PureConnect®

2023 R3

Generated:

28-November-2023

Content last updated:

20-October-2023

See Change Log for summary of changes.

PureConnect

Installation and Configuration Guide

Abstract

This document describes how to install and configure a new CIC 2015 R1 or later installation.

For the latest version of this document, see the PureConnect Documentation Library at: http://help.genesys.com/pureconnect.

Table of Contents

Introduction

Customer Interaction Center (CIC)

Customer Interaction Center (CIC) has always been a powerful all-in-one solution for IP business communications. CIC provides an architecture that's even more powerful, user tools that make the customer experience even more satisfying, and management tools that dramatically improve the performance of any business.
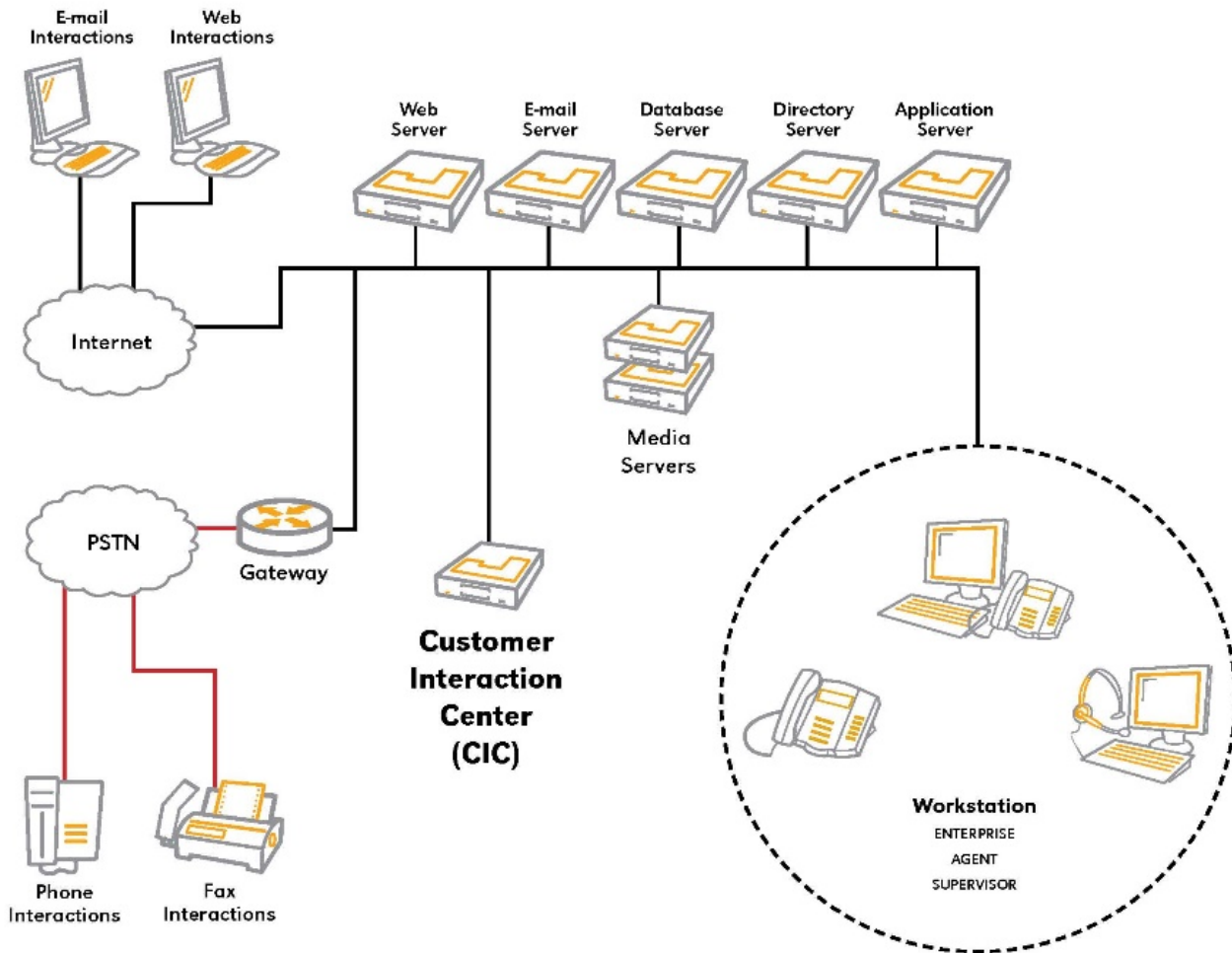
This section includes:
- Improved architecture
- Customer service enhancements
- Management enhancements
- CIC distribution model

Improved architecture

CIC's strength originates from moving all audio processing to the Interaction Media Server appliance and making the CIC Server a pure application server. For a business's communications infrastructure, the benefits are both measurable and wide-ranging.
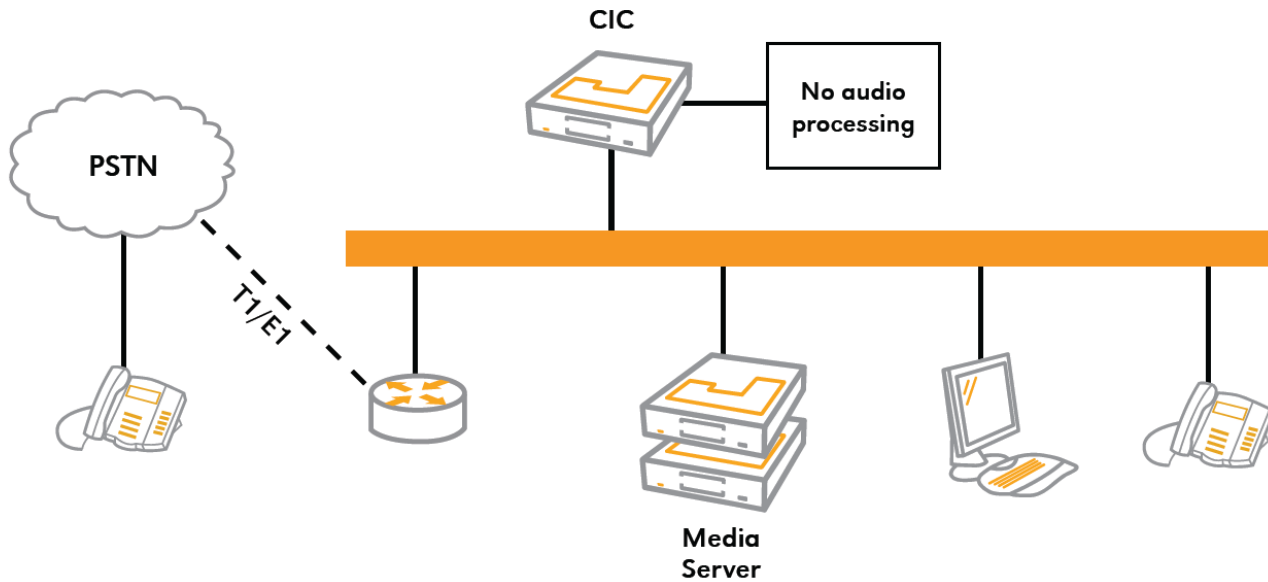
Eliminate third-party telephony components

- CIC is now a pure application server, a shift that eliminates the need for third-party voice hardware or HMP software.
- In place of voice hardware and HMP, Genesys has upgraded the Interaction Media Server to handle all CIC audio needs and developed Interaction Media Server for durability in processing these audio functions at high volumes.

Increased scalability and reliability

Perform many more operations than in previous CIC releases with the Interaction Media Server's high volume processing:
- Compression/encryption
- Prompts and DTMF(IVR)
- Call analysis
- Fax
- Conference

Enhance system continuity, with the option to take selected Interaction Media Servers out of service for maintenance without impacting system performance

Virtualization support for CIC server

Get full virtualization support for the CIC server and other servers on the CIC network.

For more information, see the PureConnect site at https://www.genesys.com/platform/pureconnect and the Release Information page at https://help.genesys.com/pureconnect/desktop/pureconnect_product_releases.htm.

Customer service enhancements

CIC customer service experience enhancements include:
- Enhanced web client
- Additional email handling
- Agent assistant
- New web portal for internal stakeholders and external customers

For more information, see the PureConnect site at https://www.genesys.com/platform/pureconnect and the Release Information page at https://help.genesys.com/pureconnect/desktop/pureconnect_product_releases.htm.

Management enhancements

CIC management enhancements include:
- Real-time speech analytics
- Improved quality monitoring
- Reporting and supervisory enhancements

For more information, see the PureConnect site at https://www.genesys.com/platform/pureconnect and the Release Information page at https://help.genesys.com/pureconnect/desktop/pureconnect_product_releases.htm.

CIC distribution model

The CIC distribution model is based on the mainline continuous development of CIC 4.0, expressed in the 20## R# Patch# format.

The CIC Distribution model includes:
- New CIC installations
- Release updates
- CIC patches
- Patches and engineering specials

Note: For the purposes of this guide, "CIC" generally refers CIC 2015 R1 or later, acknowledging that it is based on the continuous development of CIC 4.0. Specific release/version numbers are provided as needed, for example when discussing migrations or when a feature was introduced.

CIC releases

- CIC 4.0 SU 6 was the last release using the older model. CIC 2015 R1 is first release to use the distribution model in the 20## R# Patch# format..
- CIC 2015 R1 or later releases consist of new features, enhancements, and bug fixes.
- CIC 2015 R1 or later release components are .msi files.
- Each CIC 2015 R1 or later release functions as a new CIC installation and as an update to existing CIC installations.
- CIC 2015 R1 or later can be applied to any CIC 4.0 SU.

New CIC installations

For information on new CIC installations, go to Getting started in this document.

Release updates

Apply the latest CIC 2015 R1 or later release to an existing CIC 4.0 SU 6 or earlier, CIC 2015 R1 or later, or PureConnect 2016 R2 or later system.

Server Components

The following instructions show how to apply server components to a system for Interaction Media Server, CIC Server, and other servers on the CIC system.

To start, if you have not done so already, download and copy the CIC_20**_R*.iso to a file server, mount the .iso, and share the contents.

Interaction Media Server

Interaction Media Servers (and ASR servers) must be updated before the CIC server.

1. On the Interaction Media Server, navigate to the \Installs directory on the CIC 20** R* share launch **Install.exe**, and open the **Off-Server Components** tab. Interaction Media Server component is automatically selected and marked as **Update**.
2. Click **Install**. An Install Confirmation dialog box lists the selected Interaction Media Server component.
3. Click **OK**. Install.exe auto-starts and proceeds to run the patch updates install automatically. The install screens appear as Install.exe works through them, but no user input is needed.
4. Repeat steps 1 through 3 to update ASR server components on the ASR server.

CIC Server

1. On the CIC server, navigate to the \Installs directory on the CIC 20** R* share and launch **Install.exe**. The **Server Components** tab appears.

   The CIC server and Interaction Firmware components are automatically selected and marked as **Update**.

   Other components already installed, such as CIC Documentation Library, Interactive Update Provider, Language Packs, or Integrations, are also marked as **Update**.
2. If you wish to install components not currently installed, locate the components on the appropriate tab and select them.
3. Click **Install**. An Install Confirmation dialog box lists all selected components.
4. Click **OK**. Install.exe auto-starts and proceeds to run the update installs automatically. The install screens appear as Install.exe works through them, but no user input is needed.

Other Servers

Follow the same instructions to apply off-server components release components located on the Off-Server Components tab or Integrations tab to other servers on the CIC system.

Workstation Components

After the CIC Server has been updated, choose from one of the following methods to apply the CIC release components to existing CIC workstations:

- (Recommended) Use Interactive Update to apply release updates to workstations. For more information, see the [Interactive Update Technical Reference](#).
- Run Setup.exe in the appropriate shares on the CIC Server.
- Use Group Policy deployment to push release updates to workstations. For more information, see the [Group Policy Deployment for IC Applications Technical Reference](#).

Note: Since you must always apply the latest patch after installing CIC 2015 R1 or later, you can wait until you have applied the latest patch and then apply both release and patch updates to existing PureConnect (CIC) workstations at the same time, using any of these deployment methods.

Customized Files and Handlers

When an existing 4.0 SU or 2015 R1 or later system is updated to the latest 20## R# release, customized audio (.wav) files and handlers are preserved. It is no longer necessary to back up customized files and handlers prior to the update or publish custom handlers after the update.

CIC patches

- Patches are a feature of the distribution model.
- A patch is a package of Engineering Specials (bug fixes only) created for a CIC 20## R# release, cumulative of previous patches.
- Patches are released every two weeks for the current and previous releases, and as needed for prior releases.
- CIC 2015 R1 Patch1 and later patch components are .msp files.

Patch Process Support

The original, recommended approach is to apply the latest patch in its entirety after installing a release. For example, download and apply all CIC 2016 R1 Patch1 components after installing CIC 2016 R1, following the instructions to apply the latest patch.

However, in an effort to simplify the patch process, we now allow devices within an organization to be on different patch versions within the same release. This minimizes the patch process effort as you only need to apply patches to devices that require a specific fix contained in a patch. See PureConnect Customer Care KB article Q145030232900218 for the complete patch process support statement.

To assist in deciding which patch installs to run, the Summary file associated with each patch includes a "Device/Install Hint" field and name after each SCR.

The Device Install Hint appendix lists all of the names and the corresponding installation programs required for each entry, so you know which installs are required for each fix.

Patches and engineering specials

The Known Issues page describes Engineering Specials and higher priority fixes for CIC and Interaction Dialer for the latest supported release/patch version, plus the three supported previous release/patch versions available on the Downloads page. The Known Issues page is auto-updated daily.

Because of the two-week patch cycle, Engineering Specials appear much less frequently on this Known Issues page than they did for 4.0 and 3.0. If an issue is considered critical enough that the fix should be made available between patch cycles, an Engineering Special (ES) is created for the latest supported CIC or Dialer release/patch (for example, CIC 2019 R1 Patch1) and made available through PureConnect Customer Care. The ES is listed on the Known Issues page for as long as that patch is available and is included in the next patch (for example, CIC 2019 R1 Patch2). When the next patch is released, the ES is removed from the Known Issues page.

Outstanding SCRs are automatically targeted for the next patch, unless they are determined to be so critical that they must be released as an ES between patches. Outstanding SCRs are listed in the Known Issues tables only if an ES was created for them.

To view issues fixed in the latest CIC and Dialer patches, see the appropriate release/patch Summary documents on the Downloads page. The Summary documents are cumulative. For example, the Summary document for CIC 2019 R1 Patch6 contains the information from the initial CIC 2019 R1 release plus all patches up to Patch6.

To preview issues fixed in the next CIC and Dialer patches, click **Preview issues resolved in [release/patch]** on the Known Issues page below the appropriate table.

Getting Started

This section summarizes the administrative skills and licensing needed for CIC systems, and describes various sources of CIC system information and where to find it.

- [About this guide](#)
- [Administrative skills needed for CIC systems](#)
- [Licensing](#)
- [Software Downloads](#)
- [CIC 2015 R1 or later .iso file](#)
- [Release and installation documentation](#)
- [PureConnect Documentation Library](#)
- [Printable documentation](#)
- [Product Information site](#)
- [Testlab site](#)
- CIC 2.4/3.0 to 2015 R1 or later migrations

About this guide

This guide is intended for partners, planners, implementers, administrators, developers, and others who plan to install and configure a new CIC 2015 R1 or later system.

- This guide includes the pre-installation, installation, and post-installation procedures necessary for a successful *basic implementation* of a new CIC system. It provides summary material about additional servers and optional installations, and refers to other documents for detailed information.
- This guide assumes that you have a basic knowledge of SIP-based Customer Interaction Center systems, consisting of some or all of these components: CIC server Switchover system, Interaction Media Server, Interaction SIP Proxy, and IP phones.

Administrative skills needed for CIC systems

CIC requires a broad range of administrative experience since it is PC and network based, and because it interfaces with telephone system equipment and enterprise software such as Active Directory, Microsoft Exchange, IBM Domino, Microsoft SQL Server, Oracle Server and others. Administrators from various departments may work together on different aspects of CIC and related systems.

Education services have developed a large curriculum of instructor-led and on-line training designed to suit the needs of the implementer, day-day administrator, developer, and other users of the Customer Interaction Center systems. Please visit https://beyond.genesys.com/explore/home for a complete list of training options.

Licensing

CIC uses a system management module for licensing. You can manage licenses on the CIC server and flexibly allocate those licenses. As your business changes and grows, you can easily view the status of your product licenses. This helps to better manage your budgeting concerns when increasing counts of features and functions on your system.

Manage and configure your CIC product licenses using the Activation File Management Tool, at https://genesyspartner.force.com/customercare/GenesysCommunityLogin. New license types offer you more flexibility in developing new applications and performing trials on new functionality.

PureConnect has an application server license model. All features and functions are turned on with licensing rather than installing modules at a later time frame. This makes it much easier for system administrators to add functionality to the system through licensing and subsequent configuration.

- **Server features** and functionality are **licensed per server**, referred to as **Feature Licenses**. Each server is licensed in a multi-server environment. Turn on features and functionality on each server with the server feature license. The CIC server has a base server license with add-on server features that can be purchased as a package or individually.
- **CIC client features** are **licensed by user, station, or both** (based on the feature) and are referred to as **Client Access Licenses**. User licenses are either assignable or concurrent, and station licenses are assignable only.
- An **ACD Access** license is required for ACD functionality. It can be assigned to users, stations, or both.
- The **licensing structure** includes a simplified port model. There are three types of ports: External Call Ports, TIE line ports, and Outbound Dialing Ports.
- **All stations** require a **Basic Station license**. Each client type does include a station.
- You can also configure a **remote station**. In **Remote Licenses**, all CIC clients that login remotely use a station license when calls are directed to the remote station, such as a cell phone, home phone, or PBX phone.
- The **I3_FEATURE_SU_ALLOWED** feature license key, which signifies a current Licensing, Maintenance, and Support contract with Genesys, must be present in the CIC server license in order to apply CIC release updates.
- **Production licenses include** the information for both servers in a **Switchover pair**. This single license file can be applied to both machines.

For more information, see:
- "Plan license assignment and allocation" and "Order and generate the CIC license" in "CIC server".
- *PureConnect Licensing Technical Reference* in the PureConnect Documentation Library.
- Activation File Management Tool (https://genesyspartner.force.com/customercare/GenesysCommunityLogin).

Software Downloads

All PureConnect software downloads are available from the Product Downloads page   , which requires appropriate credentials. Separate images are available to download and install for:
- CIC
- Interaction Dialer
- CIC Web Applications
- Interaction Conference
- eFAQ
- Integrations
- Migration
- Interaction Gateway
- Interaction Director

Each image includes a Readme file and a Summary file that lists fixes in the latest release. New product releases are generally available every three months and patches are released every two weeks.

CIC 2015 R1 or later .iso file

CIC 2015 R1 and later releases and patches are a distributed as .iso files, available for download from the PureConnect Product Downloads page at https://help.genesys.com/pureconnect/secure/Downloads.aspx.

Release and installation documentation

Before you begin a new installation, we strongly recommend that you read the following release and installation documentation. For the latest information, see the Product Release Information page at https://help.genesys.com/pureconnect/desktop/pureconnect_product_releases.htm.

Release Notes

The PureConnect Release Notes describe new features in CIC, cumulative from CIC 4.0 GA to CIC 4.0 SU 6, and CIC 2015 R1 or later.

New Installation Checklists

Follow the checklists to perform a new CIC installation. Each summary step contains a reference to the *PureConnect Installation and Configuration Guide* (this guide).

Installation and Configuration Guide

Describes how to install and configure a new CIC installation. It includes CIC server, client workstation, Interaction Media Server, database server, mail server, and optional server prerequisites, and post-installation procedures.

PureConnect Documentation Library

The *PureConnect Installation and Configuration Guide* contains many references to finding documentation in the PureConnect Documentation Library.

The PureConnect Documentation Library merges all help systems and documentation installed on the CIC server into a single searchable unit. The PureConnect Documentation Library enables you to:

- Access the entire documentation set from one location.
- View or search the entire documentation set for a document title, topic, term, or keyword.

You can view the PureConnect Documentation Library from:

- http://help.genesys.com/cic/

- The CIC server from **Start…Programs->PureConnect->Online Documentation->IC Documentation Library,** after completing the CIC server installation.

Printable documentation

The CIC printable documentation provides print versions in .pdf format of the CIC online help systems (English and localized versions). The source files for the quick reference guides are also available in .doc, .vsd, or .pub formats for partners who want to make their own customized versions of these documents.

CIC printable documentation is available at http://help.genesys.com/cic/desktop/Printable_Documentation.htm.

Product Information site

The Product Information site at https://help.genesys.com/pureconnect/desktop/pureconnect_product_releases.htm is the central location for the latest CIC 2015 R1 or later release information, documentation, system software and hardware requirements, and downloads.

Testlab site

The Testlab site at http://testlab.genesys.com/ is a resource for tracking the latest hardware and software components that have passed interoperability testing for use with CIC products.

CIC System Requirements

Hardware Requirements

- [System hardware requirements](#)
  Server and workstation hardware requirements
- [Verified servers](#)
  Servers that have been tested and verified for use with CIC
- [Virtualization Technical Reference](#)
  Best practices and strategies for successfully deploying PureConnect products

Software Requirements

- [System software requirements](#)
  Server and workstation software requirements

CIC System Hardware Requirements

This information was formerly in the Product Information Site.

- IC Server minimum system requirements
- Recommendations for typical large-scale IC implementations
- Sizing guidelines
- Virtualization
- Client/Admin workstation system requirements

Additional information available at Genesys Testlab

IC Server minimum system requirements

This section describes the minimum hardware requirements for an IC Server at the time of the CIC 2015 R1 release.

- **Processor**: Intel Xeon E-series 64-bit quad-core processor or better
- **Memory**: minimum of 3 GB of RAM (configured to employ all memory channels for performance)
- **RAID controller:** hardware SAS/SATA 6.0 Gb/s controller with RAID 1 and 512 MB write-cache
- **Hard drives:** SAS or SATA 6.0 Gb/s configured for RAID 1 (minimum logical volume size of 500 GB* recommended)
- **Optical drive:** DVD-ROM drive (if installing from DVD media)
- **Network**: Gigabit 100/1000 baseT Ethernet adapter
- **Desktop Display**: SVGA/XGA adapter with 4 MB of RAM (1024x768x24bpp)

> *For sites that may require increased tracing for troubleshooting purposes, it is likely that more than the minimum disk requirement will be needed. Customers' individual requirements and results will vary.*

Recommendations for typical large-scale IC implementations

This section presents recommendations for typical large-scale CIC implementations using packaged PureConnect Interaction Application Servers* at the time of the CIC 2015 R1 release.

See Testlab for a list of packaged PureConnect Interaction Application Servers and specifications for each.

- Contact Center
- Enterprise
- Additional software components

Contact Center

3000 users and stations (premise-based)

- **IC Servers**
  Switchover pair
  Using enterprise-scale CIC-imaged Interaction Application Servers
- **IC Session Manager (Off-Server)**
  2000 users each (max) N+1=3
  Using large-scale Interaction Application Servers

- **Interaction Media Servers with Interaction SIP Proxy**
  400 points each (max) N+1 = (based on expected call volume)
  Using enterprise-scale Media Server-imaged Interaction Application Servers

Enterprise

8000 users and stations with client workstations or 15,000 phone-only

- **IC Servers**
  Switchover pair and/or multi-site
  Using enterprise-scale CIC-imaged Interaction Application Servers
- **IC Session Manager (Off-Server)**
  2000 users each (max) N+1 = 5 or 9

Using large-scale Interaction Application Servers
- **Interaction Recorder Remote Content Server**
  4000 users each(max) N+1 = 3 or 5
  Using small-scale Interaction Application Servers
- **Interaction Media Servers with Interaction SIP Proxy**
  400 points each (max) N+1 = (based on expected call volume)
  Using enterprise-scale Media Server-imaged Interaction Application Servers
- **IC Status Aggregator**
  5000 users recommended (~15,000 max) N+1 = 2 (either scenario)
  Using small-scale Interaction Application Servers

Additional software components

This section lists additional software components capable of using dedicated server hardware that can be added to the Contact Center and Enterprise examples. The decision to include these components should be based on requirements determined by the partner or channel-sales representative.

- ASR Server
- TTS Server
- Web Server (Interaction Web Tools, Web Clients)
- Interaction Conference Media Server
- Interaction Recorder Extreme Query Server
- Interaction Recorder Remote Content Server
- IC Multi-Site (RTM) Server
- IC Render Server
- IC Status Aggregator Server
- IC VoiceXML Interpreter Server
- Interaction Dialer Central Campaign Server (CCS)
- Interaction Dialer Outbound Server (ODS)

Sizing guidelines

For current sizing guidelines for CIC systems with multiple components on hardware-based and virtualized systems, contact the PureConnect Sales team.

Virtualization

For the latest information on support for virtualization in CIC, see the [CIC Virtualization Technical Reference](#).

Client/Admin workstation system requirements

This section describes the minimum and recommended hardware requirements for running IC User Applications, IC Business Manager Applications, Interaction Optimizer in IC Business Manager (for schedule creation/modification and intraday reforecasting), and IC Server Manager Applications on client/admin workstations.

IC User Applications

Minimum

- **Processor**: Intel® Pentium® 4 @ 2.4GHz or AMD® equivalent
- **Memory**: 4 GB system memory
- **Disk space for default installation**: 550 MB of available hard disk space
- **Disk space for full installation**: 900 MB of available hard disk space
- **Disk space for tracing and debugging files**: Up to 8 GB disk space*
- **Network**: 100 Mb network controller

Recommended

- **Processor**: Intel® Core™ i3 Processor or AMD equivalent
- **Memory**: 8 GB system memory
- **Disk space for default installation**: 700 MB of available hard disk space
- **Disk space for full installation**: 1 GB of available hard disk space
- **Disk space for tracing and debugging files**: Up to 20 GB disk space*
- **Network**: 1 Gb network controller

IC Business Manager Applications

Minimum

- **Processor**: Intel® Core™ i5 Processor or AMD equivalent
- **Memory**: 4 GB system memory
- **Disk space for installation**: 700 MB of available hard disk space
- **Disk space for tracing and debugging files**: Up to 20 GB disk space*
- **Network**: 100 Mb network controller

Recommended

- **Processor**: Intel® Core™ i7 Processor or AMD equivalent
- **Memory**: 8 GB system memory
- **Disk space for installation**: 1 GB of available hard disk space for installation
- **Disk space for tracing and debugging**: Up to 80 GB of disk space*
- **Network**: 1 Gb network controller

Interaction Optimizer in IC Business Manager

Needed for schedule creation, modification, and intraday reforecasting. For more information, see Interaction Optimizer Requirements and Limitations Overview.

Minimum

- **Processor**: Intel® Core2™ i7 Processor with at least 4 cores or AMD equivalent (Fx)
- **Memory**: 8 GB system memory
- **Disk space for installation**: No extra besides IC Business Manager requirements
- **Disk space for tracing and debugging files**: No extra besides IC Business Manager requirements
- **Network**: No extra besides IC Business Manager requirements

Recommended

- **Processor**: Intel® Core™ i7 Processor Extreme Edition with at least 6 cores or AMD equivalent (Fx)
- **Memory**: 16 GB system memory (DDR4-1600/2133)
- **Disk space for installation**: No extra besides IC Business Manager requirements
- **Disk space for tracing and debugging**: No extra besides IC Business Manager requirements
- **Network**: No extra besides IC Business Manager requirements

IC Server Manager Applications

Minimum

- **Processor**: Intel® Pentium® 4 @ 2.4 GHz or or AMD equivalent
- **Memory**: 4 GB system memory
- **Disk space for installation**: 900 MB of available hard disk space
- **Disk space for tracing and debugging files**: Up to 10 GB disk space*
- **Network**: 100 Mb network controller

Recommended

- **Processor**: Intel® Core™ i3 Processor or AMD equivalent
- **Memory**: 8 GB system memory
- **Disk space for installation**: 1.2 GB of available hard disk space
- **Disk space for tracing and debugging**: Up to 20 GB of disk space*
- **Network**: 1 Gb network controller

Hard drive sizing recommendations are based upon moderate loading of average-sized implementations with trace levels set to default values. Increasing the trace log levels beyond this level can greatly effect storage requirements. Monitoring of available drive space at regular intervals will be required due to the uncompressed nature of these off-host logs files. Only trace logs generated on the IC Server get compressed on a daily basis.

CIC System Software Requirements

This information was formerly in the Product Information Site.

- [CIC Server](#)
- [Interaction Media Server](#)
- [Other CIC Application Servers](#)
- [Client/Admin Workstation](#)
- [Supported Mail Systems](#)
- [Database](#)
- [Web Server](#)
- [Web Browser](#)
- [Speech Recognition Engine (ASR)](#)
- [Text to Speech Engine (TTS)](#)
- [Desktop Virtualization](#)
- [Data and System Protection](#)

Additional information available at Genesys Testlab

CIC Server

Operating System

- **Microsoft Windows Server 2019 (64-bit)**
  Supported in PureConnect 2020 R1 and later
  Interaction Web Portal and Interaction Administrator Web Edition are not supported because Windows Server 2019 does not support Silverlight.
- **Microsoft Windows Server 2016 (64-bit)**
  Supported in PureConnect 2018 R2 and later

Microsoft .NET Framework

- **Microsoft .NET Framework 4.7 or later**
  Required for PureConnect 2018 R4 and later
- **Microsoft .NET Framework 4.5.2 or later**
  Required for CIC 2016 R1 through 2018 R3
- **Microsoft .NET Framework 3.5**
  Windows Server 2016: Can be added via the Server Manager
  Windows Server 2012 R2: Install in Server Manager->Add roles and features. **Note**: See Microsoft KB article 2734782 for known issue.

ODBC Driver 17 or later

- Required for PureConnect 2023 R3 and later.

Interaction Media Server

Operating System

- **Microsoft Windows Server 2019 (64-bit)**
  Supported in PureConnect 2020 R1 and later
- **Microsoft Windows Server 2016 (64-bit)**
  Supported in PureConnect 2016 R2 and later

Other CIC Application Servers

For off-server Session Manager and all other servers running CIC applications.

Operating System

- **Microsoft Windows Server 2019 (64-bit)**
  Supported in PureConnect 2020 R1 and later
- **Microsoft Windows Server 2016 (64-bit)**
  Supported in PureConnect 2016 R2 and later

Microsoft .NET Framework

- **Microsoft .NET Framework 3.5**

Note: See Web Servers for additional requirements for Web Servers running CIC applications.

Client/Admin Workstation

For workstations running IC User Applications, IC Business Manager Applications, and IC Server Manager Applications.

Genesys supports the latest Microsoft OS cumulative updates and security updates for these applications. We recommend application of minor version updates, cumulative updates, and security updates to keep your software secure.See testlab.genesys.com for information on the latest validation test results.

Operating System

- **Microsoft Windows 11 (64-bit)**
  Supported in CIC 2023 R3 and later

- **Microsoft Windows 10 version 1511 and later (32-bit and 64-bit)**
  Supported in CIC 2016 R2 and later
  See testlab.genesys.com for known issues with Microsoft patches

Microsoft .NET Framework

For more information, refer to Microsoft article for .NET Framework system requirements.

IC User Applications and IC Server Manager Applications

- **Microsoft .NET Framework 4.7 or later**
  Required for PureConnect 2018 R4 and later
- **Microsoft .NET Framework 4.5.2 or later**
  Required for CIC 2016 R1 through 2018 R3
- **Microsoft .NET Framework 3.x**

IC Business Manager Applications

- **Microsoft .NET Framework 4.7 or later**
  Required for PureConnect 2018 R4 and later
- **Microsoft .NET Framework 4.5.2 or later**
  Required for CIC 2016 R1 through 2018 R3
- **Microsoft .NET Framework 3.x**

Supported Mail Systems

The following applications have passed interoperability testing with PureConnect. Once Genesys validates an application release, Genesys considers the application compatible with future PureConnect releases through the vendor's stated mainstream end-of-life date. Genesys supports all minor version updates, cumulative updates, and security updates for these applications. We recommend application of minor version updates, cumulative updates, and security updates to keep your software secure.

- **Microsoft Office 365**
  Supported in CIC 2018 R1 and later
  Exchange Web Services only
  Office 365 Exchange Web Services supported with appropriate permissions and other set up requirements
  Note: Known limits exist for using Microsoft Office 365 instead of an on-premises Exchange server. For more information, refer to Recommendations and Limitations for Using Microsoft Office 365 with CIC.
- **Microsoft Exchange 2016 CU1 or later**
  Supported in CIC 2016 R1 and later
  Exchange Web Services only
  Exchange MAPI and Calendar Access not supported
- **Microsoft Exchange 2013 CU12 or later**
  Supported in CIC 2015 R1 and later
  Exchange Web Services only
  Exchange MAPI and Calendar Access not supported
  Exchange Online 2013 supported in CIC 2015 R1 and later
- **Microsoft Exchange 2010 SP3 RU13 or later**
  Exchange Web Services - recommended minimum version is 2010 SP3 RU9 in CIC 2016 R2 and later
  Hosted Exchange Web Services supported with appropriate permissions and other setup requirements
  Calendar Access not supported
- **Gmail for Business**
  Integration of CIC with Gmail is compliant with SMTP/IMAP protocols exclusively through OAuth
- **Interaction Message Store**
  Voice mail and fax stored on the CIC server or network drive

- LDAP/SMTP/IMAP
  Other servers compliant with LDAP/SMTP/IMAP protocols exclusive

Database

The following applications have passed interoperability testing with PureConnect. Once Genesys validates an application release, Genesys considers the application compatible with future PureConnect releases through the vendor's stated mainstream end-of-life date. Genesys supports all minor version updates, cumulative updates, and security updates for these applications. We recommend application of minor version updates, cumulative updates, and security updates to keep your software secure.

- **Microsoft SQL Server 2019**
  Supported in CIC 2021 R4 and later
- **Microsoft SQL Server 2016**
  Supported in CIC 2017 R2 and later
- **Microsoft SQL Server 2014 SP1, SP2**
  Supported in CIC 2015 R1 and later
- **Microsoft SQL Server 2008 R2 SP1, SP2, SP3 (32-bit and 64-bit)**
  PureConnect 2019 R3 is the last release to support Microsoft SQL Server 2008 R2. See product notice.
- **Oracle 12c2 (64-bit) 12.2.x database**
  With (32-bit) 12.2.x client
  Supported in CIC 2019 R4 and later
  Interaction Optimizer requires Oracle 12.2 client to be installed as the default Oracle client. If the default Oracle client is not version 12.2, then you must set the ORACLE_HOME environment variable to specify the Oracle client install location.
- **Oracle 12c (64-bit) 12.1.x database**
  With (32-bit) 12.1.x client
  Supported in CIC 2016 R1 and later

Web Server

- **Microsoft IIS 10**
  Verified with Windows Server 2019 on CIC 2020R1 and higher
  Verified with Windows Server 2016 on CIC 2018R2 and higher
- **Microsoft IIS 8.5**
  Verified with Windows Server 2012 R2
- **Apache 2.4**
  Supported with Windows Server 2012 R2 and higher
  Apache may work with Linux OS, but this combination is not tested or supported by Genesys.
- **NGINX Server 1.12**
  Supported with Windows Server 2012 R2 and higher
  Nginx may work with Linux OS, but this combination is not tested or supported by Genesys.

Other requirements

Interaction Web Portal, SOAP Listener, and Interactive Update require:
- **ASP.NET 4.6 (Latest supported version)**
- **ASP.NET 4.5 (Minimum required version)**

Web Browser

- **Apple Safari 11**
  Interaction Connect only
  Supports TLS 1.2
- **Apple Safari 10**
  Interaction Connect only
  Supports TLS 1.2
- **Apple Safari 9**
  Interaction Connect only
  Supports TLS 1.2
- **Apple Safari 8**
  Interaction Connect only
  Supports TLS 1.2
- **Google Chrome 107**
  Interaction Connect only
  Supports TLS 1.2
- **Google Chrome 62**
  Interaction Connect only
  Supports TLS 1.2
- **Microsoft Edge 40**
  Supported in CIC 2017 R1 and later
  Interaction Connect only
  Interaction Marquee and Interaction Web Portal not supported
- **Mozilla Firefox 56**
  Interaction Connect only
  Supports TLS 1.2
- **Mozilla Firefox ESR 52, ESR 60**
  Interaction Connect only
  Supports TLS 1.2

Speech Recognition Engine (ASR)

- **Nuance Recognizer 11.0.3**
  with Nuance Speech Suite 11.0.4 bundle
  Note: Validated on Microsoft Windows Server 2012 and Microsoft Windows Server 2016.
- **Nuance Recognizer 10.2**
  with Nuance Speech Server 6.2
  Note: Nuance and Genesys do not support running Nuance 10.2 software on Microsoft Windows Server 2016.
- **Interaction Speech Recognition**

Text to Speech Engine (TTS)

- **Microsoft SAPI 5.1**
- **Nuance Vocalizer 7.2.7**
  with Nuance Speech Suite 11.0.4 bundle
- **Nuance Vocalizer 6.0**
  with Nuance Speech Server 6.2
- **Interaction Text-To-Speech**

Desktop Virtualization

- **Citrix Xen App 7.16**
- **Citrix XenDesktop 7.16**
- **VMware Horizon 7**
- **Microsoft App- V5.0**
- **Microsoft Server 2012 R2 Remote Desktop Services**
- **Microsoft Server 2016 Remote Desktop Services**
- Microsoft Server 2019 Remote Desktop Services

Data and System Protection Software

Customers and partners have the option to install the following validated data and system protection software on the CIC server and other machines on the network:

- **McAfee Endpoint Threat Protection 10.5**
- **Symantec Endpoint Protection 12.1.6**
  Basic Server Protection only
- **Symantec Endpoint Protection 14**
  Basic Server Protection only

Pre-Installation Procedures

The CIC suite of software runs on a Windows-based IP network environment. The software is deployed across two or more servers in that environment and makes use of additional network servers and services to support it and provide additional functionality. Requirements for the CIC Server, client workstation, and peripheral servers must be met before installing the CIC software.

In this section:

- CIC server
- Interaction Media Server
- Client Workstation
- Additional Servers
- Mail System
- Database Server
- Database Logging
- Fax Support

CIC server

This section discusses CIC server requirements and procedures to perform prior to a new CIC installation.

- CIC server minimum hardware requirements
- Recommendations for typical large-scale CIC implementations
- Virtualization support for CIC environment
- CIC server software requirements
- CIC Server configuration recommendations: pre- and post- Windows OS installation
- Recommended third party tools
- Anti-virus requirements and best practices
- PureConnect QoS driver
- Security-related settings
- Create and configure the CIC administrator account
- (Optional) Install and configure the email client
- Plan license assignment and allocation
- Order and generate the CIC 4.0 license
- (Optional) Install SNMP
- (Optional) IC Survey System

CIC server minimum hardware requirements

This section presents the minimum hardware requirements for a CIC server **at the time of the CIC 2015 R1 release**.

> Notes:
> For more information about hardware requirements see:
> https://help.genesys.com/cic/mergedProjects/wh_tr/mergedProjects/wh_tr_installation_and_configuration/desktop/hardware_requirements.htm
>
> For current sizing guidelines for CIC systems with multiple components on hardware-based and virtualized systems, contact the Genesys Sales team.

CIC server minimum hardware requirements

- **Processor:** Intel Xeon E-series 64-bit quad-core processor or better
- **Memory:** minimum of 3 GB of RAM (configured to employ all memory channels for performance)
- **RAID controller:** hardware SAS/SATA 6.0 Gb/s controller with RAID 1 and 512 MB write-cache
- **Hard drives:** SAS or SATA 6.0 Gb/s configured for RAID 1 (minimum logical volume size of 500 GB* recommended)
- **Optical drive:** DVD-ROM drive (if installing from DVD media)
- **Network:** Gigabit 100/1000 baseT Ethernet adapter
- **Desktop Display:** SVGA/XGA adapter with 4 MB of RAM (1024x768x24bpp)

* For sites that may require increased tracing for troubleshooting purposes, it is likely that more than the minimum disk requirement will be needed. Customers' individual requirements and results will vary.

Recommendations for typical large-scale CIC implementations

This section presents recommendations for typical large-scale CIC implementations using packaged PureConnect Interaction Application Servers **at the time of the CIC 2015 R1 release**.

This section includes:

- Contact Center
- Enterprise
- Additional software components

> **Notes**
>
> See CIC System hardware Requirements in the PureConnect Documentation Library for the latest hardware requirements.
>
> For a list of packaged PureConnect Interaction Application Servers and specifications for each, see Testlab at http://testlab.genesys.com/.
>
> For current sizing guidelines for CIC systems with multiple components on hardware-based and virtualized systems, contact the Genesys Sales team.
>
> For information on additional servers/software components, see "Additional Servers" and "Optional Installations and Additional Functionality".

Contact Center

3000 users and stations (premise-based)

- **CIC servers**
  Switchover pair
  Using enterprise-scale CIC-imaged Interaction Application Servers
- **Session Manager (Off-Server)**
  2000 users each (max) N+1=3
  Using large-scale Interaction Application Servers
- **Interaction Media Servers with Interaction SIP Proxy**
  400 points each (max) N+1 = (based on expected call volume)
  Using enterprise-scale Media Server-imaged Interaction Application Servers

Enterprise

8000 users and stations with client workstations or 15,000 phone-only

- **CIC servers**
  Switchover pair and/or multi-site
  Using enterprise-scale CIC-imaged Interaction Application Servers
- **Session Manager (Off-server)**
  2000 users each (max) N+1 = 5 or 9
  Using large-scale Interaction Application Servers
- **Interaction Recorder Remote Content Server**
  4000 users each(max) N+1 = 3 or 5
  Using small-scale Interaction Application Servers
- **Interaction Media Servers with Interaction SIP Proxy**
  400 points each (max) N+1 = (based on expected call volume)
  Using enterprise-scale Media Server-imaged Interaction Application Servers
- **Status Aggregator**
  5000 users recommended (~15,000 max) N+1 = 2 (either scenario)
  Using small-scale Interaction Application Servers

Additional software components

This section lists additional software components capable of using dedicated server hardware that can be added to the Contact Center and Enterprise examples. The decision to include these components should be based on requirements determined by the partner or channel-sales representative.

- ASR server
- TTS server
- Web server (Interaction Web Tools, Web clients)
- Interaction Recorder Extreme Query Server
- Interaction Recorder Remote Content Server
- CIC Multi-Site (RTM) Server
- CIC Render Server
- Status Aggregator Server
- CIC VoiceXML Interpreter Server
- Interaction Dialer Central Campaign Server (CCS)
- Interaction Dialer Outbound Server (ODS)

Virtualization support for CIC environment

CIC supports virtualization of the CIC environment. For the latest information, see the *CIC Virtualization Technical Reference* in the PureConnect Documentation Library.

The *CIC Virtualization Technical Reference* provides best practices and strategies for successfully deploying PureConnect products on a virtualized platform, and applies to Microsoft Hyper-V and VMware servers. The document lists PureConnect products that are currently supported, as well as not supported, for virtualization.

CIC server software requirements

This section describes software requirements for the CIC server.

Operating System requirements for CIC server

Update Microsoft Windows operating system with the latest patches available from Microsoft before installing CIC.

See System Software Requirements in the PureConnect Documentation Library for the latest requirements.

Microsoft .NET Framework requirements for CIC server

Install Microsoft .NET Framework 4.7 or later

Install Microsoft .NET Framework 4.5.2 or later

Install Microsoft .NET Framework 3.5.1

See System Software Requirements in the PureConnect Documentation Library for the latest requirements.

ASP.NET

See System Software Requirements in the PureConnect Documentation Library for the latest requirements.

ODBC Driver

Install Microsoft ODBC Driver 17 or later

See System Software Requirements in the PureConnect Documentation Library for the latest requirements.

Install Microsoft .NET Framework 4.7 or later

Microsoft.NET Framework 4.7 or later is required on the CIC server. For more information, see Microsoft KB article https://support.microsoft.com/en-us/help/3186539

If .NET Framework 4.7 it is not automatically installed with Windows Update, the .NET Framework 4.7 is available to install from \ThirdPartyInstalls on the PureConnect 2018 R4 or later .iso.

Install Microsoft .NET Framework 4.5.2 or later

Microsoft .NET Framework 4.5.2 or later is required on the CIC server. The Microsoft .NET Framework 4.5.2 or later is a highly compatible, in-place update to the .NET Framework 4.5.1, the .NET Framework 4.5, and the .NET Framework 4. However, it can run side by side with .NET Framework 3.5.1. For more information, see Microsoft KB article https://support.microsoft.com/en-us/kb/2934520.

Windows Server 2016

Microsoft .NET Framework 4.6.2 is included by default. No Additional install required.

Windows Server 2012 R2

The .NET Framework 4.5.2 or later for Windows Server 2012 R2 is available on Windows Update and on Windows Server Update Service, and offered as a recommended update on Windows Update.

If it was not automatically installed with Windows Update, the .NET Framework 4.5.2 or later is available to install:

- As a download from Microsoft Support. See Microsoft KB article https://support.microsoft.com/en-us/kb/2934520
- On the CIC 2016 R1 or later .iso file in the \ThirdPartyInstalls\Microsoft\DotNET4.5.2 directory

Install Microsoft .NET Framework 3.5.1

Microsoft .NET Framework 3.5.1 is an optional feature of Windows Server 2012 R2, Windows Server 2016, and Windows Server 2019. It is included, but must be installed using the Add Features wizard.

For more information, see the following Microsoft articles:

- How to determine which .NET Framework versions are installed.
- Microsoft .NET Framework 3.5 Deployment Considerations.
- Enable .NET Framework 3.5 by using the Add Roles and Features Wizard.
- Enable .NET Framework 3.5 by using Windows PowerShell.

To install Microsoft .NET Framework 3.5.1 on Windows Server 2012 R2

1. Open Server Manager and select **Features**.
2. Select **Add roles and features** to launch the **Add Roles and Features** wizard.
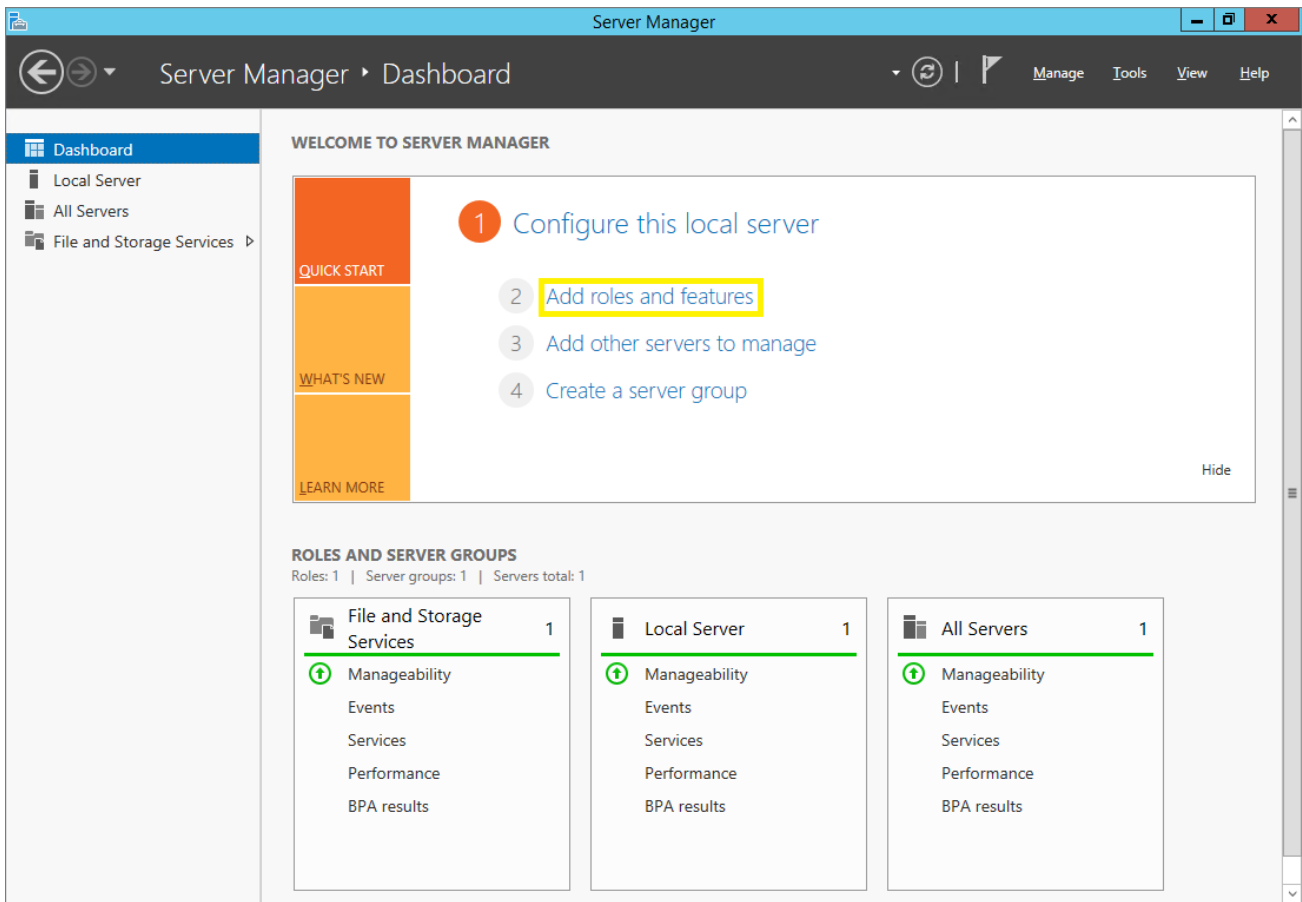
3. In the **Add Roles and Features** wizard, click the **.NET Framework 3.5** checkbox (under the .NET Framework 3.5 Features container) and click **Next**.
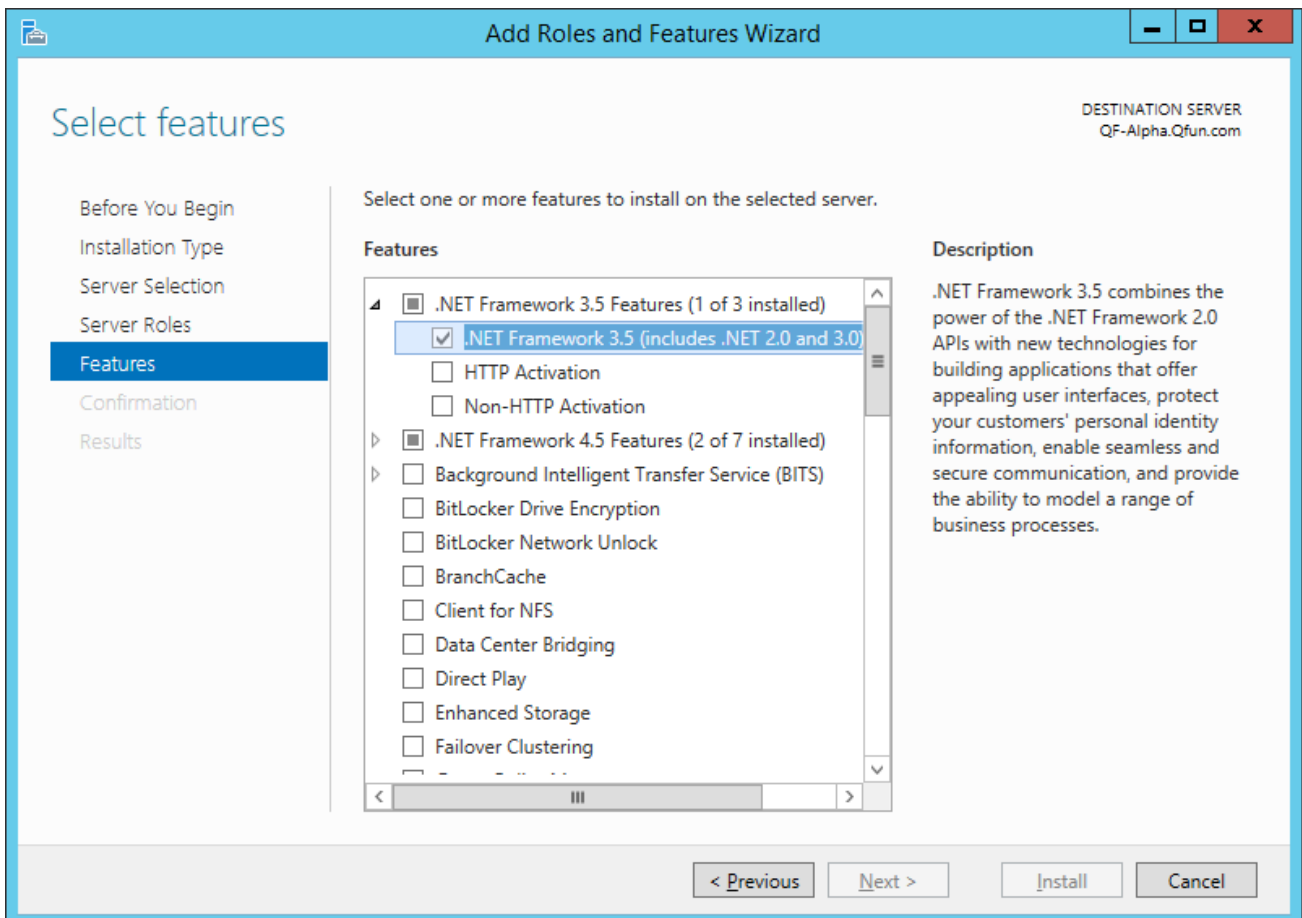
4. In the **Confirm Installation Selections** dialog box, click **Install**.
5. When the installation is complete, click **Close** to finish. Check for the latest Windows updates and install any Critical or Security updates related to Microsoft .NET.

Note: A known issue occurs when attempting to install .NET Framework 3.5 on a computer running Windows Server 2012 R2 configured to use a WSUS server to receive updates or when an Internet connection is unavailable. For more information, see **Microsoft KB article** http://support.microsoft.com/kb/2734782.

To install Microsoft .NET Framework 3.5.1 on Windows Server 2016 and Windows Server 2019

1. Open Server Manager and select **Features**.
2. Select Add roles and features to launch the Add Roles and Features wizard.
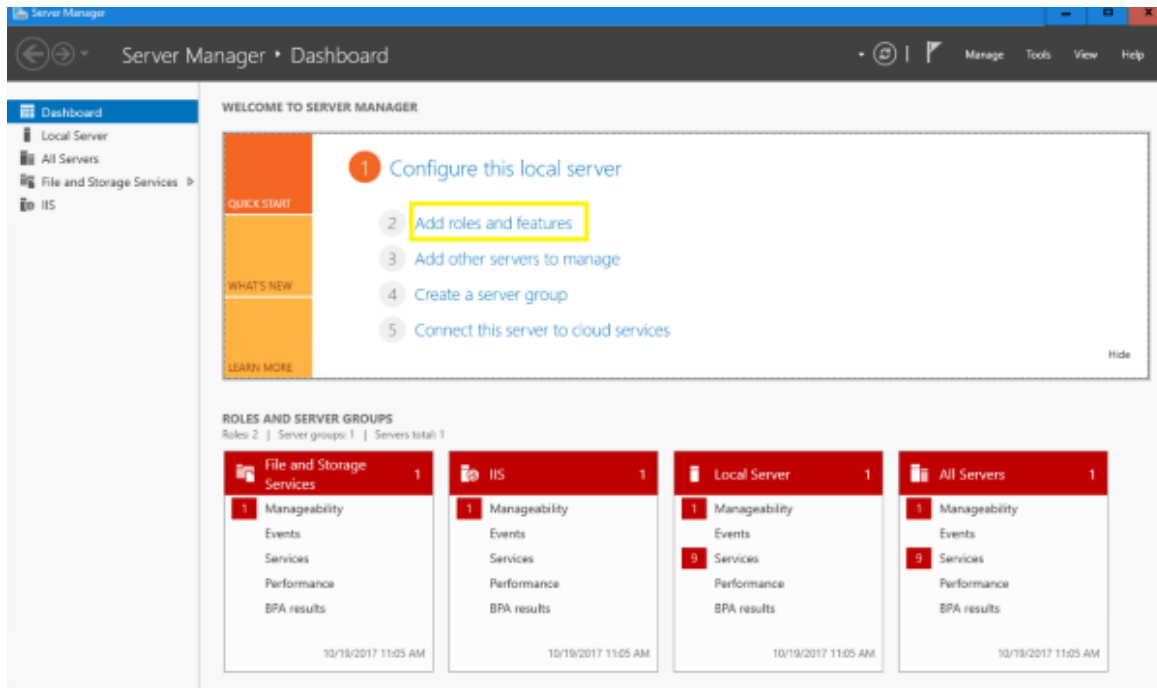
3. In the **Add Roles and Features** wizard, click the **.NET Framework 3.5** checkbox (under the .NET Framework 3.5 Features container) and click **Next**.
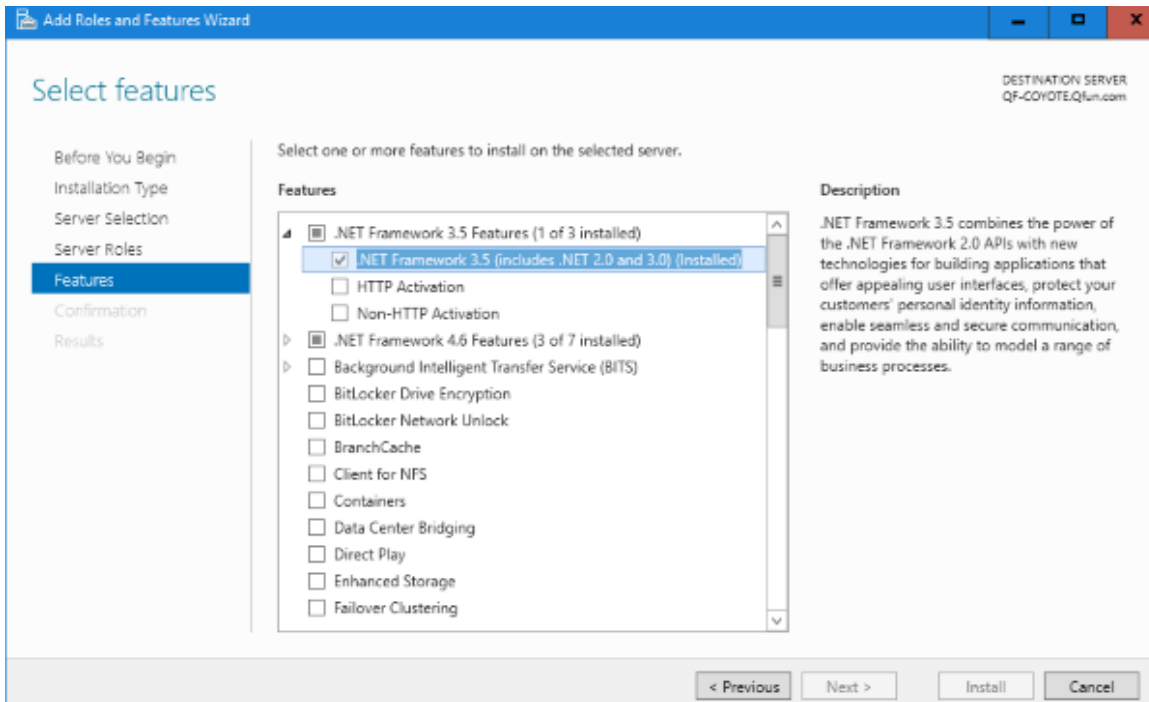
4. In the **Confirm Installation Selections** dialog box, click **Specify an alternate source path**.
5. Insert the Windows Server installation media.
6. In the **Specify Alternate Source Path** dialog box, enter the path and click **OK**. The **Confirm Installation Selections** dialog box appears.
7. Click **Install**.
8. When the installation is complete, click **Close** to finish. Check for the latest Windows updates and install any Critical or Security updates related to Microsoft .NET.

Install Microsoft ODBC Driver 17 or later

Latest Release of PureConnect 2023 R3 is compatible with ODBC driver 17 onwards. Please make sure to install ODBC driver 17 or later versions before installing the latest PureConnect build.

Note: Installation will check for ODBC driver version. If it does not meet the criteria, installation will stop with the error message "Microsoft ODBC Driver 17.3 or greater version is required. Please install the driver and then proceed with the installation".

CIC Server configuration recommendations: pre- and post- Windows OS installation

Genesys recommends the following pre- and post- Windows OS installation configurations.
- Pre- Windows OS installation configurations
- Post- Windows OS installation configurations

Pre- Windows OS installation configurations

Complete the following configurations before installing the Windows OS.
- Drive partitions and RAID
- Computer name
- Network configuration
- Domain requirements

Drive partitions and RAID

Partitioning the drives helps to avoid system problems due to applications filling up drive space. RAID implementation (Levels 1 & 10) increases the protection of data from hardware failures. We recommend that you set up the CIC server storage configuration as follows:
- We recommend your server incorporate a **hardware RAID adapter to help protect your data from hardware failure**. Additionally the hardware RAID adapter should include a battery-backed or flash-backed write cache module. In the event of power or hardware failure these modules maintain the integrity of any data that was cached at the moment of failure. Upon recovering from the failure, the data contained within the cache should be salvageable. Great care should be taken to insure that the RAID adapter can support multiple arrays of differing formats and that there are no hidden issues with the number of drives that can be used to make a RAID 10 array. RAID 10 arrays of 4 - 8 hard drives are very common implementations.
- The **typical array configuration** may vary from a single RAID 1 for smaller implementations to a single RAID10 for more storage capacity in larger configurations. In the **largest enterprise-scale implementations**, it may also make sense to incorporate a second RAID 1 or RAID 10 array dedicated to trace logging data. In this particular RAID+RAID configuration, the secondary RAID 1 or RAID 10 array would provide much better overall performance than adding additional drives to the already busy primary RAID10. The need for RAID 1 versus RAID 10 on this secondary array would be determined by overall storage capacity needs.
- In **single RAID array environments**, we recommend at least 500 GB of drive space. We would recommend creating a minimum 120 GB partition for the operating system (generally labeled C:). Next we recommend creating a second partition (generally labeled D:) to house application data including the CIC server installation. This partition is recommended to be at least 60 GB. Lastly we recommend creating a logging partition (generally labeled E:) using all of the remaining space on this single RAID format array. Additionally, we recommend enabling file compression for the logging directory. This has proven to result in a minimal CPU load increase while reducing files sizes to roughly half that of the uncompressed log files. This will be done by default in future releases. To enable this compression feature, check the "Compress contents to save disk space" checkbox under Properties->General ->Advanced… for the logging folder.
- In the **dual RAID array environments**, we recommend increasing the size of the OS partition (generally labeled C:) to 120 GB and leaving the remaining disk space of the primary RAID 10 for application partition (generally labeled D:). We then recommend creating the logging partition (generally labeled E:) with the entire available disk space on the second RAID 1 or RAID 10 volume. This will greatly benefit logging storage capacity and offload heavy logging I/O bandwidth. We also recommend enabling file compression of the logging directory, even with enterprise-scale implementations.

Computer name

Verify the customer's requested server/computer name and use accordingly. If no preferred name has been indicated, use ICServer as the computer name.

Network configuration

During Windows installation, configuration of static addresses is strongly advised. The default set of protocols installed during the Windows installation should require no additional modification. If customer protocols or network services are installed, it is important that the configuration be tested before it is placed into a production environment.

Domain requirements

All necessary interdomain trust relationships must exist and all necessary interdomain replication must be occurring.

Post- Windows OS installation configurations

Complete the following configurations after installing the Windows OS.
- Paging files
- Windows Error Reporting
- Relocate the Windows TEMP directory
- Teaming network interfaces

Paging files

The default settings for the page file should be acceptable for most customers.
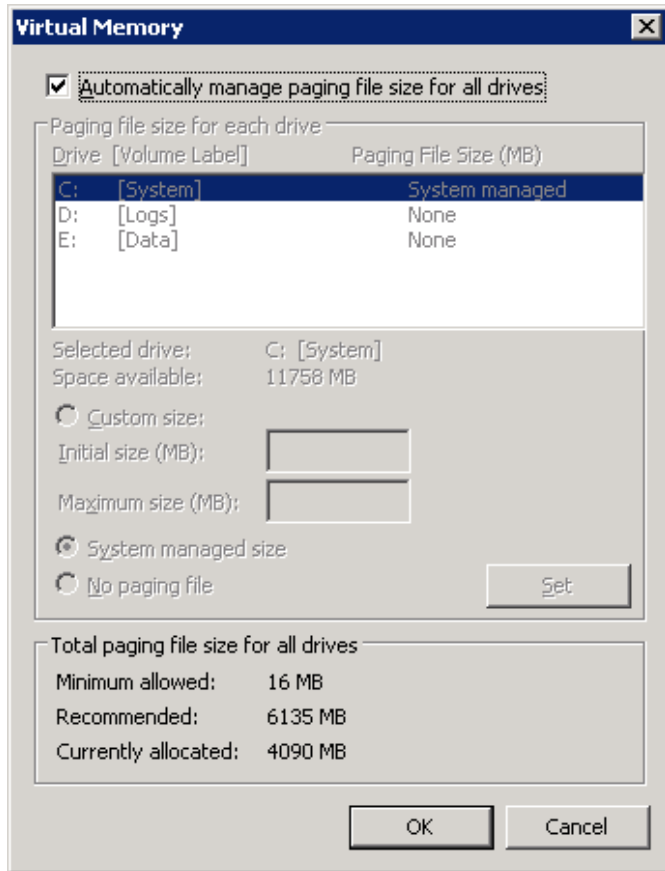
Windows Error Reporting

Windows Server 2008 introduced an improved version of Windows Error Reporting architecture. When a process crashes with an unhandled exception, a memory dump is created. All of this occurs without a debugger. The CIC server, Interaction Media Server, and other CIC applications installed on Windows Server 2008 R2 or Windows Server 2012 R2 automatically configure Windows Error Reporting during installation.

The CIC server install (and other server-side application installs) set the following registry values:

`HKLM\SOFTWARE\Microsoft\Windows\Windows Error Reporting\LocalDumps\@DumpType=dword:00000002`

`HKLM\SOFTWARE\Microsoft\Windows\Windows Error Reporting\LocalDumps\@DumpFolder=<ININ_TRACE_ROOT_Env>\WER\`

We strongly recommend that customers do not change these values or override them with Group Policy.

For Windows Server 2008 R2 and Windows Server 2012 R2, the system should be configured for "Kernel memory dump." In the event that an application generates a STOP error, a dump of the kernel memory will be written to disk. This can be verified through the "System" Control Panel applet, under "Startup and Recovery". This is not configured by PureConnect applications.
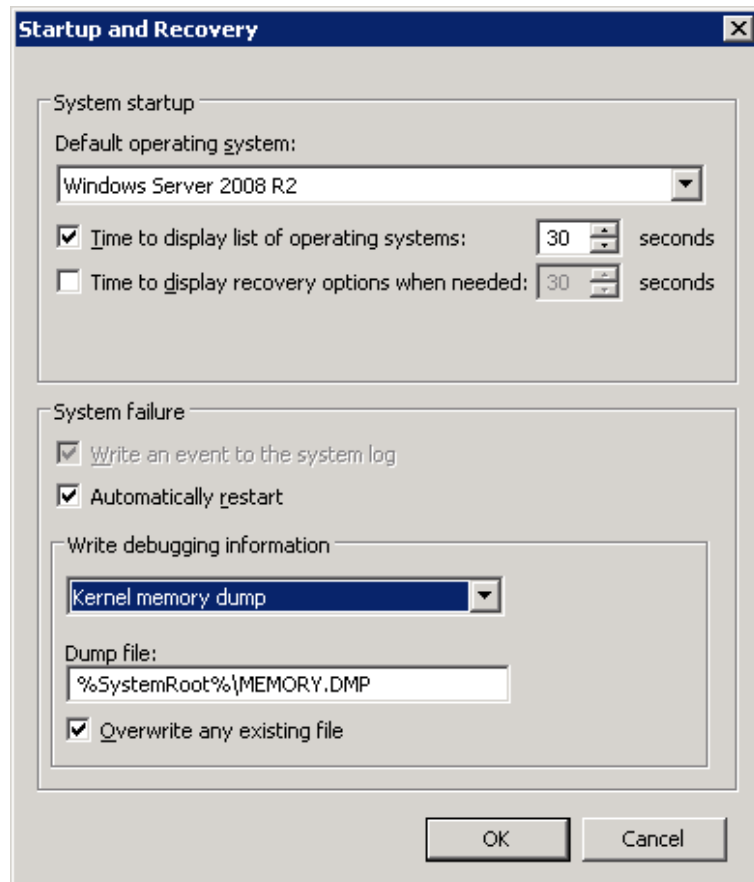
Relocate the Windows TEMP directory

To help prevent the partition housing the operating system from running low on disk space, we recommend that the TEMP environment variables be moved off of the operating system partition. To accomplish this, log in as the CIC service account, open the **System Control Panel** (sysdm.cpl) applet, click **Advanced system settings**, select the **Advanced** tab, and click **Environment variables**. Look for the four Temp locations that should be updated. TEMP and TMP should be updated for both the CIC service account user variables, as well as the System variables:
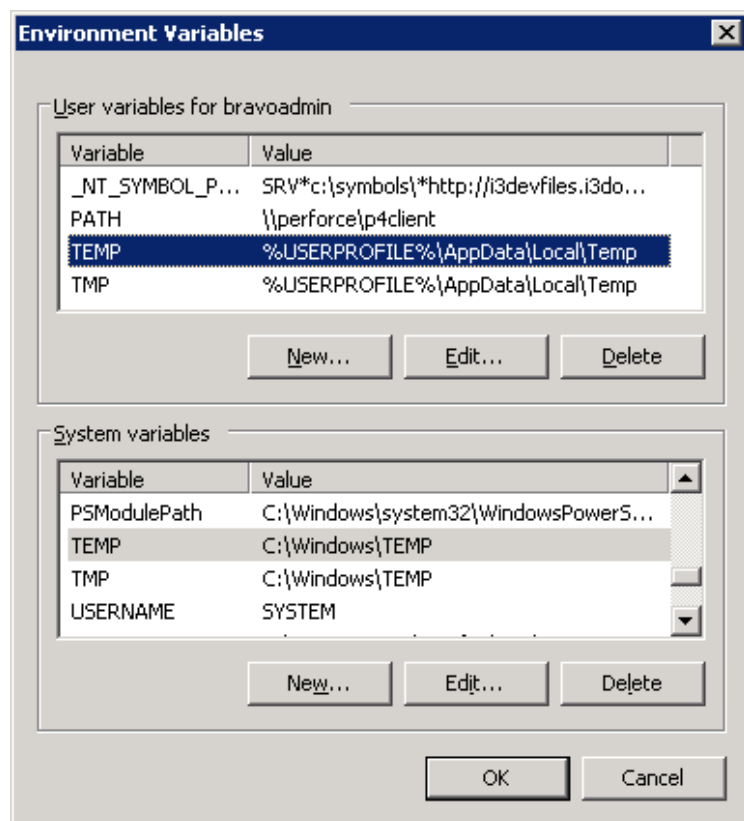
Please note that the TEMP path should be on a fault tolerant partition. Complete loss of the TEMP path can cause the operating system to stop functioning.

Teaming network interfaces

The joining or teaming of multiple network interface cards/ports (NIC's) on the CIC server is supported, but only in certain configurations. Interaction Media Servers or any server that deals with real-time audio across the network may only use particular forms of adapter teaming. Different vendors may use different terms for different teaming models, but the basic rule is that only fault-tolerant configurations are supported. Teaming forms that employ load balancing are not supported.

Choosing to deploy NIC teams makes deployments, maintenance, and troubleshooting more difficult. Understanding the correct way to implement a QoS network can be a challenge in itself. While it is impossible to test every switch type, teaming method, NIC, NIC driver, and customer environment in combination with the CIC software, following these guidelines gives you your best chance for success. Best practices dictate that customers fully test the strategy they want to use prior to using the architecture in production. See the documentation for your server for more information.

Note: For issues with Media Server licenses due to multiple MAC addresses, use a static MAC address for the NIC Team.

For more information on NIC teaming, see PureConnect Customer Care KB article https://genesyspartner.force.com/customercare/pkb_Home?id=kA50B0000008Qr0.

Recommended third party tools

Genesys recommends installing the following third party tools on the CIC server.

- Compression software
- Anti-virus software
- Adobe Reader
- Disk defragmentation

Compression software

While recent versions of Windows support the ZIP compression format natively, you may wish to install more robust compression software onto the server. Compressing files is very useful when submitting log files to PureConnect Customer Care as part of the troubleshooting process. Most support engineers prefer .ZIP files, though most can accept .RAR and .7Z formats as well.

Anti-virus software

Genesys has verified that McAfee Endpoint Threat Protection and Symantec Endpoint Protection can be installed with CIC as part of a system-wide anti-virus strategy. The customer or partner has the option to install anti-virus software. For more information, see "Anti-virus requirements and Best Practices" and Testlab (http://testlab.genesys.com) for validated anti-virus versions. See System Software Requirements in the PureConnect Documentation Library for the latest anti-virus software requirements.

Adobe Reader

Install the latest version of Adobe Reader in order to view documentation in .pdf format.

Disk defragmentation

We recommend that you defragment all hard disks on the CIC server on a schedule. Use a program such as the built-in Microsoft Disk Defragmenter (defrag.exe) to run at an off-hour time such as Monday morning (Sunday night) at 1:00am.

Anti-virus requirements and best practices

This section provides the anti-virus software best practices and additional information for the CIC server. (Similar information is applicable to Interaction Media Server and other subsystem servers. See the documentation for these servers for more information.)

Perform the following tasks when installing an anti-virus software product on the CIC server:

- Install only a supported anti-virus product
- Install only the virus protection security feature
- Configure real-time protection for only write operations
- Exclude continually accessed file types and directories
- Update virus definitions daily
- Conduct a full scan of the file system on a regular basis

See the Testlab site at http://testlab.genesys.com (under Data and System Protection) for instructions on configuring supported anti-virus software products for use with the CIC server and its subsystem servers.

Install only a supported anti-virus product

Genesys selects and tests different anti-virus software products from multiple vendors based on the popularity of the product in customer environments. Genesys tests each anti-virus software product on several criteria, such as performance impact, compatibility, and processing capacity. Genesys then validates specific anti-virus software products for use with the CIC server and its subsystem servers.

To view the supported anti-virus software products

1. Open a web browser and navigate to the Testlab site at http://testlab.genesys.com.

2. Select **Data and System Protection**. The page displays the supported anti-virus products, supported versions, and any impacts on performance and capacities for Customer Interaction Center and its subsystem servers.

Important: Ensure that you know the anti-virus software product and version that you will use on the CIC server and subsystem servers before making your purchasing decisions. Some anti-virus software products reduce capacities and performance, which require additional servers or affect licensing decisions.

Install only the virus protection security feature

Many software security products and suites include features in addition to virus protection. For performance and capacity considerations, The CIC server and its subsystem servers do not support any third party security features other than virus protection. Many of these security features require the installation of drivers that can introduce decreases in performance and capacity, such as resets of network interface adapters.

The following list provides some of the unsupported security features that software security suite products can install:

- Firewall
- Malware protection
- Spyware protection
- Intrusion prevention
- Network monitoring

> **Important**: Since security suite products typically install all security features by default, Genesys requires that you do not use standard or default installation options. Customize the installation to include only virus protection.

Configure real-time protection for only write operations

Most anti-virus software products provide a *real-time protection* feature, which scans for viruses when a program or process attempts a read, write, modify, or execute operation on a file. The terminology for this type of feature varies between anti-virus software products, such as *On-Access Scanning* and *Auto-Protect*. See the documentation for your anti-virus software product to determine its terminology for that feature.

Server software products execute and read files frequently. Configuring for the real-time protection feature can significantly reduce input and output performance of the storage media, create file lock contention, and cause a reduction in processing capacities of the host server.

> **Important**: Configure the real-time protection feature of your anti-virus software product to scan for viruses for only *write* operations, such as when files are created or modified.

Exclude continually accessed file types and directories

To process the interactions in your organization, the CIC server and its subsystem servers must write and modify files such as recordings and log files on a rapid, continual basis. To ensure the maximum performance, configure your anti-virus software product to exclude specific file types and directories, presented in this section.

- Files and file types to exclude
- Directories and subdirectories to exclude

Files and file types to exclude

Configure your antivirus software product to exclude the following files and file name extensions:

- .fbma
- .rpt
- .i3p
- .i3c
- .ivp
- .dxs
- .ihd
- .i3pub
- .ininlog (CIC log file format)
- .ininlog.ininlog_idx (CIC log index file format)

Directories and subdirectories to exclude

Configure your anti-virus software product to exclude the following directories and all subdirectories:
- ${ICDrive}\I3\IC\Recordings
- ${ICDrive}\I3\IC\Logs
- ${ICDrive}\I3\IC\Work
- ${ICDrive}\I3\IC\Mail
- ${ICDrive}\I3\IC\Persistence
- ${ICDrive}\I3\IC\PMQ
- ${ICDrive}\I3\IC\Server\Firmware
- ${ICDrive}\I3\IC\Server\LRA
- All directories and included subdirectories that are specified as server parameters in Interaction Administrator
- All directories and subdirectories that the CIC Switchover system mirrors

> **Important**:
>
> When you exclude a directory, ensure that all of its subdirectories are also excluded.
>
> Your specific anti-virus software produce may require additional configuration. Consult your anti-virus software product documentation on the Testlab site at http://testlab.genesys.com for any special instructions beyond these recommendations.

Update virus definitions daily

Genesys strongly recommends that you configure your anti-virus software product to download and implement new virus definitions on a daily basis. Schedule these updates to occur during off-peak hours. For more information about virus definitions, see your anti-virus software product documentation.

Conduct a full scan of the file system on a regular basis

Genesys strongly recommends that you configure your anti-virus software product to scan the file system of the host server storage media on a daily or weekly basis. Schedule this scan to occur during off-peak hours. Ensure that you select a time for starting the scan that allows it to finish before demand on host server resources increases.

> **Important**: Some anti-virus products use separate exclusion files for real-time protection and full system scans. Ensure that you define the files and directories excluded in Exclude continually accessed file types and directories for both types of scans.

PureConnect QoS driver

Starting with CIC 4.0 GA, CIC uses a QoS driver that closely integrates with CIC. It operates independently of the Windows QoS Packet Scheduler, which was the recommended QoS driver for CIC 3.0.

When you run the CIC server install as part of the CIC server installation process described in "CIC server Installation", the PureConnect QoS driver is silently installed and the certificate is added to the Trusted Publishers list.

If your site has reasons for modifying this default behavior, you may wish to modify the QoS properties and run the CIC server install using Group Policy or other methods. Review https://my.inin.com/Support/Pages/KB-Details.aspx?EntryID=Q131006915300479 so that you can make the appropriate planning decisions for QoS driver installation.

For more information, see the *PureConnect Quality of Service Technical Reference* in the PureConnect Documentation Library.

Security-related settings

Microsoft has taken significant measures to increase security in Windows Server 2008 (and later). Certain local permissions have been locked down in order to harden operating system security and reduce the complexity involved in configuring a secure server. For smoother CIC installation on **Windows Server 2008 R2** and **Windows Server 2012 R2**, we recommend that you verify the following security settings on the server where the PureConnect product will be installed.

This section includes:

- Windows Firewall settings

- User Account Control (UAC) settings

- (Optional) Pre-configure groups for high security DCOM settings

Note : For more detailed information about security for PureConnect products, see:

PureConnect Security Features Technical Reference. Covers basic security features employed in CIC, including its use of SSL, TLS, and SRTP protocols along with public key cryptography and certificates to enhance application security. Available in the PureConnect Documentation Library.

PureConnect Security Precautions Technical Reference. Information on general security practices, a "Top 10" list of security topics, and details about how to make the CIC server more secure. Available in the PureConnect Documentation Library.

Secure Input Technical Reference: Describes how to install and configure Interaction Intelligence support for secure input of sensitive or confidential data such as credit card numbers. Available in the PureConnect Documentation Library.

Windows Firewall settings

Windows Server 2008 (and later) provides a stateful firewall that prevents unsolicited connections to the server. The firewall can also be configured to drop outgoing traffic that is not explicitly allowed by a firewall rule. The Windows Firewall analyzes the host's network traffic and will allow or deny traffic based on configured rules. By default, Windows Firewall only allows incoming traffic to well-known Windows services, but allows all outbound traffic. If the Windows Firewall on the CIC server is configured with custom outbound rules, the firewall may prevent CIC clients from successfully communicating with the PureConnect product installed on the server. For more information, see *PureConnect Security Precautions* in the PureConnect Documentation Library.

By default, the Windows Firewall is *enabled*. In its default configuration, this is appropriate for all PureConnect products. While not recommended, the Windows Firewall may be disabled. CIC installations will configure the appropriate inbound firewall rules for the products being installed.

Note: If the site's information security policy requires the Windows Firewall to be running, please note that the installation of an PureConnect product may modify local firewall rules to open ports needed to ensure proper functionality. For more information, see *PureConnect Security Precautions* in the PureConnect Documentation Library.

User Account Control (UAC) settings

One of the most obvious new security features in Windows Server 2008 (and later) is User Account Control (UAC). When enabled, it provides a level of separation between administrative and user-level access - even when using an account with administrative privileges. It is recommended that UAC remain enabled. In its default configuration, UAC is configured appropriately for PureConnect products. PureConnect applications that require elevation to function properly will prompt the user for elevation, automatically.
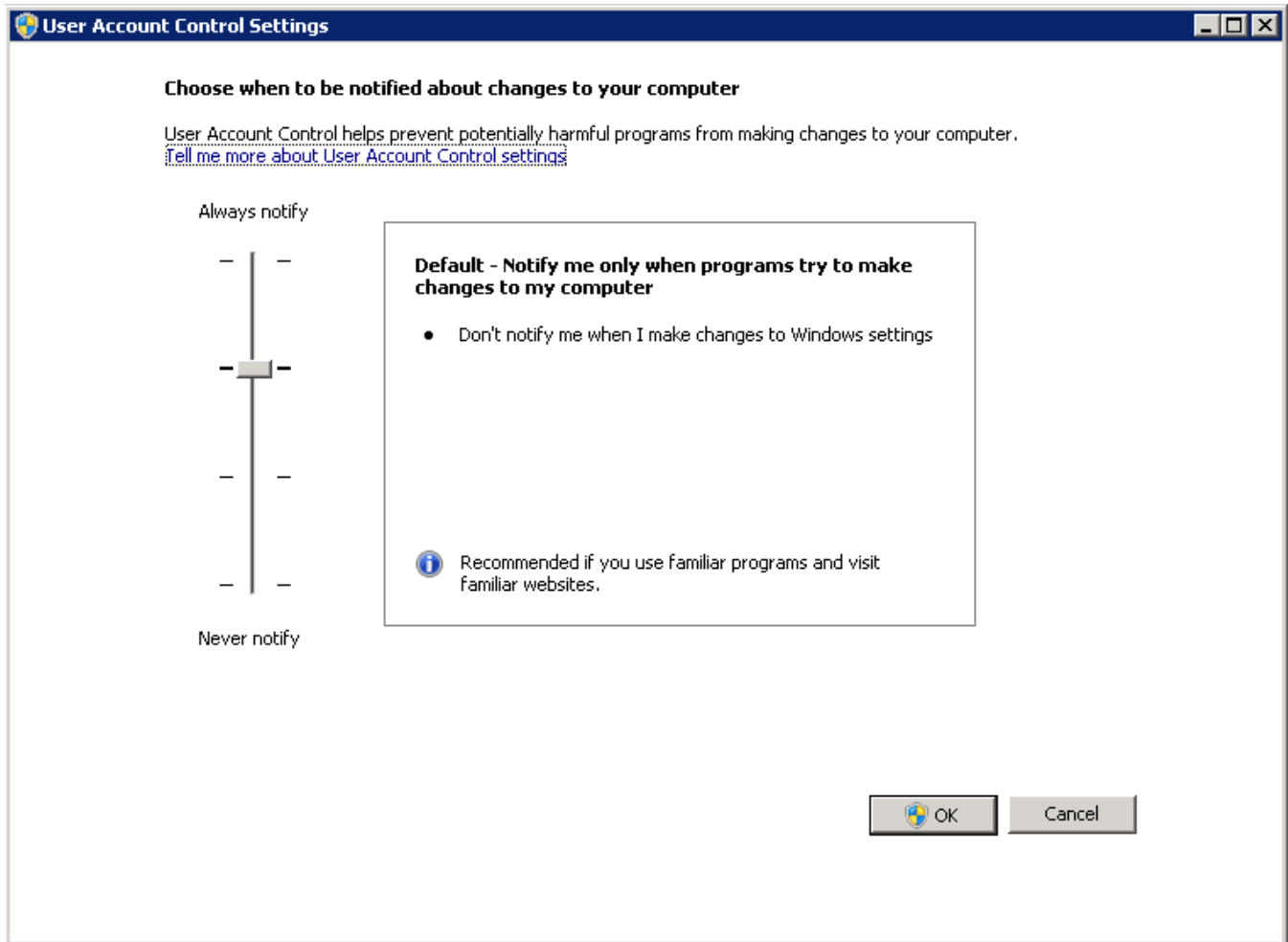
Note: Changing UAC configuration or implementing granular control of UAC (such as in a Group Policy) may result in undesired behavior. Any changes to UAC should be tested thoroughly before making changes in a production environment. For more information, see the *PureConnect Security Precautions Technical Reference* in the PureConnect Documentation Library.

(Optional) Pre-configure groups for high security DCOM settings

Microsoft has taken measures to increase security in each subsequent release of Windows Server with regard to DCOM processes. These enhancements, designed to reduce operating system security concerns, are outlined in various documents and articles in the Microsoft Knowledge Base (http://search.microsoft.com).

In order for the CIC server's DCOM components to function correctly and in a secure manner, Windows' DCOM security permissions must be modified to include the domain accounts of all CIC users. An example of a CIC server DCOM process is the IC Authentication Service. If the DCOM permissions are not set correctly, CIC client authentication will fail and the users must enter their CIC user and password when they log in to the CIC client.

When you run the **IC Setup Assistant** to configure the CIC server, you will have the opportunity to indicate whether the DCOM permissions should be set for the following security levels:

- **Allow Everyone** (Not recommended, least security). This option adds all rights to the Everyone group. If a Windows Domain (NT Authenticated Users) group exists, it will be removed. This option should be used only in small environments that do not have the option to perform NT Authentication.
- **Allow Authenticated Users** (Recommended, medium security) This option adds all rights to the Windows Domain (NT Authenticated Users) group and removes remote launch/activate from the Everyone group. This is the default selection.
- **Add pre-configured group(s) containing all CIC users' domain accounts** (Highest security) For a tighter level of security, you can add pre-configured Active Directory User group(s) or Local User group(s) (for example, workgroups). Setting up an Active Directory User group conforms to the Microsoft method of administering permissions based on Active Directory groupings. This option adds all rights to the specified groups, restores the Everyone group back to the defaults and removes the Windows Domain (NT Authenticated) Users group if it exists.

If you choose the default setting (or lower), IC Setup Assistant will automatically set the permissions — no further work is required.

Create groups

If you wish to set the DCOM permissions at a tighter level of security, you or the Domain Administrator should follow standard Windows procedures to create the appropriate Active Directory or Local User group(s) prior to running IC Setup Assistant. IC Setup Assistant will prompt for these group names.

Create and configure the CIC administrator account

The CIC server requires a **Windows domain user account** to communicate with other servers across the network. Once the domain administrator has created the account, it needs to be added to the local Administrator's group on the CIC server. **Local machine administrator privileges on the CIC server** are necessary for installing the CIC software. IC Setup Assistant configures CIC services to start by using this account, and automatically grants it sufficient rights to start these services.

> **Note**: For historical and consistency purposes, this section uses the term "CIC administrator account" to refer to the Windows domain user account that starts CIC services, acknowledging that the term may be misleading as the same account may or may not also be used to administrator CIC accounts in Interaction Administrator. If you plan to use a specific account to run CIC services, make sure to follow the instructions in this section to set up that account.

> This section includes:

- Create a CIC administrator domain user account

- Give the CIC administrator account local machine administrator privileges on the CIC server

Create a CIC administrator domain user account

Have your domain administrator create a domain user in the Active Directory Users and Computers snap-in on the domain controller.

"Domain User" is sufficient, but a higher level such as "Domain Administrator" is acceptable.

> **Note**: If a "Domain User" is configured, Read Properties permissions must be granted to this account to ensure that the account functions correctly.

Selecting the Password Never Expires option is recommended.

- We recommend that this account cannot be locked out. Please note that if domain policy *does* allow this account to be locked, and if someone accidentally or purposefully locks it, then CIC services will not be able to start or functionality of any running CIC Services may be reduced.

During both the CIC server install and IC Setup Assistant, you will be prompted for the user name and password for this account ("CIC administrator account").

> **Note**: You can change the CIC administrator domain user account after the CIC installation and re-run IC Setup Assistant. See "IC Setup Assistant."

Give the CIC administrator account local machine administrator privileges on the CIC server

1. Log into the CIC server as a user with local (machine) administrator privileges.
2. From the Control Panel, open **Administrative Tools**.
3. Open the **Computer Management MMC** snap-in. (compmgmt.msc from the command line)
4. In the Computer Management console, expand **Local Users and Groups** and select the **Groups** folder.
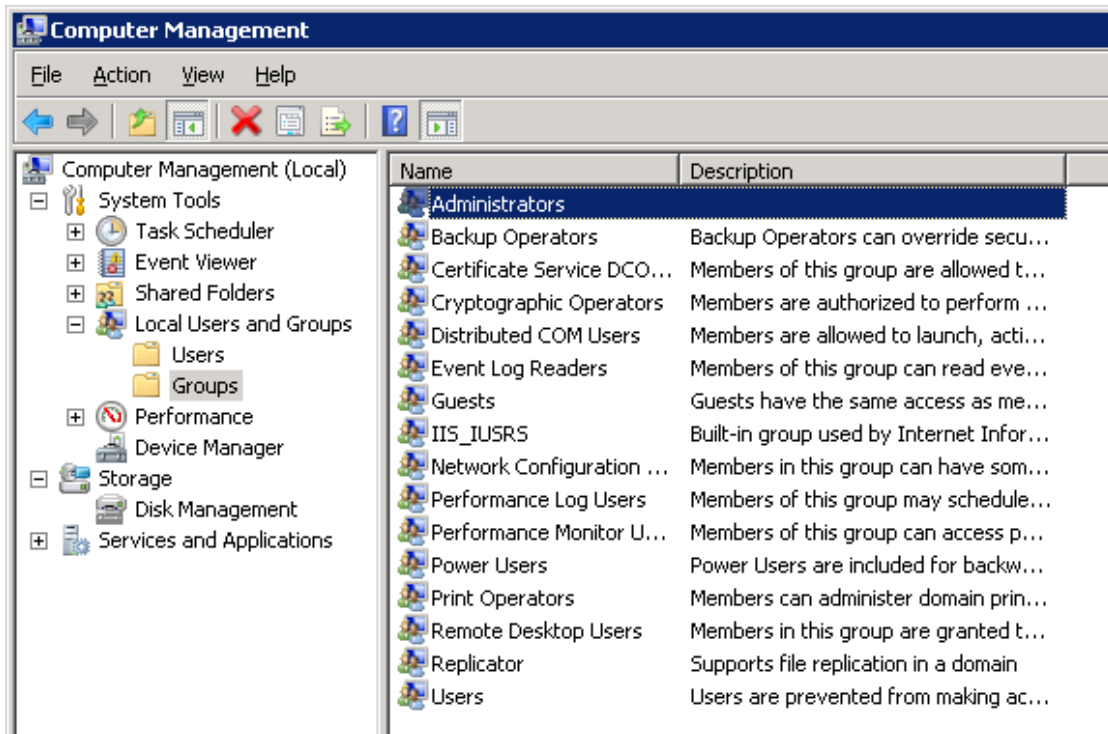
5. Right-click the **Administrators group** and choose **Add to Group**.
6. In the Administrators Properties screen, click the **Add** button and select the CIC administrator account from the list of groups and users on the CIC server's domain.
7. Click **OK**. The CIC administrator domain user is now a member of the CIC server's Administrators group.

(Optional) Install and configure the email client

Microsoft Exchange (EWS) and Novell GroupWise do *not* require an email client on the CIC server.

If you use IBM Domino/Notes, see "Mail System" in this document for instructions on installing and configuring an email client on the CIC server to access the CIC administrator account on the mail server.

Plan license assignment and allocation

If you have not already done so, review the *PureConnect Licensing Technical Reference* in the PureConnect Documentation Library to plan PureConnect licensing needs:

- Server Feature licenses
- Access licenses
- License allocation. There are now two license allocation methods: Assignable and Concurrent
- Add-on and Module licenses

Order and generate the CIC 4.0 license

New CIC 2015 R1 or later installations require a CIC 4.0 license.

Existing CIC 4.0 installations do not require any changes to the CIC 4.0 license to upgrade to CIC 2015 R1 or later.

Order and generate the CIC 4.0 license. Your license defines what product version, Server Features, Basic Station and Access license components, additional license components, and license quantities are included in your agreement.

We recommend that you download the license to the CIC server at the start of the installation process. A number of installs plus IC Setup Assistant require it. For more information, see "CIC server Installation".

To order and generate the 4.0 license

See the PureConnect Licensing Technical Reference for complete instructions for how to access the Activation File Management tool, generate a production license, and download the activation file.

1. Place the order for CIC 4.0 product with Genesys.
2. After Genesys processes your order and creates your company's account, generate the license by using the Activation File Management Tool at https://genesyspartner.force.com/customercare/GenesysCommunityLogin.
3. In the **Machine** section, provide the following machine information:

   - **Host ID** - Type the Host ID of the CIC server. See "Host ID".
   - **Machine Name** - Type the Machine Name where the license file will be downloaded.
   - **System Type** - Select Media Server Based (4.0+).
   - **Mail Connector** - Select the type of Mail System in use.

   Host ID

   PureConnect licensing is based upon a **Host ID for the CIC server and Media Server**, instead of the MAC address. The Host ID is the code that uniquely identifies a server and is used to lock a license to that server.

   A program called **GetHostID** utility is available from the CIC 2015 R1 or later .iso file and the Utilities and Downloads page at https://help.genesys.com/utilities-and-downloads.html so that you can generate the HostID prior at this time.

   > **Note**: If the physical processor chips found on the CIC server have different CPUID values, virtual machines hosted on the server will randomly show different CPUIDs when a virtual session is initiated. Contact PureConnect Customer Care to assist you with modifying your CIC server license to accommodate this condition. Record and provide the following information to the representative: CPU1:D5 | CPU2:F3.

4. If you are licensed for a Switchover server, you are prompted for information about the other server in the Switchover pair.
5. After making your license selections, generate and view the license.
6. Download the license file to the CIC server. The file downloads to your default download location (for example, your Downloads folder) with a file name extension of ".I3Lic".

(Optional) Install SNMP

The SNMP service enables Network Management Systems (NMS) to monitor CIC and its subsystems for SNMP traps. A CIC subsystem also monitors itself and other CIC subsystems for SNMP requests and traps.

SNMP service in CIC is optional — the CIC server install does not require it, and the Customer Interaction Center Service starts without it. However, SNMP service *is* required if you plan to use an SNMP-compliant Network Management Systems (NMS) tool.

For installation and configuration instructions, see the *CIC and SNMP Technical Reference* in the PureConnect Documentation Library.

If you are using an NMS tool, you can import the Customer Interaction Center's Management Information Base (i3ic.mib), which contains IC-specific objects, from:

- In the \Additional Files\SNMP directory on the CIC 2015 R1 or later .iso file.
- On the Utilities and Downloads page at https://help.genesys.com/utilities-and-downloads.html .

If you are running SNMP on the CIC server, you must import and open the MIB file in the SNMP management application. This is needed so that the SNMP management application can query the CIC server for information.

(Optional) IC Survey System

Genesys recommends that you complete a Pre-Install survey prior to a new installation to compile all the installation and configuration information needed for the customer site.

The results of the Pre-Install survey are stored in an IC Survey file on the CIC server. When you run the IC Setup Assistant as part of a new installation, it will load and read the IC Survey file, and pre-fill the screens with the appropriate configuration information. A completed survey enables installers to discover installation issues in advance of the actual installation. This makes for a simplified installation process for all involved.

To complete a Pre-Install survey

1. Open the IC Survey System from the \Additional Files\IC Survey System on the CIC 2015 R1 or later .iso file.
2. Double-click ICSurveyMenu.html.
3. Select **IC Pre-Install Survey…New**.
4. When you are done, click **Save IC Survey** file. It will generate an *.ICSurvey* file.
5. Download the IC Survey file to the \I3\IC\Manifest directory on the CIC server.

Interaction Media Server

Interaction Media Server is a required CIC subsystem. Interaction Media Server handles all CIC audio needs, including Voice-over-IP (VoIP) active call connections, recordings, and playing prompts. PureConnect has developed Interaction Media Server for durability in processing these audio functions at high volumes.

For a description of Interaction Media Server architecture and features, see the *Interaction Media Server Technical Reference* in the PureConnect Documentation Library.

This section provides a summary of installation and configuration tasks for Interaction Media Server for a new CIC installation.

- Requirements and installation
- Configuration

Requirements and installation

One or more Interaction Media Servers are required for a CIC implementation. Interaction Media Server can be installed before or after the CIC server installation. (The CIC server installation is covered in "CIC server Installation" and "IC Setup Assistant".)

Interaction Media Server is available as a pre-packaged server or the Interaction Media Server software can be installed on a verified server.

The Interaction Media Server software install is available in the following locations:

- The CIC 2015 R1 or later .iso
- The CIC 2015 R2 or later Appliance .iso

This section includes:

- Interaction Media Server install on the CIC 2015 R1 or later .iso
- Interaction Media Server install on the CIC 2015 R2 or later Appliance .iso

Interaction Media Server install on the CIC 2015 R1 or later .iso

The CIC 2015 R1 or later .iso file is available to download from the Downloads page at
https://help.genesys.com/pureconnect/secure/Downloads.aspx   .

When you run Install.exe from the \Installs directory on the CIC 2015 R1 or later .iso file as recommended, select the Off-Server Components tab, and check the Interaction Media Server component.

For requirements and installation instructions, see the *Interaction Media Server Technical Reference.*

Interaction Media Server install on the CIC 2015 R2 or later Appliance .iso

Starting with CIC 2015 R2, a CIC Appliance .iso containing the following CIC Appliance-related update components was created for customers created for customers who need to upgrade these components on appliances in a CIC 3.0 environment:

- Interaction Media Server
- Interaction SIP Proxy
- Interaction Media Server EDGE
- Interaction SIP Proxy EDGE

The CIC Appliance 2015 R2 or later .iso file is available from the Product Downloads page at
https://help.genesys.com/pureconnect/secure/Downloads.aspx   .

When you run Install.exe from the root directory of the CIC Appliance 2015 R2 or later .iso file, check the Interaction Media Server component.
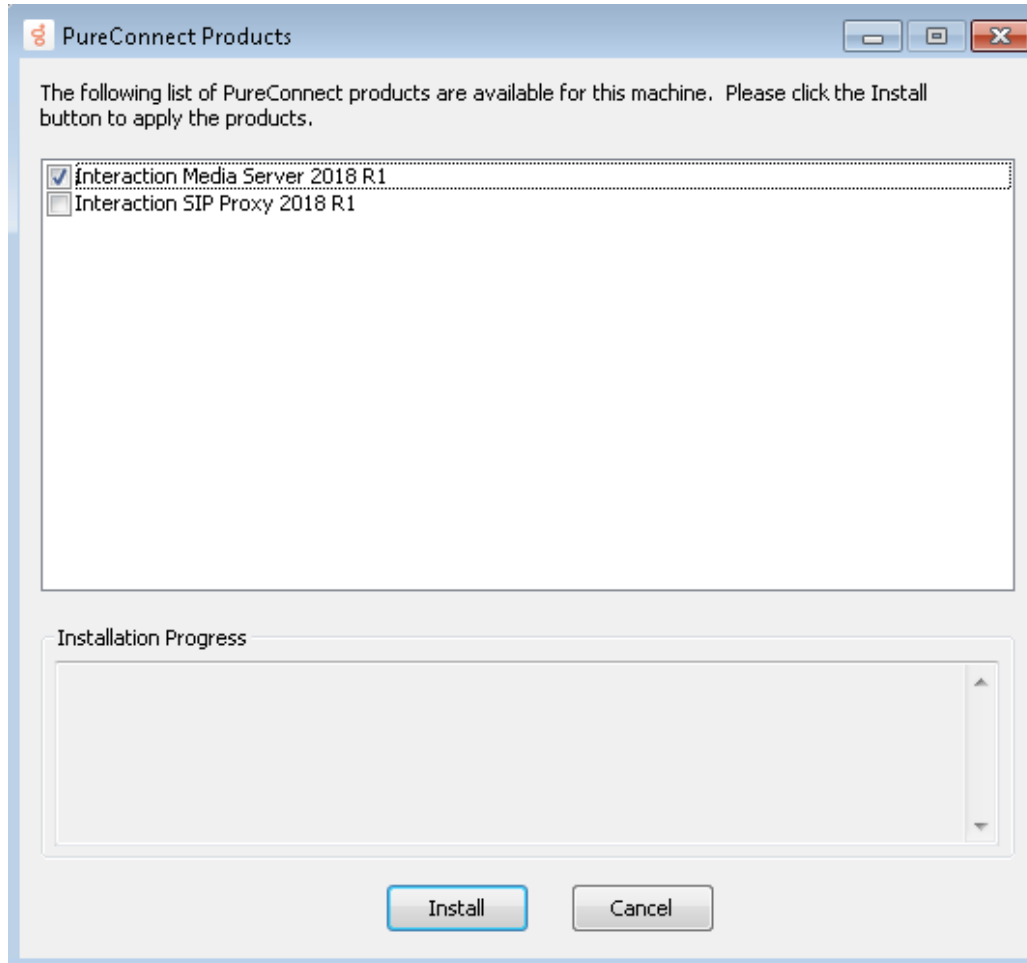
For requirements and installation instructions, see the *Interaction Media Server Technical Reference.*

Configuration

After the CIC server installation is completed, perform the following tasks to configure the Interaction Media Server to work with the CIC server:

- Add the CIC server to the Interaction Media Server
- Apply the Interaction Media Server license
- Configure CIC for Interaction Media Server

For instructions, see the *Interaction Media Server Technical Reference.*

Important: At least one Interaction Media Server must be configured to work with the CIC server before the CIC system can be tested to ensure basic functionality, as described in "Post-Installation Configuration".

Client Workstation

CIC user, supervisor, and administrator applications run on Windows-based client workstations. This section discusses client workstation requirements for use with a CIC server.

- Client workstation hardware requirements
- Client workstation software requirements
- Supported Mail Systems
- Administrative privileges
- IC User Applications (32-bit and 64-bit) install
- IC Business Manager Applications install
- IC Server Manager Applications install
- Localized client workstation applications and requirements
- Web browser requirements. See System Software Requirements in the PureConnect Documentation Library for the latest requirements.

Client workstation hardware requirements

This section describes the minimum and recommended hardware requirements for running IC User Applications, IC Business Manager Applications, Interaction Optimizer in IC Business Manager (for schedule creation/modification and intraday reforecasting), and IC Server Manager Applications on client workstations.

This section includes:

- IC User Applications
- IC Business Manager Applications hardware requirements
- Interaction Optimizer in IC Business Manager
- IC Server Manager Applications hardware requirements

IC User Applications

This section describes the minimum and recommended hardware requirements for running IC User Applications on client workstations.

