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See Change Log for summary of changes.

GENESYS™

Interaction Message Store

Technical Reference

Abstract

Interaction Message Store is a messaging option that provides storing and tracking capabilities for voice mail and fax messages without connection to an e-mail system. This document describes how Interaction Message Store works, and provides procedures for installing and configuring CIC for Interaction Message Store.

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

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Introduction

Interaction Message Store (IMS) is a messaging option that provides storing and tracking capabilities for voice mail and fax messages without connection to an email system. Interaction Message Store stores voice mail 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 voice mails and faxes are routed to these mailboxes. CIC users can access voice mail 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.

> 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.

The Interaction Message Store can also be used as a voice mail and fax backup system for unified messaging CIC users who receive e-mail, voice mail, and fax messages in their email inboxes.

How Interaction Message Store works

Interaction Message Store uses the Mail Connector API to provide the following services:
- Access to stored messages
- Transmission of messages
- Limited address book lookup

Access to stored messages

The mailbox for CIC users on a system using Interaction Message Store is simply a file system directory, and the user's e-mail address contains a unique string that Interaction Message Store computes to find that directory. The string is actually computed into a path containing two single-letter directories. The path is completed by appending the Root directory (set in Interaction Administrator) to the front end, and the unique string itself (created automatically by the CIC administrator when a user is created) to the back end. For example, if the Root directory is `\\BigServer\Mail` and the unique string is `My.Name`, the message store is implemented as the `\\BigServer\Mail\N\K\MY.NAME`.

- **Mailbox name**: The format for the Interaction Message Store mailbox name is made up of two parts: a friendly name and a unique string. The friendly name is based on the display name and can change. The unique string is used to link that user to his or her mailbox and can never change. It takes the form:
  `FBMC: <friendly-name> : <unique-string>`

For example, the format of a Interaction Message Store address might be:
`FBMC: Michael Cole:michaelc@site`

Changing the user's friendly display name does not change the Interaction Message Store mailbox name displayed in Interaction Administrator.

- **Message format**: Interaction Message Store uses XML files to store the envelope and body information for the message as well as the textual body. Attachments are stored as separate files whose names are derived from the base name of the XML message file. Certain properties of messages are more heavily used by the CIC mail server than others, and have therefore been encoded into the XML file name, so that they may be accessed without having to load and parse the XML data itself. These properties are the receipt time, the content type, and the read/unread status.
- **Message store catalog**: Interaction Message Store controls all access to the storage, keeping a persistent catalog in each mailbox.

Transmission of messages

For the delivery of messages with Interaction Message Store—each message and recipient of the message—the unique string is extracted from the recipient's address, the string is hashed and the message store is located, and the appropriate files are written into the inbox folder of that store. After the files are in place, the message store's catalog is updated to increment the count of new messages.

Limited address book lookup

Interaction Message Store does not have a full population of users when CIC is installed. CIC users are created in Setup Assistant or Interaction Administrator, and Interaction Message Store must import users from CIC. The Interaction Message Store address book implements the minimum necessary functionality. It implements a search-by-address, simply resolving the given address into a reference to the associated message store.

Multiple mail providers

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.

Here are some other considerations to help you decide if you want to configure both the Interaction Message Store and an email provider:

- If some users do not have email access and some do, and all users need a voice mail provider, then configure Interaction Message Store and an email provider.

This enables users without email to receive voice messages, and users with e-mail to receive their voice messages via the email provider.

- To provide a backup to voice mail in a unified messaging system, configure both Interaction Message Store and an email provider.

If the email server is taken out of service (planned or unplanned), and the users with email access are configured to use both Interaction Message Store and an e-mail provider to store voice messages, then they can still access voice mail from the Interaction Message Store even though they cannot access email (text-based) messages. This prevents an interruption in or loss of voice mail capability for these users.

- To cut down on email server load, configure only the Interaction Message Store, without configuring an email provider. Voice mail messages are then provided only by the Interaction Message Store.
- If you do not want to users to access voice mail, email, and faxes via an email provider (unified messaging), then configure only the Interaction Message Store without configuring an email provider.

Interaction Message Store in single and multiple CIC Server implementations

In a CIC implementation with one CIC server, the Interaction Message Store can be located on the CIC server.

Larger CIC implementations may have a cluster of CIC servers for workload balancing or as redundant systems. For these implementations, a separate, dedicated file server or Network Attached Storage (NAS) should be set up for Interaction Message Store. If one of the multiple CIC servers fails, the other CIC server(s) can still reach the message store on the file server, and the site will continue to work.

Interaction Message Store and Switchover

If your CIC implementation contains a switchover pair, we recommend that you do not include the Interaction Message Store root directory in the list of replicated directories.

Instead, we recommend that the Interaction Message Store be located on a network-based file share that is accessible to both servers. If a switchover occurs, the backup CIC server can still reach the message store on the file share, and the site will continue to work.

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 "Anti-virus Scanning and Best Practices" in the "IC Server" section of the *CIC Installation and Configuration Guide*, available in the PureConnect Documentation Library.

Configure IMS mail provider in Setup Assistant

After the IC server software has been installed, select Interaction Message Store in the Mail Provider dialogs in IC Setup Assistant or post-installation in the Interaction Mail Administrator container. Following is the procedure in Setup Assistant.
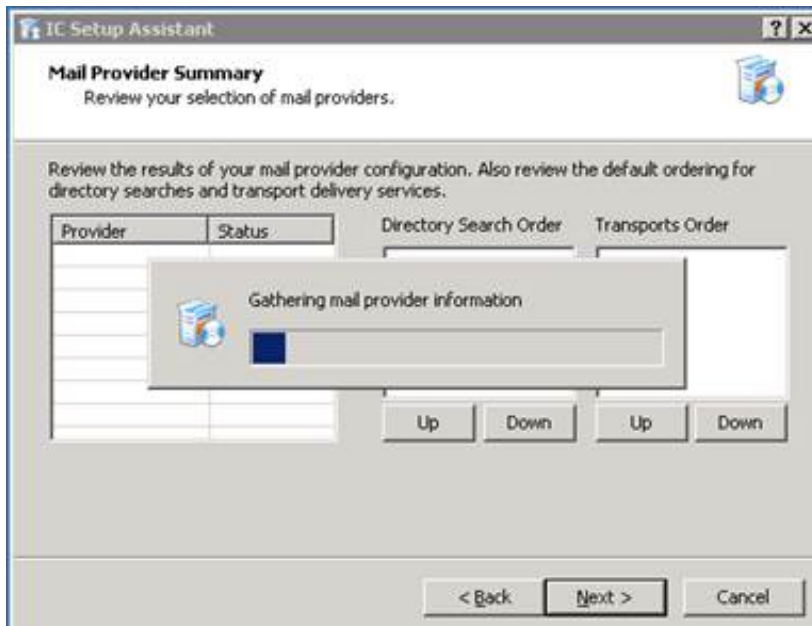
To configure the Interaction Message Store Mail mail provider in Setup Assistant

1. When you run IC Setup Assistant, the program prompts you to **Select Mail Providers**. Select **I want to configure mail providers**, and then select **Interaction Message Store**.