Minimum requirements for IC User Applications

- **Processor**: Intel® Pentium® 4 @ 2.4GHz or AMD equivalent (Athlon XP/MP)
- **Memory**: 1 GB system memory
- **Disk space for default installation**: 550 MB of available hard disk space
- **Disk space for full installation**: 900 MB of available hard disk space
- **Disk space for tracing and debugging files**: Up to 8 GB disk space*
- **Network**: 100 Mb network controller

Recommended requirements for IC User Applications

- **Processor**: Intel® Core™ i3 Processor or AMD equivalent
- **Memory**: 2 GB system memory
- **Disk space for default installation**: 700 MB of available hard disk space
- **Disk space for full installation**: 1 GB of available hard disk space
- **Disk space for tracing and debugging files**: Up to 20 GB disk space*
- **Network**: 1 Gb network controller

* Hard drive sizing recommendations are based upon moderate loading of average-sized implementations with trace levels set to default values. Increasing the trace log levels beyond this level can greatly effect storage requirements. Monitoring of available drive space at regular intervals will be required due to the uncompressed nature of these off-host logs files. Only trace logs generated on the CIC server get compressed on a daily basis.

IC Business Manager Applications hardware requirements

This section describes the minimum and recommended hardware requirements for running IC Business Manager Applications on supervisor and administrator workstations.

Minimum requirements for IC Business Manager Applications

- **Processor**: Intel ® Core™ i5 Processor or AMD equivalent
- **Memory**: 1 GB system memory
- **Disk space for installation**: 700 MB of available hard disk space
- **Disk space for tracing and debugging files**: Up to 20 GB disk space*
- **Network**: 100 Mb network controller

Recommended requirements for IC Business Manager Applications

- **Processor**: Intel® Core™ i7 Processor or AMD equivalent
- **Memory**: 2 GB system memory
- **Disk space for installation**: 1 GB of available hard disk space for installation
- **Disk space for tracing and debugging**: Up to 80 GB of disk space*
- **Network**: 1 Gb network controller

* Hard drive sizing recommendations are based upon moderate loading of average-sized implementations with trace levels set to default values. Increasing the trace log levels beyond this level can greatly effect storage requirements. Monitoring of available drive space at regular intervals will be required due to the uncompressed nature of these off-host logs files. Only trace logs generated on the CIC server get compressed on a daily basis.

Interaction Optimizer in IC Business Manager

Needed for schedule creation/modification and intraday reforecasting. For more information, see Interaction Optimizer Requirements and Limitations Overview.

Minimum requirements for Interaction Optimizer in IC Business Manager

- **Processor**: Intel ® Core™ i7 Processor with at least 4 cores or or AMD equivalent (Fx)
- **Memory**: 8 GB system memory
- **Disk space for installation**: No extra besides IC Business Manager requirements
- **Disk space for tracing and debugging files**: No extra besides IC Business Manager requirements
- **Network**: No extra besides IC Business Manager requirements

Recommended requirements for Interaction Optimizer in IC Business Manager

- **Processor**: Intel® Core™ i7 4-core Processor Extreme Edition with at least 6 cores or or AMD equivalent (Fx)
- **Memory**: 16 GB system memory (DDR4-1600/2133)
- **Disk space for installation**: No extra besides IC Business Manager requirements
- **Disk space for tracing and debugging**: No extra besides IC Business Manager requirements
- **Network**: No extra besides IC Business Manager requirements

IC Server Manager Applications hardware requirements

This section describes the minimum and recommended hardware requirements for running IC Server Manager Applications on administrator workstations.

Minimum requirements for IC Server Manager Applications

- **Processor**: Intel® Pentium® 4 @ 2.4 GHz or AMD equivalent
- **Memory**: 1 GB system memory
- **Disk space for installation**: 900 MB of available hard disk space
- **Disk space for tracing and debugging files**: Up to 10 GB disk space*
- **Network**: 100 Mb network controller

Recommended requirements for IC Server Manager Applications

- **Processor**: Intel® Core™ i3 Processor or AMD equivalent
- **Memory**: 2 GB system memory
- **Disk space for installation**: 1.2 GB of available hard disk space
- **Disk space for tracing and debugging**: Up to 20 GB of disk space*
- **Network**: 1 Gb network controller

* Hard drive sizing recommendations are based upon moderate loading of average-sized implementations with trace levels set to default values. Increasing the trace log levels beyond this level can greatly effect storage requirements. Monitoring of available drive space at regular intervals will be required due to the uncompressed nature of these off-host logs files. Only trace logs generated on the CIC server get compressed on a daily basis.

Client workstation software requirements

This section describes minimum software requirements for client workstations running IC User Applications, IC Business Manager Applications, and IC Server Manager Applications. See System Software Requirements in the PureConnect Documentation Library for the latest requirements.

In this section:
- Microsoft Windows OS - See System Software Requirements in the PureConnect Documentation Library for the latest requirements.
- Microsoft .NET Framework requirements for client workstation

Microsoft .NET Framework requirements for client workstation

See System Software Requirements in the PureConnect Documentation Library for the latest requirements.

This section includes:
- Microsoft .NET Framework 4.7
- Microsoft .NET Framework 4.5.2 or later
- Microsoft .NET Framework 4.0
- Microsoft .NET Framework 3.x

Microsoft .NET Framework 4.7 or later

Starting with PureConnect 2018 R4, Microsoft.NET Framework 4.7 or later is required on the client workstation. For more information, refer to Microsoft KB article https://support.microsoft.com/en-us/help/3186539

Windows 10 Anniversary Update and later: (Required for PureConnect 2018 R4 and later) If not installed via Windows Update, install from IC_WorkstationPreReqs share

Windows 8.1: (Required for PureConnect 2018 R4 and later) If not installed via Windows Update, install from IC_WorkstationPreReqs share

Windows 7 SP1: (Required for PureConnect 2018 R4 and later) If not installed via Windows Update, install from IC_WorkstationPreReqs share

For more information, refer to Microsoft article .NET Framework system requirements

Microsoft .NET Framework 4.5.2 or later

Starting with CIC 2016 R1 through 2018 R3, .NET Framework 4.5.2 or later is required on the client workstation for IC User Applications and IC Server Manager Applications to resolve email-related issues in Interaction Desktop and Interaction Administrator. The Microsoft .NET Framework 4.5.2 or later is a highly compatible, in-place update to the .NET Framework 4.5.1, the .NET Framework 4.5, and the .NET Framework 4. However, it can run side by side with .NET Framework 3.5.1. For more information, see Microsoft KB article https://support.microsoft.com/en-us/kb/2934520.

Windows 10

Support for .NET Framework 4.5.2 or later applications is included in Windows 10.

Windows 8 and Windows 8.1

The .NET Framework 4.5.2 or later for Windows 8.1 is available on Windows Update and offered as a recommended update on Windows Update.

If it was not automatically installed with Windows Update, the .NET Framework 4.5.2 or later is available to install:
- As a download from Microsoft Support. See Microsoft KB article https://support.microsoft.com/en-us/kb/2934520.
- On the IC_WorkstationPreReqs share on the CIC server, following the CIC server installation.

Windows 7

The .NET Framework 4.5.2 or later is available to install:
- As a download from Microsoft Support. See Microsoft KB article https://support.microsoft.com/en-us/kb/2934520.
- On the IC_WorkstationPreReqs share on the CIC server, following the CIC server installation.

Microsoft .NET Framework 4.0

Microsoft .NET Framework 4.0 is required for IC User Applications and Server Manager applications (CIC 2015 R1 through CIC 2015 R4), and IC Business User Applications .

Windows 10

Microsoft .NET Framework 4.x is included with the operating system. No user action is required to meet this framework version requirement.

Windows 8 and Windows 8.1

Microsoft .NET Framework 4.x is included with the operating system. No user action is required to meet this framework version requirement.

> **Important**: If you are running CIC client workstation applications on Windows 8, download and apply Microsoft KB http://support.microsoft.com/kb/2750149 to ensure proper functionality. The issue fixed by this KB is not present in Windows 8.1.

Windows 7

The full framework profile of Microsoft .NET Framework 4 must be installed on CIC client workstation applications running on Windows 7. The install (dotNetv40_Full_x86_64.exe) is available on the IC_WorkstationPreReqs share on the CIC server, following the CIC server installation.

Notes

- We recommend installing .NET Framework 4.0 on client workstations in advance of installing the CIC client workstation applications so that you can ensure that the .NET Framework 4.0 installation was successful.
- The .NET Framework 4.0 installation can take some time to complete, especially if it is installed on remote workstations.
- Administrators can chose to deploy .NET Framework 4.0 to client workstations using Group Policy deployment with Windows Software Update Services.

Microsoft .NET Framework 3.x

CIC client workstation applications running on Windows 10, Windows 8.1, Windows 8, and Windows 7 require that the Microsoft .NET Framework 3.5.1 feature be installed.

To install Microsoft .NET Framework 3.5.1

1. In the Control Panel, open **Program and Features**.
2. Click the **Turn Windows features on or off** link.
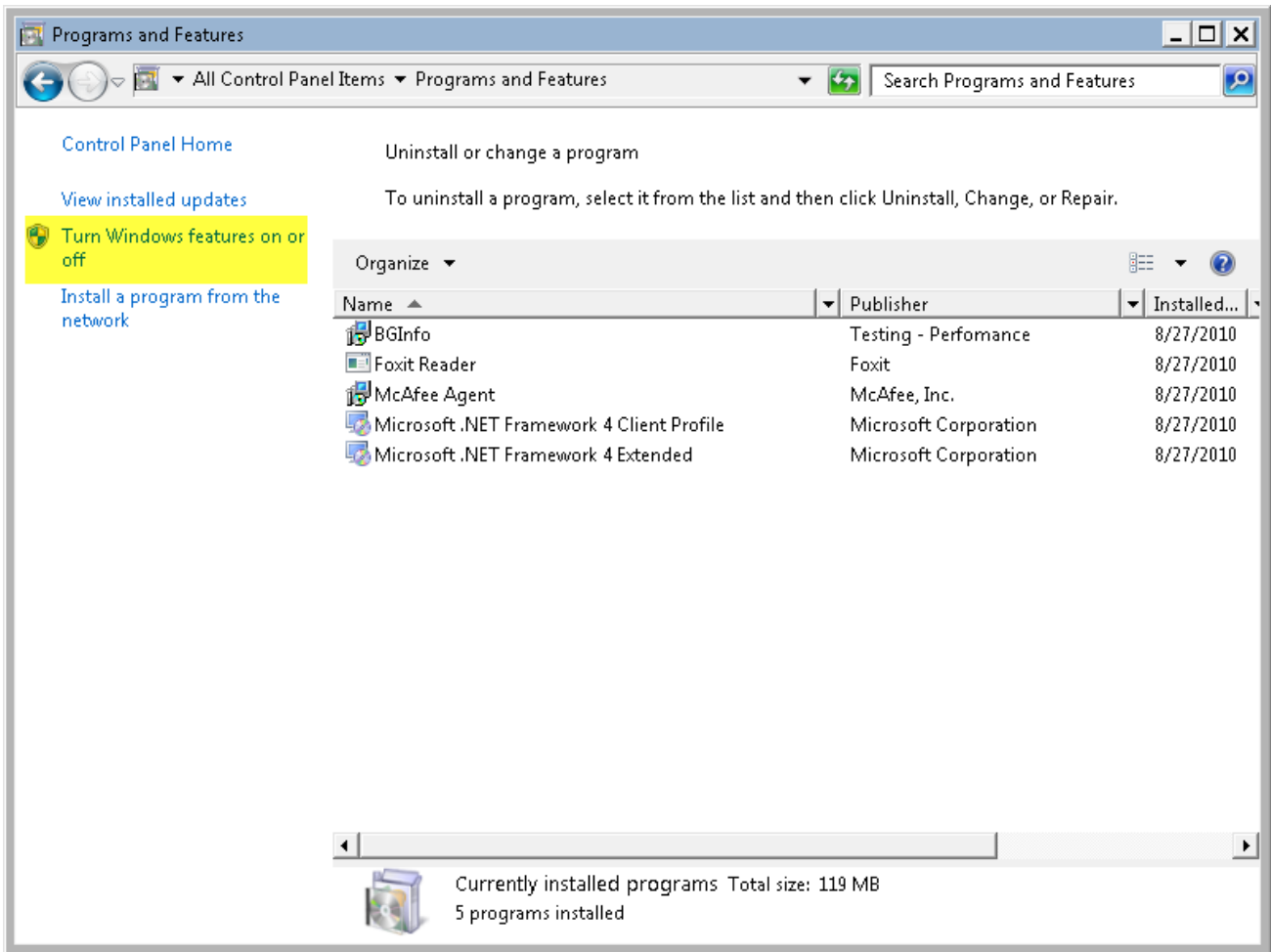
3. Locate the **Microsoft .NET Framework 3.5.1** feature (Windows 7) or **.NET Framework 3.5 (includes .NET 2.0 and 3.0)** (Windows 10, Windows 8.1, and Windows 8), and click the "plus" sign to expand the folder.
4. Select the **Microsoft .NET Framework 3.5.1** (or Microsoft .NET Framework 3.5) check box.
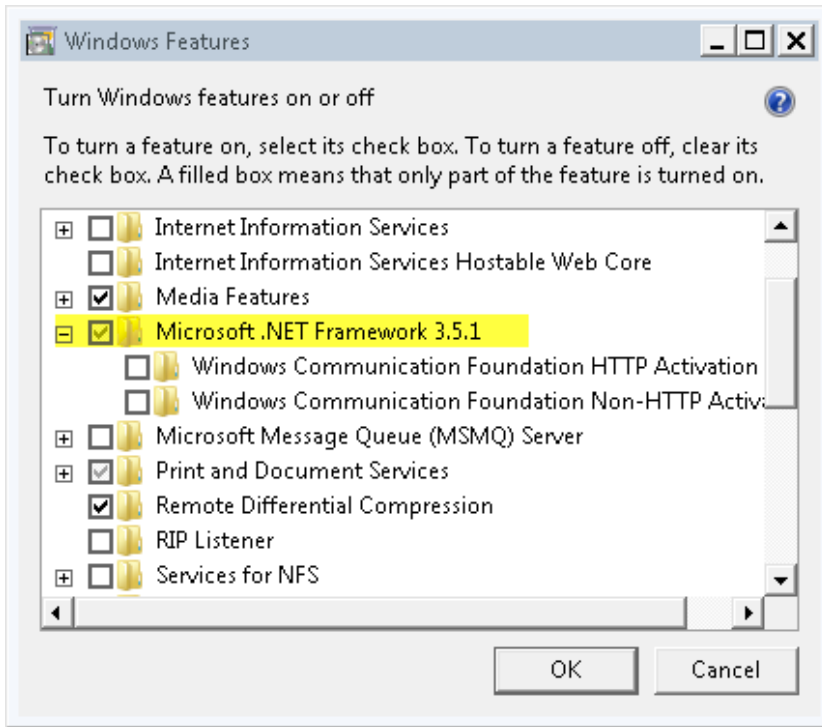
5. Click **OK**.
6. Wait for the installation to complete and reboot, if prompted.

Check for the latest Windows Updates and install any **Critical** or **Security** updates related to Microsoft .NET.

Supported Mail Systems

An email client is not required for users: voicemail and fax can be checked in the CIC client. However, if you want to provide users with the ability to check messages outside of CIC, or to receive any other messages from CIC which are not either voicemail or fax, install the appropriate email client for the site's mail system.

See System Software Requirements in the PureConnect Documentation Library for the latest requirements.

For more information, see "Mail System."

Administrative privileges

Make sure the person **installing** CIC client workstation applications has:
- Administrative privileges on the local machine.
- Write access to the C:\Program Files\Common Files directory.
- Write access to the HKEY_LOCAL_MACHINE and HKEY_CLASSES_ROOT locations in the registry on the client workstation.

There are no privilege restrictions for *users* of the CIC client workstation applications.

IC User Applications (32-bit and 64-bit) install

The IC User Applications installation program is available in 32-bit and 64-bit versions. The IC User Applications installation program installs:
- Interaction Desktop
- Additional Interaction Desktop features: Outlook Dialing
- Interaction Voicemail Player
- Interaction Fax
- SIP Soft Phone
- Interaction Screen Recorder Capture Client
- Interaction SIP Bridge
- Microsoft Outlook Interaction Desktop Add-in

This section includes Additional requirements for IC User Applications.

Note: Other IC User Applications, such as Interaction Tracker Client and Interaction Process Automation, are available in Interaction Desktop, if licensed.

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Interaction Desktop

Interaction Desktop is a full-featured CIC client that runs in a framework. It enables you to create multiple workspaces and combine CIC client views to suit your workflow. Interaction Desktop features enhanced email views, including support for email folders.

For more information

- For installation-related details, see "Client Workstation Installations".
- Existing CIC 4.0, CIC 2015 R1, and CIC 2105 R2 implementations upgrading to CIC 2015 R3 or later implementations should refer to *Transition to Interaction Desktop Administrator's Guide* in the PureConnect Documentation Library.
- For user documentation, see Interaction Desktop Quick Start Guide, Interaction Desktop Quick Reference Card, and Interaction Desktop Operator Console Quick Reference Card in the PureConnect Documentation Library.
- For a feature comparison, *see CIC Client Comparison* in the PureConnect Documentation Library.

Additional requirements for IC User Applications

This section describes the additional requirements for certain selectable application/feature components in the IC User Applications (32-bit and 64-bit) installs.
- Interaction Fax
- Interaction Voicemail Player
- SIP Soft Phone
- Interaction Screen Recorder Capture Client
- Interaction SIP Bridge
- Microsoft Outlook Interaction Desktop Add-in

Interaction Fax

Interaction Fax is a stand-alone, desktop application for managing faxes. Faxes are delivered to users via Microsoft Outlook, IBM Notes, or Novell GroupWise email. Please review the following requirements for using Interaction Fax on client workstations:
- **Configure** the **CIC server for faxing**.
- Make sure your license includes the **appropriate Interactive Media Server fax licensing**.
- Make sure that the correct IC User Applications version (32-bit or 64-bit) for the workstation is installed; it contains the necessary **fax printer driver** version for printing faxes.

For more information on these requirements, see "Fax Support".

Interaction Voicemail Player

The Interaction Voicemail Player is a stand-alone desktop application for managing voicemails, with a common interface for all supported mail systems. Voicemail .wav files are delivered to users via Microsoft Outlook, IBM Notes, or Novell GroupWise email or via the CIC client interfaces.

SIP Soft Phone

The SIP Soft Phone is a stand-alone, desktop application that places and controls calls, providing SIP endpoint functionality. It uses a USB headset to deliver audio to the user. The SIP Soft Phone can be used with Interaction Desktop.

Note the following requirements for using the SIP Soft Phone on client workstations:
- The SIP Soft Phone application works in conjunction with the CIC provisioning subsystem and is configured in Interaction Administrator. Each **SIP Soft Phone** *must* **be implemented as a managed IP phone**.
- The SIP Soft Phone application requires the use of a **USB headset** to deliver audio to the user. For a list of supported headsets, refer to http://testlab.genesys.com.
- When you run the IC User Applications install (32-bit or 64-bit) as described in "Client Workstation Installations" with the SIP Soft Phone feature selected, a **QoS Requirement** screen prompts you to select the PureConnect QoS driver. If your site has reasons for modifying this default behavior, you may wish to modify the QoS properties and run the IC User Applications install using Group Policy or other methods. Review https://my.inin.com/Support/Pages/KB-Details.aspx?EntryID=Q131006915300479 so that you can make the appropriate planning decisions for QoS driver installation on workstations.

For more information on these requirements, see the *CIC Managed IP Phones Administrator's Guide* in the PureConnect Documentation Library.

Interaction Screen Recorder Capture Client

The Interaction Screen Recorder Capture Client is an Interaction Recorder feature installed on agent workstations that records agents' screens. Screen recordings can be associated with phone call and Web chat interactions.

Note the following requirements for using the Interaction Screen Recorder Capture Client on client workstations:

- When you run the IC User Applications install (32-bit or 64-bit) as described in "Client Workstation Installations" with the Interaction Screen Recorder Capture Client feature selected, a **QoS Requirement** screen prompts you to select the PureConnect QoS driver. If your site has reasons for modifying this default behavior, you may wish to modify the QoS properties and run the IC User Applications install using Group Policy or other methods. Review https://my.inin.com/Support/Pages/KB-Details.aspx?EntryID=Q131006915300479 so that you can make the appropriate planning decisions for QoS driver installation on workstations.

For all other Interaction Recorder requirements and installation instructions, see the *Interaction Recorder Technical Reference* in the PureConnect Documentation Library.

Interaction SIP Bridge

Interaction SIP Bridge enables at-home workers to use a physical IP telephone to make and receive calls from a CIC environment through a remote connection, such as through a virtual private network.

Please note the following requirements for using the Interaction SIP Bridge on remote client workstations:

- Interaction SIP Bridge license
- When you run the IC User Applications install (32-bit or 64-bit) as described in "Client Workstation Installations" with the Interaction SIP Bridge feature selected, a **QoS Requirement** screen may prompt you to select the PureConnect QoS driver. If your site has reasons for modifying this default behavior, you may wish to modify the QoS properties and run the IC User Applications install using Group Policy or other methods. Review https://my.inin.com/Support/Pages/KB-Details.aspx?EntryID=Q131006915300479 so that you can make the appropriate planning decisions for QoS driver installation on workstations.
- The computer on the remote network of the agent must have a VPN client software application that enables connection to the corporate network.
- The VPN client software application must define a virtual network adapter in Windows.

For all other Interaction SIP Bridge requirements and installation instructions, see:

- The *Interaction SIP Bridge Installation and Configuration Guide* in the PureConnect Documentation Library.
- "Client Workstation Installations" in this document.

Microsoft Outlook Interaction Desktop Add-in

The Microsoft Outlook Interaction Desktop Add-in enables users to call both Outlook contacts and other Interaction Desktop users. It also provides up-to-date status information for other CIC client users in the organization.

Please note the following requirements for using the Microsoft Outlook Interaction Desktop Add-in on client workstations:

- 32-bit Microsoft Outlook 2010 SP1
- Interaction Desktop Outlook Add-in license and Client Access license.
- Visual Studio 2010 Tools for Microsoft Office (32-bit and 64-bit)
- Microsoft Office Primary Interop Assemblies 2010

Note: When you install Microsoft Outlook Interaction Desktop Add-in using the recommended method, the Visual Studio 2010 Tools and Microsoft Office Primary Interop Assemblies 2010 are installed automatically.

For all other Microsoft Outlook Interaction Desktop Add-in requirements and installation instructions, see:

- The *Microsoft Outlook Interaction Desktop Add-in Installation and Configuration Guide* in the PureConnect Documentation Library.
- "Client Workstation Installations" in this document.

IC Business Manager Applications install

The IC Business Manager Applications installation program installs:
- IC Business Manager
- Interaction Fax Cover Page Editor

This section includes:
- Additional requirements for Interaction Report Assistant and Interaction Reporter
- Additional requirements for other IC Business Manager modules

IC Business Manager

IC Business Manager provides a user interface for easy access to the features of the following application modules, available with the appropriate licensing:

- Interaction Feedback
- Interaction Optimizer
- Interaction Process Automation Monitor
- Interaction Process Automation Reporting
- Interaction Recorder Client
- Interaction Recorder Extreme Query
- Interaction Report Assistant
- Interaction Reporter
- Interaction Quality Manager
- Interaction Supervisor
- Interaction Tracker

Additional requirements for Interaction Report Assistant and Interaction Reporter

The reporting options available in IC Business Manager include:

- **Interaction Reporter**: Run pre-defined reports simply using filters to configure report parameters. Depending on the report, Interaction Reporter makes use of the ActiveReports 6 or Crystal Reports reporting runtime.
- **Interaction Report Assistant**: Design customized reports using the Interaction Report Assistant wizard.

Please note the following requirements for running the reporting modules in IC Business Manager on client workstations:

- A **database server** is required and **CIC must be configured for that database server**.
- If SQL Server is the Reporting database, the **SQL Server ODBC driver** must be installed on the CIC server and client workstations running the reporting modules. In most cases, the SQL Server ODBC driver is automatically installed with the CIC server and client workstation operating system software supported by CIC.
- If Oracle is the Reporting database, the **Oracle client and the Oracle ODBC driver** must be installed on the CIC server and client workstations running the reporting modules.
- Interaction Reporter has a runtime of **Crystal Reports** supporting 9, 10, XI, and 2013 for report viewing, installed automatically with the IC Business Manager Applications install. If you wish to **modify and create reports**, you must **install the full Crystal Reports package**.

Additional requirements for other IC Business Manager modules

See IC Business Manager Help in the PureConnect Documentation Library to direct you to the appropriate help and technical reference documents for other modules in the IC Business Manager.

- For Interaction Recorder Client requirements, see the *Interaction Recorder Technical Reference*.
- For Interaction Recorder Extreme Query requirements, see the *Interaction Recorder Extreme Query Installation and Configuration Guide*.
- For Interaction Process Automation requirements, see the *Interaction Process Automation Technical Reference*.

Interaction Fax Cover Page Editor

Interaction Fax Cover Page Editor enables administrators and managers to design fax cover pages and edit standard templates available to users for use with Interaction Fax. For more information, see"Fax Support".

IC Server Manager Applications install

The IC Server Manager Applications installation program installs:

- IC Server Manager
- Interaction Administrator
- Interaction Attendant
- Interaction Designer
- IC System Manager
- Interaction Host Recorder Client
- Interaction SOAP Tracer

IC Server Manager

IC Server Manager provides a user interface for easy access to the features of the following application modules, available with the appropriate licensing:

- IC Server Manager Administrator – Enables administrators to define the keywords that Interaction Analyzer uses to monitor conversations between agents and customers
- Interaction Process Automation Monitor
- Interaction Process Automation Reporting
- Interaction Process Automation Designer

For Interaction Process Automation requirements, see the *Interaction Process Automation Technical Reference*.

Interaction Host Recorder Client

Interaction Host Recorder Client is required on administrator workstations when using the **Host tools**. For requirements, see Interaction Host Recorder Help in the PureConnect Documentation Library.

Interaction SOAP Tracer

Interaction SOAP Tracer debugs SOAP messages between IC and SOAP Notifier COM or ISAPI listener. It is required on administrator workstations when using **SOAP tools**. For requirements, see the *CIC and SOAP API Developer's Guide* in the PureConnect Documentation Library.

Localized client workstation applications and requirements

For sites planning on localizing CIC, the following CIC client workstation application installation programs are localized:

- IC User Applications (32-bit)
- IC User Applications (64-bit)
- IC Business Manager Applications
- IC Server Manager Applications
- Interactive Update Client

> **Note**: The scope of localization varies for different languages. Refer to supported languages in the *CIC Language Pack Technical Reference* to find out which workstation installation programs are localized for a particular language.

Additional Servers

This section describes additional servers in the PureConnect suite of software covered in other documents in the PureConnect Documentation Library. See these documents for requirements that must be fulfilled before installing CIC.

- Directory server
- Switchover
- DHCP server
- DNS server
- Web server
- ASR server
- TTS server

Also see "Optional Installations and Additional Functionality" for a summary of installs included on the CIC 2015 R1 or later .iso file for additional IC application servers, for example, off-server Session Manager.

Directory server

Windows domains require directory servers to store the Active Directory.

Active Directory, the directory service central to the Windows Server operating system, runs only on domain controllers. Active Directory is a LDAP-based directory system capable of storing the information about large numbers of users and providing rapid access to applications.

In addition to providing a place to store data and services to make that data available, Active Directory protects network objects from unauthorized access and replicates objects across the network so that data is not lost if one domain controller fails.

CIC can use Windows Active Directory services to authenticate users.

Forest functional levels

CIC supports the following **forest** functional levels:
- Windows Server 2019
- Windows Server 2016
- Windows Server 2012 R2

Domain environments

CIC supports the following **domain** environments:
- Domain functional level: **Windows Server 2019**
  Domain controllers supported: Windows Server 2019 family
- Domain functional level: **Windows Server 2016**
  Domain controllers supported: Windows Server 2016 family
- Domain functional level: **Windows Server 2012 R2**
  Domain controllers supported: Windows Server 2012 R2 family

For more information, see Microsoft TechNet article http://technet.microsoft.com/en-us/library/understanding-active-directory-functional-levels%28WS.10%29.aspx.

Switchover

CIC supports an automated switchover system with duplicate CIC servers. With switchover in place, if your CIC server ever stops responding, a backup server will take over within 30 seconds. In addition, the switchover scheme allows administrators to manually switch the "active" CIC server with no phone disruption.

For licensing, requirements, and installation and configuration instructions, see the *Automated Switchover System Technical Reference* in the PureConnect Documentation Library.

DHCP server

While DHCP is not directly used by CIC, the service is used by many of the devices which connect to CIC. Additional configuration options can be provided using DHCP to provide functionality for features such as automated provisioning for managed IP phones.

For a discussion of IP phone network architecture and instructions for configuring the DHCP server for managed IP phones, see the *CIC Managed IP Phones Administrator's Guide* in the PureConnect Documentation Library.

DNS server

Like DHCP, DNS is not directly used by CIC, however it does provide functionality which allows various devices that connect to CIC to support features such as Switchover and TLS/STRP. Also like DHCP, DNS is used for automated provisioning for managed IP phones.

For a discussion of IP phone network architecture and instructions for configuring the DNS server for Switchover and managed IP phones, see the *CIC Managed IP Phones Administrator's Guide* in the PureConnect Documentation Library.

Web server

The addition of a web server allows CIC to interact with both users and external customers via a web browser. It is required for a variety of CIC web-based applications.

See [System Software Requirements](#) in the PureConnect Documentation Library for the latest requirements.

ASR server

PureConnect offers trusted speech recognition solutions using vendor ASR software. Integrating PureConnect technology with these speech applications offers major speech recognition benefits, including excellent accuracy, powerful standards-based features, optimized performance, and best caller experience.

See System Software Requirements in the PureConnect Documentation Library for the latest requirements.

For licensing and requirements, see the *ASR Technical Reference* and the *Interaction Speech Recognition Technical Reference* in the PureConnect Documentation Library.

Make sure you have installed the appropriate ASR server before running the appropriate ASR server install for CIC.

TTS server

The PureConnect platform uses a Text-to-Speech (TTS) engine to read text to callers over the telephone. For example, a CIC user can retrieve an email over the phone, and the TTS engine will read sender, subject, and body of the email. A variety of Speech Application Programming Interface (SAPI) compliant and Media Resource Control Protocol (MRCP) compliant TTS engines are supported. The quality of the speech produced by these TTS engines varies from vendor to vendor.

See System Software Requirements in the PureConnect Documentation Library for the latest requirements.

The Microsoft SAPI engine is included with the Windows 2008 operating system, along with Microsoft's included TTS voices. For more information, see the *Text to Speech Technical* Reference in the PureConnect Documentation Library.

Mail System

CIC provides advanced unified messaging functionality. This is supported by the use of a messaging server, usually an email system. This section discusses the mail systems supported in CIC and provides mail system requirements, planning, installation, and configuration issues.

- Supported mail systems
- Email server recommendations
- Email security
- Supported protocols for Microsoft Exchange servers
- Microsoft Exchange Web Services-based integration
- IBM Domino server
- Novell GroupWise server
- Gmail (Google Apps for Work)
- LDAP/SMTP/IMAP services
- Interaction Message Store
- Required mail system information

Supported mail systems

See System Software Requirements in the PureConnect Documentation Library for the latest mail system and mail client requirements.

You should also review the documentation that accompanies your email server software for more information on hardware and software requirements for that software.

Email server recommendations

Genesys makes the following recommendations for the email server.

Install email server on computer other than CIC server

Install the email server on a computer other than the CIC server. If installed on the CIC server, the significant mail system resource requirements may adversely affect the CIC system's performance.

Multiple mail providers

You can choose to enable multiple mail providers on your CIC server (configured when you run IC Setup Assistant). For example, your site may have a number of users who are not included in your Exchange user list, but need voicemail. In such cases, you may want to use both Exchange and Interaction Message Store as mail providers.

CIC administrator mailbox limit settings

We recommend you not directly use the CIC administrator account mailbox for anything other than CIC. In addition, we also recommend periodic review of the CIC service account mailbox to ensure it is not near or over the configured quota, which may prevent message delivery on some mail systems.

Email security

CIC supports two types of email security solutions:
- SSL/TLS
- S/MIME

Customers may choose to implement one or both of these solutions.

> **Note**: Email security implementation in CIC does not require any additional licensing. The necessary certificates and private keys can be free or for-cost, and must be obtained separately from a certificate authority (CA), such as Verisign.

For more information on email security, see Interaction Administrator Help and the *PureConnect Security Features Technical Reference* in the PureConnect Documentation Library.

SSL/TLS

The SSL/TLS security solution protects email transmissions between the CIC server and the email server.

This section includes:
- Supported mail providers for SSL/TLS
- Server certificate for the email server required for SSL/TLS
- Configure CIC for SSL/TLS after the initial CIC installation

Supported mail providers for SSL/TLS

SSL/TLS is supported for Novell GroupWise, IMAP, SMTP, and LDAP. CIC's integrations with these mail providers involve direct communication via commonly accepted protocols (SOAP, IMAP, SMTP, and LDAP, respectively) that support SSL/TLS.

> **Note**: CIC's integrations with Microsoft Exchange and with IBM Domino use proprietary API's published by Microsoft or IBM. Microsoft Exchange Web Services uses the EWS API, supported by network port 443 (HTTPS) for SSL/TLS communications encryption between Exchange Server and CIC.

Server certificate for the email server required for SSL/TLS

If you plan to use SSL/TLS, a server certificate for the email server must be issued by a certificate authority and installed in the appropriate certificate store.

Due to a mix of using Windows API's and OpenSSL API's, some mail providers' SSL/TLS functionality use the Windows certificate store (certmgr.msc), while others use the CIC certificate store (certificates and related files stored in the \I3\IC\Certificates\Email directory).

> **Note**: The server certificate required for SSL/TLS security between the CIC server and email server should *not* be confused with the Server Group certificate authority required for SSL/TLS security between the CIC server and authorized remote subsystems. (The Server Group certificate authority is installed automatically during the CIC server installation.)

Configure CIC for SSL/TLS after the initial CIC installation

If you want your CIC system to use SSL/TLS, we recommend that you install and configure the CIC server first without configuring for email security.

Once you have determined the CIC system is functioning properly, configure CIC for SSL/TLS in the Interaction Administrator Mail container. For instructions, see Interaction Administrator Help and the *PureConnect Security Features Technical Reference* in the PureConnect Documentation Library.

S/MIME

The S/MIME security solution provides email message encryption, integrity, and authentication between senders and recipients. It employs many of the same concepts and technologies as SSL/TLS (such as certificates), but has different requirements.

Because the vast majority of email sent on the internet is not formatted with S/MIME, this security solution is typically only used under special circumstances (for example, a pre-established relationship with an external party who requires highly security-sensitive email).

This section includes:
- Supported mail providers for S/MIME
- Email certificate/private keys for users required for S/MIME
- Configure CIC for S/MIME after determining that email encryption functions properly outside of CIC

Supported mail providers for S/MIME

S/MIME is supported for:
- Microsoft Exchange and IMAP only. S/MIME for these mail providers uses the CIC certificate store (the email server's certificate, email certificates/private keys, and related files stored in the \I3\IC\Certificates\Email directory).
- The decryption and/or verification of incoming queued emails only (ACD configuration in workgroup and Interaction Attendant routing). The sending of S/MIME messages is not currently supported.

Email certificate/private keys for users required for S/MIME

If you plan to use S/MIME, email certificates/private keys for users must be issued from a certificate authority and installed in the CIC certificate store (\I3\IC\Certificates\Email directory).

Configure CIC for S/MIME after determining that email encryption functions properly outside of CIC

If you plan to use S/MIME for encrypted, queued email, we recommend that you first test sending encrypted email outside of CIC:
- Set up Microsoft Outlook (or other supported email client) in a location on the Internet, external to your organization.
- Use the email certificate and private key to decrypt email using Outlook from within the organization.

Once you have determined that email encryption is functioning properly outside of CIC, configure CIC for encrypted email. For instructions, see Interaction Administrator Help, and the *PureConnect Security Features Technical Reference* in the PureConnect Documentation Library.

Supported protocols for Microsoft Exchange servers

To interface with Exchange servers, CIC uses Exchange Web Services (EWS) and Exchange (Graph). Exchange Web Services (EWS) is a SOAP-based API that uses the Web services available in Exchange to provide CIC integration to Exchange. CIC and Exchange use Exchange Web Services to communicate over HTTPS. EWS API is no longer receiving feature updates from Microsoft and is in maintenance mode. While there is no official EOL at this point, we need to look to move the next-generation API for Office365/Exchange connectivity, Graph. This will allow our Microsoft email integration to use a modern approach, and will also bring support for more granular permissions settings that customer and their security team.

Graph API allows the usage of Application Access Policies which can be used to restrict access to specific mailboxes. you can read more about this here.

Microsoft Exchange Web Services-based integration

In this section:

- [Exchange Web Services requirements](#)
- [Configure CIC for Exchange Web Services (new installations)](#)
- [Exchange Web Services troubleshooting](#)
- [Microsoft Outlook for users](#)

Exchange Web Services requirements

Make sure you have fulfilled the following requirements before configuring CIC for Exchange Web Services:

- Supported Exchange servers. See [System Software Requirements](#) in the PureConnect Documentation Library for the latest requirements.
- Exchange calendar access support
- [Exchange Web Services requirements on the CIC server](#)
- [Exchange permissions for Exchange Web Services](#)

Note: There may be other requirements, such as autodiscovery setup.

Exchange Web Services requirements on the CIC server

This section describes requirements on the CIC server for Exchange Web Services.

Microsoft .NET Framework

Exchange Web Services requires that **Microsoft .NET Framework 3.5** be installed on the CIC server.

Note: CIC requires Microsoft .NET Framework 3.5 and Microsoft .NET Framework 4.7 or later installed on the CIC server.

Outlook client not required

Exchange Web Services does not require Microsoft Outlook to be installed on the CIC server.

Exchange permissions for Exchange Web Services

"ApplicationImpersonation" (Exchange 2016, Exchange 2013, and Exchange 2010) is the only required permission set for Exchange Web Services. Assign "ApplicationImpersonation" or "Impersonation" permissions (as appropriate for your Exchange server) to the following accounts and servers:

- The CIC administrator account (Service Account) for each mailbox used for message delivery/retrieval or ACD email queuing
- The CIC administrator account (Service Account) mailbox

For instructions on setting Impersonation permissions on Exchange 2016, Exchange 2013, and Exchange 2010, see PureConnect Customer Care KB article https://genesyspartner.force.com/customercare/pkb_Home?id=kA50B0000008R8Q.

Limiting Mailbox access by Application Access Policy

- **Creating Mail Enabled Security Group:**

1. Login to https://admin.exchange.microsoft.com/ with your admin credentials (EWS Admin: abc@def.com, pw: abcdef#1111)
2. Navigate to **Recipients** > **Groups** > **Mail-enabled security**.
3. Click **Add a group** and follow the instructions in the details pane.
4. Under **Choose a group type** section, select **Mail-enabled security** and click **Next**.
5. Under **Set up the basics** section, enter the details and click **Next**.
6. Add the members you want to this Group.

- **Run the below commands in powershell:**

1. [Net.ServicePointManager]::SecurityProtocol = [Net.SecurityProtocolType]::Tls12
2. Install-PackageProvider -Name NuGet -MinimumVersion 2.8.5.201 -Force
3. Install-Module -Name PowerShellGet -Force
4. Install-Module -Name ExchangeOnlineManagement
5. Set-ExecutionPolicy -ExecutionPolicy Unrestricted
6. Import-Module ExchangeOnlineManagement
7. Connect-ExchangeOnline -UserPrincipalName abc@efg.com (after this enter password in window)

- **Creating application policy(Deny Permission):**

   Run the below command in powershell

   New-ApplicationAccessPolicy -AppId de038d8c-cfea-45a0-b309-9f9683b71a68 -PolicyScopeGroupId <abce@efgh.onmicrosoft.com> -AccessRight DenyAccess -Description "Deny access to this app to members of group ProtectedUsers."

- **To test the application policy:**

   Test-ApplicationAccessPolicy -Identity <abc@def.com> -AppId 6a3724e9-c78d-4c91-8869-b389fd6ae805

   Test-ApplicationAccessPolicy -Identity <abc@def.com> -AppId de038d8c-cfea-45a0-b309-9f9683b71a68

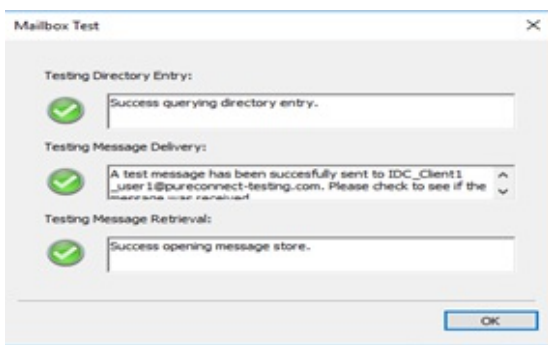- **Creating application policy(Restrict Permission):**

- Since abce@deg-testing.com is the Service Provider account on behalf of which email exchange is happening in IA, this account should also be added as the member of the group including with the other user group of members of the group.
- Service provider account should have access to the mailboxes for the permissions to apply.

- New-ApplicationAccessPolicy -AppId de038d8c-cfea-45a0-b309-9f9683b71a68 -PolicyScopeGroupId <abce@efgh.onmicrosoft.com> -AccessRight DenyAccess -Description by "Restrict access to this app to members of group ProtectedUsers."

Test-ApplicationAccessPolicy -Identity <abcd@efg-testing.com> -AppId de038d8c-cfea-45a0-b309-9f9683b71a68

Test-ApplicationAccessPolicy -Identity <abcd@efg-testing.com> -AppId de038d8c-cfea-45a0-b309-9f9683b71a68
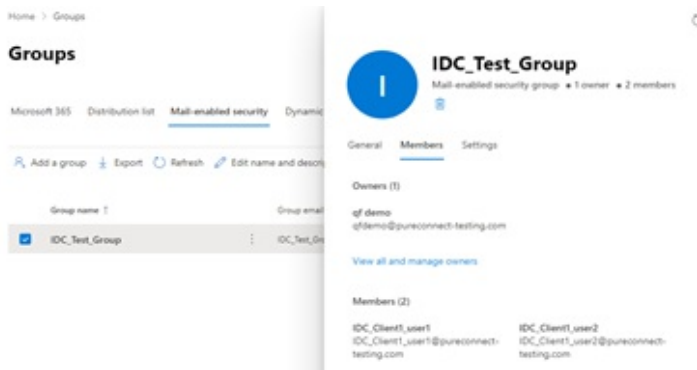
- **Deleting application policy:**

  Remove-ApplicationAccessPolicy -Identity "c96cbe3a-bc65-47bb-93d7-1143955fb8ea\de038d8c-cfea-45a0-b309-9f9683b71a68:S-1-5-21-651077753-2242224735-496758556-38211132;5f2fe90e-4827-4890-be79-b4e7d61ebff2"

Limiting Mailbox access by Application Access Policy

- **Creating Mail Enabled Security Group:**

1. Login to https://admin.exchange.microsoft.com/ with your admin credentials (EWS Admin: abc@def.com, pw: abcdef#1111)
2. Navigate to **Recipients** > **Groups** > **Mail-enabled security**.
3. Click **Add a group** and follow the instructions in the details pane.
4. Under **Choose a group type** section, select **Mail-enabled security** and click **Next**.
5. Under **Set up the basics** section, enter the details and click **Next**.
6. Add the members you want to this Group.

- **Run the below commands in powershell:**

1. [Net.ServicePointManager]::SecurityProtocol = [Net.SecurityProtocolType]::Tls12
2. Install-PackageProvider -Name NuGet -MinimumVersion 2.8.5.201 -Force
3. Install-Module -Name PowerShellGet -Force
4. Install-Module -Name ExchangeOnlineManagement
5. Set-ExecutionPolicy -ExecutionPolicy Unrestricted
6. Import-Module ExchangeOnlineManagement
7. Connect-ExchangeOnline -UserPrincipalName abc@efg.com (after this enter password in window)

- **Creating application policy(Deny Permission):**

  Run the below command in powershell

  New-ApplicationAccessPolicy -AppId de038d8c-cfea-45a0-b309-9f9683b71a68 -PolicyScopeGroupId <abce@efgh.onmicrosoft.com> -AccessRight DenyAccess -Description "Deny access to this app to members of group ProtectedUsers."

- **To test the application policy:**

Test-ApplicationAccessPolicy -Identity <abc@def.com> -AppId 6a3724e9-c78d-4c91-8869-b389fd6ae805

Test-ApplicationAccessPolicy -Identity <abc@def.com> -AppId de038d8c-cfea-45a0-b309-9f9683b71a68

- **Creating application policy(Restrict Permission):**

- Since abce@deg-testing.com is the Service Provider account on behalf of which email exchange is happening in IA, this account should also be added as the member of the group including with the other user group of members of the group.
- Service provider account should have access to the mailboxes for the permissions to apply.

- New-ApplicationAccessPolicy -AppId de038d8c-cfea-45a0-b309-9f9683b71a68 -PolicyScopeGroupId <abce@efgh.onmicrosoft.com> -AccessRight DenyAccess -Description by "Restrict access to this app to members of group ProtectedUsers."

Test-ApplicationAccessPolicy -Identity <abcd@efg-testing.com> -AppId de038d8c-cfea-45a0-b309-9f9683b71a68

Test-ApplicationAccessPolicy -Identity <abcd@efg-testing.com> -AppId de038d8c-cfea-45a0-b309-9f9683b71a68

- **Deleting application policy:**

    Remove-ApplicationAccessPolicy -Identity "c96cbe3a-bc65-47bb-93d7-1143955fb8ea\de038d8c-cfea-45a0-b309-9f9683b71a68:S-1-5-21-651077753-2242224735-496758556-38211132;5f2fe90e-4827-4890-be79-b4e7d61ebff2"

Select Mail Provider in IC Setup Assistant

You can choose to select the Mail Provider and configure for Exchange when running IC Setup Assistant as part of the initial CIC 2015 R1 or later installation, or post-installation in Setup Assistant. This section describes both options.

Note: If you choose configure users in IC Setup Assistant, we recommend selecting the Mail Provider and configuring for Exchange in IC Setup Assistant so that you can assign mailboxes when configuring the users.

Select Mail Provider in IC Setup Assistant

1. In the IC Setup Assistant **Select Mail Providers** dialog box, select **I want to configure mail providers** and select Microsoft Exchange Server.
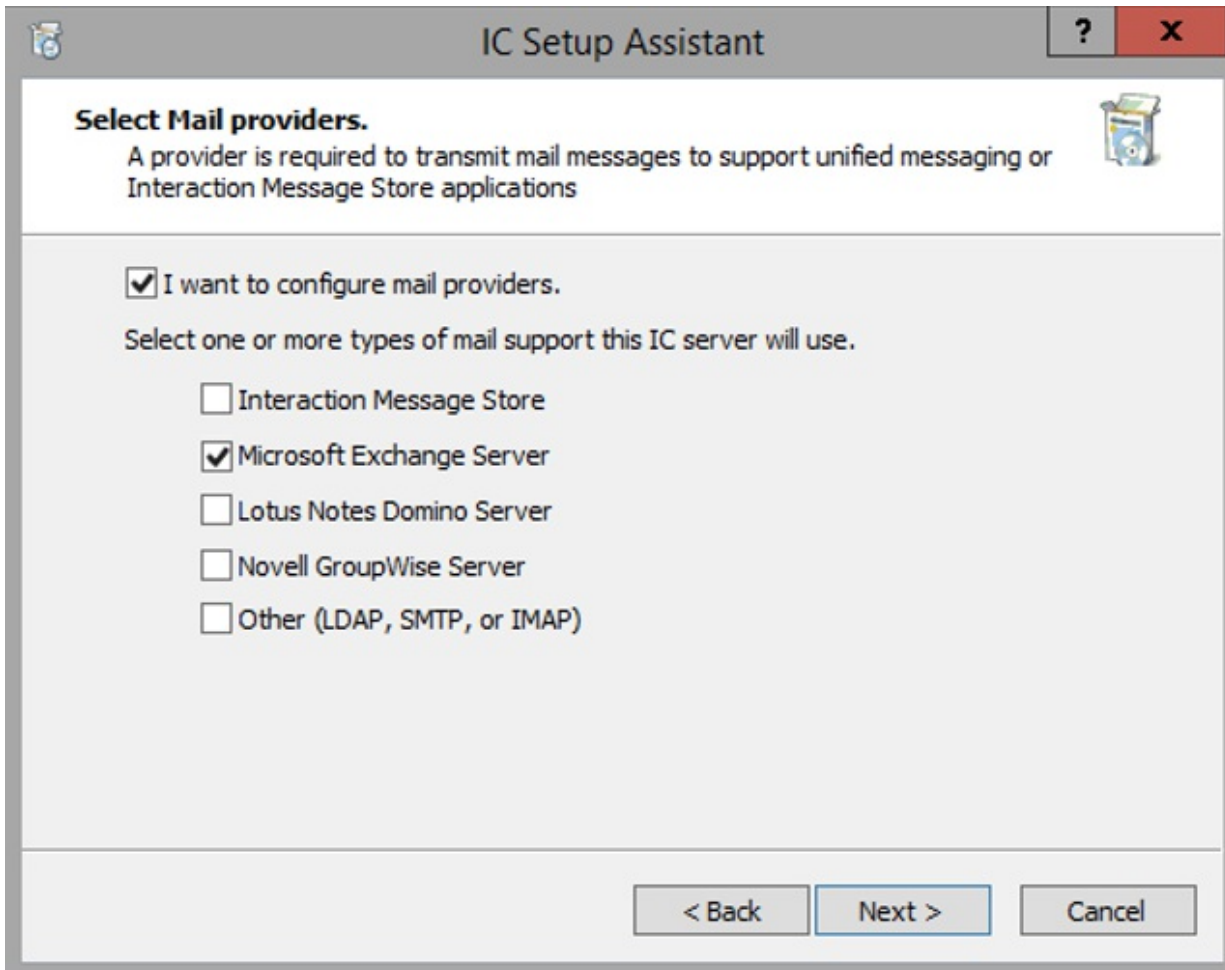
2. Click **Next**. A progress bar appears indicating IC Setup Assistant is gathering mail provider information.
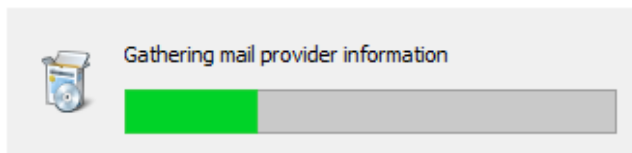
When the process is complete, the **Mail Provider Summary** dialog box appears.

3. In the **Mail Provider Summary** dialog box, verify the mail provider entries are correct.
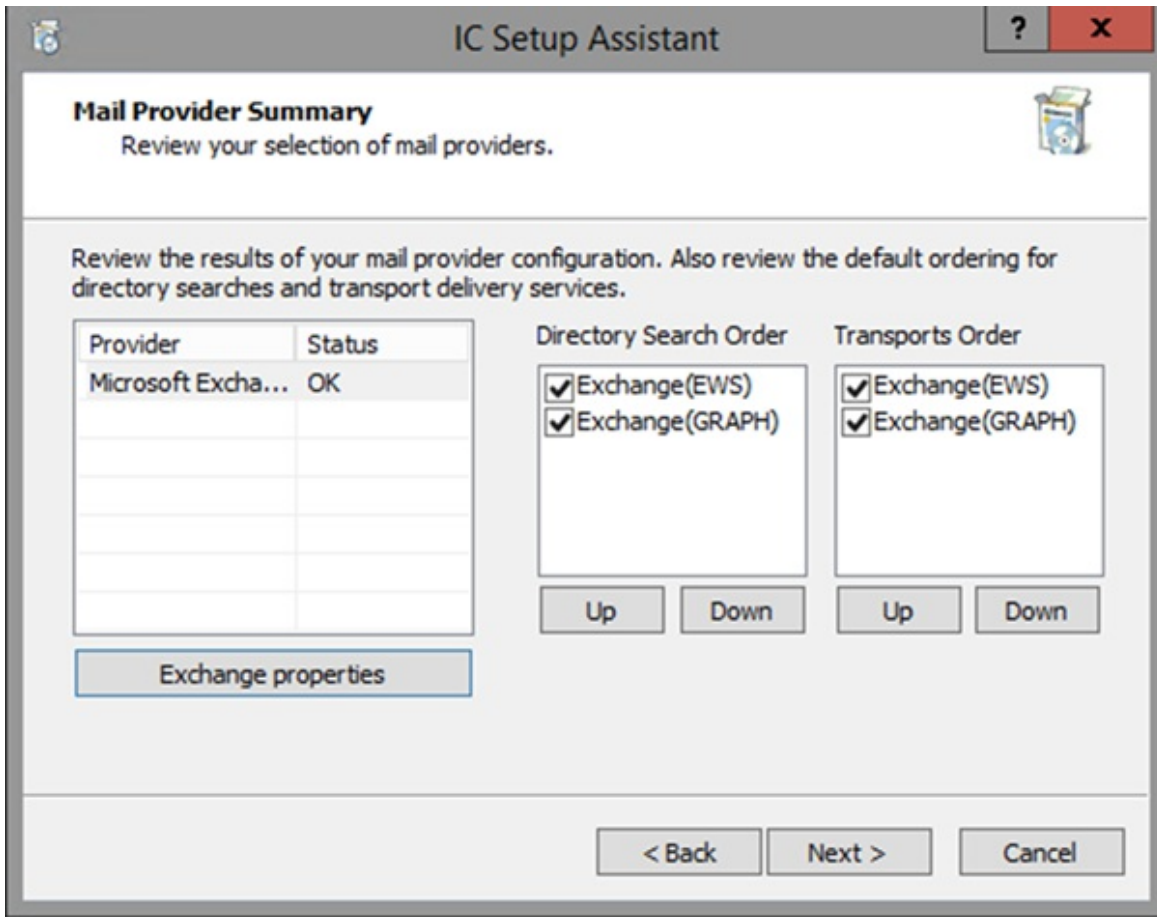
Provider: Lists Microsoft Exchange as the selected provider.

Directory Search Order: This directory contains the lookup information for contacts (first name, last name, etc.) This column shows the default order of mail provider directories that CIC will use to search for a user's mailbox. Exchange Web services(EWS) and Exchange Graph (Graph) are initially enabled by default. Disable Exchange MAPI because it is no longer supported.
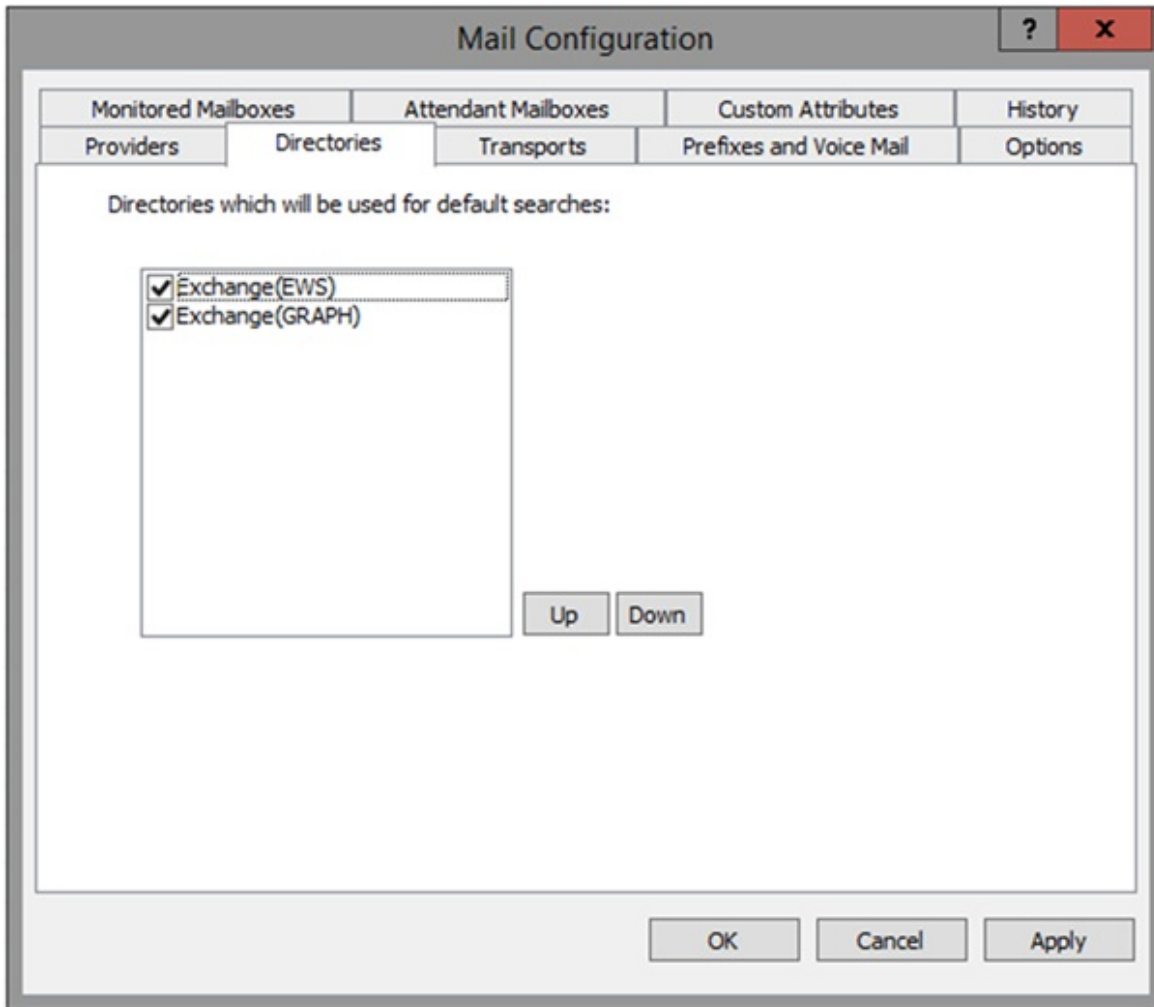
Transports Order: Transports handle the delivery of mail (for example, voicemail, ACD email replies, Supervisor alerts, and notifications) from CIC to a mail server using the respective mail integration(s). This   column shows the default order in which a message will be attempted for delivery. EWS can handle SMTP-specified addresses (e.g., user@company.com). Exchange Web services (EWS) and Exchange Graph (Graph) are initially enabled by default. Disable Exchange MAPI because it is no longer supported.

Mail Configuration

| Monitored Mailboxes | Attendant Mailboxes | | Custom Attributes | History |
| Providers | Directories | Transports | Prefixes and Voice Mail | Options |

Transports which will be used to deliver messages:

☑ Exchange(EWS)
☑ Exchange(GRAPH)

[Up] [Down]

[OK] [Cancel] [Apply]
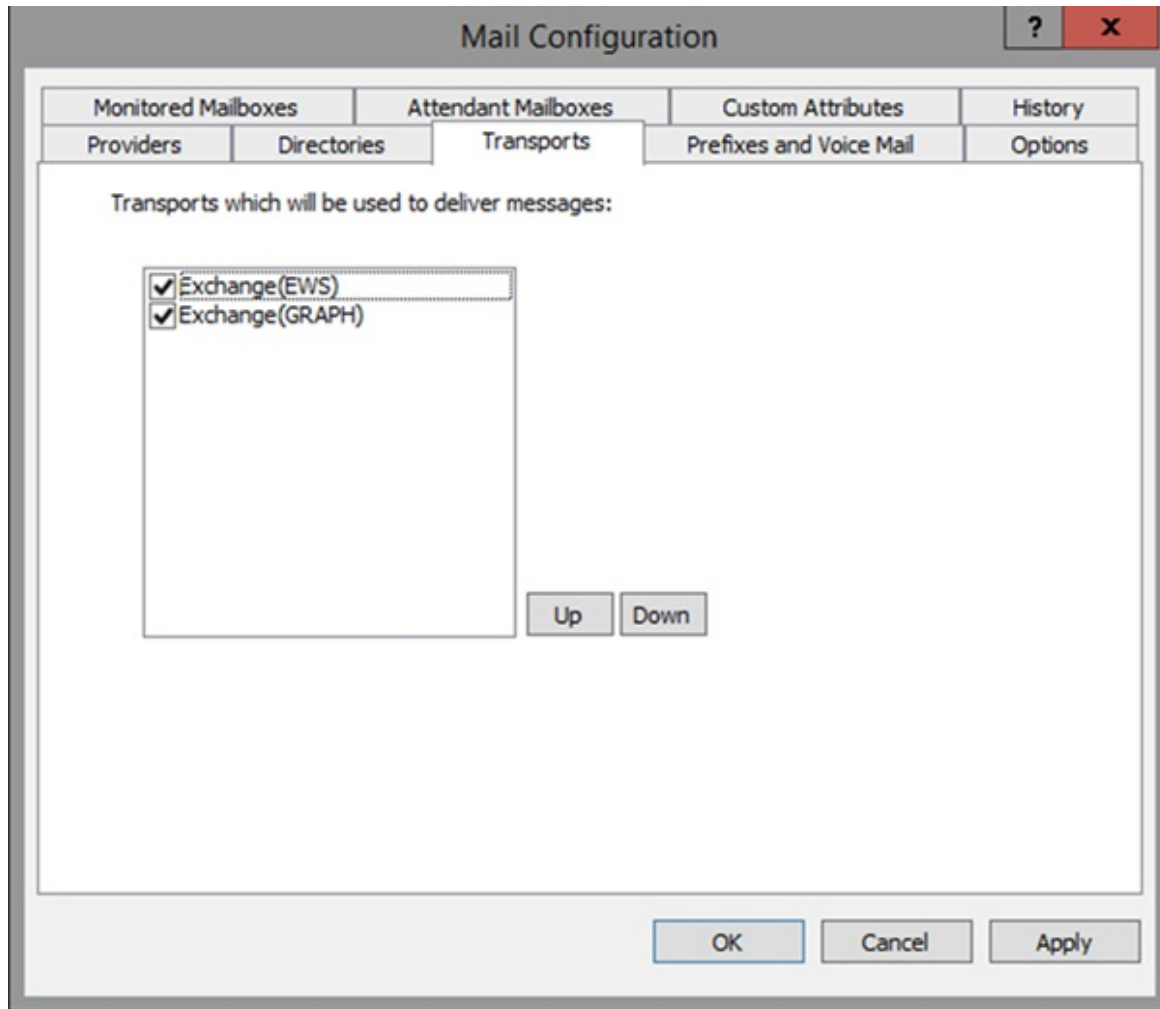
1. To configure Exchange, click **Exchange Properties**. The **Exchange Configuration** dialog box appears. Proceed to Exchange Configuration.

Select Mail Provider in Interaction Administrator

This procedure is nearly identical to "Select Mail Provider in IC Setup Assistant". It can be performed post-installation, after IC Setup Assistant was run as part of the initial installation.

1. In Interaction Administrator, click the **System Configuration** container and then click the **Mail** sub-container.
2. In the right-hand pane, double-click **Configuration**. The **Mail Configuration** dialog box appears.
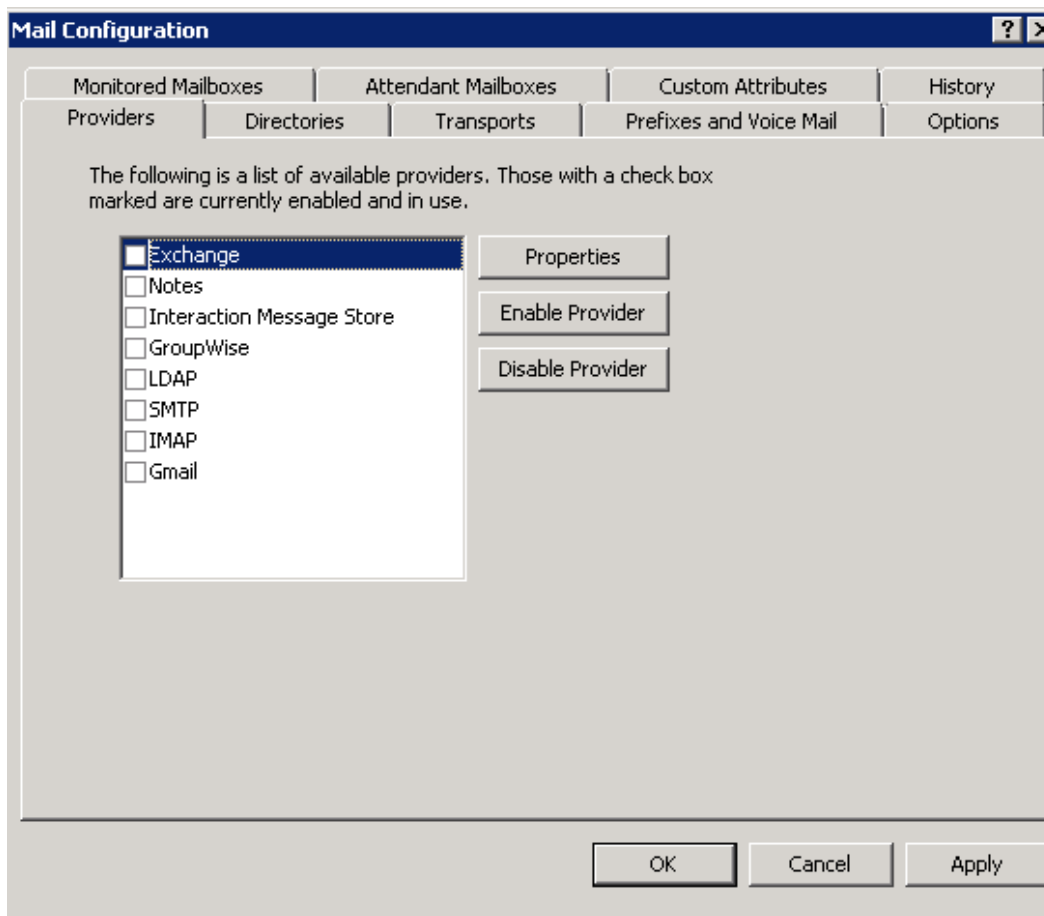
3. On the **Providers** page of the **Mail Configuration** dialog box, if Exchange is already enabled, click **Properties** to display the **Exchange Configuration** dialog box.
4. If Exchange isn't already enabled, click **Exchange** to highlight it and then click **Enable Provider**. A progress bar appears indicating Interaction Administrator is gathering mail provider information. When the process is complete, the **Exchange Configuration** dialog box appears.
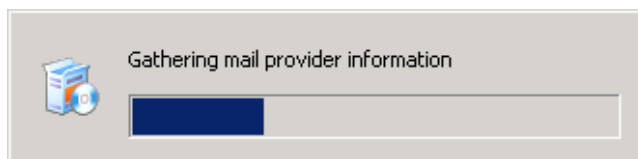
5. To configure Exchange, click **Exchange Properties**. The **Exchange Configuration** dialog box appears. Proceed to Exchange Configuration.

Exchange configuration

The same **Exchange Configuration** dialog box is used to configure Exchange, whether you selected the Mail Provider in IC Setup Assistant or Interaction Administrator.

1. In the **Exchange Configuration** dialog box, de-select **Enable MAPI**. Exchange MAPI is no longer supported.
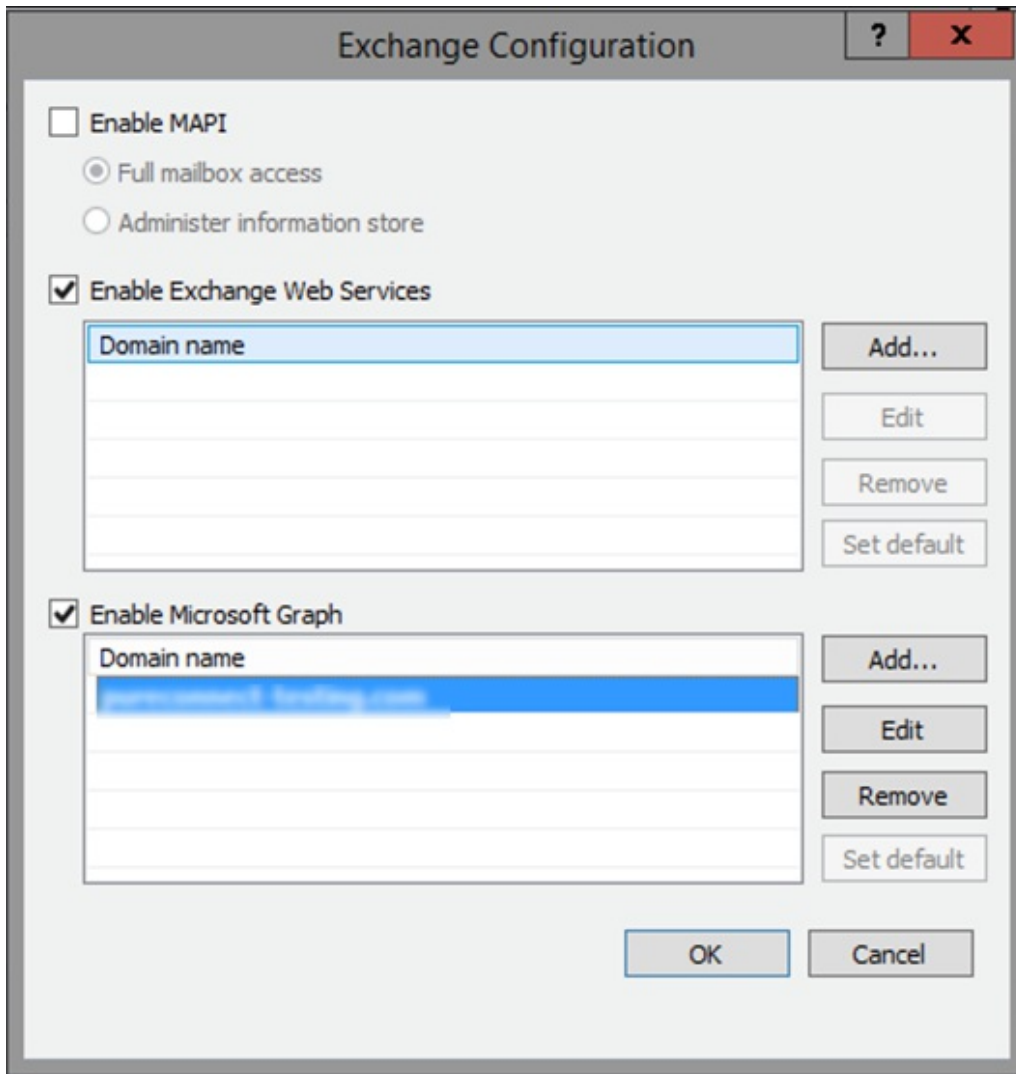
2. If Exchange Web Services isn't already enabled, select **Enable Exchange Web Services or Enable Microsoft Graph**.

3. **Click Add…** to specify a domain to use to access mailboxes. The **Domain Properties** dialog box appears.

> **Note:** If you don't specify the domain to use to access mailboxes, the system connects to the default Exchange server but for the Exchange (Graph) explicitly mention the domain name. That is, Exchange Web Services will try to use the CIC service account's mailbox for auto discovery and impersonation over other mailboxes for message retrieval and queuing. If you want to use another Exchange server in addition to the default Exchange server to access mailboxes, you must specify the domain to use for the default Exchange server and the domain to use for the additional Exchange server.
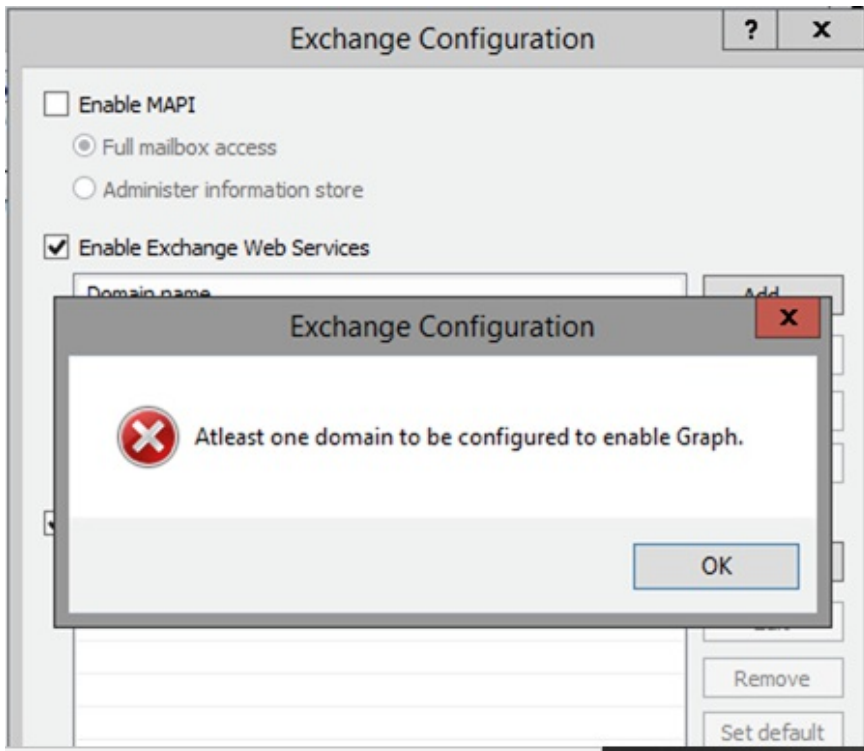
4. In the **Domain Properties,**

   a. For **EWS Exchange dialog box**, provide the requested information.
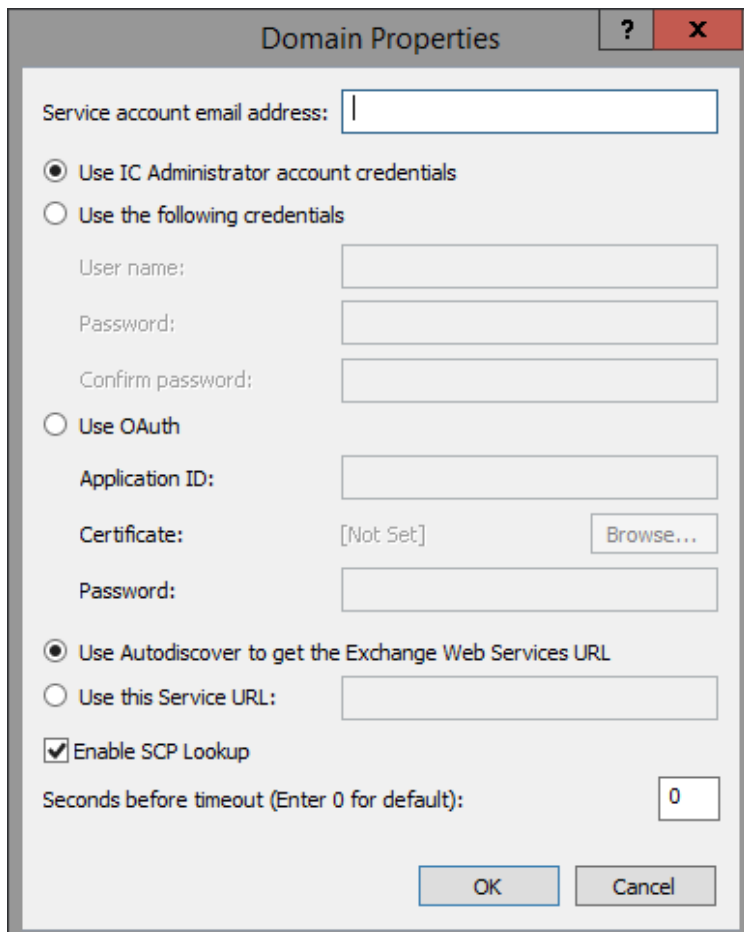
Service account email address: Type the email address used to access mailboxes.

Use IC Administrator account credentials: Select this option if you want to use the CIC Administrator account credentials to access mailboxes.

Use the following credentials: Select this option if you want to use another account's credentials to access mailboxes.

User name: Type an administrative user account name (CIC administrator account) that has impersonation rights on the Exchange server. For network credentials, type the domain and user name (domain\username). For Web credentials, type the account name @ domain (username@domain).

Confirm password: Re-type the password for the account.

Use OAuth: To use OAuth to authenticate with Exchange, enter the certificate, certificate password, and the application ID that were generated during the application registration in the Microsoft Azure portal to request an access token that is passed during requests to Exchange.

Use Autodiscover to get the Exchange Web Services URL: Select to use the Exchange Autodiscover feature to identify the Exchange Web Services URL.

Use this Service URL: Select to manually specify the Exchange Web Services URL and type the Service URL in the corresponding box.

Enable SCP Lookup: If Exchange information is not stored in Active Directory, using SCP lookup during the autodiscover process to find service endpoints can result in unnecessary delays. To disable the SCP lookup, clear the **Enable SCP Lookup** check box.

Seconds before timeout: Type the number of seconds that CIC should attempt to contact the Exchange Server.

b.　　　　For **Microsoft Graph Exchange dialog box,** provide requested information

****END USER must provide Certificate or Secret for Tenant

****Need to validate the Tenant and the Secret

5. Click **OK** to close the **Domain Properties** dialog box.

6. Click **OK** to close the **Exchange Configuration** dialog box.
7. Click **OK** to close the Mail Provider Summary dialog box (IC Setup Assistant) or the **Mail Configuration** dialog box (Interaction Administrator).

Enable Exchange Web Services for users

After you configure CIC for Exchange, follow this procedure to enable Exchange Web Services for users who will connect to Exchange using the Exchange Web Services protocol. (You can also enable Exchange Web Services for workgroups".)
1. In Interaction Administrator, click the **People** container and then click the **Users** sub-container.
2. In the right-hand pane, double-click the user name to edit. The **User Configuration** dialog box appears.

3. On the **Configuration** page of the **User Configuration** dialog box, click (**…**) to the right of **Mailbox User**. The **Mailbox Selection** dialog box appears.

4. On the **Mailbox Selection** dialog box, click **Search for a mailbox in the following directories**. Select **Exchange** for EWS or Graph and click **Search**. The Exchange e-mail address appears in the search results.

Mailbox Selection - chaos_User

Select a mailbox option:

- Review Current Settings
- No mailbox
- Interaction Message Store
- IMAP and/or SMTP
- Search for a mailbox in the following directories:

☑ Exchange

Search by: ⦿ Name   ○ E-mail address

chaos_User   [Search]

Search by name results:

Display Name	Identification Address
chaos_user	EX:/o=Dev2000/ou=First Administra...

Display Name: chaos_user
IC Directory Entry: x-inin-mail.ex:o=Dev2000,ou=First%20Adm
IC Message Address: EX:/o=Dev2000/ou=First Administrative Gro
IC Message Store: x-inin-mail.ex.store:/mailbox/o=Dev2000,ou

[Test]

[OK]   [Cancel]

5. Click **OK** to close the **Mail Selection** dialog box.
6. Click **OK** to close the **User Configuration** dialog box.

Enable Exchange Web Services for users

After you configure CIC for Exchange, follow this procedure to enable Exchange Web Services for users who will connect to Exchange using the Exchange Web Services protocol. (You can also enable Exchange Web Services for workgroups".)

1. In Interaction Administrator, click the **People** container and then click the **Users** sub-container.
2. In the right-hand pane, double-click the user name to edit. The **User Configuration** dialog box appears.

3. On the **Configuration** page of the **User Configuration** dialog box, click (**…**) to the right of **Mailbox User**. The **Mailbox Selection** dialog box appears.

4. On the **Mailbox Selection** dialog box, click **Search for a mailbox in the following directories**. Select **Exchange** for EWS or Graph and click **Search**. The Exchange e-mail address appears in the search results.

Mailbox Selection - chaos_User

Select a mailbox option:

○ Review Current Settings
○ No mailbox
○ Interaction Message Store
○ IMAP and/or SMTP
● Search for a mailbox in the following directories:

☑ Exchange

Search by: ● Name   ○ E-mail address

chaos_User   [Search]

Search by name results:

Display Name	Identification Address
chaos_user	EX:/o=Dev2000/ou=First Administra...

Display Name: chaos_user
IC Directory Entry: x-inin-mail.ex:o=Dev2000,ou=First%20Adm
IC Message Address: EX:/o=Dev2000/ou=First Administrative Gro
IC Message Store: x-inin-mail.ex.store:/mailbox/o=Dev2000,ou

[Test]

[OK]   [Cancel]

5. Click **OK** to close the **Mail Selection** dialog box.
6. Click **OK** to close the **User Configuration** dialog box.

Enable Exchange Web Services for workgroups

After you configure CIC for Exchange, follow this procedure to enable Exchange Web Services for workgroups that will connect to Exchange using the Exchange Web Services protocol.

("You can also enable Exchange Graph for individual users")

> **Note**: This procedure is for workgroup ACD email queuing, not for setting up a mailbox for the workgroup but would be used to deliver faxes and voicemail.

1. In Interaction Administrator, click the **People** container and then click the **Workgroups** sub-container.
2. In the right-hand pane, double-click the workgroup name to edit. The **Workgroup Configuration** dialog box appears.
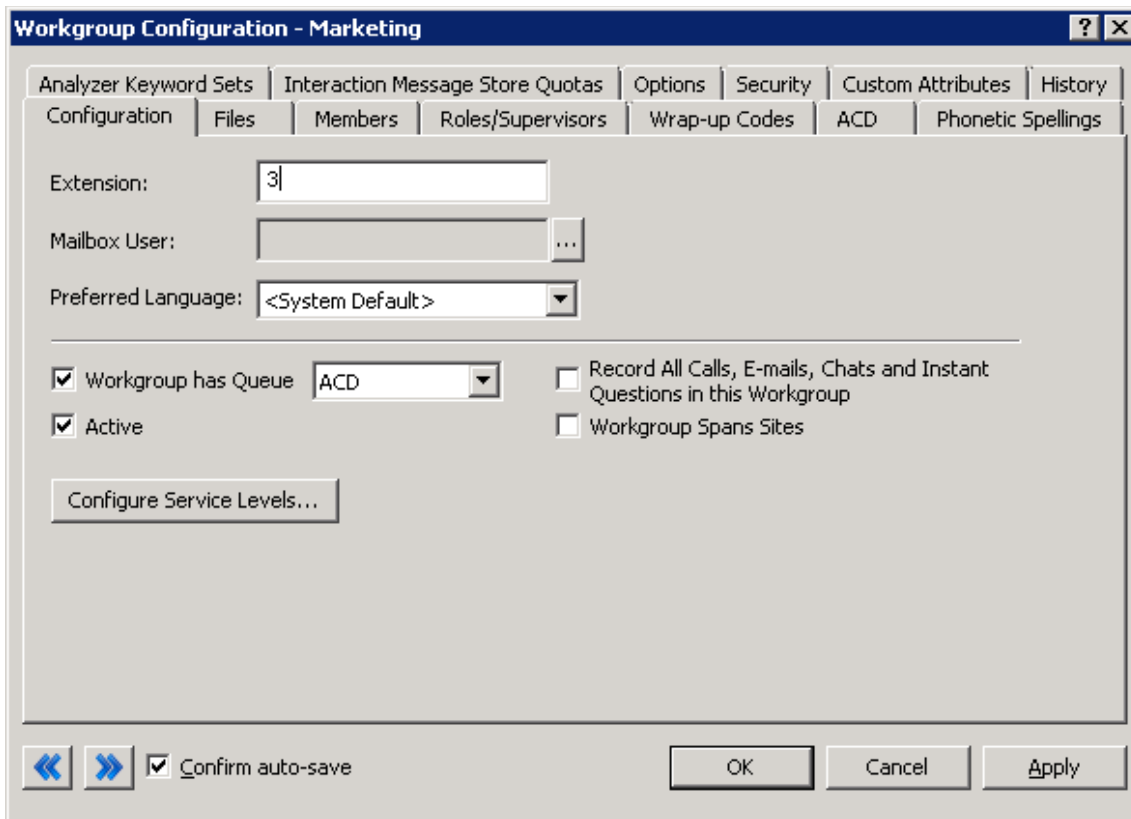
3. On the **Workgroup Configuration** dialog box, click the **ACD** tab. The **ACD** dialog box appears.
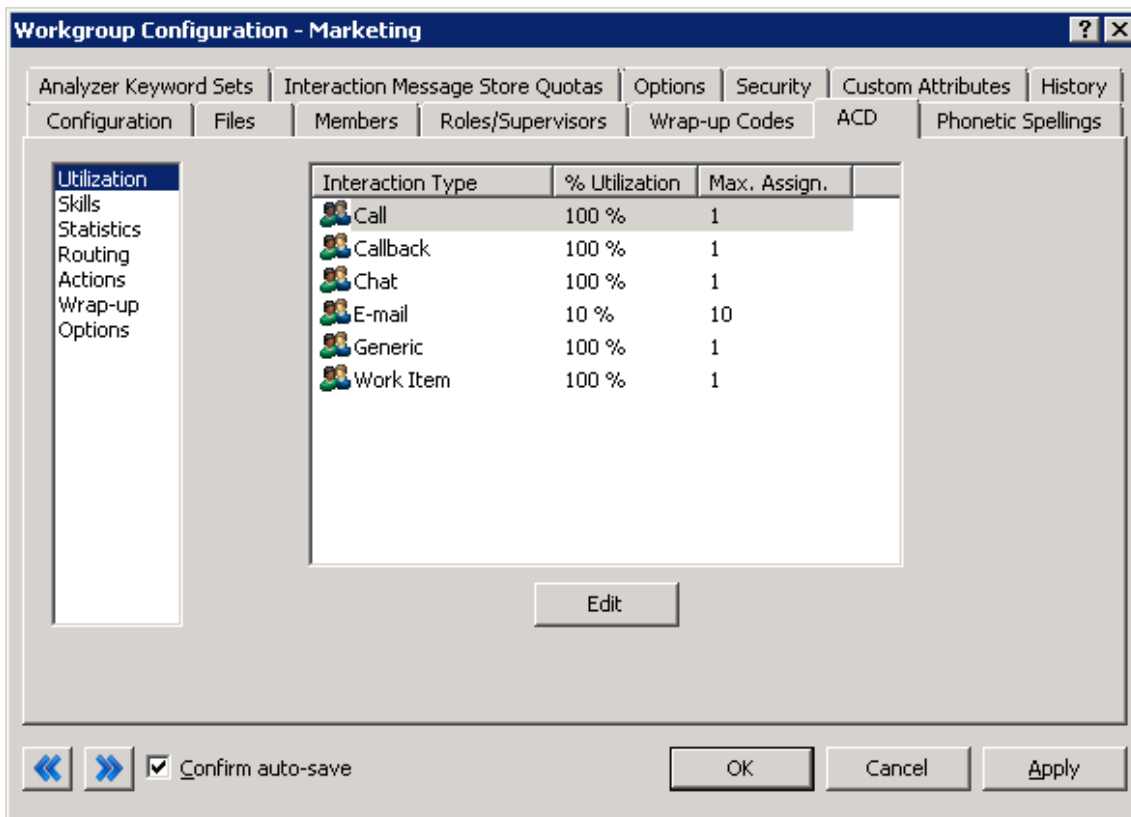
4. In the navigation box on the **ACD** dialog box, click **Routing**.
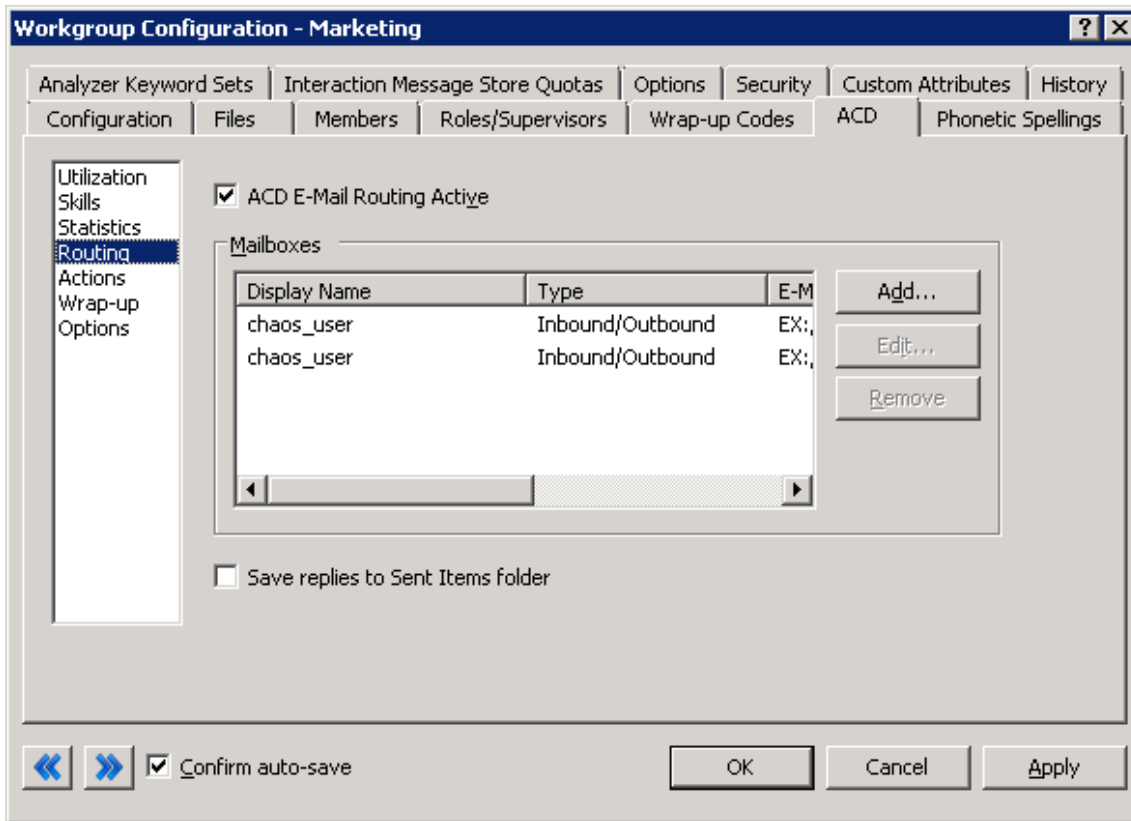
Note: "Inbound" is used to queue messages so that agents can be assigned and reply. "Outbound" is only used for creating a new email interaction not related to an incoming ACD email interaction.

5. Click **Add…** The **ACD E-Mail Routing Mailbox** dialog box appears.

6. On the **ACD E-Mail Routing Mailbox dialog box**, click (...) to the right of **Mailbox**. The **Mailbox Selection** dialog box appears.

Mailbox Selection

Select a mailbox option:

- ⦿ Review Current Settings
- ○ No mailbox
- ○ Interaction Message Store
- ○ IMAP and/or SMTP
- ○ Search for a mailbox in the following directories:

  ☑ Exchange

Display Name:

Directory Entry

The IC Directory Entry can supply the IC Message Address and IC Message Store, as well as personal information for a user in the company directory.

No value set.

Message Delivery

The IC Message Address is where new voicemails, faxes, and IC related emails are sent.

No value set.

Message Retrieval

The IC Message Store is where voicemails, faxes, and emails are retrieved for playback.

No value set.

Test

OK   Cancel
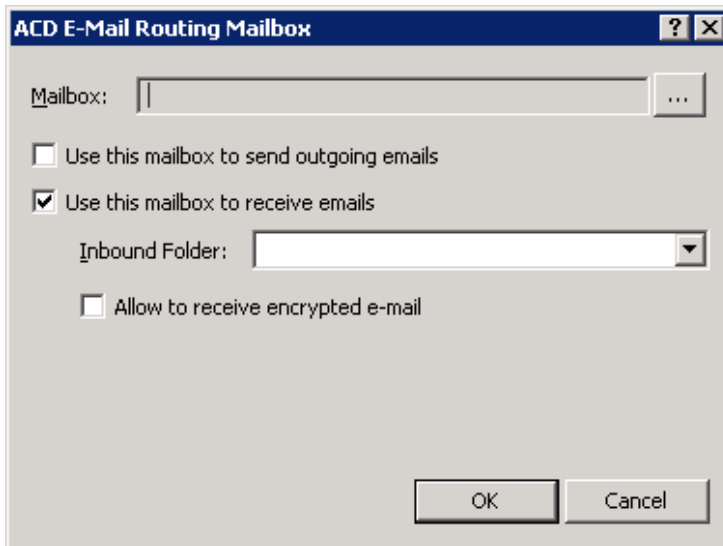
7. On the **Mailbox Selection** dialog box, click **Search for a mailbox in the following directories** and select **Exchange (EWS) or Exchange (Graph)**. Select to search by Name or E-mail address, type a name or e-mail address in the **Search** box, and click **Search**. The Exchange e-mail address appears in the search results.

Mailbox Selection

Select a mailbox option:
- Review Current Settings
- No mailbox
- Interaction Message Store
- IMAP and/or SMTP
- Search for a mailbox in the following directories:
  - ☑ Exchange

Search by: ⦿ Name ○ E-mail address

Marketing [Search]

Search by name results:

Display Name	Identification Address
Marketing User	EX:/o=Dev2000/ou=Exchange Admi...

Display Name: Marketing User
IC Directory Entry: x-inin-mail.ex:o=Dev2000,ou=Exchange%2
IC Message Address: EX:/o=Dev2000/ou=Exchange Administrativ
IC Message Store: x-inin-mail.ex.store:/mailbox/o=Dev2000,ou

[Test]

[OK]   [Cancel]

Mailbox Selection - workgroup1

Select a mailbox option:
- ○ Review Current Settings
- ○ No mailbox
- ○ Interaction Message Store
- ○ IMAP and/or SMTP
- ○ Gmail
- ⦿ Search for a mailbox in the following directories:
  - ☑ Exchange(GRAPH)

Search by: ⦿ Name ○ Email address

workgroup1 [Search]

Results:

Display Name	Identification Address
There are no items to display.	

Display Name:
IC Directory Entry:
IC Message Address:
IC Message Store:

[Test]

[OK]   [Cancel]

8. Click **OK** to close the **Mail Selection** dialog box.
9. Click **OK** to close the **ACD E-Mail Routing Mailbox** dialog box.
10. Click **OK** to close the **Workgroup Configuration** dialog box.

Enable Exchange Graph for workgroups

After you configure CIC for Exchange, follow this procedure to enable Exchange Graph for workgroups that will connect to Exchange using the Exchange Graph protocol. (You can also enable Exchange Graph for individual users.)

> **Note**: This procedure is for workgroup ACD email queuing, not for setting up a mailbox for the workgroup would be used to deliver faxes and voicemail.
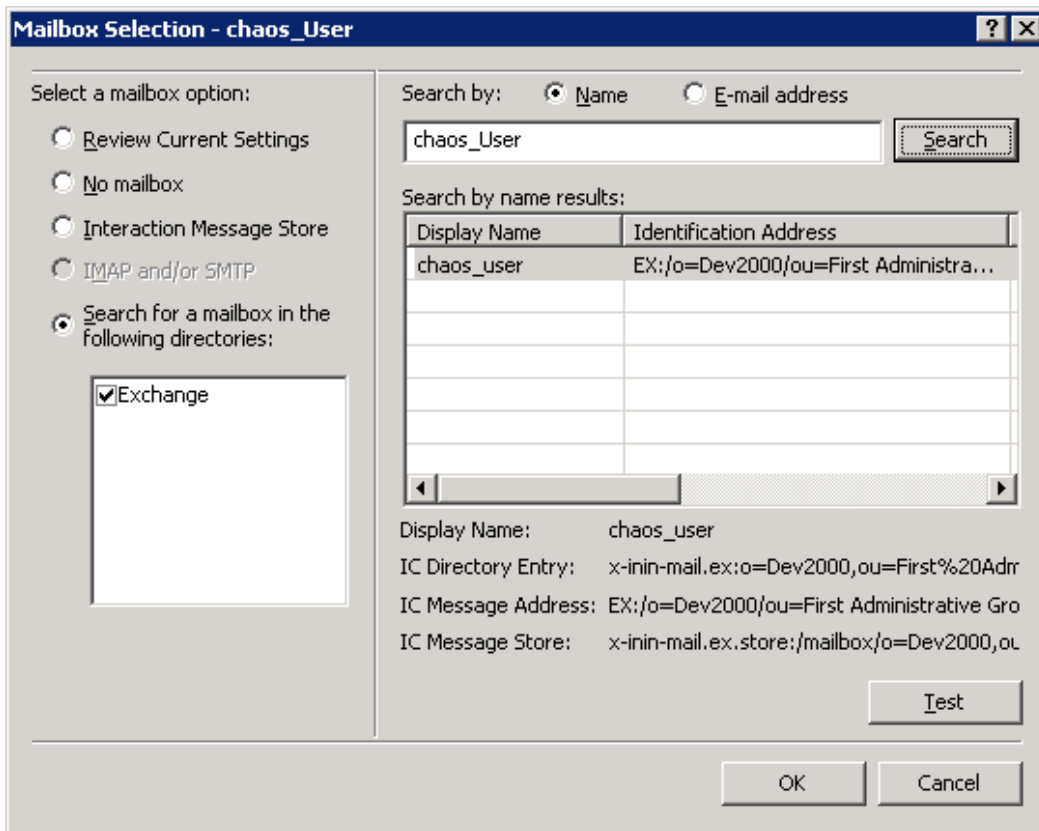
1. In Interaction Administrator, click the **People** container and then click the **Workgroups** sub-container.
2. In the right-hand pane, double-click the workgroup name to edit. The **Workgroup Configuration** dialog box appears.

3. On the **Workgroup Configuration** dialog box, click the **ACD** tab. The **ACD** dialog box appears.

Workgroup Configuration - Marketing [?] [X]

| Analyzer Keyword Sets | Interaction Message Store Quotas | Options | Security | Custom Attributes | History |

| Configuration | Files | Members | Roles/Supervisors | Wrap-up Codes | ACD | Phonetic Spellings |

Utilization
Skills
Statistics
Routing
Actions
Wrap-up
Options

Interaction Type	% Utilization	Max. Assign.
Call	100 %	1
Callback	100 %	1
Chat	100 %	1
E-mail	10 %	10
Generic	100 %	1
Work Item	100 %	1

Edit

[«] [»] ☑ Confirm auto-save   OK   Cancel   Apply

4. In the navigation box on the **ACD** dialog box, click **Routing**.

Workgroup Configuration - Marketing [?] [X]

| Analyzer Keyword Sets | Interaction Message Store Quotas | Options | Security | Custom Attributes | History |

| Configuration | Files | Members | Roles/Supervisors | Wrap-up Codes | ACD | Phonetic Spellings |

Utilization
Skills
Statistics
Routing
Actions
Wrap-up
Options

☑ ACD E-Mail Routing Active

Mailboxes

Display Name	Type	E-M
chaos_user	Inbound/Outbound	EX:,
chaos_user	Inbound/Outbound	EX:,

Add...
Edit...
Remove

☐ Save replies to Sent Items folder

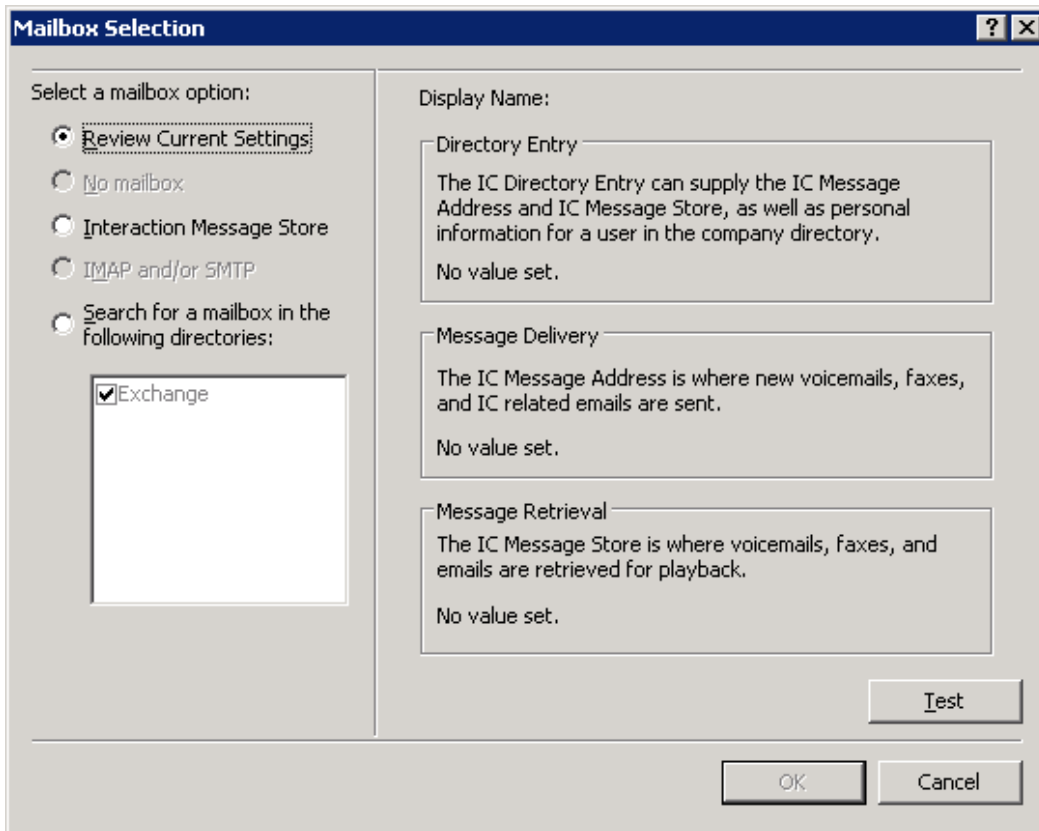[«] [»] ☑ Confirm auto-save   OK   Cancel   Apply

> **Note**: "Inbound" is used to queue messages so that agents can be assigned and reply. "Outbound" is only used for creating a new email interaction not related to an incoming ACD email interaction.

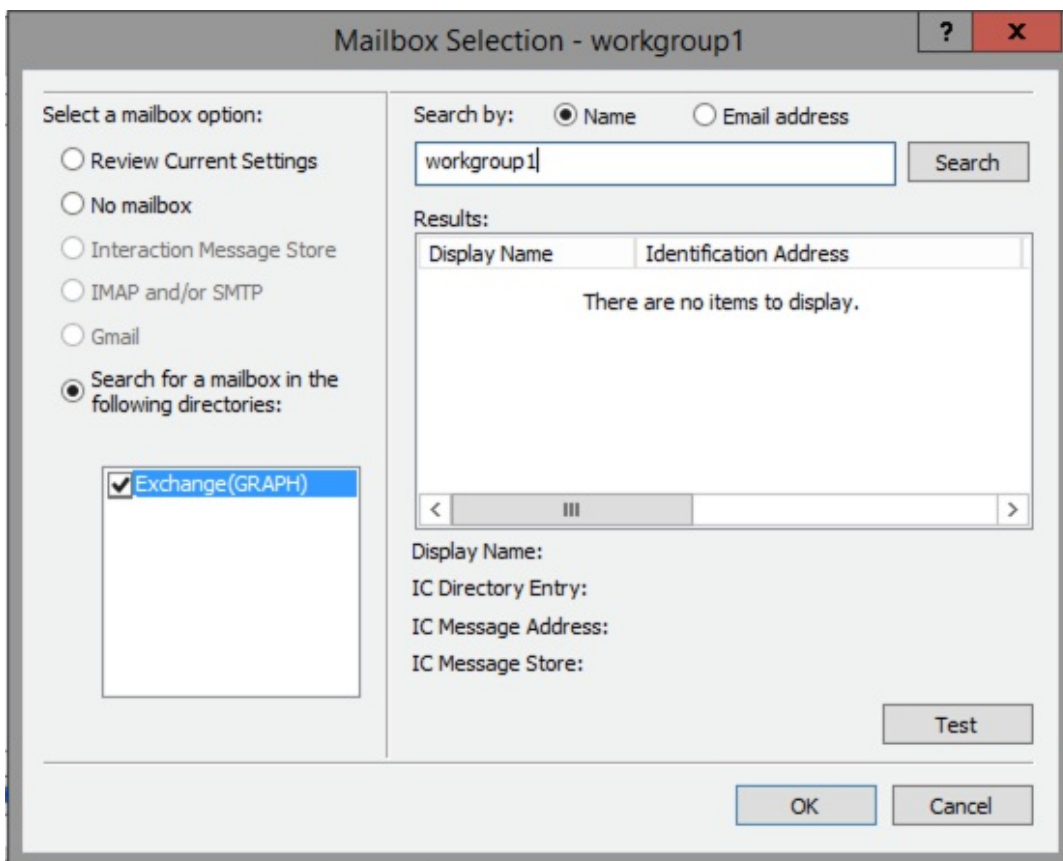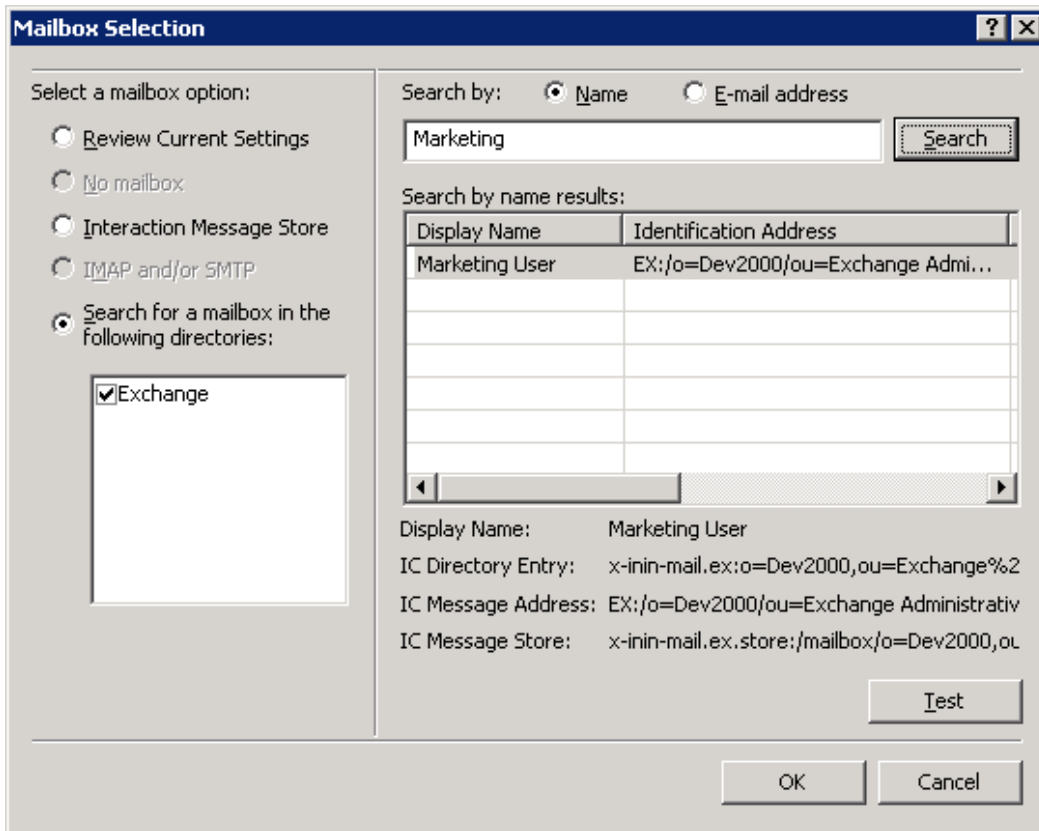5. Click **Add…** The **ACD E-Mail Routing Mailbox** dialog box appears.

6. On the **ACD E-Mail Routing Mailbox dialog box**, click (...) to the right of **Mailbox**. The **Mailbox Selection** dialog box appears.

7. On the **Mailbox Selection** dialog box, click **Search for a mailbox in the following directories** and select **Exchange (Graph)**. Select to search by Name or E-mail address, type a name or e-mail address in the **Search** box, and click **Search**. The Exchange e-mail address appears in the search results.
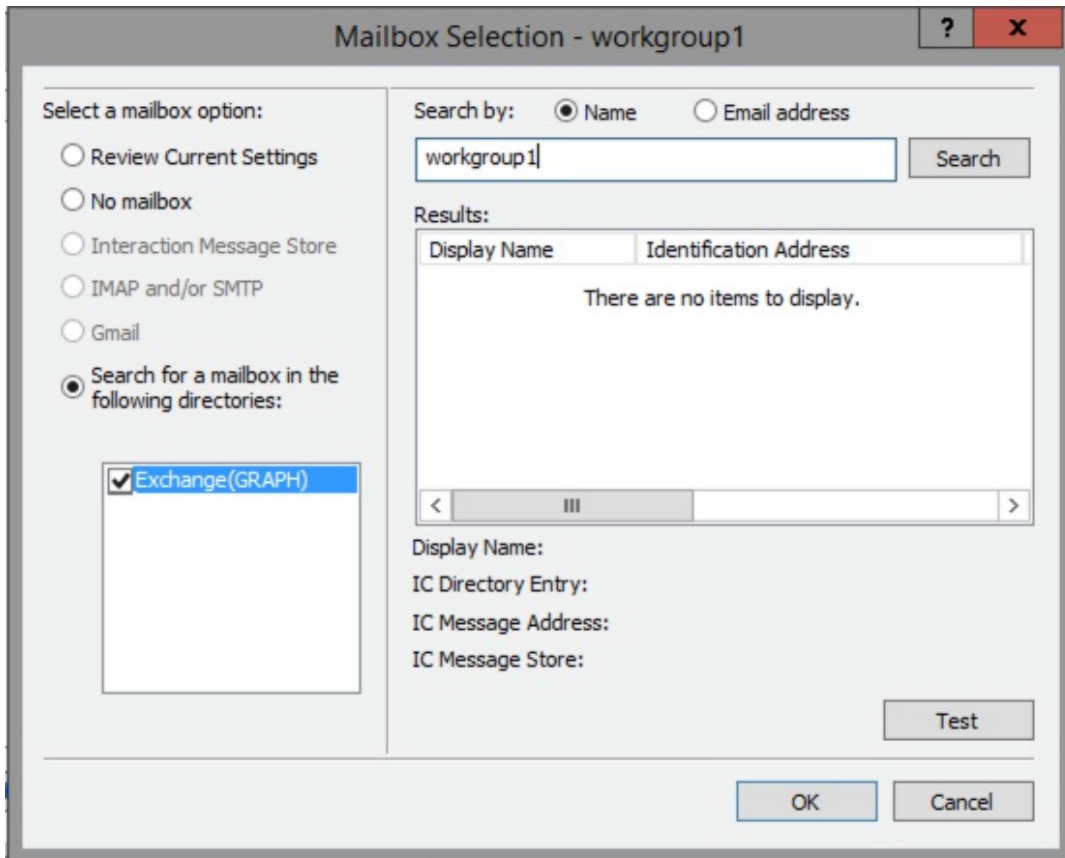
8. Click **OK** to close the **Mail Selection** dialog box.
9. Click **OK** to close the **ACD E-Mail Routing Mailbox** dialog box.
10. Click **OK** to close the **Workgroup Configuration** dialog box.

Enable retrieval of private contacts

Starting with CIC 4.0 SU 2, the private contact feature in Microsoft Outlook is supported.

You can configure the system to support retrieval of private contacts for users who have mailboxes associated through Exchange Web Services. All contacts are read-only. Public contacts aren't supported for mailboxes associated through Exchange Web Services. The contacts are seen

through Interaction Desktop, as described in the "Outlook for users" section of this document.

1. In Interaction Administrator, click the **System Configuration** container, click the **Contact Data Manager** sub-container, and then click the **Contact List Sources** sub-container.
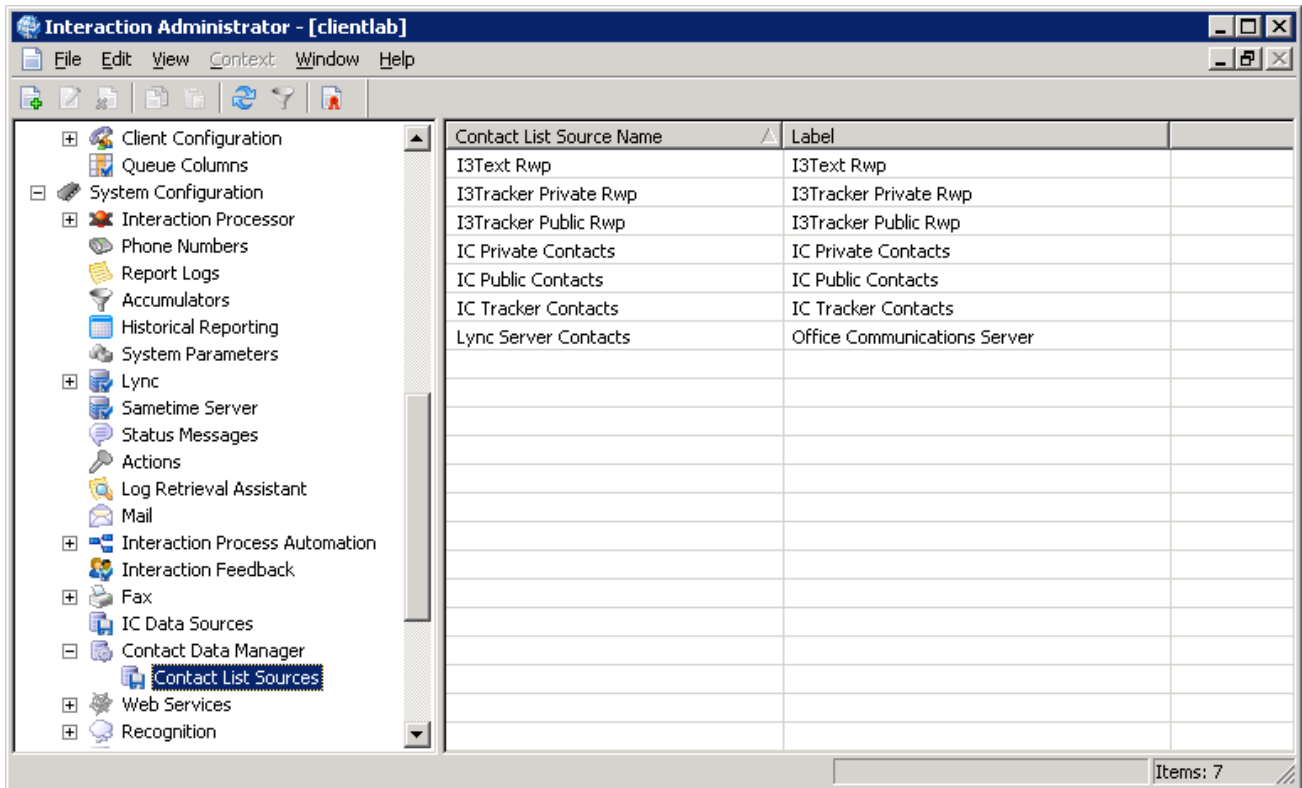
2. Press the **Insert** key. The **Entry Name** dialog box appears.
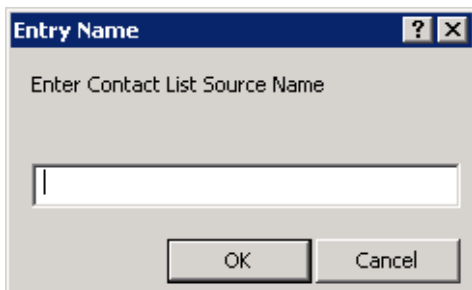
3. Type a name (for example, IC Private Contacts) and click **OK**. The **Contact List Source Configuration** dialog box appears.
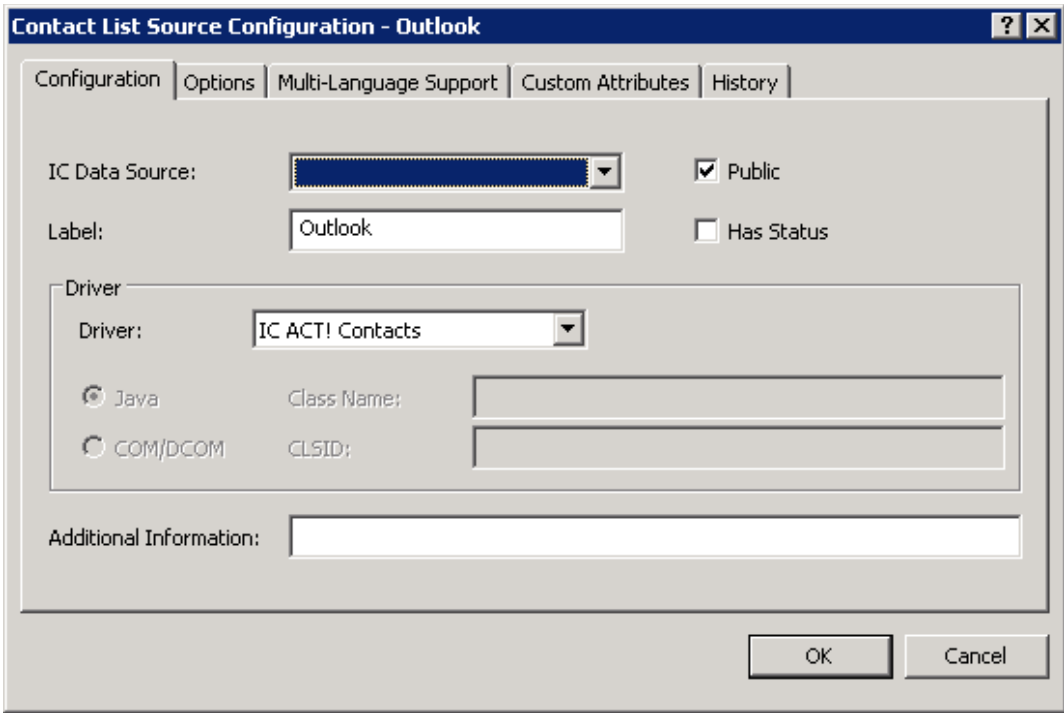
4. Leave the **IC Data Source** list box blank and clear the **Public** check box.
5. In the **Driver** list box, click **IC Mail Services**.
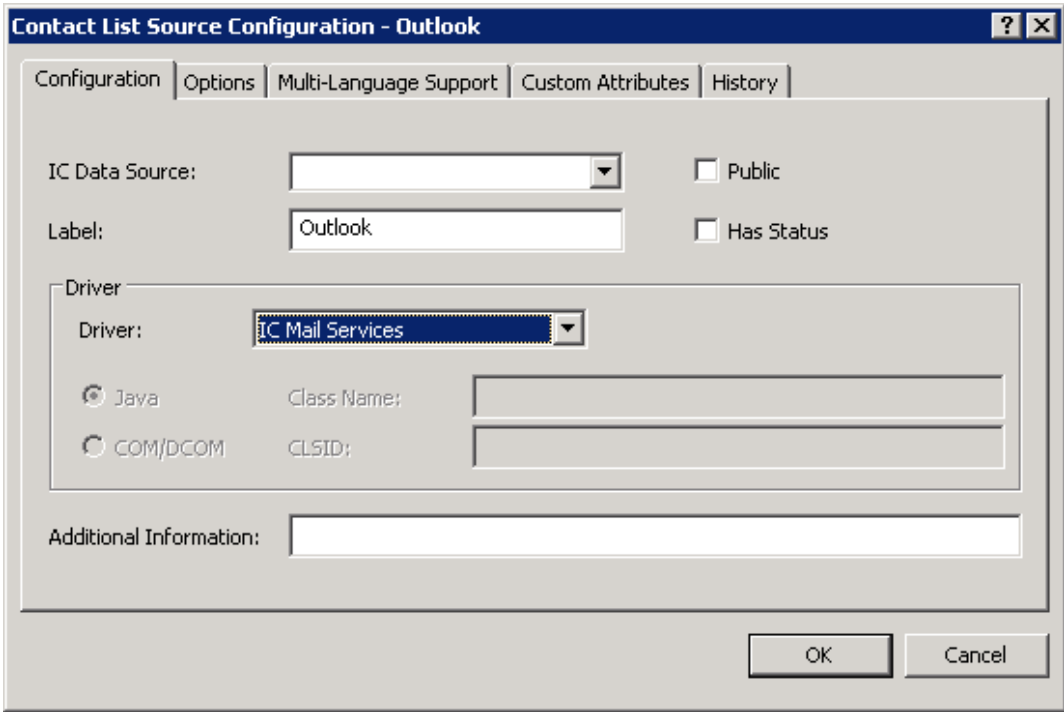
6. Click **OK**.

Exchange Web Services troubleshooting

If you encounter issues when setting up CIC to connect to an Exchange server via Exchange Web Services, see PureConnect Customer Care KB article https://genesyspartner.force.com/customercare/pkb_Home?id=kA50B0000008R8p.

Microsoft Outlook for users

An email client is not required for users: voicemail and fax can be checked in Interaction Desktop (CIC). However, if you want to provide users with the ability to check messages outside of CIC, or to receive any other messages from CIC which are not either voicemail or fax, use either the Microsoft Outlook client on user workstations or Outlook Web Access.

This section includes:

- Outlook client on user workstations
- Outlook Web Access
- Display contacts in Interaction Desktop

Outlook client on user workstations

CIC supports the following Microsoft Outlook client versions on user workstations:

- Microsoft Outlook 2013
- Microsoft Outlook 2010 SP2 (32-bit and 64-bit)

Visit the Testlab site at http://testlab.genesys.com/ for the latest service packs certified for use with CIC. Microsoft recommends applying the latest Outlook service packs for full functionality.

Outlook Web Access

Microsoft Outlook Web Access allows users to gain access to their Microsoft Exchange Server mailbox using a web browser. If you choose to use Outlook Web Access, see the documentation provided by Microsoft on how to configure and use Outlook Web Access.

Display contacts in Interaction Desktop

The private contact feature in Microsoft Outlook is supported in Interaction Desktop.. The server-side configuration for this feature is described in "Enable retrieval of private contacts".

Users can display their private contacts by adding a directory tab in Interaction Desktop. The contacts cannot be modified in Interaction Desktop and public contacts are not displayed.

1. In Interaction Desktop, do one of the following:

   - In the File menu, select **New->View…**
   - In the New menu, select **View…**
   - In Getting Started, select . **View…**

2. In the **Create New View** dialog box, do one of the following to find the **General Directories** view.

   - In Group by Products, search for General Directories, and double-click **General Directories**.
   - In Group by Category, click Directories in the left pane and double-click **General Directories**.
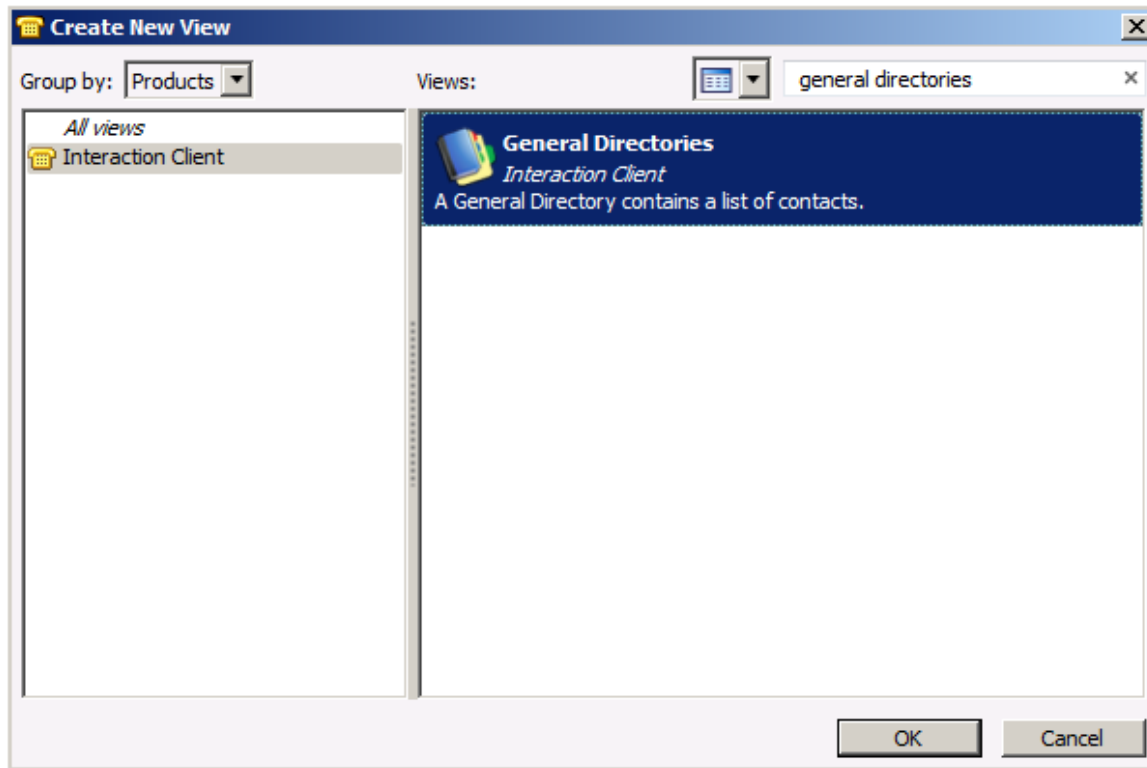
3. In the **Select General Directories to Add** dialog box, click the Contact List Source Name that was created in Interaction Administrator when you enabled retrieval of private contacts. (In this example, IC Private Contacts.)
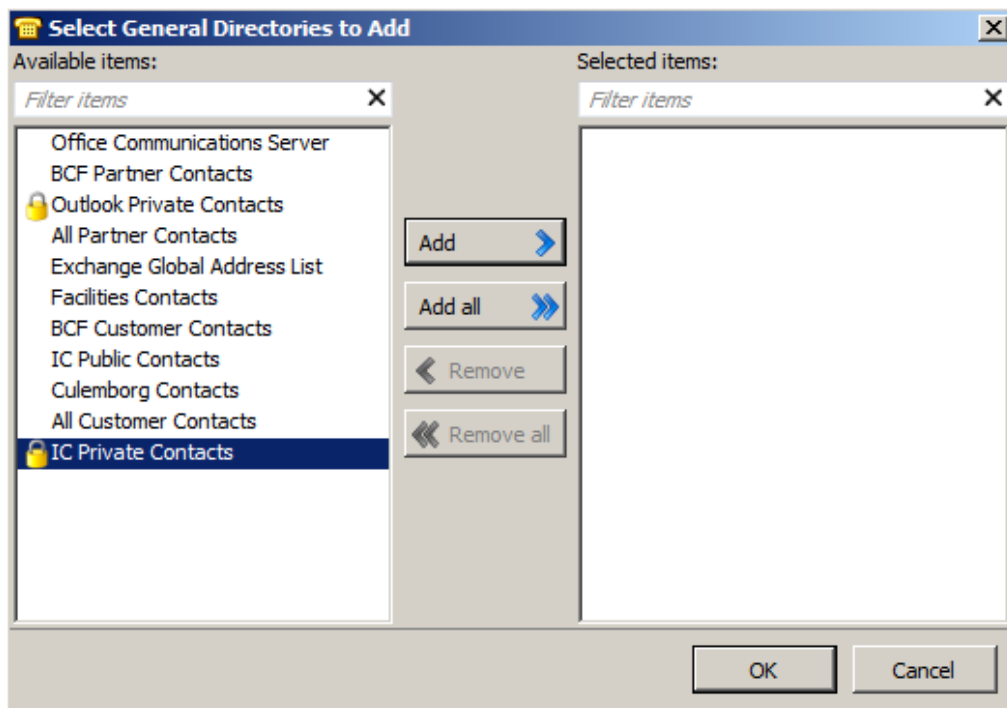
4. Click **Add**. The Contact List Source Name is moved to the right pane.
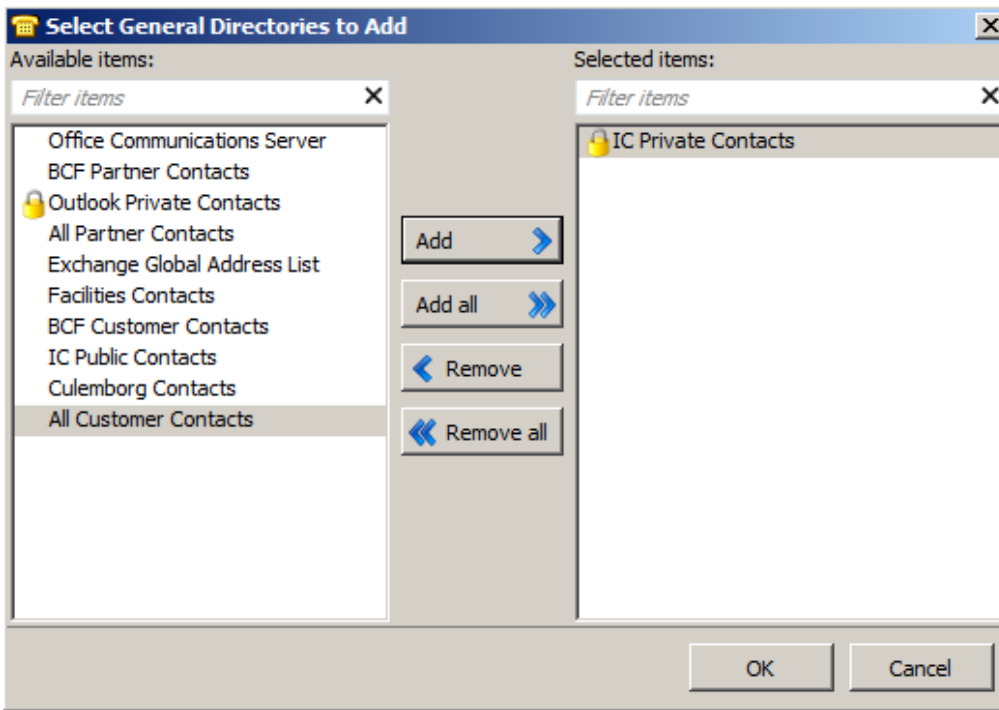
5. Click **OK**. The new view is added to Interaction Desktop interface with the user's private contacts displayed.
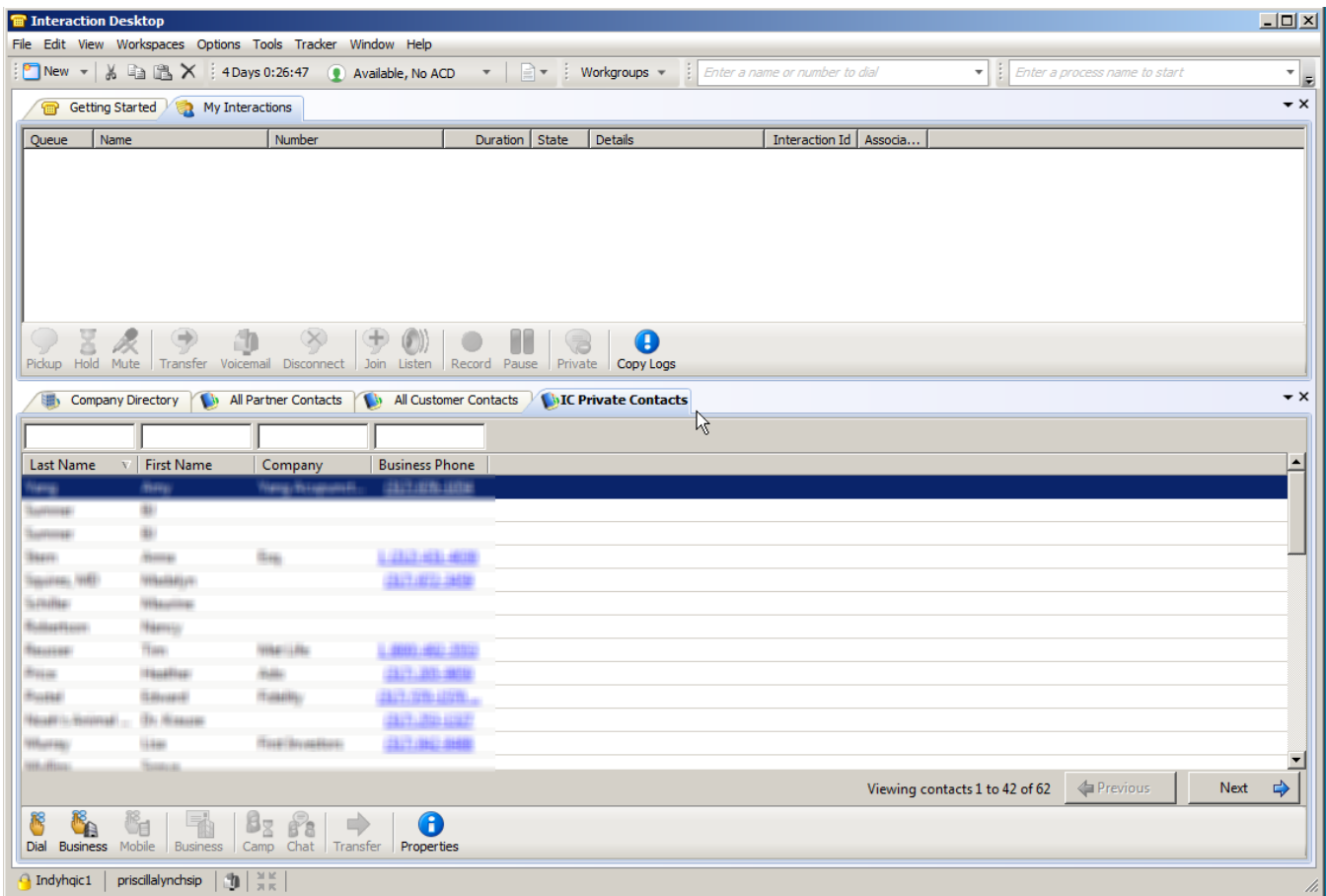
IBM Domino server

IBM Domino/Notes is a supported CIC mail provider, supporting unified messaging and email queuing (ACD queuing of email to contact center agents)

This section provides IBM Domino/Notes-related requirements, installation, and configuration information.

- Supported IBM Domino servers. See System Software Requirements in the PureConnect Documentation Library for the latest requirements.
- Assign the CIC administrator permissions on the IBM Domino server
- Install and configure the Notes client on the CIC server
- Configure CIC for IBM Domino/Notes

- IBM Domino/Notes support limitations

Assign the CIC administrator permissions on the IBM Domino server

The CIC administrator account is used to log in to the IBM Domino server. You should have already created the CIC administrator domain user account with local privileges on the CIC server as described in "CIC server".

To configure the CIC administrator account on the Domino server:

- Register the CIC administrator as a new Notes user
- Grant Manager privileges to CIC administrator's Domino account over CIC users' Domino mailboxes

Register the CIC administrator as a new Notes user

Log on as the IBM Domino administrator, and register a new Notes user (for example, ICAdmin) for CIC's use.

Registration creates a person document in the Domino Directory, a properly verified Notes ID, and a mail database on the IBM Domino server. See the IBM Domino administrator documentation for information on how to register a new Notes user.

When you run IC Setup Assistant, it will prompt you for the password for the CIC administrator's Domino account password.

Grant Manager privileges to CIC administrator's Domino account over CIC users' Domino mailboxes

To enable phone-based retrieval of voicemail and email messages, the CIC administrator's Domino account must be granted Manager privileges including permission to "Delete documents" over the CIC users' Domino mailboxes.

1. If you have not already done so, first give the IBM Domino administrator **Full Access Administration**. This step is needed so that the user running IBM Domino Administrator can modify users ACLs to add the CIC administrator account.
2. Double-click a CIC Notes user's **NSF file** (found in the \Notes\Data\Mail directory).
3. On the IBM Notes Administration interface, select the **File->Database->Access Control** and add the account designated as the CIC administrator account to the Access Control List. Make sure this account has **Manager** rights and that all check boxes are selected, including **Delete Documents**.
4. Repeat steps 2 and 3 for all other users.

   Alternatively, you can highlight all users at once and then choose "database/access control" and select the File->Database->Access Control and add the account designated as the CIC administrator account to the Access Control List for all users. This takes a while to complete, but is easier than granting Manager privileges to individual users.

Install and configure the Notes client on the CIC server

The IBM Domino server must be installed, connected to the CIC server, and configured for the CIC administrator account before you install the Notes client on the CIC server.

> **Note**: This procedure is a prerequisite for CIC installation; IC Setup Assistant will not proceed with configuring the IBM Domino mail provider until the Notes client is installed on the CIC server.

To install and configure the Notes client on the CIC server

1. Install the IBM Notes client version corresponding to the IBM Domino server version on the CIC server.

   > **Notes**: If you intend to install IBM Notes and Microsoft Outlook on the CIC server, we recommend that IBM Notes be installed before Microsoft Outlook, as some versions of Outlook can cause problems with IBM Notes.
   >
   > While installing the client, "Single-User" install must be selected or CIC may not be able to connect to your Notes server.

2. Log in to the CIC server as the CIC administrator.
3. Start the IBM Notes client, select the Notes ID (for example, ICAdmin), and enter the Notes password that you created for this CIC account.
4. Make sure the CIC server's PATH statement includes the Notes directory (typically C:\NOTES). If the PATH statement does not include the Notes directory before IC Setup Assistant is run, IC Setup Assistant will not be successful.
5. On the CIC server, make sure the TMP or TEMP environment variable exists and points to a valid directory on the CIC server with enough space to temporarily hold attachments (for example, voicemail and fax files) for email messages.
6. To verify the IBM Notes client installation, log out, then log in to the IBM Notes client as the CIC administrator and send an email to the CIC administrator account.

Configure CIC for IBM Domino/Notes

After the CIC server software has been installed, configure the IBM Domino mail provider in IC Setup Assistant or post-installation in the Interaction Administrator Mail container.

For instructions on IBM Domino mail provider configuration, see IC Setup Assistant Help and Interaction Administrator Help.

Additional IBM Domino/Notes configuration in Interaction Administrator

The following options are available in Interaction Administrator only.

The **Use Database Search** and **Use Folder References** settings are available in the Notes Configuration screen in the Interaction Administrator Mail container. They provide a significant performance improvement when accessing a mailbox via the TUI.

IBM Domino/Notes support limitations

Please note the following limitations to IBM Domino/Notes support in CIC:
- HTML is not supported in email interactions. Only plain text is available.
- Workgroup ACD routing in the **Save Replies to Sent Items** folder does not work.

Novell GroupWise server

Novell GroupWise is a supported CIC mail provider, supporting unified messaging, and email queuing (ACD queuing of email to contact center agents).

This section provides GroupWise-related requirements, installation, and configuration information.
- About the GroupWise Connector
- Supported GroupWise servers
- Configure the GroupWise POA(s) for SOAP
- Generate the Trusted Application Key file
- Configure CIC for GroupWise
- GroupWise client on client workstations

About the GroupWise Connector

The GroupWise Connector uses the Web services available in GroupWise 8.0 to provide the CIC/GroupWise integration. CIC and GroupWise use the SOAP API to communicate over HTTP between the GroupWise Connector and a Post Office Agent (POA) with SOAP enabled.

The SOAP-based GroupWise Connector has several advantages over the GroupWise Connector supported in previous CIC releases, which was based on the GroupWise Object API. The advantages include easier installation, improved performance and reliability, and less troubleshooting.

Trusted Application

The GroupWise Connector requires that you install CIC as a Trusted Application in GroupWise. This is accomplished by running the GroupWise snap-in in ConsoleOne. The Trusted Application Key file is then imported by CIC in Setup Assistant or Interaction Administrator. When the CIC configuration is completed, CIC automatically provides users access to their mailboxes through e-mail or the TUI.

The Trusted Application Key file eliminates the need for the administrator to individually grant the CIC administrator account proxy access to each user mailbox that CIC will access. In previous CIC releases, the proxy access requirement proved to be time consuming for the administrator, and often resulted in support cases.

GroupWise client no longer required on the CIC server

To further simplify the installation procedure, CIC no longer requires that the GroupWise client be installed on the CIC server.

Supported GroupWise servers

A GroupWise system is a collection of POA's, which may be running on one or more GroupWise servers. (A post office is a collection of user mailboxes and GroupWise objects. The POA delivers messages to mailboxes.) Multiple POA's are useful for load balancing and/or user provisioning.

CIC supports the following GroupWise versions:
- GroupWise 2012 (CIC 4.0 SU 4 to SU 6, CIC 2015 R1 and later)
- GroupWise 8

See software requirements at
https://help.genesys.com/cic/mergedProjects/wh_tr/mergedProjects/wh_tr_installation_and_configuration/desktop/software_requirements.htm
for mail system support updates.

User accounts should already be created in the GroupWise system.

Configure the GroupWise POA(s) for SOAP

For each GroupWise Post Office Agent (POA) that will be accessed by CIC, enable SOAP, check the SOAP port, and (optionally) enable SSL for SOAP.

If you want to use SSL for SOAP, you must obtain a server certificate for this POA and assign it to the POA in GroupWise. The certificate for the POA must be trusted by the CIC server. For more information, see "Email security".

Follow the instructions in *Novell GroupWise Support for CIC* in the Technical Reference Documents section of the PureConnect Documentation Library.

Generate the Trusted Application Key file

The GroupWise Connector requires that you install CIC as a Trusted Application in GroupWise. This is accomplished by running the GroupWise snap-in in ConsoleOne. The Trusted Application Key file is then imported by CIC in Setup Assistant or Interaction Administrator.

Follow the instructions in the *Novell GroupWise Support for CIC Technical Reference* in the PureConnect Documentation Library.

Configure CIC for GroupWise

After the CIC server software has been installed, configure the GroupWise mail provider in IC Setup Assistant or post-installation in the Interaction Administrator Mail container.

For instructions, see IC Setup Assistant help, Interaction Administrator help, or the *Novell GroupWise Support for CIC Technical Reference* in the PureConnect Documentation Library.

Additional Groupwise configuration in Interaction Administrator

The following options are available in Interaction Administrator only.

If plan you to use SSL/TLS for SOAP, you will need to enable **Use Secure Connections (TLS)** in the Interaction Administrator GroupWise Configuration screen. (Obtaining a server certificate for the GroupWise server, assigning it to the POA, and enabling SSL for SOAP in the POA is also required.)

An **Enable server side tracing** option for troubleshooting is also available in the Interaction Administrator GroupWise Configuration screen.

GroupWise client on client workstations

The GroupWise Connector does not require that the GroupWise client be installed on client workstations. However, we recommend it if you want users to access voicemails and faxes via email as well as the TUI.

> **Note**: Interaction Desktop has voicemail and fax features, but the GroupWise client is needed to receive CIC system emails.

Gmail (Google Apps for Work)

Gmail, part of Google Apps for Work, is a web-based hosted email application offering message threading, message labels, message search, and spam filtering. Integration of CIC with Gmail is compliant with SMTP/IMAP protocols and uses two-legged OAuth for authentication.

Starting with CIC 2015 R2, the integration of CIC with Gmail:
- Supports OAuth 2.0
- Is a separate selection in the Interaction Administrator Mail Provider, no longer configured via SMTP/IMAP services

Both new and existing CIC installations using Gmail must follow these procedures to configure Gmail in CIC 2015 R2 and later:
- Re-run IC Setup Assistant (existing CIC installations only)
- Create a Google Project and Service Account
  You will generate a .json file needed when configuring mail in Interaction Administrator
- Configure the Google Domain
- Configure Mail in Interaction Administrator
- Configure User in Interaction Administrator

> **Note**: Existing CIC installations must follow these procedures in order to upgrade and configure for OAuth 2.0.

For more information, including configuration procedures, see the *Gmail Integration Technical Reference* in the PureConnect Documentation Library.

LDAP/SMTP/IMAP services

CIC supports unified messaging for mail providers that use the standard SMTP/IMAP messaging protocols and the LDAP directory access protocol.

This section provides LDAP/SMTP/IMAP-related requirements, installation, and configuration information.
- About LDAP, SMTP, and IMAP
- Supported LDAP/SMTP/IMAP servers. See System Software Requirements in the PureConnect Documentation Library for the latest requirements.
- Configure CIC for LDAP/SMTP/IMAP

About LDAP, SMTP, and IMAP

LDAP is a protocol for looking up user information (first name, last name, address, company, etc.). The LDAP directory stores credentials for accessing the IMAP server.

SMTP is a protocol for sending mail (transport service).

IMAP is a protocol for retrieving mail (message store service).

LDAP, SMTP, and IMAP can be enabled and configured independently in IC Setup Assistant or Interaction Administrator, depending on the type of unified messaging functionality you want the CIC system to have. For example:

- If you want delivery of voicemail messages, faxes, and CIC notification email messages (i.e., "caller left a voicemail less than 2 seconds" or "you haven't recorded your name prompt") to email addresses (even external SMTP email addresses, such as a Hotmail account), and you want to associate users with address book entries, then you only need to configure SMTP and LDAP.
- If you want delivery of voicemail messages, faxes, and CIC notification email messages, but you do not want retrieval of messages (through the TUI), then you only need to configure SMTP, not IMAP.
- If you want retrieval of email messages through the TUI (again, even from an external IMAP account), but you do not want delivery of voicemails, faxes, and IC-notification-email messages to email addresses, then you only need to configure IMAP, not SMTP.

If you want users to access messages on client workstations via an email client instead of the telephone user interface (TUI), fulfill these requirements:

- Establish a CIC mail account on the IMAP server for each CIC user.
- Install IMAP-capable email software on client workstations. (It is not necessary to install the email software on the CIC server.)

Configure CIC for LDAP/SMTP/IMAP

After the CIC server software has been installed, configure for LDAP, SMTP, and/or IMAP in the Mail Provider screens in IC Setup Assistant or post-installation in the Interaction Administrator Mail container.

You will be prompted for LDAP Provider and Directory, SMTP Provider and Directory, and IMAP Provider and Directory information. Because LDAP, SMTP, and IMAP functionality is independent, you can configure what is needed and skip the screens that do not apply. See IC Setup Assistant Help or Interaction Administrator Help for descriptions of the fields in each screen.

Additional LDAP/SMTP/IMAP configuration in Interaction Administrator

The following option is available in Interaction Administrator only.

If plan to use SSL/TLS to provide security between the CIC server and the LDAP, SMTP, and/or IMAP servers, you will need to enable **Use Secure Connections (TLS)** in the Interaction Administrator LDAP, SMTP, and/or IMAP Provider screens.

A server certificate for the LDAP, SMTP, and/or IMAP servers must be available and trusted:

- LDAP uses certificates stored in the Windows certificate store.
- SMTP uses certificates stored in the \I3\IC\Certificates\Email directory.
- IMAP uses certificates stored in the \I3\IC\Certificates\Email directory.

For more information, see Interaction Administrator help.

Interaction Message Store

CIC supports Interaction Message Store, a messaging option that provides storing and tracking capabilities for voicemail and fax messages without connection to an email system.

This section provides Interaction Message Store-related requirements, installation, and configuration information.

- About Interaction Message Store
- Multiple mail providers: Interaction Message Store plus email provider
- Configure CIC for Interaction Message Store
- Interaction Message Store and virus scanning

About Interaction Message Store

Interaction Message Store stores voicemail and faxes as files on the CIC server (small implementations) or a network file server (large implementations). Users are associated with mailboxes in a file directory structure, and voicemails and faxes are routed to these mailboxes. CIC users can access voicemail messages from Interaction Desktop or the telephone user interface (TUI). Fax messages can be viewed from Interaction Desktop or forwarded to another fax number via the TUI.

For more information, see the *Interaction Message Store Technical Reference* in the PureConnect Documentation Library.

Multiple mail providers: Interaction Message Store plus email provider

When you configure mail providers as part of the CIC server installation procedure, you can configure other mail providers as well as Interaction Message Store. This enables you to serve users as they need to be served.

The Interaction Message Store has no email capability, and it may be necessary for users or administrators to receive text-based (email) notifications on cell phones or other email enabled devices. In such a case, you would want to configure an email provider as well as Interaction Message Store. You can then assign one or more mail providers to each user as necessary.

For more information, see the *Interaction Message Store* in the Technical Reference Documents section of the PureConnect Documentation Library.

Configure CIC for Interaction Message Store

After the CIC server software has been installed, select Interaction Message Store in the Mail Provider screens in IC Setup Assistant or post-installation in the Interaction Administrator Mail container.

Setup Assistant automatically sets a root directory for message storage. The default is D:\I3\IC\FBMC on the CIC server.

Additional Interaction Message Store configuration in Interaction Administrator

The following options are available in Interaction Administrator Mail container only.

If you wish to change the root directory for the message store on the CIC server, or if you plan to use a **network file server** instead of the CIC server as the message store, you must perform additional configuration in the Interaction Administrator Mail container in the **Interaction Message Store** screen. For a network file server, you must **enter the UNC path**.

After the CIC installation, you can perform the following system administration tasks for the message store in Interaction Administrator in the **Interaction Message Store** screen:
- Specify message compression rate
- Manage Interaction Message Store mailboxes, including Interaction Message Store quotas for storage space and message count for users, roles, and workgroups.

For more information, see Interaction Administrator help.

Interaction Message Store and virus scanning

Virus scanning software looks for viruses in files whenever they are accessed on the server. Because Interaction Message Store stores its messages in files, a virus scanner uses a significant amount of CPU resources to scan those files. Virus scanners can also cause problems by corrupting messages and locking files that are used by Interaction Message Store. We recommend that you configure your virus scanner to exclude files in certain product directories from being scanned, such as the Interaction Message Store root directory. Adding the Interaction Message Store root directory to the virus scanner's exclusion list reduces the amount of time looking for files that are highly unlikely to be infected.

For detailed information on virus scanner use with Interaction Message Store, see "Antivirus Scanning and Best Practices" in "CIC server".

Required mail system information

Before you run IC Setup Assistant as part of a new CIC server installation, make sure that you have the following mail system information available, typically provided by the mail administrator.
- Mail server name
- (IBM Domino/Notes) Notes client installed on the CIC server, IBM Domino administrator account password
- (GroupWise) GroupWise server IP address, port, GroupWise administrator account and password, location of Trusted Application Key file on the CIC server
- (Gmail) Google domain name, location of .json file
- If users are imported from mail server address or distribution lists, create the address and distribution lists

Database Server

CIC can make use of a database to provide many functions that support call center operations. You must fulfill the database requirements to successfully configure the CIC database as part of a new CIC installation. This section discusses the databases supported in CIC and provides database server requirements, planning, installation, and maintenance issues.

- CIC Database Configuration during CIC server installation
- CIC Database Configuration options
- Reporting tables
- Interaction Recorder tables
- Interaction Tracker tables
- Interaction Optimizer tables
- Interaction Feedback tables
- Interaction Process Automation tables
- SQL Server
- Oracle
- Data retention
- Required database information

- Database Schema Change Library
- Database changes and troubleshooting

CIC Database Configuration

This section presents background information on the CIC Database configuration performed during the CIC server installation. Configuring a database for use by CIC involves two parts: creating the database and configuring CIC to use that database.

> **Important**: Migrating data between 2.4 or 3.0 and 2015 R1 or later versions of CIC is *not* covered in this section. For more information, see the Interaction Migrator Technical Reference.

Database configuration during CIC server installation

- Creates the three database user accounts used by CIC:

- Administrative account (default ic_admin)
- User account (default ic_user)
- Read-only account (default ic_readonly).

- Creates or upgrades the database tables, views, indexes, and stored procedures needed for

- Reporting - Additional licensing for Interaction Reporter and Interaction Report Assistant required
- CIC Public and Private Contacts
- Speed Dial lists
- Interaction Recorder, including Interaction Screen Recorder - Additional licensing required
- Interaction Tracker - Additional licensing required
- Interaction Optimizer - Additional licensing required
- Interaction Feedback - Additional licensing required
- Interaction Process Automation - Additional licensing required

CIC configuration

- Configures database logging — configures the CIC server to transport Reporting, Interaction Recorder, Interaction Tracker, Interaction Optimizer, Interaction Feedback, and Interaction Process Automation data from the CIC server to the database server via Persistent Message Queuing (PMQ). For more information, see "Database Logging".
- Creates the necessary ODBC data sources in the Control Panel.
- Automatically populates various configuration settings in Interaction Administrator (CIC Data Sources, Report Logs, Server Parameters, etc.).

CIC Database Configuration options

Genesys offers a number of options to allow database administrators the flexibility to create the database using different accounts with different permissions without sharing those credentials, and also give the freedom to have this work performed before the CIC server installation begins.

For details see:
- "CIC Database Configuration options for SQL Server" in the "SQL Server" section.
- "CIC Database Configuration options for Oracle" in the "Oracle" section.

Reporting tables

The Reporting database records statistics and other information including:

- Call Detail Records (CDR) for calls and other multimedia interactions (chats, emails, etc.)
- Performance data on users and workgroups
- Line and line group statistics
- IVR statistics
- Changes to CIC configuration (for auditing)

CIC administrators, call center supervisors, and other users can create or run reports on that data in IC Business Manager to analyze trends and improve resource usage using the following IC Business Manager application modules:

- **Interaction Reporter**: Run pre-defined reports simply using filters to configure report parameters. Depending on the report, Interaction Reporter uses the ActiveReports 6 or Crystal Reports reporting runtime.
- **Interaction Report Assistant**: Design customized reports using the Interaction Report Assistant wizard.

The supporting files for the Reporting components are automatically installed with the IC Server Manager Applications and IC Business Manager Applications installs. The CIC Database Configuration that occurs when running IC Setup Assistant configures the Reporting database tables.

Interaction Reporter has a runtime of Crystal Reports supporting 9, 10, XI, and 2013 for report viewing, installed automatically with the IC Business Manager Applications install. If you wish to modify and create reports, you must install the full Crystal Reports package.

A database server is required to create and run reports. If a database server is not available, we recommend purchasing the database server and fulfilling the server prerequisites before the CIC server installation, and then configuring the CIC database in IC Setup Assistant during the CIC installation.

No Reporting

If the site does not include a database server, choose the "no reporting option" in IC Setup Assistant.

> **Note**: CIC Private and Public Contacts lists require a database.

Interaction Recorder tables

Interaction Recorder data is stored in the **same CIC database**, although in different tables.

Interaction Recorder is an application for managing phone calls, emails, faxes, screen recordings, and Web chats recorded within CIC. Interaction Recorder compresses, archives, and manages the attributes for each recording, allowing you to quickly sort and manage large numbers of recordings. A major feature of Interaction Recorder is the ability to organize and manage these recorded calls for training, quality assurance, legal purposes, etc.

Interaction Screen Recorder is an Interaction Recorder feature, requiring separate Interaction Screen Recorder licensing. Interaction Screen Recorder adds screen recording capability, assisting contact center managers and supervisors in improving their contact center's productivity and assessing agents' skills. Synchronizing the audio recording of an agent with the workstation activity, screen recording provides a complete management tool for contact center supervisors.

The supporting files for the Interaction Recorder and Interaction Screen Recorder components are automatically installed with the CIC server, IC Business Manager Applications, and IC User Applications installs. The CIC Database Configuration that occurs when running IC Setup configures the Interaction Recorder database tables.

For licensing, requirements, and installation and configuration instructions, see the *Interaction Recorder Technical Reference* in the PureConnect Documentation Library.

Interaction Tracker tables

Interaction Tracker data is stored in the **same CIC database**, although in different tables.

Interaction Tracker enables CIC users to view the interaction histories between CIC users and outside people, or between CIC users, by maintaining a database of CIC users and their associated interactions.

The supporting files for the Interaction Tracker components are automatically installed with the CIC server, IC User Applications, and IC Business Manager installs. The CIC Database Configuration that occurs when running IC Setup configures the Interaction Tracker database tables.

For licensing, requirements, and configuration instructions, see the *Interaction Tracker Filtered Directories Technical Reference* in the PureConnect Documentation Library.

Interaction Optimizer tables

Interaction Optimizer data is stored in the **same CIC database**, although in different tables.

Interaction Optimizer is a complete workforce management (WFM) application for CIC that optimizes agent effectiveness in contact centers of all sizes. It combines CIC's historical ACD data with projected market expectations for demand forecasts that more accurately determine required scheduling targets. Interaction Optimizer also manages agents' time-off requests and last-minute changes for schedules that balance anticipated interaction demands with agent availability and skills.

The supporting files for the Interaction Optimizer components are automatically installed with the CIC server and IC Business Manager installs. The CIC Database Configuration that occurs when running IC Setup configures the Interaction Optimizer database tables.

For licensing, requirements, and configuration instructions, see the *Interaction Optimizer Technical Reference* in the PureConnect Documentation Library.

Interaction Feedback tables

Interaction Feedback data is stored in the **same CIC database**, although in different tables.

Interaction Feedback is an IC Business Manager add-on module that supports automated post-call customer satisfaction surveys. Interaction Feedback gives business users the ability to easily create surveys using the Create Survey Wizard. Surveys can be quickly created with pre-defined industry standard templates. Customized questions can be simply created using Interaction Feedback Tools, for creating prompts and managing questions.

The supporting files for the Interaction Feedback components are automatically installed with the CIC server and IC Business Manager installs. The CIC Database Configuration that occurs when running IC Setup configures the Interaction Feedback database tables.

For licensing, requirements, and configuration instructions, see the *Interaction Feedback Technical Reference* in the PureConnect Documentation Library.

Interaction Process Automation tables

Interaction Process Automation (IPA) data is stored in the **same CIC database**, although in different tables.

IPA takes the advanced communications technologies available in CIC and applies them to process automation, giving organizations a cost-effective way to automate business processes end-to-end. IPA uses intelligent queuing and routing to provide a flexible distribution of process work, using presence to indicate availability for work assignment and to speed processing time.

The supporting files for the IPA components are automatically installed with the CIC server, IC User Applications, IC Business Manager Application, and IC Server Manager installs. The CIC Database Configuration that occurs when running IC Setup configures the IPA database tables.

For licensing, requirements, and configuration instructions, see the *Interaction Process Automation Technical Reference* in the PureConnect Documentation Library.

SQL Server

Genesys recommends a dedicated SQL Server computer for CIC database storage. If a SQL Server is already installed on the same network as the CIC server, that server may be used for CIC database storage.

Fulfill the requirements described in this section before the CIC server installation:

- Supported SQL Server versions
- Configure SQL Server for Mixed Authentication Mode
- SQL Server security settings
- SQL Server ODBC driver
- SQL Server database space planning
- SQL Server configuration
- SQL Server database maintenance
- CIC Database Configuration options for SQL Server
- Use Active Directory accounts with SQL Server

Supported SQL Server versions

See System Software Requirements in the PureConnect Documentation Library for the latest requirements.

> **Note**: The **SQL Server** must be **case-insensitive**. CIC Database Configuration cannot log into a case-sensitive SQL Server. For more information, contact PureConnect Customer Care.

Configure SQL Server for Mixed Authentication Mode

SQL Server must be configured for Mixed Authentication Mode. Mixed Mode allows users to connect to an instance of SQL Server using either Windows Authentication or SQL Server Authentication.

- Choose Mixed Mode when installing SQL Server.
- If SQL Server is already configured for Windows Authentication Mode only, change to Mixed Mode using SQL Server management tools.

See SQL Server documentation for instructions.

SQL Server security settings

The port that SQL Server uses must be unblocked or available through a firewall. This is necessary to successfully configure the CIC database in IC Setup Assistant. Port 1433 is the default port, but may be set to other values during the SQL Server installation.

SQL Server ODBC driver

The CIC server and client workstations running Interaction Reporter and/or Interaction Report Assistant in IC Business Manager use the SQL Server ODBC driver in their communications with the database server.

In most cases, the SQL Server ODBC driver is automatically installed with the CIC server and client workstation operating system software supported by CIC 4.0.

No SQL client tools are required.

SQL Server database space planning

This section discusses SQL Server database space planning, including initial data and log file size, growth increment, and maximum growth size.

During the CIC server installation, enter the appropriate values based on the database space planning in IC Setup Assistant database configuration screens. IC Setup Assistant then configures the database.

This section includes:
- Use the CIC Database Space Planning Spreadsheet
- Database file size allocations
- Growth increment
- Maximum growth size
- Account for index rebuilds
- Once the database is created, expand file size to final size

Use the CIC Database Space Planning Spreadsheet

We recommend using the *CIC Database Space Planning Spreadsheet*, DB_SpacePlanning.xls to determine the target size (initial data file size) of the CIC database. This Excel spreadsheet is located in the Additional Files\SQL directory on the CIC 2015 R1 or later iso .file.

The Main sheet of the spreadsheet presents questions regarding the site's operations, including

- Data retention period in months
- Average calls per hours
- Days of week in operation
- Number agents (users)

Based on the answers, the spreadsheet calculates the initial data file size for a SQL Server Reporting database.

Indicate on the spreadsheet if Interaction Recorder, Interaction Tracker, Interaction Feedback, Interaction Optimizer, and/or Interaction Process Automation licenses are used to account for the additional space needed for these databases.

The spreadsheet also contains Advanced Options questions, a breakdown of the SQL Server database size estimates, and Table Details.

Database file size allocations

The following table shows the "rule of thumb" that the *CIC Database Planning Spreadsheet* uses to calculate initial data file size values for a Reporting, Tracker, and/or Recorder database. During a new installation, CIC Database Configuration in IC Setup Assistant uses these default values if no values are entered.

File	Reporting database	With a Tracker license…	With a Recorder license…*	With both Recorder and Tracker licenses…
Data file	1GB	Add additional 750MB	Add additional 1GB	Add additional 1GB
Log file	250MB	Add additional 183MB	Add additional 250MB	Add additional 250MB

* If Interaction Recorder is licensed, but Interaction Tracker is not, recordings still require most of the related Interaction Tracker information.

Growth increment

Determine the growth increment, which is how much space the data and log files will add when they need additional space, before the maximum growth size is reached or the disk is full.

During a new CIC installation, IC Setup Assistant uses the following default values if no values are entered.

File	Growth increment	With a Tracker license…	With a Recorder license…*	With both Recorder and Tracker licenses…
Data file	250MB	Add additional 200MB	Add additional 250MB	Add additional 250MB
Log file	50MB	Add additional 50MB	Add additional 50MB	Add additional 50MB

* If Interaction Recorder is licensed, but Interaction Tracker is not, recordings still require most of the related Interaction Tracker information.

Maximum growth size

Determine the maximum size the data or log file can grow following the initial file creation. During a new CIC installation, IC Setup Assistant uses the default value of UNLIMITED for both the data file and log file. The file will grow until the disk is full.

Account for index rebuilds

If several years' worth of data needs to be retained in the CIC database, account for this data in the sizing calculations. Add enough free space to the calculation, to facilitate rebuilding the database indexes.

We strongly recommend reviewing Microsoft's SQL Server Books Online at http://msdn.microsoft.com/en-us/library/ms189858.aspx for information on reorganizing and rebuilding indexes.

Once the database is created, expand file size to final size

As mentioned, we recommend using the *CIC Database Planning Spreadsheet* to estimate the CIC database, and to specify the SQL Server database data and log file size in the Database Configuration screen in IC Setup Assistant during the CIC server installation.

If these planning tasks were not completed, we recommend expanding the file size to final size immediately after the new CIC database has been created, so that it can be allocated in a single contiguous block. It is not acceptable to create a 500 MB database, and then allow it to grow by small increments to a size of several gigabytes. When the database file(s) are required to grow repeatedly, the file space allocations will probably not be contiguous with the initial file space. This is manifested as physical fragmentation, which degrades performance. Once report logging starts, the database will consume space quickly, and may use many gigabytes per month, depending on the call load.

SQL Server configuration

We strongly recommend configuring SQL Server for optimum performance.
- Place database transaction log files (for all user databases) on a separate set of disks from the database data files. It is preferable to use RAID 1 for the transaction log files rather than RAID 5, for performance reasons.
- Ensure that Tempdb has an adequate size. In addition, Tempdb can be placed on its own disk(s) for optimum performance.

SQL Server database maintenance

Use the normal database backup procedures as described in the Microsoft SQL Server documentation.

CIC Database Configuration options for SQL Server

We offer two CIC Database Configuration options to allow database administrators the flexibility to create the database using different accounts with different permissions without sharing those credentials, and also give the freedom to have this work performed before the CIC server installation begins.

Option 1: Typical CIC installation sequence for SQL Server using IC Setup Assistant

When running IC Setup Assistant as part of the CIC server installation, Setup Assistant prompts for CIC Database Configuration information for SQL Server. Setup Assistant performs the necessary database creation and configuration for CIC during the commit stage.

This method is most commonly used and is highly recommended.

Option 2: Database creation scripts

Manually run the database creation scripts to create the CIC database any time prior to the CIC server installation.

SQL Server database creation/upgrade scripts for the latest release are available in the \Installs\Additional Files\SQL directory on the CIC 2016 R1 or later release and patch iso .files. The zip file is also available on the Downloads page at https://help.genesys.com/pureconnect/secure/Downloads.aspx   .

> **Important**: Migrating data between 2.4 or 3.0 and 2015 R1 or later versions of CIC is *not* covered in this content. For more information, see the Interaction Migrator Technical Reference.

When running IC Setup Assistant as part of the CIC server installation, **make sure to complete the database-related screens in IC Setup Assistant** to configure CIC to use the database. In the **Configure the IC Database Name** screen, choose to use an existing database.

This option is the most complex and requires manual SQL execution. This method is provided for sites where the database administrator doesn't want to share credentials or wants to know what the scripts will do ahead of time.

Use Active Directory accounts with SQL Server

An organization can use Windows Active Directory accounts in place of the default SQL accounts that CIC creates. See Using Active Directory Accounts with SQL Server in CIC in the PureConnect Documentation Library to learn how to use Corporate Windows Domain or Active Directory users in CIC reporting and client applications.

Oracle

Genesys recommends using a dedicated Oracle server computer for CIC database storage. If an Oracle server is already installed on the same network as the CIC server, that server may be used for CIC database storage.

Fulfill the requirements described in this section before the CIC server installation:

- Supported Oracle server versions. See System Software Requirements in the PureConnect Documentation Library for the latest requirements.

- Oracle server security settings. The port that Oracle server uses must be unblocked or available through a firewall. This is necessary to successfully configure the CIC database in IC Setup Assistant. Port 1521 is the default port, but may be set to other values during the Oracle server installation.

- Oracle ODBC driver/Oracle client
- Tablespace planning
- Oracle configuration
- Oracle database maintenance
- CIC Database Configuration options for Oracle

Oracle ODBC driver/Oracle client

The CIC server and client workstations running Interaction Reporter and/or Interaction Report Assistant in IC Business Manager use the Oracle ODBC driver in their communications with the database server.

It is essential that the **32-bit version of the Oracle ODBC driver is installed on the CIC server**, even though the CIC server is running the 64-bit version of Microsoft Windows. CIC programs are 32-bit, and require the 32-bit Oracle ODBC drivers to function properly.

Install the **Oracle client** and the **Oracle ODBC driver (32-bit)** on:

- The CIC server
- Client workstations that will run Interaction Reporter and/or Interaction Report Assistant in IC Business Manager

> **Note**: Interaction Optimizer requires Oracle 12.2 client to be installed as the default Oracle client. If the default Oracle client is not version 12.2, then you must set the ORACLE_HOME environment variable to specify the Oracle client install location.

Oracle instance alias name

In order for reports to run correctly, the Oracle instance alias name (specified in TNSNames.ora) must be consistent between the CIC server and client workstations that will run Interaction Reporter and/or Interaction Report Assistant in IC Business Manager. When configuring the Oracle client on client workstations, use the same alias name specified in the CIC server's tsnames.ora file.

Tablespace planning

CIC tables and indexes are stored in Oracle tablespaces. We strongly recommend storing the tables and indexes in different tablespaces, and separate them from the data contained in other applications that might already exist on the Oracle server.

Use the CIC Database Space Planning Spreadsheet

See the previous section under SQL Server about the *CIC Database Space Planning Spreadsheet*. Although the spreadsheet does not have specific Oracle calculations, the information generated is accurate enough to plan for Oracle.

Create the tablespaces before the CIC installation

Create the data and index tablespaces for the CIC database *before* beginning the CIC server installation.

During the CIC server installation, enter the appropriate data and index tablespace values in the IC Setup Assistant database configuration screens. IC Setup Assistant then configures the database.

There are three different tablespace planning scenarios:

Tablespace planning scenario #1 (Recommended)

If there is enough disk space on the Oracle server, we suggest using the *CIC Database Space Planning Spreadsheet* to plan how much space will be needed for the new CIC data and index tablespaces.

Create the tablespaces using Oracle Enterprise Manager, or use the ora_eic_TS.sql script, available on the Utilities and Downloads page at https://help.genesys.com/utilities-and-downloads.html.

The IC Setup Assistant database configuration screen will ask for the tablespace names to use, which would be the tablespaces that are created in this step using Oracle Enterprise Manager or the ora_eic_TS.sql script.

Tablespace planning scenario #2

If the Oracle server doesn't have enough disk space to create new tablespaces, but there is enough unused space on existing user tablespaces (don't use SYSTEM tablespace), use the existing user tablespaces to store CIC data.

It's good practice to separate different applications' data to different tablespaces. Pick the empty tablespaces for CIC data, and do not put any other application's data into a CIC tablespace unless it won't be used for CIC anymore.

Tablespace planning scenario #3

If neither disk nor existing tablespace have the minimum required free space, we suggest adding more disk space before beginning the CIC server installation.

Oracle configuration

When running IC Setup Assistant against an Oracle database residing in a cluster, the CIC server must be able to use the configured TNSNames.ora file to resolve to the appropriate database server. Before beginning the CIC server installation, we recommend using the Oracle client on the CIC server to validate that the connection to the clustered Oracle database can be established.

Disclaimer: In case if IC Setup assistant gives an error due to the old version (Oracle in OraClient12Home1_32txt') existence in the ODBC drivers. Delete the ODBC driver 'Oracle in OraClient12Home1_32txt' using below path in registry. After deleting the old version 12c from ODBC drivers, the Oracle19c DB connection should be successful.

HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\ODBC\ODBCINST.INI\ODBC Drivers
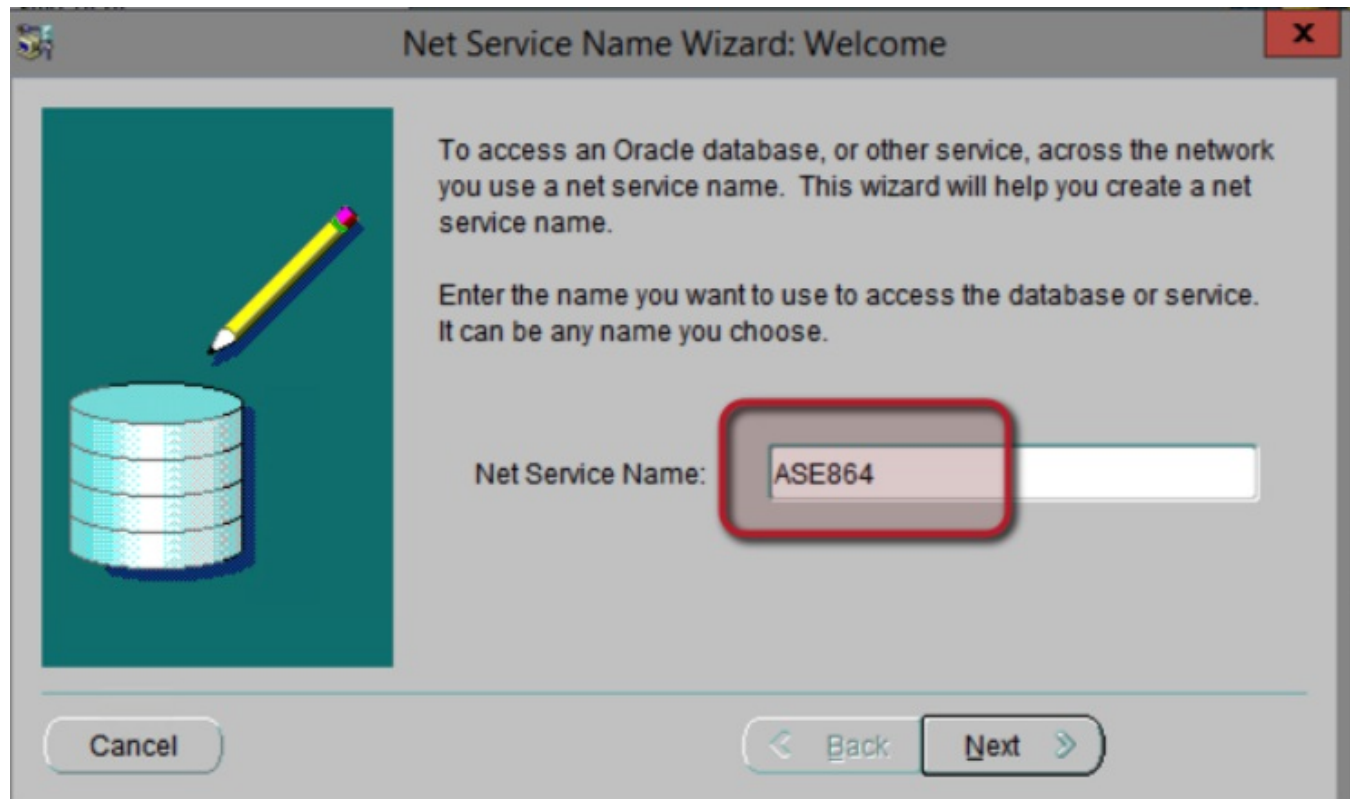
Oracle database maintenance

Use the normal database backup procedures as described in the Oracle server documentation.

CIC Database Configuration options for Oracle

We offer two CIC Database Configuration options to allow database administrators the flexibility to create the database using different accounts with different permissions without sharing those credentials, and also give the freedom to have this work performed before the CIC server installation begins.

Option 1: Typical CIC installation sequence for Oracle using IC Setup Assistant

When running IC Setup Assistant as part of the CIC server installation, Setup Assistant prompts for CIC Database Configuration information for Oracle. Setup Assistant performs the necessary database creation and configuration for CIC during the commit stage.

This method is most commonly used and is highly recommended.

Option 2: Database creation/upgrade scripts

Manually run the database creation scripts to create the CIC database any time prior to the CIC server installation.

Oracle database creation/upgrade scripts for the latest release are available in the \Installs\Additional Files\SQL directory on the CIC 2016 R1 or later release and patch iso .files. The zip file is also available on the Downloads page at
https://help.genesys.com/pureconnect/secure/Downloads.aspx   .

> **Important**: Migrating data between 2.4 or 3.0 and 2015 R1 or later versions of CIC is *not* covered in this content. For more information, see the Interaction Migrator Technical Reference.
>
> When running IC Setup Assistant as part of the CIC server installation, complete the database-related screens in Setup Assistant to configure CIC to use the database. In the **Configure the IC Database Schema** screen, choose to use an existing database.

This option is the most complex and requires manual SQL execution. This method is provided for sites where the database administrator doesn't want to share credentials or wants to know what the scripts will do ahead of time.

Data retention

The following data retention topics apply to all database servers:
- Reporting data log purges
- Recording data purges
- Tracker data purges
- Optimizer data purges
- Reporting data deletion errors

Reporting data log purges

By default, CIC automatically purges 400 days (13 months) of Reporting data. The default purge runs nightly and attempts to purge all data older than 400 days from each of the logs.

After CIC is installed and configured, configure log purge settings in Interaction Administrator to:
- Schedule the time of day for the data log purge to take place, and how often the purge should run. Configure these settings in the Interaction Administrator **Site:Server** container. Double-click **Configuration** and select the **Report Log Purging** tab.
- For each report log (base or custom), specify how long the report log data should be retained, and whether the report log should be purged automatically or not. Configure these settings in the Interaction Administrator **System Configuration:Report Logs** container. Double-click a report log and select the **Retention** tab. Repeat for the other report logs listed.

Recording data purges

By default, Recording data purging is *not* enabled.

After CIC is installed and configured, configure purge settings in the **Interaction Recorder Policy Editor** in the Interaction Administrator**Interaction Recorder** container.

To activate the policy editor, click on the **Policy Editor** container underneath the **Interaction Recorder** container, and then double-click **Configuration**. Once the Interaction Recorder Policy Editor finishes launching, recording retention is configured through Retention policies. The **Default Storage Location policy** is created during Interaction Recorder installation, and it can be used to implement a retention period for all recordings, or new retention policies can be created that can also implement a retention period for a subset of all recordings. To implement a retention period, a retention policy must have the **retention period set to** action checked. The period can be set to Forever, or for a duration of any number of days, weeks, months, quarters, or years. In addition, the **purge the recording or media only** action must be checked, and the action must be set to **purge the recording and media** so that the database will be purged along with the recorded media.

> **Important**: When editing an existing retention policy, the policy is not active until the **Apply** button is clicked. Further, if a retention period is added to or changed on an existing retention policy, then the **Re-apply** button must be clicked. When the Re-apply button is clicked, the Reapply retention policies screen appears, and you want the retention period changes to take effect for all recordings, make sure to select the **Re-apply to all recordings** checkbox before clicking OK. If that isn't done, then the new/changed retention period will only be applied to new recordings.

Tracker data purges

By default, Tracker data purging is *not* enabled.

After CIC is installed and configured, configure purge settings in the Interaction Tracker container in Interaction Administrator.

The default nightly purge is 34 days. The default purge attempts to delete all data older than 34 days from the database.

Optimizer data purges

By default, Optimizer data purging is *not* enabled.

Currently, Interaction Administrator does not contain any purge setting configuration for Interaction Optimizer. Customers are responsible for removing old forecast schedule entries if they choose to do so.

Reporting data deletion errors

CIC creates NT Event Log entries for each Reporting log when data is deleted. Any errors while attempting to delete data will also appear in the NT Event Log. Possible error causes are "Timeout", meaning a timeout from trying to perform a very large delete; and "Out of space", meaning not enough transaction space is available to perform deletion of rows. These errors are not critical and will not immediately cause CIC operational problems, but do not allow these errors to continue. Contact the database administrator, the CIC reseller, or PureConnect Customer Care to intervene and resolve the problem.

Required database information

Before running the CIC server installation, make sure that the following standard database administrator account information is available, typically provided by the database administrator. IC Setup Assistant requires it.

This section includes:
- Database server name
- Administrator account and password
- Passwords for CIC user accounts

Database server name

One of the following:
- SQL Server name
- Oracle service name

The SQL Server or Oracle service that will host the database must actively be running on a SQL Server or Oracle server and on the network.

Administrator account and password

One of the following:
- SQL administrator account and password
- Oracle service administrator account and password

User name and password of the SQL or Oracle administrator account to use for the CIC installation.

CIC Database Configuration in Setup Assistant uses this account to connect to the database server, create the database, and to create the three standard CIC database user accounts.

Passwords for CIC user accounts

CIC Database Configuration in Setup Assistant creates the tables and grants permissions to these standard database user accounts in a new database and verifies this information for existing databases:

- **ic_admin**: Admin account with the db_owner role and owns all the tables on the database server with "dbo" schema. It can be used to perform administrative tasks on the database (performance tuning, backups, etc). IC_Admin is used by the IC Tracker and IC Report Logging Data Sources defined in Interaction Administrator.
- **ic_user**: User account used by CIC server components that reads and writes to the database.
- **ic_readonly**: Read-only account used by the CIC server and client components query the database.

Create the password for these accounts. The database administrator may have a password policy (for example, at least six characters long, must start with a number, etc.).

Database Schema Change Library

The Database Schema Change Library can help you with upgrading database customizations. The library contains reports detailing the database schema changes between your current CIC release/patch and a target CIC release/patch. The report consists of three collapsible sections:

- Objects that exist in the current and target database schema versions but are different.
- Deprecated objects in the current version. Deprecated objects remain in the database. A future database version can use a deprecated object.
- New objects in the target version.

For example, use the Database Schema Change Library to access a report to identify database schema changes that can affect your custom reports.

Access a report in the Database Schema Change Library

1. Open the Database Schema Change Library.
2. Select **MSSQL** or **Oracle** for the database type. For example, select MSSQL if your implementation uses Microsoft SQL Server Database.
3. Select the current database version. For example, if your implementation uses CIC 2018R5 P34, select **ININ_2018R5_P34**.
4. Select the target database version. For example, for a report listing the database schema changes between CIC 2018R5 P34 and CIC 2019R4 P12, select **ININ_2019R4_P12** as the target database version.
5. Click **Get Report**.
6. To view the information in a report:

   - Click a section to expand the information in that section.
   - Click an object listed in an expanded section to view the details at the bottom of the report.

Example Report

This example shows a report for a Microsoft SQL Server database. The report displays the:

- Database schema changes between CIC 2018R5_P34 and CIC 2019R4_P12.
- Expanded the first section listing the objects that exist in the current and target database versions but are different.

Report Date: 15 Jun 2020 4:53 PM

Type	Owner	(Microsoft SQL Server Database) ININ_2018R5_P34 Object Name		(Microsoft SQL Server Database) ININ_2019R4_P12 Object Name	Owner
(20 objects that exist in both but are different)					
Table	dbo	Individual	≠	Individual	dbo
Table	dbo	InteractionSummary	≠	InteractionSummary	dbo
Table	dbo	IO_NamedSchedule	≠	IO_NamedSchedule	dbo
Table	dbo	IO_VolumeForecast	≠	IO_VolumeForecast	dbo
Table	dbo	IR_QForm	≠	IR_QForm	dbo
Stored Procedure	dbo	spic_insert_sent_sms_message	≠	spic_insert_sent_sms_message	dbo
Stored Procedure	dbo	spinin_GetStatSetKeys	≠	spinin_GetStatSetKeys	dbo
Stored Procedure	dbo	spinin_insert_IntxSumDetail4	≠	spinin_insert_IntxSumDetail4	dbo
Stored Procedure	dbo	spinin_insert_SegmentSummary4	≠	spinin_insert_SegmentSummary4	dbo
Stored Procedure	dbo	spinin_purge_qn_lookup	≠	spinin_purge_qn_lookup	dbo
Stored Procedure	dbo	spintx_get_IntxParVw1ByIntxID	≠	spintx_get_IntxParVw1ByIntxID	dbo
Stored Procedure	dbo	spintx_insert_contact	≠	spintx_insert_contact	dbo
Stored Procedure	dbo	spintx_insert_indivaddress	≠	spintx_insert_indivaddress	dbo
Stored Procedure	dbo	spintx_insert_locaddress	≠	spintx_insert_locaddress	dbo
Stored Procedure	dbo	spintx_insert_orgaddress	≠	spintx_insert_orgaddress	dbo
Stored Procedure	dbo	spir_get_avg_wg_score	≠	spir_get_avg_wg_score	dbo
Stored Procedure	dbo	spir_get_scrcrd_result_chunk2	≠	spir_get_scrcrd_result_chunk2	dbo
Stored Procedure	dbo	spir_ins_qform	≠	spir_ins_qform	dbo
Stored Procedure	dbo	spir_ins_qform2	≠	spir_ins_qform2	dbo
Stored Procedure	dbo	sprpt_CRQueueSummary	≠	sprpt_CRQueueSummary	dbo
(0 objects that exist only in ININ_2018R5_P34)					
(42 objects that exist only in ININ_2019R4_P12)					

Database changes and troubleshooting

To make database configuration changes or resolve installation or database-related problems *after* the CIC server installation, re-run IC Setup Assistant and select the Database task to make changes to the Setup Assistant database configuration screens.

Database Logging

Database logging is the mechanism by which CIC transports Reporting, Interaction Recorder, Interaction Tracker, etc. data from the CIC server to the database server and stores it. It is performed via Persistent Message Queuing (PMQ). PMQ is embedded within the CIC application on a CIC Server with a connection to a database server.

- About PMQ
- Directory paths for file storage
- Storage file naming
- Storage cleanup process
- Data recovery

About PMQ

PMQ is a queuing system that allows data destined for the database to queue to memory and/or disk when the database is temporarily unavailable, or if there is a backlog of data (the data generated by CIC temporarily exceeds the rate by which it can be inserted into the database). Use of this system guarantees that critical data generated by Reporting, Interaction Recorder, Interaction Tracker, etc. is not lost during expected (e.g. database maintenance, backups) or unexpected database outages. Not all CIC components that insert data into the CIC database use PMQ. For example, CIC Contacts and Speed Dial lists, as well as data inserted with the Database tools in Interaction Designer, do not use PMQ and thus require an active database connection. Furthermore, PMQ does not guarantee *availability* of the data. For example, reports cannot be run, or archived recordings accessed, during database outages.

Note: PMQ does not support processing files from a previous version.

Directory paths for file storage

The CIC server installation by default stores PMQ data, when PMQ must queue to disk, in \I3\IC\PMQ. This location may be changed, to store potentially large amounts of PMQ data on a dedicated drive for example, after CIC installation by modifying the registry value at *HKLM\Software\Interactive Intelligence\PersistMsgLib\PersistMsgBufferPath*.

Because PMQ has the potential to generate large amounts of data on disk, monitoring the available disk space on the PMQ drive should be done, especially during known database outages. Interaction Supervisor can be used to indicate when queuing to disk is occurring and issue an alert.

Under the PMQ root directory, subdirectories are created for each CIC subsystem that uses PMQ. These subdirectories in turn contain subdirectories with queue names (one subsystem can segregate PMQ data into multiple queues). Within the queue name directories are the actual PMQ files for data stored on disk.

For example, there may be files such as

- \I3\IC\PMQ\StatServer\IC Report Logging\72405237.I3P - data queued to disk (see "Storage file naming").
- \I3\IC\PMQ\StatServer\IC Report Logging\72405237.I3C - count file for above data file (see "Storage file naming").
- \I3\IC\PMQ\AdminServer\IC Report Logging\72405203.ERR - data that experienced an unexpected error when being inserted into the database (see "Data recovery").

The subsystems that use PMQ, and thus directories that exist under the PMQ directory, and the tables they update, are as follows:

- **AdminServer:** UserWorkgroup, LineConfig, LineGroupConfig, LineGroupLines, AccountCodeMirror.
- **IpServer:** AgentActivityLog, AgentQueueActivationHist, ILineGroupStats, ILineStats, IAChangeLog, ICDirChangeLog, FaxEnvelopeHist.
- **IP:** Interaction Processor is responsible for any data submitted through the Logging Custom Passthrough tool.
- **IRServer:** various Interaction Recorder-related tables.
- **iwp_server:** various Interaction Web Portal-related tables.
- **OptimizerSrv:** various Interaction Optimizer-related tables.
- **ProcessAutomationServer:** various Interaction Process Automation-related tables.
- **StatServer:** AgentServiceLevelOverflows, AgentStatistics, AgentStats, AgentStatus, DQConfig, DQServiceLevelOverflows, DQStatistics, DQStatus, SGServiceLevelOverflows, SGStatistics, StatDimensions, StatProfile, InteractionCustomAttributes
- **TrackerSvr:** InteractionTracker has two directories associated with it, PMQTracker and PMQSegmentLogs. PMQTracker stores various Tracker tables and is used only if the customer has a Tracker or a Recorder license. PMQSegmentLogs stores data from the tables InteractionSummary and InteractionSegmentDetail, regardless of whether or not a customer has a Tracker or a Recorder license.

Storage file naming

Storage files for each process will have a unique, number-sequenced name to guarantee FIFO in-order delivery and avoid any errors during a restore-recover scenario. There are two physical files for each saved buffer of data; the data messages are stored in files with the extension I3P, and a count of how many messages were originally written in a file with the extension I3C.

> **Note**: The count (I3C) files are not required for normal operation. If the I3C files don't exist, the PMQ library will generate an approximation based on the file and message size for each I3P file. These counts are strictly for quick reference, they do not affect data storage and recovery. Do not be concerned if they do not exist in your storage directories.

Both Persistence (I3P) and Count (I3C) files will have the same sequenced filename, and this sequence (ranging from 1000 to 99999) is incremented and saved in the registry. Never alter Recovery Key values, as that could cause immediate data loss if the system is writing storage files or has data stored for recovery.

The storage file name is formed from a three-character code then a five-digit unique sequence number. Only the sequence number is actually used to order the files for recovery. The beginning three-character code represents when the file was created (1 to C for month, followed by the two-digit day of the month) for an easy determination of approximate file age, even if the system clock has been changed, or the files copied or restored from backup. It has no use during recovery.

If the program using PMQ enables error queuing, a third type of file may appear in the storage directories. This is an I3P-type file with an extension of .ERR, which contains any data which could not be processed correctly. The method of recovery of these error-queued files depends on the PMQ-enabled application.

Storage cleanup process

If the system is storing data into disk files and the free space on the storage drive drops below the total file space limits for PMQ storage, files will be deleted to avoid causing server failure. The storage cleanup process occurs hourly for each queue/application. Each queue requires a minimum of 1 GB of free space. Data loss will occur if this amount of disk space isn't available. Each queue is monitored separately, so data loss may not be complete if the first queue's cleanup removed the low disk space condition.

If the free space falls below the specified minimum, the storage files for the oldest day will be deleted. This procedure will occur repeatedly until available disk space is again above the defined minimum storage limit.

Note: The current day's data won't ever be deleted, regardless of storage setting.

The default values for all applications using the PMQ tools can be altered by creating DWORD registry values under the PersistMsgLib key discussed above for the root directory value. The parameter is **PersistMsgMinDiskMegAvail** (default 1024). This will override **ALL** PMQ-enabled applications, so be very careful about adding this override entry.

Data recovery

When an interrupted database connection is once again available, PMQ enters recovery mode and processes I3P/I3C files on disk. PMQ will always process the oldest storage file first, in file name sequence number order. Once all messages within a storage file are processed, the I3P and I3C files are deleted.

When inserting data, and an unexpected error (other than the database being unavailable) occurs, the data is stored in a file with the extension ERR. For example, a table may have been unintentionally (and external to CIC) removed from the database, generating a SQL error when the insert is attempted. These .ERR files will not be reprocessed and will remain on disk until manually removed or renamed. To reprocess this data, rename the ERR files extension to I3P and restart the corresponding CIC subsystem. However, if the condition that caused the original error still exists, the data will again fail to insert and generate another ERR file.

To process error files for the TrackerServer, IRServer, and OptimizerServer subsystems, use the **sendcustomnotification** following command:

- Sendcustomnotification TrackerServer PMQRetry
- Sendcustomnotification IRServer PMQRetry
- Sendcustomnotification OptimizerServer PMQRetry

This command allows the ERR files to be processed without having to manually rename the files with the I3P extension and restarting the subsystems. However, for other PMQ subsystems, like Statserver, this process is not enabled and would require the ERR files to be renamed and the subsystem restarted.

Fax Support

The CIC server (Fax server subsystem) and Interaction Media Server process, transmit, and receive faxes to and from client workstations. The CIC server handles faxes for stand-alone fax machines. Interaction Fax on client workstations enables users to receive, view, send, and monitor faxes.

- Supported fax platforms: T.38 and T.30 (fax over IP)
- Fax installation and configuration on the CIC server
- Create and configure standalone fax machines
- Interaction Media Server faxing
- Fax components on client workstations

## Supported fax platforms: T.38 and T.30 (fax over IP)

Faxes transmitted or received over the IP network on a CIC Server and Interaction Media Server use the T.38 or T.30 protocol if supported by the remote device. The T.30 protocol is supported in CIC 4.0 SU 6 and CIC 2015 R1 or later.

Unless otherwise specified, the PureConnect QoS driver is automatically installed on the CIC server and Interaction Media Server to add QoS to fax over IP protocols.

By default, CIC uses T.38 for fax over IP. Using the Default Station Configuration/Global SIP Station dialog box or the Station Configuration/Configuration dialog box for Transport in Interaction Administrator, you can:

- Disable fax for over IP.
- Enable T.30 faxing only.
- Enable T.38 faxing only.
- Enable fax attempts to first use T.38 followed by T.30.
- Enable fax attempts to first use T.30 followed by T.38.

For more information, see Interaction Administrator Help.
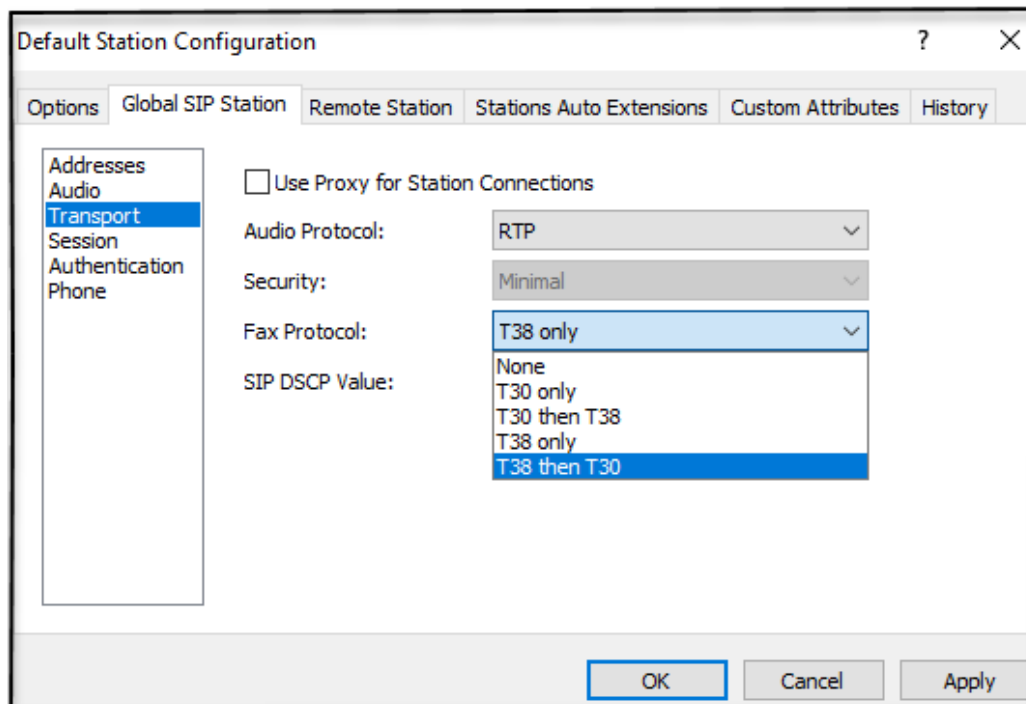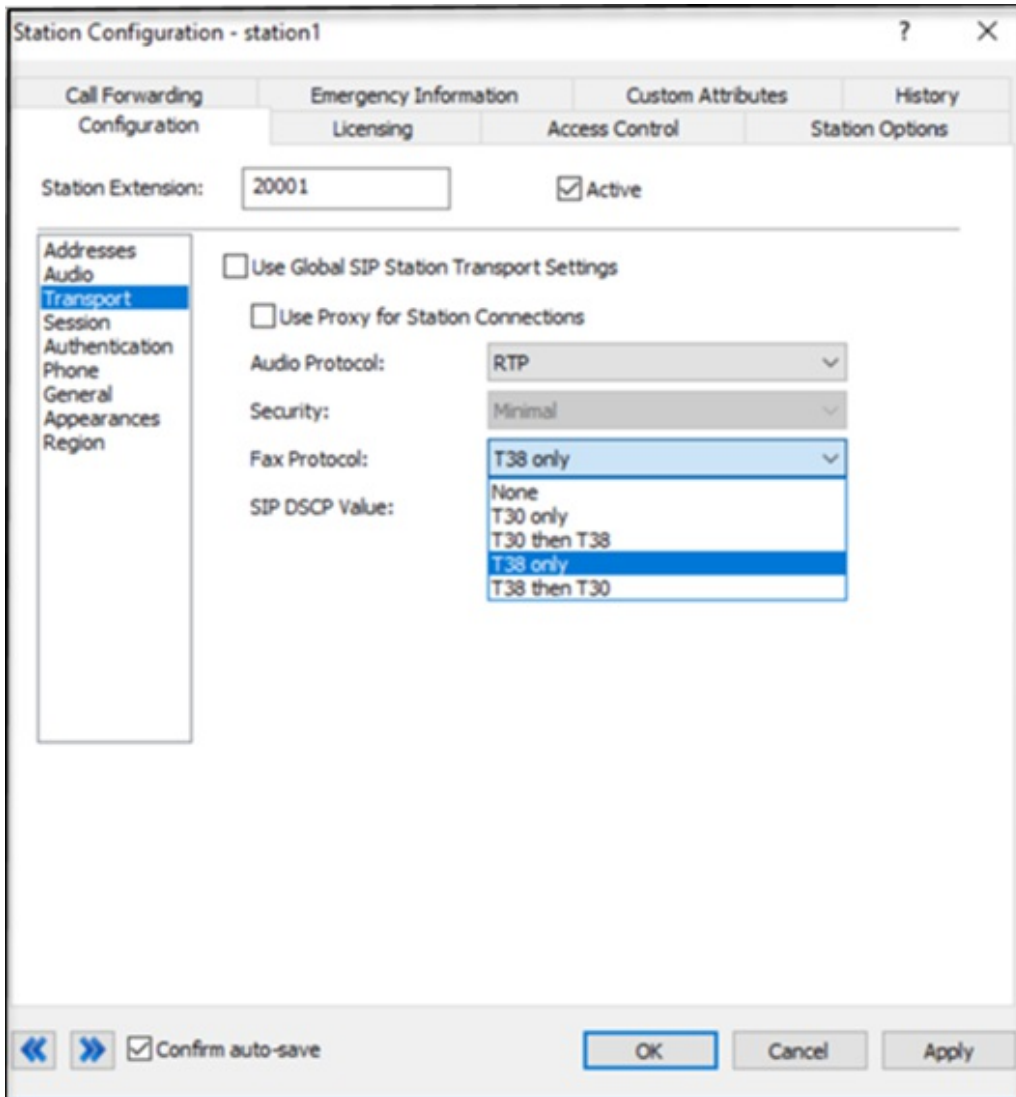
Fax installation and configuration on the CIC server

The following fax components are automatically installed on the CIC server as part of the CIC server installation:

- **Fax server** subsystem - processes faxes from client workstations and standalone fax machines
- **Fax printer driver** - renders fax cover pages on the CIC server. The printer spooler service must be running on the CIC server to install the fax printer driver.
- **Interaction Fax** - enables users to receive, view, send, and monitor faxes easily from client workstations. Interaction Fax on the CIC server is useful for debugging.

Additional configuration in **Interaction Administrator** is needed:

- If your implementation includes stand-alone fax machines
- If you wish to change default fax configuration settings or create fax groups.

Create and configure standalone fax machines

If your implementation includes stand-alone fax machines, create standalone **fax stations using Add Stations Assistant** when you run IC Setup Assistant or, post-installation, in Interaction Administrator. In Add Stations Assistant, select Stations connected by IP (SIP) to import a CSV list of SIP stations that includes stand-alone fax stations.

Note: Stand-alone fax stations do not have Interaction Fax capabilities.

You can perform the following additional fax configuration in Interaction Administrator. For more information, see Interaction Administrator Help.

Fax Configuration

In **Fax Configuration**, define default **Appearance** and other settings.

Fax Groups

In **Fax Configuration**, define the default **Fax Group** and create additional Fax Groups.

Fax Recipient

In **System Configuration->Mailboxes**, define **Fax Recipient**.
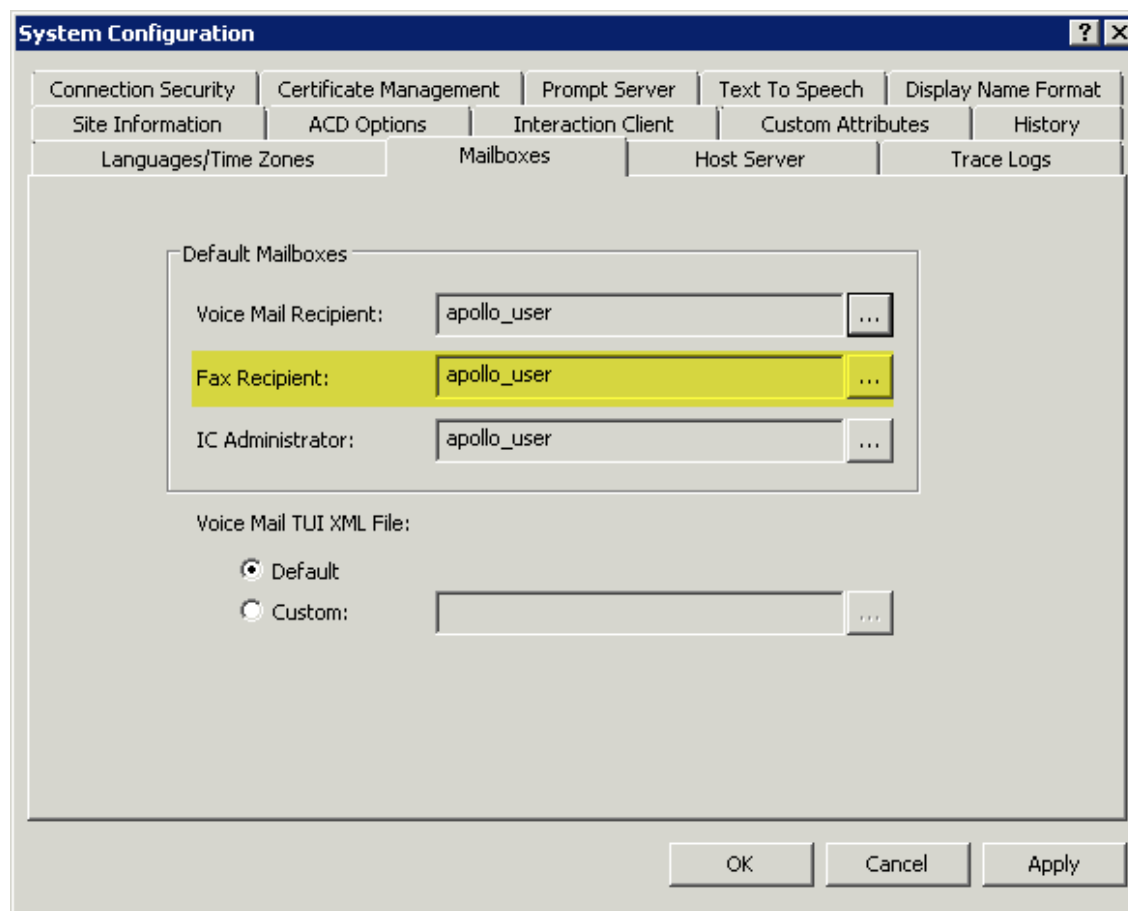
Interaction Media Server faxing

CIC uses Interaction Media Server to handle the transmission and reception of faxes to and from client workstations. For more information, see *Interaction Media Server Technical Reference* in the PureConnect Documentation Library.

This section includes:
- Interaction Media Server faxing process
- Interaction Media Server fax licensing

Interaction Media Server faxing process

This section describes how faxing works with Interaction Media Server.

Inbound faxes

1. An external source transmits a fax to a telephone number for a user extension in the CIC network.

   Note: Faxes sent to a station extension do not require audio processing through Interaction Media Server.

2. A gateway converts the analog fax data to the T.38 or T.30 protocol and sends the data to Interaction Media Server.
3. Interaction Media Server converts the fax data to the TIFF format image files and sends the files to CIC.
4. CIC attaches the fax images to an email message and addresses it to the associated user of the target station.
5. The user receives an email message with the fax attachment.

Outbound faxes

1. Using Interaction Fax, a user of a station sends a fax to an external telephone number.
2. CIC sends the fax data in the form of TIFF format image files to Interaction Media Server.
3. Interaction Media Server converts the TIFF format images of the fax to the T.38 or T.30 protocol and sends the data to the gateway that conveys communications for the external telephone number.
4. The gateway converts the T.38 or T.30 fax data to analog fax signals and sends that signal to the external telephone number.

Interaction Media Server fax licensing

Each simultaneous active fax, either inbound or outbound, requires a fax session license. Fax session licenses are defined in the PureConnect license.

If you exceed your fax session license count, the following events occur based on the direction of the fax:

- Inbound – These faxes fail and are not serviced.
- Outbound – CIC holds these faxes in a queue until a fax session license becomes available.

To determine how many fax session licenses are in use, use Interaction Supervisor and view the **Fax Licenses Available** statistic.

Fax components on client workstations

This section describes the Interaction Fax components that can be installed on client and administrator workstations.
- IC User Applications install - Fax components
- IC Business Manager Applications install - Fax components

IC User Applications install - Fax components

When you run the **IC User Applications 32-bit or 64-bit installs** on client workstations, **Interaction Fax** is selected by default in the **Custom Setup** screen. For more information, see "Client Workstation Installations."

> **Note**: Before you run the IC User Applications 32-bit or 64-bit installs on client workstations to install fax components, the printer spooler service must be running on the CIC server to install the fax printer driver.

The following fax components are installed on the client workstation:

- **Fax printer driver** - allows faxing of any document that can be printed. It supports landscape printing and various paper sizes.

> **Note**: Make sure that the correct IC User Applications version (32-bit or 64-bit) for the workstation is installed; it is necessary for printing faxes.

- **Interaction Fax** - enables users to receive, view, send, and monitor faxes easily from client workstations.

Interaction Fax on client workstations

Interaction Fax is a stand-alone, desktop application for managing faxes. Faxes are delivered to users via Microsoft Outlook, IBM Notes, or Novell GroupWise email.

Interaction Fax is launched once a document has been rendered to the fax printer driver. Users can view incoming faxes (I3F files) and specify envelope information to send a fax.

Interaction Fax is available from Start->Programs->PureConnect or as a shortcut on the desktop.

Included with Interaction Fax is **Interaction Fax Monitor**, which monitors the queue and transmission status of each fax. The Interaction Fax Monitor icon appears in the system tray, just like the Windows print monitor. For more information, see Interaction Fax Help and Interaction Desktop Help.

IC Business Manager Applications install - Fax components

When you run the **IC Business Manager Applications install** on administrator or supervisor workstations, **Interaction Fax Cover Page Editor** is selected by default in the **Custom Setup** screen. For more information, see "Client Workstation Installations."

Interaction Fax Cover Page Editor on client workstations

Installed on administrator or supervisor workstations with IC Business User Applications installed, the Interaction Fax Cover Page Editor enables the administrator to design fax cover pages with common plug-in locations for name, phone, comment, etc. The administrator can also edit standard templates available to users.

Interaction Fax Cover Page Editor is available from Start->Programs->PureConnect and also as a shortcut on the desktop. For more information, see Interaction Fax Cover Page Editor Help.

Install CIC

In this section
- CIC Server Installation
- IC Setup Assistant

CIC Server Installation

This section walks you through a new CIC server installation procedure for CIC 2015 R1 or later. The procedure includes installing the latest patch for the release.
- Step 1: Download and copy the CIC release .iso to a file server
- Step 2: Verify CIC server prerequisites
- Step 3: Run Install.exe
- Step 4: Load the CIC license file
- Step 5: CIC server install
- Step 6: PureConnect Documentation Library install
- Step 7: Interaction Text-to-Speech install
- Step 8: Interaction Firmware install
- Step 9: Interactive Update Provider install
- Step10: Restart to complete the release installation
- Step11: Apply the latest patch
- Step 12: Run IC Setup Assistant
- Step 13: Post-installation tasks
- Uninstall CIC

Step 1: Download and copy the CIC release .iso to a file server

CIC releases are distributed as .iso files. We recommend that you store the CIC release .iso file on a file server to avoid having to copy the .iso file to multiple servers.

1. Download the latest CIC release .iso, for example **CIC_2018_R1.iso**, from the Product Downloads page at https://help.genesys.com/pureconnect/secure/Downloads.aspx .
2. Copy the .iso file to a file server (non-CIC server) with a high bandwidth connection to the servers(s) onto which you will be running the CIC installs.
3. Mount the .iso file and share the contents to make them accessible to those servers.

> **Note**: Starting with 2019 R2, the CIC Language Pack and Prompt Pack installs for new CIC installations and updates for existing localized CIC systems are available on the 2019 R2 and later CIC Language Pack .iso file downloadable from the Product Downloads page at https://help.genesys.com/pureconnect/secure/Downloads.aspx . See "CIC Language Packs and Prompt Packs" optional install information in this document.

Step 2: Verify CIC server prerequisites

Verify that you have fulfilled all the prerequisites and performed all necessary pre-installation procedures for the CIC server, described in CIC server .

If you have not done so yet:
- Run GetHostID.exe from \Additional Files\GetHostID on the .iso share (needed for license file generation).
- Generate and download the license file to the CIC server as described in Order and generate the CIC 4.0 license.

Step 3: Run Install.exe

We recommend installing CIC releases using the installation utility (Install.exe) located in the \Installs directory on the .iso share. Install.exe is an enhanced tool that simplifies and automates many aspects of the manual install and update process.

Important: When Install.exe accesses the \Installs directory across a network share as recommended, the utility copies the installs to the server's local temp directory, then executes from there. Executing individual installs from a directory across a network share is not recommended.

Run Install.exe to select the CIC server components to install

1. Navigate to the \Installs directory on the CIC 2015 R1 or later .iso share and launch **Install.exe**.

Name	Date modified	Type	Size
Integrations	1/31/2019 9:51 AM	File folder	
InteractiveUpdate	1/31/2019 9:51 AM	File folder	
Off-ServerComponents	1/31/2019 9:50 AM	File folder	
ServerComponents	1/31/2019 9:49 AM	File folder	
Install	1/30/2019 7:09 PM	Application	4,648 KB

2. In the **Server Components** tab, select the **Interaction Center Server** and **IC Documentation Library** components. The **Interaction Firmware** component and the **Interaction Text-to-Speech** component are automatically selected when the Interaction Center Server component is checked.
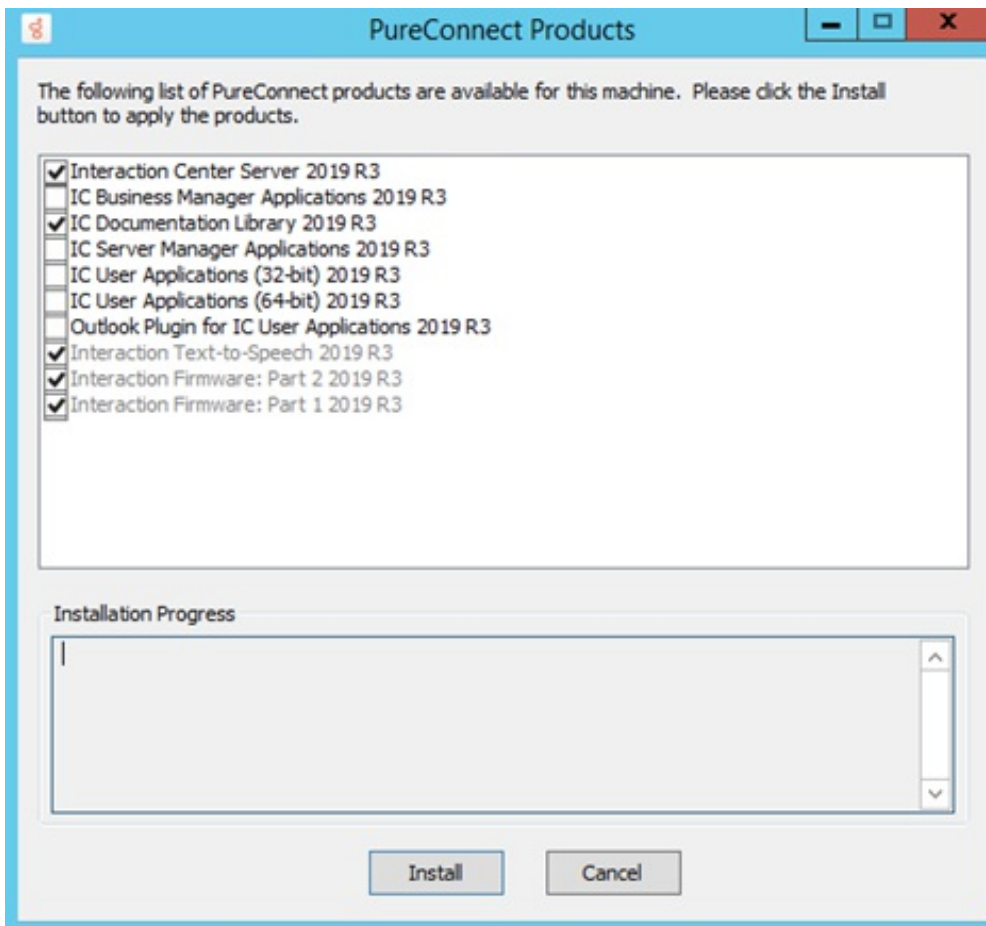
3. Open the **Interactive Update** tab and select the **Interactive Update Provider** component to install the Interactive Update Provider on the CIC server.

   Notes:

   The Interactive Update Provider and Interactive Active Client components cannot be installed on the same machine. If one is selected, the other is de-selected.

   If you wish to install the Interactive Update Provider on a separate server on the CIC network (stand-alone provider), skip this step. For more information, see the *Interactive Update Technical Reference* in the PureConnect Documentation Library.

4. Click **Install**.

5. If the following message appears, click **Fix Patch Cache** or **Cancel** to manually adjust the patch cache policy and run Install.exe again.
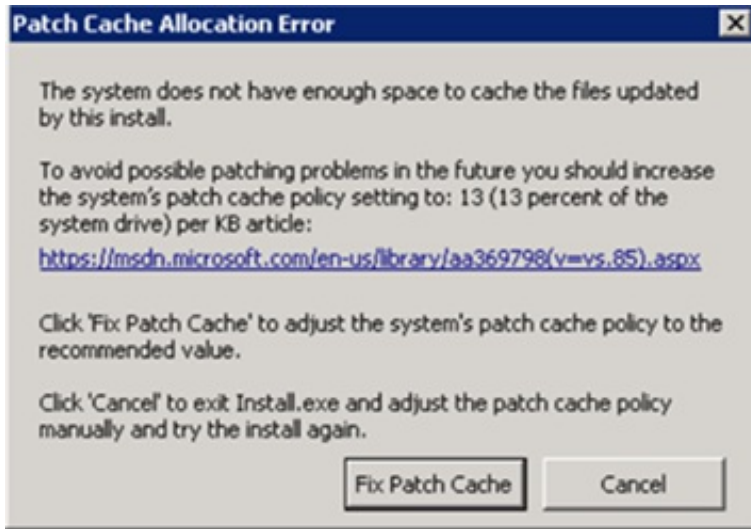
6. In the **Install Confirmation dialog** box, confirm your selections and click **OK**.
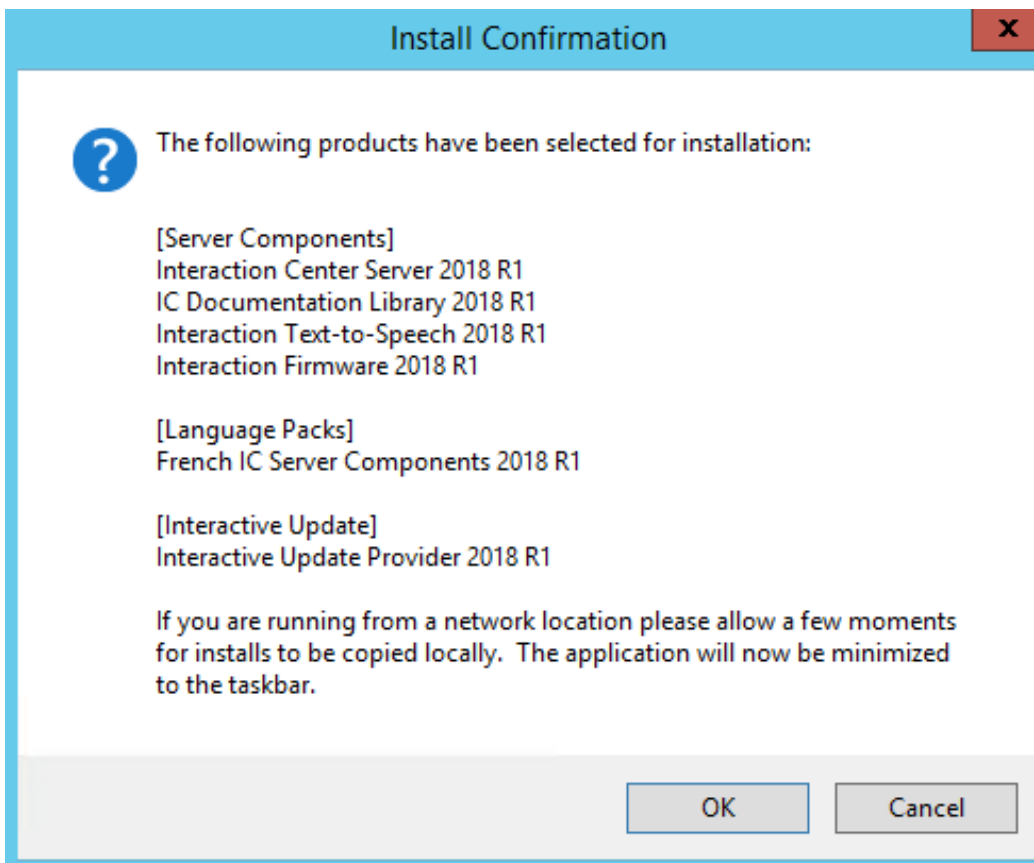
The utility minimizes to the toolbar and begins running the installs in the order selected.

Note: When Install.exe accesses the \Installs directory across a network share as recommended, the utility copies the installs to the server's local temp directory, then executes from there. This process takes a few minutes to complete.

Step 4: Load the CIC license file

Starting with CIC 2015 R2, Install.exe prompts for and loads the CIC license file prior to installing the selected install components.

Loading the license file at the start enables Install.exe to run more efficiently, bypassing the license file prompts within individual installs. This is especially useful for implementations that install multiple Language Packs.

Load the CIC license file

1. In the **Please load the license file** screen, navigate to the CIC license file you downloaded to the CIC server in Step 2.
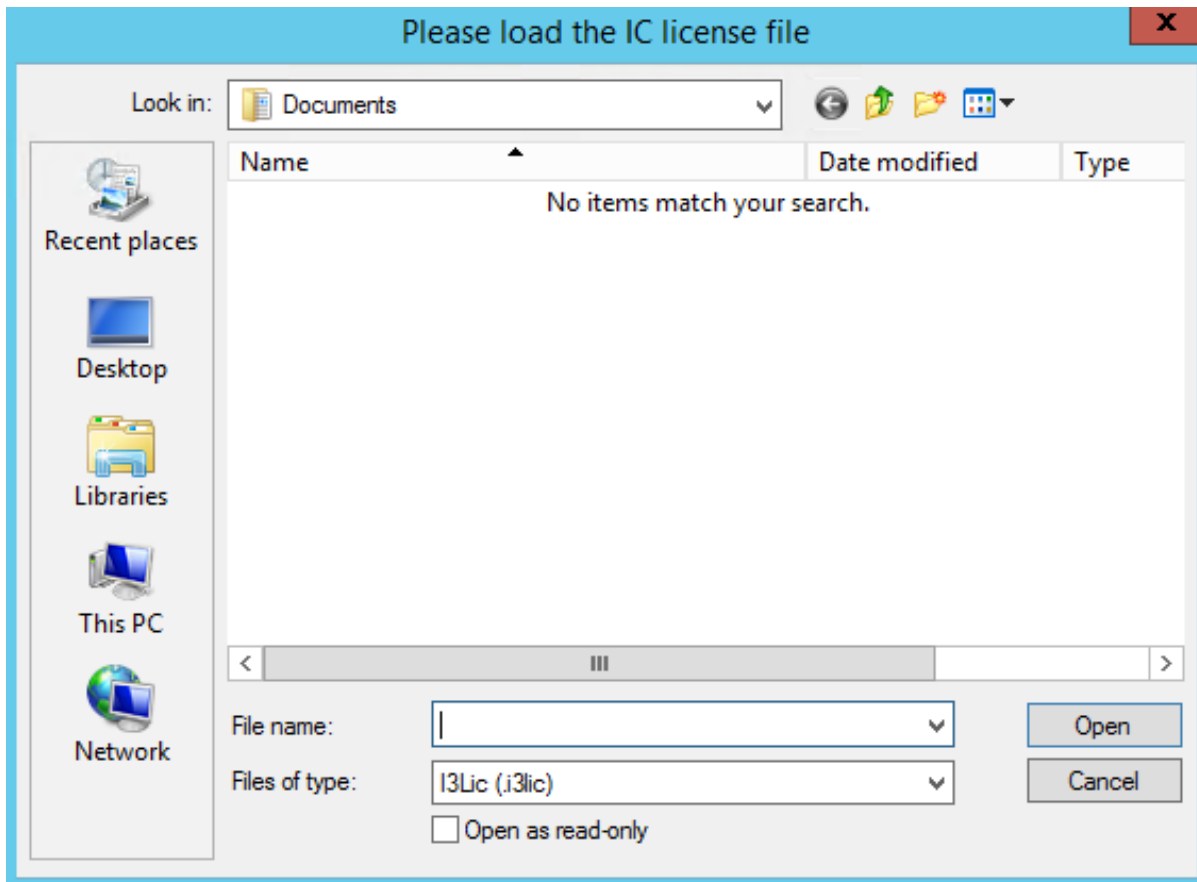
2. Select the license file and click **Open**.

Step 5: CIC server install

The CIC server installation program installs the CIC software. You must be logged in as a user with administrator privileges on the CIC server in order to run the CIC server install.

Before you start the CIC server install, review the following **QoS driver**-related information:

- When you run the CIC server install, the PureConnect QoS driver is silently installed and the certificate is added to the Trusted Publishers list. If your site has reasons for modifying this default behavior, you may wish to modify the QoS properties and run the CIC server install using Group Policy or other methods. Review PureConnect Customer Care KB article https://genesyspartner.force.com/customercare/pkb_Home?id=kA50B0000008R5H so that you can make the appropriate planning decisions for QoS driver installation.

CIC server install

1. On the **Welcome** screen, press **Next** to proceed to the next screen.
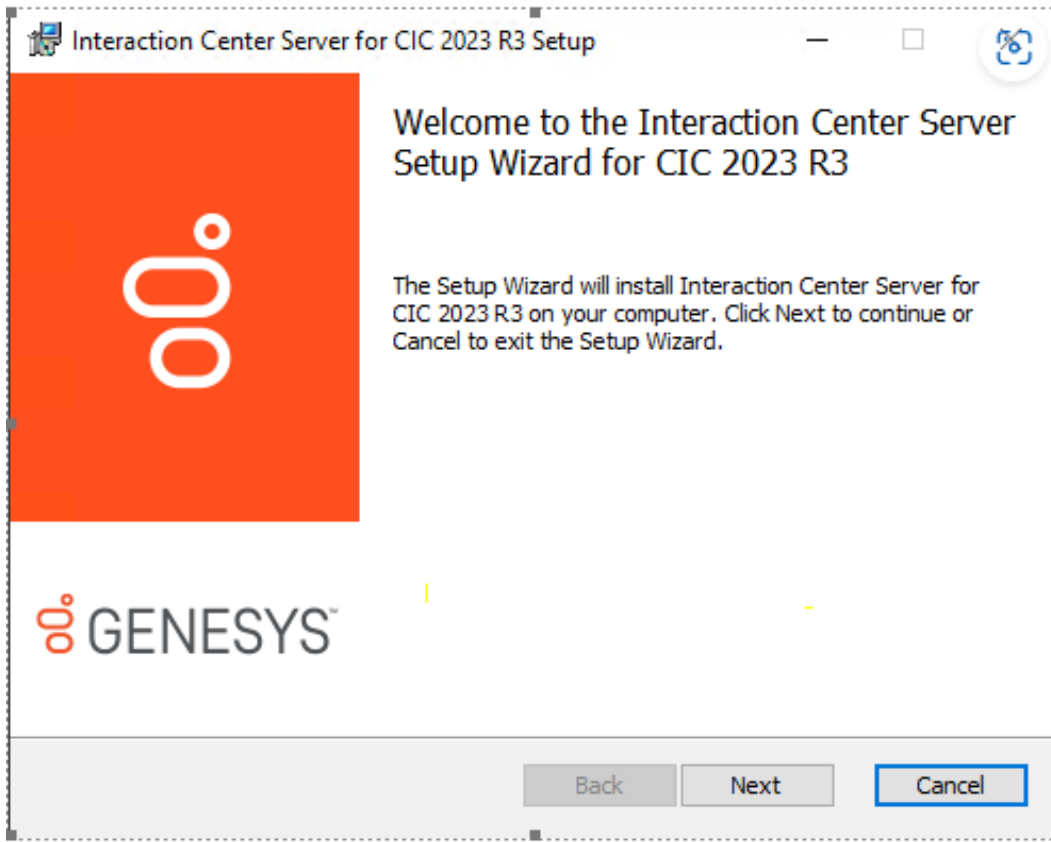
Note: The option to generate certificate signed using SHA-1, which was present in the older versions of CIC has been removed (from 2023 R3 onwards). The Product now generates certificates signed using SHA-256.

2. The **Domain User Validation** screen is pre-populated with account information for the logged-on user with administrator privileges on the CIC server. Enter the password associated with this account, and click **Next**.

   Administrative rights on the local machine are necessary for installing the software and other components that CIC uses. This account is used to start CIC Services.
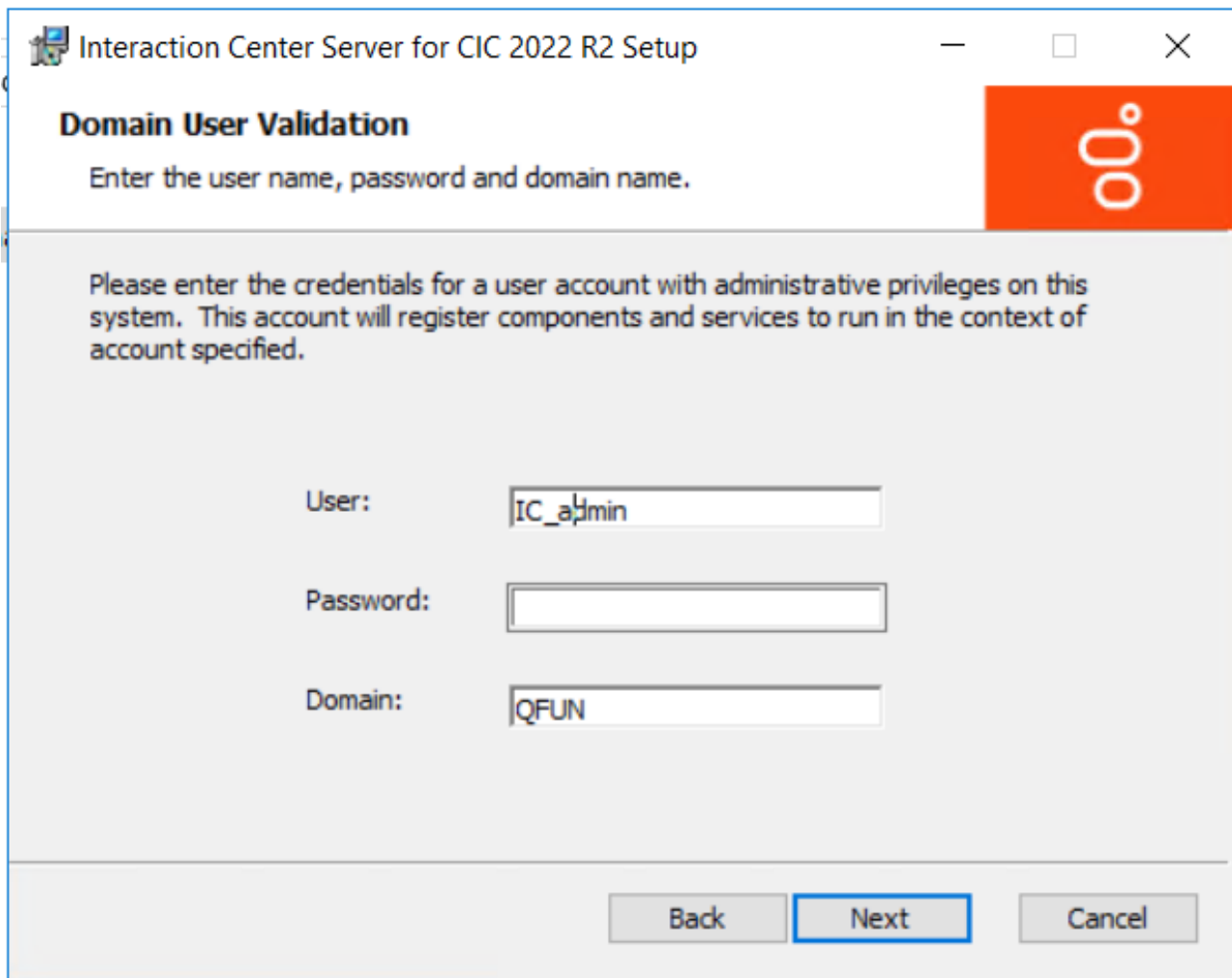
User

In most cases, the user is the CIC administrator account (Windows 2008 R2 or Windows 2012 R2 domain user account created specifically for the CIC administrator, with administrator privileges on the CIC server). If the network has a mail server, the CIC administrator account should also have an email profile for the mail client installed on the CIC server (e.g., Microsoft Outlook or IBM Notes). See "CIC server" for instructions on creating the CIC administrator account.

If the CIC server is not connected to the network at this time, the user is the currently logged-on user with administrative privileges on the CIC server. If this is the case, when you run IC Setup Assistant, you have the opportunity to change the administrator account. IC Setup Assistant configures the CIC Services to start by using this account.

Password

We recommend that you do not use a blank password.

Domain

In most cases, the name in this field is the network domain that the CIC server is in — the same domain as the mail server, if there is one on the network. If the CIC server is not connected to the network at this time, the name in this field is the CIC server name.

4. In the **IC Server Destination Folders** screen, specify the target drives for the following directories or keep the default directories, and click **Next**.
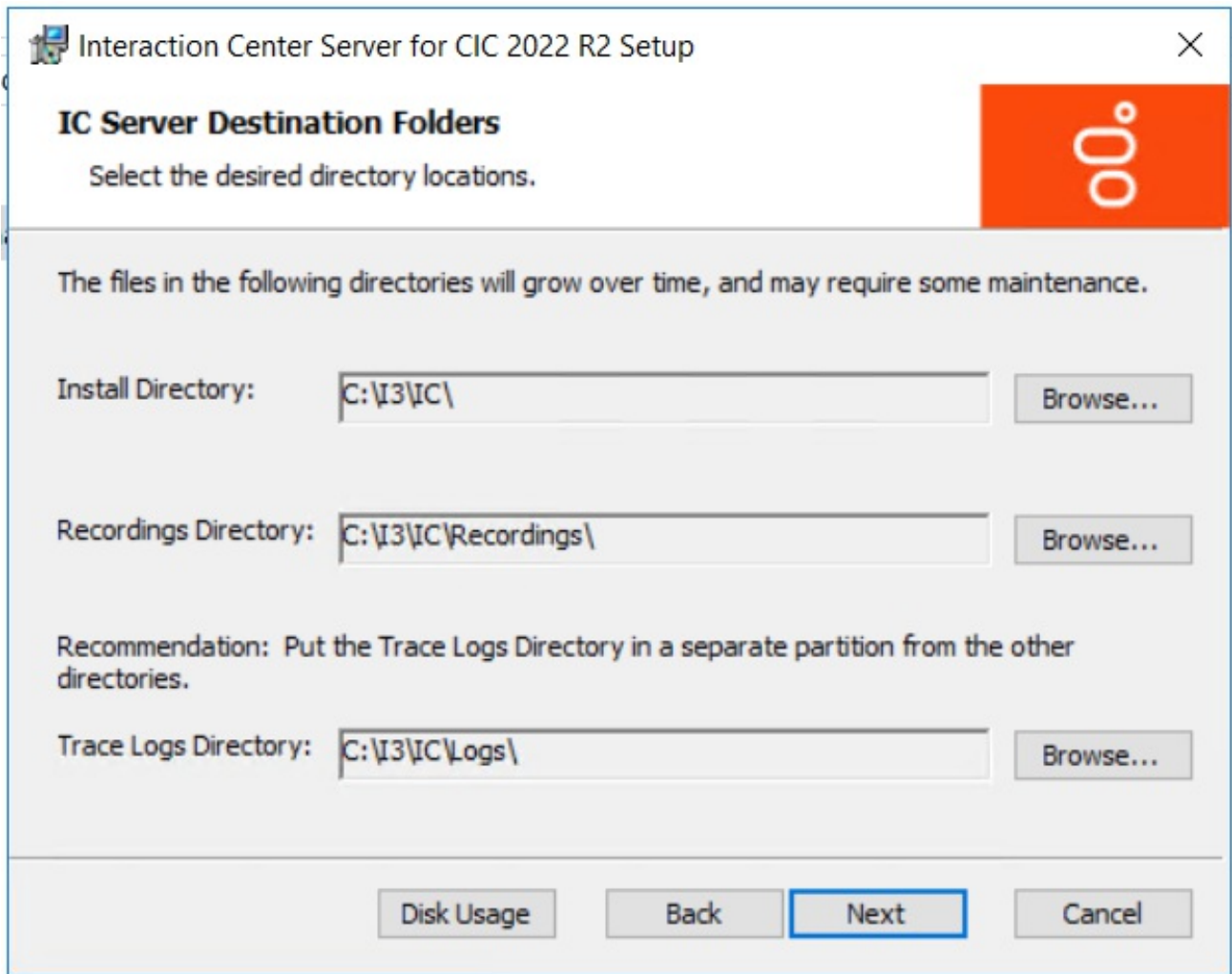
Directory	Description
Install Directory	All CIC server files will be installed in this directory.
Recordings Directory	Directory that will contain recorded calls.
Trace Logs Directory	Directory that will contain trace logs used for debugging. It will grow quickly, so make sure that there is enough available space. We recommend that you place it in its own partition. The CIC server install uses this directory to create a directory at the same level for database logging data.

Notes

Typically, the default drive for the CIC server is D:\. You may select another drive, however, do not select the same drive as your operating system, usually C:\. Genesys does not support installing the CIC server directories on the operating system drive.

Specify a separate drive for the Trace Logs Directory.

You may specify different drives for the more heavily used directories, if desired. The total minimum free space required is 60 GB.

You may change the directory name, but not the paths.

You may wish to review "CIC server" for additional information about drive partitioning.

5. When you are ready to begin the installation, select **Install**.

Interaction Center Server for CIC 2022 R2 Setup

Ready to install Interaction Center Server for CIC 2022 R2

Click Install to begin the installation. Click Back to review or change any of your installation settings. Click Cancel to exit the wizard.

Back   Install   Cancel
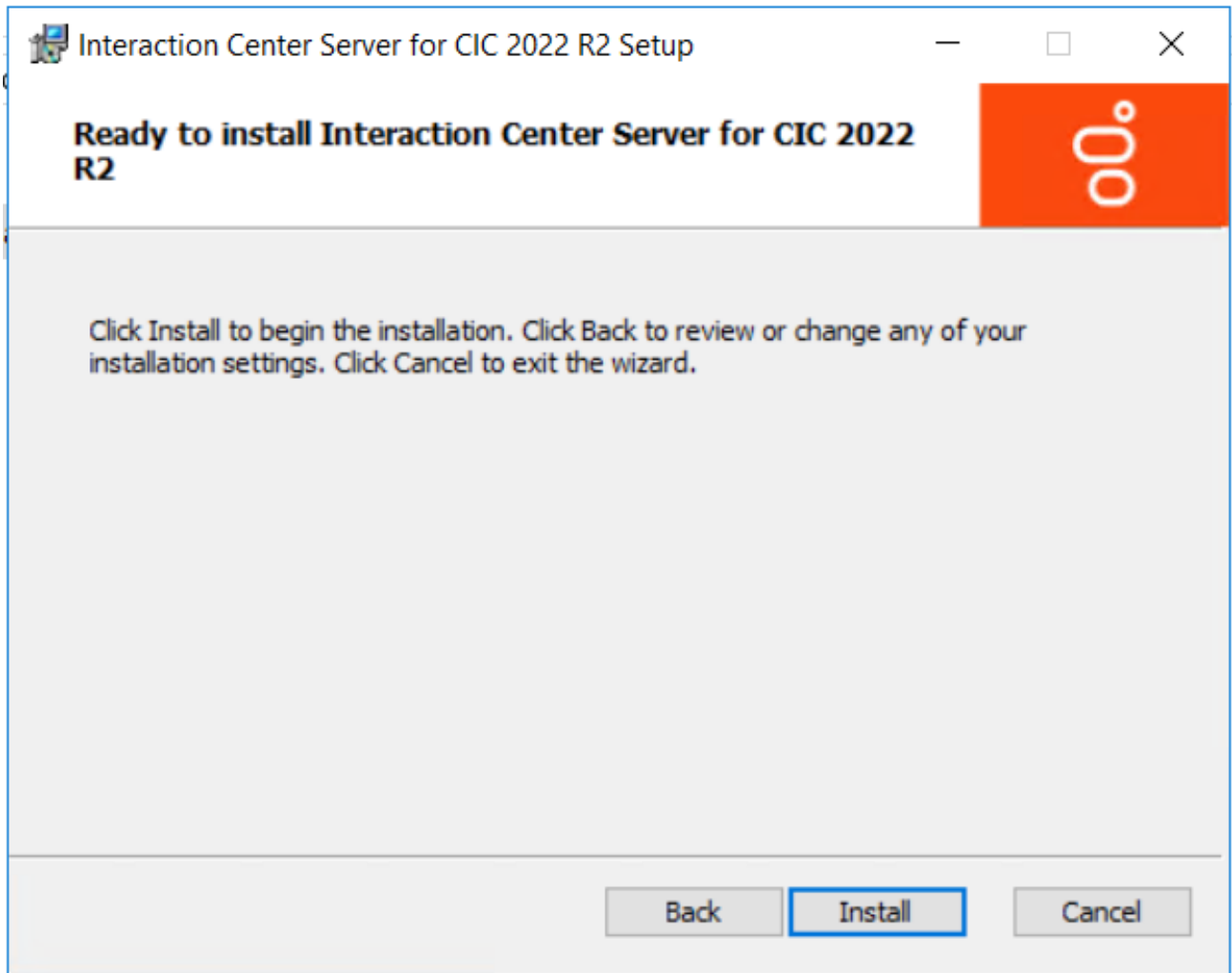
As the installation continues, a status bar indicates the progress.

The **Completed** screen appears.

Interaction Center Server for CIC 2022 R2 Setup

Completed the Interaction Center Server
Setup Wizard for CIC 2022 R2

Click the Finish button to exit the Setup Wizard.

☐ Launch the Default Programs dialog.

Setup Assistant   Back   Finish   Cancel
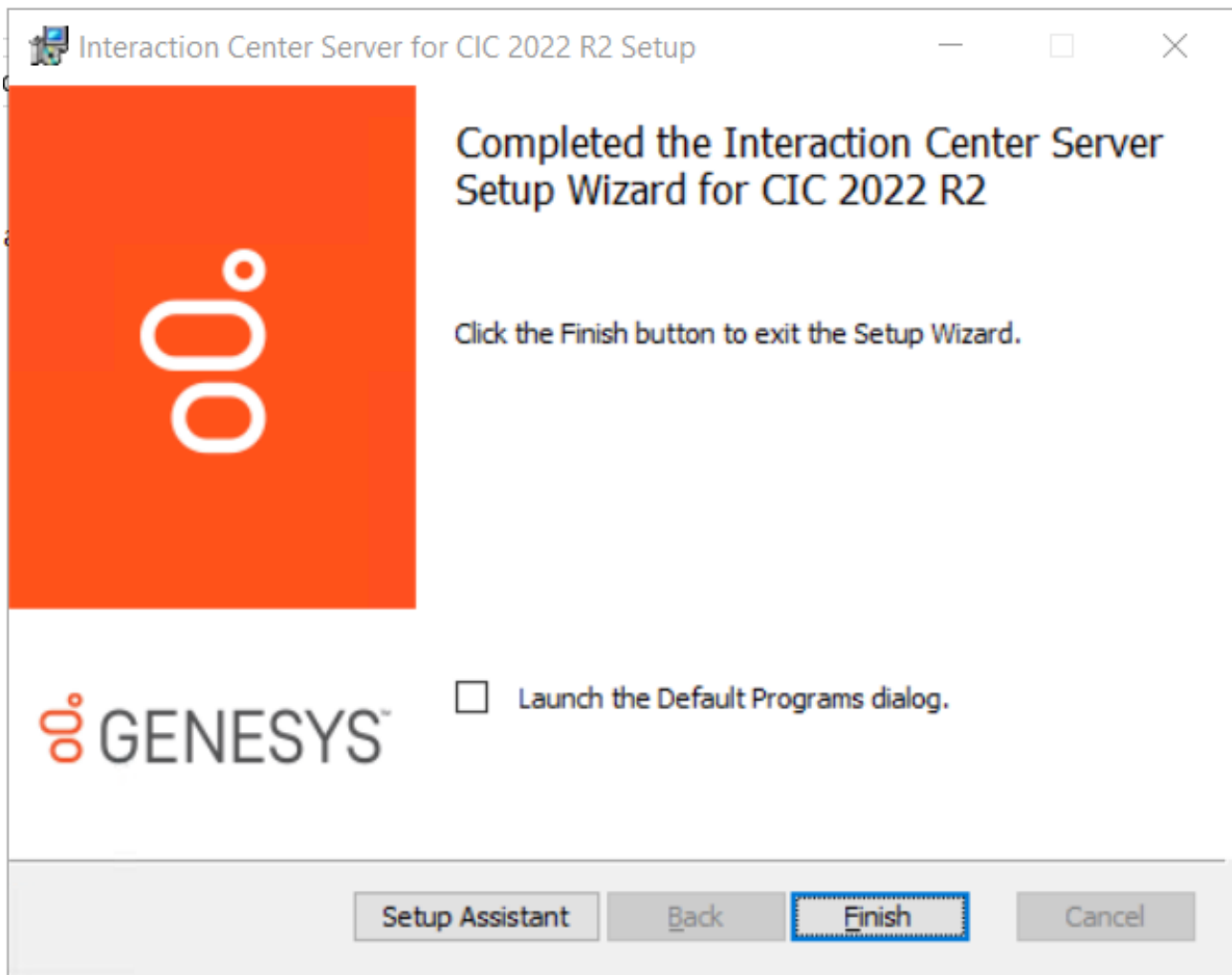
6. Click **Finish**.

Step 6: PureConnect Documentation Library install

The PureConnect Documentation Library contains all available CIC help systems, installation and configuration guides, technical reference documents, and quick reference materials in a single searchable unit. It is updated for each CIC 2015 R1 and later release.

The PureConnect Documentation Library is recommended to be included in your CIC 2015 R1 or later installation to ensure that you always have the latest version of the PureConnect Documentation Library on the CIC server.

Follow the instructions on the screens to complete the PureConnect Documentation Library installation.

Step 7: Interaction Text-to-Speech install

Interaction Text to Speech is an integrated component of Interaction Media Server and is installed through the Media Server installation. This install adds language models for newly supported languages.

Install.exe auto-starts the Interaction Text-to-Speech install and proceeds to install it automatically.

You can view the progress and successful completion of the installs in the Install.exe Installation Progress window.

Step 8: Interaction Firmware install

The Interaction Firmware install contains the latest supported firmware for Polycom, Interaction SIP Station, AudioCodes, and Genesys managed IP phones.

Install.exe auto-starts the Interaction Firmware Part 1 and Interaction Firmware Part2 installs and proceeds to install it automatically.

You can view the progress and successful completion of the installs in the Install.exe Installation Progress window.

Step 9: Interactive Update Provider install

The Interactive Update Provider installation program installs the Interactive Update Provider service and the Interactive Update Client service on the CIC server. For more information, see the *Interactive Update Technical Reference* in the PureConnect

Interactive Update Provider install

1. Press **Next** to proceed past the **Welcome** screen.
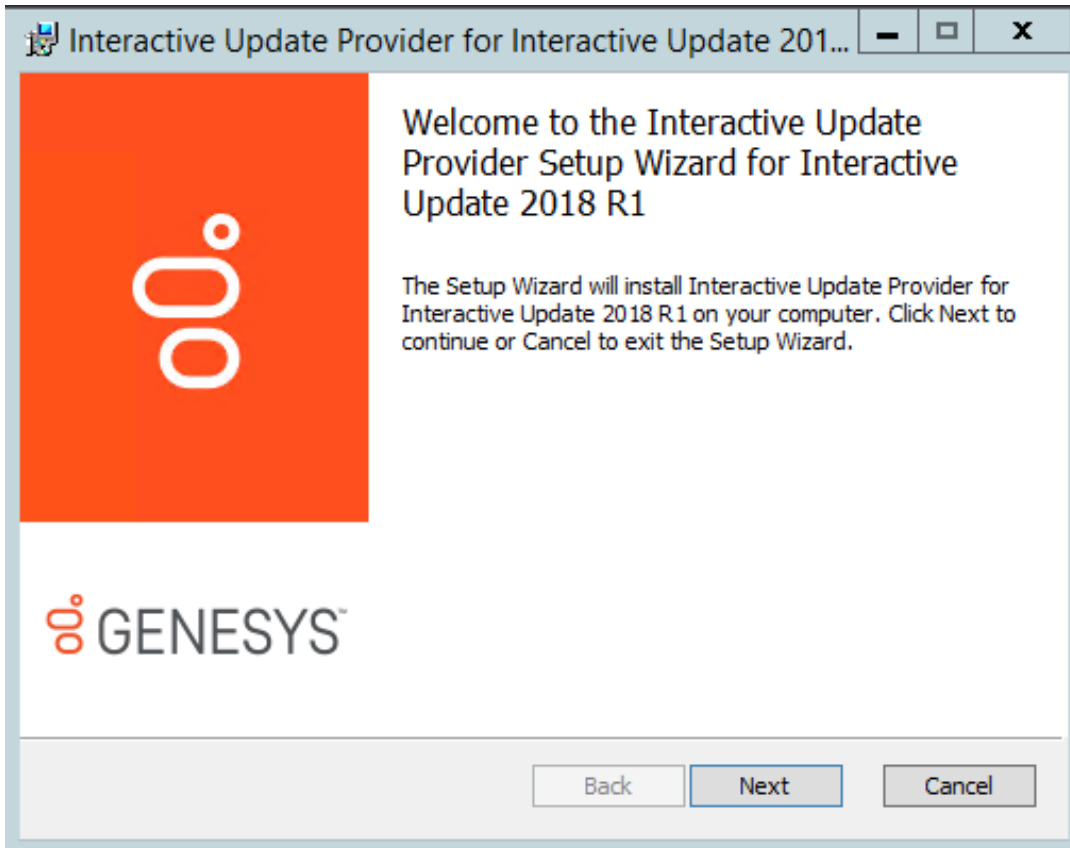
2. Press **Next** to accept the default **Destination Folder** screen, the same directory as the CIC server installation.
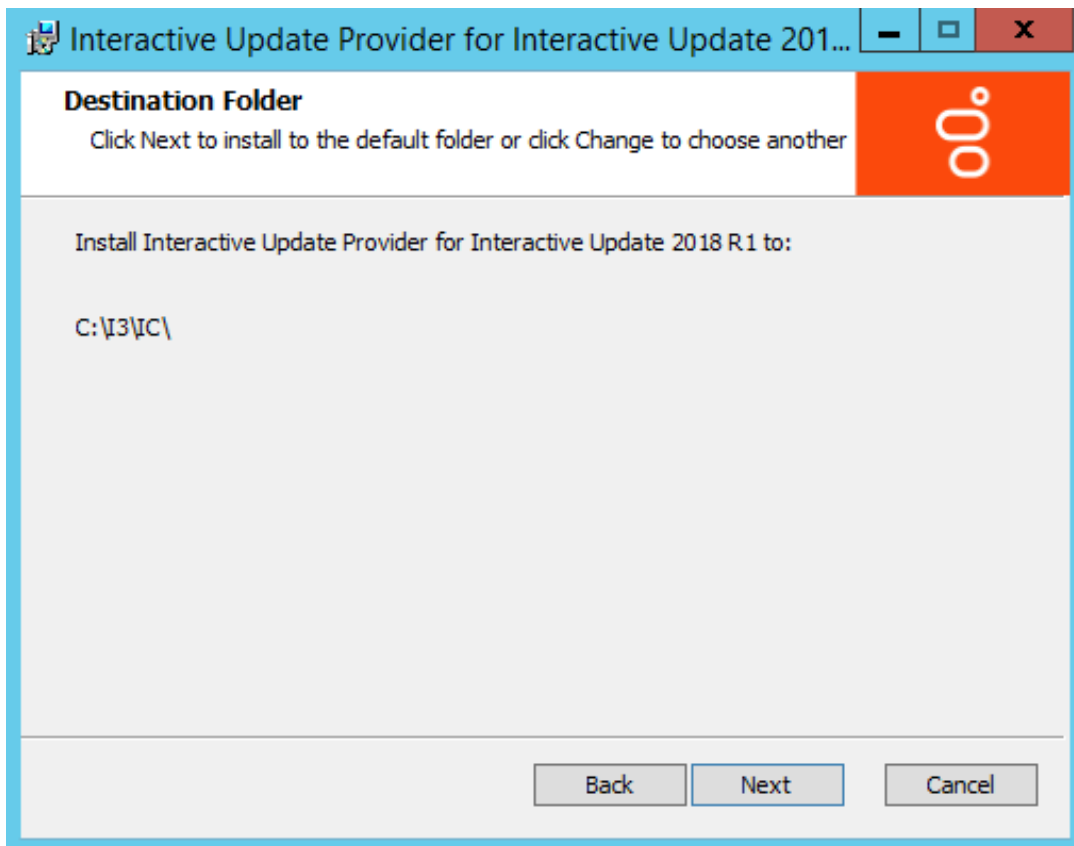
The install will create a subdirectory for Interactive Update.

3. Select **Local Provider (Default)** to distribute updates for all client machines within a local area network, and to distribute updates remote providers, depending on your implementation. For more information, see the Interactive Update Technical Reference in the PureConnect Documentation Library.
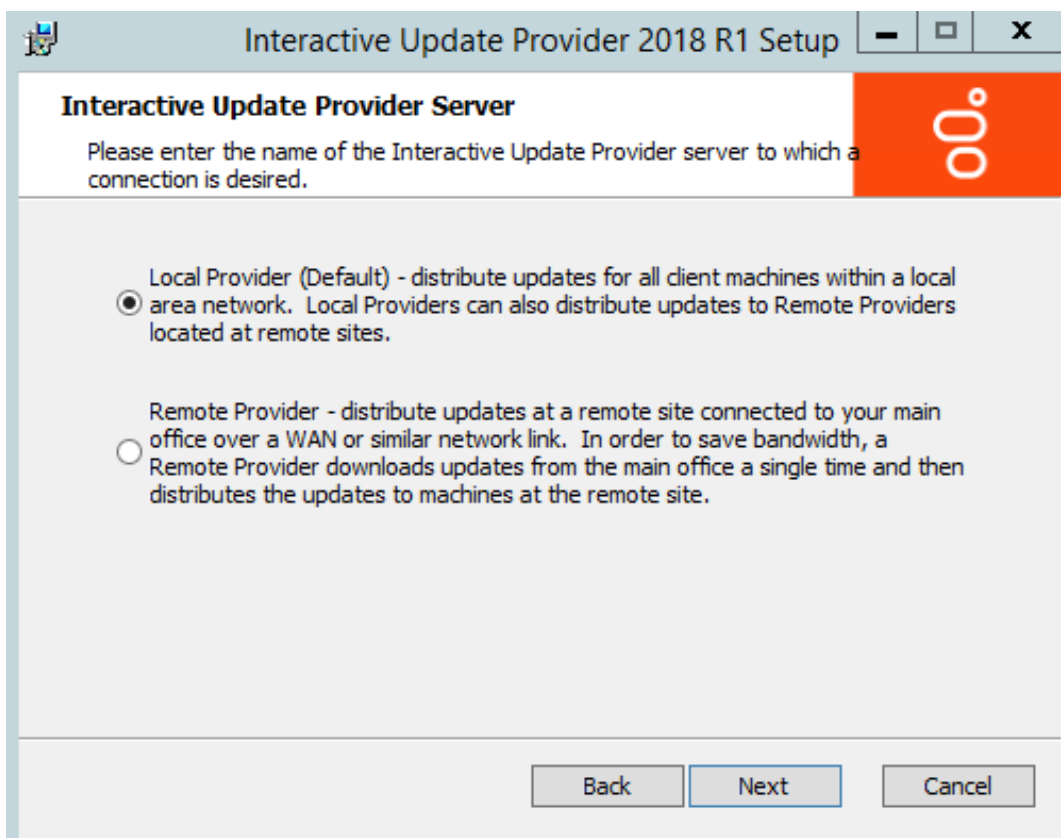
4. If your CIC server is part a Switchover pair, starting with Interactive Update 2016 R2, you can create or use a shared database. Otherwise, click **Next** to continue.

    On the initial active server, click **Yes** and enter the location for the shared database. When you run the installation on the initial backup server, enter the same shared database location. For more information, see the *Interactive Update Technical Reference* in the PureConnect Documentation Library.
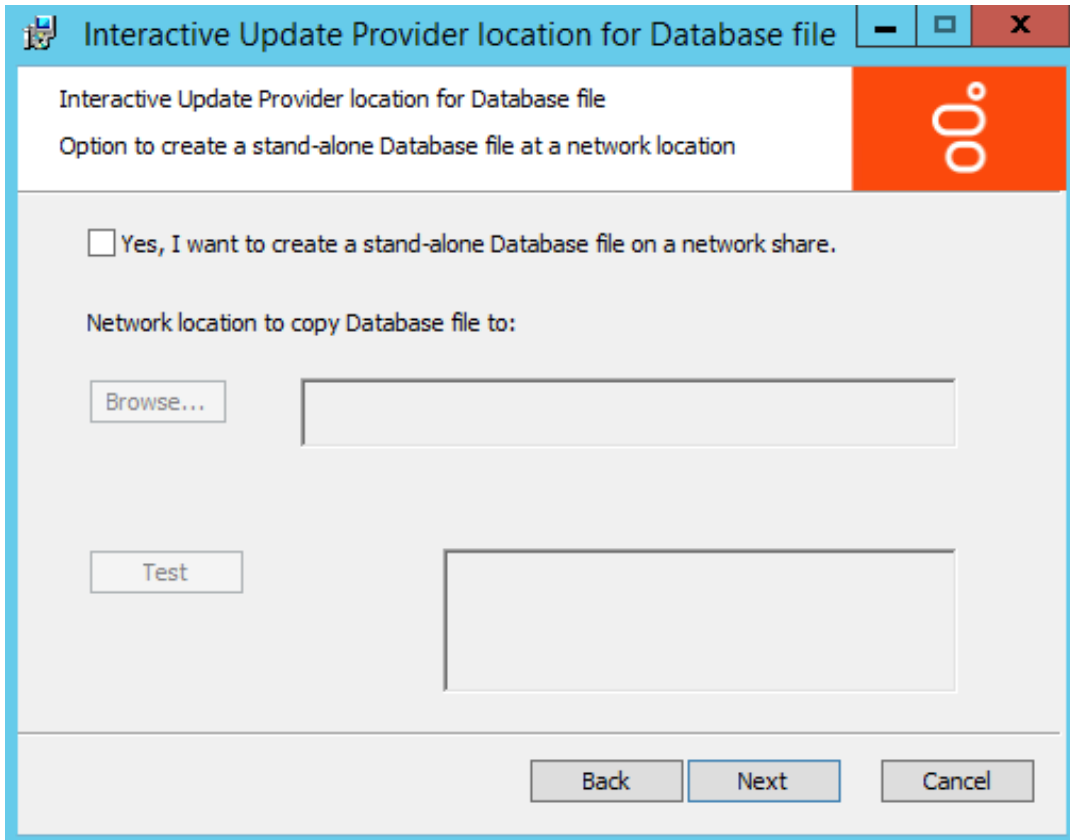
5. When you are ready to begin the installation, click **Install**.
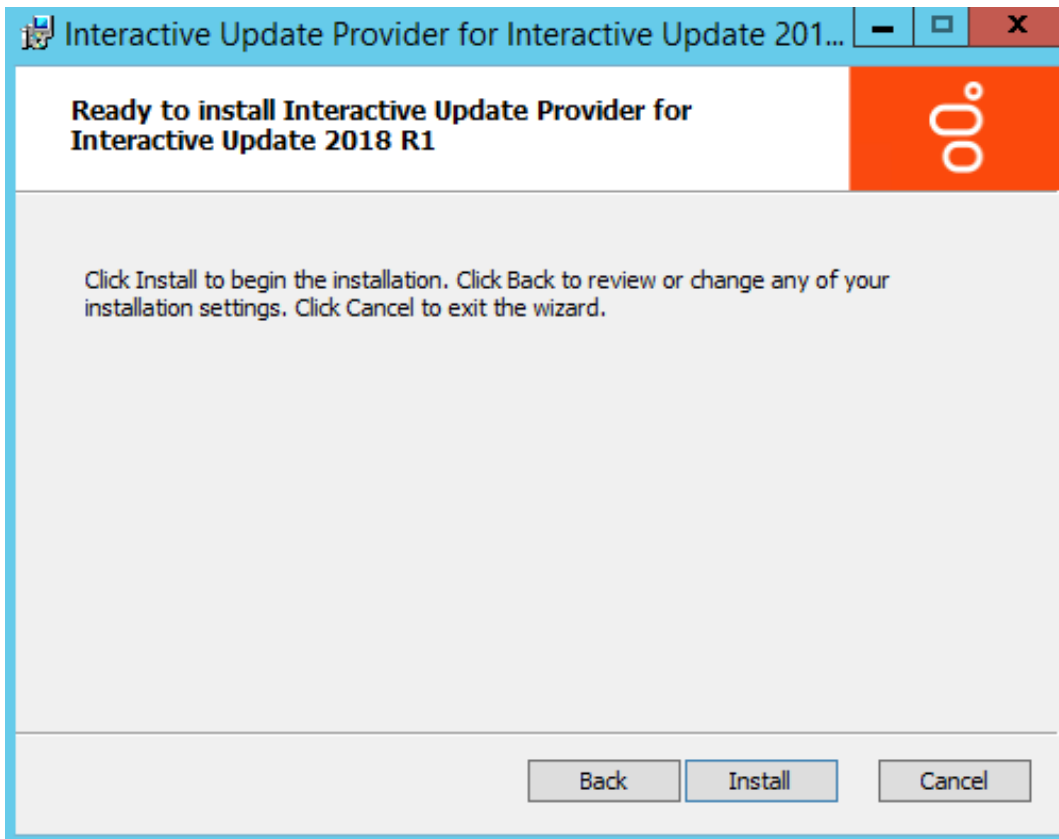
As the installation continues, a status bar indicates the progress.

6. When the **Completed** screen appears, click **Finish**.
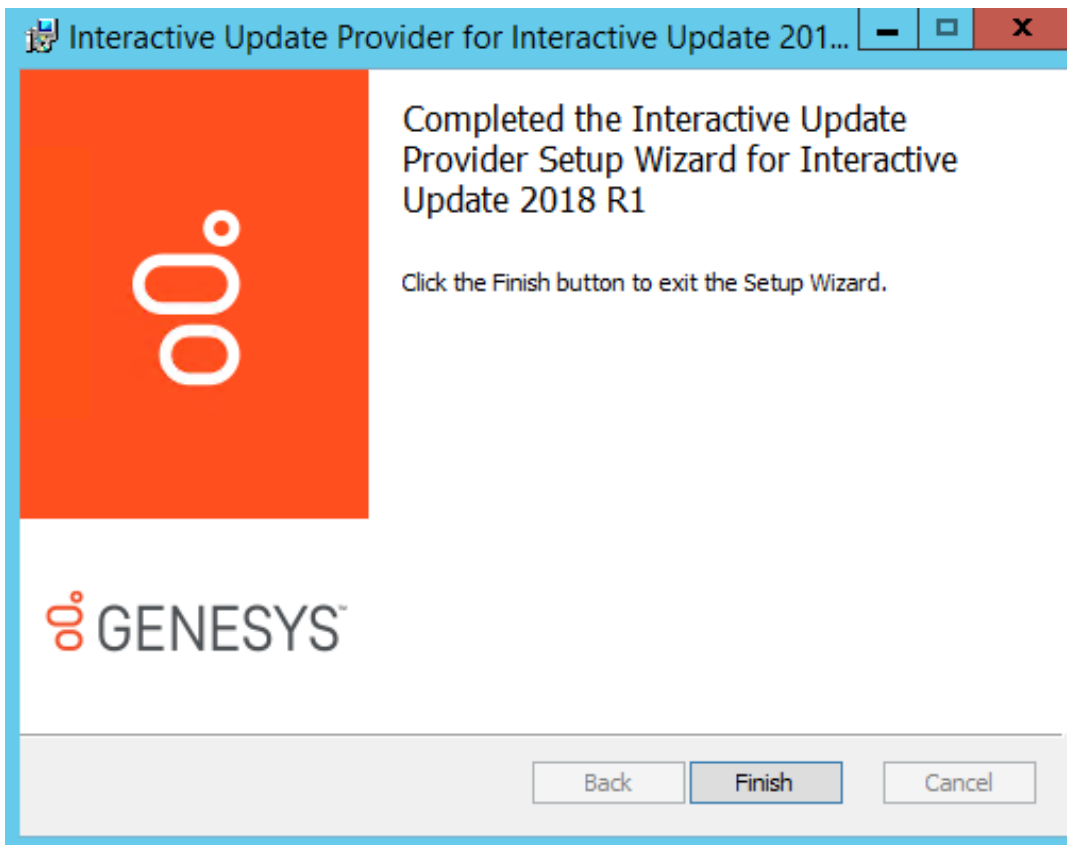
Step 10: Restart to complete the release installation

When you have installed all the selected components and the Installation Progress window shows all were successfully installed, Install.exe prompts you to reboot to complete the installation.
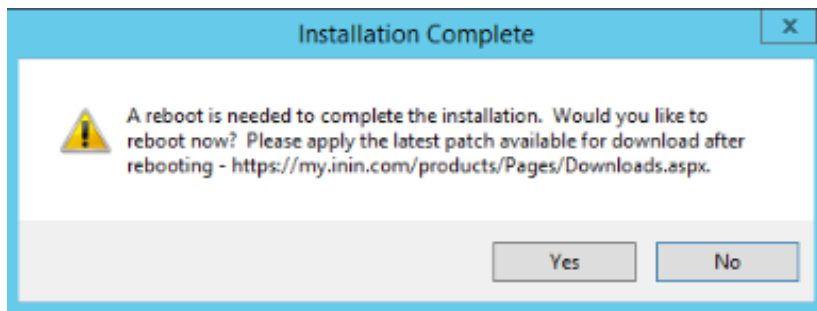
Click **Yes**.

Step 11: Apply the latest patch

After running the CIC release installation on the CIC server, apply the latest patch for the release. This requirement helps to ensure the most stable operation of the product. Patches are posted along with releases on the Product Downloads page at https://help.genesys.com/pureconnect/secure/Downloads.aspx .

> **Note**: Patches are cumulative.

Server Components

> The following instructions show how to apply server components to a system for Interaction Media Server, CIC Server, and other servers on the CIC system.

To start, if you have not done so already, download and copy the CIC_20**_R*.iso to a file server, mount the .iso, and share the contents.

Interaction Media Server

Interaction Media Servers (and ASR servers) must be updated before the CIC server.

1. On the Interaction Media Server, navigate to the \Installs directory on the CIC 20** R* share launch **Install.exe**, and open the **Off-Server Components** tab. Interaction Media Server component is automatically selected and marked as **Update**.
2. Click **Install**. An Install Confirmation dialog box lists the selected Interaction Media Server component.
3. Click **OK**. Install.exe auto-starts and proceeds to run the patch updates install automatically. The install screens appear as Install.exe works through them, but no user input is needed.
4. Repeat steps 1 through 3 to update ASR server components on the ASR server.

CIC Servers

1. Download the latest patch .iso for the release, for example **CIC_2019_R2_Patch1.iso**, from the Product Downloads page at https://help.genesys.com/pureconnect/secure/Downloads.aspx , mount the .iso, and share the contents as described in Step 1.
2. Navigate to the \Installs directory on the CIC Patch1 share and launch **Install.exe**.
3. The CIC server and Interaction Firmware components are automatically selected and marked as **Required**. They cannot be de-selected.

   Other components already installed on the CIC 2018 R1 Server such as the PureConnect Documentation Library and Interactive Update Provider are also marked as **Required** and cannot be de-selected.

   Components not currently installed on the CIC 2018 R1 Server are marked **Not Applicable**. They cannot be selected.
4. Click **Install**.

The Install Confirmation screen lists all the selected components.

5. Click **OK**.

   Install.exe auto-starts and proceeds to run the patch updates automatically. The install screens appear as Install.exe works through them, but no user input is needed.

6. Click **Yes** when you are prompted to reboot.

Other Servers

Follow the same instructions to apply off-server components release components located on the Off-Server Components tab or Integrations tab to other servers on the CIC system.

Workstation Components

After the CIC Server has been updated, choose from one of the following methods to apply the CIC release components to existing CIC workstations:

- (Recommended) Use Interactive Update to apply release updates to workstations. For more information, see the Interactive Update Technical Reference.
- Run Setup.exe in the appropriate shares on the CIC Server.
- Use Group Policy deployment to push release updates to workstations. For more information, see the Group Policy Deployment for IC Applications Technical Reference.

> **Note**: Since you must always apply the latest patch after installing CIC 2015 R1 or later, you can wait until you have applied the latest patch and then apply both release and patch updates to existing PureConnect (CIC) workstations at the same time, using any of these deployment methods.

Step 12: Run IC Setup Assistant

Once the CIC 2015 R1 or later release and latest patch are installed, run IC Setup Assistant to configure the CIC server and start CIC Services.

Before you run IC Setup Assistant, make sure you have:
- Applied the latest patch for the release.
- Completed any reboots.

See "IC Setup Assistant" for detailed instructions launching and running IC Setup Assistant
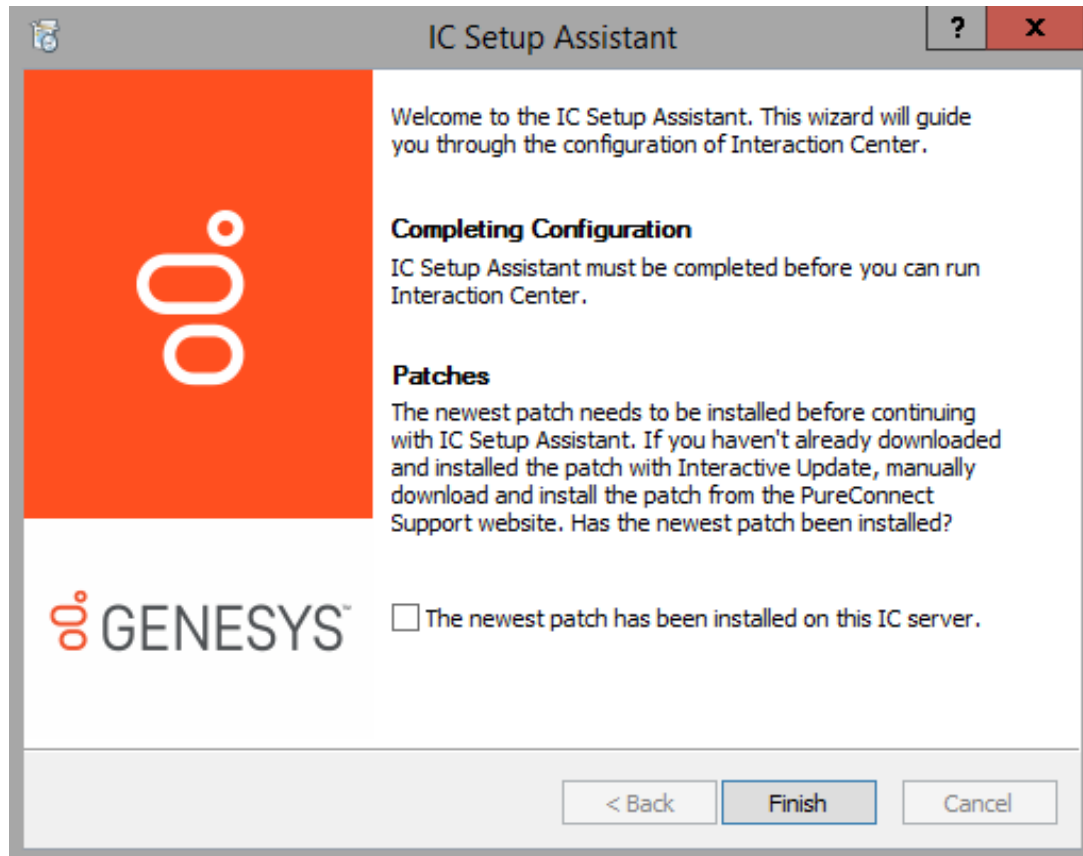
When IC Setup Assistant completes, you must reboot to start CIC Services.

Step 13: Post-installation tasks

- Complete CIC server configuration in Interaction Administrator. See "Post-Installation Configuration".
- Configure Interaction Media Server (or install it first if necessary). See the *Interaction Media Server Technical Reference* in the PureConnect Documentation Library.

Uninstall CIC

Uninstall and Downgrade to the previous version

When you update an existing 4.0 SU or 2015 R1 or later system to the latest 20## R# release, the update install for each product component backs up the previously installed version. The backed-up files include the previously installed component's .msi plus any applied .msp files (4.0 SU or 2015 R1 or later patches), along with any transform (.mst) used during the original installation.

To uninstall the newly installed product version, for example, for troubleshooting purposes, you can choose to downgrade to (reinstall) the previously installed product version. Uninstall 2015 R1 or later and downgrade to the previous version using one of the following methods:
- Programs and Features

- Group policy deployment
- Interactive Update

Programs and Features

You can use Programs and Features in Control Panel to uninstall 2015 R1 or later product components and downgrade to the previously installed version on the CIC server, client workstations, and other servers on the PureConnect (CIC) system.

In **Programs and Features**, select the appropriate 2015 R1 or later product component and click **Uninstall**.
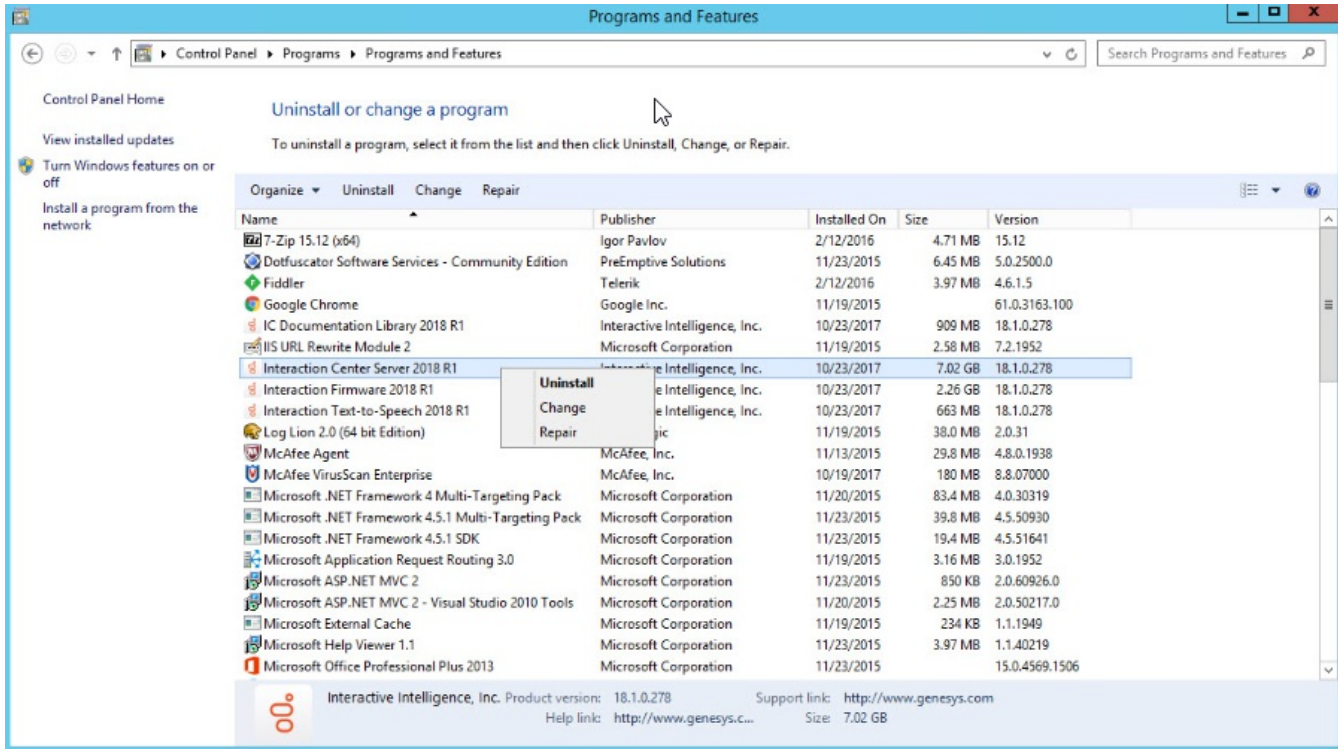
If there is a previous product backup available, a **Confirm Previous Version Install** dialog box gives you the choice to reinstall the previous version.
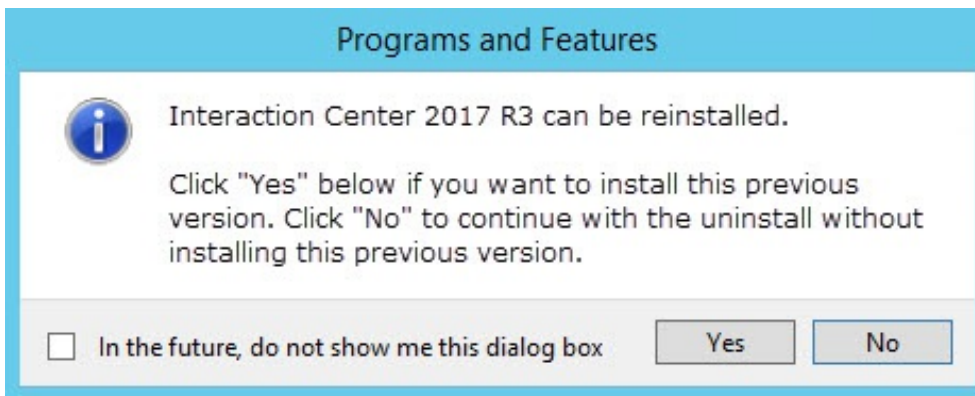
> **Note**: When uninstalling and downgrading PureConnect (CIC) product components on the CIC server, uninstall and downgrade the CIC Server install component before uninstalling and downgrading the Interaction Firmware component and any Language Pack components.

Group Policy Deployment

When uninstalling 2015 R1 or later product components using group policy deployment, use the REINSTALL_BACKUP_PRODUCT property to downgrade to the previously installed version. For more information, see the *Group Policy Deployment Technical Reference* in the PureConnect Documentation Library.

Interactive Update

If you used Interactive Update to apply the 2015 R1 or later updates to client workstations, when you select a 2015 R1 or later component as "Remove" in Interactive Update Provider, the component downgrades to the previous version (if the previous version is present). For more information, see the *Interactive Update Technical Reference* in the PureConnect Documentation Library.

> **Note**: To uninstall and downgrade Interactive Update Provider 2015 R1 or later to a previous version, use Programs and Features. You may need to restart IC Services after downgrading to a previous version of the provider.

IC Setup Assistant

IC Setup Assistant is a wizard that configures CIC Server components such as CIC administrator and network information, dial plan, database, Switchover, Multi-Site RTM, Interaction Recorder, Speech Recognition, mail provider, Log Retrieval Assistant, SIP lines and default registration group (for managed IP phones), users, workgroups, roles, group call processing, and DCOM security.

This section includes:
- Prepare for IC Setup Assistant
- Run IC Setup Assistant
- Re-run IC Setup Assistant
- \I3\IC directory paths and shares

Prepare for IC Setup Assistant

In addition, we recommend that you perform the following IC Setup Assistant preparations before running IC Setup Assistant as part of a new installation. This preparation work helps to ensure an efficient and successful CIC Server configuration.

IC Survey file

If a reseller or someone else filled out a Pre-Install survey to compile the installation and configuration information needed for IC Setup Assistant in advance, download the resulting IC Survey file to the CIC Server, as described in "CIC Server".

Review the IC Survey file and verify the information. You may need to consult with the network administrator, email administrator, database administrator, CIC system administrator, and other people at the customer site.

Dial plan

Resellers may wish to use an existing dial plan. If so, download the dial plan to the CIC Server prior to running IC Setup Assistant.

CIC uses a regional dial plan, with an `.i3dplan` extension. If you wish to import an older dial plan with an `.i3pnum` extension, you may do so. However, you will not gain the benefits of the regional dial plan. For information, see the *CIC Regionalization and Dial Plan Technical Reference* in the PureConnect Documentation Library.

CSV SIP Station list

We recommend that you create managed IP phones (Polycom, AudioCodes, Genesys, Interaction SIP Station, and/or SIP Soft Phone) in CIC. This procedure is performed post-IC Server installation. For more information, see "Post-Installation Configuration" and the *CIC Managed IP Phones Administrator's Guide* in the PureConnect Documentation Library.

However, CIC does support "non-managed" Polycom phones and other SIP handsets from vendors that are not included in PureConnect's managed IP phone implementation, as well as analog stations connected via SIP FXS gateways. For non-managed IP phones, you can create "non-managed" SIP stations by importing a CSV list containing SIP station information in Add Stations Assistant within IC Setup Assistant.

The CSV SIP Station list is also used to create SIP Stations for stand-alone fax machines.

A sample CSV SIP station list in the `\Installs\Additional Files\CSV Lists` directory on the CIC 2015 R1 or later `.iso` file. See the *CSV List Import Technical Reference* in the PureConnect Documentation Library for instructions on how to create a CSV SIP station list.

Download the CSV SIP station list to the CIC Server.

CSV user list

If you wish, you can create a CSV user list prior to running IC Setup Assistant. When you run IC Setup Assistant, you can choose to import users from the CSV user list. If you plan to do this, be sure to have that list ready for import. You will have a chance after importing the list into IC Setup Assistant to modify user attributes before those users are created on the CIC server.

A sample CSV user is included in the `\Installs\Additional Files\CSV Lists` directory on the CIC 2015 R1 or later `.iso` file. See the *CSV List Import Technical Reference* in the PureConnect Documentation Library for instructions on how to create a CSV SIP station list.

Download the CSV user list to the CIC Server.

Install and configure optional servers

Make sure you have installed and configured any optional servers you plan to use, including:

- Servers used with Interaction Recorder (add-on licenses required). For more information, see the *Interaction Recorder Technical Reference* in the PureConnect Documentation Library.
- ASR Server (add-on license required). For more information, see the *ASR Technical Reference* in the PureConnect Documentation Library.

IC Setup Assistant will prompt you for information about these servers.

Run IC Setup Assistant

This section describes the IC Setup Assistant screens for a new CIC 2015 R1 or later installation. For more information on each screen presented here, click Help (?) in the upper right hand corner of the screen in IC Setup Assistant.

> **Note**: If you have to exit IC Setup Assistant before completing all the screens and/or committing your choices, everything you have entered so far is saved automatically to your IC Survey file.

- Launch IC Setup Assistant
- Starting CIC Subsystems
- Load IC Survey file
- Confirm CIC Administrator account
- Confirm the domain
- License file
- Select the dial plan
- Enter the local area codes
- Enter local exchanges
- Select a reporting option
- Database configuration
- Select the Microsoft SQL Server
- Configure the CIC database name
- Configure the SQL database CIC accounts
- Configure the SQL database files
- Select CIC optional components
- Configure Switchover servers
- Configure Multi-Site for this Server
- Define Multi-Site Parameters
- Site information
- Change the site name
- Certificate Signing Options
- Interaction Recorder compressed files location
- Speech Recognition
- Select mail providers
- Mail provider summary
- Log Retrieval Assistant mailbox configuration
- SIP Lines and Default Registration Group
- Configure stations
- Create CIC user accounts
- Configure CIC user accounts

- [Add Users Assistant](#)
- [Configure CIC user accounts (showing created users)](#)
- [Configure CIC workgroups](#)
- [Manage workgroups](#)
- [Configure role memberships](#)
- [Manage Roles](#)
- [Configure default hours of operation](#)
- [Configure group call processing](#)
- [Edit group call processing](#)
- [DCOM Security Limits](#)
- [Commit your choices](#)
- [Saving configuration](#)
- [IC Setup Assistant completed](#)

Launch IC Setup Assistant

After running the CIC Server install as described in "CIC Server Installation" for CIC 2015 R1 or later and the latest patch:

- Logged on as the CIC administrator account. The CIC administrator user account should have administrator privileges on the CIC Server, as described in "CIC Server".
- Downloaded your CIC license to the CIC Server.
- Applied the latest patch for the release.

Launch IC Setup Assistant

1. Manually launch IC Setup Assistant by selecting:

    - Windows 2008 R2: Start->Programs->PureConnect->IC Setup Assistant
    - Windows 2012 R2: Start screen->Apps->PureConnect->IC Setup Assistant

2. The IC Setup Assistant **Welcome** screen appears.
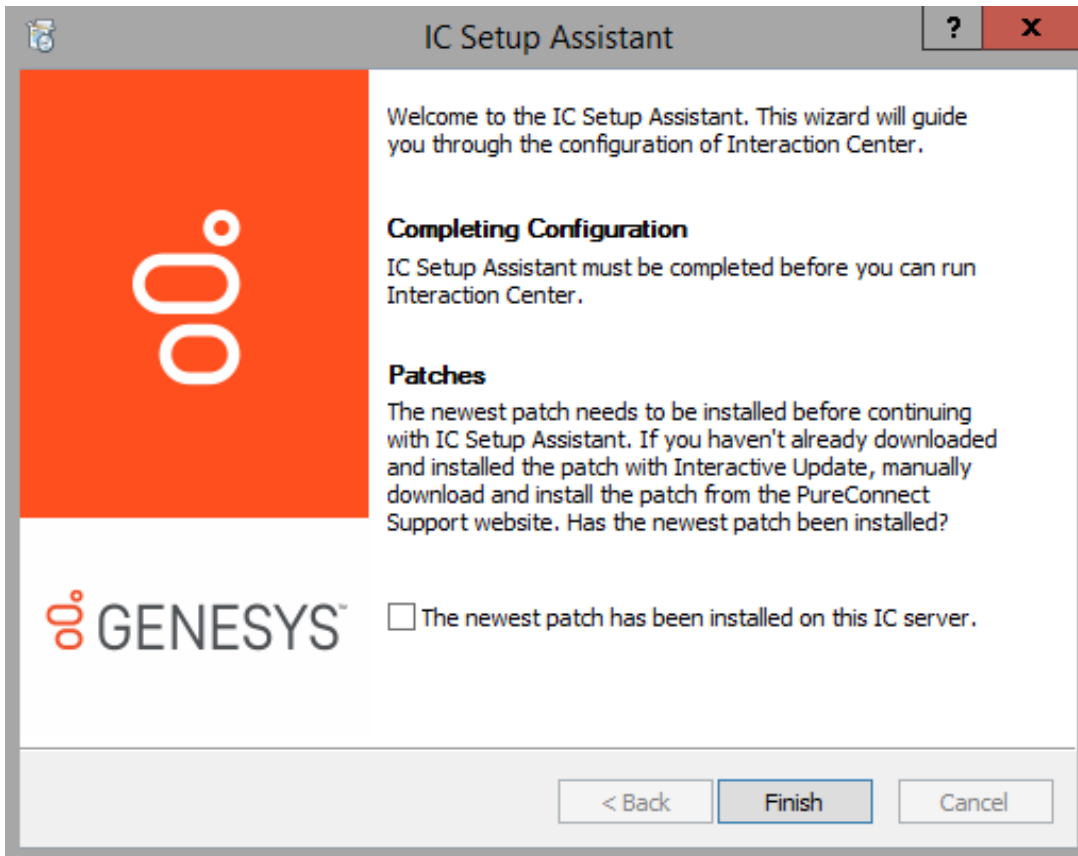
Click **The newest patch has been installed on this IC server** checkbox and then click **Next** to continue.
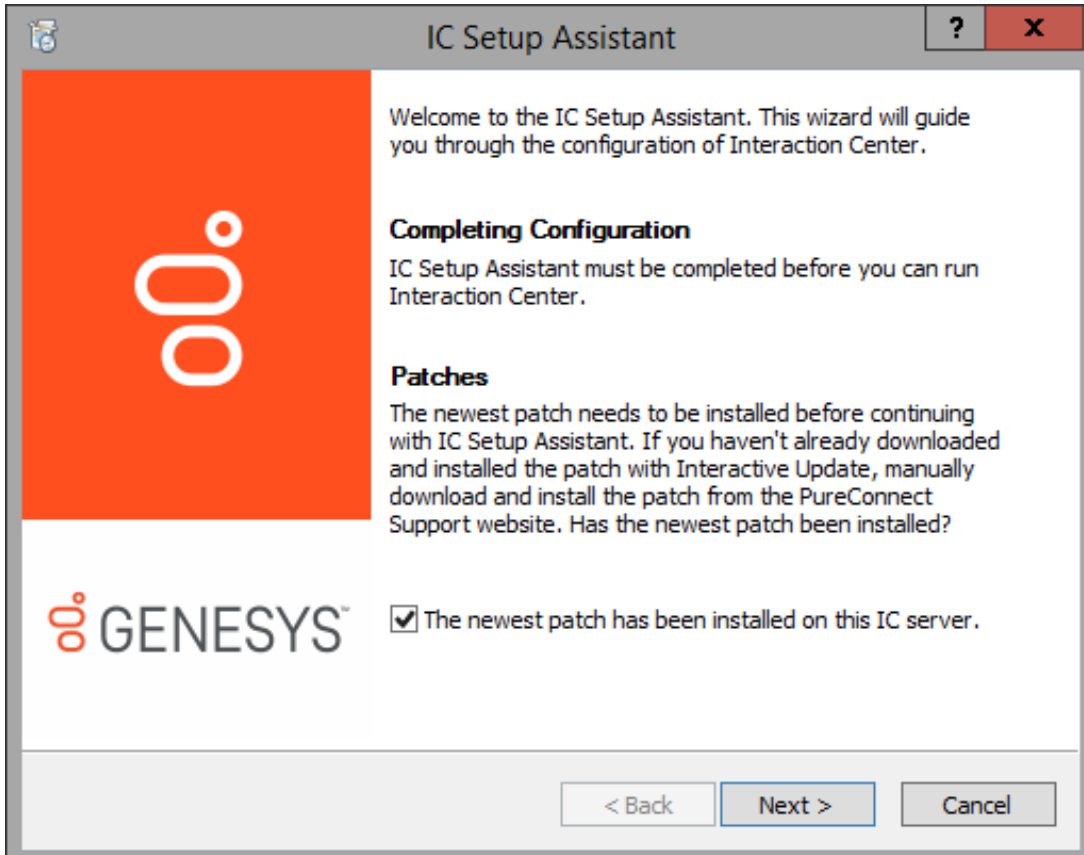
Starting CIC Subsystems

Please wait while some essential CIC subsystems are started.
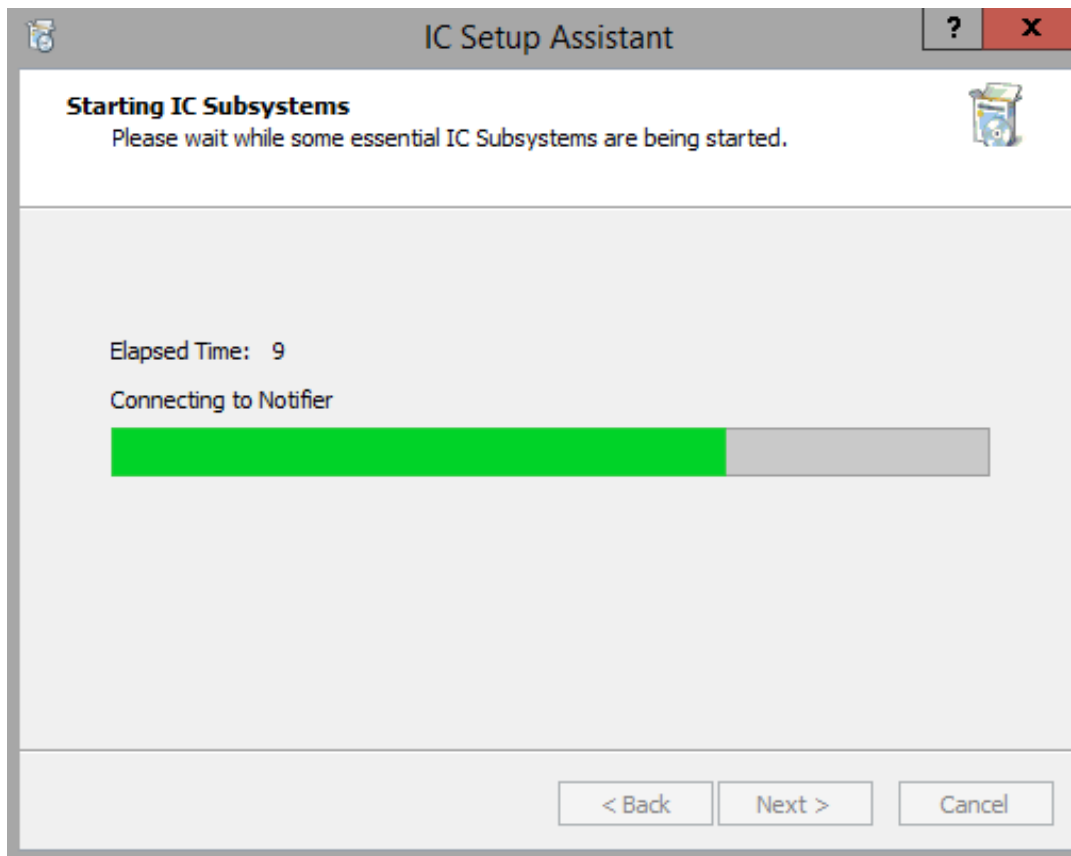
Once the CIC subsystems are started, the **Load IC Survey File** screen appears.

Load IC Survey file

IC Setup Assistant stores all configuration information in an IC Survey file. If you need to re-install the CIC Server, an existing IC Survey file can be used to ensure the server is configured exactly as it was initially installed. For more information, see "CIC server" or click Help (?).
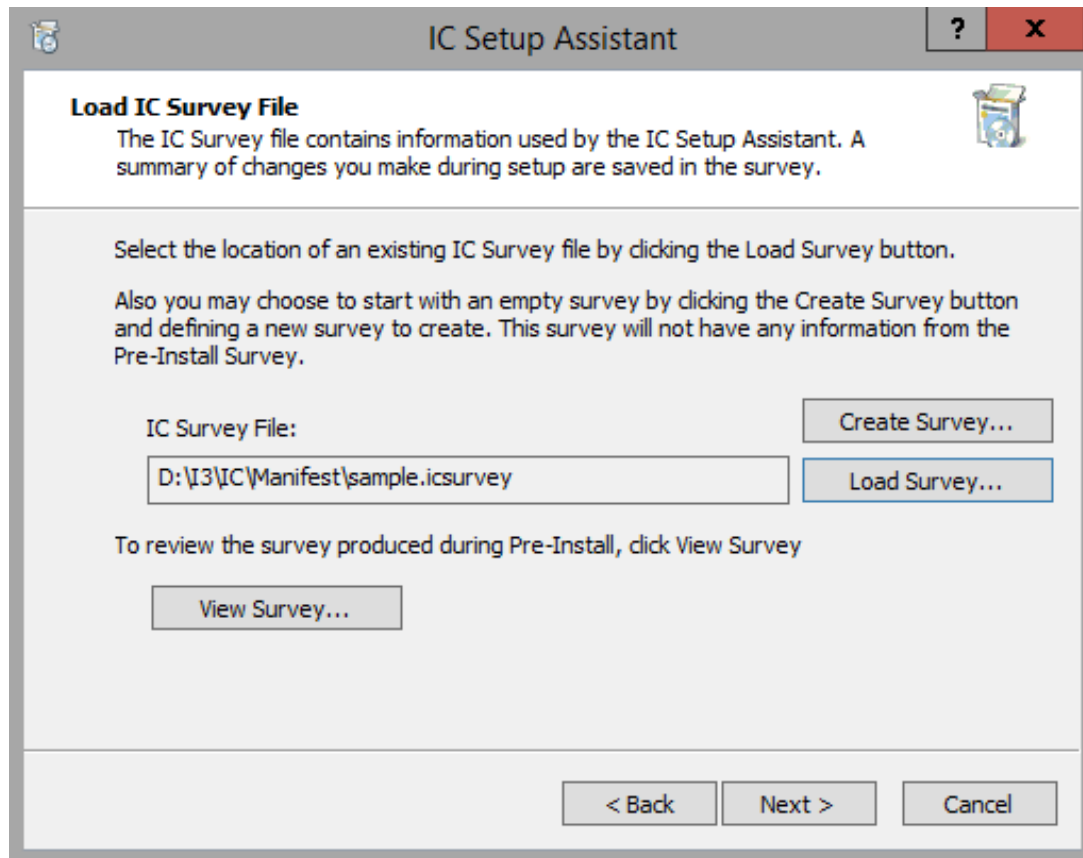
IC Survey File

The directory location of the IC Survey file appears here once you have either created it or loaded it.

Create Survey

Select this option if you do not have an IC Survey file. IC Setup Assistant will create one with the default name New Survey.ICSurvey and save it locally on the CIC Server in the default \I3\IC\Manifest directory. We recommend that you use the default name unless that file already exists.
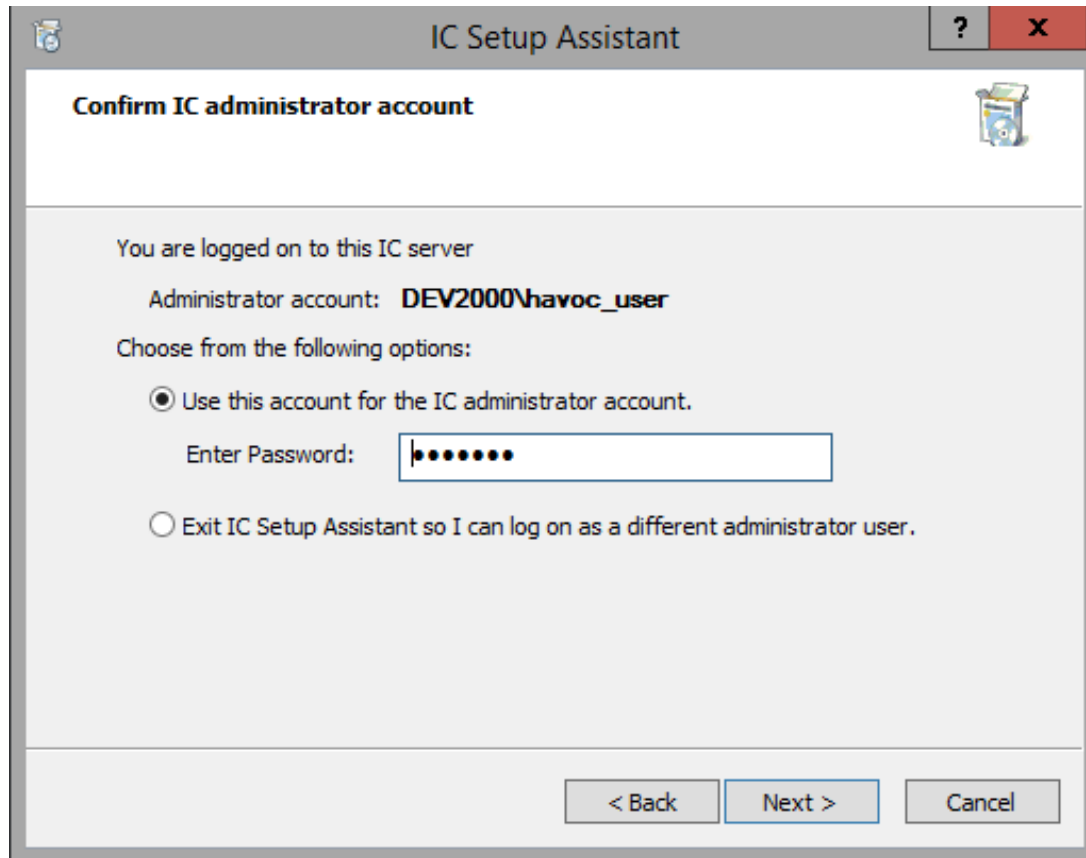
Load Survey

Loads an IC Survey file generated before starting IC Setup Assistant. As you walk through IC Setup Assistant, it will read the IC Survey file, and pre-fill many screens with the appropriate configuration information.

Confirm CIC Administrator account

IC Setup Assistant has detected that you are logged on as the noted local administrator account. The CIC administrator user account should have administrator privileges on the CIC Server.

IC Setup Assistant uses this account to configure the CIC services to start automatically on reboot, and also to set DCOM processes for other servers connecting to this CIC Server.

Use this account for the IC Administrator Account (default)

Select this option to confirm that the currently logged-in administrator account is the CIC administrator account. (It is possible that there are other administrative accounts on this CIC Server.)

Enter Password

Type the password associated with the currently logged-in administrator account.

Exit IC Setup Assistant so I can log in as a different local administrator user

Select this option to log in as a different administrator account. IC Setup Assistant will end. You must then log in with this account and restart IC Setup Assistant.

Confirm the domain

Verify that the CIC Server is connected to the noted domain.
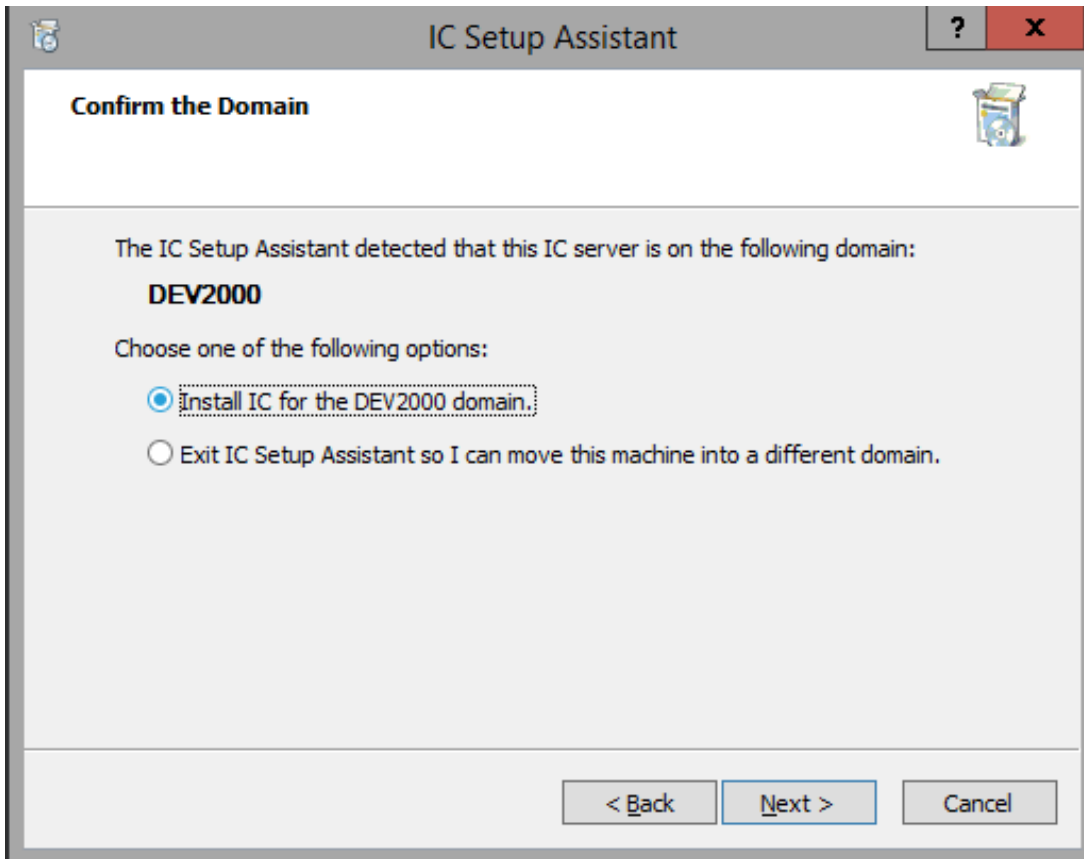
Install IC for the <domain name> domain

Select this option to run IC Setup Assistant on the currently connected domain.

Exit IC Setup Assistant so I can move this machine into a different domain.

Select this option if you want the CIC Server connected to a different domain. IC Setup Assistant will end. You must then connect this server to that domain and restart IC Setup Assistant.

License file

You should have already downloaded your CIC 4.0 license to the CIC Server.
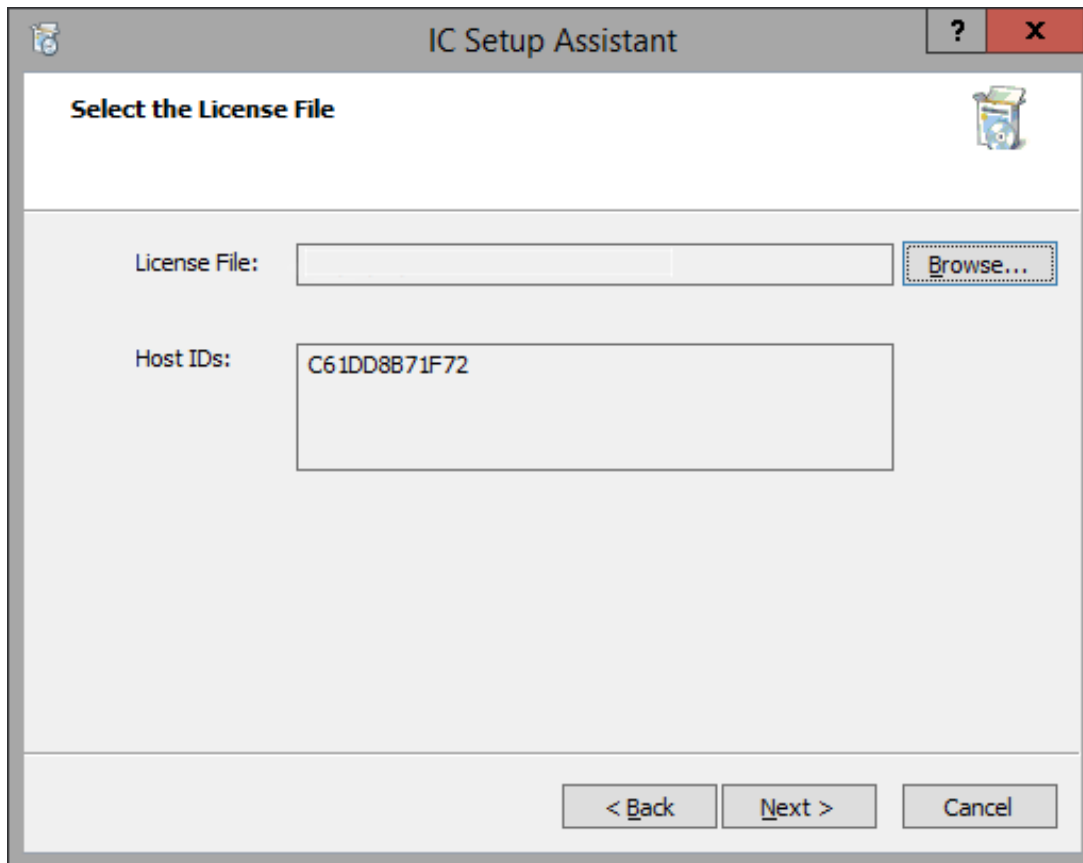
License File

By default, IC Setup Assistant looks in the \I3\IC directory for the CIC 4.0 license filename used by the Task List. The license file is **CurrentLicenseAdmin.i3lic**. If the license file is not located in this directory, browse to the appropriate directory.

Host ID

IC Setup Assistant locates the CIC Server's unique Host ID to be used by CIC's license management. In previous releases, MAC Address was used. Like the MAC Address, the Host ID is tied to the NIC (ethernet) card. (You may have used the GetHostID utility, available in the \Installs\Additional Files\GetHostID directory on the CIC 2015 R1 or later iso .file or on the Utilities and Downloads page at https://help.genesys.com/utilities-and-downloads.html to generate the Host ID for your license.)

If the physical processor chips found on the CIC Server have different CPUID values, **virtual machines** hosted on the server will randomly show different CPUIDs when a virtual session is initiated. Contact PureConnect Customer Care to assist you with modifying your CIC Service License to accommodate this condition. Record and provide the following information to the representative: CPU1:D5 | CPU2:F3.

If there are **redundant or multiple NICs**, you are presented with a list of multiple Host ID's. Please note that the Host ID used for the CIC license will correspond to one specific NIC. The simplest way to determine which NIC corresponds to the CIC license is to match the last six characters of the Host ID to the MAC address.

Important: Make sure that the NIC that corresponds to the CIC license is always active and available. If you disable or otherwise uninstall it, CIC will no longer function correctly. It will run as if the server is unlicensed.

Once a valid license file has been loaded, "Customer Interaction Center" appears in the**Product** field.
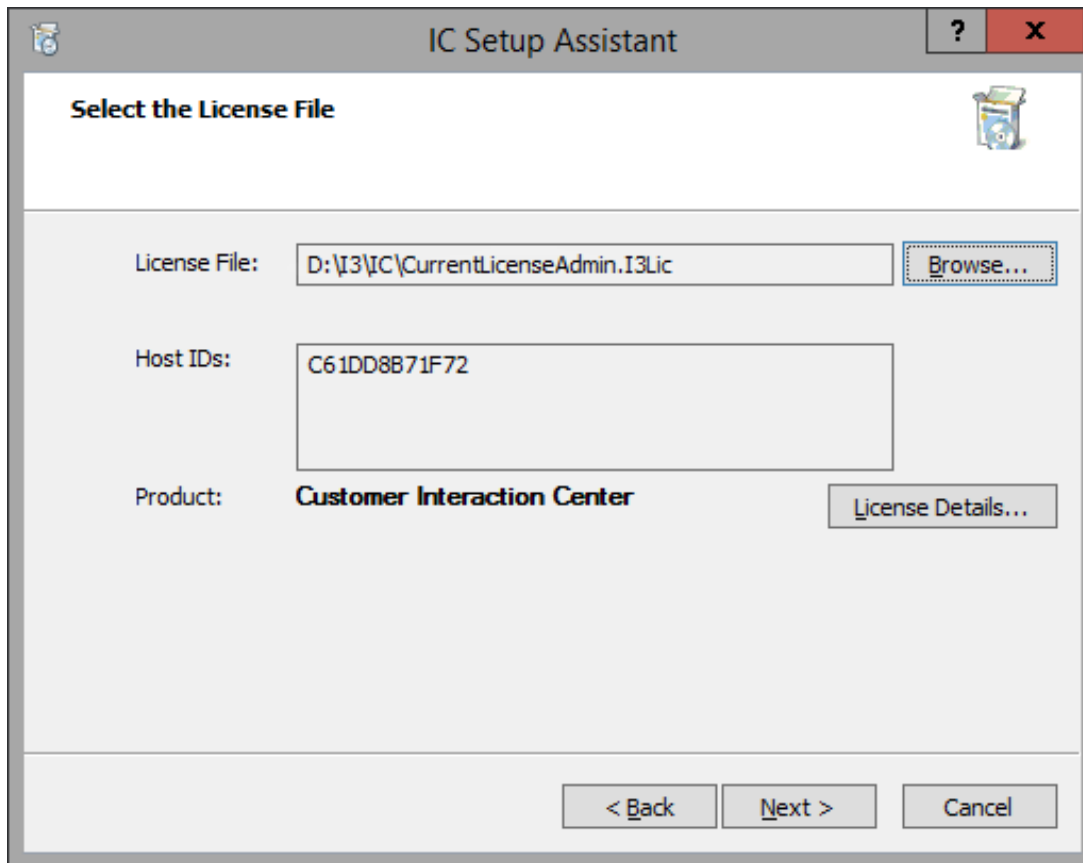
Select **License Details…** to view a list of the Server, Basic Station, and Access license titles, allowed seats per license, and feature licenses.
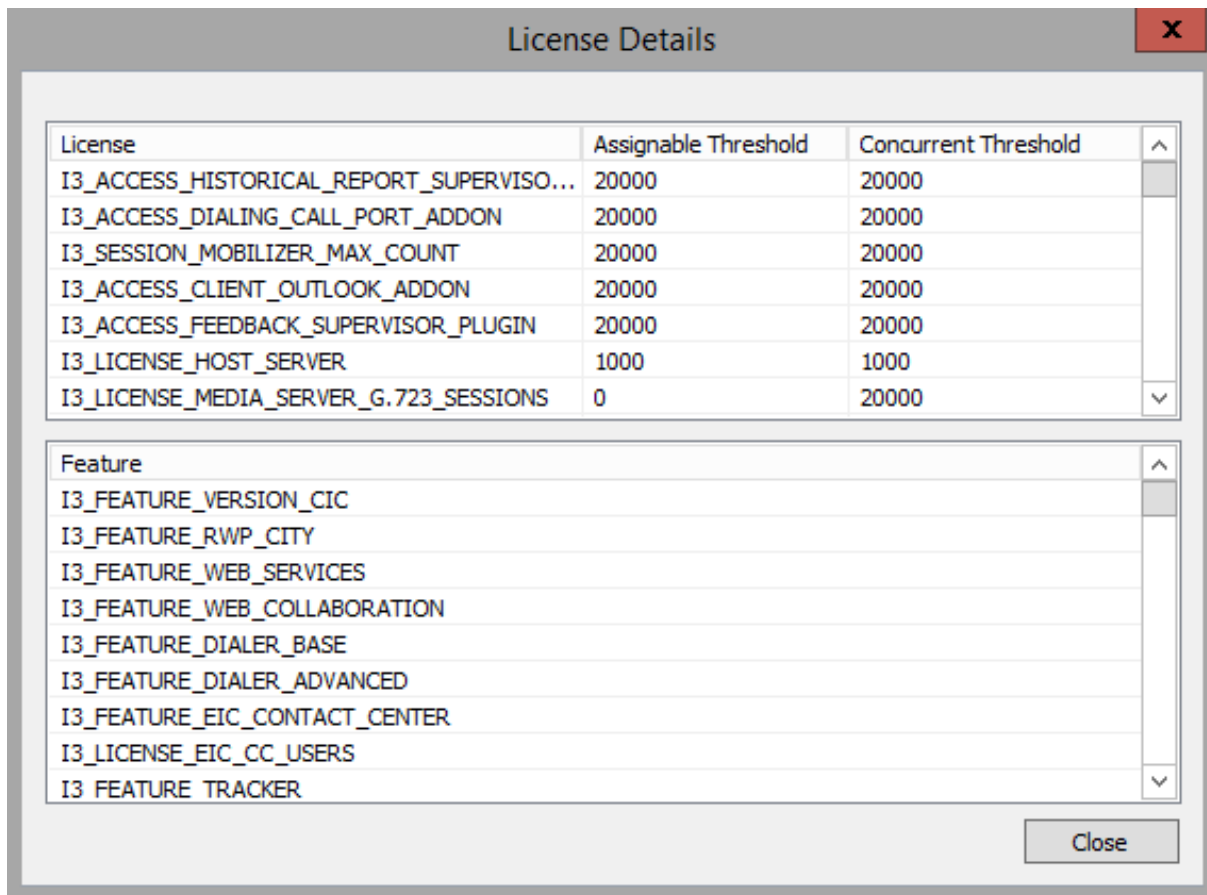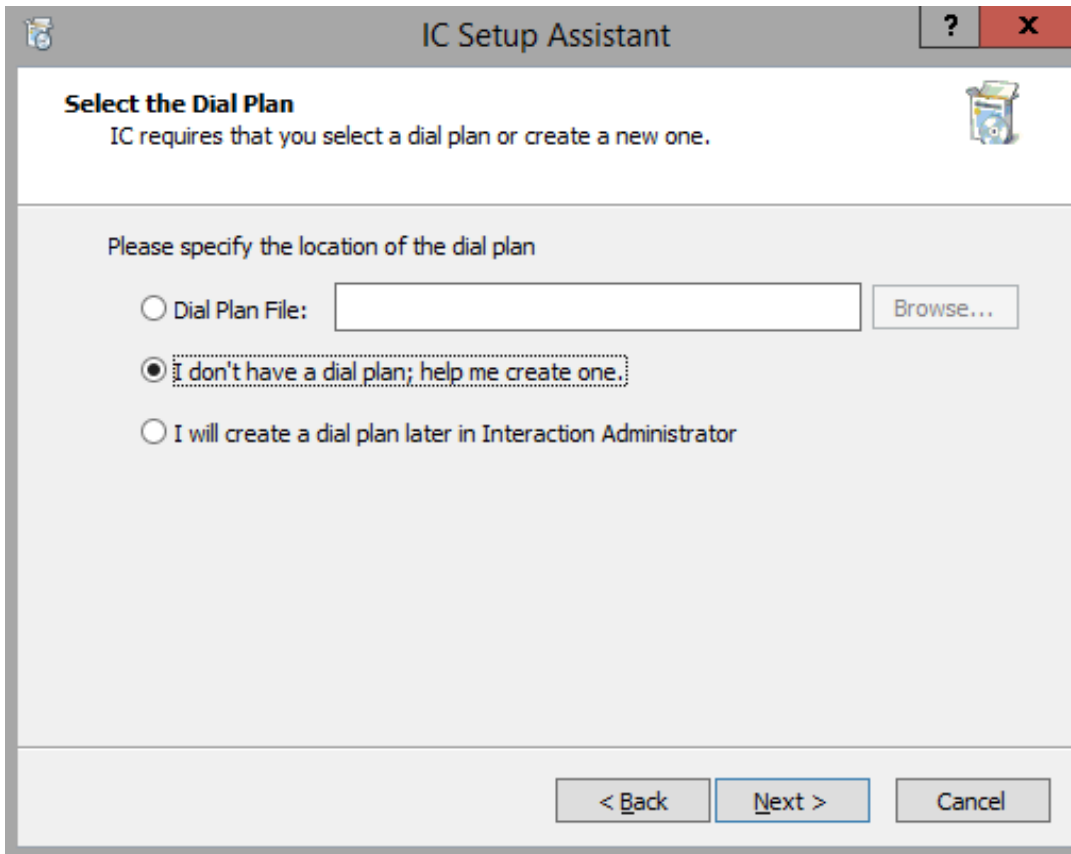
Select the dial plan

A dial plan contains information to determine which telephone calls are extensions, local calls, and long-distance calls. CIC matches each kind of phone number with the appropriate user, workgroup, role, or station dialing privileges.

Specify how you want to create your dial plan.

> Important: We highly recommend that you either create a dial plan in IC Setup Assistant or import an existing dial plan file now. The procedure is greatly simplified in either of these methods, compared to creating a dial plan later in Interaction Administrator.

Dial Plan File

Select this option to import an existing dial plan file. For example, a reseller may have created specific complete dial plans for customers in different regions of the country, county, or city. IC Setup Assistant uses macro substitutions to enable localizers to set up a dial plan for their locale from the imported dial plan file.

> **Important**: This option is recommended for countries using numbering plans other than the North American Numbering Plan.

Specify the path to the dial plan file. By default, IC Setup Assistant looks in the \I3\IC\Manifest directory. If the dial plan file contains macros, a subsequent screen may prompt to **Localize the Dial Plan Import File**, providing substitution for macros if needed. Click Help (**?**) for information about this screen.

> **Note**: CIC uses a regional dial plan with an .i3dplan extension. If you wish to import an older dial plan with an .i3pnum extension, you may do so. However, you will not gain the benefits of the regional dial plan. For information, see the *CIC Regionalization and Dial Plan Technical Reference* in the PureConnect Documentation Library.

After the new installation is completed, you can modify your dial plan in the Phone Numbers container in Interaction Administrator.

I don't have a dial plan; help me create one

Select this option if you want IC Setup Assistant to create a dial plan for you.

> **Important**: This option is recommended for countries using the North American Numbering Plan.

You only need to define a few elements — local area codes and exchanges — and IC Setup Assistant will do the rest to create a North American dial plan.
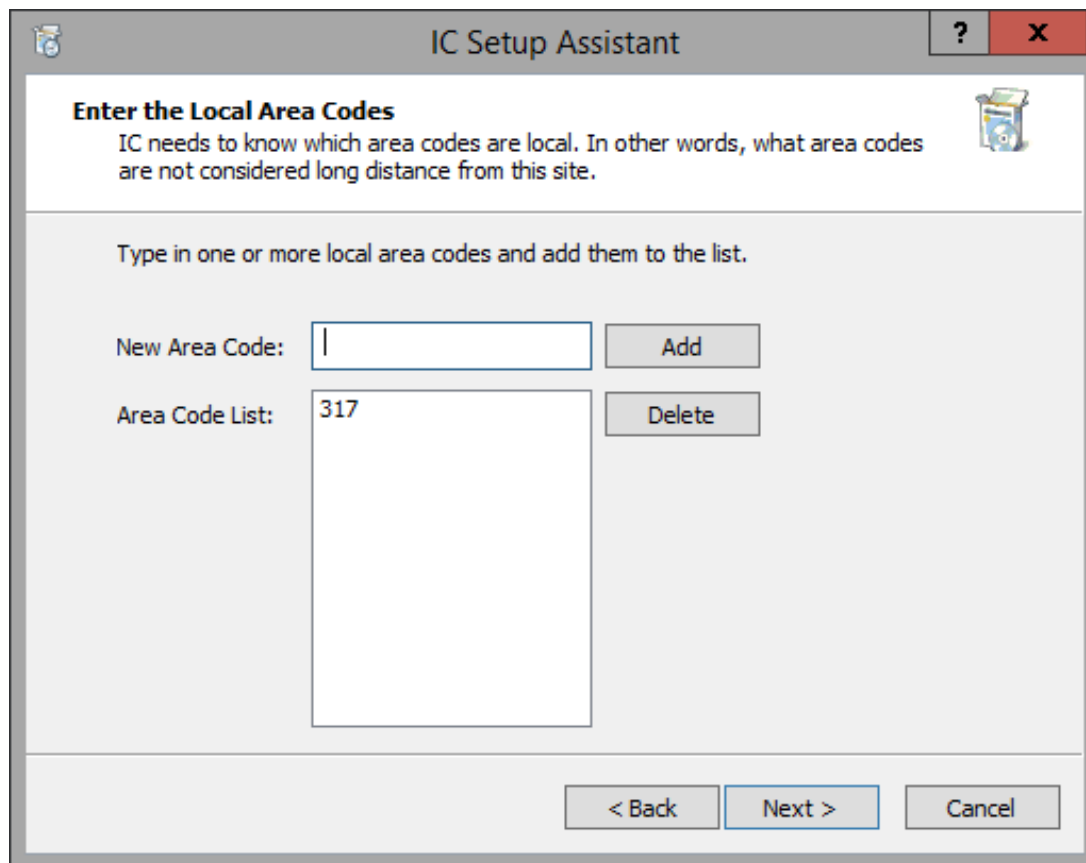
After the new installation is completed, you can modify your dial plan in the Phone Numbers container in the Interaction Administrator Phone Numbers container.

I will create a dial plan later in Interaction Administrator

Select this option to skip the dial plan portions of IC Setup Assistant. Post-installation, you can re-run IC Setup Assistant for the same dial plan creation options. Or you can create the dial plan in Interaction Administrator. See Interaction Administrator online help for details.

Enter the local area codes

This screen appears if you selected to create a dial plan. Specify your local area codes (containing local exchanges).

New Area Code

Type an area code that contains local exchanges, and click **Add**. The area code is added to the list of local **Area Code List**. Repeat for additional local area codes.

> **Note**: After the installation, if a new area code needs to be created or added to the locality in which the CIC server is installed, add it to the dial plan in the Interaction Administrator **Phone Numbers** container.

Enter local exchanges

This screen appears if you selected to create a dial plan. After the local area codes have been entered, add the local exchanges.

CIC will use all area codes in conjunction with all local exchanges to determine which calls are local to the CIC system. Add multiple exchanges by clicking **Add** and entering all valid exchanges for the locality in which the CIC Server is installed.

Area Code List

The changes you make to **set the number of digits** for each area code, and the **exchanges added for each area code** are reflected in this list box.

Number of digits

For each area code in the **Area Code List**, define the number of digits (7, 10, or 11) that are required to make a local call. Highlight an area code, select 7, 10, or 11 in the **Number of digits** list box.

The option selected should reflect the needs of an area in which the CIC server is installed. For examples, click Help (**?**).

Exchange List

Exchanges for the area in which the CIC Server is installed appear in this list. Local exchanges in the North American Numbering Plan (NANP) are three digit numbers in the range of 200 to 999. This information may be available in a local phone book or you can contact your telephone service provider (CO) to request a complete listing of local exchanges, and possibly a list of exchanges within the area code that are long distance charges from your site. For examples, click Help (**?**).
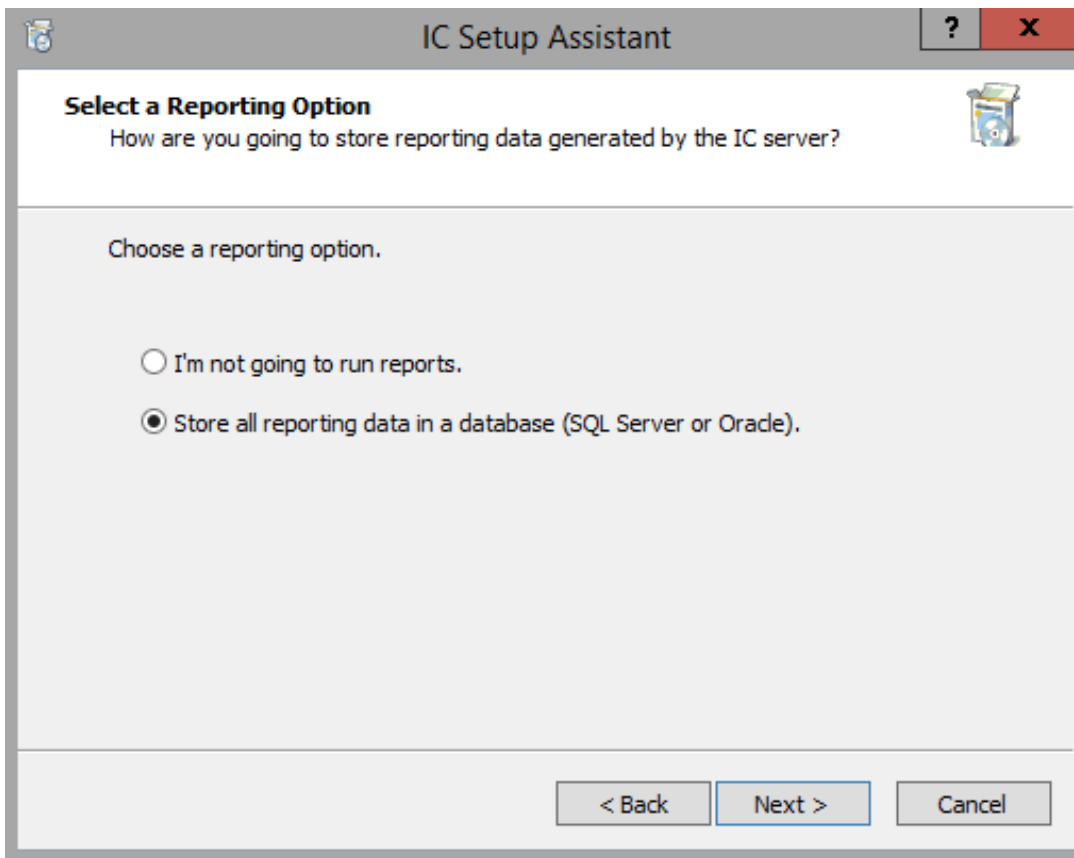
Add: Click Add to add exchanges to the list.

Import…: Click Import to import a text file with local exchanges for that area code. The exchange values must be separated by commas or spaces.

Remove: Select an existing exchange and click Remove to delete it from the list.

Select a reporting option

CIC provides reporting statistics for calls into and out of the CIC system.

Select how you are going to store reporting data generated by the CIC Server.

I'm not going to run reports

If your site does not include a database server, select this option to not collect any reporting data or any call details.

Store all reporting data in a database (SQL Server or Oracle)

Select this option if your site includes a SQL Server or Oracle database server.

Database configuration

Select the database you want to configure.

Configuring a database for use by CIC involves two parts: creating the database, and configuring CIC to use the database.

> **Note**: Make sure you have fulfilled requirements for the database you select. For instructions, see "Database Server".
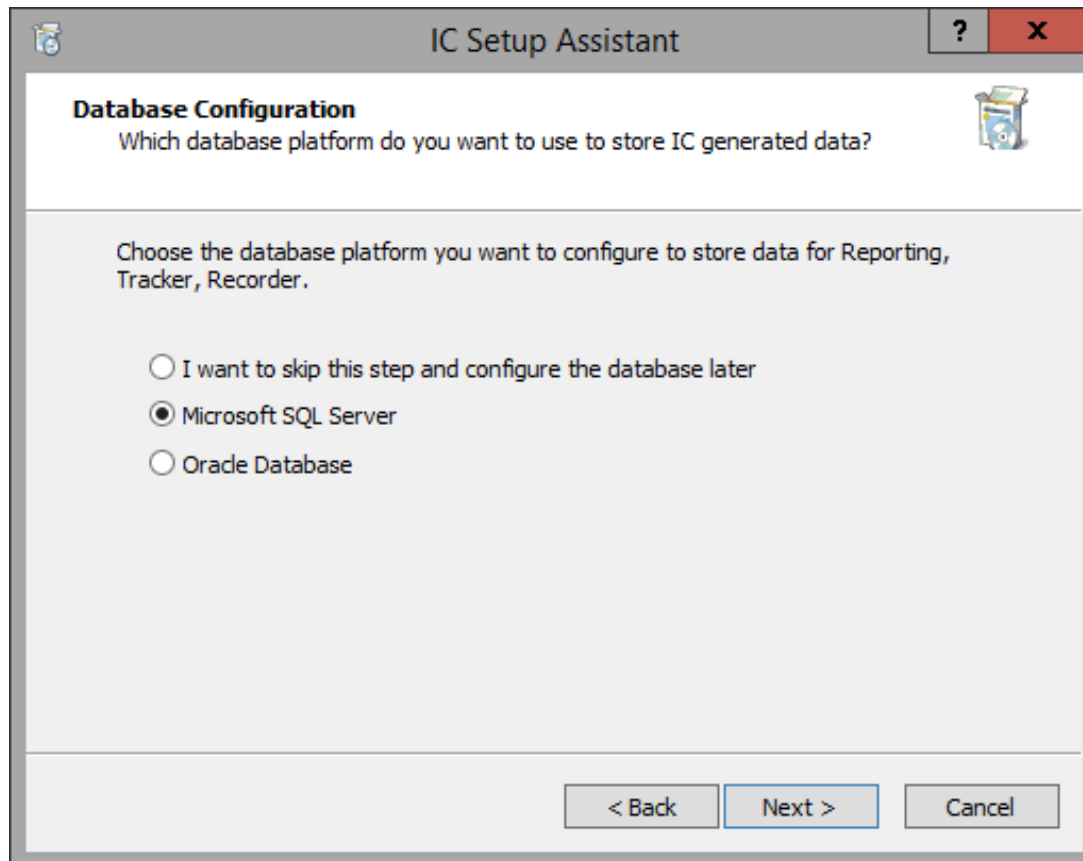
I want to skip this step and configure the database later

You can choose to configure the database at a later time by re-running IC Setup Assistant.

Microsoft SQL Server

Select this option if your site has a SQL Server. For large implementations, we recommend that you use a **dedicated SQL Server computer** for CIC database storage.

Oracle Database

Select this option if your site has an Oracle server. We recommend that you use a **dedicated Oracle server computer** for CIC database storage.

> **Note**: The Oracle client must be installed on the CIC Server. If IC Setup Assistant detects that is not present, you cannot select the Oracle option. You must exit IC Setup Assistant, install the Oracle client, and restart IC Setup Assistant. For Oracle client requirements, see "Database Server".

Select the Microsoft SQL Server

This screen appears if you selected Microsoft SQL Server in the Database Configuration screen. It specifies the SQL Server database administrator account user name and password, and other SQL Server-related configuration information.

Note: If you selected an Oracle database, corresponding Oracle-related screens will follow. Click Help (?) for information.

SQL Server

Enter the fully qualified domain name (FQDN) of the SQL Server that will host the CIC database. This machine must actively be running SQL Server and on the network. Make sure that the address you enter is reachable by client workstations.

Important: The SQL Server must be configured to be case-insensitive. CIC cannot log into a case-sensitive SQL Server or SQL Server instance name. For more information, contact PureConnect Customer Care.

Use credentials of the currently logged in user

Select this option if you wish to use Windows Authentication. IC Setup Assistant will use the currently logged in administrator account (CIC administrator account) credentials to connect to the SQL Server, create the CIC database, and create the three standard CIC database user accounts.

Use the specified credentials

Select this option if you wish to use the database administrator account or other account to connect to the SQL Server, create the CIC database, and create the three standard CIC database user accounts.

SQL Administrator Name and Password

The SQL Administrator and Password fields are enabled when the Use the specified credentials option is selected.

Enter an account with the sysadmin role. In most cases, this is the built-in database administrator account, sa. However, any account with the sysadmin role can be used.

Note: If the CIC database already exists and is up to date, you may enter an CIC database account, for example IC_ReadOnly (one of the standard CIC database user accounts).
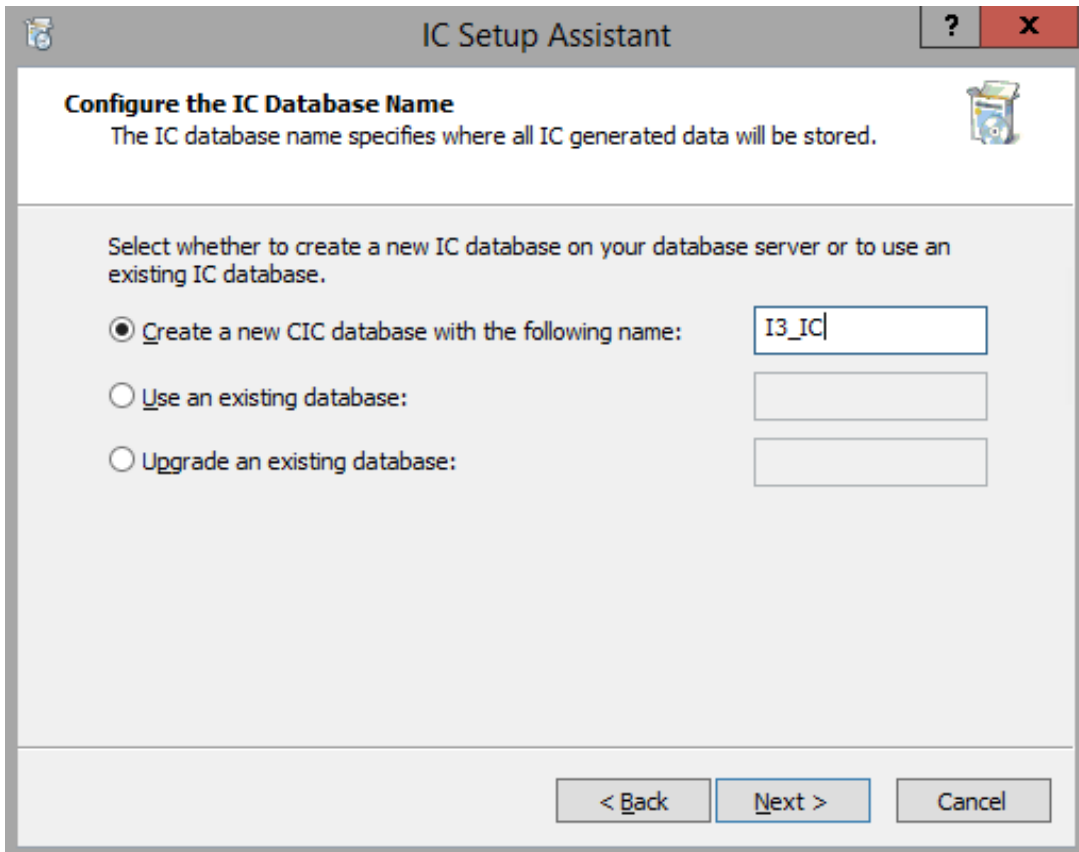
ODBC Driver

We recommend that you keep the default setting of "Use the default ODBC driver". Select Change... to change the ODBC driver only if you have contacted PureConnect Customer Care first to verify the driver.

Test

Click **Test** to verify that the CIC Server is able to connect to the database server and that the administrator name and password are correct. If IC Setup Assistant cannot verify this information, the problem must be fixed before IC Setup Assistant can continue.

Configure the CIC database name

Select one of the following options for a SQL Server database.

Create a new CIC database with the following name

Creates a brand new CIC database (one that has no data in it).

The database name field is populated with the database name I3_IC. You can change the database name, if desired.

> **Note:**
> If you choose to use a different database name, make sure that it does not contain hyphens, single quotes, double-quotes, or other illegal character types. Use of illegal character types may result in database creation errors once Setup Assistant begins the Commit process.

Use an existing database

Select this option if you wish to use an existing CIC database.

A database may already exist and be up to date, if you have multiple CIC Servers in your organization using the same CIC database (multiple active CIC Servers or one or more Switchover pairs), and the database was created while running IC Setup Assistant on

one of the other CIC Servers. Or, you may have already created the CIC database prior to running IC Setup Assistant by manually running the SQL scripts.

> **Note:**
> If you entered an account in the **Select the Microsoft SQL Server** screen that is not in the sysadmin role, such as **IC_ReadOnly**, the only option available is to use an existing database; you cannot choose to create a new database with this account.
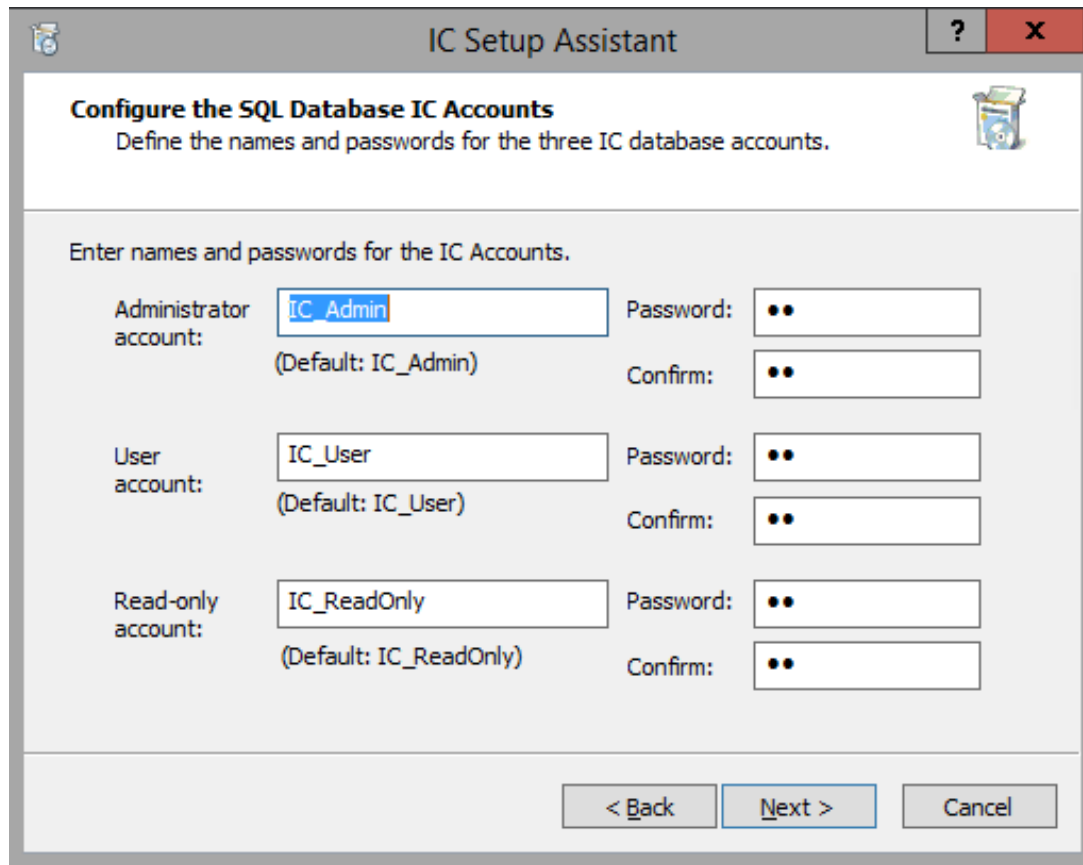
Upgrade existing database

This option is generally not applicable in CIC 4.0 GA to SU 6 or CIC 2015 R1 or later.

- This option does **not** apply to migrating an IC 2.4 or 3.0 database to CIC 4.0 GA to SU 6 or CIC 2015 R1 or later.
- This option may be applicable in certain circumstances when applying a CIC 4.0 to SU 6 Service Update or CIC 2015 R1 or later (with Setup Assistant in **rerun** mode). Check with PureConnect Customer Care.

Configure the SQL database CIC accounts

The CIC database has three default accounts with different permission levels to provide different levels of access to the database. IC Setup Assistant creates the tables and grants permissions to these standard database user accounts in a new database and verifies this information for existing databases.

Enter the names and passwords for the following CIC accounts.

> **Note**: You must enter a password. IC Setup Assistant does not allow blank passwords for database user accounts.

The database administrator may have a password policy (for example, at least six characters long, must start with a number, etc.). Be sure to remember or record in a safe place the passwords you enter here.

Administrator Account

IC_Admin is the administrative account with the db_owner role and owns all the tables on the database server with "dbo" schema. It can be used to perform administrative tasks on the database (performance tuning, backups, etc). IC_Admin is used by the IC Tracker and IC Report Logging Data Sources defined in Interaction Administrator.

User Account

IC_User is the user account used by CIC Server components to read and write to the database.
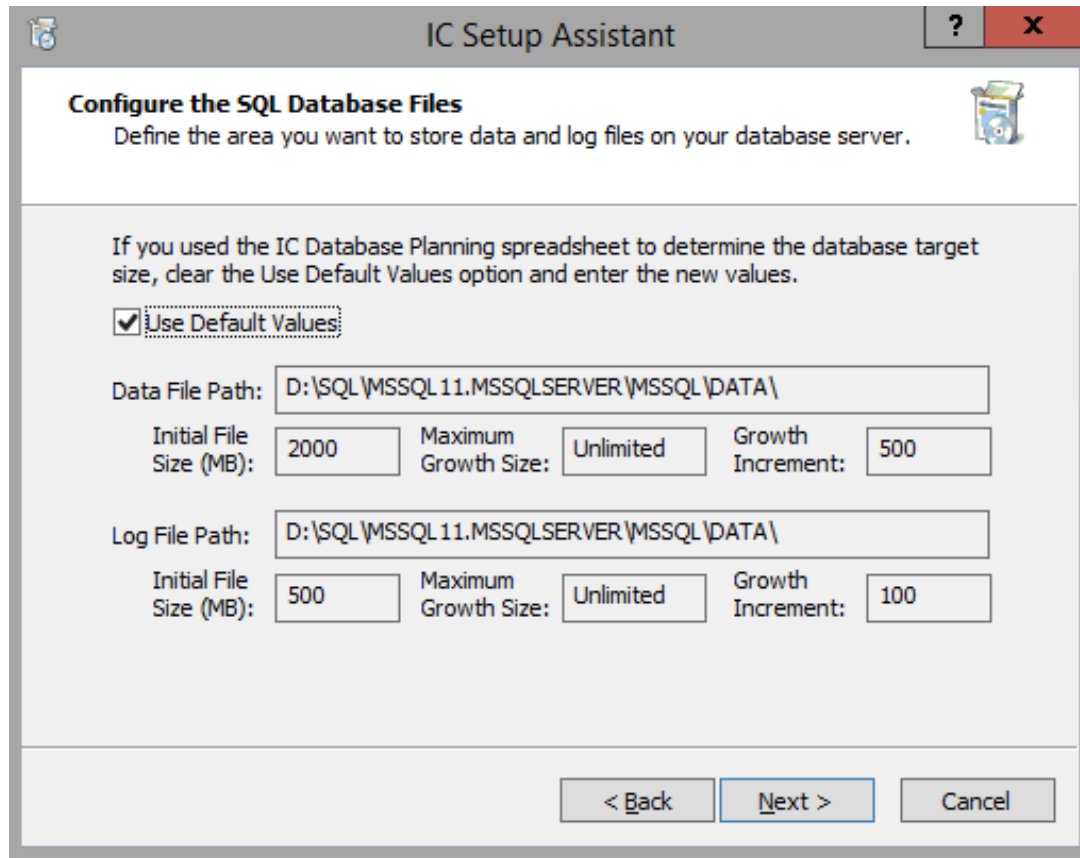
Read-Only Account

IC_ReadOnly is the read-only account used by the CIC Server and client components to query the database.

Configure the SQL database files

Specify the directory locations for the Reporting/Recorder/Tracker SQL Server database data file and log file, and the sizing specifications for each.

As part of the SQL Server database requirements, you should have already performed your database space planning, as discussed in "Database Server". Refer to that section information about filling out this screen.

In this example, the initial file sizes and growth increments provided are for a CIC license that includes Interaction Recorder and Interaction Tracker feature licenses.

Depending on the sizing determinations you made, keep the default values or de-select **Use default values** and enter other values. We recommend that only the database administrator or other experienced user change the default values. Click Help (**?**) for more information.

Select CIC optional components

The Switchover Service, Multi-Site, TFTP, and Director Monitored Server are additional components. They can be selected in this screen to meet the needs of the particular installation.

Note: Switchover Service, Multi-Site, and Director Monitored Server require additional licensing.
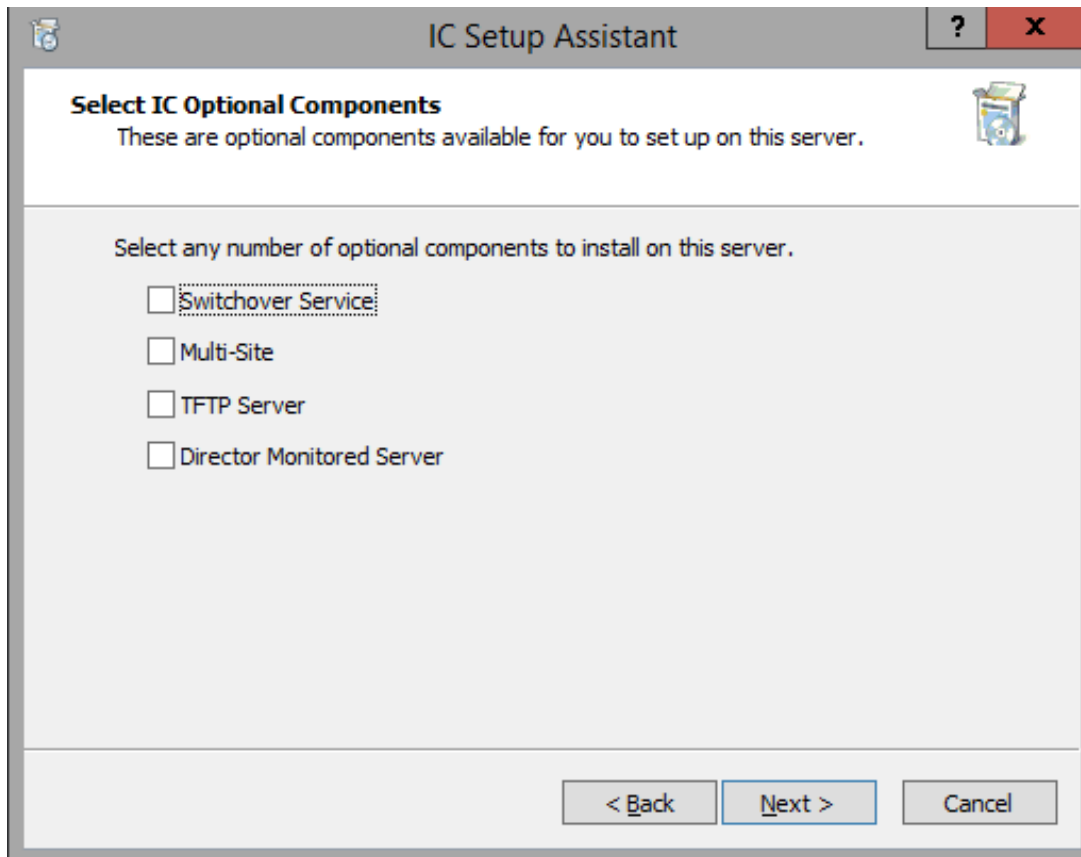
Switchover Service

Select this option if the installation requires the Switchover service for failover support. Additional Switchover screens will follow.

Multi-Site

Select this option if this server will participate in an Interaction Multi-Site configuration. Additional Multi-Site screens will follow.

TFTP Server

The CIC server install automatically installs the necessary TFTP server component files and configures the default configuration required for the TFTP server. Setup Assistant configures enables the TFTP server by changing its Service Startup Type from Manual to Automatic.

Select this option if you plan to:
- Configure Interaction SIP Station, AudioCodes, and Genesys phones as part of a managed IP phones implementation. For more information, see the C*IC Managed IP Phones Administrator's Guide* in the PureConnect Documentation Library.
- Configure unmanaged Polycom phones. For more information, see the *Configuration of CIC Phone Features for Polycom Phones Technical Reference* in the PureConnect Documentation Library.
- Perform gateway programming.

Director Monitored Server

Starting with CIC 4.0 SU 3, Interaction Director Monitored Server components are included in the CIC server installation/update component.

If your site implements Interaction Director 4.0, select this option. An additional **Director User Account** screen will follow.
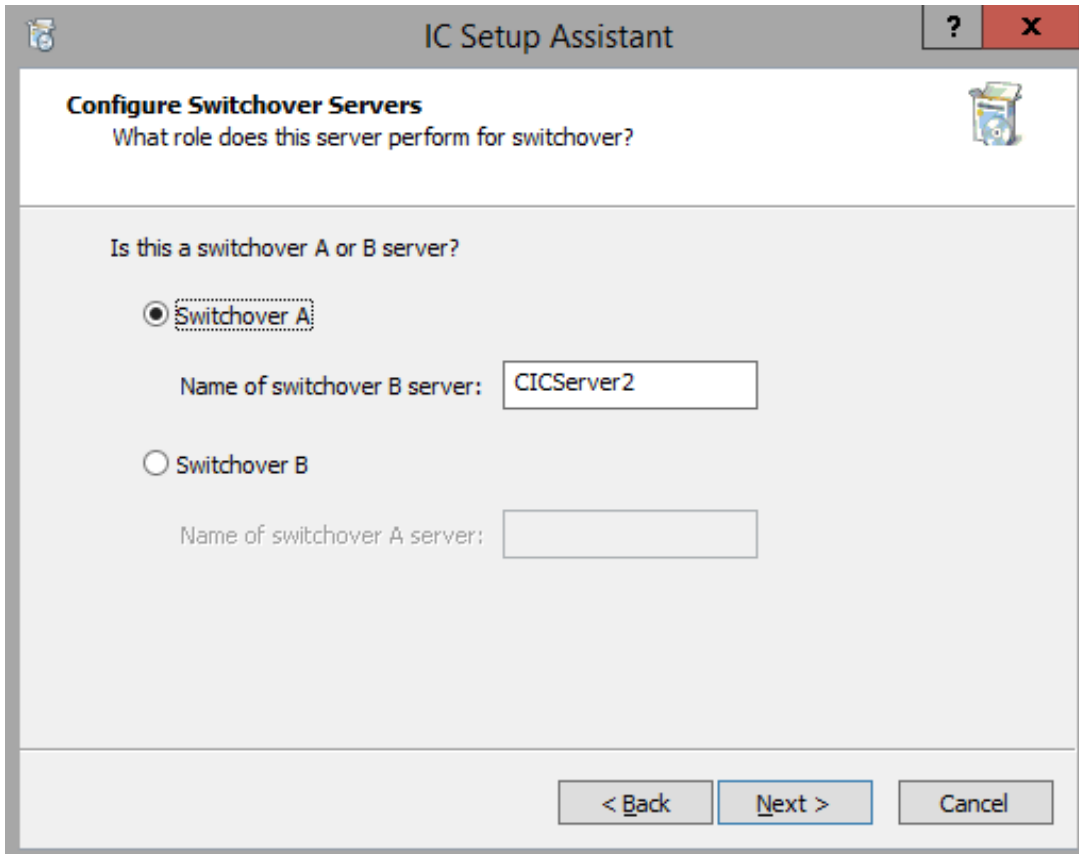
For information on setting up the Interaction Director Monitored Server, see the *Director Monitored Server Installation and Configuration Guide* in the Add-on Documentation section of the PureConnect Documentation Library.

Configure Switchover servers

This screen appears if you selected the Switchover Service option on the **Select IC Components** screen.

> Important: Before continuing, review the *Automated Switchover System Technical Reference* in the PureConnect Documentation Library for Switchover system requirements and installation instructions. You will first complete a CIC installation on the server *intended* to be the initial active server and then repeat the procedure on the server *intended* to be the initial backup server.

Configure the role that this CIC server performs for Switchover. In our example, "CICServer1" is the intended initial active server or "Switchover A", and "CICServer2" is the intended initial backup server or "Switchover B".

Follow these instructions to configure the initial active and initial backup servers.

- Initial active server configuration for Switchover service
- Initial backup server configuration for Switchover service
- Confirm the Switchover server configuration

Initial active server configuration for Switchover service

Select the first option when you run Setup Assistant on the initial active server or "Switchover A" server (in our example, "CICServer1").

Switchover A

Select this option when you run Setup Assistant on the server you have determined to be the initial active server or "Switchover A" server (in our example, "CICServer1").

Name of switchover B server
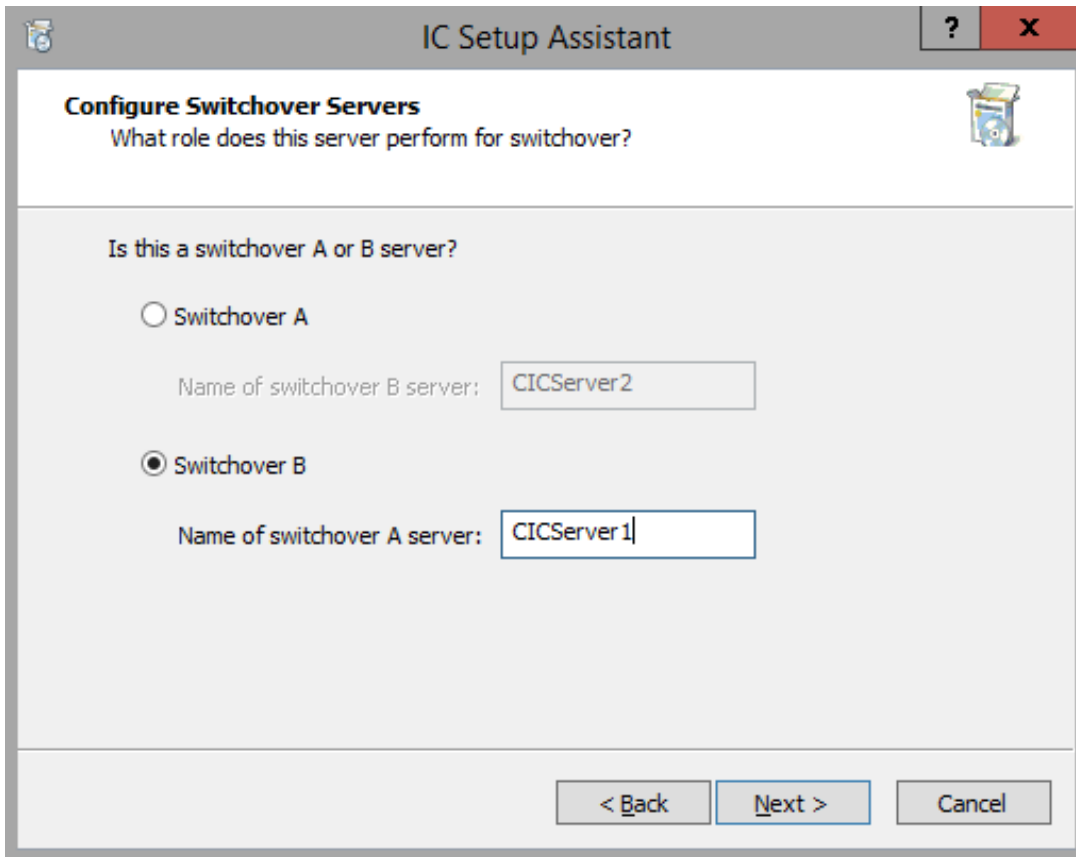
Enter the machine name of the initial backup server or "Switchover B" server. In our example, this is "CICServer2".

The backup server name should be different than active server name. *Do not enter the IP address or the fully qualified domain name.*

The entry in this field populates the required "SwitchoverServer B" server parameter in Interaction Administrator.

Initial backup server configuration for Switchover service

Select the **second option** when you run Setup Assistant on the initial backup server or "Switchover B" server (in our example, "CICServer2").

Switchover B

Select this option when you run Setup Assistant on the server you have determined to be the initial backup server or "Switchover B" server (in our example, "CICServer2").

Name of switchover A server

Enter the machine name of the initial active server or "Switchover A" server. In our example, this is "CICServer1".

The active server name should be different than the backup server name. *Do not enter the IP address or the fully qualified domain name.*

The entry in this field populates the required "SwitchoverServer A" server parameter in Interaction Administrator.

Confirm the Switchover server configuration

After running IC Setup Assistant on the initial active and backup servers (in this example, "CICServer1" and "CICServer2"), the SwitchoverServer A and B server parameters would be configured like this:

On **CICServer1**:

SwitchoverServer A = CICServer1

SwitchoverServer B = CICServer2

On **CICServer2**:

SwitchoverServer A = CICServer1

SwitchoverServer B = CICServer2

If the SwitchoverServer A and B server parameters are not set correctly, the Switchover system will get confused about which server is the active server and which one is the backup server, and CIC will not start successfully.

Configure Multi-Site for this Server

The screen appears if you selected the Multi-Site option on the **Select IC Optional Components** screen.

> Note: Before you configure Multi-Site RTM for this server, you should have determined whether a dedicated Multi-Site RTM server is necessary for your organization, and, if needed, installed on a server on the CIC server network. The Multi-Site RTM Server install is available on the CIC 2015 R1 or later iso .file. Run Install.exe from the \Installs directory, select the Off-Server Components tab, and check the appropriate checkbox.

For more information on setting up Interaction Multi-Site, see the *Multi-Site Technical Reference* in the PureConnect Documentation Library.
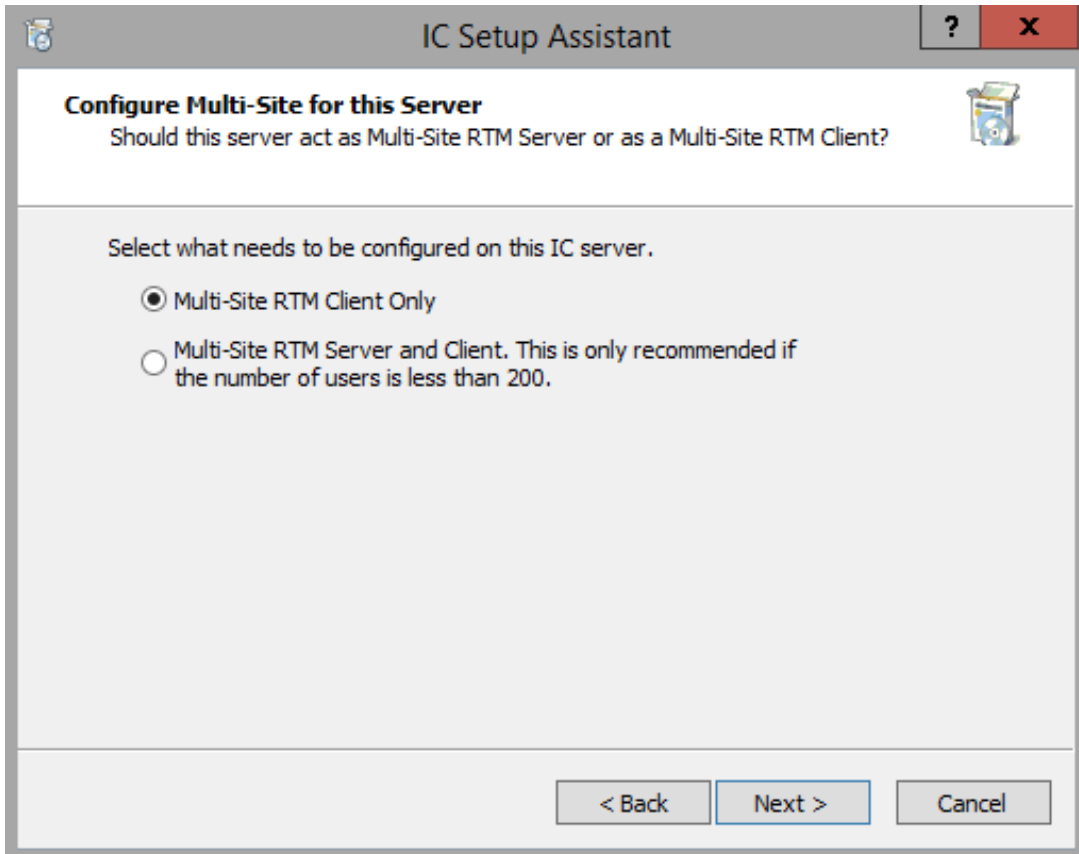
Select what needs to be configured on this CIC Server.

Multi-Site RTM Client Only

Select this option to install Multi-Site RTM client on this CIC Server. You must have a dedicated Multi-Site RTM server installed on a server on the CIC Server network.
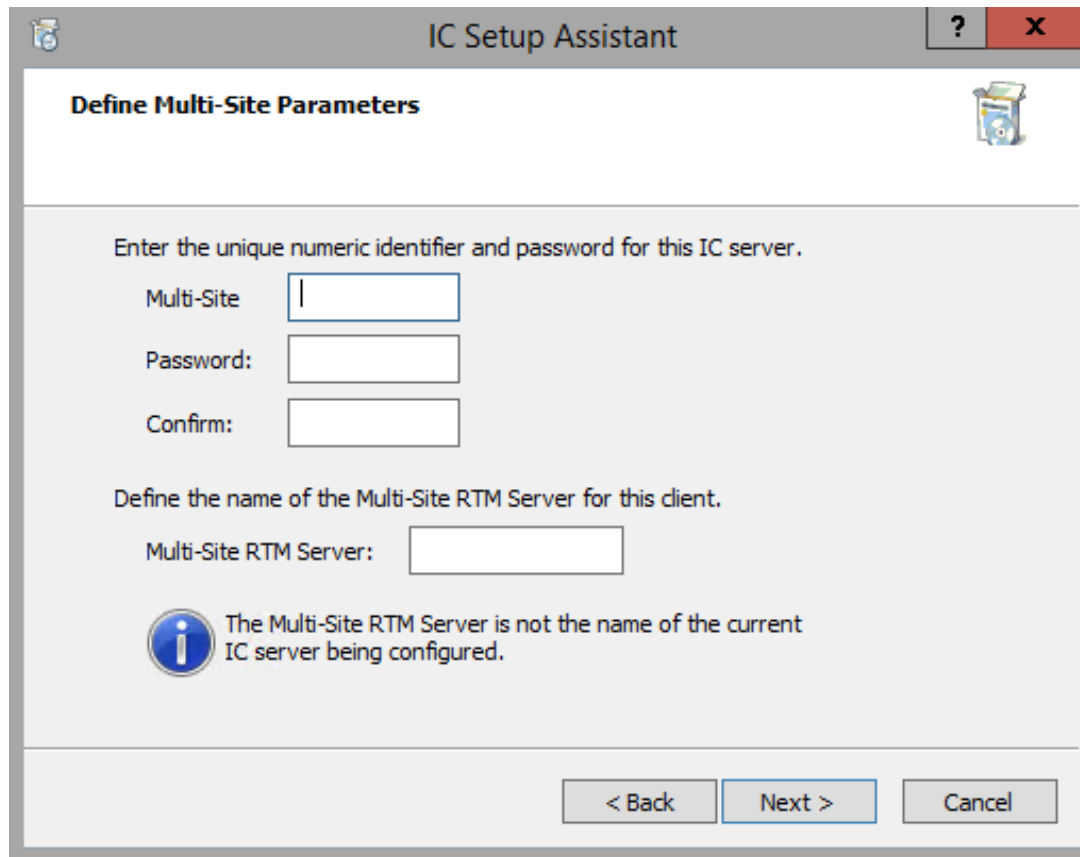
Multi-Site RTM Server and Client

Select this option to install Multi-Site RTM server and Multi-Site RTM client on this CIC server. Select this option only if your collective will contain 200 hundred users or less. Note that the role as Multi-Site RTM server consumes a lot of resources on the CIC Server.

Define Multi-Site Parameters

The screen appears if you selected the Multi-Site option on the **Select IC Optional Components** screen.

For information on setting up Interaction Multi-Site, see the *Multi-Site Technical Reference* in the PureConnect Documentation Library.

Multi-Site ID

Enter the unique numeric identifier for this CIC Server. Each CIC Server should have a unique Site ID.

Password

Enter the Multi-Site password for this CIC Server. Passwords are case-sensitive and can be any length or character.

Confirm

Re-enter the password.
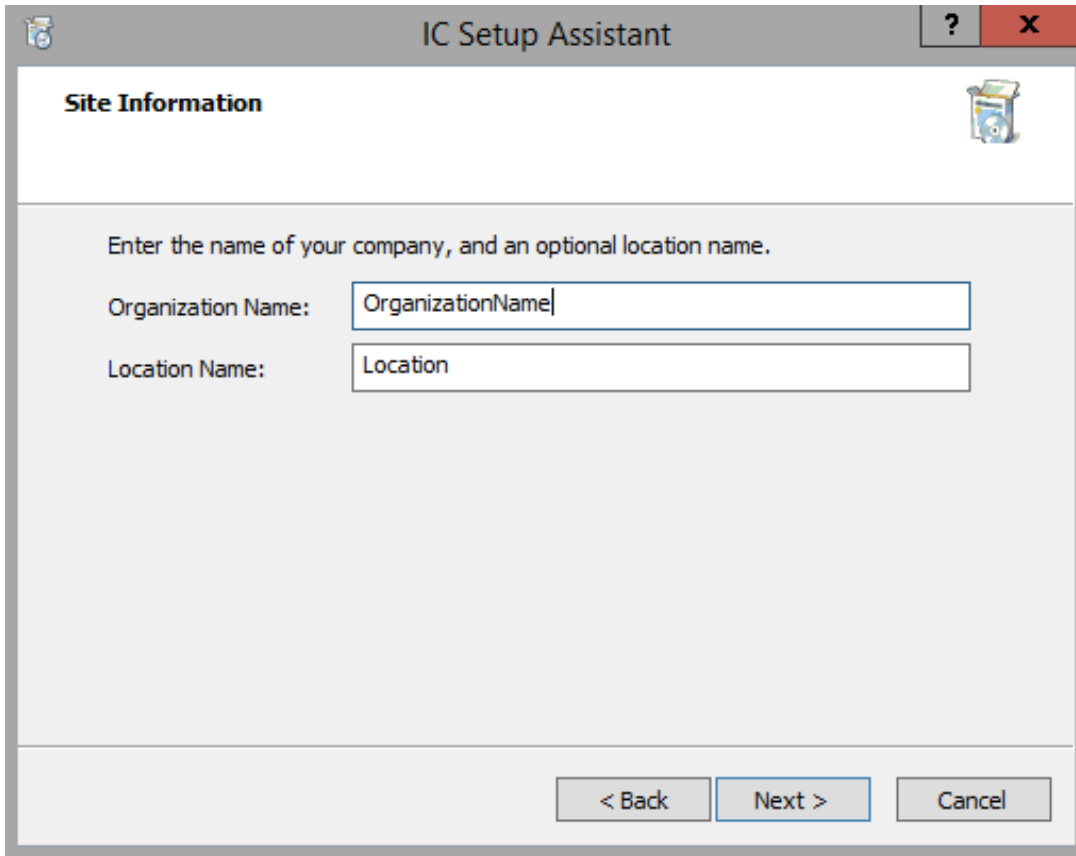
Multi-Site RTM Server

This option is enabled if you selected Multi-Site RTM Client Only in the **Configure Multi-Site for this Server** screen.

Type the name of the machine that runs the Multi-Site RTM server that you will be connecting to. This is the dedicated Multi-Site RTM server, not the CIC Server currently being configured.

Site information

Enter site information that Interaction Tracker and other CIC components require. Interaction Tracker (additional licensing required) uses the information to create user Organization and Location records during the CIC user import in IC Setup Assistant or Interaction Administrator. Tracker uses the records to link interactions to CIC users.

Organization Name

Enter the name of your company, for example,"Acme Corporation" or "Acme". The default is OrganizationName. In a Multi-Site environment, the name should be the same for each site.

Location Name

(Optional) Enter an identifier for physical location, for example, "Indianapolis" or "HQ" or "2nd Floor". The location should generally reflect a mailing address. If you configured for Multi-Site, IC Setup Assistant supplies the Site ID by default, for example, Location 111. You can change this if it does not suit the location scheme for your customer site. (Note that Site ID is *not* related to physical location.)

Change the site name

IC Setup Assistant uses "CustomerSite" as the default site name. A more descriptive name may be entered if desired.

I want to use CustomerSite as the site name

This is the default option. If this option is selected, the name of the site will appear in Interaction Administrator as CustomerSite.

I want to use the following name

Select this option to use a different site name and enter the name.

Certificate Signing Options

CIC servers require certificates and private keys for secure communications with remote subsystems such as ASR servers and Web servers.

CIC servers in multiple CIC server environments, for example, a Switchover pair, require identical certificates and private keys to connect to remote subsystems. Depending on this CIC server's role in your CIC server environment, you can complete this process on each CIC server.

This section explains how to configure certificate signing options when you run IC Setup Assistant as part of a new or update installation. For more information, see Setup Assistant Help. This section covers:

- Certificate Signing Option Screen
- Generated Certificates and Private keys
- Create Signing Requests and Import Third-Party Signed Certificate

Certificate Signing Option Screen

In the **Certificate Signing Option** screen, you select the certificate signing option to use.

The following illustration shows how the **Certificate Signing Option** screen appears the first time you run IC Setup Assistant.
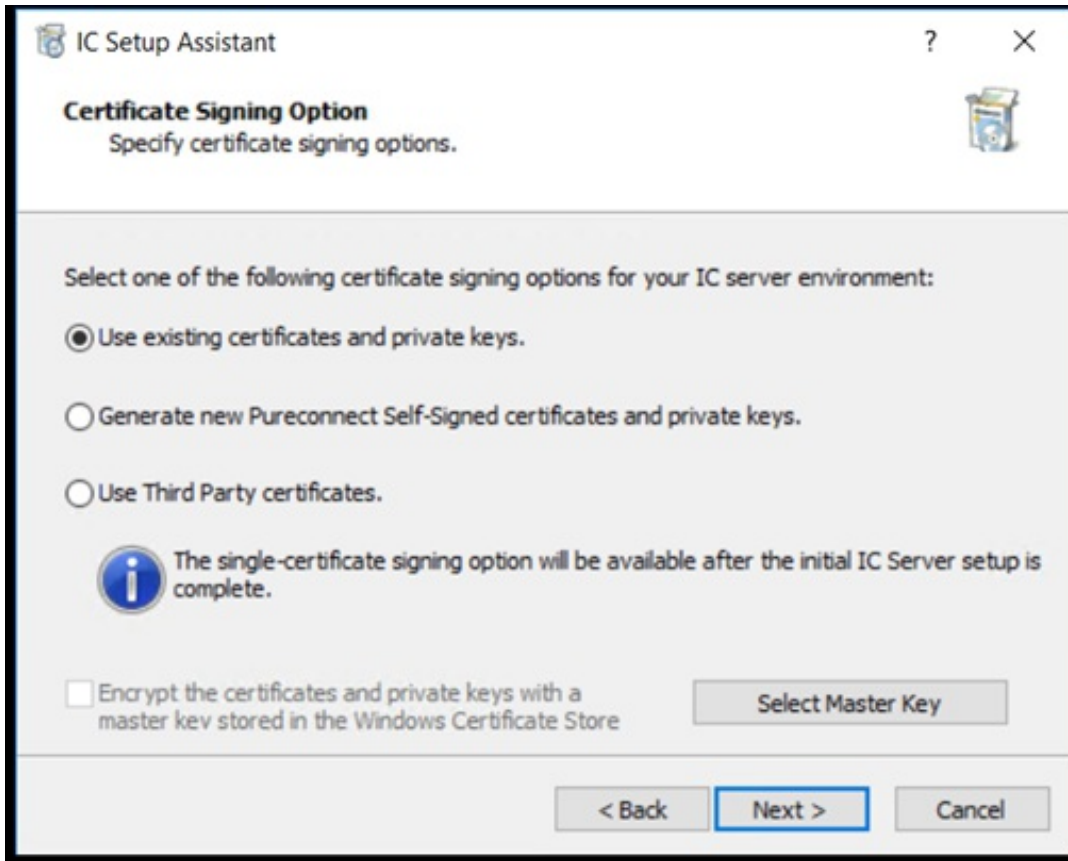
The following illustration shows how the **Certificate Signing Option** screen appears when you rerun IC Setup Assistant.
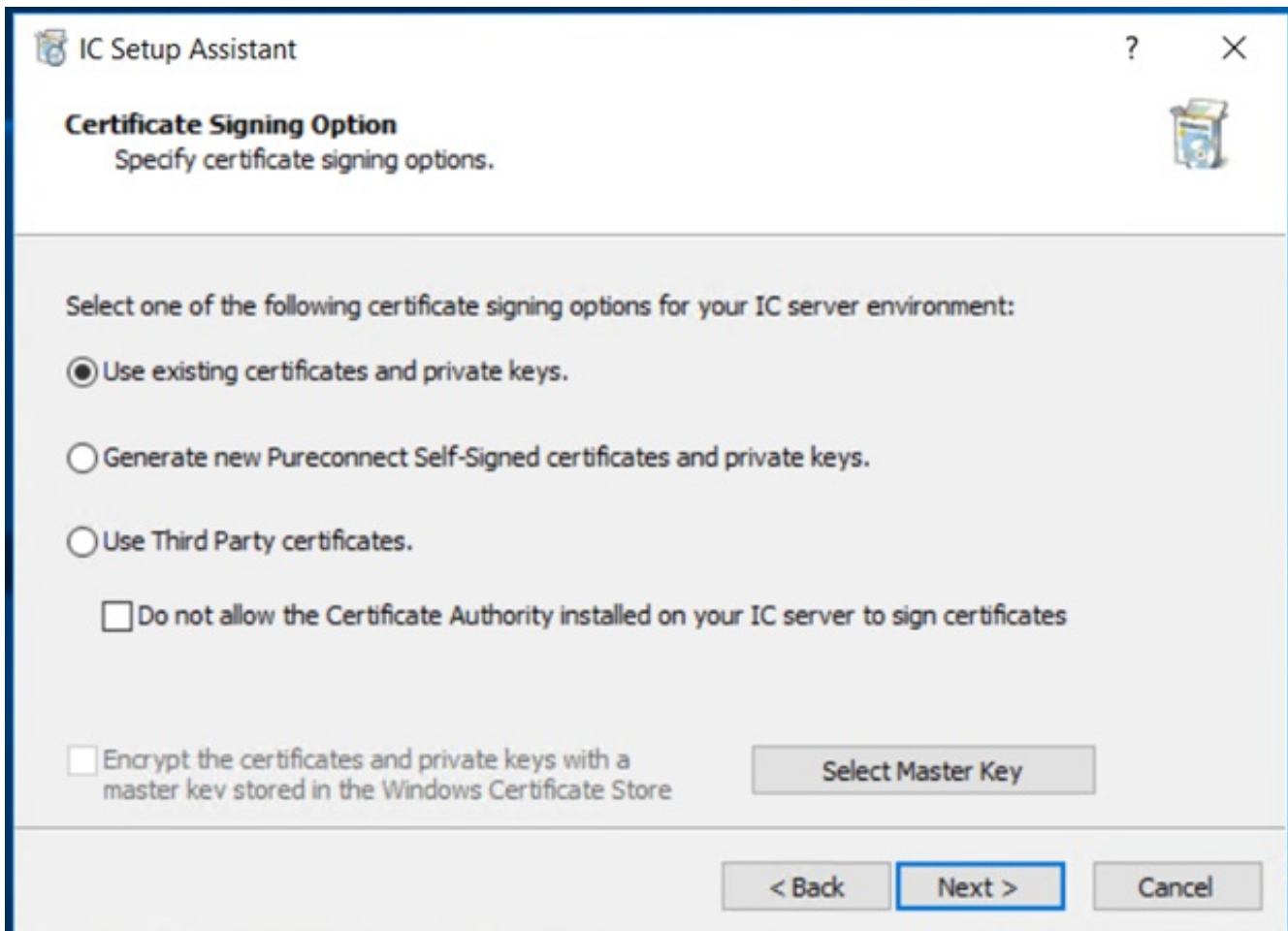
Use existing certificates and private keys

Select this option if you prefer to leave the current certificate structure as is. This selection bypasses any further setup for certificates and continues with the next step in IC Setup Assistant.

Generate new Pureconnect Self-Signed certificates and private keys

Select this option to use the generated certificates and private keys signed by CIC. This certificate signing option uses the Server Group Certificate and Private Key screen and the Server Group Certificate and Private Key Locations screen.

Use Third Party certificates

Select this option to use certificates signed by a third-party certificate authority. This option uses the **Certificate Signing Requests** window to select the certificate use type for which to create a certificate signing request. After you receive the signed certificate from the certificate authority, re-run IC Setup Assistant and select this option again to import the signed certificate and private key.

Do not allow the Certificate Authority installed on your IC server to sign certificates

> **Note**: This option appears when you rerun IC Setup Assistant. This option does allow the Certificate Authority installed on your IC server to sign certificates.

Select this option to use a single server certificate for all certificate use types. Selecting this option automatically selects the **Create Certificate Signing Requests to be signed by an external Certificate Authority and imported into your IC server** option. If you select this option, the **Certificate Signing Requests** dialog contains a single certificate use type.

> **Note** : Before you use a single server certificate for all certificate use types, consider that if the single certificate becomes compromised for one certificate use type, the other certificate use types cannot use the certificate.

Clear this option to use a separate server certificate for each certificate use type. If you clear this option, the **Certificate Signing Requests** dialog contains all the certificate use types.

Encrypt the certificates and private keys with a master key stored in the Windows Certificate Store

This option appears selected if you used **Select Master Key** to import a certificate and private key to use as a master key. You can clear this option if you no longer want to use a certificate and private key to encrypt the certificate folder.

> **Important** : This option disables further certificate generation on this machine until you re-run IC Setup Assistant and remove the check mark to clear this option.

Select Master Key

Select this button to indicate the master certificate and private key to use to encrypt the certificate folder. The Windows Certificate Store stores the master certificate. You can use **Select Master Key** with all three certificate signing options. Click **Select Master Key** and the **Import or Select Signed Certificate** dialog appears. From the **Import or Select Signed Certificate** dialog you can:

- Import the master certificate and private key. Select **Import** and complete the information in the **Import Certificate** dialog.
- Select the master certificate and private key from the Windows Certificate Store. Click **Select** and complete the information in the **Select Certificate From Windows Certificate Store** dialog.

After you use the **Import or Select Signed Certificate** dialog to import the master certificate and private key, the **Encrypt the certificates and private keys with a master key stored in the Windows Certificate Store** option appears selected.

Generated Certificates and Private keys

This certificate signing option uses the **Server Group Certificate and Private Key** screen and the **Server Group Certificate and Private Key Locations** screen.

This section includes:

Server Group Certificate and Private Key Screen

Server Group Certificate and Private Key Locations

Server Group Certificate and Private Key Screen

In this screen, you select the appropriate certificate management options for your CIC server environment. As an example, this section explains the selections to make for the initial active and backup servers in a **Switchover pair**.

This section includes:

- Initial active server configuration using certificate generated by CIC
- Initial backup server configuration using certificate generated by CIC
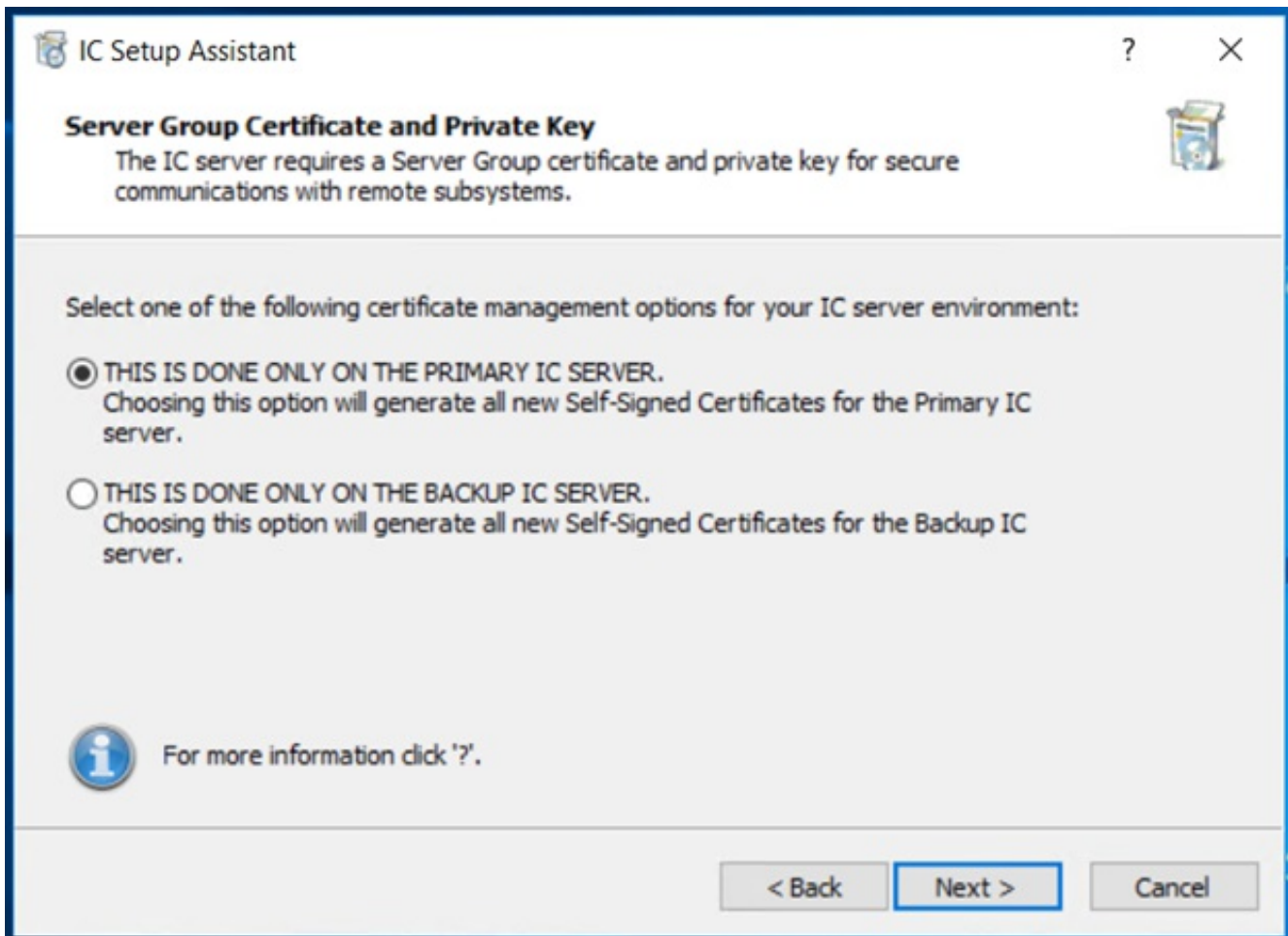
Initial active server configuration using certificate generated by CIC

Select the **first option** if this CIC server is the initial active server. No further configuration is necessary. Setup Assistant will use the Server Group certificate and private key that was automatically generated during the IC server installation.
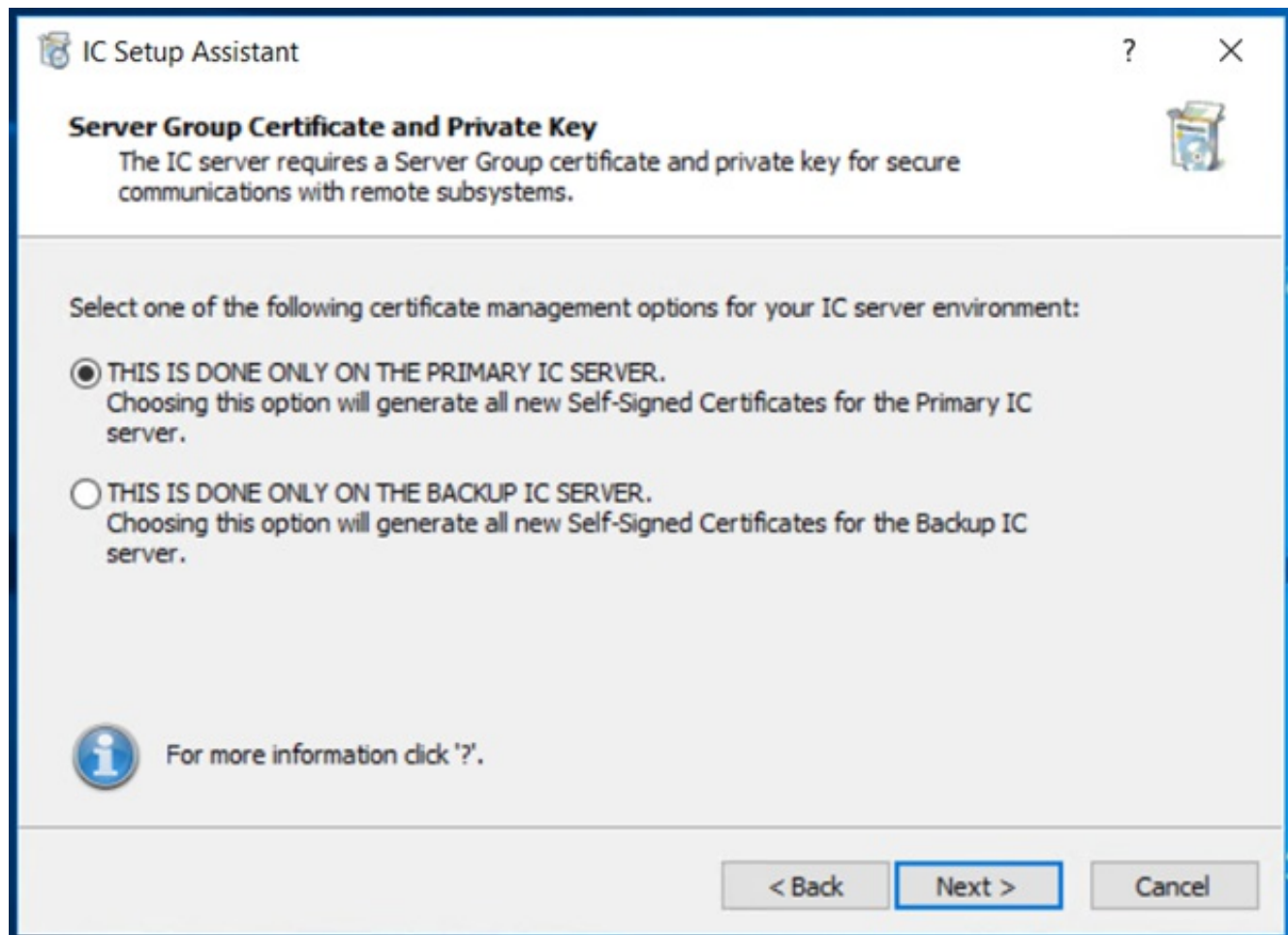
Note: If you plan to use a third party certificate authority, do *not* select this option. Select the second option instead so that you can securely copy your own Server Group certificate and private key files to the initial active server.

Click **Next** to continue on Setup Assistant.

Initial backup server configuration using certificate generated by CIC

Select the **second option** if this CIC server is the initial backup server.
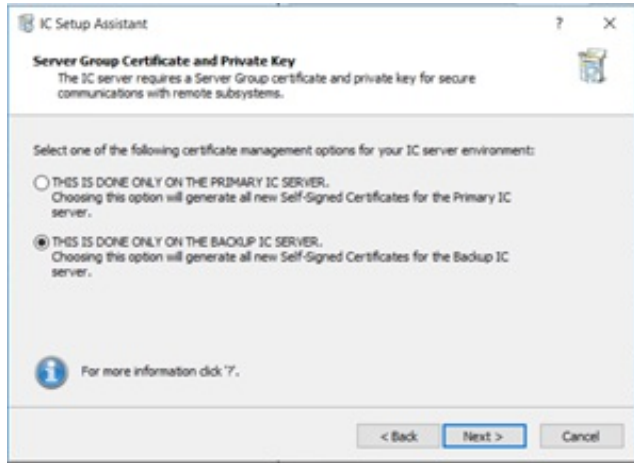
Click **Next**. You will perform a procedure in the next screen to securely copy the Server Group certificate and private key from the initial active server to the initial backup server.

> Note: If you plan to use a third party certificate authority, select this option and click **Next**. You will perform a procedure in the next screen to securely copy your own Server Group certificate and private key files to the initial backup server.

For more information

For more information on configuring Switchover and Server Group certificates and private keys, see the *CIC Automated Switchover System Technical Reference* in the PureConnect Documentation Library.

Server Group Certificate and Private Key Locations

This screen appears if you selected the second option in the **Server Group Certificate and Private Key** screen.

As an example, this section explains the selections to make for the initial backup server in a **Switchover pair**.

This section includes:

Initial backup server configuration copying the Server Group certificate and private key files

Follow this procedure to securely copy the Server Group certificate and private key files from the initial active server to the initial backup server.

1. With Setup Assistant set on this screen, create new folder in the Downloads folder with the name 'ServerGroup_InitialServer'.
2. Browse to the \I3\IC\Certificates\ServerGroup directory on the initial active server.

> Note: If you are using your own Server Group certificate and private key, browse to the directory locations of the Server Group certificate (ServerGroupCertificate.cer) and Server Group private key (ServerGroupPrivateKey.bin) that you wish to use.

3. Copy the entire \I3\IC\Certificates\ServerGroup directory to the 'ServerGroup_InitialServer' folder (Created in the Downloads folder).

> **Note**: If you are using your own Server Group certificate and private key, copy the Server Group certificate and private key that you wish to 'ServerGroup_InitialServer' folder.

4. Copy the 'ServerGroup_InitialServer' folder from initial Active Server and paste it in the Downloads folder of initial backup server.

5. Click the **Import Certificates** button in the **Server Group Certificate and Private Key Locations** screen.

6. The **Import Certificate** screen appears.

> **Note**: If you are using your own Server Group certificate and private key, you must also specify the **Type** and **Format** information, and whether the private key is password protected. Click on Help for details on these fields.

7. Click **OK** to return to the **Server Group Certificate and Private Key Locations** screen, which displays the paths of the Server Group certificate and private key files on the 'ServerGroup_InitialServer' that will be copied to this CIC server.

8. Continue on in Setup Assistant until it completes. Keep the 'ServerGroup_InitialServer' folder in the CIC server until Setup Assistant completes. The Server Group certificate and private key files will be copied from the 'ServerGroup_InitialServer' folder to the CIC server during the **Commit** process.

Create Signing Requests and Import Third-Party Signed Certificate

Select the **Create Certificate Signing Requests to be signed by an external Certificate Authority and imported into your IC server** option to use certificates signed by a third-party certificate authority. This option uses the **Certificate Signing**

Requests window to select the certificate use type for which to create a certificate signing request.
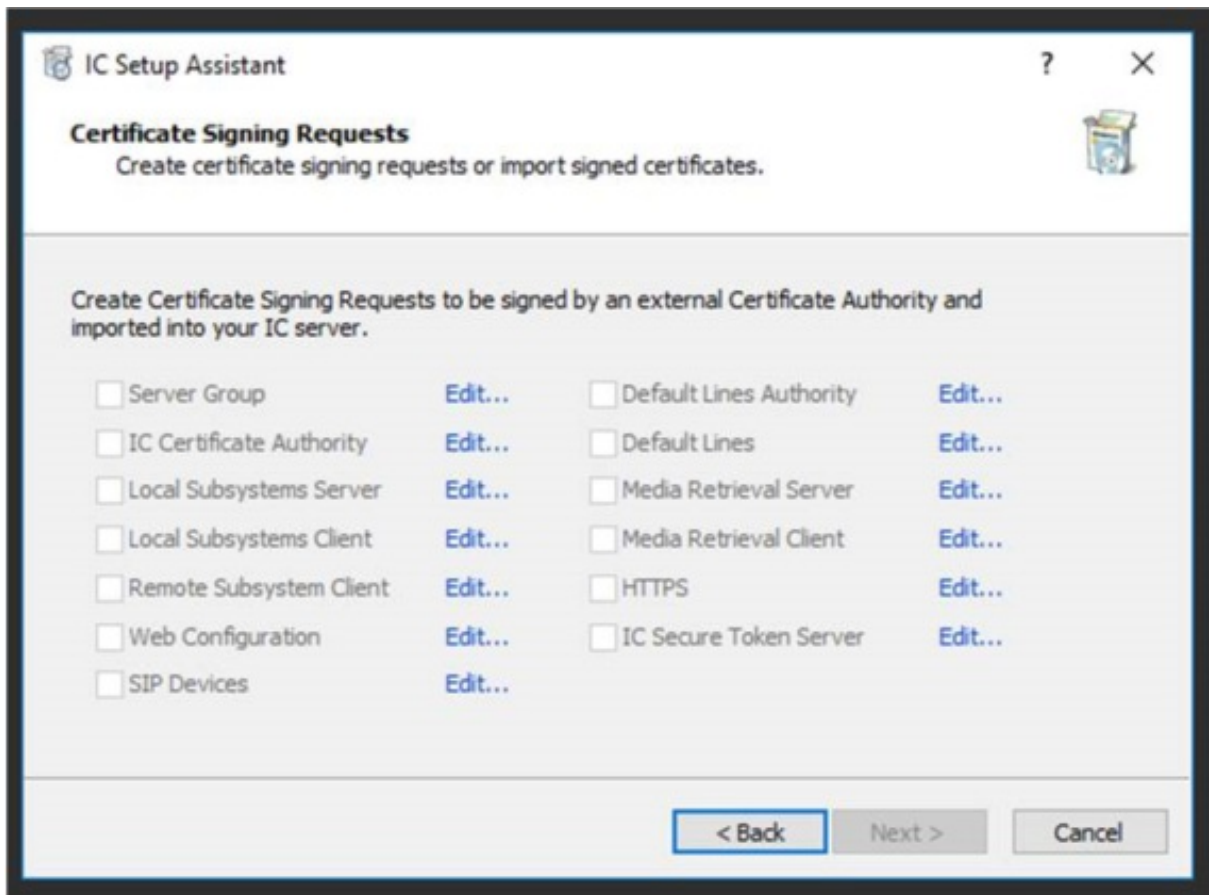
The first time you run IC Setup Assistant:

- If you do not plan to use a single certificate for all certificate uses, use the **Certificate Signing Requests** dialog to create a certificate signing request for all the certificate use types.
- If you do plan to use a single certificate for all certificate uses, then use the **Certificate Signing Requests** dialog to create a certificate signing request for the Server Group certificate use type or select a signed certificate from the Windows Certificate Store for the Server Group certificate use type.

Creating a certificate signing request creates a certificate signing request file and a private key. Send the certificate signing request file to a certificate authority. Keep the private key to use when you import the signed certificate you receive from the certificate authority.

> **Note** : Do not send the private key to the certificate authority. Do not copy the private key unless you create a secure copy.

When you receive the signed certificate from the certificate authority, re-run IC Setup Assistant and use the **Certificate Signing Requests** dialog to import the signed certificate and private key. When you rerun IC Setup Assistant:

- If you selected **Do not allow the Certificate Authority installed on your IC server to sign certificates** to use a single certificate for all certificate uses, then you import a signed certificate for all the certificate use types.
- If you did not select **Do not allow the Certificate Authority installed on your IC server to sign certificates** to use a single certificate for all certificate uses, then you import a signed certificate for the Server Group certificate use type.

CIC servers in multiple CIC server environments, for example, a Switchover pair, require *identical* certificates and private keys to connect to remote subsystems. Depending on this CIC server's role in your CIC server environment, you can complete this process on each CIC server.

Create a certificate signing request

> **Important**: If you plan to use a single certificate for all certificate uses, you must create a certificate signing request for the Server Group certificate use type. If you do not plan to use a single certificate for all certificate uses, you must create a certificate signing request for all the certificate use types.

1. From the **Certificate Signing Option** dialog, select **Create Certificate Signing Requests to be signed by an external Certificate Authority and imported into your IC server**.
2. Select **Next**. The **Certificate Signing Requests** dialog appears.
3. Select the **Edit** button next to a certificate use type to create a certificate signing request for that certificate use type. The **Import or Select Signed Certificate** dialog appears.
4. Click **Create** under **Certificate Signing Request**. IC Setup Assistant displays a message to indicate that you successfully created the request.
5. Click **OK**. The **Import or Select Signed Certificate** dialog appears. The **File Path** field indicates the directory for the certificate signing request file and the private key.

   Note: Make note of the directory for the certificate signing request file and private key. You want to access this directory to find the file to send to the certificate authority. You also want to access this directory to specify the private key to import.
6. Click **OK**. The **Certificate Signing Requests** dialog appears. A check mark appears next to the certificate use type for which you just created a certificate signing request.
7. Repeat this procedure to create additional certificate signing requests for other certificate use types as needed.

Note: After you create the certificate signing requests, send the certificate signing request file or files to your certificate authority. Do not send the private key to the certificate authority. Do not copy the private key unless you create a secure copy. When you receive the signed certificate back from the certificate authority, re-run IC Setup Assistant and import the signed certificate and private key.

Import a signed certificate and private key

When you receive the signed certificate back from the certificate authority, re-run IC Setup Assistant and import the signed certificate and private key.
1. From the **Certificate Signing Option** dialog, select **Create Certificate Signing Requests to be signed by an external Certificate Authority and imported into your IC server**.
2. (Optional) Select **Do not allow the Certificate Authority installed on your IC server to sign certificates**. Select this option to use a single server certificate for all uses.
3. Select **Next**. The **Certificate Signing Requests** dialog appears.

   Note: If you selected **Do not allow the Certificate Authority installed on your IC server to sign certificates**, IC Setup Assistant displays a message to determine whether you want to continue.
4. Select the **Edit** button next to a certificate use type to import a signed certificate and private key for that certificate use type. The **Import or Select Signed Certificate** dialog appears.
5. Click **Import** under **Import Signed Certificate And Private Key** to import the certificate file and private key. The **Import Certificate** dialog appears.
6. Complete the information in the **Import Certificate** dialog and click **OK**. The **Import or Select Signed Certificate** dialog appears. The **Certificate File Path** field and **Private Key File Path** field indicate the location from which you imported.
7. Click **Import** under **Import Signed Certificate And Private Key** to import the trusted certificate. You can select **Import** to import a trusted certificate if you selected **Local Subsystems Server**, **Local Subsystems Client**, **Remote Subsystem Client**, or **HTTPS** certificate use types in the **Certificate Signing Requests** dialog.
8. Indicate the file path for the trusted certificate. The **Import or Select Signed Certificate** dialog appears. The **Trusted Certificate File Path** field indicates the location from which you imported.
9. Enter the name of the server in the **Remote Subsystem Server** field. You can access the **Remote Subsystem Server** field if you selected the **Remote Subsystem Client** certificate use type in the **Certificate Signing Requests** dialog.
10. Click **OK** in the **Import or Select Signed Certificate** dialog. The **Certificate Signing Requests** dialog appears. A check mark appears next to the certificate use type for which you just completed.
11. Repeat this procedure for each certificate use type in the **Certificate Signing Requests** dialog.

Select a Signed Certificate from the Windows Certificate Store

1. From the **Certificate Signing Option** dialog, select **Create Certificate Signing Requests to be signed by an external Certificate Authority and imported into your IC server**.
2. Select **Do not allow the Certificate Authority installed on your IC server to sign certificates**.
3. Select **Next**. IC Setup Assistant displays a message to determine whether you want to continue.
4. Select **Yes**. The **Certificate Signing Requests** dialog appears.
5. Select the **Edit** button next to the Server Group certificate use type. The **Import or Select Signed Certificate** dialog appears.

6. Click **Select** under **Select From Windows Certificate Store**. The **Select Certificate From Windows Certificate Store** dialog appears.

7. Indicate local machine or current user, select a certificate store, and then click **Select**.

8. Click **OK** to confirm the certificate. The **Select Certificate From Windows Certificate Store** dialog appears with the certificate subject in the **Certificate** field.

9. Click **OK**. The **Import or Select Signed Certificate** dialog appears with the certificate subject in the **Certificate** field.

10. Click **OK**. The **Certificate Signing Requests** dialog appears. A check mark appears next to the Server Group certificate use type.

Interaction Recorder compressed files location

This screen appears if IC Setup Assistant detects that Interaction Recorder is included in the license.
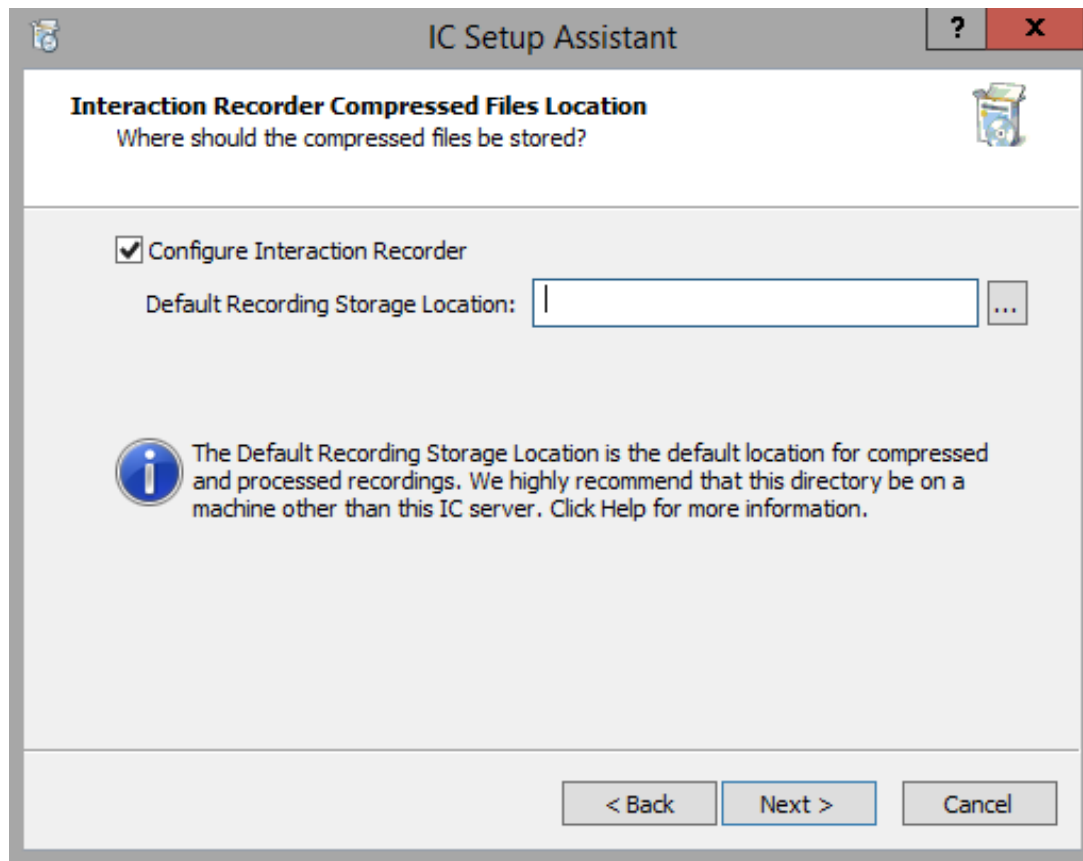
Configure Interaction Recorder

Select this option to configure Interaction Recorder.

You can choose to skip the Interaction Recorder configuration in Setup Assistant and instead perform the configuration post-installation, in the Interaction Recorder Policy Editor in Interaction Administrator. For more information, see the *Interaction Recorder Technical Reference*.

> Warning: If you donot perform the Interaction Recorder configuration in either IC Setup Assistant or Interaction Administrator, Interaction Recorder may not function properly.

Default Recording Storage Location

The **Default Recording Storage Location** is the default location where compressed and recordings are stored for Interaction Recorder.

We highly recommend that this directory be:

- On a machine other than this IC Server. This is particularly important if the site generates a large number of recordings, or if there are multiple CIC servers generating recordings. In these cases, this directory must be on a non-IC Server machine to reduce potential performance and reliability problems with the CIC server. For customer sites with large Interaction Recorder installations, the directory size could be hundreds of gigabytes.
- A valid UNC path. This is necessary because there may be multiple CIC servers with Interaction Recorder enabled that will be storing recordings and accessing recordings in this location. The share for the UNC path should provide both read and write permissions to the CIC administrator account. If the site is using Recorder Remote Content Servers, then a local path can be used to cause the recordings to be stored on the Recorder Remote Content Server itself.

> **Note**: If IC Setup Assistant cannot validate the specified path, a message may prompt you to ensure that the selected path exists and is shared before CIC is launched.

Speech Recognition

This screen appears if IC Setup Assistant detects that Speech Recognition is included in the license.

This selection you make on this screen only enables the selected speech recognition engines on the CIC server. In order to use speech recognition, the ASR server(s) must also be installed and configured to communicate with the CIC server. If you have not already installed and configured the ASR server(s), you can do so after IC Setup Assistant has completed.
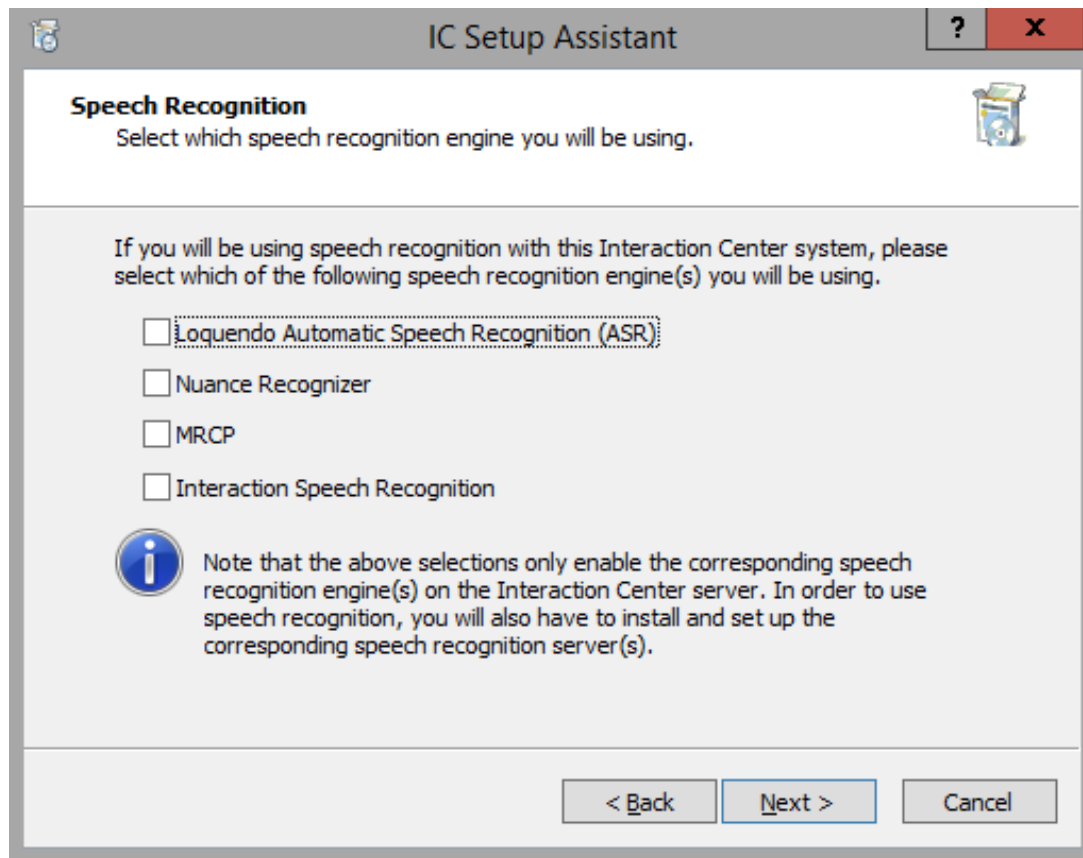
Select the speech recognition engine(s) that your site uses:
- Loquendo Automatic Speech Recognition (ASR)
- Nuance Recognizer
- MRCP
- Interaction Speech Recognition

Notes:

Support for MRCP ASR was added in CIC 4.0 SU 3.

Interaction Speech Recognition (ASR support on Interaction Media Server) was added in CIC 4.0 SU 4. For more information, see the *Interaction Speech Recognition Technical Reference* in the PureConnect Documentation Library.

For requirements and installation procedures for the other supported speech recognition engines, see the *ASR Technical Reference* in the PureConnect Documentation Library.

Select mail providers

IC Setup Assistant will configure the mail provider you select in this screen. If you choose to, you can configure multiple mail providers on your CIC server.

Notes
- Make sure you have fulfilled requirements for each mail provider you select. For instructions, see "Mail System".

- IC Setup Assistant may prevent you from selecting a mail provider if the email client is not installed on the CIC server. You must fulfill that requirement before continuing.
- You can make additions and/or changes to your mail configuration after IC Setup Assistant completes in the Interaction Administrator **Mail** container.
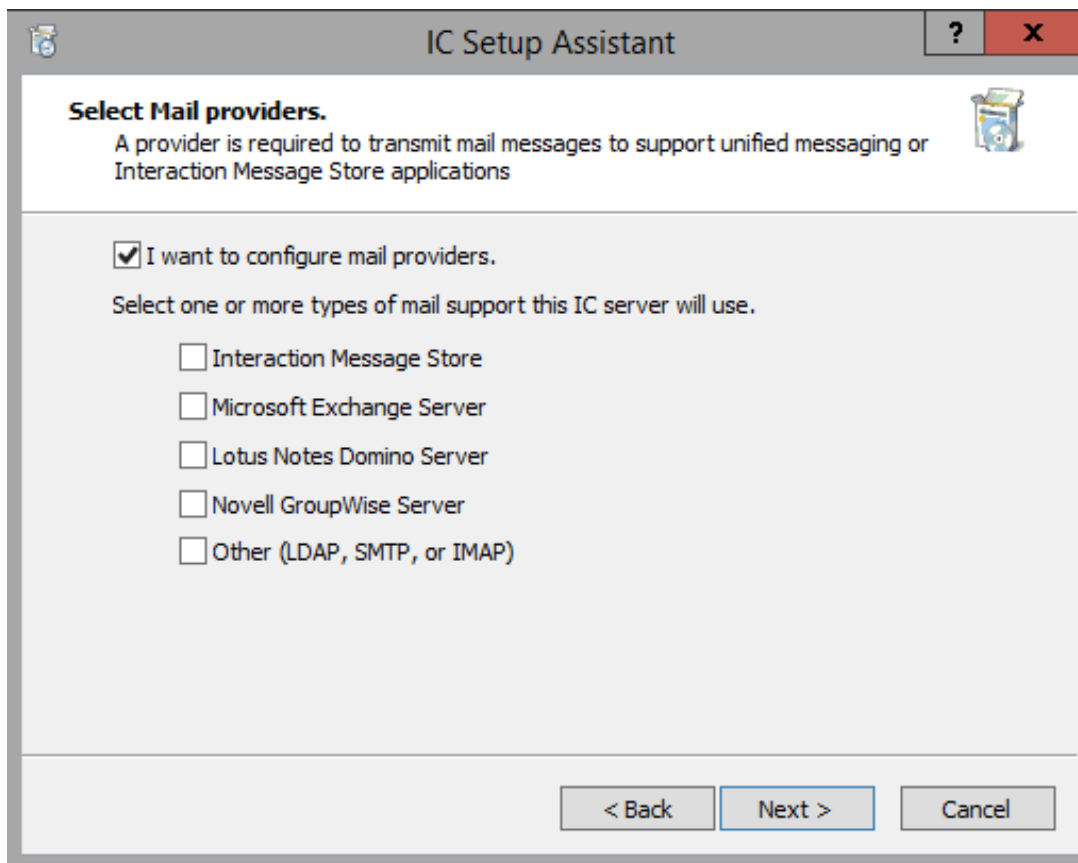
I want to configure mail providers

Select this option to configure one or more mail providers.

If you do **not** select this option, you will not be able to assign mailboxes to users when you configure users in IC Setup Assistant.

Interaction Message Store

Interaction Message Store is a messaging option that provides storing and tracking capabilities for voicemail and fax messages without connection to an email system.

Interaction Message Store stores voicemail and faxes as files on the CIC server (small implementations) or a network file server (large implementations). Users are associated with mailboxes in a file directory structure, and voicemails and faxes are routed to these mailboxes. CIC users can access voicemail messages from Interaction Desktop or the telephone user interface (TUI). Fax messages can be viewed from Interaction Desktop or forwarded to another fax number.

For more information, see the Interaction Message Store *Technical Reference* in the PureConnect Documentation Library.

Microsoft Exchange Server

Select Microsoft Exchange Server to use **Microsoft Exchange Web Services-based integration**.

If you select this mail provider, make additional Exchange configuration selections in the **Mail Provider Summary** screen.

For requirements and additional information, see"Mail System".

IBM Domino Notes Server

If you select this mail provider, IC Setup Assistant prompts you for the CIC administrator's IBM Domino password.

For requirements and additional information, see "Mail System".

Novell GroupWise Server

If you select this mail provider, IC Setup Assistant prompts you for GroupWise server, port, user name, and the location of the Trusted Application key file.

For requirements and additional information, see:
- "Mail System".
- The Novell GroupWise Support for CIC Technical Reference in the PureConnect Documentation Library. This document steps you through all aspects of configuring CIC for Novell GroupWise.

You can configure CIC for GroupWise now in IC Setup Assistant **or** post-installation in the Interaction Administrator Mail container. If you have not yet fulfilled the requirements, you may want to perform the configuration in the Interaction Administrator Mail container.

Gmail

Starting with CIC 2015 R2, the integration of CIC with Gmail:
- Supports OAuth 2.0.
- Cannot be selected in IC Setup Assistant. You must configure CIC for Gmail post-installation in the Interaction Administrator Mail container.
- Is a separate selection in the Interaction Administrator Mail Provider, no longer configured via SMTP/IMAP services.

For requirements and configuration information see:
- "Mail System".
- The Gmail Integration *Technical Reference* in the PureConnect Documentation Library. This document steps you through all aspects of configuring CIC for Gmail.

Other (LDAP, SMTP, or IMAP)

IC Setup Assistant enables you to configure a variety of other mail providers that support the following services:
- LDAP: Directory service for looking up user information
- SMTP: Transport service for sending mail
- IMAP: Message store service

When you select this option, additional screens prompt you for LDAP Provider, SMTP Providers, and IMAP Provider information. Note that LDAP, SMTP, and IMAP functionality is independent. You can configure what is needed and skip the screens that do not apply. Click Help (**?**) for information.

For requirements and additional information, see "Mail System".

Mail provider summary

After you have selected mail providers and clicked **Nex**t in the **Select Mail Providers** screen, a progress bar appears showing that IC Setup Assistant is gathering mail provider information.
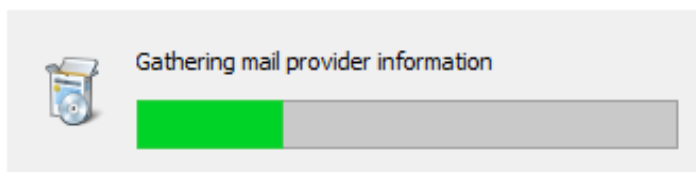
When completed, the **Mail Provider Summary** screen appears. Verify that the mail provider entries are correct. If multiple mail providers are listed, verify that the default ordering for directory searches and transport delivery services is correct.
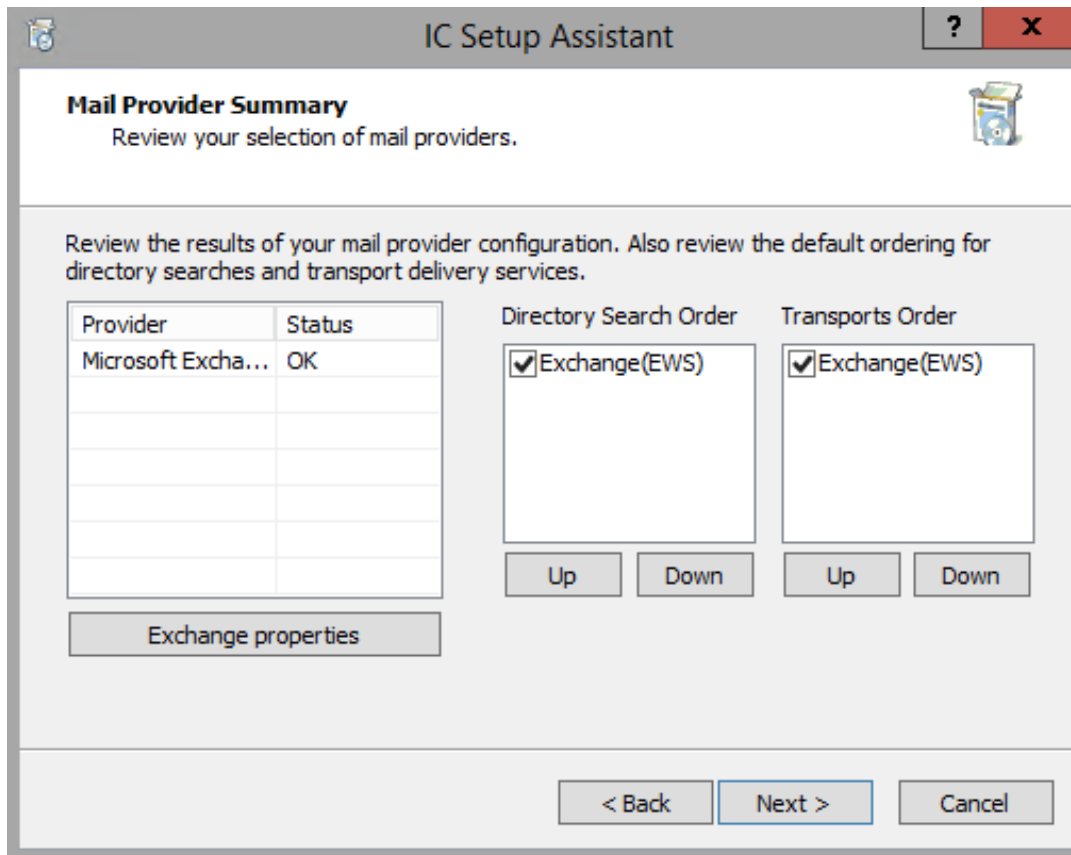
Provider

Lists the selected mail provider(s).

Status

A mail provider's status is marked as Not present if the appropriate mail connector is not registered and therefore unavailable. One reason for the Not present status may be that the mail provider client is not installed on the CIC server, if that is a requirement.

Exchange Properties

Select the **Exchange properties** button to access the **Exchange Configuration** screen to configure Exchange Web Services (EWS). EWS is initially enabled by default. Disable Exchange MAPI because it is no longer supported.

See "Configure CIC for Exchange Web Services" in "Mail System" for instructions on filling out the **Exchange Configuration** screen.

Directory Search Order

The directory contains the lookup information for contacts (first name, last name, etc.) This column shows the default order of mail provider directories that CIC will use to search for a user's mailbox.

- If you selected Microsoft Exchange Server as the mail provider, Exchange Web services EWS is initially enabled by default. Disable Exchange MAPI because it is no longer supported.
- Interaction Message Store will not be listed because it does not maintain any contact information.
- If you defined more than one LDAP directory, each is listed.

To change the directory search order, highlight a mail provider directory and use the **Up** and **Down** buttons to move the directory.

Transports Order

The SMTP transport handles the delivery of mail. This column shows the default order of mail provider transport vehicles that CIC will use to search for a user's mailbox.

- If you selected Microsoft Exchange Server as the mail provider, Exchange Web services EWS is initially enabled by default. Disable Exchange MAPI because it is no longer supported.
- If you defined more than one SMTP transport, each is listed.
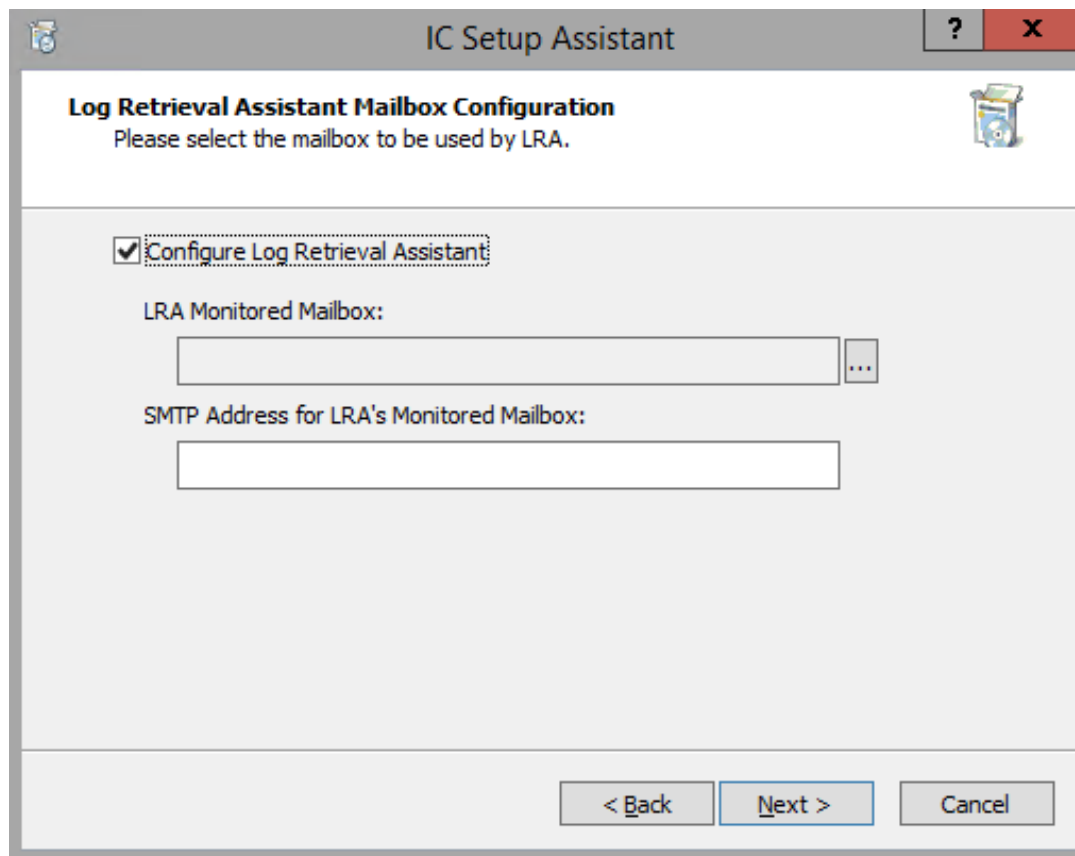
To change the directory search order, highlight a mail provider transport and use the **Up** and **Down** buttons to move the directory.

Log Retrieval Assistant mailbox configuration

This screen appears if your CIC system has a mail server. If Interaction Message Store is the only mail provider, Log Retrieval Assistant is not supported.

Log Retrieval Assistant (LRA) is a feature that allows support organizations such as Genesys and certified partners to configure logging and retrieve logs from CIC servers at specific times.

Log Retrieval Assistant is installed automatically during the CIC server install. For more information, see the *Log Retrieval Assistant Customer Site Technical Reference* in the PureConnect Documentation Library.

To use Log Retrieval Assistant, leave the default option of **Configure the Log Retrieval Assistant** checked, and enter the information that IC Setup Assistant needs to configure the LRA Monitored Mailbox, a specified email account on the customer site that Log Retrieval Assistant will monitor to pick up requests. Log requests are mailed to this account for LRA to process.

LRA Monitored Mailbox

Click the button on the right (...) to open the **Mailbox Selection** screen. Provide the information needed to locate the actual mailbox that will be used as the LRA Monitored Mailbox. Depending on the mailbox option (for example, mail server directory), you may need to provide the Name, Display Name, Address, Directory, Message Store, and/or other information.

We recommend creating a mailbox specifically for the LRA process.

SMTP Address for LRA's Monitored Mailbox

Type the SMTP address for the LRA Monitored Mailbox, for example, someplace@somewhere.com.

SIP Lines and Default Registration Group

IC Setup Assistant automatically creates three permanent internal SIP lines for station-to-station calls - <Stations-UDP> (default), <Stations-TCP>, and <Stations-TLS>. (SIP lines for outbound calls must be configured manually in the Interaction Administrator Lines container.)

IC Setup Assistant also creates two permanent default registration groups (one for the <Stations-UDP> line and one for the <Stations-TLS> line), necessary for creating managed IP phones and associated SIP stations.

> **Note:**
> In CIC 4.0 SU 1, the default transport protocol was changed from TCP to UDP due to support issues such as problems with TCP offloading and large sites impacted by the OS limit of 4000 TCP connections.

Station Lines

The Station Lines portion of the screen provides information about the SIP station lines that IC Setup Assistant will create.

Line Name Prefix

The line name prefix appears in the SIP line name listed in numerous Interaction Administrator screens, such as Line Configuration > SIP Line Configuration, for example, <Stations-UDP>.

We recommend that you keep the default SIP station line name prefix, Stations. However, if you plan to localize, you may wish to use a different line name prefix.

Important!

Make your line name prefix selection carefully, as lines cannot be renamed.

Resulting Line Names

IC Setup Assistant automatically creates three SIP station lines for different transport protocols: <Stations-UDP>, <Station-TCP>, and <Stations-TLS>. Setup Assistant does not allow any modifications to these lines; any modifications must be made in Interaction Administrator.

<Stations-UDP>

The <Stations-UDP> line is the default transport protocol. Nearly all IP phones support UDP.

IC Setup Assistant automatically sets the <Stations-UDP> line port number to 8060.

IC Setup Assistant sets the <Stations-UDP> line as the default line for a number of SIP stations and managed IP phone settings.

<Stations-TCP>

The TCP station line is available if needed. Most new IP phones support TCP.

IC Setup Assistant automatically sets the <Stations-TCP> line port number to 8060.

<Stations-TLS>

The <Stations-TLS> line is available if your CIC license includes the Advanced Security feature.

IC Setup Assistant automatically sets the <Stations-TLS> line port number to 8061.

> **Note:**
> For non-switchover implementations, TLS lines use the <Default Line Certificate> instead of the domain certification.

Outbound Address

Enter a telephone number for one of the lines provided by the telephone company, for example, (919) 872-5555 or 0249581974. Parentheses around area code numbers are optional and any combination of text or numbers may be used (Q = 7 and Z = 9).

This is a required field. The number is used in the "From" header in outbound SIP calls.

DNS SRV Domain Name

Enter the domain name used to formulate SIP-URLs for CIC users and phone numbers. This domain name will be automatically appended to all REGISTER requests sent by CIC.

> **Note:**
> Use the DNS SRV domain name, not the computer's domain name.

This value is used in the "From" header in outbound SIP calls.

Address to Use

Select the Network Connection (from the drop down list) that you want to use for outbound SIP calls.

Default Registration Groups

Registration groups are a required attribute of every managed IP phone. (Managed IP phones and associated SIP stations are created post-installation. See "Post-Installation Configuration".)

The registration group controls who the phone registers and communicates with. Each registration group consists of an ordered list of registrations. Each registration points to a line, is specified manually, or is obtained from a SIP proxy or DNS SRV. A managed IP phone will attempt to use the first registration, if it fails, then it uses the second one, etc.

IC Setup Assistant automatically creates two permanent default registration groups:
- <Default Registration Group> for the <Stations-UDP> line
- <Default Secure Registration Group> for the <Stations-TLS> line

Depending on your implementation, it may be necessary to modify the registration group configuration post-installation. For more information, see the *CIC Managed IP Phones Administrator's Guide* in the PureConnect Documentation Library.

Configure stations

The **Configure Stations** screen enables you to create multiple SIP stations for **non-managed IP phones and/or standalone fax machines** using **Add Stations Assistant**. Non-managed IP phones include:

- Analog stations connected via SIP FXS gateways.
- SIP handsets from vendors that are not included in PureConnect's managed IP phone implementation.
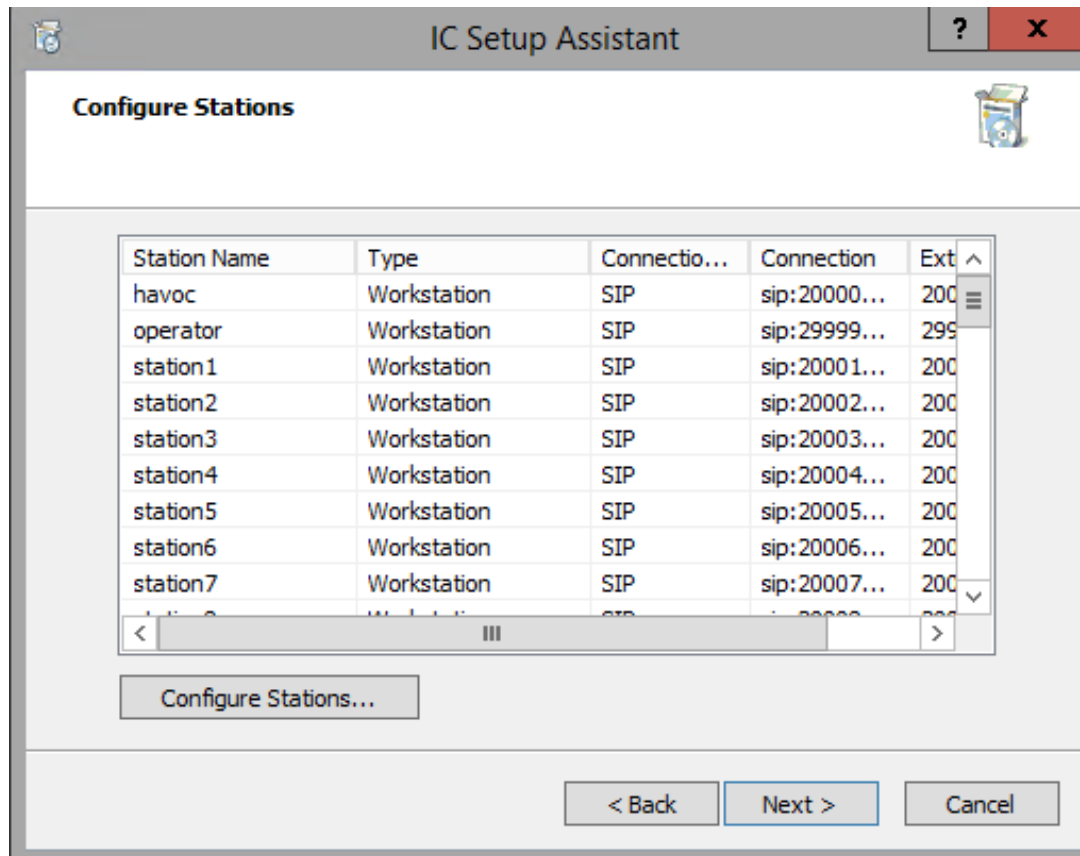
> Important: If you plan to implement managed IP phones

Click **Next** to skip this step and proceed with IC Setup Assistant. You will create managed IP phones and associated SIP stations using **Managed IP Phones Assistant** post-installation in Interaction Administrator.

For more information, see "[Post-Installation Configuration](#)" and the *CIC Managed IP Phones Administrator's Guide* in the PureConnect Documentation Library.

If you plan to implement non-managed IP phones and/or standalone-alone fax stations

You can create multiple SIP stations for non-managed IP phones and/or stand -alone fax machines now in IC Setup Assistant or post-installation in Interaction Administrator using CSV SIP Station List as described in "[Prepare for IC Setup Assistant](#)" in this section.

- To create them now, click the Configure Stations button to open the Add Stations Assistant. Click **Help (?)** for instructions.
- To create them post-installation, click **Next** to skip this step and proceed with IC Setup Assistant. See "[Post-Installation Configuration](#)".

Create CIC user accounts

In the **Create IC User Accounts** screen, you can choose to create users now in IC Setup Assistant or post-installation in Interaction Administrator.
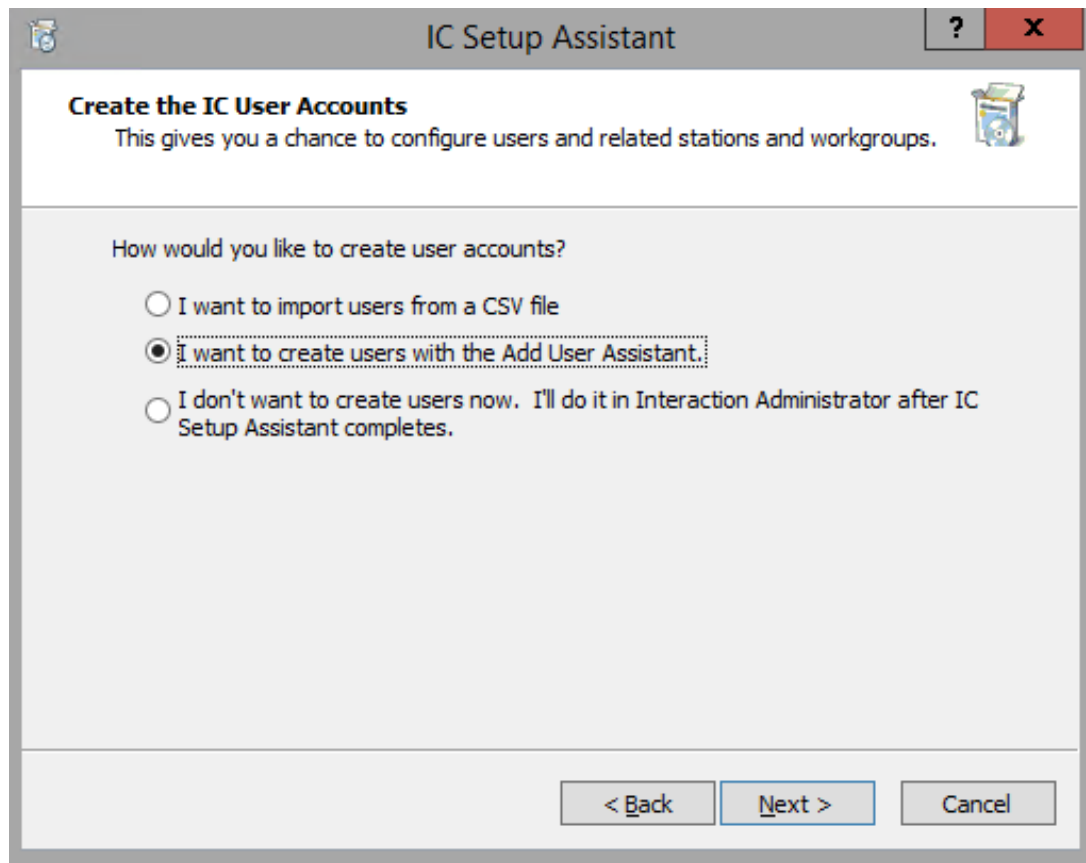
I want to import users from a CSV file

A CSV user list is a file containing information about users and user attributes, prepared prior to running IC Setup Assistant, and downloaded to the CIC server as described in "Prepare for IC Setup Assistant" in this section.

If you select this option, an additional screen appears. For more information, click **Help** (**?**)

I want to create users with the Add Users Assistant
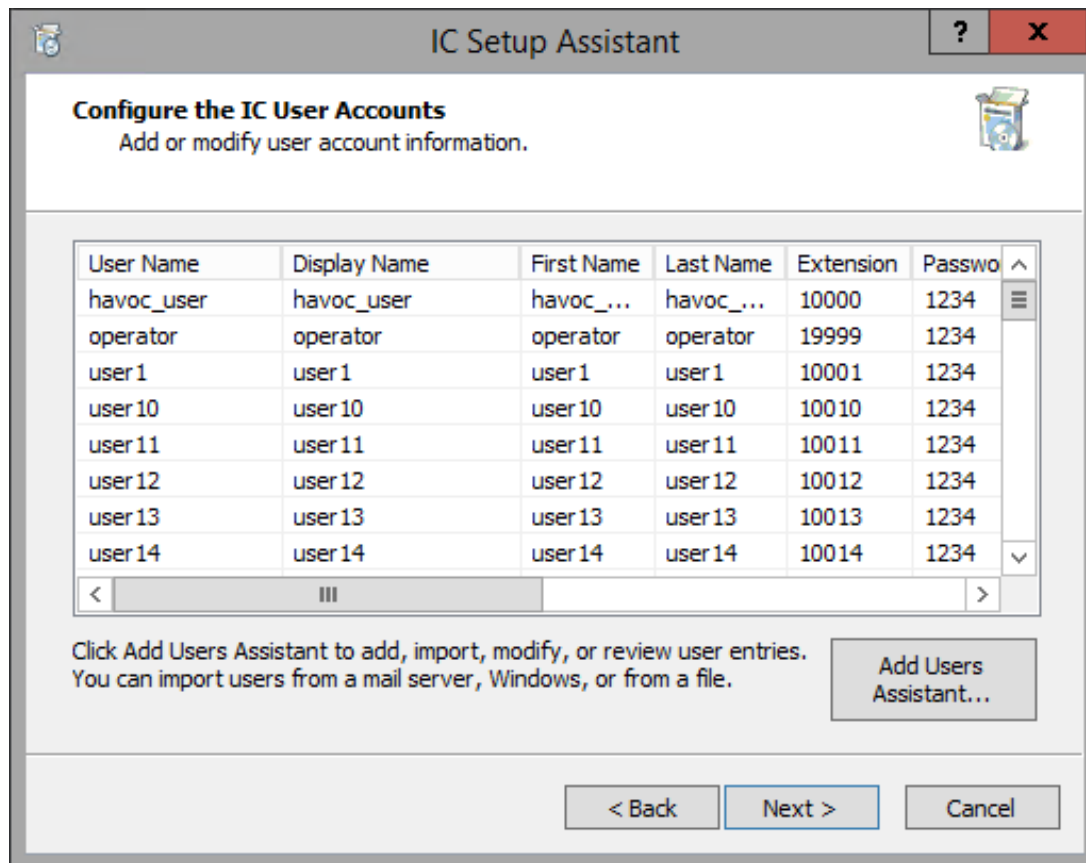
The IC Setup Assistant will launch the Add Users Assistant, a wizard that guides you through the creation of multiple CIC user accounts, importing users from mail server distribution lists and Windows users. If you choose to create users now, you have the opportunity to configure related stations, workgroups, and roles in IC Setup Assistant.

I don't want to create users now. I'll do it in Interaction Administrator after IC Setup Assistant completes.

Select this option to prevent IC Setup Assistant from creating users. You can create users later manually or run the Add Users Assistant in the Interaction Administrator **Users** container after IC Setup Assistant completes.

Configure CIC user accounts

This screen appears if you selected to create users with Add Users Assistant or import them from a CSV file.

Every person that plans to run Interaction Desktop or plans to have a unique user extension must have a CIC user account. Each CIC user account has several user values such as user extension, password, and email address.

IC Setup Assistant automatically adds two required user account entries — the **IC administrator account** and the default **Company Operator user account** — to the Configure the IC User Accounts matrix. These required users will not override similar users set in a CSV user list.

Click **Add Users Assistant** to add user entries.

> **Note**: If you just finished importing users from a CSV user list in the previous screens, the **Configure the IC User Accounts** matrix is populated with the CSV user list entries. Click **Next** to skip Add Users Assistant and move on to **Configure IC workgroups**.

Add Users Assistant

The Add Users Assistant guides you through the creation of multiple CIC user accounts. Users can be imported from mail server distribution lists, Windows users, or a CSV user list. The Add Users Assistant also sets extensions and passwords for the CIC user accounts imported from mail servers or Windows users. When the Add Users Assistant completes, a User Worksheet appears populated with the user account entries you created. For instructions, click Help **(?)**.

Note: After IC Setup Assistant completes, you can create and modify users in Interaction Administrator with the Add Users Assistant and User Worksheet. For more information, see Interaction Administrator online help.

Configure CIC user accounts (showing created users)

If you created users with **Add Users Assistant**, the **Configure the IC User Account** screen shows the created users.

Configure CIC workgroups

This screen appears if you created users via a CSV user list or **Add Users Assistant**.

Workgroups are logical groups of users (for example, departments) that can function as a group in the CIC system. You may have already assigned the users to workgroups in the User Worksheet. If you did, the entries you specified appear in the **Configure IC Workgroups** screen.

Use this screen to review or modify existing workgroups, or specify new workgroups.

IC Setup Assistant automatically creates the default **Company Operator** workgroup. You should assign a user to this workgroup if you want this user to answer calls to the company operator.

Note: IC Setup Assistant provides minimal workgroup configuration, useful for planning purposes. After the IC Setup Assistant completes, complete your workgroup configuration in Interaction Administrator. For more information, see Interaction Administrator Help.

Click **Configure Workgroups** to add new workgroups or modify existing workgroups.

Manage workgroups

Create a new workgroup or modify an existing workgroup by specifying its extension, alerting option, and workgroup membership

Add
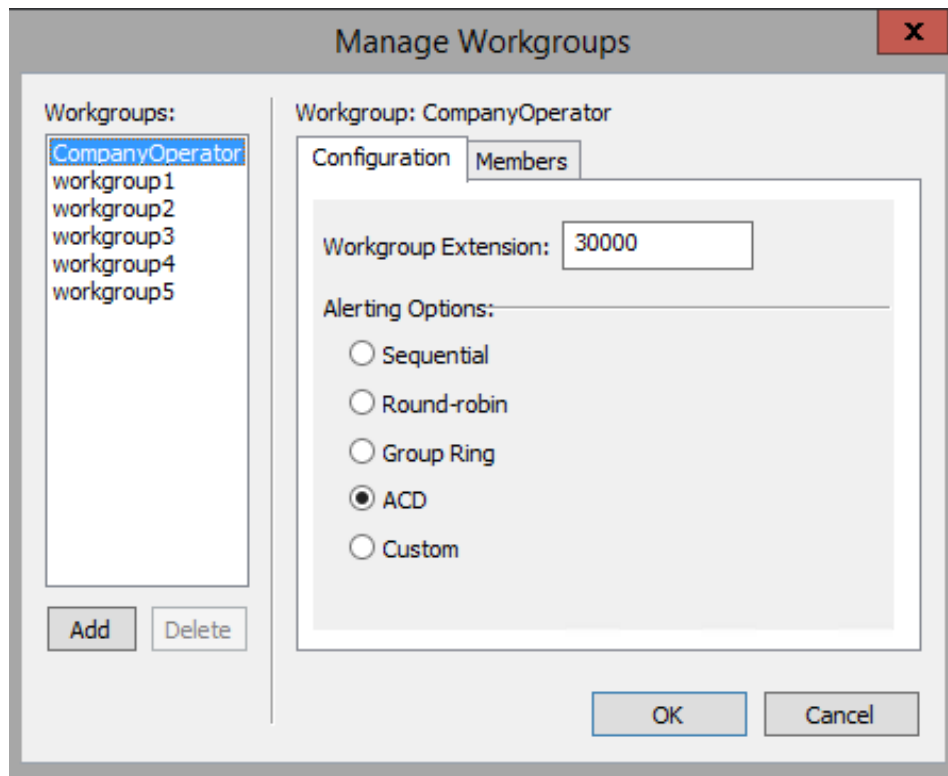
Click **Add** to create a new workgroup and add it to the list of workgroups.

Delete

Click **Delete** to remove a workgroup from the list.

Workgroup Extension

Type the extension number that will be associated with the selected workgroup.

Alerting Options

When an incoming call is for members of a workgroup and the workgroup has a queue, you can specify how the system should alert members to the new call.

- **Sequential**: Rings workgroup members one at a time, in order of extension.
- **Round-robin**: Remembers the last user who was sent a call. Round-robin works in a loop, repeating the process down the through list, and then the process starts over with the next call.
- **Group Ring**: All users of the workgroup are alerted simultaneously.
- **ACD**: Sets the call to Automatic Call Distribution (ACD) processing on that queue.
- **Custom:** The alert behavior is set in the CustomIVRWorkgroupQueue subroutine.

Members

Click the **Members** tab to add users to a selected workgroup.

Configure role memberships

This screen appears if you created users via a CSV user list or Add Users Assistant.

A role is a way to define a special group of people that require specific CIC client rights or Interaction Administrator access. You may have already assigned the users to roles in the User Worksheet. If you did, the entries you specified appear in the **Configure IC Role Memberships** screen.

Use this screen to review or modify existing role memberships, or specify new role memberships.

Note that IC Setup Assistant created the following default roles with pre-selected dialing classifications and other permissions: Administrator, Agent, Billable-Time User, Business User, Operator, and Supervisor.

> **Note**: IC Setup Assistant provides minimal Role membership configuration, useful for planning purposes. After the IC Setup Assistant completes, complete your Role membership configuration in Interaction Administrator. For more information, see Interaction Administrator Help.

Click **Configure Roles** to create new roles or modify existing roles.

Manage Roles

Create a new role or modify an existing role by specifying its membership.

IC Setup Assistant assigns users to roles only. You can assign workgroups to roles in Interaction Administrator.

Add
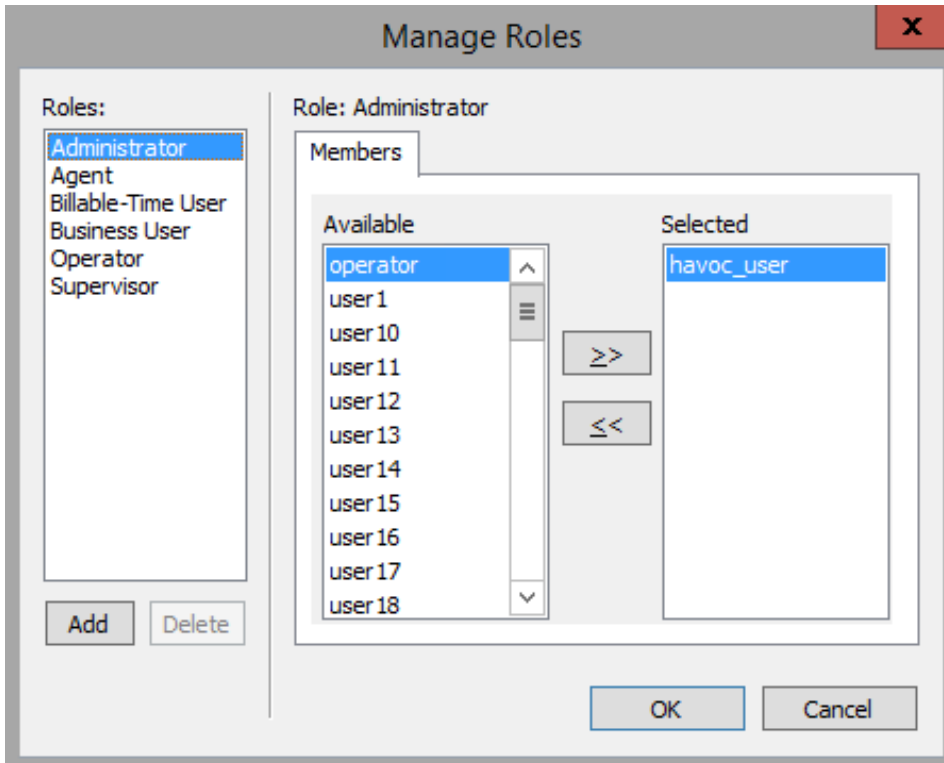
Click **Add** to create a new role and add it to the list.

Delete

Click **Delete** to remove a role from the list.

Members

All users are listed in the **Available** list. To add a user to the selected role, choose one or more users from the **Available** list and use the arrows to add the selected users to the **Selected** list.

Configure default hours of operation

IC Setup Assistant generates a default auto-attendant menu with "out-of-the-box features". You can also configure additional information and incorporate it in the auto-attendant menu.

> **Note:** When IC Setup Assistant completes, the auto-attendant menu is operational on the CIC server. It is not necessary to perform any further configuration in Interaction Attendant, unless you wish to make further customizations. For more information, see Interaction Attendant Help.

In this screen, configure the default hours of operation.

Your entries create a schedule that runs the automated attendant menus for your standard work week.

If you make no entries in this screen and simply click **Next**, IC Setup Assistant will create the default schedule of Monday through Friday, 9am to 5pm.

Set 7x24

Select this option for schedule to run all day. For example, the schedule would become active at 9am on Monday and run 24 hours a day, Sunday through Saturday.

Set M-F 9 to 5

Select this option to set the schedule back to the default schedule.

Set Multiple Days...

Select this option to configure a different schedule for certain days of the standard work week. For example, you can specify that the Thursday and Friday start time is 8am and stop time is 4pm.

Configure group call processing

Configure workgroup call processing to define auto-attendant menu options that route calls to specific ACD workgroup queues.

Use this screen to add, modify, or review ACD workgroup call processing. When you first view this screen, the table is empty.

Note: IC Setup Assistant provides basic ACD operation configuration, without complex configuration or handlers. After the IC Setup Assistant completes, you can perform additional workgroup processing configuration in Interaction Attendant. For more information, see Interaction Attendant Help.

Click **Add** to configure ACD workgroup call processing, including queue overflow.

Edit group call processing

Configure ACD workgroup call processing, including queue overflow and whether or not to play on-hold announcements.
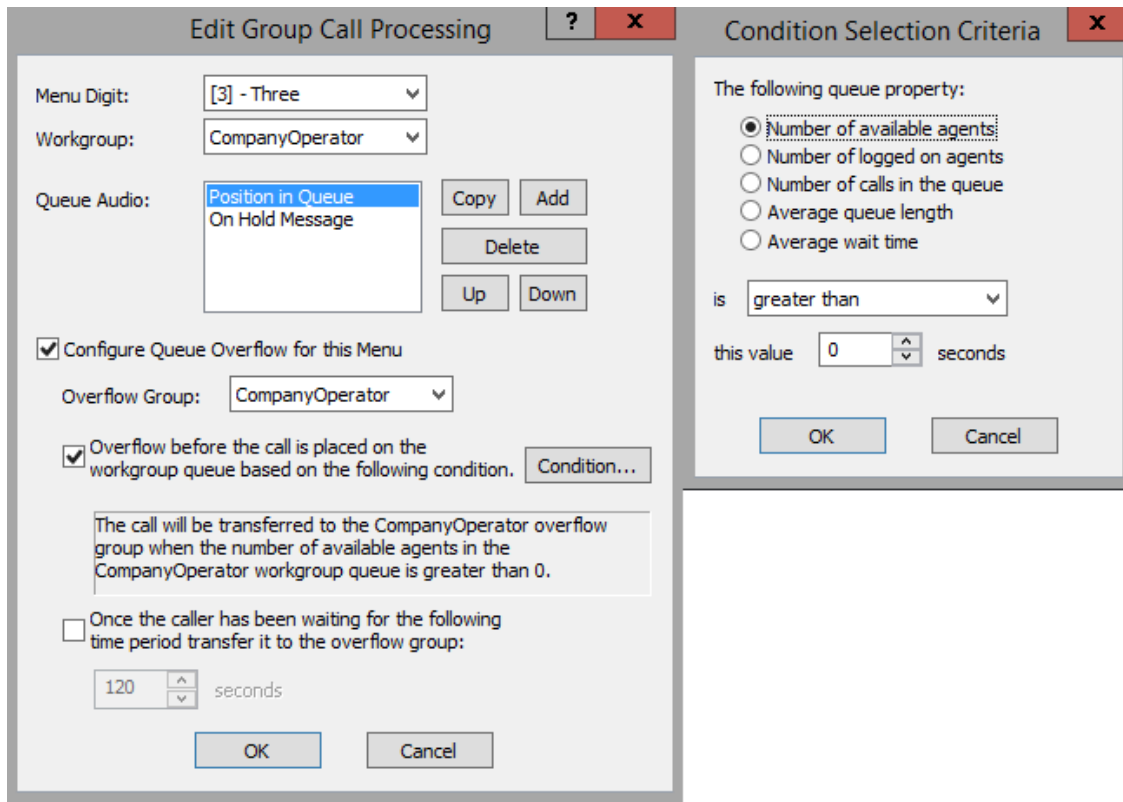
Menu Digit

Select the key that callers press to select the specified workgroup.

Workgroup

Select the name of the ACD workgroup previously defined when you configured workgroups.

Queue Audio

Select this option to play on-hold announcements when a caller enters a workgroup. You must already have pre-recorded prompts.

Configure Queue Overflow for this Menu

Select this option to configure queue overflow if the selected workgroup queue becomes too full.

Overflow Group

Select the name of the ACD workgroup designated as the overflow group.

Overflow before the call is placed on the workgroup queue based on the following condition

Select this option to transfer a call to the overflow group based on a set of conditions. In Interaction Attendant, this is configured as a logical transfer.

Click **Condition** to open the **Condition Selection Criteria** screen to select the following criteria:
- Queue property (for example, number of available agents, number of calls in queue, average wait time)
- Greater than, less than, equal to, etc.
- Number of seconds

The selected conditions are presented as a statement in the **Edit Group Call Processing** screen, for example: The call will be transferred to Workgroup2 overflow group when the number of agents in the Workgroup1 workgroup queue is greater than 10.

Once the caller has been waiting for the following time period transfer it to the overflow group

Select this option to transfer a call to the overflow group after a defined time period. In Interaction Attendant, this is configured as a workgroup transfer.

Define the maximum length of time in seconds that a call can remain in this workgroup queue before it is transferred to the overflow group.

DCOM Security Limits

In order for the CIC server's DCOM components to function correctly and in a secure manner, Windows' DCOM security permissions must be modified to include the domain accounts of all CIC users. An example of a CIC server DCOM process is the IC Authentication Service. If the DCOM permissions are not set correctly, CIC client authentication will fail and users must enter their CIC user and password when they log in to the CIC client, for example, Interaction Desktop.
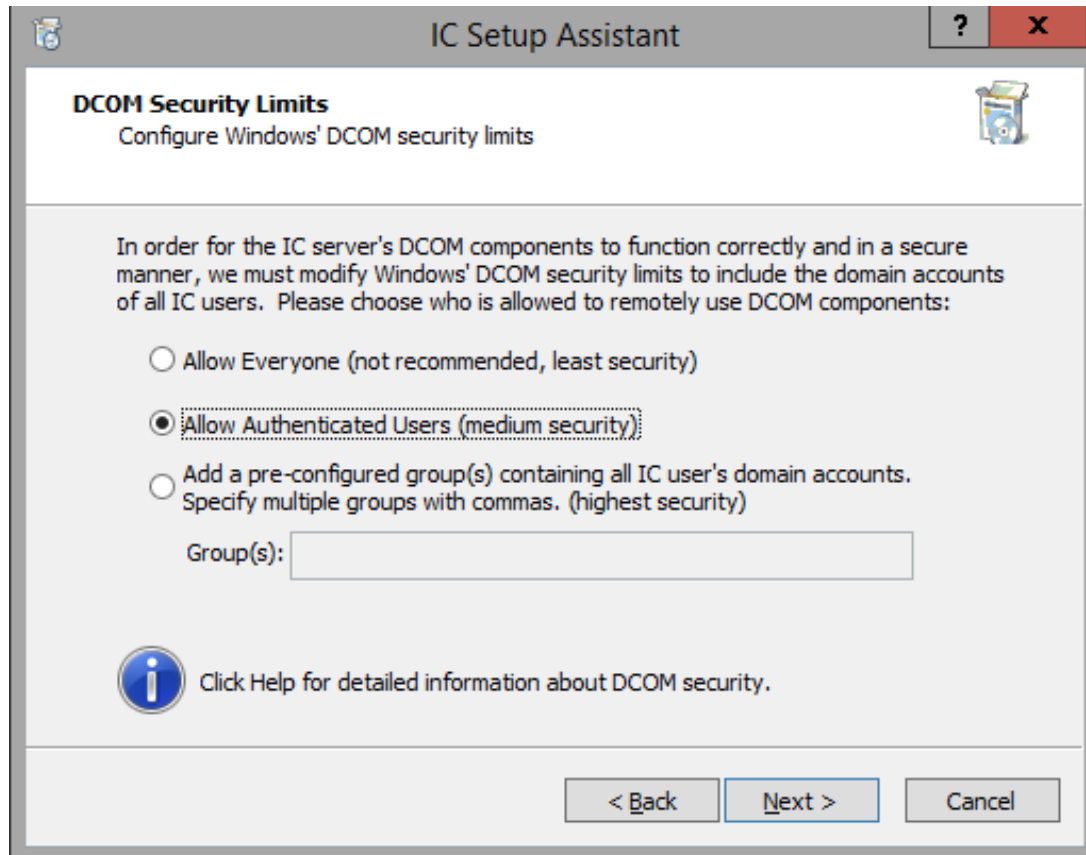
Select the level of security needed for your site. The recommended level of security is to allow authenticated users.

Allow Everyone

(Not recommended, least security). This option adds all rights to the Everyone group. If a Windows Domain (NT Authenticated Users) group exists, it will be removed. This option should be used only in small environments that do not have the option to perform NT Authentication.

Allow Authenticated Users

(Recommended, medium security) This option adds all rights to the Windows Domain (NT Authenticated Users) group and removes remote launch/activate from the Everyone group. This is the default selection.

Add pre-configured group(s) containing all IC users' domain accounts

(Highest security) For a tighter level of security, you can add pre-configured Active Directory User group(s) or Local User group(s) (for example, workgroups). Setting up an Active Directory User group conforms to the Microsoft method of administering

permissions based on Active Directory groupings. This option adds all rights to the specified groups, restores the Everyone group back to the defaults and removes the Windows Domain (NT Authenticated) Users group if it exists.

Groups

You may have already created the group(s) as a pre-installation procedure described in "CIC server". If you have not done so, do so now. Follow standard Windows procedures for Active Directory or Local User group(s.)

Enter the group(s). Separate multiple groups with commas. IC Setup Assistant will perform a validation check with Active Directory before setting the group(s).

Commit your choices

Press the **Review Choices** button to review your selections, and press the **Commit** button to commit them. IC Setup Assistant will configure the CIC server based on these selections.
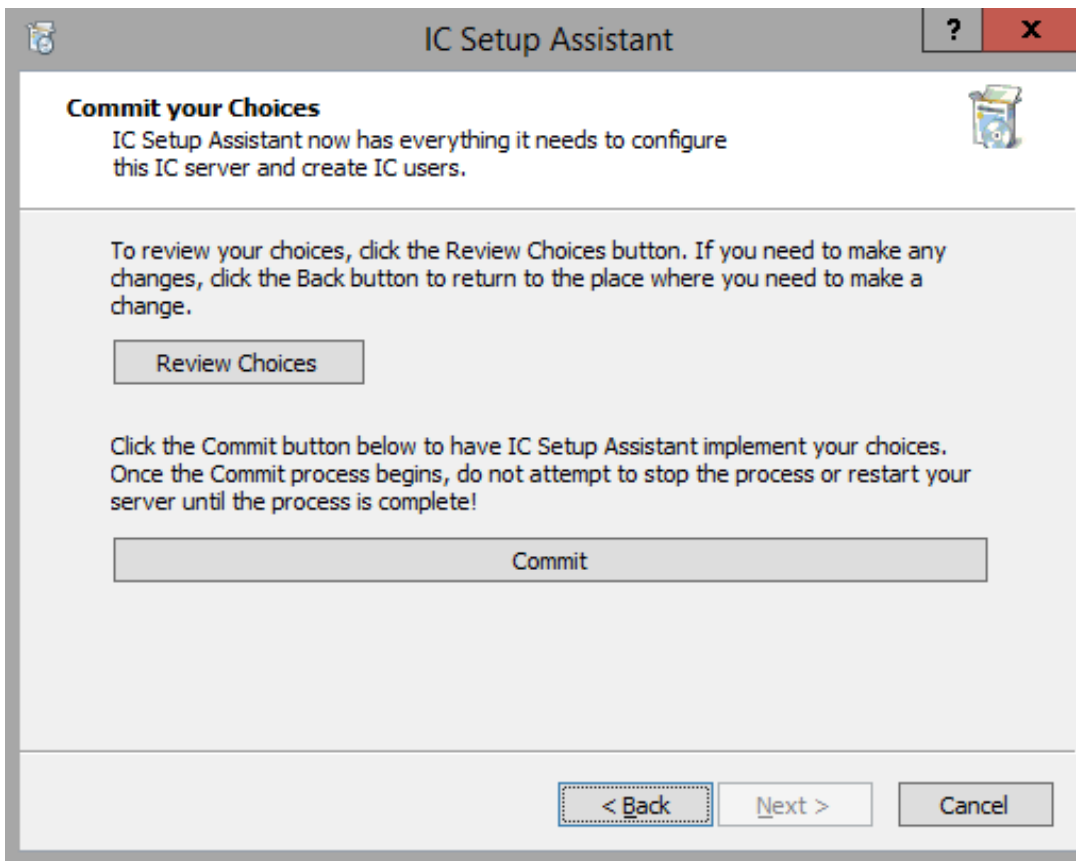
Warning: Once the Commit process begins, do not attempt to process or reboot the server until the process is complete.

Saving configuration

Once the selections are committed, IC Setup Assistant begins saving the configuration.
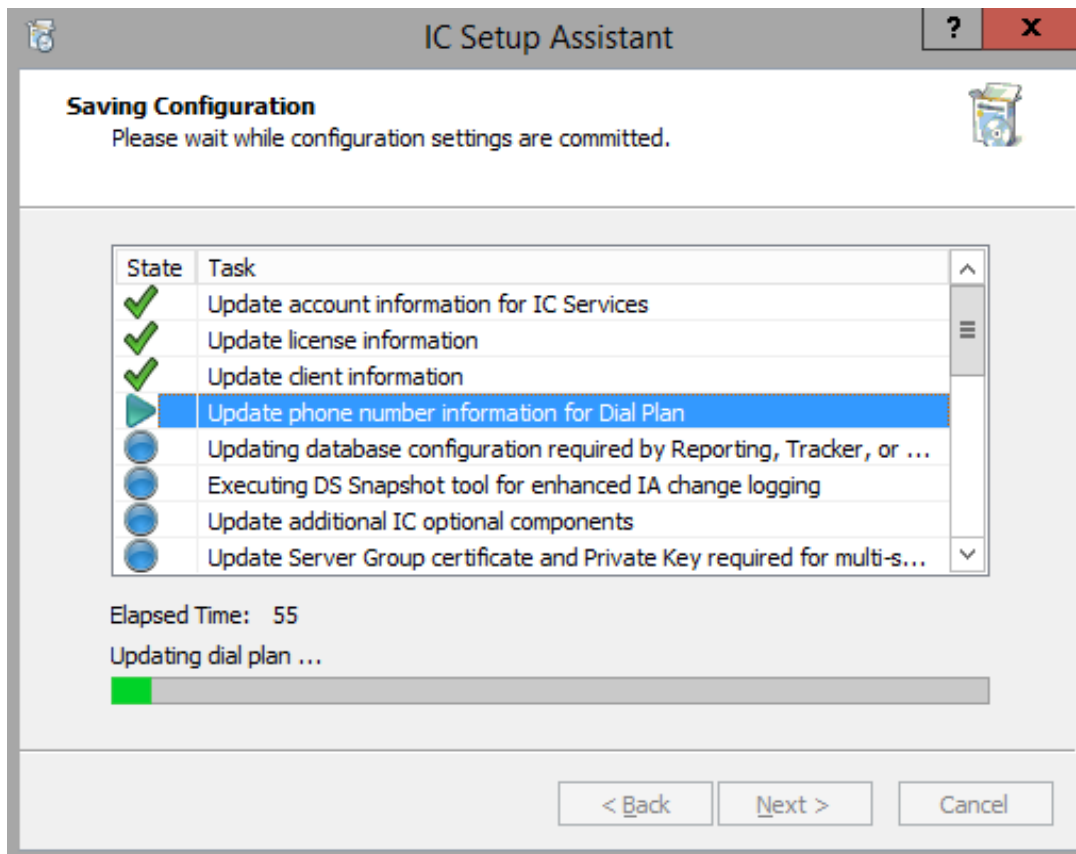
IC Setup Assistant completed

IC Setup Assistant completes the rest of the installation. This screen appears once IC Setup Assistant has finished. Click **View Report** to verify the configuration settings.
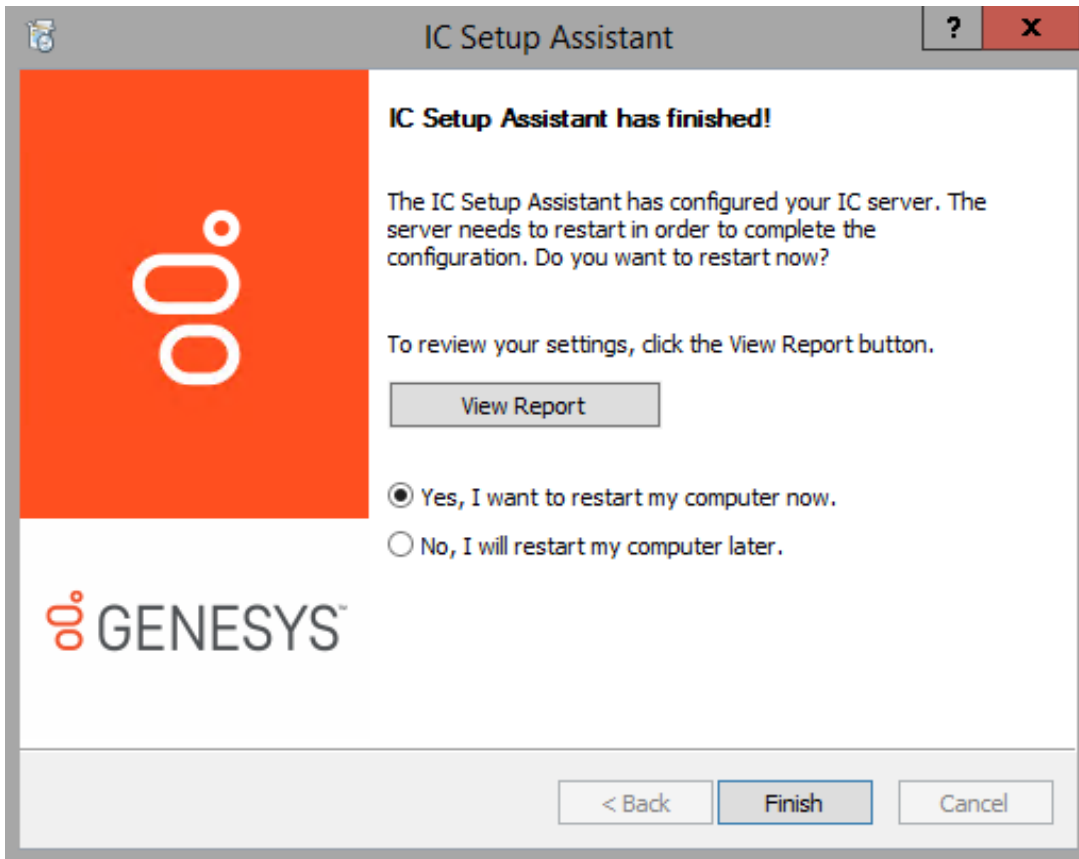
You must reboot to complete the CIC server configuration. The default setting is **Yes, I want to restart my computer now**.

Click **Finish** to restart and start CIC Services.

Once CIC Services starts:

- Log on and check the Application Event Log in Computer Management->System Tools->Event Viewer to check for any error logs.
- For a Switchover pair, if this CIC server is the initial backup server, you can now eject the USB key that you used to copy the Server Group certificate and private key files from the CIC server that is the initial active server. Store the USB key containing the \Certificates directory in a safe location for backup purposes.

Re-run IC Setup Assistant

After the initial run of IC Setup Assistant for a new CIC server installation, you can re-run IC Setup Assistant to accomplish certain tasks not available in Interaction Administrator or anywhere else in CIC.

Access IC Setup Assistant from the IC Server desktop by selecting **Start->Programs->PureConnect->IC Setup Assistant**.

The appearance of a second-run IC Setup Assistant differs from the IC Setup Assistant in a new installation. A different **Welcome** screen launches the tasks allowed in a re-run.
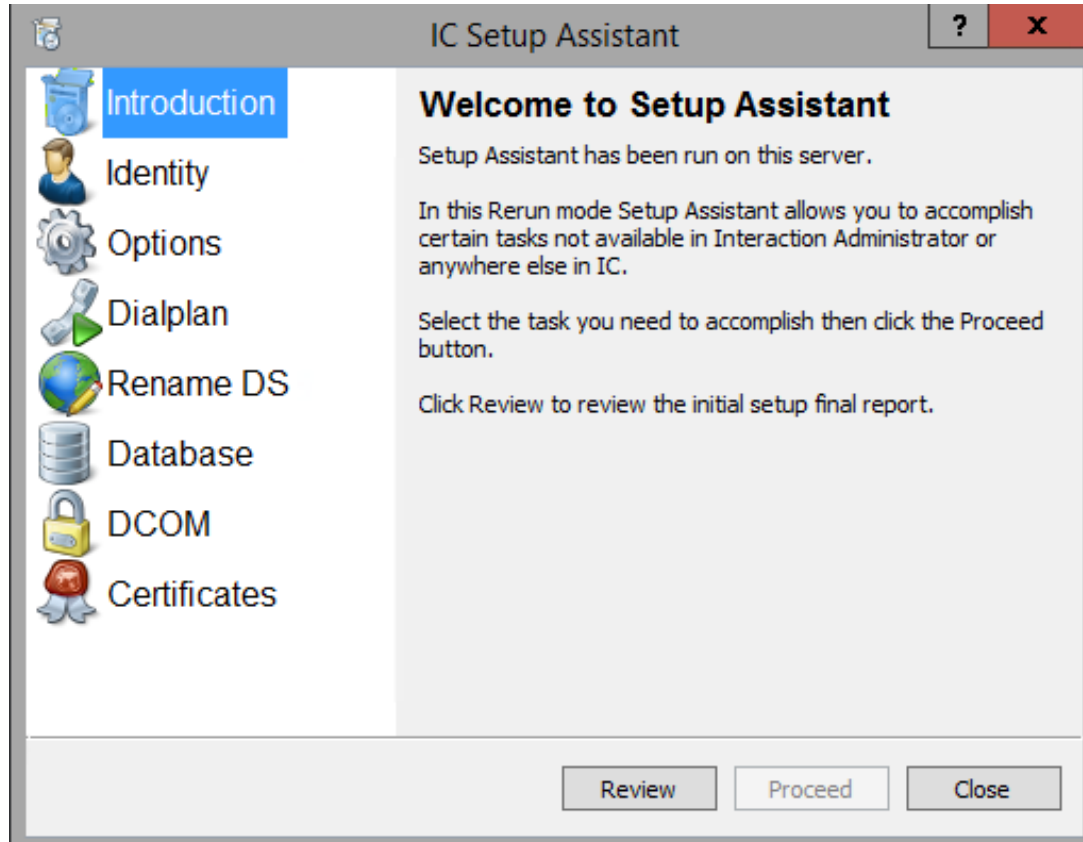
Note: Re-running IC Setup Assistant does not repair or reset the CIC server in the event of problems or corruption (called a "refresh install"). For instructions on performing a refresh installation, see "CIC server Installation".

This section includes:

- What you can change

- What you can't change

What you can change

You can make the following changes when you re-run IC Setup Assistant.

Identity

The Identity re-run task resets the administrator account used to launch CIC services and DCOM processes.
- If the currently logged-in administrator account is different than the one previously used to configure the CIC server (for example, if the site was moved), click Proceed to confirm the administrator account and password. CIC services and DCOM processes on other servers will be re-registered for this administrator account.
- If you wish to change the administrator account used to configure the CIC server, click Close to exit IC Setup Assistant. Log in with the appropriate account, restart IC Setup Assistant, and select the Identity re-run task. Click Proceed to confirm the administrator account and password. CIC services and DCOM processes on other servers will be re-registered for this administrator account.

- Changing administrator account settings with the Identity re-run task may affect mail connector configurations, such as Exchange profiles. Make sure to verify these configurations following any administrator account changes. For Switchover environments, verify the mail connector configurations for both servers.

> **Note:**
> The Identity re-run task does **not** update the existing CIC master admin accounts in Interaction Administrator or associate them with the currently logged-in administrator account. To do this, you must launch Interaction Administrator and ensure that the master admin accounts are associated with the currently logged-in Windows domain user account on the User configuration page.

Options

Add or modify one or more of these optional components.
- Multi-Site
- Switchover
- TFTP Server
- Director Monitored Server

Dial Plan

Configure a new dial plan that replaces the current dial plan defined on the CIC server.
- Import an existing dial plan file
- Create a dial plan

Rename DS

This task makes the necessary modifications in Directory Services (DS) to account for a new site name and possibly a new server name. If the CIC server is part of a Switchover pair, the DS references are modified appropriately.
- You can choose to change the site name. IC Setup Assistant will rename the DS Site.
- If the CIC server name was changed after the last time IC Setup Assistant was run, IC Setup Assistant will rename the DS Server key.

Note:

Renaming the Directory Services is usually done in a migration context. It may prevent CIC or some of its components from working properly. It should not be done lightly.

Database

If you wish to make database configuration changes, IC Setup Assistant launches the CIC Database Configuration program required for Reporting, Interaction Recorder, Interaction Tracker, and Interaction Optimizer.
- SQL Server or Oracle Service name and administrator account information
- CIC database name or CIC database schema
- CIC database user account passwords (change must be made on the database server first)
- SQL Server database data file, log file, and growth increment
- Oracle tablespaces

DCOM

If you wish, you can set the DCOM security permissions to a more restrictive level than those set in the initial installation.

Certificates

In **Select a Certificate Management Option**, you can choose to manage server group certificates or manage certificate digests.

Manage server group certificates - Select **Manage server group certificates** to indicate your certificate signing option.

Manage certificate digests - Starting with CIC 2016 R4, CIC can generate certificates using the 256-bit version of the SHA-2

signature digest. SHA-256 is more collision-resistant than SHA-1, which makes it harder for attackers to forge a certificate that has a SHA-256 signature digest. CIC continues to use SHA-1 by default, however, new and upgrade 2016 R4 or later installations can choose to use SHA-256. For more information, see the *CIC Security Features Technical Reference* in the PureConnect Documentation Library.

Select **Manage certificate digests** to change the signature digest algorithm to sign the certificates in your IC system. In **Certificate Digests**, select SHA-256 or SHA-1.

What you can't change

Additions or changes to the following configurations must be made in Interaction Administrator:

- Site information (Interaction Tracker)
- SIP Lines and Default Registration Group
- Interaction Recorder
- Speech Recognition
- Mail provider
- Log Retrieval Assistant
- Stations
- Users
- Workgroups
- Roles

Additions or changes to the following configurations must be made in Interaction Attendant:

- Default hours of operation
- Group call processing

\I3\IC directory paths and shares

During the installation, the CIC server install creates the \I3\IC directory, and IC Setup Assistant creates some additional subdirectories when it starts certain CIC subsystems.

While the \I3\IC directory is not shared by default, several subdirectories are shared, with varying access for all network users. The network administrator or system administrator may wish to modify the access of some users, depending on the security requirements of the customer site network.

Once IC Setup Assistant has completed, the administrator can change the permissions on the shares.

This section includes: \I3\IC directory paths and shares table

\I3\IC directory paths and shares table

The following table summarizes the directories and shares in the \I3\IC directory.

> **Note:**
> Drives are not indicated because the CIC server install enables the installer to select the destination drive for the CIC files and, if desired, place the more heavily used directories on separate drives.

Permissions

A = Read-only Access for non-administrator client users, and Full Access for CIC and system administrators

B = Read/Write Access for non-administrator client users, Full Access for CIC and system administrators

C = Not shared for non-administrator client users, Full Access for CIC and system administrators

Directory	Share	Permission
`\I3\IC\Certificates`		C
`\I3\IC\Certificates\Client`		C
`\I3\IC\Certificates\Email`		C

\I3\IC\Certificates\ICCertificateAuthority		C
\I3\IC\Certificates\Lines		C
\I3\IC\Certificates\LinesAuthority		C
\I3\IC\Certificates\ServerGroup		C
\I3\IC\ClientSettings		C
\I3\IC\Documentation	**IC_Docs**	A
\I3\IC\Handlers		C
\I3\IC\Handlers\40Handlers		C
\I3\IC\Handlers\Custom		C
\I3\IC\HostTools		C
\I3\IC\ININ SNMP		
\I3\IC\ININ Trace Initialization		C
\I3\IC\Install		C
\I3\IC\Install\BusinessManagerApps	**IC_BusinessManagerApps**	A
\I3\IC\Install\ExtermalInstalls	**IC_WorkstationPreReqs**	A
\I3\IC\Install\IC Web Service Chat Files	**IC_WebServicesChat**	
\I3\IC\Install\IceLibSDK	**IC_IceLibSDK**	A
\I3\IC\Install\IUpdate_Client	**IC_IUpdate**	A
\I3\IC\Install\ServerManagerApps	**IC_ServerManagerApps**	A
\I3\IC\Install\UserApps_32bit	**IC_UserApps_32bit**	A
\I3\IC\Install\UserApps_64bit	**IC_UserApps_64bit**	A
\I3\IC\InteractiveUpdate		C
\I3\IC\InteractiveUpdate\config		C
\I3\IC\InteractiveUpdate\Web		C
\I3\IC\InteractiveUpdate\Web\bin		C
\I3\IC\InteractiveUpdate\Web\images		C
\I3\IC\Logs	**Logs**	A
\I3\IC\Logs*year-month-day*		C
\I3\IC\Logs\WER		C
\I3\IC\Mail		C
\I3\IC\Mail\Interactions		C
\I3\IC\Mail\NoRetry		C
\I3\IC\Mail\Outbox		C
\I3\IC\Mail\Processing		C

\I3\IC\Mail\Retry		C
\I3\IC\Mail\Scheduled		C
\I3\IC\Mail\Work		C
\I3\IC\Manifest		C
\I3\IC\PMQ		C
\I3\IC\Provision		C
\I3\IC\Provision\Polycom		C
\I3\IC\Provision\overrides		C
\I3\IC\Recordings		C
\I3\IC\Resources	**Resources**	A
\I3\IC\Resources\AlertServerData		C
\I3\IC\Resources\CoverPages		C
\I3\IC\Resources\i3ca		C
\I3\IC\Resources\i3ca\<LanguageID>		C
\I3\IC\Resources\Interaction AttendantFaxes	**AttendantFaxes**	A
\I3\IC\Resources\Interaction AttendantWaves	**AttendantWaves**	A
\I3\IC\Resources\SurveyPrompts		C
\I3\IC\Resources\TUIDefault		C
\I3\IC\Server		C
\I3\IC\Server\filemanager		C
\I3\IC\Server\Work		C
\I3\IC\Server\Config		C
\I3\IC\Server\Handlers		C
\I3\IC\Server\Resources	**Resources**	A
\I3\IC\Server\SoundPointIPLocalization\Chinese_China		C
\I3\IC\Server\SoundPointIPLocalization\Danish_Denmark		C
\I3\IC\Server\SoundPointIPLocalization\Dutch_Netherlands		C
\I3\IC\Server\SoundPointIPLocalization\English_Canada		C
\I3\IC\Server\SoundPointIPLocalization\English_United_Kingdom		C
\I3\IC\Server\SoundPointIPLocalization\English_United_States		C
\I3\IC\Server\SoundPointIPLocalization\French_France		C
\I3\IC\Server\SoundPointIPLocalization\German_Germany		C
\I3\IC\Server\SoundPointIPLocalization\Italian_Italy		C
\I3\IC\Server\SoundPointIPLocalization\Japanese_Japan		C

\I3\IC\Server\SoundPointIPLocalization\Korean_Korea		C
\I3\IC\Server\SoundPointIPLocalization\Norwegian_Norway		C
\I3\IC\Server\SoundPointIPLocalization\Polish_Poland		C
\I3\IC\Server\SoundPointIPLocalization\Portuguese_Portugal		C
\I3\IC\Server\SoundPointIPLocalization\Russian_Russia		C
\I3\IC\Server\SoundPointIPLocalization\Slovenian_Slovenia		C
\I3\IC\Server\SoundPointIPLocalization\Spanish_Spain		C
\I3\IC\Server\SoundPointIPLocalization\Swedish_Sweden		C
\I3\IC\Server\LRA		C
\I3\IC\Server\LRA\Requests		C
\I3\IC\Server\Dictionaries		C
\I3\IC\Server\Firmware		C
\I3\IC\Server\Firmware\ININ		C
\I3\IC\Server\Firmware\Polycom		C
\I3\IC\Server\HandlerDiff		C
\I3\IC\Server\HandlerDiff\XSLFiles		C
\I3\IC\Server\BlackIceResources		C
\I3\IC\Server\Lib		C
\I3\IC\Server\Modules		C
\I3\IC\Server\Modules\Addressing		C
\I3\IC\Server\Modules\Logging		C
\I3\IC\Server\Reports	**IC_Reports**	A
\I3\IC\Server\Reports\Oracle		C
\I3\IC\Server\Reports\SQL		C
\I3\IC\Server\I3RxDocs		C
\I3\IC\Server\I3RxDocs\Users		C
\I3\IC\Server\I3Tables		C
\I3\IC\Server\DSImportParameters		C
\I3\IC\Server\LRA		C
\I3\IC\Server\LRA\Requests		C
\I3\IC\TFTPRoot		C
\I3\IC\Work		C

Post-Installation Configuration

After the CIC server installation (including IC Setup Assistant) is completed and you have **configured at least one Interaction Media Server**, perform basic post-installation tasks in Interaction Administrator and test for basic functionality. The CIC software is complex; even the Event Viewer and the Services panel may not alert administrators of other issues that sometimes only appear once the basic configuration has been completed.

Some tasks, such as configuring SIP lines and creating managed IP phones, must be configured in Interaction Administrator post-installation. Other, such as users, workgroups, roles, and dial plan you may have already configured in IC Setup Assistant. In that case, you simply need to verify these configurations.

This section includes:

- Interaction Administrator
- Master Administrator configuration
- Create a unique Site ID
- Configure SIP lines
- Create Line Groups
- Create managed IP phones and associated SIP stations
- Verify or create non-managed SIP stations
- Verify or create users
- Allocate Access licenses
- Verify or create workgroups
- Verify or create roles
- Verify or create the dial plan
- Enable Switchover replication for mail interactions
- Complete additional mail provider configuration
- Install IC User Applications on client workstations
- Test system for basic functionality
- Client Workstation Installations

Interaction Administrator

Interaction Administrator is an administration application installed with the CIC software. It is a graphical console that is used to create, configure, customize, and maintain various aspects of the PureConnect platform, such as lines, stations, managed IP phones, licenses, users, workgroups, dial plan, etc.

Interaction Administrator divides the different areas into containers. The containers hold the configuration information for the CIC server. Note the containers in the left panel.

For a description of the Interaction Administrator containers, see Interaction Administrator help.

Master Administrator configuration

The user that runs Setup Assistant is the CIC Admin user. This user is assigned to the Administrator role, which includes Master Administrator privileges. You should verify the permissions for this user, set up a mailbox, and assign full CIC client privileges. In addition, the CIC Admin user must have an extension and password configured before phones can be provisioned or Media Servers can be managed.

Anyone with master administrator rights can view and change everything in Interaction Administrator, and assign or remove all levels of administrator rights for any other CIC account, including others with master administrator rights. All property pages (especially Admin Access and Access Control) for the Default User, User, Workgroup, and Role containers are visible to master administrators. This is not the case for other accounts without master administrator rights.

Master administrators can grant individual users a range of administration rights, which enable them to manage other CIC configuration resources. These rights can be very minimal, such as a user allowed to run Interaction Administrator to change only their own user and station configuration, or perhaps the user and station configurations for the members of a Workgroup. In contrast, a master administrator can grant another user rights to create, modify, or delete any other CIC configuration resource in Interaction Administrator, including giving other users a subset of their own administration rights. Master administrators also control the appearance of the Access Control and Admin Access property pages for select users (other users do not have the option to control these pages).

This section includes:

- Authorized Master Administrator Network Accounts
- Verify Master Administrator permissions and rights
- Ensure the Master Administrator has been assigned Full CIC Client Privileges
- Set up an extension and password for the CIC Administrator User
- Set up a Master Administrator Mailbox

Authorized Master Administrator Network Accounts

When CIC is first installed, only the designated CIC Administrator account and the account used to run the CIC server install have master administrator rights in Interaction Administrator. The CIC administrator account is specified during the CIC server installation. When you are logged in to the network as either the CIC Administrator or with the account used to run the CIC server Setup program (typically, the network system administrator account), you have Master Administrator rights when you start Interaction Administrator. All other users who start Interaction Administrator will not see the configuration containers in the left window pane unless they are given rights to view and or modify specific configuration entries.

For more information on Master Administrator accounts, see Interaction Administrator help.

Verify Master Administrator permissions and rights

Before configuring users, you should consider the rights and permissions they require. In Interaction Administrator, you can configure objects for Users, Roles, Workgroups, and the Default user. The Security tab allows administrators to assign attributes that define the rights and accessibility that users have.

The Master Administrator has full rights over all aspects of Interaction Administrator. Anyone with Master Administrator rights can view and modify everything in Interaction Administrator, and can assign or remove all levels of administrator rights for any other Customer Interaction Center user account, including others with Master Administrator rights. The Master Administrator check box can be considered the "Select All" for permissions within the Security tab.

To confirm the CIC Administrator account has master administrator permissions and rights

Open **Interaction Administrator**, expand the **People** node, click **Users**, and double-click the CIC Administrator account. The User Configuration screen opens for the administrator. On the **Security** tab, ensure the **Master Administrator** check box is selected.

Ensure the Master Administrator has been assigned Full CIC Client Privileges

To confirm the CIC Administrator account has master administrator permissions and rights, open **Interaction Administrator**, expand the **People** node, click **Users**, and double-click the CIC Administrator account. The **User Configuration** screen opens for the administrator. Click the **Security Rights** button. The Security Rights screen opens. Ensure the **Category** drop down list is set to **<All>**, specifying the Master Administrator has rights for all options.
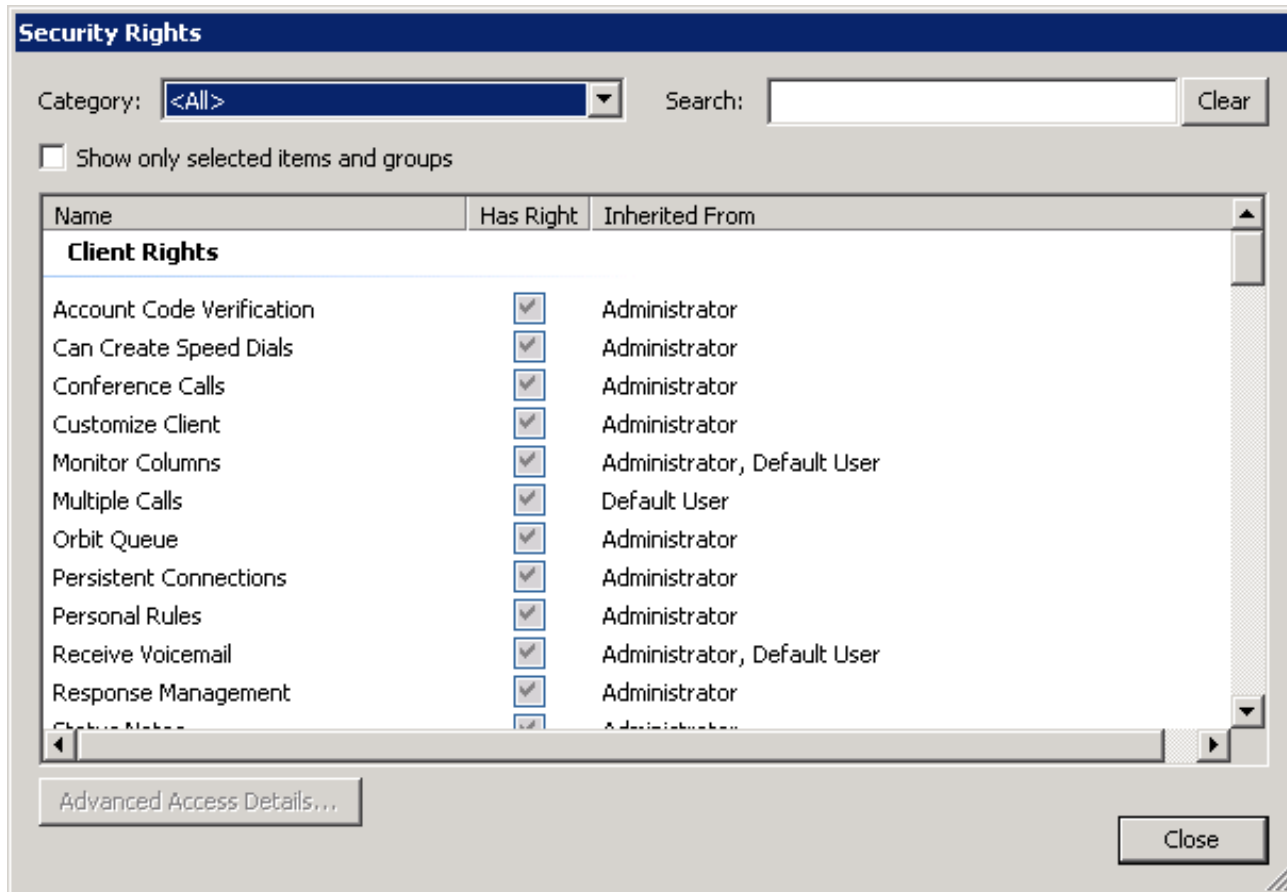
Set up an extension and password for the CIC Administrator User

In the Master Administrator's User Configuration screen, click the **Configuration** tab.

Set up a CIC Administrator User Extension

In the **Extension** field, type a unique (logical) extension number associated with this user. When this user logs on to the network at any CIC client workstation, the CIC system detects that user's presence (by his or her extension) and routes calls to the workstation where the user logged on. If the user is logged on to more than one workstation at the same time, all connected workstations ring when a call is received for that user, regardless of the workstation's extension number.

> Notes: Be sure the user extension numbers do not begin with a number that conflicts with a workgroup extension or other valid queue extension. Extension numbers can be from two to six digits but should avoid the following numbers (in North America): 1800, 1900, 1411, and 1911.

Set up a CIC Administrator User Password

In the **Password** field, type a password of any length or any characters (upper and lower case are significant); it is initially displayed as one or more "*" characters. The next time you open the User configuration, the Password and Confirm Password fields will display 16 '*' characters, regardless of the length of the password you entered, as an added security measure. Keep in mind that remote callers may have to enter this password from a phone key pad. This password is required for some CIC operations, such as remote voicemail retrieval, remote CIC client connections, and Forced Authorization Codes. It is not required for local CIC client use.

In the **Confirm Password** field, retype the password exactly as you did in the Password box.

Set up a Master Administrator Mailbox

In the Master Administrator's User Configuration screen, click the **Configuration** tab. If you are using unified messaging (such as Microsoft Exchange), select an email account to receive voicemail, faxes, and email sent to this user. If a user does not have an email account, he or she will not receive voicemail. User names and addresses must contain only valid (alpha-numerical) characters.

The ⬚ button displays the Mailboxes page that lets you unambiguously specify the mailbox for this user. If this user does not have or require an email account, leave the field blank.

> Notes: If you chose Interaction Message Store to store and track user voicemails and faxes, you cannot change the Mailbox User address on this page. When Interaction Message Store is enabled, the name displayed is from information on the Mailbox Info tabbed page. To change Mailbox User information for Interaction Message Store, click the Mailbox Info tab.

Create a unique Site ID

By default, IC Setup Assistant sets the Site ID to 1. If your organization has plans to migrate CIC 2.4 or 3.0 data to CIC 2015 R1 or later, the CIC 2015 R1 or later Server must have a unique Site ID, different from any of the existing CIC 2.4 or 3.0 Servers. This is a critical step to avoid duplicate CallIDkey values from being created on the CIC 2015 R1 or later and CIC 2.4 or 3.0 Servers. To change the Site ID, open **Interaction Administrator**, expand the **Collective** node, and click **Home Site**. Double-click the **Configuration** screen to open the **Home Site Configuration** screen. In the **Home Site Configuration tab**, change the **Site Identifier** to a unique number that is unique among all CIC servers in your organization.

> **Note:** We highly recommend doing this immediately after completing IC Setup Assistant. This ensures no records will be created in your database that might conflict with data imported from your existing historical data. If you created users in the process of running Setup Assistant, the home site of those users will be updated. All new users created, or imported as part of the CIC 2015 R1 or later migration process will have the new site ID value.

Configure SIP lines

Basic functionality in a SIP implementation requires two types of SIP lines:
- SIP lines for station-to-to station calls - Communication between managed IP phones and the CIC server. Created when Setup Assistant is run as part of the initial CIC installation.
- SIP line for outbound calls – Single line to a voice gateway, for calls made from a phone on the CIC network to a phone outside the CIC environment. Created post-installation in the Interaction Administrator **Lines** container.

In this section:
- SIP lines for internal station-to-station calls
- Create SIP line for outbound calls
- Create additional SIP lines
- Changes to SIP Line Configuration
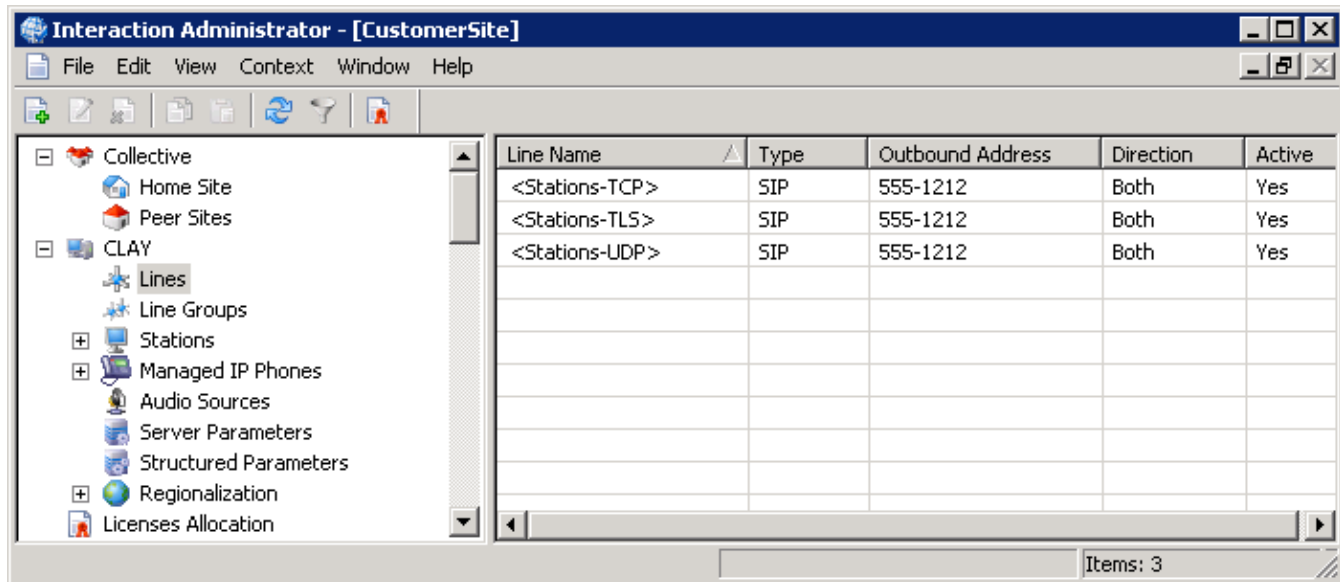
SIP lines for internal station-to-station calls

When you ran IC Setup Assistant, you entered information in the **SIP Lines and Default Registration Group** screen that defined:

- Three default SIP station lines with transport protocols to be used for internal station-to-station calls: <Stations-UDP>, <Stations-TLS>, and <Stations-TCP>.
- A default registration group for managed IP phones that controls how CIC communicates with the phones. The registration group contains one of the default SIP lines (<Stations-UDP>).

Note: Starting with CIC 4.0 SU 1, the default transport protocol was changed from TCP to UDP due to support issues such as problems with TCP offloading and large sites impacted by the OS limit of 4000 TCP connections.

When you open the **Lines** container in Interaction Administrator, these three default lines are present.

You may wish to use one or more of these lines, depending on your implementation and licensing. The default <Stations-UDP>, <Stations-TLS>, and <Stations-TCP> lines cannot be deleted, but they can be deactivated, if desired.

To further configure the default SIP lines, see Interaction Administrator help.

SIP line security/Advanced Security feature license

If you plan to implement SIP line security (TLS/SRTP) for station-to-station calls and registration groups (for managed IP phones), the Advanced Security feature license is include in the CIC 4.0 license.

For information on SIP security features and configuration, see the *PureConnect Security Features Technical Reference* in the PureConnect Documentation Library and Interaction Administrator help.

Create SIP line for outbound calls

Typically only one SIP line for outbound calls needs to be configured, as a single SIP line handles all resources. An outbound call requires a voice gateway, which is why a SIP line is required.

When a SIP line is created or modified, the changes take effect immediately.

To configure a SIP line for outbound calls

1. In the **Lines** container, right-click in the right pane, and select **New…** The **Entry Name** screen opens.
2. In the **Entry Name** , enter the SIP line name.
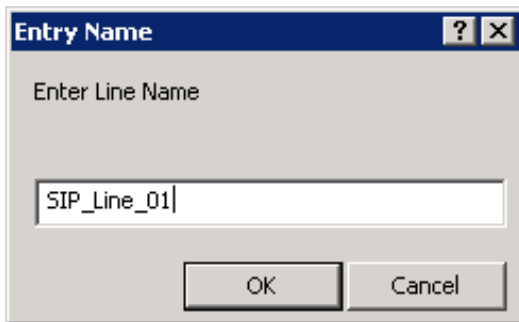
3. The **SIP Line Configuration** screen appears.
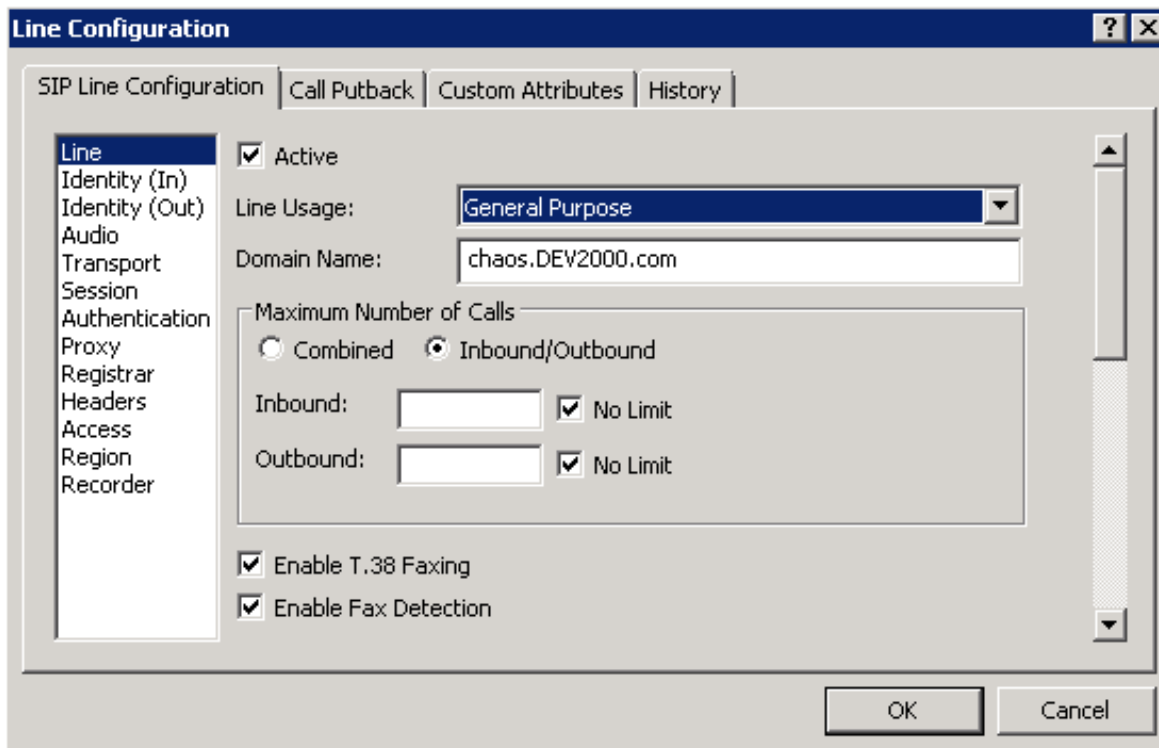
Fill in the configuration information as described in Interaction Administrator help.

Create additional SIP lines

Additional lines may be needed for:
- SIP registration for non-managed IP phones
- Connections to other gateways
- Connections to other SIP servers

Changes to SIP Line Configuration

Starting with PureConnect 2023 R3, new SHA256 Ciphers are added to support the latest OpenSSL version 3.0.8.

The following **TLS Ciphers** are added in **TLS Line** and in **SIP Proxy UI**
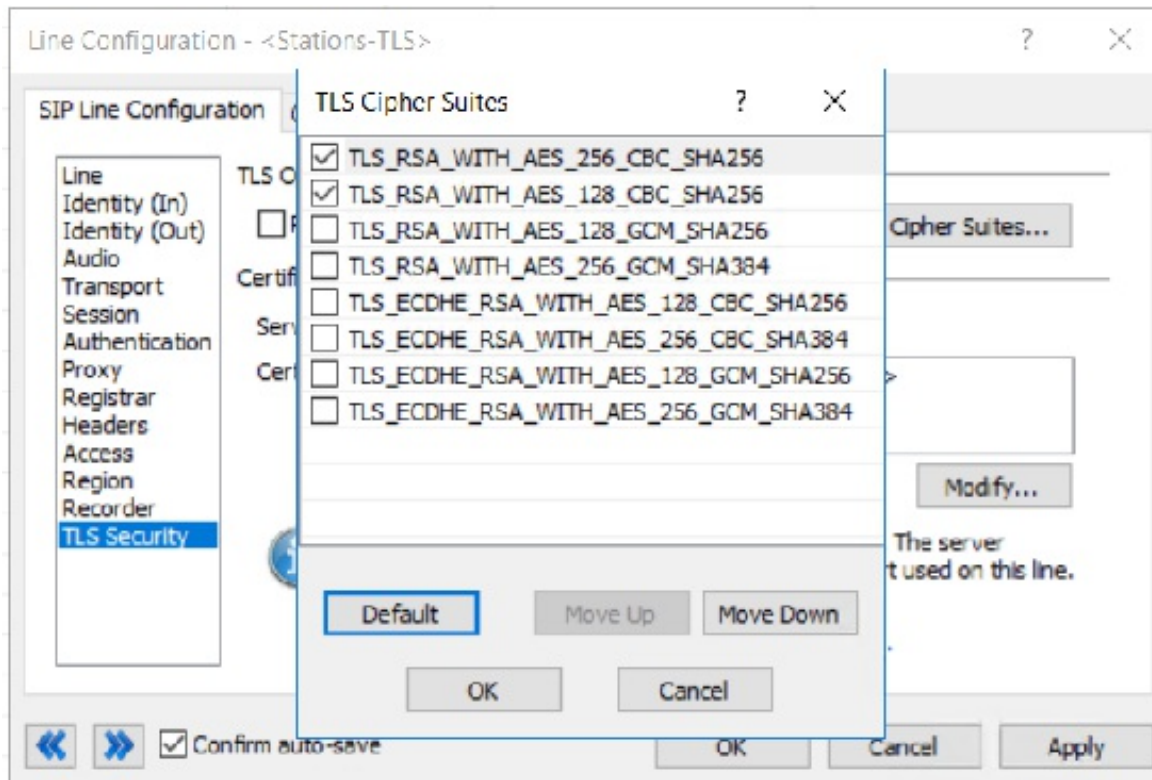
> **Note:** "AEAD_AES_128_GCM" and "AEAD_AES_256_GCM" SRTP Ciphers are not validated as part of the OpenSSL upgrade. All the phones that PureConnect supports are not using these ciphers. For these phones, customers can still add these Ciphers from the Registry. We recommend not activating those new Ciphers until they are more common and widely adopted by SBC\SIP Gateway and IP Phone manufacturers.

The following **SIP Line Configuration** screen provides easier and more intuitive handling of inbound and outbound call processing. Two new SIP line identity configuration tabs are available: **Identity (In)** and **Identity (Out)**:
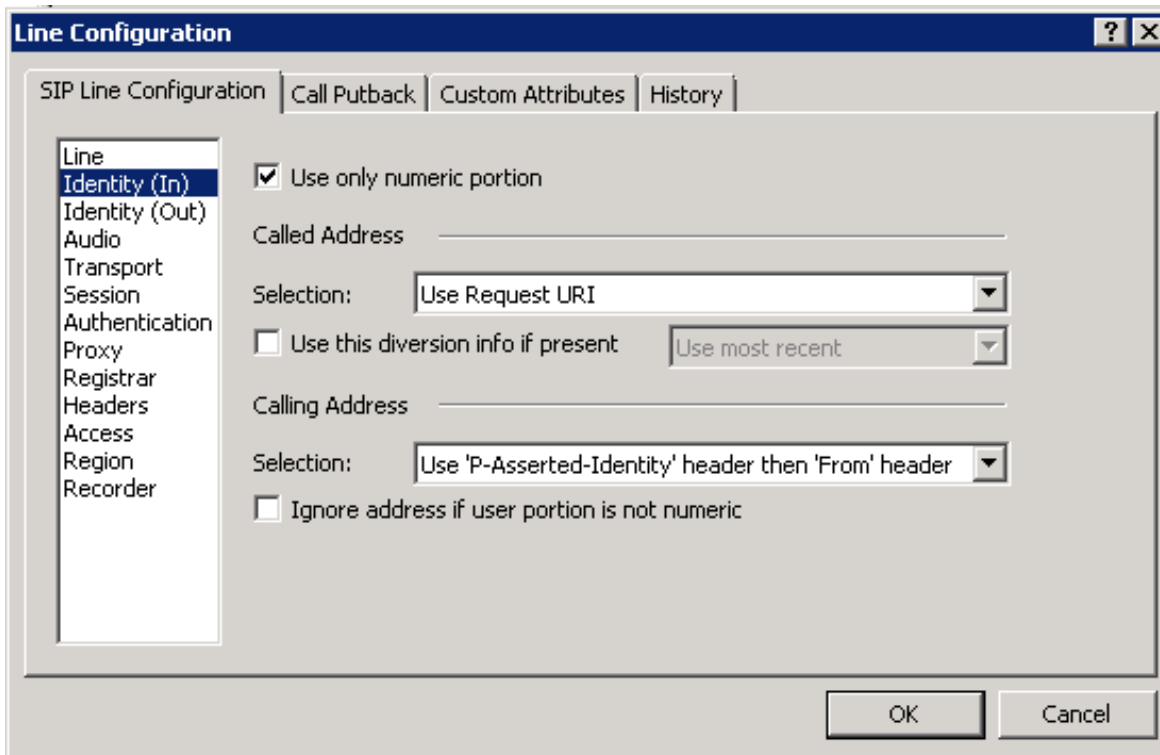
Identity (In) identifies what portions of the inbound SIP message should be used by CIC.
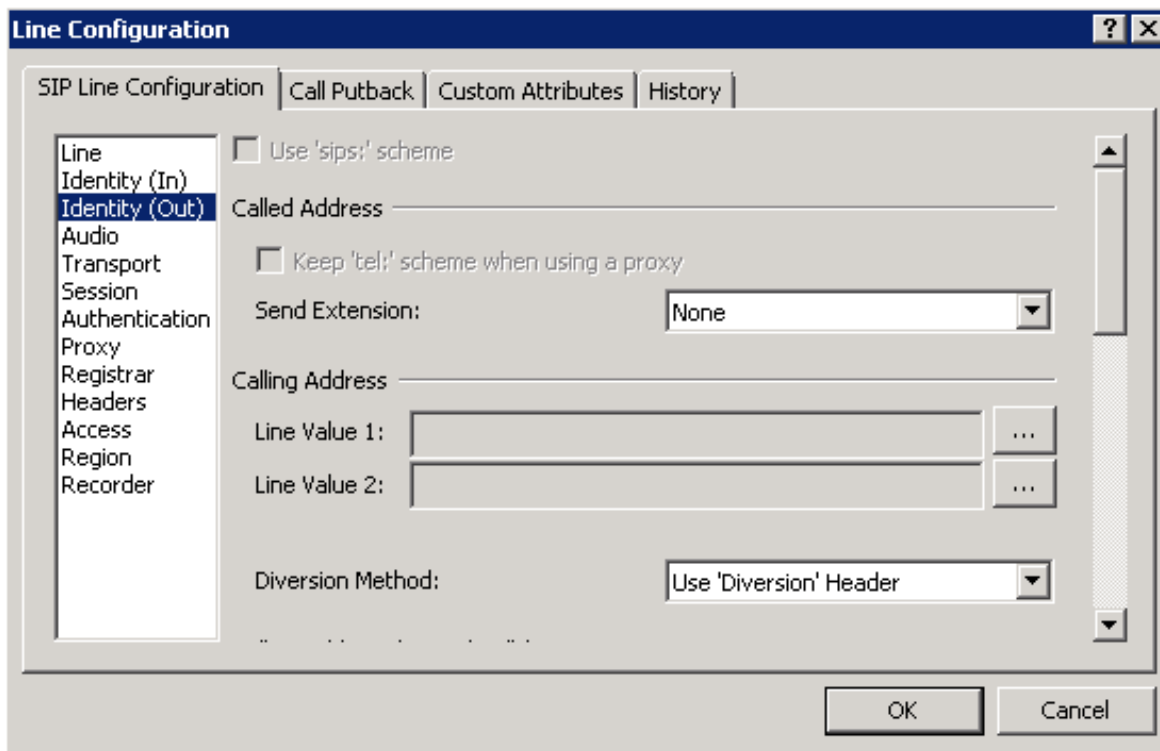
Identity (Out) identifies what portions of the outbound SIP message should be set by CIC.

For more information, see Interaction Administrator help.

Create Line Groups

After lines are created, they are added to groups called line groups. Line groups serve two primary purposes:

- Dial groups: A dial group is a group of lines that CIC uses for outbound calls
- Reporting: Trunk group usage statistics for reporting on lines is performed according to the group, rather than individual lines.

After creating the line, create a line group in the Interaction Administrator **Line Groups** container to contain that line. While a line will typically only represent one gateway, a line group would commonly include many lines, and thus represent many SIP gateways. When the line group is used as a dial group, dial plan may select that line group for outbound calls and use any line in that group, according to hunt group settings.

Create managed IP phones and associated SIP stations

After lines and line groups are created, you should create managed IP phones and SIP stations. We recommend that you create managed IP phones and associated SIP stations for the Polycom, Interaction SIP Station, SIP Soft Phones, AudioCodes, and Genesys phones in your implementation following the CIC server installation.

The CIC provisioning subsystem on the CIC server manages the configuration of Polycom phones, Interaction SIP Station phones, SIP Soft Phones, AudioCodes, and Genesys phones for the purpose of reducing initial IP phone configuration time and ongoing maintenance. The CIC provisioning subsystem manages the CIC features available on each phone, and also updates the firmware and manages resetting the phones as needed.

The Managed IP Phones container in Interaction Administrator holds all Polycom phones, Interaction SIP Station phones, SIP Soft Phones, AudioCodes, and Genesys phones managed by the CIC provisioning subsystem. The Managed IP Phones container also contains templates to create new managed IP phones and the SIP stations associated with each, as well as registration groups for organizing phones according to the sources of registration data.
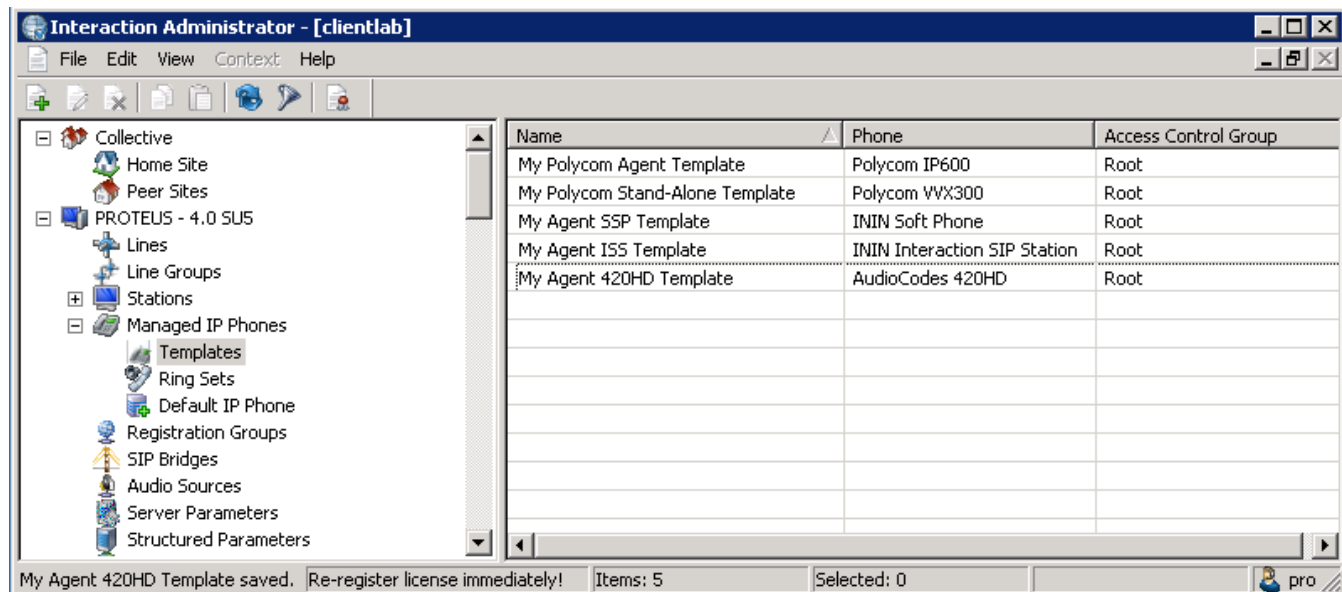
The *CIC Managed IP Phones Administrator's Guide* in the PureConnect Documentation Library provides the complete instructions for creating managed IP phones and associated SIP stations, including:

- Configure the network for managed IP phones
- Create individual managed IP phones for test purposes
- Create multiple managed IP phones using a CSV Managed IP Phone list
- Polycom administration: Additional configuration, troubleshooting, and boot and provision sequences
- Interaction SIP Station I & II administration: Set up, additional configuration, troubleshooting, and boot and provision sequences
- SIP Soft Phone: Setup and configuration, troubleshooting, and setup and provision sequences
- AudioCodes and Genesys phone administration: Additional configuration, troubleshooting, and boot and provision sequences
- How registrations work (proxy settings)

Verify or create non-managed SIP stations

If you did *not create* non-managed SIP stations for non-managed IP phones and/or, stand-alone fax machines when you ran IC Setup Assistant, create them now in the Interaction Administrator Stations container, using **Add Stations Assistant** or create them individually.

Verify non-managed SIP station configuration

The following figure shows a **Station Configuration** screen for the IP connection type for non-managed IP phones.
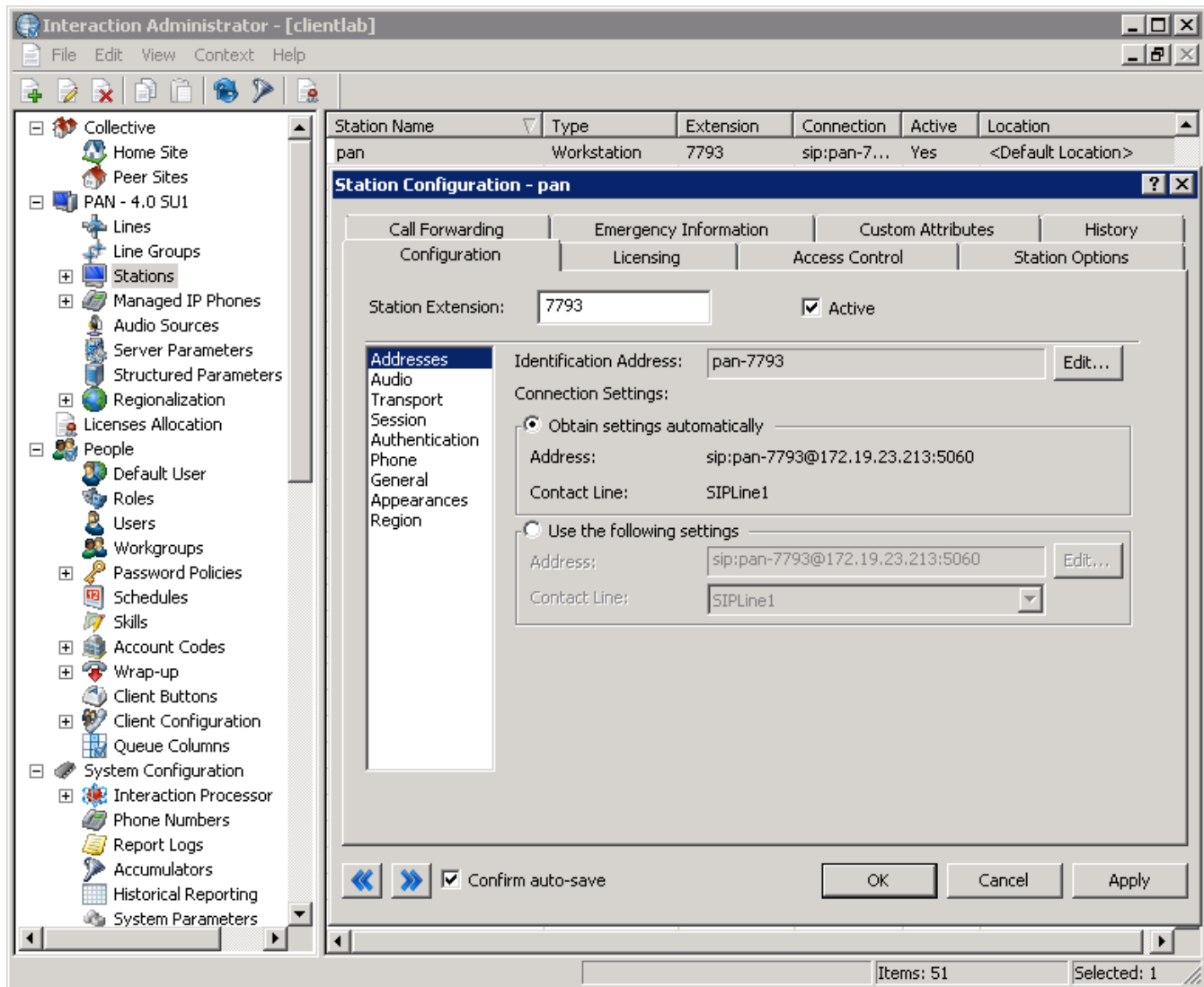
Ensure that each station created when you imported a CSV SIP station list in IC Setup Assistant has a station type, extension, and the appropriate default station values for the station and connection type.

If you assigned Basic Station licenses or other licenses when you ran IC Setup Assistant, review the licenses assigned to each station. For information about allocating licenses assigned to stations and users, see "Allocate Access licenses".

For more information, see the Interaction Administration help.

Verify or create users

Review **user configuration** in the Interaction Administrator **Default User** and **Users** containers.
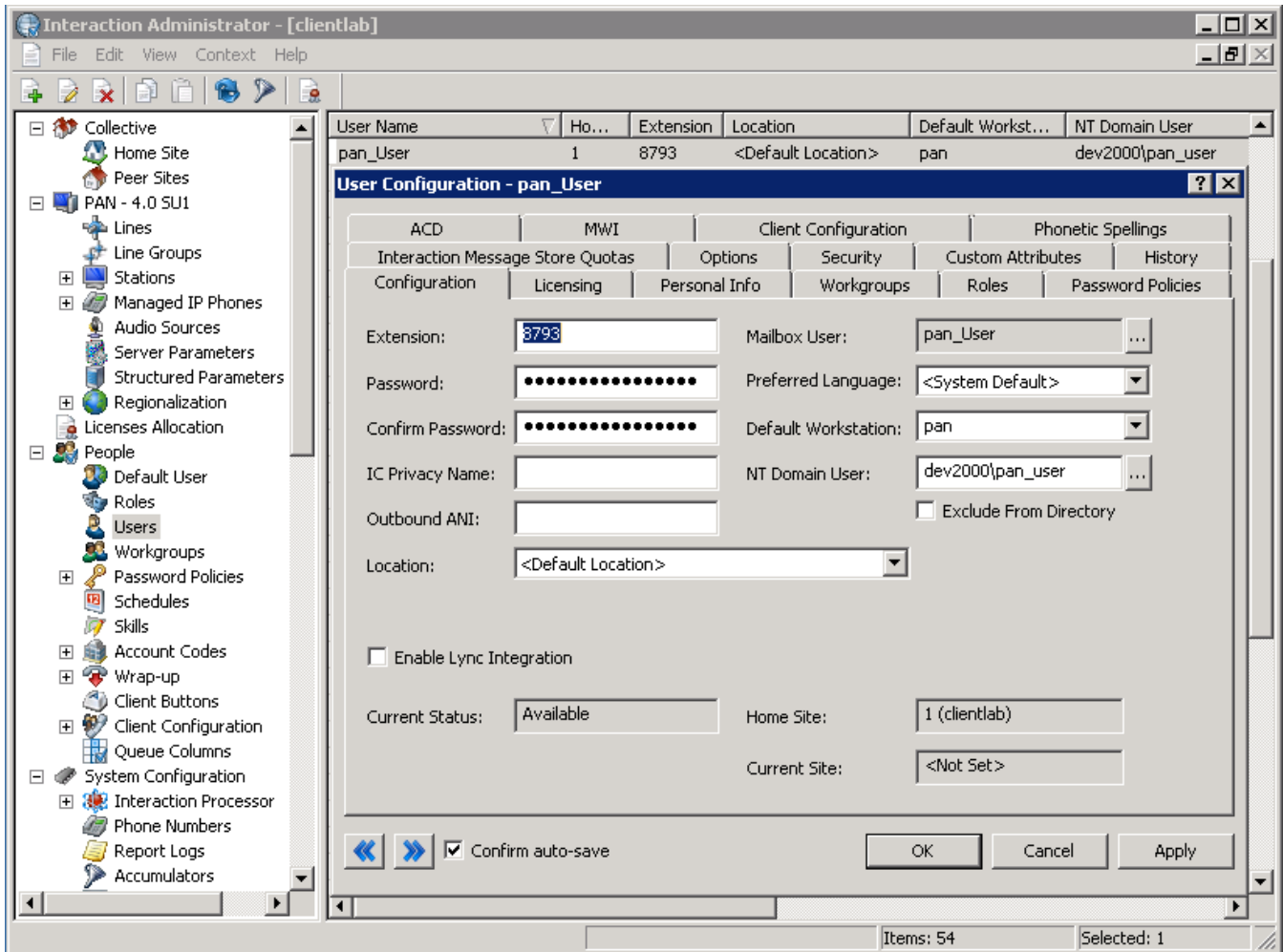
Ensure each user created when you ran IC Setup Assistant is allocated a station, extension, and mailbox, and belongs to the appropriate workgroups and roles. See Interaction Administration online help for information.

You can assign Client Access licenses, ACD Access licenses, and add-on licenses to users in the Licensing tab now, or in the **Licenses Allocation** container. For information, see "Allocate Access licenses".

Notes:

If you did *not* create users when you ran IC Setup Assistant, create them now in **Add Users Assistant** or create them individually. For information, see the Interaction Administrator help.

For security reasons, we recommend that you do *not* select to automatically assign **user passwords** in Add Users Assistant. Instead, set user passwords in the Interaction Administrator Users container. Select all users with valid mailboxes, right-click, and choose **Set Password…** From there you can generate a random password that can be emailed to the users.

Allocate Access licenses

If you have not yet assigned Client Access licenses and ACD Access licenses to stations and users, you can do so in the Interaction Administrator **Licenses Allocation** container. You can also change the allocation, as needed.

The Licenses Allocation container in Interaction Administrator displays a list of all known licenses. For each license, it shows:

- **Name**: The license name, such as Client Access
- **Assignable Allowed**: The number of Assignable licenses purchased
- **Assignable Configured**: The number of Assignable licenses assigned to users or stations
- **Concurrent Allowed**: The number of Concurrent licenses purchased
- **Concurrent Configured**: The number of Concurrent licensed assigned to users or stations
- **Concurrent in Use:** The number of Concurrent licenses that are currently in use by users or stations
- **Notes**: Text that appears if the count exceeds the number of licenses

This section includes:

- Client Access license allocation
- Configure Membership
- Basic Station license allocation

Client Access license allocation

When you double-click on **Client Access**, the **License Configuration - Client Access** screen appears. In this screen you can easily view which users and stations are allocated to the license.

License Configuration - Client Access

Assignable | Concurrent

User Name
devlab_user
Operator

Add...
Delete

Station Name
AgentISS2

Add...
Delete

Number of licenses: 100
Total configured: 3

☑ Confirm auto-save

OK | Cancel | Apply
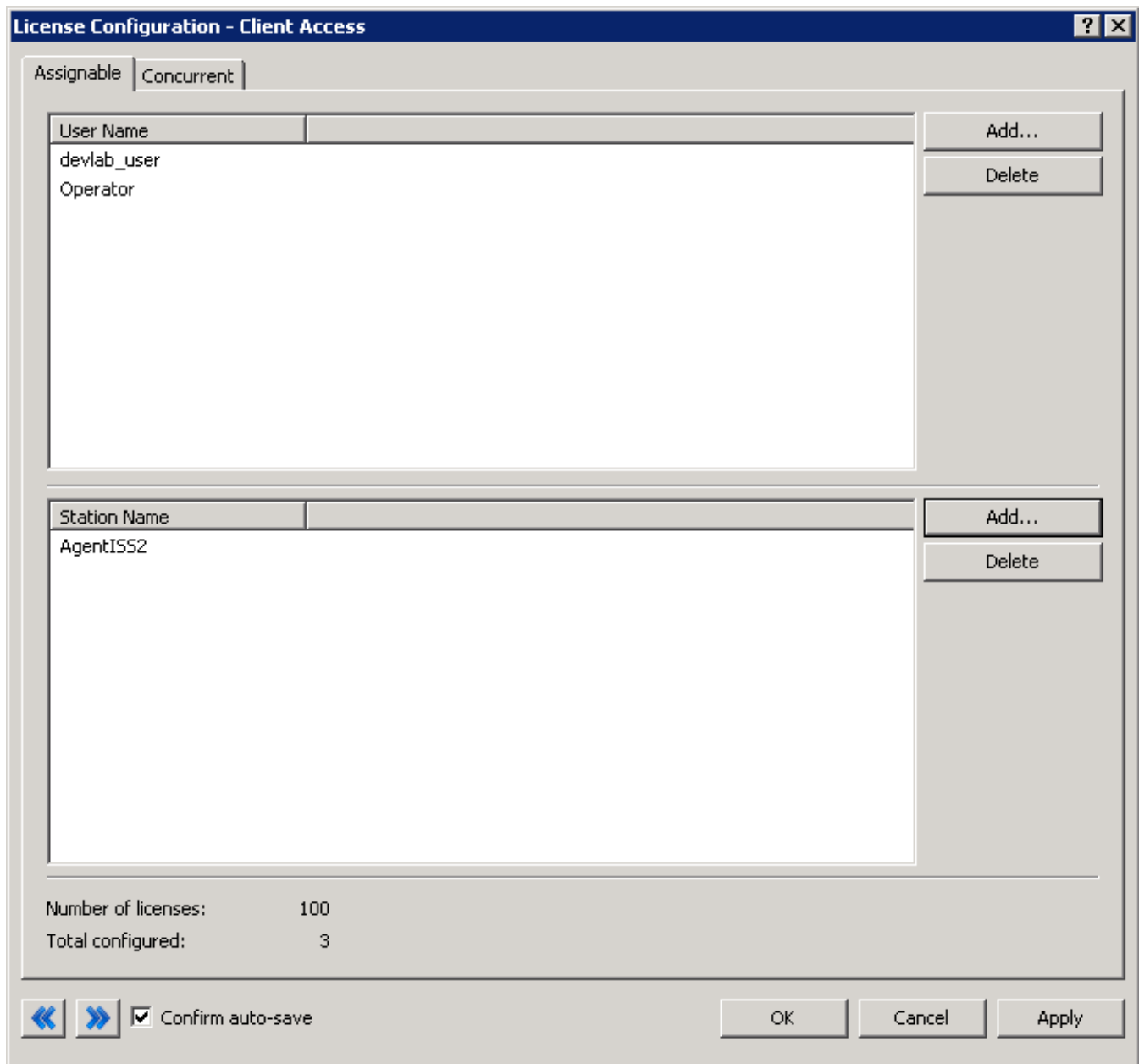
This screen is especially useful for assignments to an Access license because of the overview it provides of users and stations at the same time. The License Configuration page represents one license. There are two tabs; Assignable and Concurrent.

Assignable

The Assignable tab has a section for users and a section for stations. Each section contains a list box showing the license membership.

There are two counters shown at the bottom of each page. These counters are the Number of licenses and the Total Configured:

- Number of licenses - This is the total number of licenses available.
- Total Configured - This is a count of the total number of users and stations that are granted the current license based on the contents of this page. If this number exceeds the License Threshold, warning text is displayed at the bottom of the page.

Concurrent

The Concurrent tab has a section for users which contains a list box showing the license membership.

There are two counters shown at the bottom of each page. These counters are the Number of licenses and the Total Configured:

- Number of licenses - This is the total number of licenses available.

- Total Configured - This is a count of the total number of users and stations that are granted the current license based on the contents of this page. If this number exceeds the License Threshold, warning text is displayed at the bottom of the page.

Configure Membership

The administrator can add or remove users and stations allocated to the license as needed, while keeping within the License Threshold. Users and Workgroups in this list are defined in the Users container.

To allocate an assignable license to a User (making this user a licensed user):

1. Click the **Add** button next to the **User Name** section. The **Select Items** screen opens.
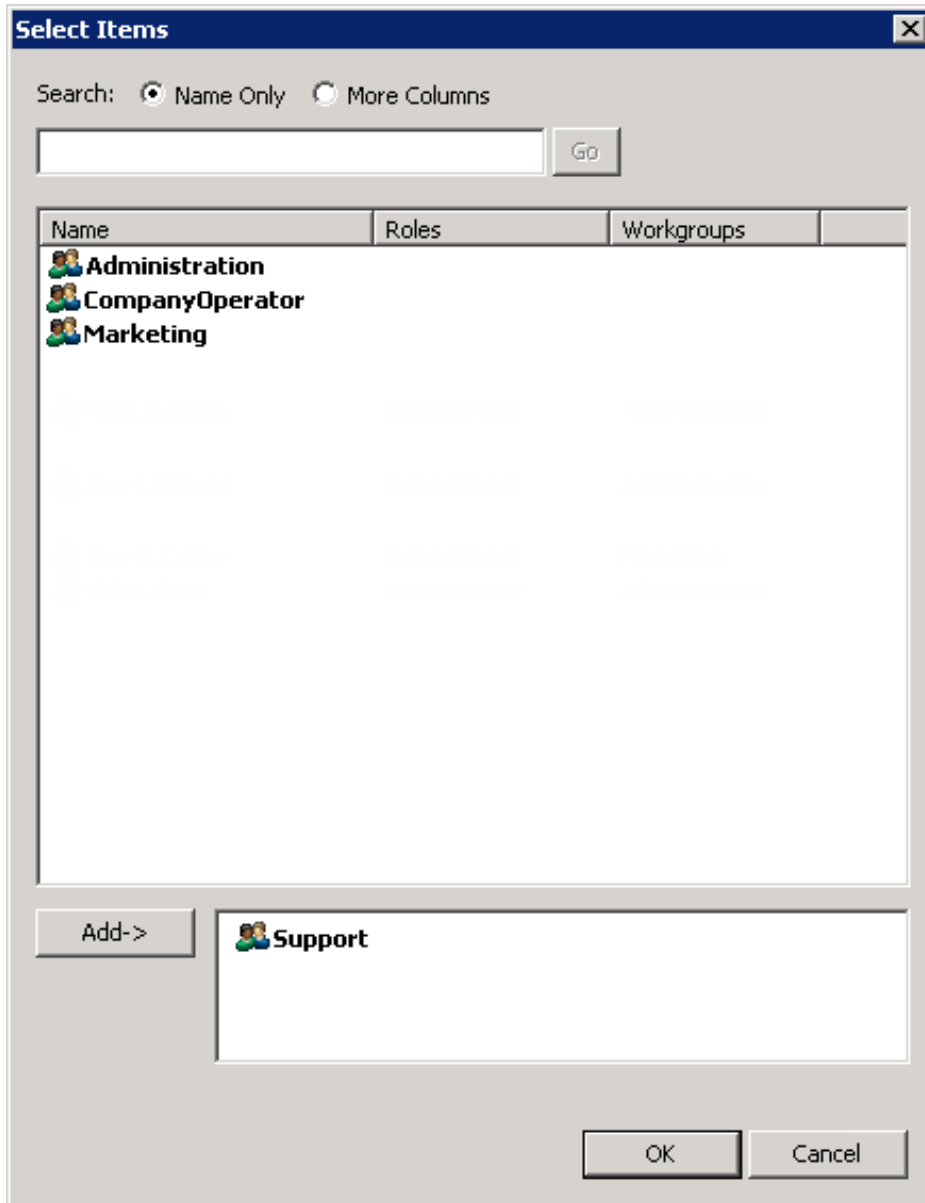
2. You can perform a search by Name Only, or you can search by specified columns. Grant membership to a user by:

- Double-clicking the User, or
- Selecting a User and clicking Add.

3. Click the **OK** button when you finish allocating user licenses.

To allocate an assignable station license:

1. Click the **Add** button next to the **Stations** section.
2. Repeat steps 2-3 to add stations.

To allocate a concurrent license to a User (making this user a licensed user):

1. Click the **Concurrent** tab.
2. Click the **Add** button next to the **User Name** section. The **Select Items** screen opens.
3. Repeat steps 2-3 above.
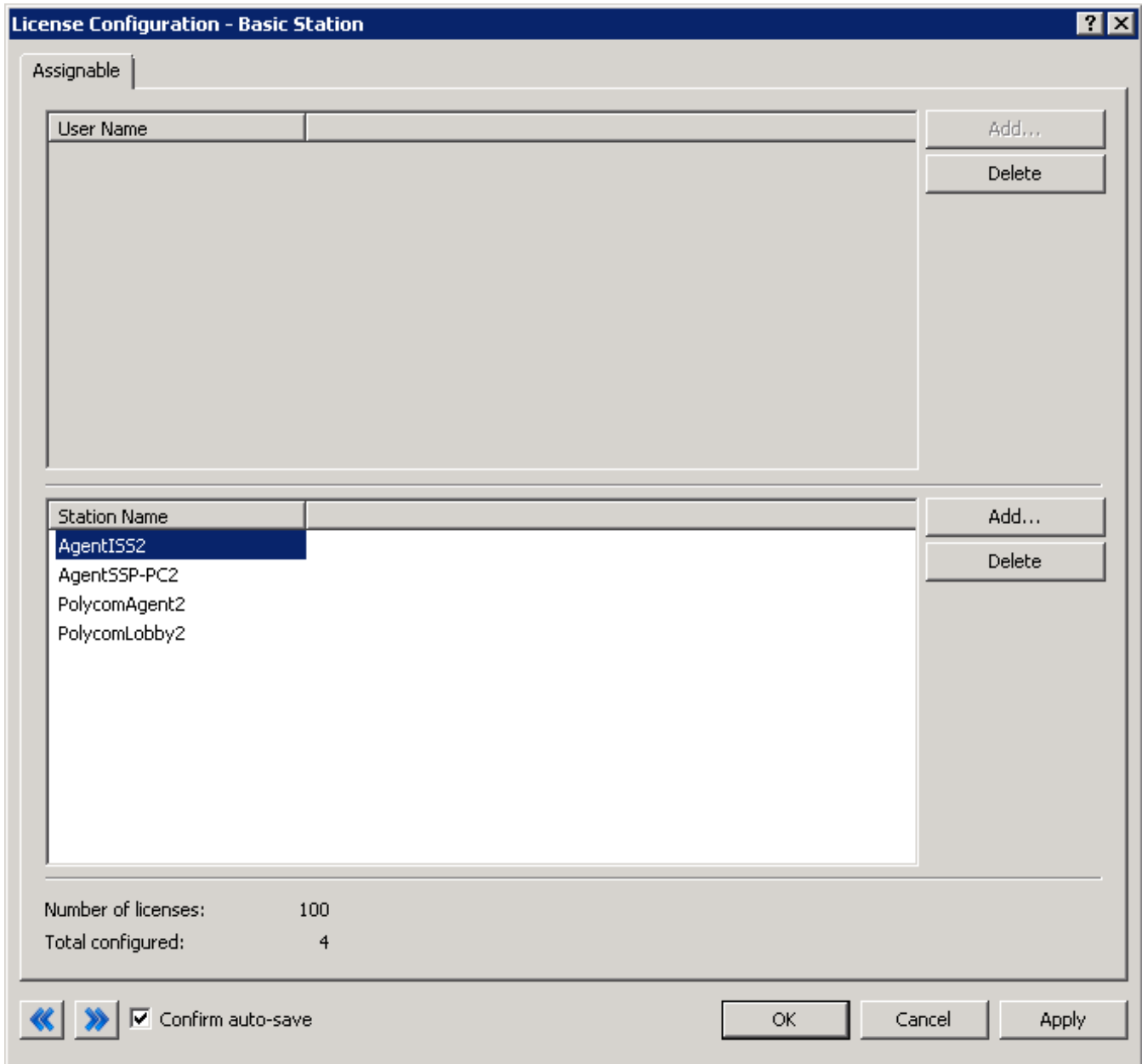
To remove an assignable license from a user's permissions:

You can remove assignable user or station licenses, and you can remove concurrent licenses:

- To remove a user from an assignable user license, in the **User Name** area, select the user you want to remove and click the **Delete** button.
- To remove a station from an assignable station license, in the **Stations** section select the station to remove and click the **Delete** button.
- To remove a concurrent license from a user, click the **Concurrent** tab, in the **User Name** area click the name of the user whose concurrent license you want to remove, and click the **Delete** button.

Basic Station license allocation

You can also allocate stations in the **Basic Station** license.

License Configuration - Basic Station	? X

Assignable

User Name		Add...
		Delete

Station Name		Add...
AgentISS2		Delete
AgentSSP-PC2		
PolycomAgent2		
PolycomLobby2		

Number of licenses: 100
Total configured: 4

☑ Confirm auto-save   OK   Cancel   Apply

Notes

Available Users is disabled, as only stations are assigned to the Basic Station license.

Workstation, Managed Workstation, Standalone Fax, Standalone Phone, and Remote stations are all assigned a Basic Station license; these licenses are part of the fixed usage count for these physical stations.

Dynamic remote stations (when a remote phone number is used to log in to Interaction Desktop) have no station associated with the user. However, when this occurs, the system attempts to acquire a Basic Station license, which affects the Basic Station usage count.

Verify or create workgroups

Review **workgroup configuration** in the Interaction Administrator **Workgroups** container.
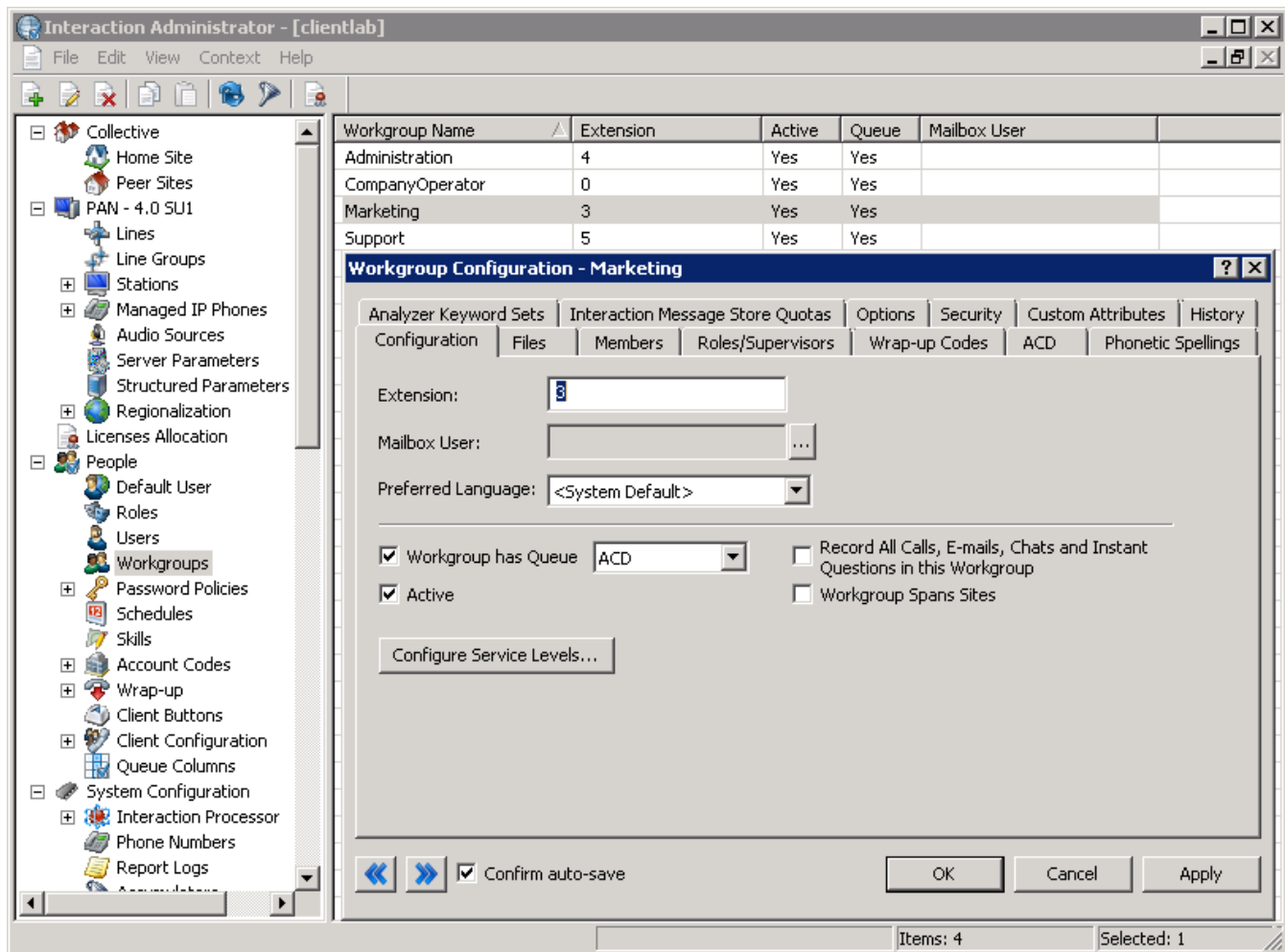
Ensure that the workgroups created when you ran IC Setup Assistant are assigned extensions and alerting options and contain the appropriate members.

See the Interaction Administration help for information.

> **Note**: If you did not create workgroups when you ran IC Setup Assistant, create them now. For information, see Interaction Administrator help.

Verify or create roles

Review **roles configuration** in the Interaction Administrator **Roles** container.
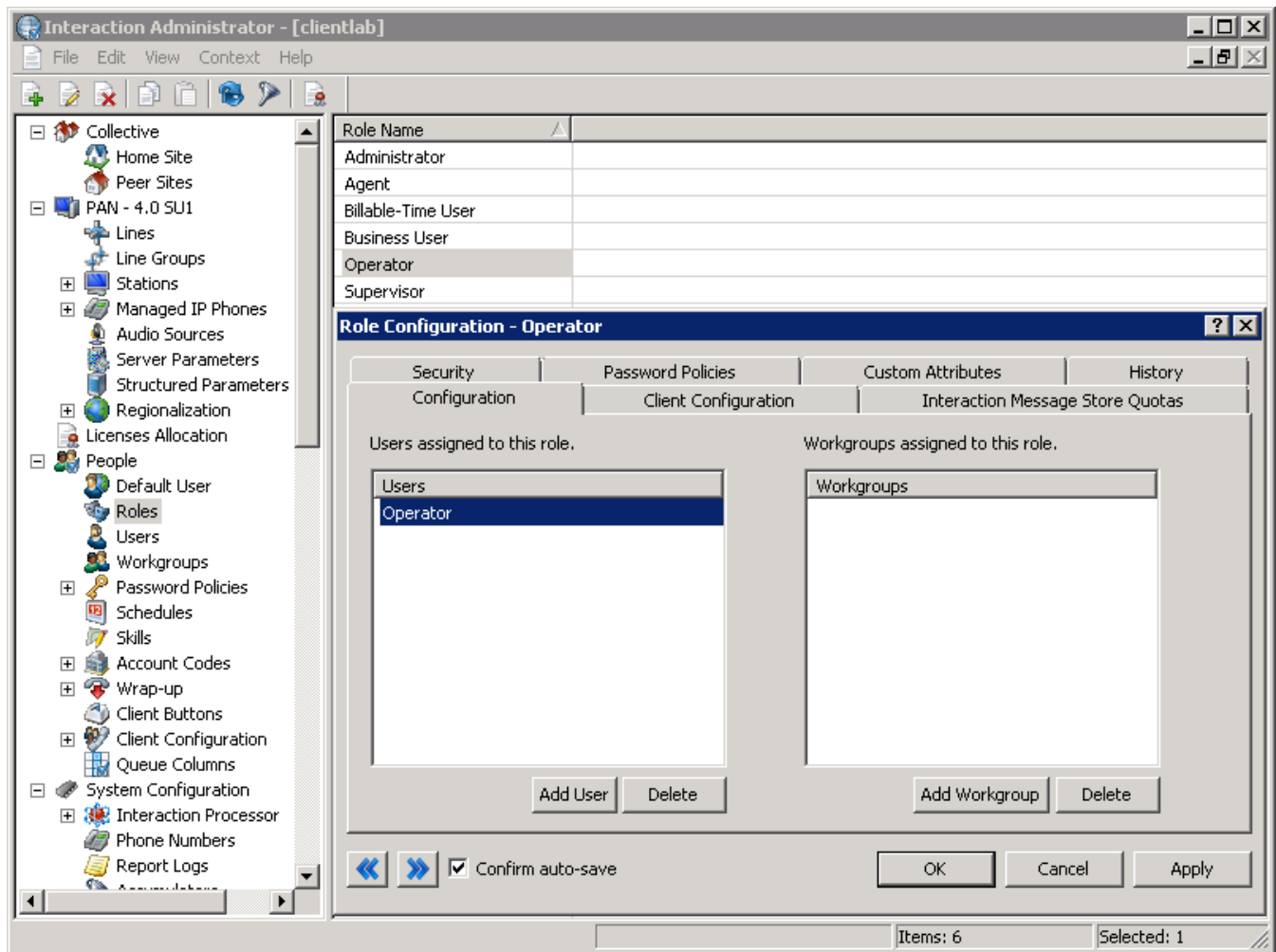
Ensure that the default roles and any new roles you created when you ran IC Setup Assistant contain the appropriate members.

See the Interaction Administration help for information.

Note: If you did not create roles when you ran IC Setup Assistant, create them now. For information, see Interaction Administrator help.

Verify or create the dial plan

A CIC dial plan contains information to determine which telephone calls are extensions, local calls, and long-distance calls. CIC matches each kind of phone number with the appropriate user, workgroup, role, or station dialing privileges. Dial plan is also utilized to format outbound phone numbers and select the dial group over which to send each call.

CIC supports two dial plans:

- The **regional dial plan** has an .i3dplan extension. For more information, see *CIC Regionalization and Dial Plan* in the Technical Reference Documents section of the PureConnect Documentation Library.
- The **old dial plan** has an .i3pnum extension. For more information, see *Dial Plan* in the Technical Reference Documents section of the PureConnect Documentation Library.

Verify the **dial plan** created when you ran IC Setup Assistant in the Interaction Administrator **Phone Numbers** container. The screens differ depending on whether a regional dial plan or old dial plan is active.

> **Note**: If you skipped dial plan creation when you ran IC Setup Assistant, we recommend that you re-run Setup Assistant to create a dial plan or import an existing dial plan (see "Re-run IC Setup Assistant"). You can also perform these procedures in Interaction Administrator, but they are simpler and more automated in IC Setup Assistant.

Perform any additional dial plan configuration in Interaction Administrator.

This section includes:
- Verify a regional dial plan
- Verify an old dial plan

Verify a regional dial plan

1. In the Interaction Administrator **Phone Numbers** container, right-click on **Configuration** and select **Properties**.

   If you created a dial plan when you ran IC Setup Assistant or imported a regional dial plan file, the **Phone Number Configuration** screen displays the **Regional Dial Plan tab**.
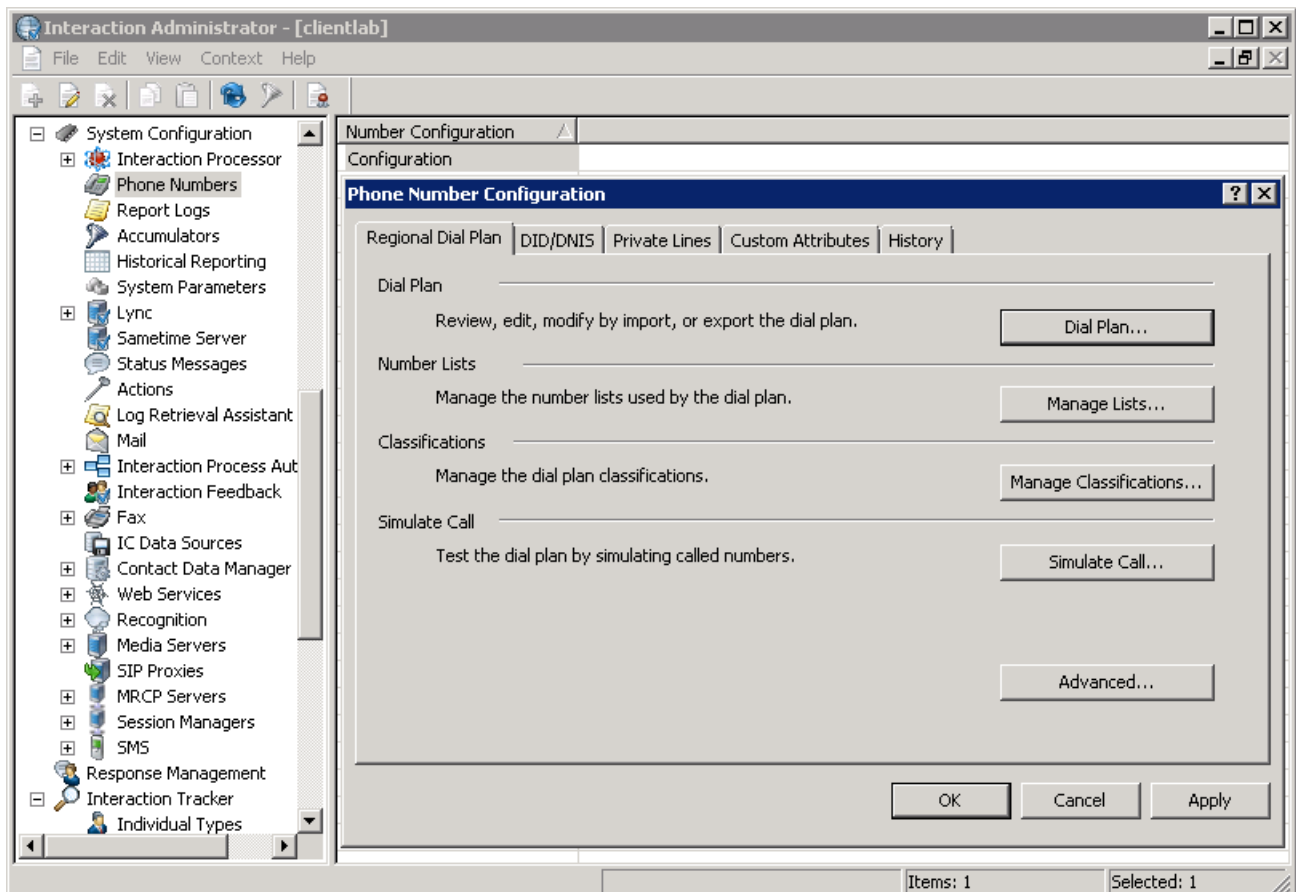
2. Click **Simulate Call**.
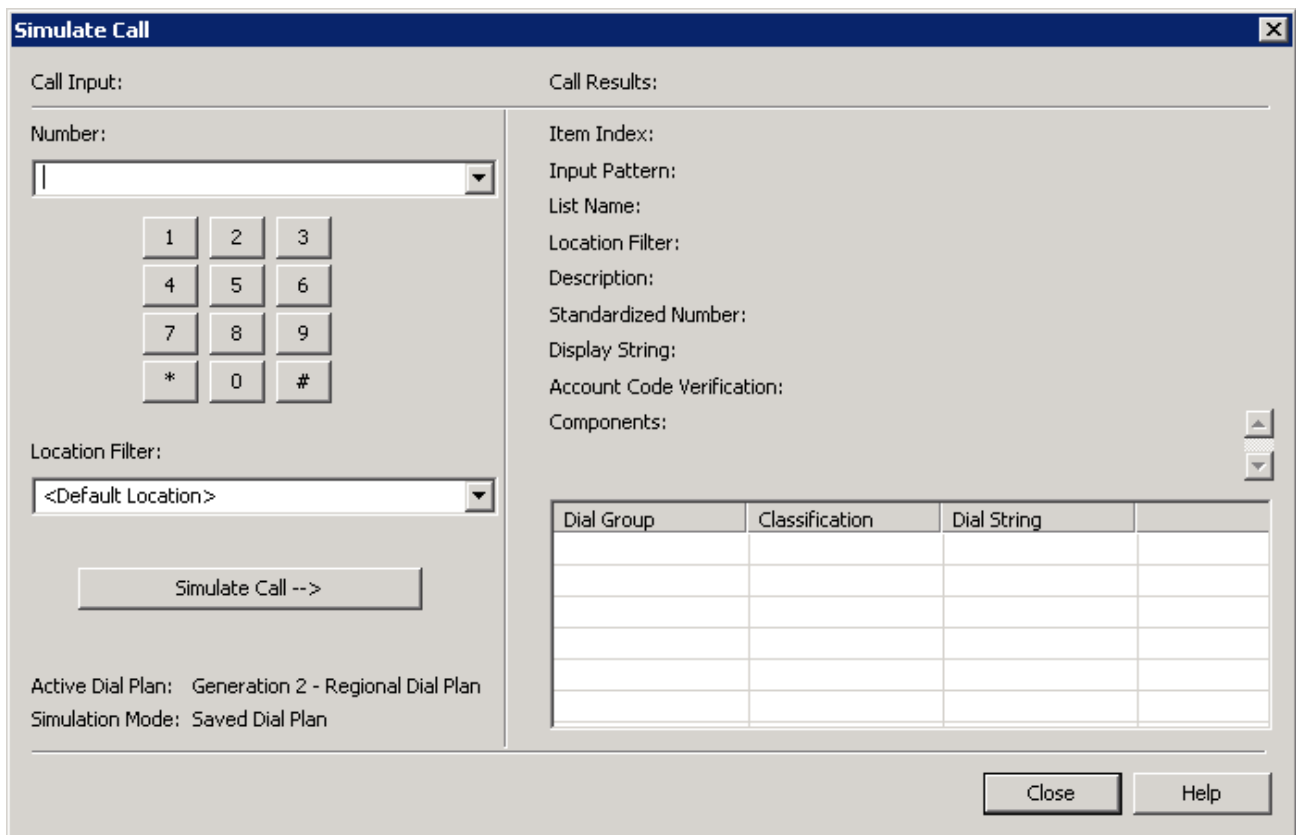
3. In the **Call Input** section, enter the **Number** you wish to test.
4. Click **Simulate Call -->** to verify call results and input pattern.

See the Interaction Administration help for information.

Verify an old dial plan

1. In the Interaction Administrator **Phone Numbers** container, right-click on **Configuration** and select **Properties**.

   If you imported an old dial plan file, the **Phone Number Configuration** screen displays the **Old Dial Plan tab**.
2. Click **Simulate Call**.
3. In the **Call Input** section, enter the **Number** you wish to test.
4. Click **Simulate Call -->** to verify call results and input pattern.

See the Interaction Administration help for information.

Enable Switchover replication for mail interactions

(CIC 4.0 SU 3 to SU 6, CIC 2015 R1 or later) If your implementation includes a Switchover pair, enable the replication of email interactions by adding the **Mail Interaction Recovery Enabled** server parameter in the Interaction Administrator **Server Parameters** container. Set the value to 1.

Complete additional mail provider configuration

Complete any additional configuration required for your mail provider(s) in the Interaction Administrator **Mail** container.
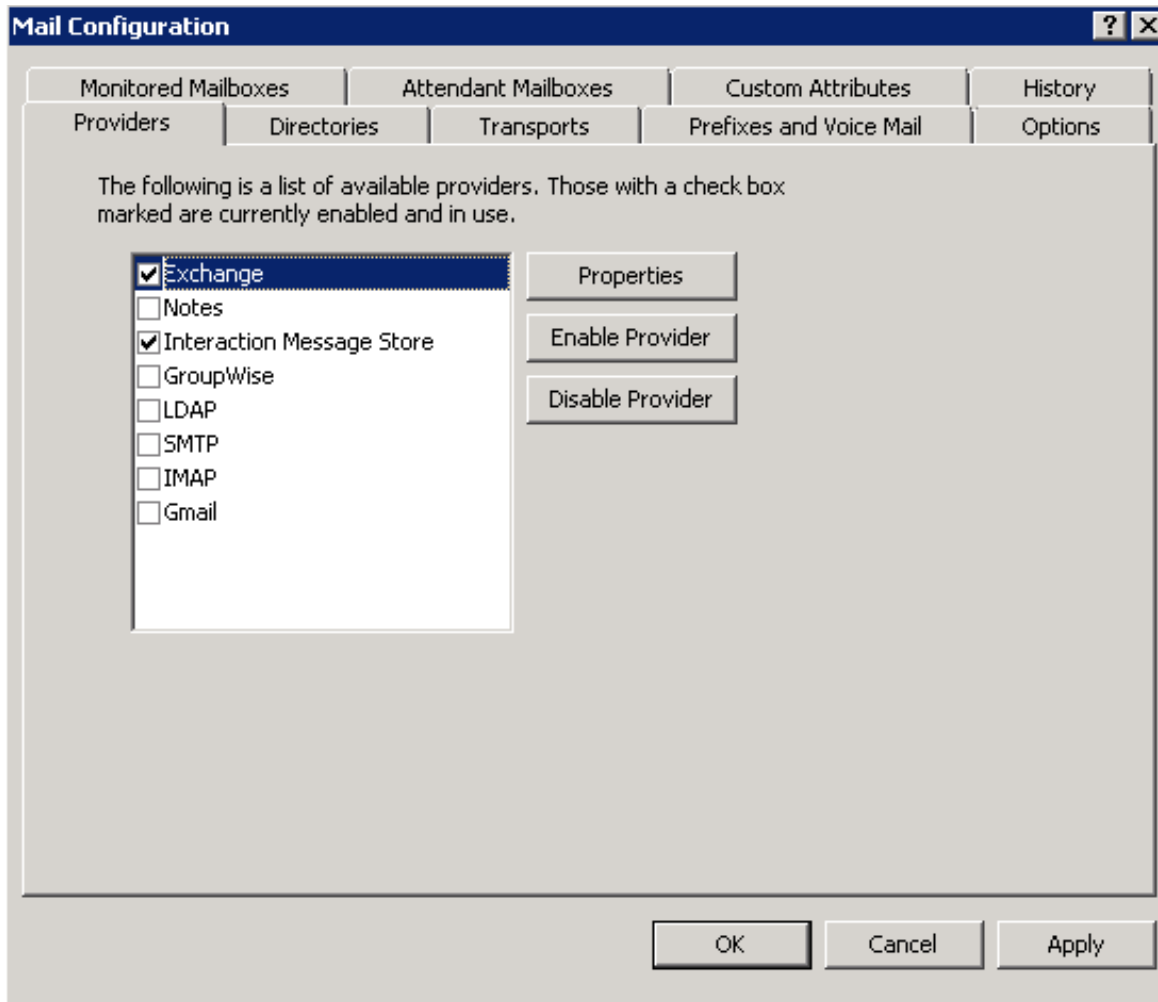
For example:
- Exchange Web Services configuration for users and workgroups, and to retrieve private contacts
- Novell GroupWise configuration
- Gmail configuration (CIC 2015 R2 or later)

For more information, see"Mail System".

Install IC User Applications on client workstations

Run the IC User Applications install to install Interaction Desktop on client workstations. This is necessary to fully test CIC functionality. See:
- "Client Workstation" for client workstation requirements
- "Client Workstation Installations" for installation procedures

Test system for basic functionality

There are a variety of settings that can be configured in Interaction Administrator to create the feature set desired for each individual installation. However, the system must first be tested to ensure functionality. Before you test the functionality, ensure the following tasks have been performed:

- Set up the CIC Administrator user's extension and password
- Configure Media Server (see "Media Servers".)
- Create and provision IP managed phones
- Create lines and line groups

The initial steps the installer should take to verify basic functionality include:

- Call from internal phone to another internal phone
- Call from an internal phone to an external phone
- Call from an external phone to an internal phone via IVR
- Retrieve voicemail from email client
- Test auto-attendant

Call from internal phone to another internal phone

Connecting a call between two internal devices verifies the following:

- Station configuration
- SIP registration line configuration
- Dial plan
- Dialing permission

Call from an internal phone to an external phone

Connecting an outbound call verifies the following:

- Station configuration
- SIP line configuration
- SIP gateway configuration
- Dial plan
- Dialing permissions

Call from an external phone to an internal phone via IVR

Connecting an inbound call verifies the following:

- Media Server configuration
- Station configuration
- SIP line configuration
- Basic Interaction Attendant functionality

Retrieve voicemail from email client

Retrieving a voicemail verifies the following:

- Messaging system configuration
- CIC Administrator user configuration
- General system operations
- Interaction completion from start to finish

Test auto-attendant

IC Setup Assistant generates a **default auto-attendant menu** with "out-of-the-box features." When you ran IC Setup Assistant, you may have performed additional auto-attendant configuration such as default hours of operation and group call processing.

When IC Setup Assistant completes, the auto-attendant menu is operational on the CIC Server. It is not necessary to perform any further configuration in **Interaction Attendant**, unless you wish to make further customizations. For more information, see the Interaction Attendant help.

Default auto-attendant menu

This is the default auto-attendant menu that is installed with CIC.

```
Server Name
  Default Profile
    Default Schedule
         Disconnect (no activity)
      0  Escape to Operator
      1  Dialing an Extension
            0  Extensions starting with 0
            1  Extensions starting with 1
            2  Extensions starting with 2
            3  Extensions starting with 3
            4  Extensions starting with 4
            5  Extensions starting with 5
            6  Extensions starting with 6
            7  Extensions starting with 7
            8  Extensions starting with 8
            9  Extensions starting with 9
            *  Escape to Main Menu
      2  Dialing by Name
      9  Extended Menu
            0  Multi-site
            5  Call Picked-up
            8  Agent Login/Logout
            9  Unified Messaging
            *  Escape to Main Menu
      *  Escape to Main Menu
```

IC Setup Assistant created a CompanyOperator workgroup and an Operator user queue. Incoming calls are routed to the Operator queue first, and then rolled to the CompanyOperator workgroup. If persons in your company assist the primary operator, you should add their names to the CompanyOperator workgroup.

Test the default auto-attendant menu

1. First, change the "Operator" user's status to "Available" in Interaction Administrator. When IC Setup Assistant created the attendant default menu, it set the status for the "Operator" user to "Do Not Disturb". If the "Operator" with a "Do Not Disturb" status receives a call, then the user monitoring the Operator Queue will not get alerted.
2. Pick up the handset from a phone not connected to the CIC system.
3. Dial the number of a line that you have configured and assigned to your CIC system.
4. Make sure you hear the main greeting, "Thank you for calling" WAV file.

Client Workstation Installations

This section describes how to install the client workstation applications by running Setup.exe from the appropriate workstation application share on the CIC server. Alternatively, the administrator can use group policy deployment to install client workstation applications.

- Workstation application install share directory contents
- IC User Applications (32-bit and 64-bit)
- IC Business Manager Applications installation
- IC Server Manager Applications installation
- Group Policy deployment
- Desktop Virtualization for client workstation applications

Workstation application install share directory contents

The following table shows the client workstation application shares on the CIC server, following the CIC 2015 R1 or later CIC server installation.

- The IC_UserApps_32bit, IC_UserApps_64bit, IC_BusinessManagerApps, and IC_ServerManagerApps shares are created by the CIC server install, run as part of the CIC server installation.
- The IC_IUpdate share is created by the Interactive Update Provider install run as part of the CIC server installation.

Installation program	Share	Contents
IC User Applications 32-bit	IC_UserApps_32bit	\backup \LanguagePlugins ICUserApps_32bit_20##_R#.msi ICUserApps_32bit_Lang_##.mst Setup.exe
IC User Applications 64-bit	IC_UserApps_64bit	\backup \LanguagePlugins ICUserApps_64bit_20##_R#.msi ICUserApps_64bit_Lang_##.mst Setup.exe
IC Business Manager Applications	IC_BusinessManagerApps	\backup \LanguagePlugins ICBusinessManagerApps_20##_R#.msi ICBusinessManagerApps_Lang_##.mst Setup.exe
IC Server Manager Applications	IC_ServerManagerApps	\backup \LanguagePlugins ICServerManagerApps_20##_R#.msi ICServerManagerApps_Lang_##.mst Setup.exe
Interactive Update Client	IC_IUpdate	\backup IUpdateClient_20##_R#.msi IUpdateClient_Lang_##.mst Setup.exe

Here is a description of the client workstation application install share directory contents. In the examples below, the string "

{Install_Name}" is used in place of the names such as "IC_UserApps_64bit" or "IUpdateClient" to address all the workstation applications at the same time.

\backup directory

The \backup directory is empty following a new CIC 2015 R1 or later installation. When later CIC releases are applied, they back up any previous CIC-related files, such as the previous .msi file and Language Pack .mst files.

\LanguagePlugins directory

If one or more Language Packs are installed on the CIC server , a \LanguagePlugins directory is present in the workstation application share that contains the following files:

- **{Install_Name}_LanguagePlugin_XX_20##_R#.msi**. As an example: ICUserApps_LanguagePlugin_XX_20##_R#_msi, where XX = a specific language (for example, ja for Japanese). ICUserApps_LanguagePlugin_ja.msi is the Japanese client language plugin for IC User Applications (both 32-bit and 64-bit). If multiple Language Packs are installed, there are multiple client language plugin .msi files, one for each language.
- **\LanguagePlugins\backup directory**: The \LanguagePlugins\backup directory is empty following a new Language Pack installation. When later CIC Language Packs are applied, they back up any previous client language plugin-related files.

See the *CIC Language Pack Technical Reference* for additional information and installation instructions.

{Install_Name}.msi

As an example, ICUserApps_64_bit_20##_R#.msi is the IC User Applications 64-bit install.

{Install_Name}_Lang_##.mst

If one or more Language Packs are installed on the CIC server, one .mst file per language is present in the workstation application share.

As an example, ICUserApps_64bit_Lang_##.mst, where ## = the language, contains localized strings for the IC User Applications 64-bit install GUI for a specific language (for example, ja for Japanese).

> **Note** : In the case of **Interactive Update**, the IC_Update share contains .mst files for the Interactive Update Client install GUI for all currently supported languages.

A new version of the .mst file may be included with future releases. If that occurs, the original version will be moved to the \backup directory during the latest release update.

See the *CIC Language Pack Technical Reference* for additional information and installation instructions.

Setup.exe

Setup.exe manually installs/updates client workstation applications on *individual client workstations.*

Use Setup.exe to:
- Perform a new client workstation application installation (.msi) or apply the latest client workstation release component (.msi).
- Install multiple client plugins (.msi) for the client workstation application or apply the latest client plugin release components (.msi).
- Provide a localized client workstation application install GUI.

When you run Setup.exe to:
- **Install a client workstation application**, Setup.exe launches the install (full GUI). If client plugins are selected, Setup.exe silently installs and/or updates the client plugins.
- **Install a client workstation application plus apply the latest client workstation application update**, Setup.exe launches the install (full GUI) and applies the update silently. If client plugins are selected, Setup.exe silently installs and/or updates the client plugins.
- **Apply the latest client workstation application release component**, Setup.exe silently applies the updated release component. If client plugins are selected, Setup.exe silently installs and/or updates the client plugins.

A newer version of Setup.exe may be included with future releases. If that occurs, the previous version will be moved to the \backup directory during the latest release update.

IC User Applications (32-bit and 64-bit)

The IC User Applications (32-bit and 64-bit) installation program installs Interaction Desktop, Interaction Fax, Interaction Voicemail Player, SIP Soft Phone, Interaction Screen Recorder Capture Client, Interaction SIP Bridge on Windows 7, Windows 8, and Windows 8.1,and Windows 10 on user workstations.

When you run Setup.exe to install IC User Applications (32-bit and 64-bit), you can also choose to install client plugins such as Languages and Microsoft Outlook Interaction Desktop Add-in.

In this section:

- Interaction Desktop installation
- IC User Applications (32-bit and 64-bit) requirements
- Install IC User Applications (32-bit and 64-bit)
- Install Interactive Update Client
- Verify FQDN resolution to ensure client connectivity with the host CIC server
- IC User Application post-installation procedures
- Change, repair, or remove IC User Applications

Interaction Desktop installation

When IC User Applications 2015 R3 and later is installed, Interaction Desktop is installed on client workstations and a shortcut is created. See Install IC User Applications (32-bit and 64-bit). See also "Interaction Desktop" in "Client Workstation" in this guide for a feature description and references to related documentation.

> **Notes:**
>
> Starting with CIC 2015 R3, Interaction Desktop replaced Interaction Client .NET Edition as the primary CIC client.
>
> Starting with CIC 2016 R1, Interaction Client NET Edition was removed from existing CIC installations and is no longer installed with new CIC installations.

- Existing CIC 4.0 and CIC 2015 R1 or later implementations upgrading to CIC 2015 R3 or later implementations should refer to *Transition to Interaction Desktop Administrator's Guide* in the PureConnect Documentation Library. This document describes the Interaction Client Settings Migrator utility that runs during the CIC server upgrade to CIC 2015 R3 or later to migrate Interaction .NET Edition user settings to Interaction Desktop.

IC User Applications (32-bit and 64-bit) requirements

Before installing IC User Applications, review "Workstation"and make sure you have understood and fulfilled the following requirements on the appropriate Windows 7, Windows 8, and Windows 10 workstations:

- **Microsoft .NET Framework versions.** See "Workstation".
- **Additional requirements discussed in "Workstation"**, for example, appropriate server components for Interaction Fax, SIP Soft Phone, and Interaction Screen Recorder Capture , Interaction SIP Bridge, and Microsoft Outlook Interaction Desktop Add-in.
- **Users/stations licensed and configured** for Access licenses. See "Post-Installation Configuration."
- The person installing IC User Applications must have administrative privileges on the local machine and other permissions. See "Workstation".
- Close Microsoft Outlook and any other applications running on the workstation. Turn off virus scanning.

Install IC User Applications (32-bit and 64-bit)

Make sure to install the version (32-bit or 64-bit) appropriate for the workstation. This section describes how to install IC User Applications (64-bit) 2015 R3 or later using `Setup.exe`.

> **Note:**
> If one or more Language Packs are installed on the CIC server, please refer to the *CIC Language Pack Technical Reference* for additional information.

To install IC User Applications

1. On the workstation, select **Start**. In **Search programs and files**, type `\\servername\` where *servername* is the CIC server name, to view the shares on the CIC server.

2. Select the IC User Apps install share appropriate for the workstation from the list, for example **IC_UserApps_64-bit**, and double-click.
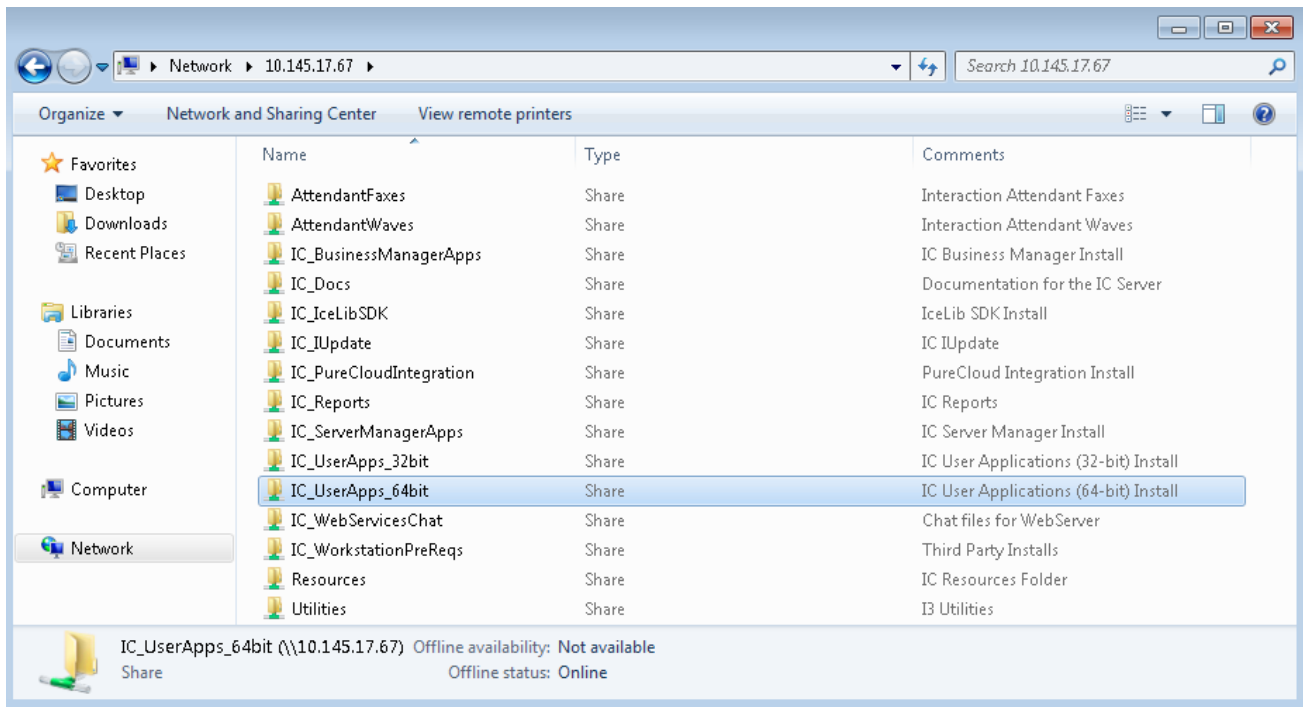
3. Review the contents of the IC User Apps install share and the Language Plugins subdirectory.
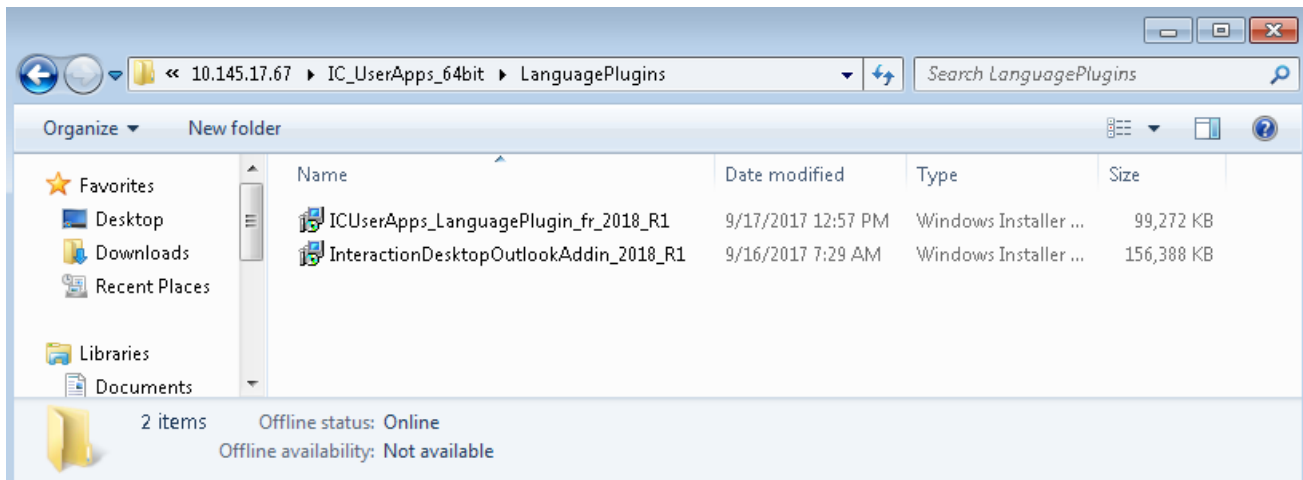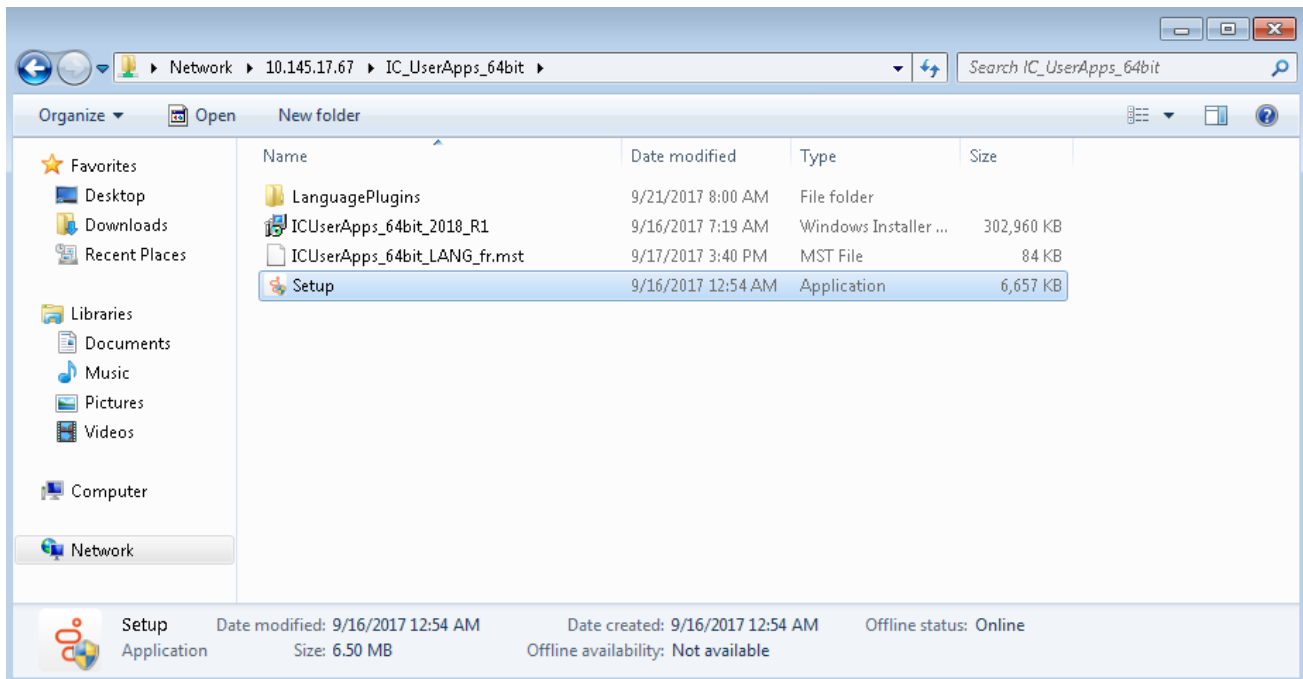
In this example, the **IC_UserApps_64bit** share contains:

- Language Plugins directory: `InteractionDesktopOutlookEdition_2018_R1.msi` install and the `ICUserApps_LanguagePlugin_fr_2018_R1.msi` install.
- The `ICUserApps_64bit_2018_R1.msi` install
- The `ICUserApps_64bit_LANG-fr.mst` file
- The `Setup.exe` utility

4. Double-click `Setup.exe` in the **IC User Apps** install share.
5. In the **Setup.exe** screen, select **English** from the drop down list and click **OK**.
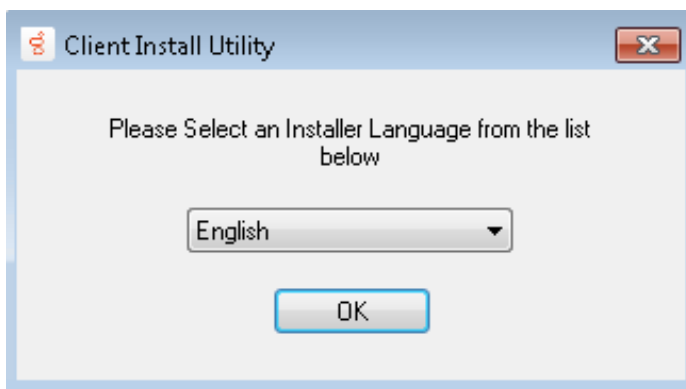
If one or more Language Packs are installed on the CIC server, the applicable languages are available in the drop down list for display on the IC User Applications install screens.

> **Note:**
> This screen appears only in the initial run of Setup.exe in the **IC_UserApps_64bit** share. The next time you run
> `Setup.exe`, the IC User Applications install automatically appears in the language you selected the first time you ran
> `Setup.exe`.

6. In the next **Setup.exe** screen, make the appropriate selections depending on the content displayed and click **Start** to launch the IC User Applications (64-bit) install.
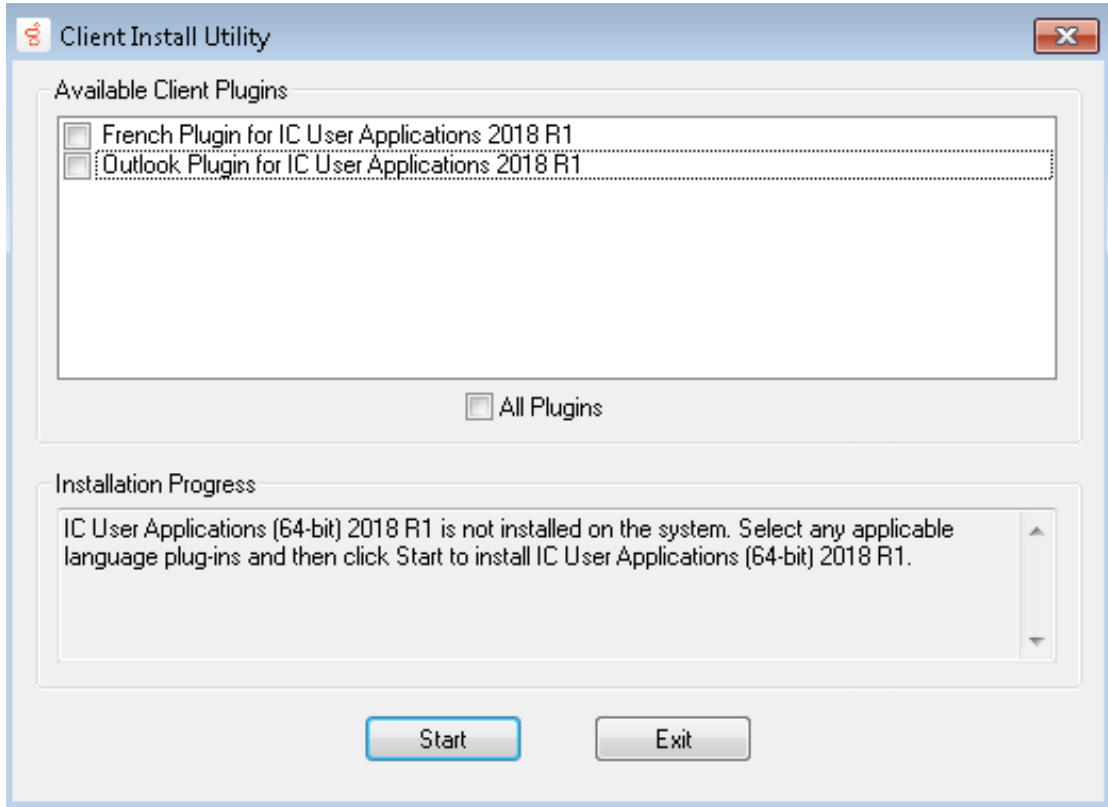
Available Plugins

Select the plugins to install or select **All Plugins** to install all listed plugins.

Installation Progress

Review the message displayed.

"*IC User Applications (64-bit) 2018 R1 is not installed on the system. Select any applicable language plug-ins and then click Start to install IC User Applications (64-bit) 2018 R1.*"

7. The IC User Applications (64-bit) install launches. Click **Next** to proceed past the **Welcome** screen.
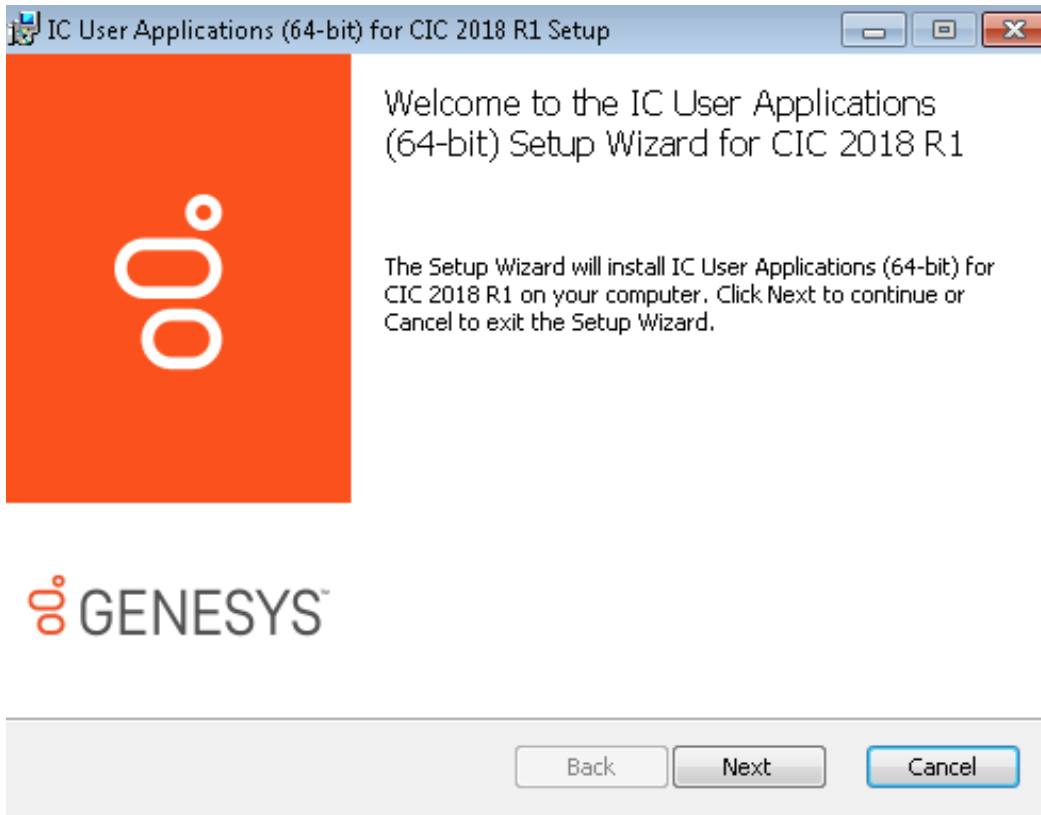
8. In **Custom Setup** screen, select or de-select applications/features as needed and click **Next**.
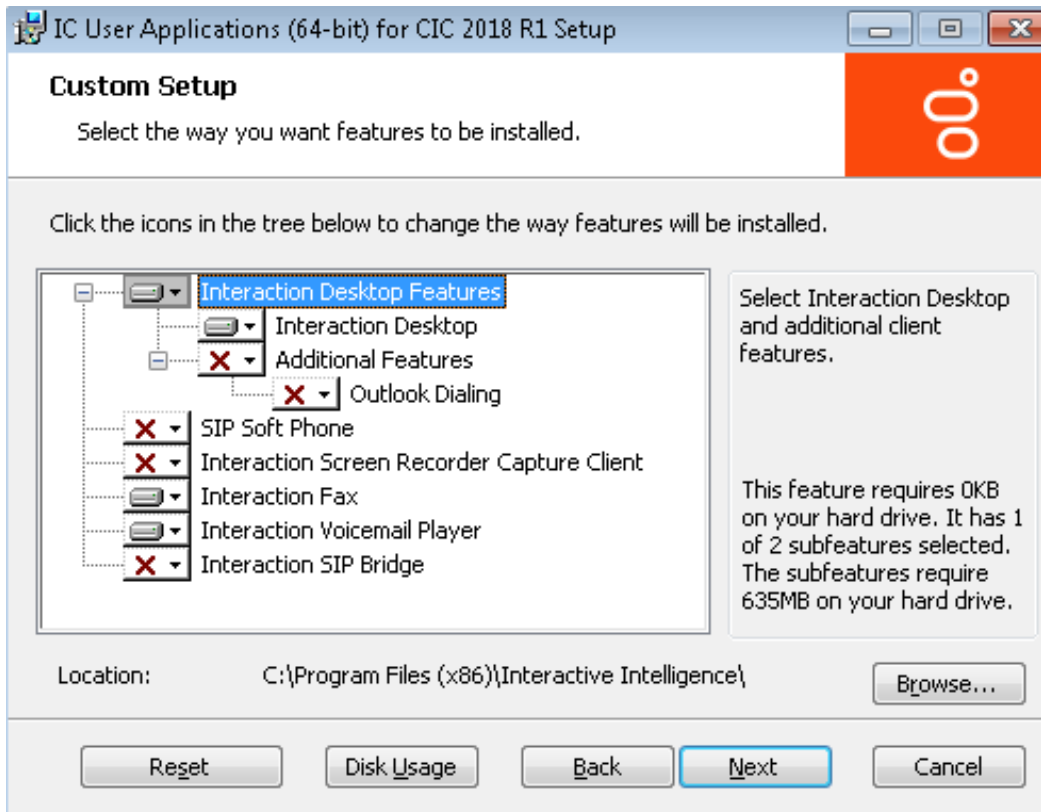
We recommend that you keep the default location of `C:\Program Files\Interactive Intelligence` where the IC User Applications will be installed. If you wish to change the default location, use the **Browse** button.

The following table provides a description for each of the applications/features.

Feature Component	Default Selection	Description
Interaction Desktop	Yes	Standard version of the CIC. Feature-rich, provides low bandwidth usage for larger deployments.
Additional Features	–	Select additional Interaction Desktop features.
Outlook Dialing	–	Dial from Microsoft Outlook and TAPI/TSP-compatible applications.
SIP Soft Phone	–	Delivers audio through a USB headset on a workstation or laptop. Works with Interaction Desktop or a basic call control interface.
Interaction Screen Recorder Capture	–	An Interaction Recorder feature installed on agent workstations to record agents' screens. Screen recordings can be associated with phone call and Web chat interactions.
Interaction Fax	Yes	Enables users to send, receive, print, annotate, and rotate faxes; as well as monitor the fax queue.
Interaction Voicemail Player	Yes	Enables users to play voicemail messages directly from email and control message playback.
Interaction SIP Bridge	–	Enables at-home workers to use a SIP-enabled telephone to make and receive calls from CIC through a remote connection.

9. If you selected **SIP Soft Phone**, **Interaction Screen Recorder Capture** , or**Interaction SIP Bridge** in the **Custom Setup** screen, the **QoS Requirement** screen appears.
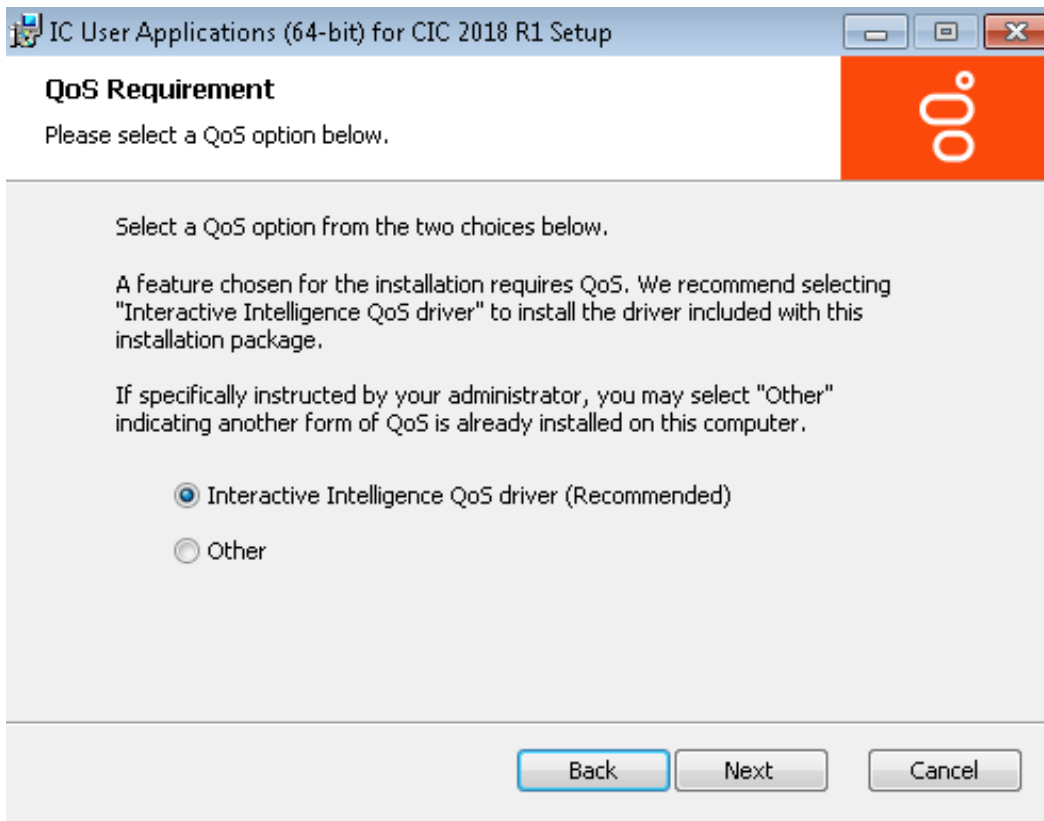
We recommend that you select **PureConnect QoS driver.**

PureConnect QoS driver

This is the default and recommended option. When this option is selected, the install adds the PureConnect certificate to the Trusted Publishers list, then installs the driver. *In most cases*, adding the certificate to the Trusted Publishers list saves the user from being prompted by Windows Security to manually trust the certificate.

Other

If **Other** is selected, the PureConnect certificate is not added to the Trusted Publishers list and driver is not installed. We recommend that users do not select this option unless specified by the administrator. Selecting this option implies that another form of QoS is used at the site.

If the system administrator does not allow the Trusted Publishers list to be modified, the user will be prompted with the **Windows Security** screen. To make it easier for the user, the following message appears first, explaining what to do when the **Windows Security** appears.
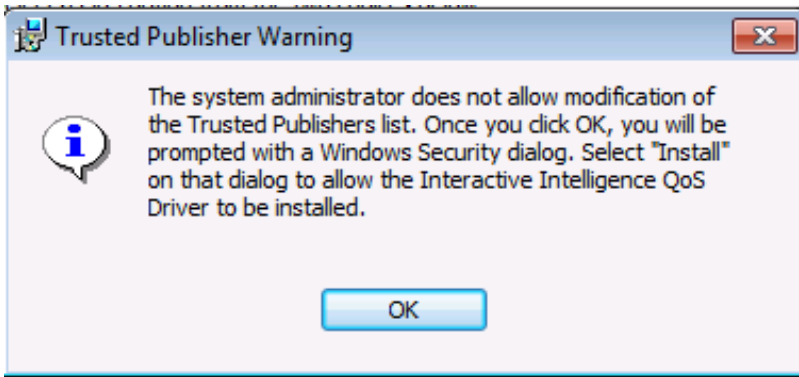
For more information about the PureConnect QoS driver, see the PureConnect Customer Care KB article https://genesyspartner.force.com/customercare/pkb_Home?id=kA50B0000008R5H.

10. In the **IC Server Name** screen, type the name of the host CIC server and click **Next**. We recommend using a fully qualified domain name (FQDN), not a short name.
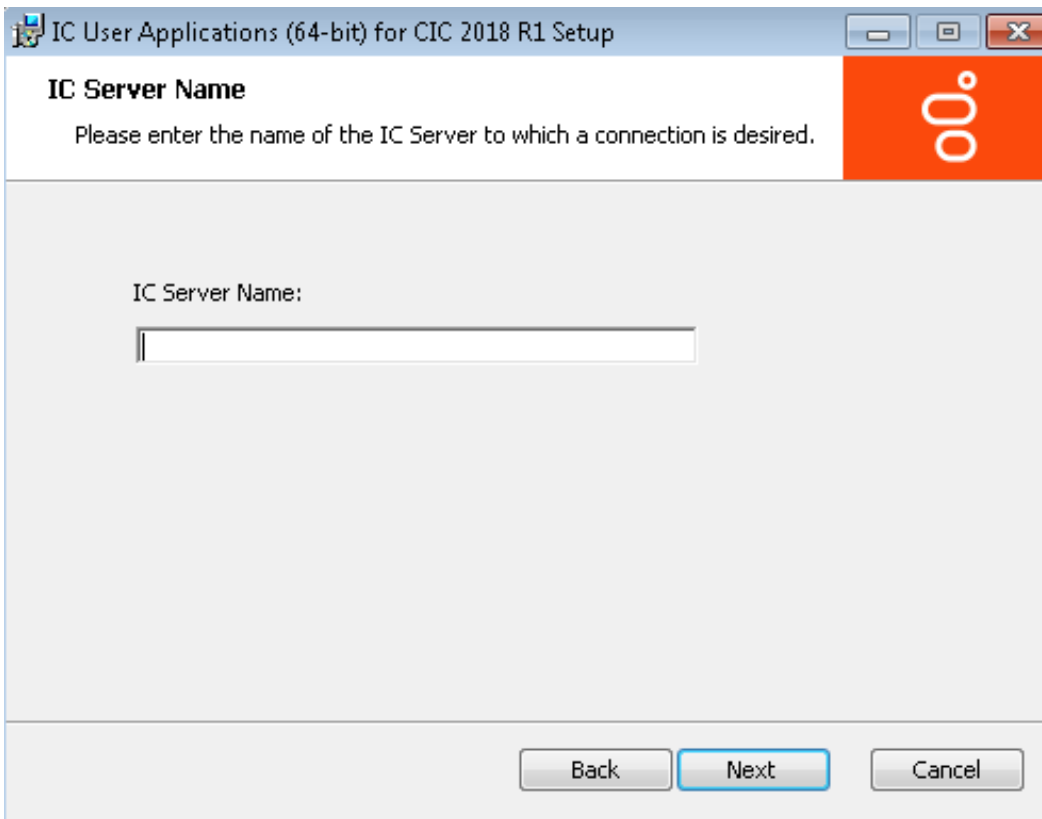
> **Note:**
> If you have a CIC Switchover architecture and you created a pair of commonly named DNS A records pointing to each server as part of the IP phone network configuration for managed phones, do not use that common name value here. Instead, use one of the actual CIC server names. We recommend using a fully qualified domain name (FQDN), not a short name.
> Once you have completed this installation, refer to the following section to verify fully qualified domain name (FQDN) resolution to ensure connectivity with the host CIC server.

11. When you are ready to begin the installation, click **Install**.
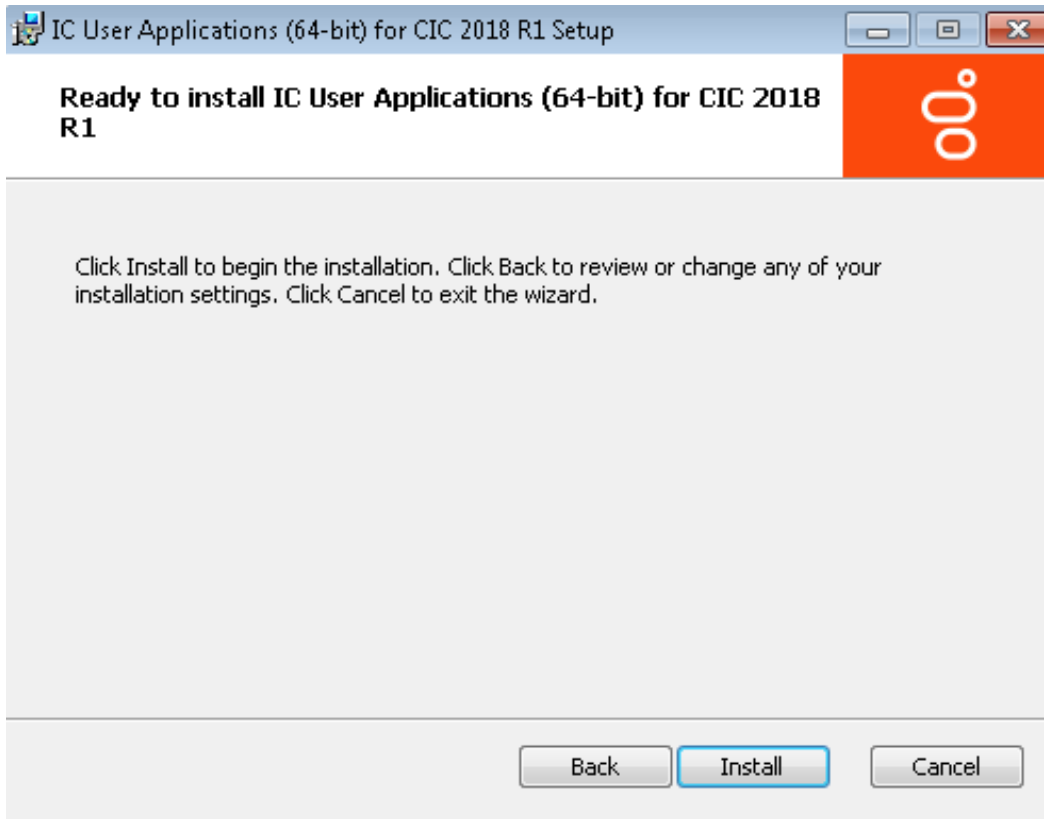
As the installation continues, a status bar indicates the progress.

12. When the installation is complete, click **Finish** in the **Completed** screen.
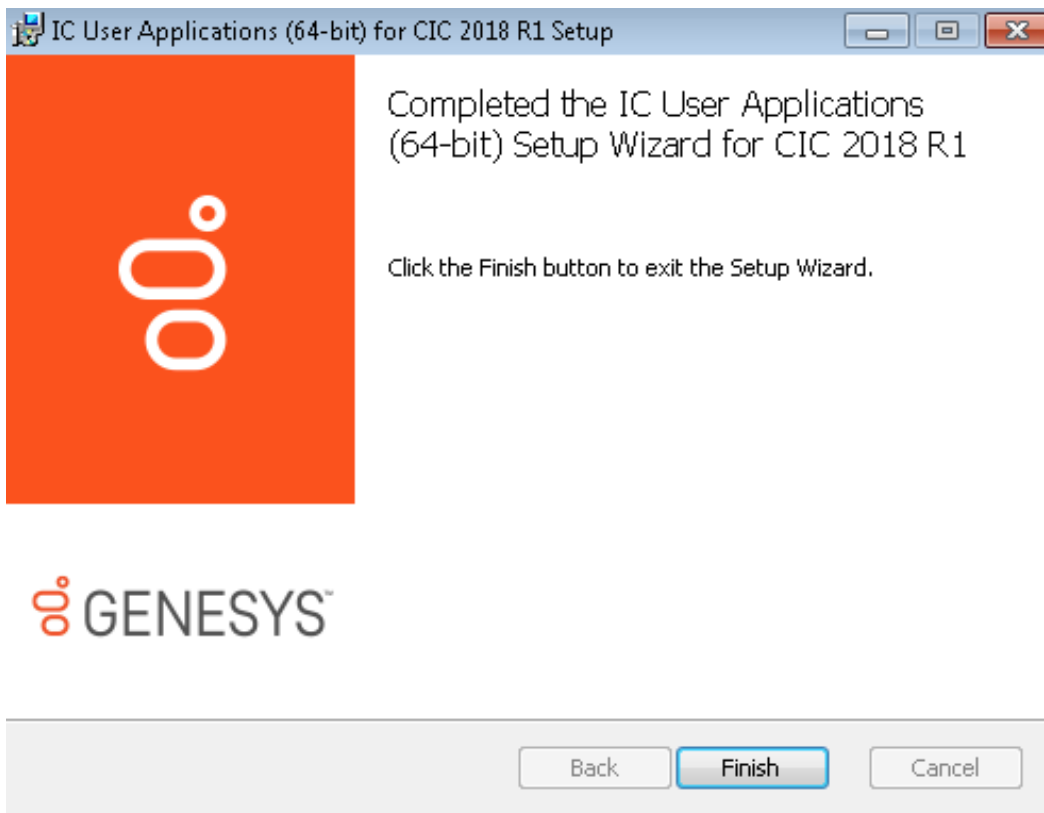
13. The installation returns to `Setup.exe`. `Setup.exe` proceeds to silently install the client plugins selected in step 6. After the selected client plugins are installed, click **Exit** to close `Setup.exe`.

Installation Progress

   ○ The following message appears for each selected Client Plugin:**"Installing {Client Plugin} Plugin for IC User Applications."**

- When `Setup.exe` has finished installing the Client Plugins, the following message appears: **"Finished processing installs for client workstation applications and selected language plug-ins, if applicable."**

14. If you are prompted to restart, click **Yes** to restart now.

15. The IC User Applications can be launched from the shortcuts on the desktop or from **Start->Programs->PureConnect** on Windows 7 or Start screen->Apps->PureConnect-> on later versions of Windows.

Install Interactive Update Client

The Interactive Update Client must be installed as a separate step.

Once you have installed Interactive Update Client on the workstation, the Interactive Update Client service will check for updates to IC User Applications and any other workstation applications or other CIC products or components on the workstation.

To install Interactive Update Client

1. Select **Start**. In **Search programs and files**, type *servername*\ where *servername* is the CIC server name, to view the shares on the CIC server.

2. Select the Interactive Update Client install share **IC_IUpdate** in the list and double-click.
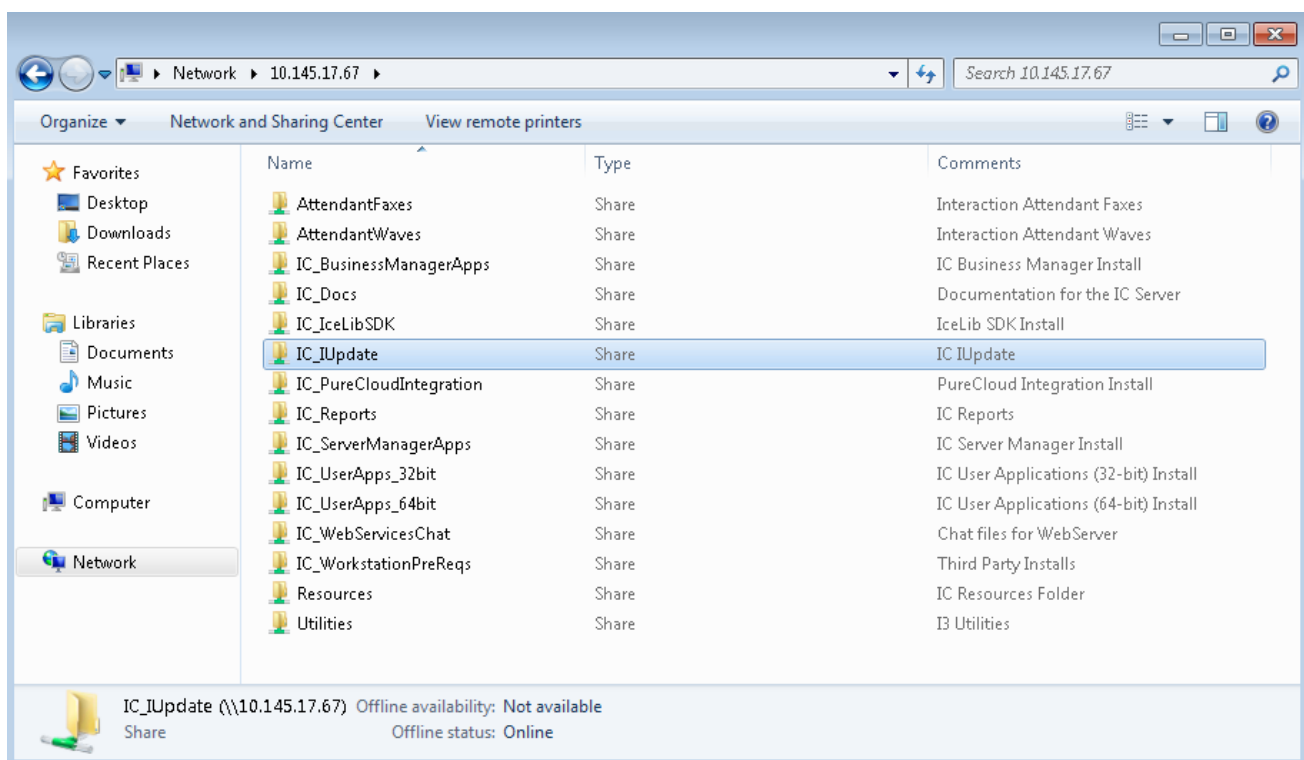
3. Review the contents of the IC_IUpdate install share.
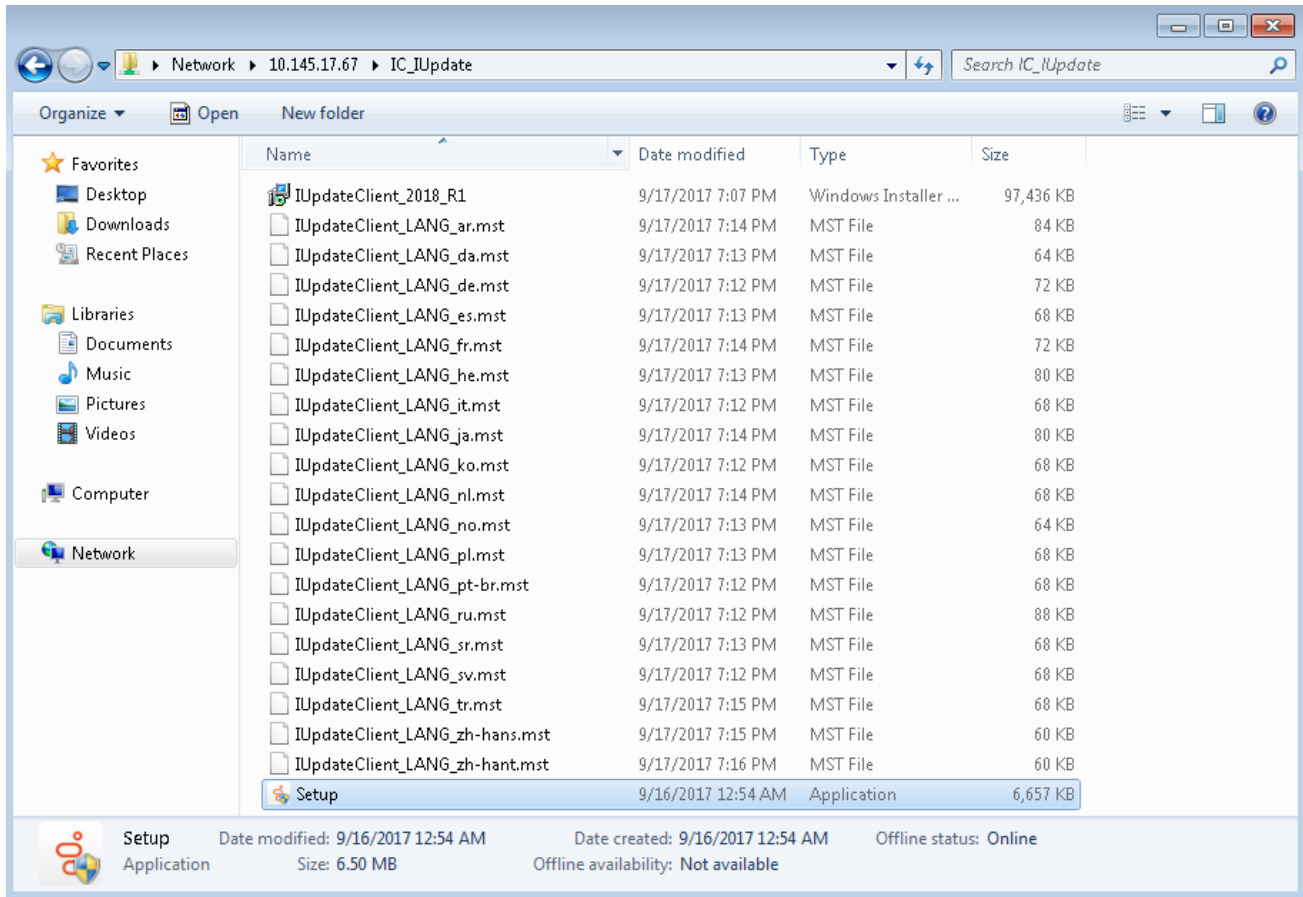
In this example, the IC_IUpdate share contains:

- The `IUpdateClient_2018_R1.msi` install
- `.mst` files for the Interactive Update Client install GUI for all CIC Language Packs. For more information, see "Workstation application install share directory contents".
- The `Setup.exe` utility

4. Double-click **Setup.exe** in the **IC_IUpdate** share.
5. In the **Setup.exe** screen, select **English** from the drop down list and click **OK**.
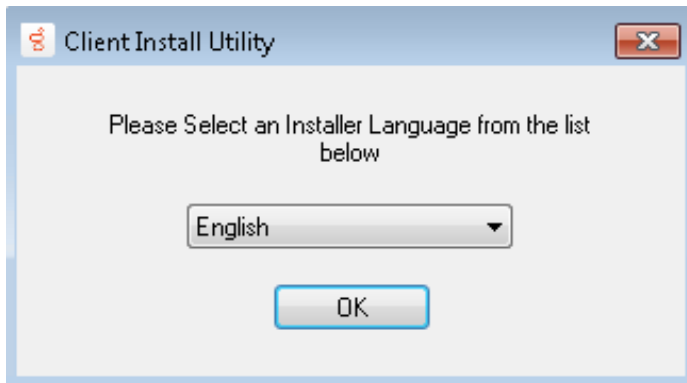
Unlike the other client workstation applications, all currently supported languages (English included) are available to select.

> **Note:**
> This screen appears only in the initial run of `Setup.exe` in the **IC_IUpdate** share. The next time you run `Setup.exe`, the Interactive Update Client install automatically appears in the language you selected the first time you ran `Setup.exe`.

6. In the next `Setup.exe` screen, make the appropriate selections depending on the content displayed and click **Start** to launch the Interactive Update Client install.
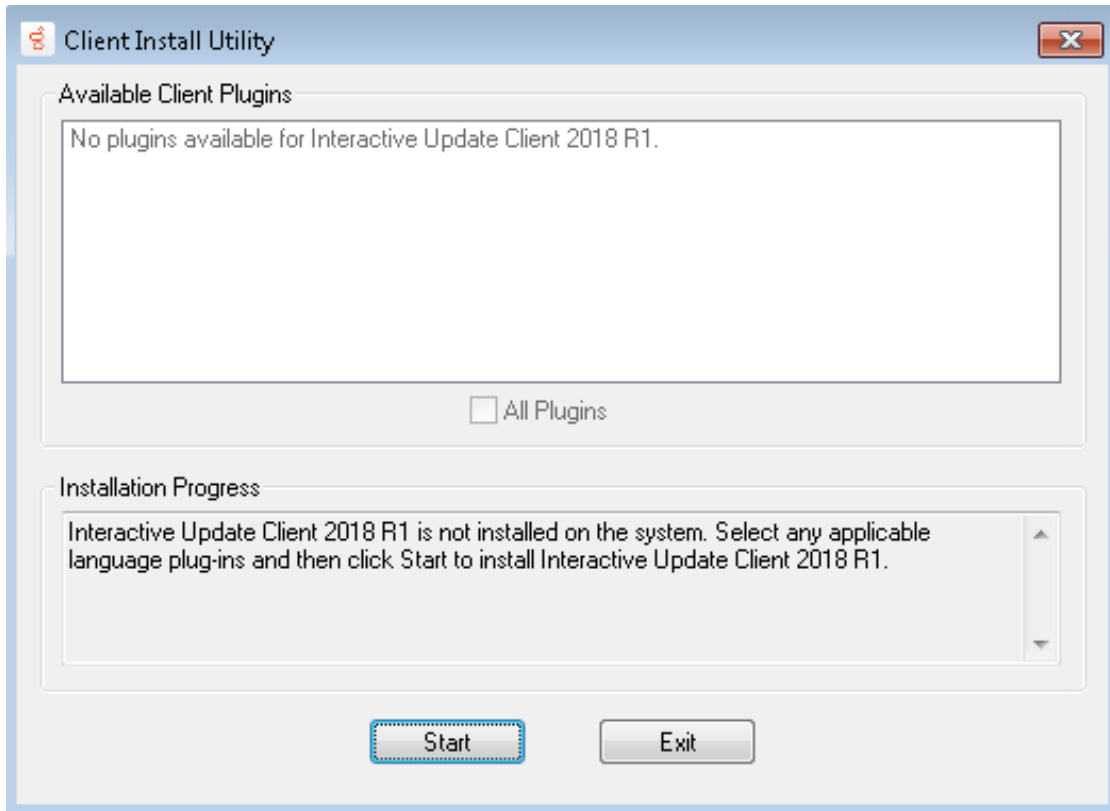
Available Client Plugins

Interactive Update Client does not have associated client plugins, so nothing is displayed in this list box, even if one or more Language Packs are installed on the CIC server.

Installation Progress

Review the message displayed. In this example, the message says:

Interactive Update Client 2015 R3 is not installed on the system. Select any applicable language plug-ins and then click OK to install Interactive Update Client 2015 R3.

7. The Interactive Update install launches. Click **Next** to proceed past the **Welcome** screen.
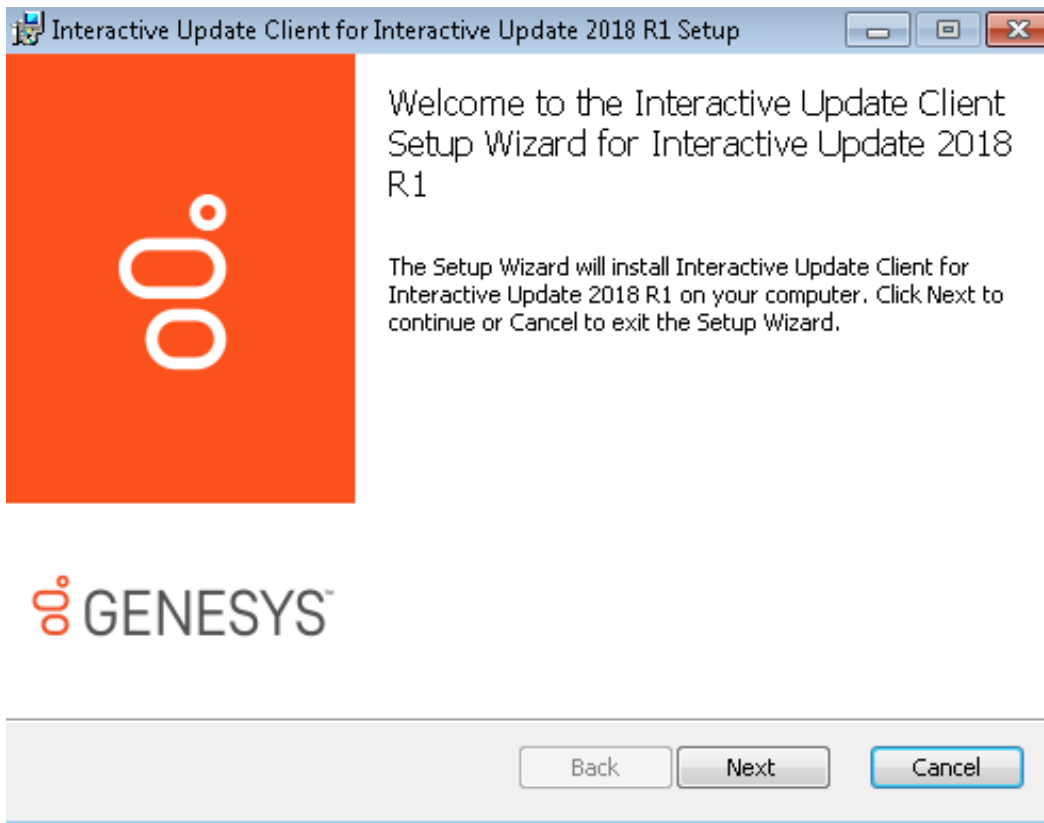
8. In the **Destination Folder** screen, select the default directory to install Interactive Update Client or select **Change** to choose a different directory.
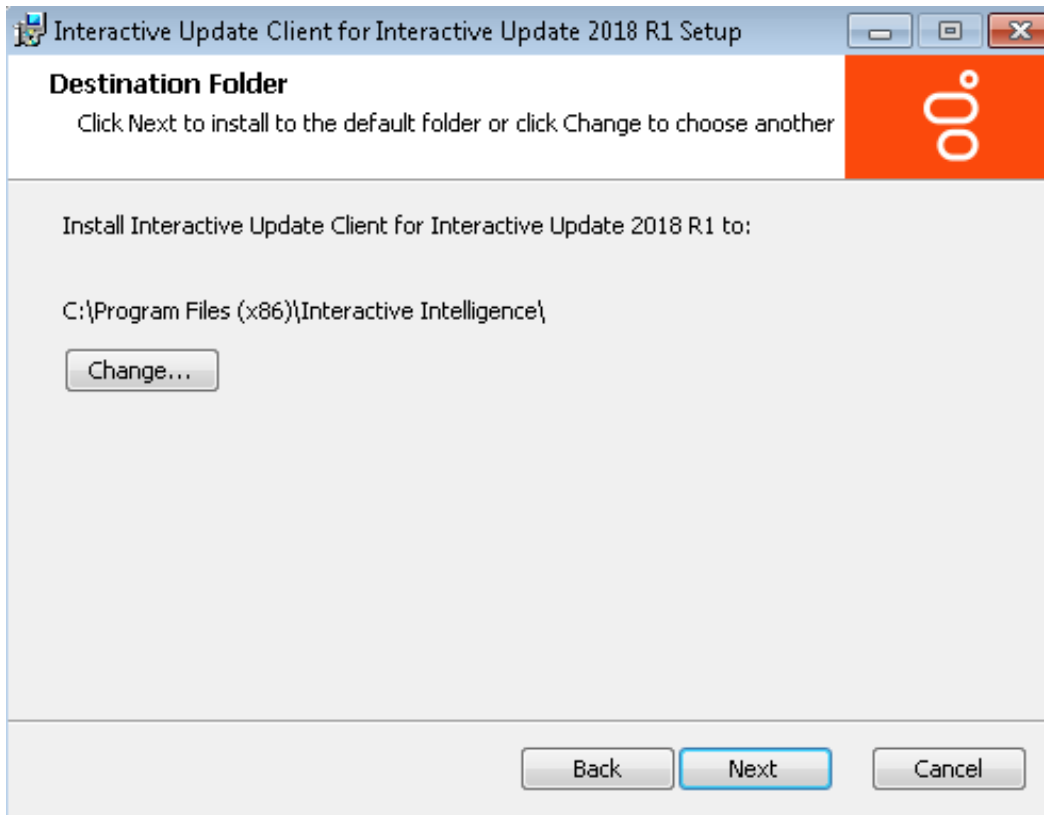
9. In the **Interactive Update Provider Server** screen, type the name of the Interactive Update Provider server (host CIC server) and click **Next**.
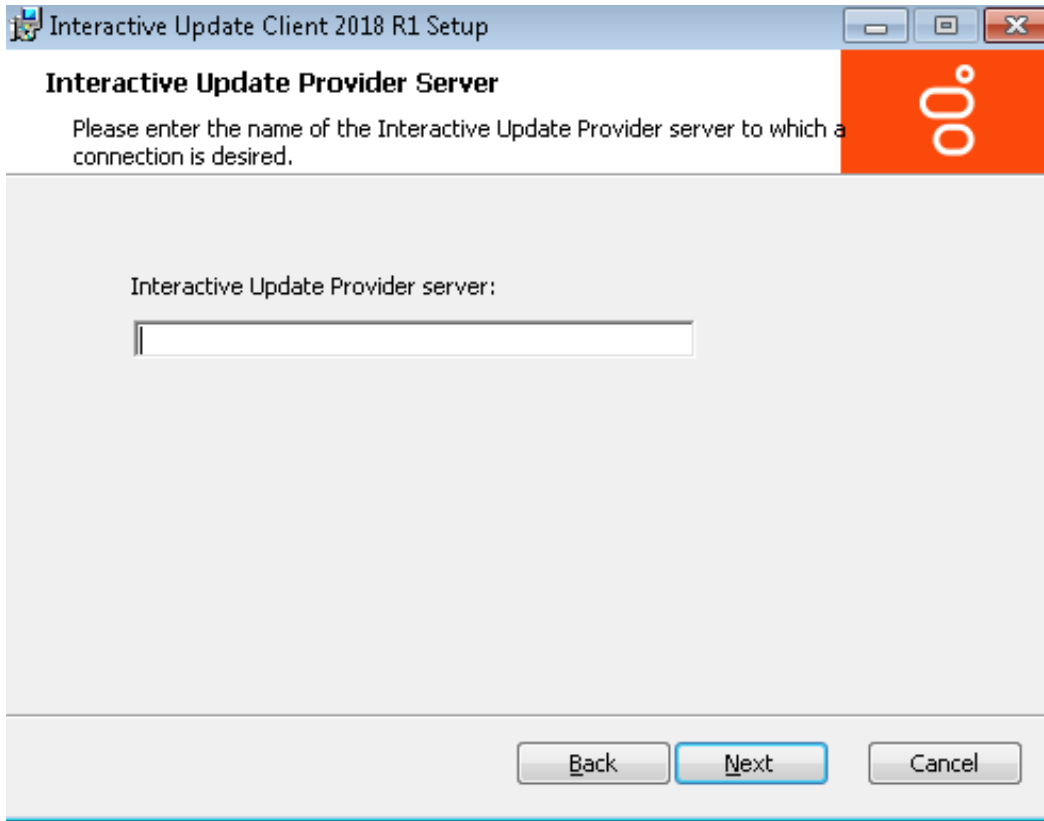
> **Note:**
> If you have a CIC Switchover architecture and you created a pair of commonly named DNS A records pointing to each server as part of the IP phone network configuration for managed phones, do not use that common name value here. Instead, use one of the actual CIC server names. We recommend using a fully qualified domain name (FQDN), not a short name.
> Once you have completed this installation, refer to the following section to verify fully qualified domain name (FQDN) resolution to ensure client connectivity with the host IC server.

10. When you are ready to begin the installation, click **Install**.
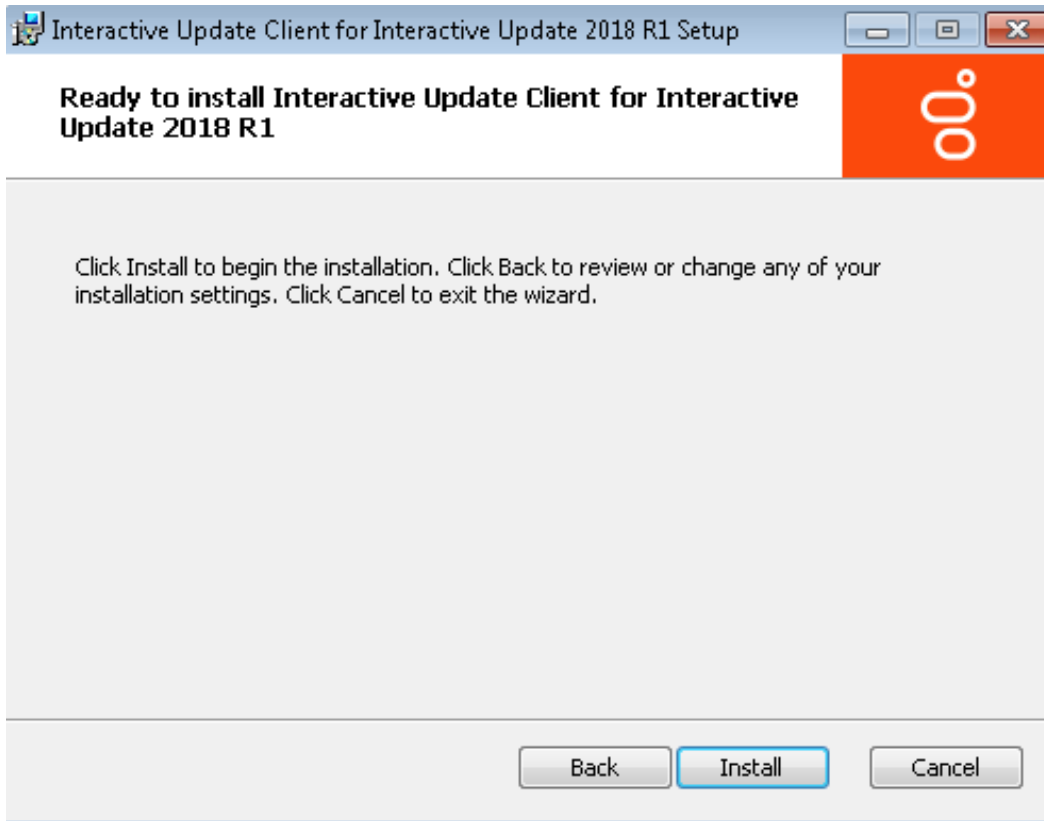
As the installation continues, a status bar indicates the progress.

11. When the installation is complete, click **Finish** in the **Completed** screen.
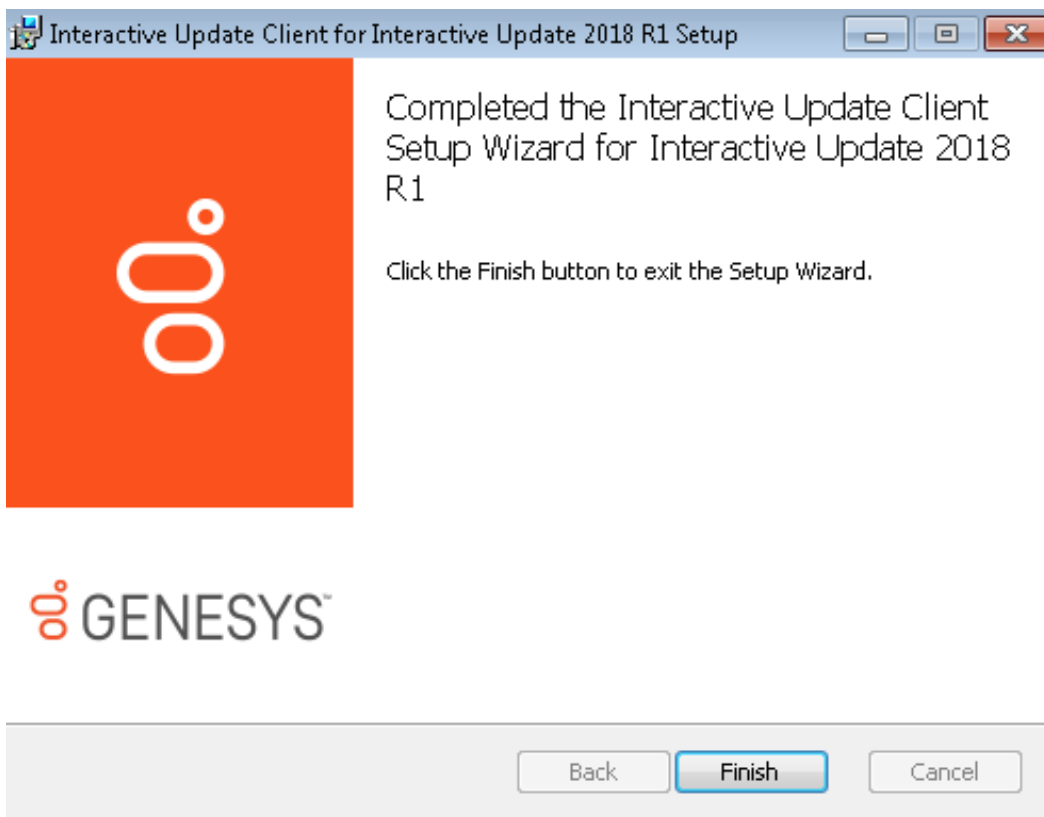
12. The installation returns to `Setup.exe`. When `Setup.exe` is finished, click **Exit** to close `Setup.exe`.

Installation Progress

When `Setup.exe` has finished, the following message appears: "*Finished processing installs for client workstation applications and selected language plug-ins, if applicable.*"

13. You are prompted to restart. Click **Yes**

14. Immediately following the reboot, the Interactive Update Client service looks for any PureConnect products or components installed on the workstation.
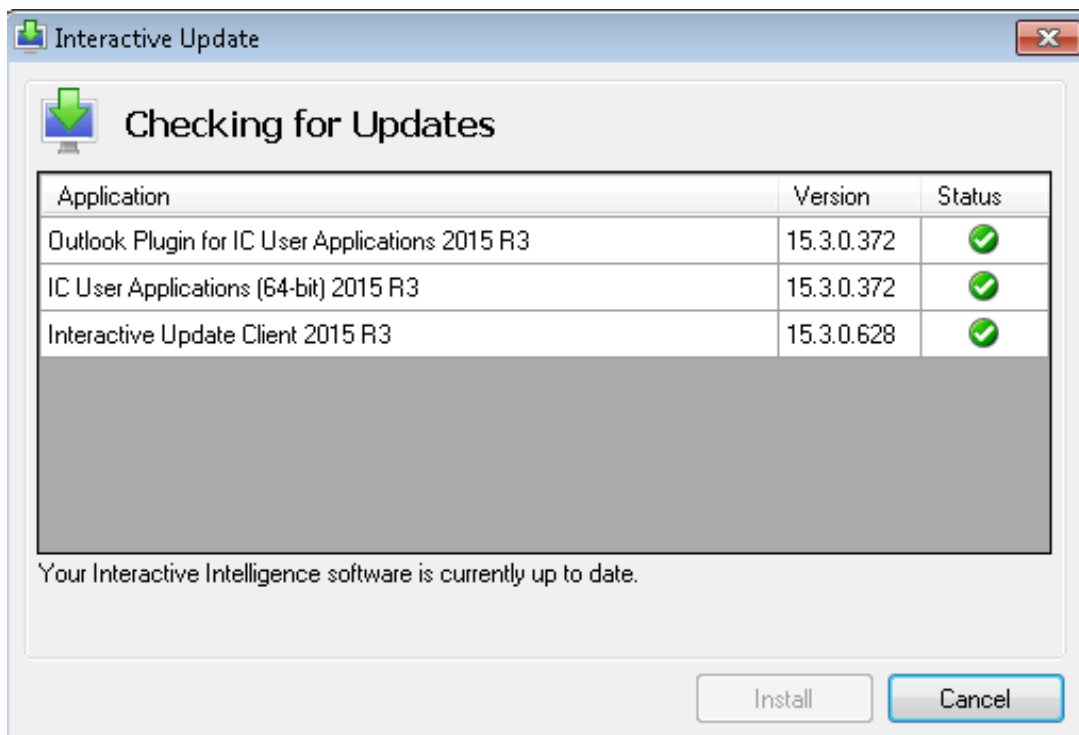
The **Checking for Updates** dialog box appears starting with Interactive Update 2015 R3. This dialog displays messages to indicate the steps that Interactive Update executes to check for updates and a final message to indicate the number of updates available or the software is up to date. This dialog displays a list of applications currently installed. In the Status column, a:

- ○ ✅ Indicates that the application is up to date.

- ○ ⚠️ Indicates that an update is available for the application.

For more information see *Interactive Update Technical Reference* in the PureConnect Documentation Library.

Verify FQDN resolution to ensure client connectivity with the host CIC server

The network administrator should perform the following procedure to verify fully qualified domain name (FQDN) resolution to ensure client connectivity with the host CIC server. This simple procedure can be performed at any point after the host CIC server has been joined to the domain. If the CIC servers are part of a Switchover pair, be sure to verify FQDN resolution from a workstation for both servers.

1. In a command window from the workstation, ping the short name of the host CIC server.
2. Obtain the IP address from the ping and perform an NSlookup on the IP address.

This procedure can also be performed as a troubleshooting step to rule out FQDN if the client fails to connect to a host CIC server.

IC User Application post-installation procedures

Interaction Desktop and the other IC User Applications have full-featured online help systems, available from the Help menu in the appropriate application and in the PureConnect Documentation Library. We recommend that you review these help systems for any post-installation configuration procedures that may be required before users can start making calls, sending faxes or voicemail, etc.

SIP Soft Phone post-installation procedures

If you are implementing the SIP Soft Phone, review the *Managed IP Phones Administrator's Guide* in the PureConnect Documentation Library for configuration and provisioning information.

Each SIP Soft Phone must be implemented as a managed IP phone

For instructions, see the *Managed IP Phones Administrator's Guide* in the PureConnect Documentation Library.

SIP Soft Phone help

See the SIP Soft Phone Help for information on starting and exiting SIP Soft Phone, the SIP Soft Phone Provisioning wizard (use if automated provisioning does not start when the SIP Soft Phone starts), and configuring the audio devices and network adapter.

Interaction Recorder Screen Capture Client

If you are implementing Interaction Recorder Screen Capture Client as part of an Interaction Recorder implementation, see the *Interaction Recorder Technical Reference* in the PureConnect Documentation Library for configuration information.

Change, repair, or remove IC User Applications

Follow these steps to change, repair or remove individual IC User Application components, or repair or remove all currently installed IC User Applications.

Note: To change or remove localized IC User Applications, see the *CIC Language Pack Technical Reference*.

To change, repair or remove IC User Applications

1. In the Control Panel, select **Programs and Features**.
2. Select **IC User Applications (64-bit)** from the list, right-click and select **Uninstall, Change, or Repair.**
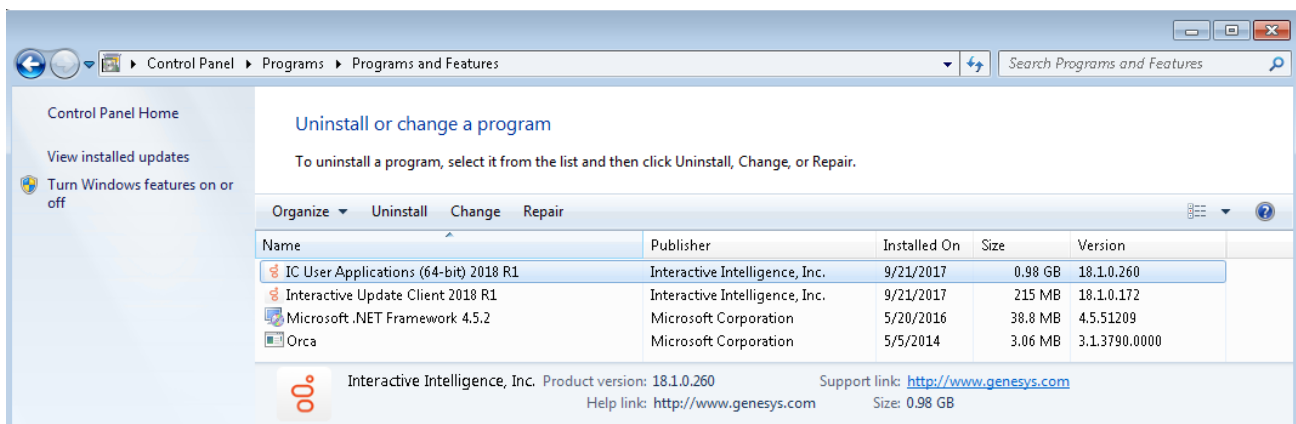
3. Click **Next** to proceed past the **Welcome** screen.
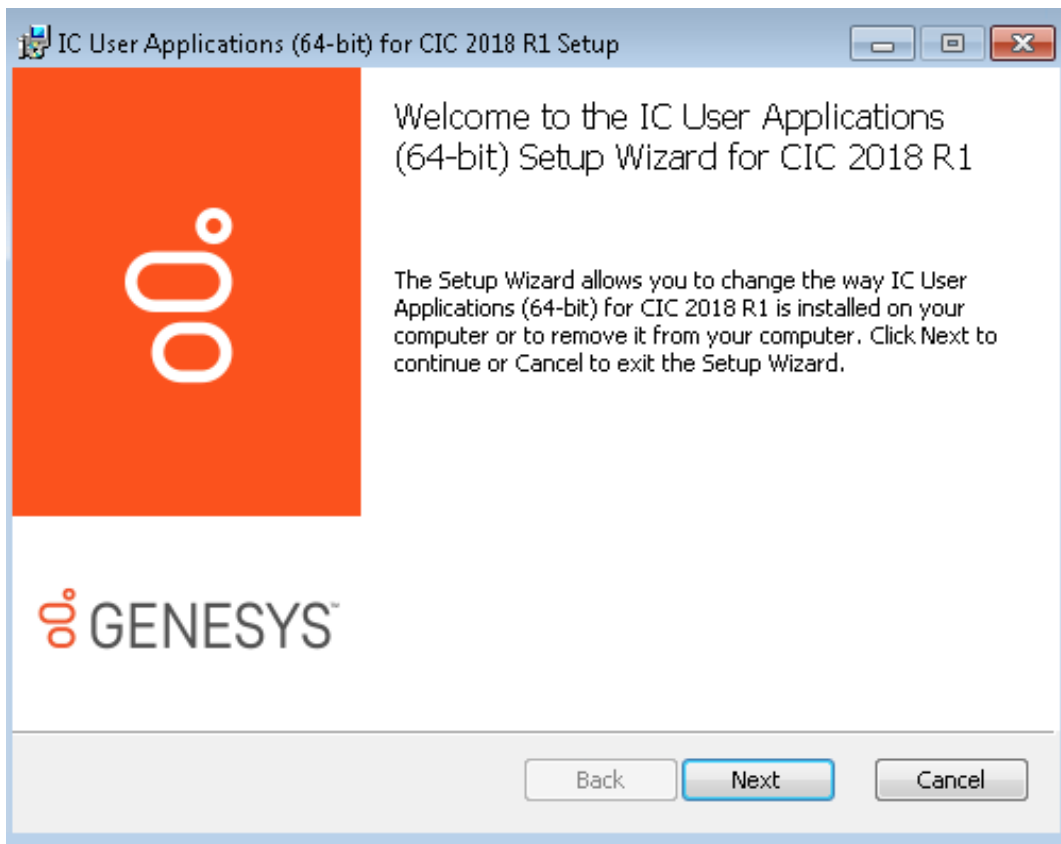
4. Select the desired option in the **Change, repair, or remove installation** screen.
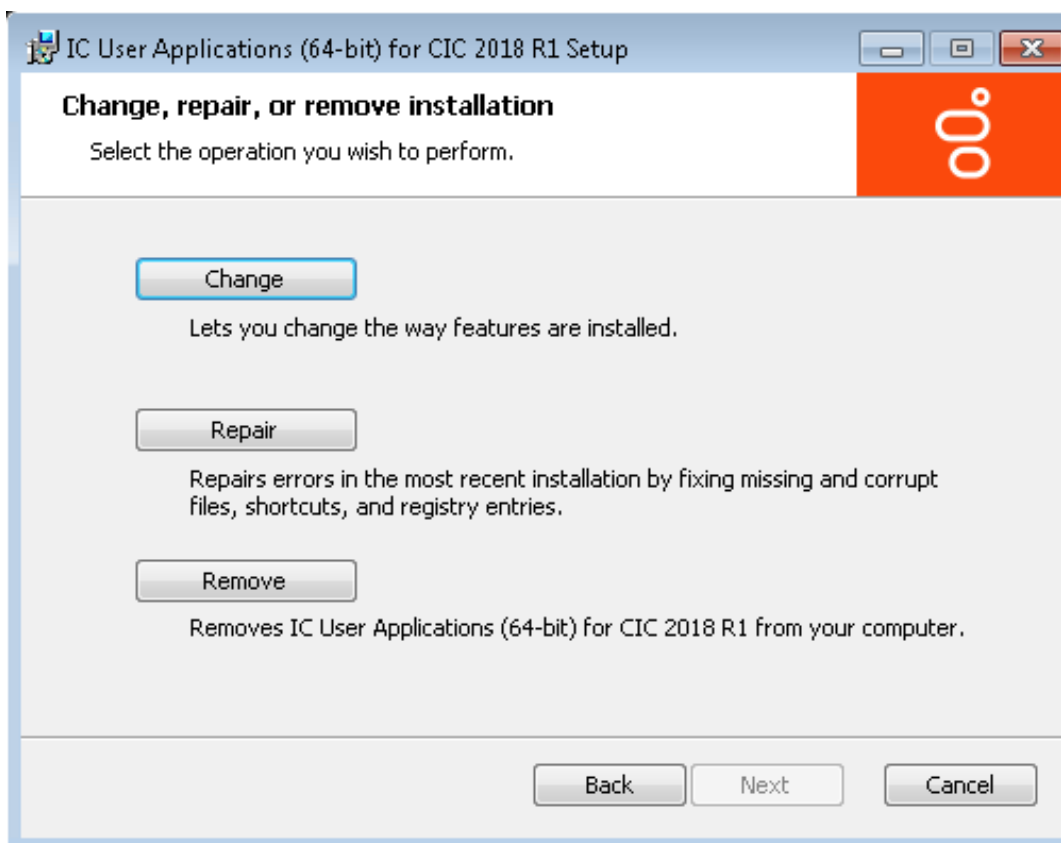
Change

Select this option to add or remove individual IC User Application components. The **Custom Setup** screen will prompt you to select or de-select the applications/features you wish to add or remove.

Repair

Select this option to restore the most recent installation of IC User Applications if you are experiencing problems with Interaction Desktop or any of other applications. The **IC Server Name** screen appears so that you can change the server name in case the registry entry was corrupted.

Remove

Select this option to remove all currently installed IC User Applications.

IC Business Manager Applications installation

The IC Business Manager Applications installation program installs IC Business Manager and Interaction Fax Cover Page Editor on Windows 7, Windows 8, and Windows 8.1 supervisor workstations.

In this section:

- IC Business Manager Applications requirements
- Install IC Business Manager Applications
- Install Interactive Update Client. If Interactive Update Client has not yet been installed on the workstation on which IC Business Manager Applications is installed, install it now. See "Install Interactive Update" in "IC User Applications".
- Verify FQDN resolution to ensure client connectivity with the host CIC server. Following the IC Business Manager Applications installation, follow the instructions in "Verify FQDN resolution to ensure client connectivity with the host CIC server" as described in the "IC User Applications" section if you have not yet done so for this workstation.
- Change, repair, or remove Business Manager Applications. Please refer to "Change, repair, or remove IC User Applications".

IC Business Manager Applications requirements

Before installing IC Business Manager Applications, make sure you have understood and fulfilled the client workstation requirements on Windows 7, Windows 8, and Windows 8.1 workstations:

- **Microsoft .NET Framework versions** installed on Windows 7, Windows 8, and Windows 8.1 workstations. See "Client Workstation".
- **Additional requirements discussed in "Client Workstation"**, for example, appropriate licensing for all IC Business Manager application modules, and database and reporting-related requirements.
- The person installing IC Business Manager Applications must have administrative privileges on the local machine and other permissions. See "Client Workstation".
- Close Microsoft Outlook and any other applications running on the workstation. Turn off virus scanning.

Install IC Business Manager Applications

Installing IC Business Manager Applications is similar to installing IC User Applications. Follow the instructions in "Install IC User Applications (32-bit and 64-bit)" with the following specifics for IC Business Manager Applications:

1. On the client workstation, select **Start**. In **Search programs and files**, type $\backslash\backslash servername\backslash IC\_BusinessManagerApps$, where *servername* is the CIC server name. Click **Setup.exe** to launch the IC Business Manager Applications install.

2. In the **Custom Setup** screen, the default selection is all applications selected. De-select any applications that you don't wish to install.

3. The following table provides a description for each of the default applications.

Feature Component	Description
Interaction Fax Cover Page Editor	Design Interaction Fax cover pages and edit standard templates available to users.
IC Business Manager Applications	Installs IC Business Manager, providing access to business manager application modules for Interaction Feedback, Interaction Optimizer Administration, Interaction Process Automation, Interaction Recorder, Interaction Report Assistant, Interaction Reporter, Interaction Supervisor, Interaction Tracker, and Interaction Quality Manager.

4. When the IC Business Manager Applications install completes, it can be launched from the shortcuts on the desktop or from **Start->Programs->PureConnect** on Windows 7 or Start screen->Apps->PureConnect-> on later versions of Windows.

IC Server Manager Applications installation

The IC Server Manager Applications installation program installs IC Server Manager Applications, Interaction Administrator, Interaction Attendant, Interaction Designer, IC System Manager, Interaction Host Recorder Client, and Interaction SOAP Tracer administrator applications on Windows 7, Windows 8 and Windows 8.1 workstations.

In this section:

- IC Server Manager Applications requirements
- Install IC Server Manager Applications
- Install Interactive Update Client. If Interactive Update Client has not yet been installed on the workstation on which IC Server Manager Applications is installed, install it now. See "Install Interactive Update" in "IC User Applications".
- Verify FQDN resolution to ensure client connectivity with the host CIC server. Following the IC Server Manager Applications installation, follow the instructions in "Verify FQDN resolution to ensure client connectivity with the host CIC server" as described in the "IC User Applications" section if you have not yet done so for this workstation.
- Change, repair, or remove Server Manager Applications. Please refer to "Change, repair, or remove IC User Applications".

IC Server Manager Applications requirements

Before installing IC Server Manager Applications, make sure you have understood and fulfilled the client workstation requirements:

- **Microsoft .NET Framework versions** installed on Windows 7, Windows 8, and Windows 8.1 workstations. See "Client Workstation".
- **Any additional requirements discussed in "Client Workstation".**
- The person installing IC Server Manager Applications must have administrative privileges on the local machine and other permissions. See "Client Workstation".
- Close Microsoft Outlook and any other applications running on the workstation. Turn off virus scanning.

Install IC Server Manager Applications

Installing IC Server Manager Applications is similar to installing IC User Applications. Follow the instructions in "Install IC User Applications (32-bit and 64-bit)" with the following specifics for IC Server Manager Applications:

1. On the client workstation, select **Start**. In **Search programs and files,** type *servername*\IC_ServerManagerApps, where *servername* is the CIC server name. Click **Setup.exe** to launch the IC Server Manager Applications install.

2. In the **Custom Setup** screen, the default selection is all applications selected. De-select any applications that you don't wish to install.

3. The following table provides a description for each of the default applications.

Feature Component	Description
IC Server Manager	Installs IC Server Manager, providing access to server manager application modules such as Interaction Process Automation (IPA) Monitor, IPA Reporting, IPA Designer, and IC Server Manager Administrator. The IC Server Manager Administrator application module enables administrators to define the keywords that Interaction Analyzer uses to monitor conversations between agents and customers.
Interaction Designer	Design tool for creating, modifying, and debugging handlers.
Interaction Administrator	Administrator application for configuring most behavior in CIC including users, workgroups, stations, lines, ACD, dial plans, client appearance, security, etc.
Interaction Attendant	Administrator application for configuring auto-attendant functionality for CIC.
IC System Manager	Manages subsystems when CIC is started as service. IC System Manager can query, stop, restart, configure, and trace CIC subsystems.
Interaction Host Recorder Client	Required on administrator workstations when using the Host tools.
Interaction SOAP Tracer	Debugs SOAP messages between CIC and SOAP Notifier COM or ISAPI listener. Required on administrator workstations when using SOAP tools.

4. In the **IC Server Name** screen, if you have a CIC Switchover architecture and you created a pair of commonly named DNS A records pointing to each server as part of the IP phone network configuration for managed phones, do not use that common name value here. Instead, use one of the actual CIC server names. We recommend using a fully qualified domain name (FQDN), not a short name.

5. When the IC Server Manager Applications install completes, it can be launched from the shortcuts on the desktop or from **Start->Programs->PureConnect** on Windows 7 or **Start screen->Apps->PureConnect->** on later versions of Windows.

Group Policy deployment

CIC administrators may prefer to silently install client workstation applications using Group Policy deployment, instead of performing individual installations on hundreds of workstations. In a Group Policy deployment, users do not see any windows or enter any input during the installation. Genesys recommends group policy deployment of client workstation applications using Window startup scripts.

For more information, see the *Group Policy Deployment for CIC Applications Technical Reference* in the PureConnect Documentation Library.

SHA-256 support is required to use the PureConnect QoS driver and without it, the ICUserApps installation will be blocked. Windows 7 and Windows 2008R2 require two Microsoft KBs (articles 3033929 and 2921916) be applied to enable SHA256 support. Windows 8, 10, 2012 R2 (and beyond) have SHA-256 support built into the OS.

Starting with CIC 2016 R3 or later, CIC 2016 P2 Patch4 or later, CIC 2016 R1 Patch10 or later, CIC 2015 R4 Patch16 or later, and CIC 2015 R3 Patch21 or later, the following changes were made to improve the upgrade experience for Windows 2008 R2 and Windows 7 systems:

Install.exe: Install.exe now detects if the two Microsoft KB's are not installed for the selected products that use the QoS driver. If detected:

- Install.exe runs the install(s) in UI mode so that Microsoft KB requirement notification for SHA-256 certificate support can be seen.
- If the IC server installation fails, no other installs are attempted and Install.exe exits.

Note: Microsoft released a roll-up KB3125574 which includes support for both KB 3033929 and 2921916. The installs in CIC 2016 R2 Patch13, 2016 R3 Patch7, and 2016 R4 or later also detect and support this roll-up KB.

You can set the IGNORE_MISSING_KBS property to ignore the launch condition that checks for the SHA-256 certificate for products that do not use the QoS driver. For more information, see the *Group Policy Deployment for CIC Applications Technical Reference* in the PureConnect Documentation Library.

Desktop Virtualization for client workstation applications

Genesys supports a subset of IC User Applications, IC Business Manager Application modules, and IC Server Manager modules using the following virtual desktop applications:

- Citrix XenDesktop 7.6
- Citrix XenApp 6.5 and 6.0 on Windows Server 2008 R2 (64-bit)
- Remote Desktop Services on a Windows Server 2008 R2 (64-bit)
- VMWare View 5.2, 5.0, and 4.6

Note: SIP Soft Phone not supported.

Multi-platform and remote users are encouraged to run these supported CIC client-side applications with the Citrix or Remote Desktop Services client.

For details, see the *CIC Workstation Applications in Citrix and Terminal Services Environments Technical Reference* in the PureConnect Documentation Library.

Optional Installations and Additional Functionality

This section describes the optional server component installation programs, utilities, and additional functionality available for CIC, and references other documents and help systems for additional information. Many of the optional server components require additional licensing.

- Optional installations and additional files on the CIC installation media
- Trust off-host certificates following off-server installations
- ASR Servers
- Interaction Recorder and Interaction Screen Recorder
- Interaction Recorder Remote Content Service
- Interaction Recorder Extreme Query
- Interaction Administrator Web Edition
- Interaction Center Extension Library (IceLib) SDK
- CIC VoiceXML Interpreter Server
- Interaction Multi-Site
- Status Aggregator
- Interaction Analyzer
- Interaction Process Automation
- Interaction Feedback
- Interaction Tracker
- Interaction Optimizer
- Interaction Web Tools
- Session Manager Off-server
- CIC Render Server
- SOAP Listener
- SOAP Notifier COM Components
- CSV lists
- G-729 Hold Audio files
- Get Host ID
- CIC Database files
- PureConnect Documentation Library installation
- IC Survey System
- IC System Handlers
- SNMP
- CIC Language Packs and Prompt Packs
- IPA Integration with SharePoint
- CIC Integration with LiveLOOK
- CIC Integration with HEAT
- CIC Integration with IBM Sametime
- CIC Integration with Microsoft Lync
- CIC Integration with Remedy and Remedy IVR
- CIC Integration with Workforce Management
- CIC Scheduled Reports
- Interaction SIP Bridge installation
- Microsoft Outlook Interaction Desktop Add-in installation
- Interaction Media Streaming Server
- Interaction Web Portal
- Interaction Marquee
- CIC Integration with Oracle Siebel
- PureConnect Integration to Oracle Service Cloud
- Interaction Center Web Services (ICWS) SDK
- IPA Stand-Alone Web Client
- Interaction Connect
- CIC Appliance .iso (Interaction Edge)
- ININProductInfo utility
- Crystal Report Import Utility

- [Genesys Cloud for PureConnect Integration](#)

Optional installations and additional files on the CIC installation media

The optional server component installs and additional files are available on the CIC .iso file:

- Off-Server Components. To install optional off-server components, run Install.exe from the \Installs directory on the CIC .iso file, select the **Off-Server Component**s tab, and check the appropriate checkbox.
- Integrations. To install Integrations, run Install.exe from the \Installs directory on the CIC .iso file, select the **Integrations** tab, and check the appropriate checkbox(s). Supporting files for Integrations are located in the \Installs\Integrations directory on the CIC .iso file.
- Additional Files. Additional files and utilities are available to install from the \Installs\Additional Files directory on the CIC 2015 R2 or later .iso file.

The CIC .iso file is available to download from the Product Downloads page at https://help.genesys.com/pureconnect/secure/Downloads.aspx   .

> **Note**: Starting with 2019 R2, the CIC Language Pack and Prompt Pack installs for new CIC installations and updates for existing localized CIC systems are available on the 2019 R2 and later CIC Language Pack .iso file downloadable from the Product Downloads page at https://help.genesys.com/pureconnect/secure/Downloads.aspx   .

Update to OpenSSL 3.0

PureConnect 2023 R3 is incorporated with OpenSSL 3.0.8, which is a major update containing support for many security improvements as well as renewed FIPS certification. This version of OpenSSL 3.0, while addressing various vulnerabilities, also mandates a minimum version of Transport Layer Security (TLS) to be version 1.2 and previous versions (1.0 and 1.1) are no longer supported. CIC Server and all client instances need to be updated to use TLS v1.2 and update the certificates to SHA-256 before proceeding with the upgrading to PureConnect 2023 R3. Following topics give more information about the Prerequisites, Installation and Certificate Update.

[Prerequisites for PureConnect 2023 R3 (OpenSSL 3.0)](#)

[Troubleshooting - Update Certificates with SHA256 Digest](#)

Reference links:

[New Cipher Suites](#)

[Digest Conversion from SHA1 to SHA256](#)

[Third-party Certificates](#)

Prerequisites for PureConnect 2023 R3 (OpenSSL 3.0)

This section covers the following topics:

[Prerequisites for PureConnect 2023 R3 Installation or Upgrade - Server (OpenSSL 3.0)](#)

[Prerequisites for PureConnect 2023 R3 Installation or Upgrade - Client (OpenSSL 3.0)](#)

Prerequisites for PureConnect 2023 R3 Installation or Upgrade - Server (OpenSSL 3.0)

- **TLS Version 1.2**: Set the environment variable "ININ_SSL_MIN_PROTOCOL_VERSION" with the minimum TLS version 1.2 and restart the machine after adding this environment variable. This variable must be set on all machines, where an IC process runs, that supports the specified version. For more information, refer to the section "[tlsv1.2 connections](#)"

Edit System Variable ×

Variable name: `ININ_SSL_MIN_PROTOCOL_VERSION`

Variable value: `TLSv1.2`

[Browse Directory...] [Browse File...]   [OK] [Cancel]
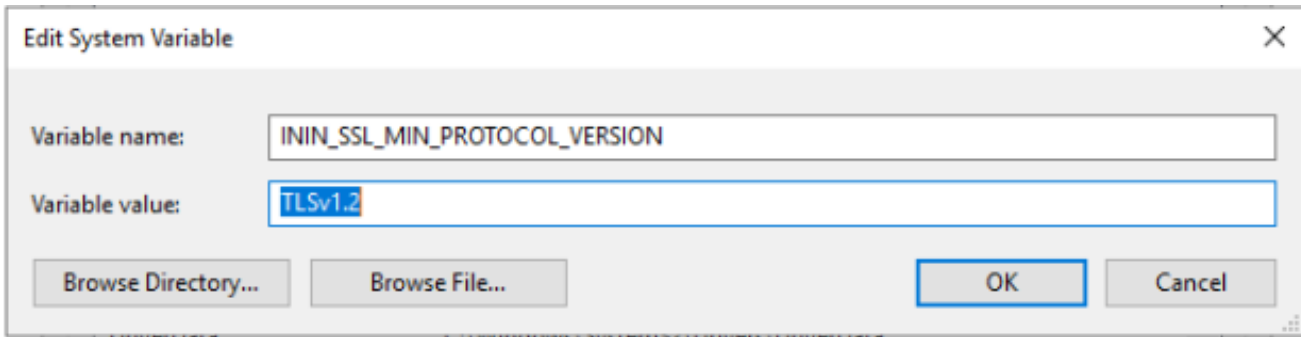
- **Windows Security Update**: Make sure tokeep the Windows Security up to date before installing the PureConnect 2023 R3 build.

- **Latest Patch Versions**: Install the latest Patch of the installed CIC version before installing 2023 R3. Refer to the following release version and Patch details.

> 2023 R2 Patch 6 or later versions
>
> 2023 R1 Patch 14 or later versions
>
> 2022 R3 Patch 18 or later versions
>
> 2022 R2 Patch 25 or later versions
>
> 2022 R1 Patch 33 or later versions

- **Certificates update to SHA-256 Digest**: PureConnect 2023 R3 with OpenSSL 3.0 mandates all CIC processes to be setup to use SHA-256 certificates. All certificates must be updated to SHA-256 digest before upgrading to PureConnect 2023 R3 version. To verify the existing certificate's digest, refer <u>Troubleshooting Trusted Certificates"</u>. For existing CIC installations, if the certificates are with SHA-1, Setup Assistant can be used to modify the digest to SHA-256, refer <u>"Managing Certificate Digest"</u>

- **ODBC Driver 17 compatibility:** PureConnect 2023 R3 is compatible with ODBC Driver 17 onwards. Install ODBC driver 17 or later versions before installing the latest build. **Note:** Installation checks for the ODBC driver version. If the compatibility criteria is not met, the installation stops and throws the message **"Microsoft ODBC Driver 17.3 or greater version is required. Please install the driver and then proceed with the installation."** For more information about ODBC driver requirements, see "**<u>cic_server_software_requirements.htm</u>**"
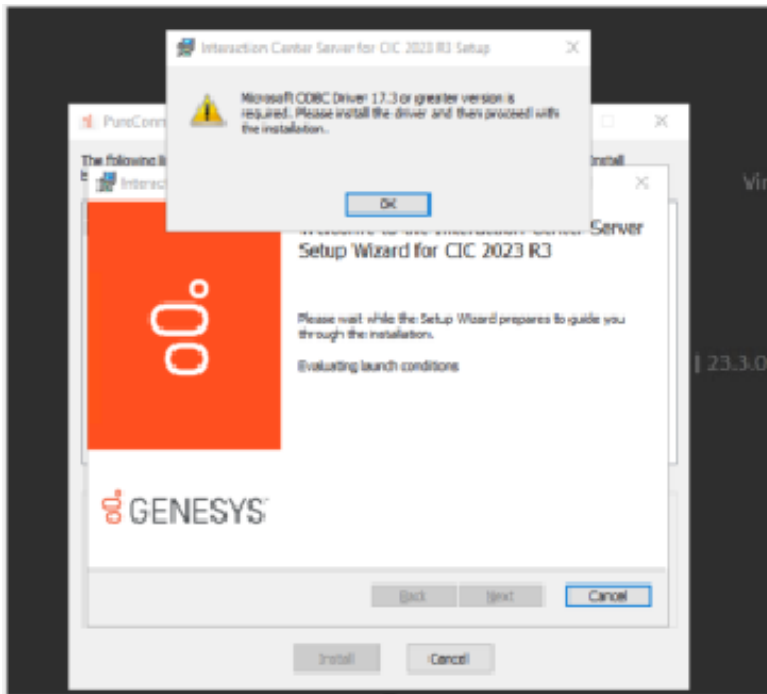
Prerequisites for PureConnect 2023 R3 Installation or Upgrade - Client (OpenSSL 3.0)

- Back up the certificates folder, which can be found at the environment variable **"ININ_Certificates."**
- Delete all the files in the certificates folder, then the new SHA-256 certificates and the keys are generated automatically.

    Note: PureConnect 2023 R3 works with SHA-256 certificates only. Ensure all the certificates are converted to SHA-256.

Troubleshooting - Update Certificates with SHA256 Digest

To verify the successful certificate conversion, run the below command in command line in "Certificates" directory.

for /R %f in (.*.cer) do openssl x509 -text -noout < %f | FINDSTR "Signature Algorithm

The following output confirms the successful certificate conversion:

> D:\I3\IC\Certificates>for /R %f in (.*.cer) do openssl x509 -text -noout < %f | FINDSTR "Signature Algorithm"
>
> D:\I3\IC\Certificates>openssl x509 -text -noout
> 0<D:\I3\IC\Certificates\Client\Local_Subsystems\.\CONSTANTINE_ClientCertificate.cer | FINDSTR "Signature Algorithm"
>
> Signature Algorithm: sha256WithRSAEncryption
>
> Public Key Algorithm: rsaEncryption
>
> Signature Algorithm: sha256WithRSAEncryption
>
> Signature Value:

Trust off-host certificates following off-server installations

After installing off-server components such as Interaction Media Server, ASR servers, Interaction Process Automation server, etc., remember to trust the off-host certificates in Interaction Administrator:

1. In Interaction Administrator, click the **System Configuration** container.
2. Double-click **Configuration** in the list view.
3. Click **Certificate Management**.
4. Next to **Subsystem Certificates Configuration** click Modify.
5. Select the certificates for the system you installed the off-server component on and click **Trust**.

ASR Servers

Genesys offers trusted speech recognition solutions using vendor ASR software.

CIC supports the following Speech Recognition Engines:
- Loquendo ASR Engine
- Nuance Recognizer
- Nuance Recognizer (MRCP) with Nuance Speech Server
- Interaction Speech Recognition (ASR support on Interaction Media Server)

As discussed in "[Additional Servers](#)", make sure you have installed the appropriate ASR server before running the appropriate ASR server install for CIC .

The Loquendo ASR, Nuance Recognizer, and/or MRCP ASR installs are available on the CIC 2015 R1 or later iso .file. Run Install.exe from the \Installs directory, select the Off-Server Components tab, and check the appropriate checkbox.

For licensing, requirements, and installation and configuration instructions, see the *ASR Technical Reference* and the *Interaction Speech Recognition Technical Reference* in the PureConnect Documentation Library.

Interaction Recorder and Interaction Screen Recorder

Interaction Recorder is an application for managing phone calls, emails, faxes, screen recordings, and Web chats recorded within CIC. Interaction Recorder compresses, archives, and manages the attributes for each recording, allowing you to quickly sort and manage large numbers of recordings. A major feature of Interaction Recorder is the ability to organize and manage these recorded calls for training, quality assurance, legal purposes, etc.

Interaction Screen Recorder is an Interaction Recorder feature, requiring separate Interaction Screen Recorder licensing. Interaction Screen Recorder adds screen recording capability, assisting contact center managers and supervisors in improving their contact center's productivity and assessing agents' skills. Synchronizing the audio recording of an agent with the workstation activity, screen recording provides a complete management tool for contact center supervisors.

The supporting files for the Interaction Recorder and Interaction Screen Recorder components are automatically installed with the CIC server, IC Business Manager Applications, and IC User Applications installs.

For licensing, requirements, and installation and configuration instructions, see the *Interaction Recorder Technical Reference* in the PureConnect Documentation Library.

> **Important :** The My Quality Results view in Interaction Connect requires that you use HTTPS certificates signed by a third-party certificate authority for the:
>
> - CIC server and any associated Interaction Recorder Remote Content Service servers.
> - Proxies forwarding traffic by HTTPS.
>
> If you do not use an HTTPS certificate signed by a third-party certificate authority, a user can encounter a certificate warning from a web browser that requires the user to accept or bypass the warning to view playback recordings. For more information, see the following documents in the PureConnect Documentation Library:
>
> - "Create Signing Requests and Import Third-Party Signed Certificate" in the *PureConnect Installation and Configuration Guide*.
> - " Create an HTTPS certificate signed by a Certificate Authority for viewing playback recordings" in the *Interaction Recorder Remote Content Service Installation and Configuration Guide*.

Interaction Recorder Remote Content Service

Interaction Recorder Remote Content Service facilitates the retrieval and storage of both audio and screen recordings in your CIC environment. This capability offloads those actions from the Interaction Recorder server that resides on the CIC server therby granting the CIC server more processing and bandwidth resources for facilitating and handling interactions.

The **Interaction Recorder Remote Content Service** install is available on the CIC 2015 R1 or later iso .file. Run Install.exe from the \Installs directory, select the Off-Server Components tab, and check the appropriate checkbox. Run the install on a non-IC server on the CIC network.

For licensing, requirements, and installation and configuration instructions, see the *Interaction Recorder Remote Content Service Installation and Configuration Guide* in the PureConnect Documentation Library.

> **Important:** The My Quality Results view in Interaction Connect requires that you use HTTPS certificates signed by a third-party certificate authority for the:
>
> - CIC server and any associated Interaction Recorder Remote Content Service servers.
> - Proxies forwarding traffic by HTTPS.
>
> If you do not use an HTTPS certificate signed by a third-party certificate authority, a user can encounter a certificate warning from a web browser that requires the user to accept or bypass the warning to view playback recordings. For more information, see the following documents in the PureConnect Documentation Library:
>
> - "Create Signing Requests and Import Third-Party Signed Certificate" in the *PureConnect Installation and Configuration Guide*.
> -" Create an HTTPS certificate signed by a Certificate Authority for viewing playback recordings" in the *Interaction Recorder Remote Content Service Installation and Configuration Guide*.

Interaction Recorder Extreme Query

Interaction Recorder Extreme Query is an ultra-fast solution for running searches and retrieving stored call recordings for playback. The Extreme Query Server can store information about millions of call recordings for quick retrieval. The Extreme Query is used to conduct extremely fast searches, against the Extreme Query Server, and playback phone calls.

- The **Interaction Recorder Extreme Query Server** install is available on the CIC 2015 R1 or later iso .file. Run Install.exe from the \Installs directory, select the Off-Server Components tab, and check the appropriate checkbox. Run the install on a non-IC Server on the CIC network.
- The**Interaction Recorder Extreme Query** is automatically installed with IC Business Manager Applications install.

For licensing, requirements, and installation and configuration instructions, see the *Interaction Recorder Extreme Query Installation and Configuration Guide* in the PureConnect Documentation Library.

Interaction Administrator Web Edition

Interaction Administrator Web Edition is a .NET browser-based, limited feature version of Interaction Administrator.

The **Interaction Administrator Web Edition** is available on the CIC 2015 R1 or later iso .file. Run Install.exe from the \Installs directory, select the Off-Server Components tab, and check the appropriate checkbox. Run the install on a Web server.

For licensing, requirements, and installation and configuration instructions, see the *Interaction Administrator Web Edition Installation Guide* in the PureConnect Documentation Library.

Interaction Center Extension Library (IceLib) SDK

The Interaction Center Extension Library (IceLib) SDK is a programming API that allows .NET developers to create custom applications that leverage the Customer Interaction Center to solve business problems. IceLib is for developers who use modern .Net languages, such as C# or VB.Net.

The **IceLib SDK (32-bit) and (64-bit)** installs are available on the CIC 2015 R1 or later iso .file. Run Install.exe from the \Installs directory, select the Off-Server Components tab, and check the appropriate checkbox. The installs can be run a non-IC Server machine.

For licensing, requirements, and installation and configuration instructions, see the *Interaction Center Extension Library (IceLib) API Technical Reference* in the PureConnect Documentation Library.

CIC VoiceXML Interpreter Server

VoiceXML, the Voice Extensible Markup Language, is an XML-based language used to create audio dialogs featuring synthesized speech (TTS) or digitized audio (pre-recorded audio) to prompt the user and accept spoken words or DTMF key input. The VoiceXML application contains the logic that controls the flow of the dialog, and it's what prompts the caller, accepts the caller's input, and determines the next step for the caller.

CIC VoiceXML enables you to use existing applications written in the industry standard VoiceXML and take advantage of speech recognition technology without application development costs.

CIC VoiceXML requires two components: VoiceXML Host Server and VoiceXML Interpreter server(s).
- The **VoiceXML Host Server** is installed on a CIC server with Automatic Speech Recognition (ASR), as part of the CIC server installation.
- The **VoiceXML Interpreter server** is available on the CIC 2015 R1 or later iso .file. Run Install.exe from the \Installs directory, select the Off-Server Components tab, and check the appropriate checkbox. We recommend installing it on a separate server on the CIC server network.

For licensing, requirements, and installation and configuration instructions, see the *CIC VoiceXML Technical Reference* in the PureConnect Documentation Library.

Interaction Multi-Site

Interaction Multi-Site is optional CIC software that links two or more CIC contact centers to route interactions from one location to another. Interaction Multi-Site provides a company-wide directory, universal user extensions, and other features that boost employee mobility. For example, Interaction Multi-Site routes interactions to an agent's current location.

Multi-Site requires two components:
- **Multi-Site RTM Client** is always installed and configured on a CIC server, as part of the CIC server installation.
- The **Multi-Site RTM Server** can be installed and configured on a CIC server (along with a Multi-Site Client) as part of the CIC server installation or it can be installed on a separate server on the CIC server network. Large organizations with many remote locations should install the Multi-Site Server on a separate server. The **Multi-Site RTM Server** install is available on the CIC 2015 R1 or later iso .file. Run Install.exe from the \Installs directory, select the Off-Server Components tab, and check the appropriate checkbox.

For licensing, requirements, and installation and configuration instructions, see the *CIC Multi-Site Technical Reference* in the PureConnect Documentation Library.

Status Aggregator

Status Aggregator consolidates CIC user status information from CIC servers in multiple offices and is scalable for large numbers of users. It makes that consolidated status information available through the CIC client. Status Aggregator is intended for large organizations that have too many users to host on a single CIC server.

The Status Aggregator install is available on the CIC 2015 R1 or later iso .file. Run Install.exe from the \Installs directory, select the Off-Server Components tab, and check the appropriate checkbox. Run the Status Aggregator install on a separate server on the CIC network.

For licensing, requirements, and installation and configuration instructions, see the *Status Aggregator Technical Reference* in the PureConnect Documentation Library.

Interaction Analyzer

Interaction Analyzer determines, in real time, when defined words (keywords) are spoken in a telephone conversation that is associated with a workgroup queue. If a keyword is detected, Interaction Analyzer identifies the location in the recording where the word was spoken. Interaction Recorder can provide access to recorded conversations that indicate where keywords were spoken. IC Business Manager can use Interaction Analyzer and Interaction Supervisor to alert contact center supervisors in real-time and provide statistics on current calls.

The supporting files for Interaction Analyzer components are automatically installed with the CIC server and workstation application installs.

For licensing, requirements, and configuration instructions, see the *Interaction Analyzer Technical Reference* in the PureConnect Documentation Library.

Interaction Process Automation

Interaction Process Automation (IPA) takes the advanced communications technologies available in CIC and applies them to process automation, giving organizations a cost-effective way to automate business processes end-to-end. IPA uses intelligent queuing and routing to provide a flexible distribution of process work, using presence to indicate availability for work assignment and to speed processing time. The supporting files for the IPA components are automatically installed with the CIC server and workstation application installs.

Starting with CIC 2017 R1, the more scalable Process Automation Server Version 2 (PASv2) is the only version of the Process Automation Server that is installed on the CIC server. Starting with CIC 2016 R2, a PASv2 off-server install is available on the CIC .iso to install PASv2 on a non-CIC Server.

For licensing, requirements, and configuration instructions, see the *Interaction Process Automation Technical Reference* in the PureConnect Documentation Library.

Interaction Feedback

Interaction Feedback is an IC Business Manager add-on module that supports automated post-call customer satisfaction surveys. Interaction Feedback gives business users the ability to easily create surveys using the Create Survey Wizard. Surveys can be quickly created with pre-defined industry standard templates. Customized questions can be simply created using Interaction Feedback Tools, for creating prompts and managing questions.

The supporting files for the Interaction Feedback components are automatically installed with the CIC server and IC Business Manager installs.

For licensing, requirements, and configuration instructions, see the *Interaction Feedback Technical Reference* in the PureConnect Documentation Library.

Interaction Tracker

Interaction Tracker enables CIC users to view the interaction histories between CIC users and outside people, or between CIC users, by m aintaining a database of CIC users and their associated interactions.

The supporting files for the Interaction Tracker components are automatically installed with the CIC server, IC User Applications, and IC Business Manager installs.

For licensing, requirements, and configuration instructions, see the *Interaction Tracker Filtered Directories Technical Reference* in the PureConnect Documentation Library.

Interaction Optimizer

Interaction Optimizer is a complete workforce management (WFM) application for CIC that optimizes agent effectiveness in contact centers of all sizes. It combines CIC's historical ACD data with projected market expectations for demand forecasts that more accurately determine required scheduling targets. Interaction Optimizer also manages agents' time-off requests and last-minute changes for schedules that balance anticipated interaction demands with agent availability and skills.

The supporting files for the Interaction Optimizer components are automatically installed with the CIC server and IC Business Manager installs.

For licensing, requirements, and configuration instructions, see the *Interaction Optimizer Technical Reference* in the PureConnect Documentation Library.

Interaction Web Tools

Interaction Web Tools enable CIC agents to interact with visitors to your company's website or use chat functionality to communicate with other CIC agents. These tools enable handlers to send and receive information from Web pages and make it possible to register and authenticate customers against the Interaction Tracker database.

Interaction Web Tools support the following CIC client features:

- **Web Chat**: An agent can engage in text-based, one-on-one communication online with a customer or create a chat conference between multiple agents and a customer.
- **Intercom Chat**: An agent can chat online with fellow employees or a group of fellow employees.
- **Callback**: Your customers can visit your website and request that an agent call them back. The request is routed to the appropriate agent.
- **Response Management**: Agents can use Response Management during a Chat to send pre-defined messages, URLs, or files to a customer. An agent can also use Response Management for guidance in answering a customer's questions during a call made as a result of a callback request.

The Interaction Web Tools are available in the **IC_WebServicesChat share** on the CIC server following the CIC server installation.

For licensing, requirements, and instruction on using the Interaction Web Tools, see the *Interaction Web Tools Technical Reference* in the PureConnect Documentation Library.

Session Manager ("Off-server")

Large organizations can deploy the off-server Session Manager on file servers separate from the CIC server to support N+1 scalability and disaster recovery. Off-server Session Manager implementations are recommended for CIC installations with greater than 1,000 clients. Plan to deploy at least two separate off-server Session Manager servers in case of fail-over.

The Session Manager ("Off-Server") install is available on the CIC 2015 R1 or later iso .file. Run Install.exe from the `\Installs` directory, select the Off-Server Components tab, and check the appropriate checkbox. Run the Session Manager ("Off-Server") install on a separate server on the CIC network.

For planning, licensing, requirements, and configuration instructions, see the *Session Manager Developer Application Note* in the PureConnect Documentation Library.

CIC Render Server

The CIC Render Server is an application that allows handlers to convert .pdf files to Interaction Fax file (.i3f) format. Use this application if you want to create a set of fax back handlers based on a library of .pdf files.

The CIC Render Server install is available on the CIC 2015 R1 or later iso .file. Run Install.exe from the \Installs directory, select the Off-Server Components tab, and check the appropriate checkbox. Run the CIC Render Server install on any computer on the CIC server network. We recommend that you do not install it on the CIC server.

For requirements and configuration instructions, see the *CIC Render Server Technical Reference* in the PureConnect Documentation Library.

SOAP Listener

The SOAP Listener is a component of a SOAP programming API implementation in an Customer Interaction Center environment. The SOAP ISAPI Listener Task is responsible for parsing incoming SOAP requests, dispatching requests to the appropriate method, and packaging return values into outgoing SOAP responses.

The SOAP Listener install registers the SOAP Listener ISAPI DLL on a Microsoft IIS server. The SOAP Listener install is available on the CIC 2015 R1 or later iso .file. Run Install.exe from the \Installs directory, select the Off-Server Components tab, and check the appropriate checkbox. The SOAP Listener can be installed on a computer with Microsoft IIS installed.

For more information, see the *CIC and SOAP API Developer's Guide* in the PureConnect Documentation Library.

SOAP Notifier COM Components

The SOAP Notifier COM objects are a component of a SOAP programming API implementation in an Customer Interaction Center environment. SOAP Notifier COM objects issue SOAP notifications from automation compatible applications and add support for the Microsoft SOAP Toolkit. SOAP Notifier COM components provide a high-performance method of initiating handlers without incurring the performance penalty of HTTP-based Listener operations.

The SOAP Notifier COM install registers components needed to develop or run third-party Notifier COM applications. The IC SOAP Notifier COM Components install is install is available on the CIC 2015 R1 or later iso .file. Run Install.exe from the \Installs directory, select the Off-Server Components tab, and check the appropriate checkbox. Run it on any computer on the CIC server network.

For more information, see the *SOAP Notifier COM API Developer's Guide* in the PureConnect Documentation Library.

CSV lists

The CSV Lists in the \Installs\Additional Files\CSV Lists directory on the CIC 2015 R1 or later .iso file contains the template files for creating CSV lists. A reseller or system administrator can define and create one or more of the following CSV list prior to the CIC installation, to be used by IC Setup Assistant or Interaction Administrator to import to CIC.

- A CSV managed IP phones list is a template file with managed IP phones information. Two of these lists are provided. One is based on template and the other is based on type, manufacturer, and model. For more information about using a CSV managed IP phone list to create multiple managed IP phones and associated SIP stations, see, "Post-Installation Configuration" and the *CIC Managed IP Phones Administrator's Guide* in theC PureConnect Documentation Library.
- A CSV user list is a template file with users and user attributes information. For more information about using a CSV list to create multiple users, see "IC Setup Assistant", "Post-Installation Configuration", and the *CSV List Technical Reference* in the PureConnect Documentation Library.
- A CSV SIP station list is a template file with non-managed IP phones information. For more information on creating using a CSV SIP station list to create multiple non-managed IP stations, see "IC Setup Assistant", "Post-Installation Configuration" and the *CSV List Technical Reference* in the PureConnect Documentation Library.

G-729 Hold Audio files

CIC sites can replace default on-hold music .wav files with G.729 compression-compatible .wav files.

- Following the CIC installation, back up the existing SystemAudioOnHold(0-7).wav and SystemDefaultAudioOnHold .wav files found in the \i3\ic\Resources\folder on the CIC server.
- Copy the SystemAudioOnHold(0-7).wav and SystemDefaultAudioOnHold .wav files from \Installs\Additional Files\G.729 Audio Files directory on the on the CIC 2015 R1 or later iso .file to the \i3\ic\Resources\folder on the CIC server.
- Alternatively, use the SystemDefaultAudioOnHold .wav file as Custom Audio under a Workgroup Transfer node in Attendant or configure as the on-hold music audio source for workgroups in Interaction Administrator.

For more information, see Interaction Attendant help, and Audio Sources in Interaction Administrator help.

Get Host ID

Use the GetHostID utility to obtain the CIC server Host ID prior to a new CIC installation. The CIC server Host ID name is needed to generate the CIC 4.0 license.

The GetHostID utility is available:

- In the \Installs\Additional Files\GetHostID directory on the CIC 2015 R1 or later iso .file.
- On the Product Downloads page at https://help.genesys.com/pureconnect/secure/Downloads.aspx .

CIC Database files

The CIC database files in the \Installs\Additional Files\SQL directory on the CIC 2016 R1 or later release and patch iso .files contain:

- A zip file containing the scripts for manually creating SQL and Oracle databases for the latest release, plus a stored procedure for purging Reporting data, a sample Oracle tablespace create script, and an index rebuilding script. For more information, see "[Database Server](#)". The zip file is also available on the Downloads page at https://help.genesys.com/pureconnect/secure/Downloads.aspx .
- The IC Database Space Planning Spreadsheet. Use the IC Database Space Planning Spreadsheet to plan how much space will be needed for the target size (initial data file size) of the CIC database for SQL Server and the IC data and index tablespaces for Oracle. For instructions, see "[Database Server](#)".

PureConnect Documentation Library installation

The PureConnect Documentation Library contains all CIC help systems and documentation in a single searchable unit.

The PureConnect Documentation Library is installed on the CIC server as part of a new CIC server installation procedure as described in "[CIC server Installation](#)".

You can view the PureConnect Documentation Library from:

- http://help.genesys.com/cic/

- The IC server from **Start…Programs->PureConnect->Online Documentation->IC Documentation Library,** after completing the CIC server installation.

IC Survey System

Genesys recommends that you complete a Pre-Install survey prior to a new installation to compile all the installation and configuration information needed for the customer site.

The results of the Pre-Install survey are stored in an IC Survey file on the CIC server. When you run the IC Setup Assistant as part of a new installation, Setup Assistant will load and read the IC Survey file, and pre-fill the screens with the appropriate configuration information. A completed survey enables installers to discover installation issues in advance of the actual installation. This makes for a simplified installation process for all involved.

The IC Survey System is available in the \Installs\Additional Files\IC_Survey_System directory on the CIC 2015 R1 or later iso .file. Double-click ICSurveyMenu.html and click New.

See "[CIC server](#)" for instructions on completing a Pre-Install survey. You may need to consult with the network administrator, email administrator, database administrator, CIC system administrator, and other people at the customer site to gather the information.

IC System Handlers

IC System Handlers is a utility that contains the CIC handlers. You may find the IC System Handlers utility useful for migrating any handler changes prior to applying CIC 2015 R1 or later releases.

The IC System Handlers install is available on the CIC 2015 R1 or later iso .file. Run Install.exe from the \Installs directory, select the Off-Server Components tab, and check the appropriate checkbox. Run the IC System Handlers install on any computer other than the CIC server.

SNMP

The SNMP service enables Network Management Systems (NMS) to monitor CIC and its subsystems for SNMP traps. A CIC subsystem also monitors itself and other CIC subsystems for SNMP requests and traps.

CIC's Management Information Base (i3ic.mib), which contains IC-specific objects is available:

- In the SNMP directory \Installs\Additional Files\SNMP directory on the CIC 2015 R1 or later iso .file.
- On the Utilities and Downloads page at https://help.genesys.com/utilities-and-downloads.html.

If you are running SNMP on the CIC server, you must import and open the MIB file in the SNMP management application. This is needed so that the SNMP management application can query the CIC server for information.

For more information, see "[CIC server](#)" and the *CIC and SNMP Technical Reference* in the PureConnect Documentation Library.

CIC Language Packs and Prompt Packs

For information on supported languages in CIC, their current availability, and scope of localization for each language, see supported languages in the CIC Language Pack Technical Reference.

Starting with 2019 R2, the CIC Language Pack and Prompt Pack installs are available on the CIC LanguagePacks .iso file on the Product Downloads page at https://help.genesys.com/pureconnect/secure/Downloads.aspx   . For CIC 2015 R1 through 2019 R1, the CIC Language Pack and Prompt Pack installs are available on the on the CIC .iso file.

Run Install.exe from the \Installs directory on the Language Packs .iso share, select the Language Packs tab, and check the appropriate checkbox(s).

For requirements, and installation and configuration instructions, see the *CIC Language Pack Technical Reference* and *CIC Prompt Pack Technical Reference* in the PureConnect Documentation Library.

IPA Integration with SharePoint

Starting with CIC 2015 R3, IPA Integration with SharePoint is end-of-life and removed from CIC.

CIC Integration with LiveLOOK

Starting with CIC 2016 R1, CIC Integration with LiveLOOK is end-of-life and removed from CIC.

CIC Integration with HEAT

Starting with CIC 2016 R3, CIC Integration with HEAT is end-of-life and removed from CIC.

CIC Integration with IBM Sametime

Starting with CIC 2016 R1, CIC Integration with IBM Sametime is end-of-life and removed from CIC.

CIC Integration with Microsoft Lync

Starting with CIC 4.0 SU 2, the **CIC Integration with Microsoft Lync (Telephony and Embedded Client Plugin)** is available. This component is installed automatically when you install the CIC server and IC User Applications.

Starting with CIC 4.0 SU 3, the following CIC Integration with Microsoft Lync components are available:
- **Lync Presence Integration Service**. For more information, see the Lync (Skype) Integration page at https://help.genesys.com/pureconnect/desktop/lync_integration_landing.htm.
- **Lync Company Directory/Directory Merging**. This component is installed automatically when install the CIC server and IC User Applications.

For more information

For more information, see:
- The the Lync (Skype) Integration page at https://help.genesys.com/pureconnect/desktop/lync_integration_landing.htm.
- The *CIC Integration to Microsoft Lync Administrator's Guide* in the Technical Reference Documents section of the PureConnect Documentation Library.

CIC Integration with Remedy and Remedy IVR

Starting with CIC 2016 R2, **CIC Integration with Remedy** end-of-life and removed from CIC.

Starting with CIC 2015 R3, **CIC Integration with Remedy IVR** is end-of-life and removed from CIC.

CIC Integration with Workforce Management

Starting with CIC 4.0 SU 2, CIC Integration with Workforce Management is available.

The CIC Integration with Workforce Management Integration install and related files are available on the CIC 2015 R1 or later .iso file. Run Install.exe from the \Installs directory, select the Integrations tab, and check the appropriate checkbox.

For more information

For more information, see the *CIC Integration to Workforce Management Historical and Real-Time Adherence Technical Reference* in the Technical Reference Documents section of the PureConnect Documentation Library.

CIC Scheduled Reports

Starting with CIC 4.0 SU 2, CIC Scheduled Reports is available.

The CIC Scheduled Reports installs and related files are available on the CIC 2015 R1 or later .iso file. Run Install.exe from the \Installs directory, select the Off-Server Components tab (available in this location starting with CIC 2015 R2), and check the appropriate checkbox.

For more information

For more information, see:
- The Scheduled Reports page at https://help.genesys.com/pureconnect/desktop/scheduled_reports_landing.htm .
- The *CIC Scheduled Reports Installation and Configuration Guide* in the Technical Reference Documents section of the PureConnect Documentation Library.

Interaction SIP Bridge installation

Starting with CIC 4.0 SU 2, Interaction SIP Bridge is available.

Starting with CIC 2015 R1, Interaction SIP Bridge is installed during the IC User Applications (32-bit or 64-bit) installation on remote workstations.

For more information

For more information, see:
- The *Interaction SIP Bridge Installation and Configuration Guide* in the Technical Reference Documents section of the PureConnect Documentation Library.
- "Client Workstation" and "Client Workstation Installations" in this document.

Microsoft Outlook Interaction Desktop Add-in installation

Starting with CIC 4.0 SU 3, Microsoft Outlook Interaction Desktop Add-in is available. The Microsoft Outlook Interaction Desktop Add-in supports 32-bit Microsoft Outlook 2010 SP1 only.

> **Note**: Starting with CIC 2016 R1, Microsoft Outlook Interaction Client Add-in was renamed Microsoft Outlook Interaction Desktop Add-in.

When you install the CIC server, a Microsoft Outlook Interaction Desktop Add-in plugin install is added to the IC User Applications (32-bit and 64-bit) shares on the CIC server.

To install the Microsoft Outlook Interaction Desktop Add-in on client workstations running Microsoft Outlook, from the IC User Applications (32-bit or 64-bit) share, run Setup.exe to install IC User Applications and select the Outlook Plugin for IC User Applications.

For more information

For more information, see:
- The *Microsoft Outlook Interaction Desktop Add-in Installation and Configuration Guide* in the Technical Reference Documents section of the PureConnect Documentation Library.
- "Client Workstation" and "Client Workstation Installations" in this document.

Interaction Media Streaming Server

Starting with CIC 4.0 SU 3, Interaction Media Streaming Server is available.

The Interaction Media Streaming Server install is available on the CIC 2015 R1 or later iso .file. Run Install.exe from the \Installs directory, select the Off-Server Components tab, and check the appropriate checkbox.

For more information, see the *Interaction Media Streaming Server Technical Reference* in the Technical Reference Documents section of the PureConnect Documentation Library.

Interaction Web Portal

Starting with CIC 4.0 SU 3, Interaction Web Portal is available.

The Interaction Web Portal install is available on the CIC 2015 R1 or later iso .file. Run Install.exe from the \Installs directory, select the Off-Server Components tab, and check the appropriate checkbox.

For more information

For more information, see:
- The Interaction Web Portal page at https://help.genesys.com/pureconnect/desktop/interaction_web_portal_landing.htm.
- The *Interaction Web Portal Installation and Configuration Guide* in the Technical Reference Documents section of the PureConnect Documentation Library.

Interaction Marquee

Starting with CIC 4.0 SU 3, Interaction Marquee is available as a revised product in the PureConnect product line. Interaction Marquee is available inside the Interaction Web Portal framework.
Interaction Marquee is automatically installed with Interaction Web Portal.

For more information

For more information, see:
- The Interaction Marquee page at https://help.genesys.com/pureconnect/desktop/interaction_marquee_landing.htm.
- The *Interaction Web Portal Installation and Configuration Guide* in the Technical Reference Documents section of the PureConnect Documentation Library.

CIC Integration with Oracle Siebel

Starting with CIC 4.0 SU 3, CIC Integration with Oracle Siebel is available.

The CIC Integration with Oracle Siebel install is available on the CIC 2015 R1 or later .iso file. Run Install.exe from the \Installs directory, select the Integrations tab, and check the appropriate checkbox.

For more information

For more information, see:

- The Siebel Integration page at https://help.genesys.com/pureconnect/desktop/seibel_integration_landing.htm.
- The *CIC Integration to Siebel Installation and Configuration Guide* in the Technical Reference Documents section of the PureConnect Documentation Library.

PureConnect Integration to Oracle Service Cloud

Starting with CIC 4.0 SU 3, PureConnect Integration to Oracle Service Cloud (formerly Oracle RightNow) is available.

Starting with the 2015 R2 release, the PureConnect Integration to Oracle Service Cloud installs and related files are available on Integrations 2015 R2 or later .iso file, available under "Integrations" on the Downloads page at https://help.genesys.com/pureconnect/secure/Downloads.aspx .

Run Install.exe from the \Installs directory, and check the appropriate checkboxes.

For more information

For more information, see:

- The Oracle Service Cloud Integration page at https://help.genesys.com/pureconnect/desktop/oracle_service_cloud_integration_landing.htm.
- The *PureConnect Integration to Oracle Service Cloud Installation and Configuration Guide* in the Technical Reference Documents section of the PureConnect Documentation Library.

Interaction Center Web Services (ICWS) SDK

Starting with CIC 4.0 SU 6, Interaction Center Web Services (ICWS) SDK is available. The ICWS SDK is a REST API for web, mobile, and desktop clients. The ICWS SDK includes:

- ICWS API documentation
- Example applications
- Language-specific libraries

For more information

For more information, see the Downloads page at https://help.genesys.com/pureconnect/secure/Downloads.aspx .

IPA Stand-Alone Web Client

Starting with CIC 2015 R1, the IPA Stand-Alone Web Client is available. The IP Stand-Alone Web Client consists of the IPA Work Item Client and the IPA Work Item Viewer. The IPA Stand-Alone Web Client files are in the CIC Web Applications download zip file on the Download page at https://help.genesys.com/pureconnect/secure/Downloads.aspx .

For more information

For more information, see:

- The *CIC Web Applications Installation and Configuration Guide* in the Technical Reference Documents section of the PureConnect Documentation Library.
- Interaction Process Automation help.

Interaction Connect

Starting with CIC 2015 R2, Interaction Connect is available. Interaction Connect is a browser-based interaction management client application offering call control functionality, chat features, and status management. Interaction Connect files are in the CIC Web Applications download zip file on the Product Downloads page at https://help.genesys.com/pureconnect/secure/Downloads.aspx .

For more information

For more information, see:

- The *CIC Web Applications Installation and Configuration Guide* in the Technical Reference Documents section of the PureConnect Documentation Library.
- Interaction Connect help.

CIC Appliance .iso

The CIC Appliance 2015 R2 or later .iso file is available to download from the on the PureConnect Product Downloads page at
https://help.genesys.com/pureconnect/secure/Downloads.aspx   .

When you run Install.exe from the root directory of the CIC Appliance 2015 R2 or later .iso file, the components are available to select.
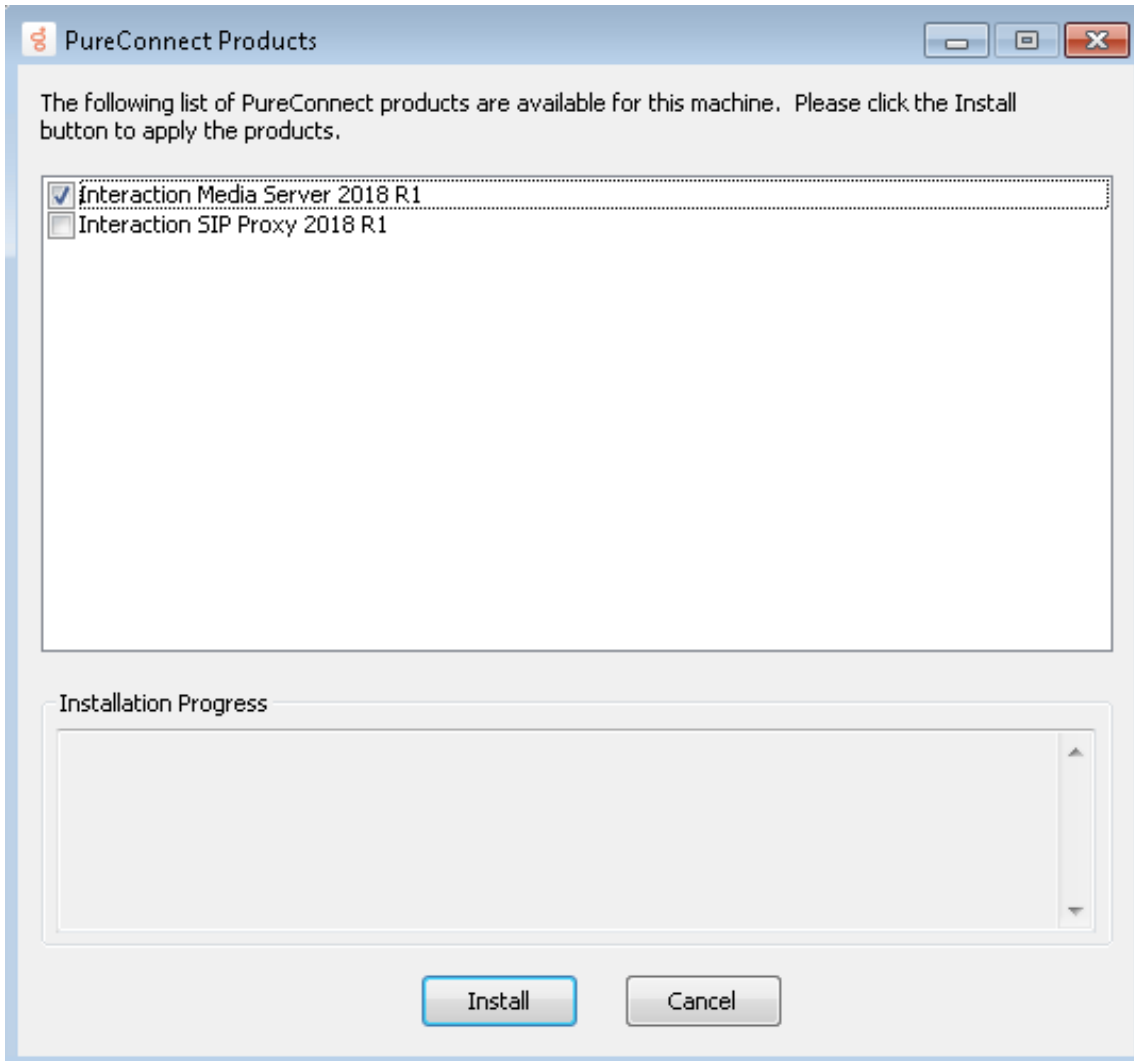
For more information

For more information, see the *Interaction Media Server Technical Reference* in the Technical Reference Documents section of the PureConnect Documentation Library.

ININProductInfo utility

Starting with CIC 2015 R3, the ININProductInfo utility is available.

The ININProductInfo utility gathers information about installed PureConnect products and system information, logs, and (optionally) applied operating Knowledge Base updates and Windows Installer logs, to help PureConnect Customer Care and Testing teams diagnose installation issues.

The ININProductInfo utility can be run as a console application or as a simply UI application. After the utility has finished gathering information, it creates a zip file containing the copied logs and generated reports, and writes the zip file to the desktop with the name *ininproductinfo_<computerName>_<timestamp>.zip*.

Following the 2015 R3 CIC server installation, the ININProductInfo utility is available in the \Utilities share on the CIC server.

Crystal Report Import Utility

The Crystal Report Import Utility is available from the Utilities and Downloads page. It is a an easy-to-use wizard for importing a new crystal report into the system using an .rpt file and user-friendly forms, run from IC Business Manager. This eliminates the need to manually add a crystal report through Interaction Administrator using XML editing to populate the necessary metadata. For more information, see the Crystal Report Import Utility Technical Reference. The posted download supports CIC 2015 R2 and later.

Genesys Cloud for PureConnect Integration

Genesys Cloud for PureConnect Integration enriches your CIC users' experience by using the power and data of PureConnect and Genesys Cloud collaborative features. This integration enables PureConnect to consume services such as WebRTC, co-browse, and Salesforce Object Routing from Genesys Cloud. For more information, see the Genesys Cloud for PureConnect Administrator's Guide.

Appendix A: OpenSSL Copyright

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Appendix B: Device Install Hint

This appendix describes the "Device/Install Hint" terms that appears after an SCR description in the CIC_release_summary.html file. This file is generated with each patch release and provided on the [Downloads page](). The "Device/Install Hint" term appears in the left column of the table, with the "Installation Program" name(s) that contain the SCR's code in the center column, followed by the "Device" column which lists the server, workstation, or other computer where the install(s) need to be run to apply the fixed code.

In most cases, each "Device/Install Hint" is associated with one installation program that is installed on one type of computer/device. In some cases, the Device/Install Hint indicates multiple installation programs are required to apply the code for a particular SCR. In any case, you are required to run only the install(s) associated with the Device/Install Hint on the designated device to apply a fixed SCR. Of course, all other fixes in the patch are applied as well, but you are not required to run all of the current installs in a patch release if you do not need the updates for that device. You may use only the patch installs that you need. However, our original best practice recommendation is to apply all of the patches in a release.

Device/Install Hint	Contents	Device
ASRServerNuanceRecognizer	ASRServerNuanceRecognizer	Speech Server
Central Campaign Server (CCS)	Central Campaign Server (CCS)	Dialer Server
CIC Web Applications (iConnect)	CIC_Web_Applications .zip file	Web Server
Conference	ICServer_IConferencePlugins	Interaction Center Server
Dialer	ODS (Outbound Dialer Server) DialerServer* (Dialer Localization server-side)	Interaction Center Server
Documentation	ICDocumentation	Interaction Center Server or Standalone
Edge	EDGE-MediaServer EDGE-SIPProxy Igateway	Edge Server
IceLibSDK_32bit	IceLibSDK_32bit	Developer Server
IceLibSDK_64bit	IceLibSDK_64bit	Developer Server
ICSystemHandlers	ICSystemHandlers	Developer Server
Interaction Center Server	ICServer InteractionFirmware (required to be installed with ICServer)	Interaction Center Server
Interaction Scripter.NET	ScripterNet ScripterNet_LanguagePlugin (Scripter.Net localization)	Workstation
IRExtremeQueryServer	IRExtremeQueryServer	IR Extreme Query Server
IRRemoteContentService	IRRemoteContentService	Standalone
IUpdate	IUpdateProvider OR IUpdateClient	Interaction Center Server or Standalone
LoquendoASR	LoquendoASR	Speech Server
Media Server	MediaServer MediaStreamingServer_64bit	Media Server
Migrator	Migrator	Interaction Center Server or Media Server

MrcpASRServer	MrcpASRServer	Speech Server
MSOutlook_IConferencePlugins	MSOutlook_IConferencePlugins	Workstation
Off-Server Session Manager (OSSM)	SessionManager ICSessionManager_DialerPlugins SessionManager_IConferencePlugins	Off Server Session Manager Server
Other	See Pre-Installation Instructions	
ProcessAutomationServerv2	ProcessAutomationServerv2	Interaction Center Server or Standalone
RenderServer	RenderServer	Standalone
RightNow/Oracle Integration	OracleServiceCloudIntegrationService	Interaction Center Server
RTMServer	RTMServer	Interaction Center Server or Standalone
Salesforce Desktop Integration	Salesforce Desktop Integration	Workstation
ScheduledReportsClient	ScheduledReportsClient	Workstation
ScheduledReportsServer	ScheduledReportsServer	Standalone
Server Language Packs	LanguagePack* (CIC Localization server-side)	Interaction Center Server
SiebelIntegration	SiebelIntegration	Siebel Server
SIPProxy	SIPProxy	Media Server, Edge Server or Standalone
SOAPCOM	SOAPCOM	Standalone
SOAPListener	SOAPListener	Web Server
Status Aggregator	Status Aggregator	Standalone
VoiceXMLv2	VoiceXMLv2	Speech Server
Web Server - ICWebClientEdition	ICWebClientEdition ICWebClient_LanguagePlugin (WebClient localization)	Web Server
Web Server - InteractionConferenceWebServer	InteractionConferenceWebServer	Web Server
Web Server - InteractionWebPortal	InteractionWebPortal	Web Server
Web Server - SOAPListener	SOAPListener	Web Server
Web Server - WebAdministrator	WebAdministrator	Web Server
WFMRTAIntegration	WFMRTAIntegration	Standalone
Workstation - Business Manager Apps	ICBusinessManagerApps ICBusinessManagerApps_DialerPlugins ICBusinessManagerApps_LanguagePlugin (BusinessManagerApps localization)	Workstation
Workstation - InteractionScriptAssist	InteractionScriptAssist	Workstation

Workstation - Server Manager Apps	ICServerManagerApps_IConferencePlugins	Workstation
	ICServerManagerApps_DialerPlugins	
	ICServerManagerApps_LanguagePlugin* (ServerManagerApps localization)	
	eFAQ_Integration (integrates ICServerManagerApps (IA) with the 2.3.1 eFAQ Server)	
Workstation - User Apps	ICUserApps_32bit	Workstation
	ICUserApps_64bit	
	InteractionDesktopOutlookAddin	
	ICUserApps_LanguagePlugin* (UserApps localization)	

Change Log

Date	Change
14-December-2011	"Mail System", under "Lotus Domino server", added new section "Lotus Domino/Notes support limitations".
25-January-2012	Updated Copyright information. "Client Workstation Installations", under "IC Server Manager Applications", updated screenshot of Custom Setup screen in IC 4.0 SU1. IPA is now a child feature of IC Server Manager and is not listed separately in the Custom Setup screen.
02-March-2012	"Optional Installations and Additional Functionality", updated "IC Language Packs and Prompt Packs" section for additional information about Language Packs released with IC 4.0 SU1.
14-March-2012	"IC Server", updated "Set up your IC 4.0 installation media" to clarify explanation in the "Service Updates" section.
29-March-2012	"Client Workstation", added section on localized client workstation applications and requirements.
29-March-2012	"Client Workstation Installations": - Updated "Workstation application install share directory contents" section for changes made in IC 4.0 SU1 for Client Language Plugins and new Setup.exe. - Updated "Install IC User Applications (32-bit and 64-bit)" for changes made in IC 4.0 SU1 for Client Language Plugins and new Setup.exe. - Updated "Install Interactive Update Client" for changes made in IC 4.0 SU1 for new Setup.exe.
31-May-2012	"IC Server", updated entire "Anti-virus requirements and best practices" section.
01-June-2012	Updated the following for change in default protocol from TCP to UDP in IC 4.0 SU1: "IC Setup Assistant", the "SIP Lines and Default Registration Group" section. "Post-Installation Configuration", the "Configure SIP lines" section.
03-October-2012	"Database Server", updated "Supported SQL Server versions" to include support for Microsoft SQL Server 2012 in IC 4.0 SU 2 and later.
03-October-2012	Add note in the following that explains why change in default protocol from TCP to UDP in IC 4.0 SU1 was made: - "IC Setup Assistant", the "SIP Lines and Default Registration Group" section. "Post-Installation Configuration", the "Configure SIP lines" section.
03-October-2012	"Fax Support", updated the Interaction Media Server faxing section to be up to date with changes made in the *Interaction Media Server Technical Reference*.
03-October-2012	"IC Setup Assistant" in the "Configure role memberships" section, noted that the Interaction Mobile Office role was removed in IC 4.0 SU 1.
03-October-2012	"Optional Installations and Additional Functionality", added sections for the following new feature installations included in IC 4.0 SU 1 and IC 4.0 SU 2: IPA Integration with SharePoint, IC Integration with LiveLOOK, IC Integration with HEAT, IC Integration with IBM Sametime, IC Integration with Microsoft Lync, IC Integration with Remedy, IC Integration with Salesforce.com, IC Integration with Workforce Management, and IC Scheduled Reports.

03-October-2012	Updated the following for support for Microsoft Exchange Web Services-based integration in IC 4.0 SU 2: "Mail System": Revised section on Microsoft Exchange with two subsections: "Microsoft Exchange Web Services-based integration" and Microsoft Exchange MAPI-based integration. "Client Workstation": Updated "E-mail client" section for Microsoft Outlook and Microsoft Outlook Web Access. "IC Setup Assistant": Updated "Select Mail Provider" and "Mail Provider Summary" screen descriptions. Added "Exchange Configuration" screen description. "Post-Installation Configuration": Updated "Complete mail configuration" section.
10-December-2012	"IC Server", updated "IC Server minimum hardware requirements" with a note that the minimum disk requirements may be higher for sites that require increased tracing.
10-December-2012	"Getting Started", updated "IC 2.4/3.0 to 4.0 migrations" for latest information on the migration package.
12-December-2012	Updated the following for support for MRCP ASR in IC 4.0 SU 3: "Additional Servers": Updated "ASR Servers" for MRCP support. "IC Setup Assistant": Updated "Speech Recognition" for MRCP option. "Optional Installations and Additional Functionality": Updated "ASR Server" for MRCP support.
12-December-2012	"Client Workstation" for Interaction SIP Bridge (added in IC 4.0 SU 2) and Microsoft Outlook Interaction Client Add-in (added in IC 4.0 SU 3).
12-December-2012	"Client Workstation Installations" for Interaction SIP Bridge (added in IC 4.0 SU 2), Microsoft Outlook Interaction Client Add-in (added in IC 4.0 SU 3), and changes made to Setup.exe in IC 4.0 SU 2.
18-January-2013	"Optional Installations and Additional Functionality" for installs added as new features in IC 4.0 SU 3.
30-January-2013	Updated the following for support for Interaction Speech Recognition in IC 4.0 SU 3 (trial license only): "Additional Servers": Updated "ASR Servers" for Interaction Speech Recognition support. "IC Setup Assistant": Updated "Speech Recognition" for Interaction Speech Recognition support. "Optional Installations and Additional Functionality": Updated "ASR Server" for Interaction Speech Recognition support.
30-January-2013	"IC Setup Assistant" in "Select IC Optional Components" for option for Director Monitored Server added in IC 4.0 SU 3.
05-March-2013	Updated the following to state that the Microsoft Outlook Interaction Client Add-in (added in IC 4.0 SU 3) supports 32-bit Microsoft Outlook 2010 SP1 only: "Client Workstation" "Mail System" "Optional Installations and Additional Functionality"
07-August-2013	Updated the following for supported ASR servers in IC 4.0 SU 4. "Additional Servers": Updated "ASR Servers". "IC Setup Assistant": Updated "Speech Recognition". "Optional Installations and Additional Functionality": Updated "ASR Server".
07-August-2013	Updated the following sections in "IC Setup Assistant" for changes in IC 4.0 SU 4: -"SIP Lines and Default Registration Group": Update to DNS SRV Domain Name description. - "Re-run IC Setup Assistant": Added note to Identity re-run task about verifying mail connector configurations.
07-August-2013	Removed references to Interaction Conference Media Server. Distributed Conferencing on Interaction Media Server, available in IC 4.0 SU 4 and later, replaces the need for Interaction Conference Media Server.

07-August-2013	"Client Workstation" and "Client Workstation Installation" for Windows 8 support, available in IC 4.0 SU 3 and later.
07-August-2013	"Mail System" for: - Microsoft Exchange 2013 support (EWS only), available in IC 4.0 SU 4 and later. -Novell GroupWise 2012 support available in IC 4.0 SU 4 and later. -Generating GroupWise Trusted Application Key File using Novell ConsoleOne Instead of the IC Trusted Application Installer. -Added to the "Configure IC for Interaction Message Store" section that IMS quotas for storage space and message count for user, roles, and workgroups are configured in the Interaction Administrator mail container in IC 4.0 SU 4 and later.
07-August-2013	"Post-Installation Configuration" for new section "Enable Switchover replication for mail interactions" for Mail Interaction Recovery Enabled server parameter available in IC 4.0 SU 3 and later.
21-August-2013	"Optional Installations and Additional Functionality" for installs added as new features in IC 4.0 SU 4.
21-August-2013	"Post-Installation Configuration" in the "Configure SIP Lines" section to cover changes made to SIP Line Configuration in IC 4.0 SU 3 and later.
21-August-2013	"Database Server" for supported Oracle versions.
11-November-2013	"Additional Servers" in the "Directory server" section for Windows Server 2012 forest and domain functional level support
16-January-2014	Updated the following for support for AudioCodes managed IP phones in IC 4.0 SU 5 and later: "IC Setup Assistant", "Select IC optional components" for TFTP server configuration. "Post-Installation Configuration", "Create managed IP phones and associated SIP stations".
05-February-2014	"Mail System" for Microsoft Exchange Online 2013 support in IC 4.0 SU 5 and later.
05-February-2014	"Additional Servers" for supported TTS servers in IC 4.0 SU 5 and later.
05-February-2014	Updated the following for supported ASR servers in IC 4.0 SU 5 and later: "Additional Servers" "Optional Installations and Additional Functionality"
07-April-2014	Made the following updates to "Database Server": - "Supported Oracle versions": Added note and KB article reference about known issues with Oracle client 11.2.0.10. - Removed "Manual data purges" section per request from as the stored procedures are no longer provided.
07-April-2014	"Post-Installation Configuration," updated "Enable Switchover replication for mail interactions," to add the parameter value.
07-April-2014	"Client Workstation Installations," updated "Install IC Server Manager Applications" section with recommendation to use one of the actual IC server names instead of DNA record for Switchover environments.
14-May-2014	"Fax Support" for T.30 digital fax protocol, available in IC 4.0 SU 6 and later.
14-May-2014	"IC Setup Assistant," in "Re-run IC Setup Assistant," updated the "Rename DS" section to mention configuration for Switchover added in IC 4.0 SU 5.
14-May-2014	"Optional Installations and Additional Functionality," added new section for "Interaction Center Web Services (ICWS) SDK," available in IC 4.0 SU 6 and later.

03-October-2014	Updated documentation to reflect changes required in the transition from version 4.0 SU# to CIC 2015 R1, such as updates to product version numbers, system requirements, installation procedures, references to Interactive Intelligence Product Information site URLs, and copyright and trademark information.
05-November-2014	Updated the following to add Microsoft KB article for Windows Server 2012 R2 and Windows 8.1 support: "IC Server," in "IC Server software requirements." "Client Workstations," in "Client workstation requirements."
05-November-2014	"Optional Installations and Additional Functionality," added new section for "IPA Stand-Alone Web Client," available in CIC 2015 R1.
05-November-2014	Updated Copyright page for 2015.
05-November-2014	"Mail System" for the following change: -Moved content from existing Exchange Web Services Support for IC Technical Reference. -Moved content on Exchange MAPI into a new Exchange MAPI Support for IC Technical Reference.
05-November-2014	Updated the following for new CIC Integration with Gmail with support for OAuth 2.0 in CIC 2015 R2 and later: "Mail System" "IC Setup Assistant" "Post-Installation Configuration"
14-January-2015	Updated the following for changes to Reporting in CIC 2015 R2 and later for support for Crystal Reports 2013 and removal of Historical Reporting: "Client Workstation" "Database Server" "Client Workstation Installations"
14-January-2015	"Database Server," updated "Supported Oracle server versions" for Oracle 12c support in CIC 2015 R1 and later.
14-January-2015	"IC Server Installation," updated all screenshots for a CIC 2015 R2 installation, and changed order of installation due to Install.exe prompt for license file in CIC 2015 R2 and later.
14-January-2015	"Media Servers" for CIC Appliance .iso, available in CIC 2015 R2 and later.
14-January-2015	"Optional Installations and Additional Functionality," for the following changes: -New section "Interaction Connect", available in CIC Web Applications in CIC 2015 R2 or later. -Updated "Optional installations and additional files on the CIC installation media" for changes in the CIC 2015 R2. -New section "CIC Appliance .iso (Interaction Edge)." -Updated "IC Scheduled Reports" for CIC 2015 R2. -Updated "IC Integration with Oracle RightNow" to "IC Integration with Oracle Service Cloud" and location on Integrations .iso for 2015 R2.
03-April-2015	Updated document to reflect changes required in the transition from Interaction Client .NET Edition to Interaction Desktop in CIC 2015 R3 and later.
03-April-2015	Updated "Optional Installations and Additional Functionality," for the following changes: - "IPA Integration with SharePoint" for end-of-life starting with CIC 2015 R3. - "IC Integration with Remedy and Remedy IVR" for Remedy IVR end-of-life starting with CIC 2015 R3. - New section "ININProductInfo utility" for the CIC 2015 R3 release.
03-April-2015	"Mail System," in "Configure CIC for Exchange Web Services (new installations)," updated the Domain Properties dialog box screenshot and related information.

03-April-2015	Updated Copyright page.
27-April-2015	"Mail System," updated "Migrate from Exchange MAPI to Exchange Web Services (existing installations)" to add a warning that the procedure must be performed on both servers in a switchover pair.
19-June-2015	"IC Server," updated "IC Server software requirements" to mention ASP.NET requirements if Interactive Update Provider is on the IC Server.
30-June-2015	"Client Workstation," updated "Client workstation software requirements" to include support for 32-bit as well as 64-bit for Windows 8 and Windows 8.1.
06-August-2015	Updated references to "Lotus Domino/Notes" to "IBM Domino/Notes" in this guide. Updated the following for support for IBM Domino/Notes 9, available in CIC 2015 R4 and later: "Client Workstation" in "Email client". "Mail System," in "Supported Mail systems," "Supported IBM Domino servers," and "Install and configure the Notes client on the IC Server."
06-August-2015	Updated "Client Workstation," to add a "Web browser requirements" section.
04-October-2015	Updated the document for rebranding in CIC 2016 R1 and later, including updated screenshots where applicable.
04-October-2015	Updated the document, specifically "Client Workstation," "Client Workstation Installations, " and "Optional Installations and Additional Functionality" for removal of Interaction Client .NET Edition and renaming of Microsoft Outlook Interaction Client Plugin to Microsoft Outlook Interaction Desktop Plugin in CIC 2016 R1 and later.
04-October-2015	Updated "IC Server Installation" for changes to Install.exe to speed up deployment time in CIC 2016 R1 and later.
04-October-2015	Updated "Optional Installations and Additional Functionality," for the following changes: - Added new section "Trust off-host certificates following off-server installations." - "IC Integration with LiveLOOK" for end-of-life starting with CIC 2016 R1. - "IC Integration with IBM Sametime" for end-of-life starting with CIC 2016 R1. - "IC Database files" for zip file containing SQL and Oracle DB scripts for each release and patch on the CIC .iso, starting with CIC 2016 R1. The zip file is also posted on the Downloads page on the Product Information site.
06-October-2015	Updated "Database Server" in "IC database configuration options for SQL Server" and "IC database configuration options for Oracle" for " for zip file containing SQL and Oracle DB scripts for each release and patch on the CIC .iso, starting with CIC 2016 R1. The zip file is also posted on the Downloads page on the Product Information site.
06-October-2015	Updated the following for Microsoft .NET Framework 4.5.2 requirement for IC Server, IC User Applications, and IC Server Manager Applications in CIC 2016 R1 and later: "IC Server," in "IC Server software requirements" "Client Workstation," in "Software requirements" "Client Workstation Installations," in "IC User Application requirements" and "IC Server Manager Requirements."
06-Janurary-2016	Updated "Optional Installations and Additional Functionality," for the following changes: - "IC Integration with Remedy" for end-of-life starting with CIC 2016 R2. - "Interaction Process Automation" for PASv2 off-server install available in CIC 2016 R2 or later. - Added new sections "Crystal Report Import Utility" and "Database Schema Change Library."
06-Janurary-2016	Updated "Database Server," for the following changes: - In "SQL Server," added new section "Use Active Directory Accounts with SQL SQL Server". - Added new section "Database Schema Change Library."

06-Janurary-2016	Updated "Mail System" in "Supported mail systems" and "Exchange Web Services requirements" for support statement that starting with CIC 2016 R2, the minimum supported Exchange version for Exchange Web Services is Exchange 2010 SP2.
06-Janurary-2016	Updated "IC Server Installation" for a new CIC 2016 R2 installation. Updated "Step 10: Interactive Update Provider install" for new Interactive Update Provider location for database file selection in Interactive Update 2016 R2 and later.
09-March-2016	Updated "Client workstation" for the following changes: -In "Client workstation software requirements," added support for Windows 10 in CIC 2016 R2 and later and updated .NET Framework requirements for Windows 10. -In "Web browser requirements," added support for Microsoft Edge in CIC 2016 R2 and later.
21-March-2016	Additional update to "Client workstation software requirements" in "Client workstation" for Windows 10.
25-March-2016	Updated "Mail System" for Microsoft Exchange 2016 support in CIC 2016 R1 and later.
07-April-2016	Updated "Optional Installations and Additional Functionality," for the following changes: - "PureCloud for CIC Integration" available in CIC 2016 R3 or later. - "IC Integration with HEAT" for end-of-life starting with CIC 2016 R3.
07-April-2016	Updated the following sections for support for Microsoft SHA-256 certificates on Windows 2008 R2 and Windows 7 systems running Interactive Intelligence products that use the QoS driver: "IC Server," updated "IC Server software requirements." "Media Server," updated "Requirements and installation." "Client Workstation," "Client workstation software requirements." "IC Server Installation," updated "Step 5: IC Server install." "Client Workstation Installations", updated "Install IC User Applications (32-bit and 64-bit)."
11-May-2016	"IC Server," in "Pre-Windows OS installation configurations," updated the "Drive partitions and RAID" section to recommend a minimum 120 GB for the operating system instead of 60 GB.
25-May-2016	In "Client Workstation," in "Client workstation hardware requirements," updated "Interaction Optimizer in IC Business Manager" requirements and linked to Interaction Optimizer Requirements and Limitation Overview document.
13-September-2016	Updated the following: "Mail System" updated note in "Supported mail providers for SSL/TLS" section. "Mail System" added note about "Single-User" install to step 1 of Install and configure the notes client on the IC server. "Optional Installation and Additional Functionality", updated "Interaction Process Automation" section with information about PASv2 is only version of Process Automation Server install on CIC server starting with CIC 2017 R1.
07-December-2016	Updated Database Server, Supported SQL Server versions to include Microsoft SQL Server 2016.
16-March-2017	Updated "Mail System", "Supported mail systems" to include a link to Microsoft Exchange and Outlook Software Requirements and Testlab recommended mail systems.
25-April-2017	Updated Mail System, Exchange Configuration to include description of Enable SCP Lookup option.
25-April-2017	Updated "IC Server Installation" to include a new step 7 Interaction Text-to-Speech install.
28-April-2017	Starting with CIC 2017 R4, Salesforce Web integration, Interaction Client Web Edition, and Interaction Mobile Web Client were removed from existing CIC installations and are no longer installed with new CIC installations.
03-May-2017	Updated Mail System, Exchange Web Services requirements section from Microsoft .NET Framework 4.0 to 4.5.2 or later.

31-May-2017	Updated Database Logging, About PMQ section to include note that PMQ does not support processing files from a previous version.
11-July-2017	Updated Microsoft .NET Framework 4.5.2 requirement to Microsoft .NET Framework 4.5.2 or later.
10-August-2017	Updated Setup Assistant to include Certificate Signing Options.
26-Septmber-2017	Rebranding- terminology, product names, screen captures, title and Copyright page.
28-November-2017	Updated requirements to include Windows Server 2016.
08-December-2017	Verified Client Workstation Software Requirements section for minimum Windows OS requirements and added link to Testlab
23-January-2018	Updated requirements to remove Windows Server 2008.
02-February-2018	Added Microsoft Office 365 to Supported Exchange servers and Supported mail system.
27-February-2018	Conversion to HTML. Renaming duplicate topics.
28-February-2018	Updated testlab links to testlab.genesys.com
26-April-2018	Added important note for My Quality Results view in Interaction Connect using HTTPS certificates signed by a third-party certificate authority - added this important note to Interaction Recorder and Interaction Screen Recorder topic and Interaction Recorder Remote Content Service topic under Optional Installations and Additional Functionality.
01-June-2018	Updated requirements for Microsoft .NET Framework 4.7.
25-July-2018	Removed software requirements that duplicate information on System Software Requirements page in doc library. Provide link to page in doc library.
15-August-2018	Updated Certificate Signing Options in IC Setup Assistant to include Windows Certificate Store option.
28-August-2018	Updated topics to indicate that PureConnect no longer supports Microsoft Exchange MAPI-based integrations as of the 2016 R2 release. Use Microsoft Exchange Web Services-based integration as the alternative to the Microsoft Exchange MAPI-based integration. The options for configuring Microsoft Exchange MAPI-based integrations remain visible in Interaction Administrator but setting the options no longer enables Microsoft Exchange MAPI-based integrations.
17-October-2018	Updated License Management System link to Activation File Management Tool link. Updated KB links from inin.com to genesyspartner.force.com.
19-December-2018	Updated for the addition of Genesys phones.
12-February-2019	Updated link to Genesys University website in "Administrative skills needed for CIC system" topic

19-February-2019	Updated topics to indicate separate language pack prompt pack .iso
26-February-2019	Removed references to Exchange 2007.
05-March-2019	Removed Microsoft Internet Explorer 11 from software requirements. Removed reference to Interactive Intelligence on System Requirements page. Updated links to testlab.
13-March-2019	Removed links to Localization page. Added links to Language Pack TR instead.
16-May-2019	Updated Create Signing Requests and Import Third-party Signed Certificate topic to add Edit button instead of ellipsis button.
21-May-2019	Added Appendix B: Device Install Hint.
22-May-2019	Added info from PureConnect Releases and Patches page.
21-June-2019	Updated for Interaction Firmware Part 1 and Part 2 installs in Step 3: Run Install.exe and in Step 8: Interaction Firmware install topic.
12-July-2019	Fixed link to Virtualization TR in CIC System Hardware Requirements.
02-August-2019	Reorganized the content only, which included combining some topics and deleting others that just had an introductory sentence such as, "In this section...".
16-August-2019	Added mini toc to Release updates topic. Added link to step 1 in Step 11 of CIC server installation. In Group Policy deployment topic, removed referenced to KB article Q145410357000370.
19-September-2019	Added note to Oracle ODBC Driver Oracle client topic about ORACLE_HOME environment variable. Updated Database Requirements in Software Requirements - added Oracle 12.2, removed Oracle 11g.
11-October-2019	Updated inin.com and testlab addresses.
23-October-2019	Updated Speech Recognition Engine (ASR) section to include Nuance Recognizer 11.0.3. Updated Text to Speech Engine (TTS) section to include Nuance Vocalizer 7.2.7.
7-November-2019	Added note to Software Requirements that PureConnect 2019 R3 is the last release to support Microsoft SQL Server 2008 R2.
10-December-2019	Added that print spooler must be running to install fax printer driver to "IC User Applications install - Fax components" topic and "Fax installation and configuration on the CIC server" topic.
11-December-2019	Removed statement about restart is required for server parameter in "Enable Switchover replication for mail interactions" topic.
10-January-2020	Updated "Minimum" and "Recommend" memory requirements for IC User Apps, ICBM Apps, and ICSM Apps in the CIC System Hardware Requirements topic.
14-January-2020	Updated "Create signing requests and import third-party signed certificate" topic and "Certificate signing option screen" topic with UI changes to Setup Assistant for certificates.

28-February-2020	Updated requirements to include Windows Server 2019.
28-February-2020	Updated requirements to include Windows Server 2019.
09-March-2020	Fixed link to Transition to Interaction Desktop Administrator's Guide in the Interaction Desktop installation topic. Per feedback, added a link to Install IC User Applications (32-bit and 64-bit) topic.
02-April-2020	Updated references to Genesys education. Added note to Teaming Network Interfaces topic about issues with Media Server licenses and MAC addresses.
28-April-2020	Updated links from my.inin.com to new locations.
04-May-2020	Updated Supported fax platforms: T.39 and T.30 (fax over IP) to include new option.

03-June-2020	Most, if not all, customers have already migrated from CIC 2.4/3.0 to a later release. Therefore, changed the following:
	• Removed "CIC 2.4/3.0 to 2015 R1 or later migrations" section.
	• Changed the link to the "Migration" page in the PureConnect Documentation Library to point to the Interaction Migrator Technical Reference in the following:
	   ○ CIC Database Configuration
	   ○ CIC Database Configuration options for SQL Server
	   ○ CIC Database Configuration options for Oracle

05-June-2020	Updated Install Microsoft .NET Framework 3.5.1 procedure.
14-July-2020	Updated Database Schema Change Library to include procedure and new link.
27-August-2020	Replaced PureCloud references with Genesys Cloud. Updated /I3/IC directory paths and shares table to include single entry for language subdirectories "\I3\IC\Resources\i3ca\<LanguageID>".
08-November-2021	Added Microsoft SQL Server 2019 in Software Requirements topic.
20-October-2023	• Added a new topic for 'Update to OpenSSL 3.0'. • Updated the Step5 of 'CIC Server Installation' with the new installer screen and message. • Updated the support of operating system '**Microsoft Windows 11 (64-bit)**'.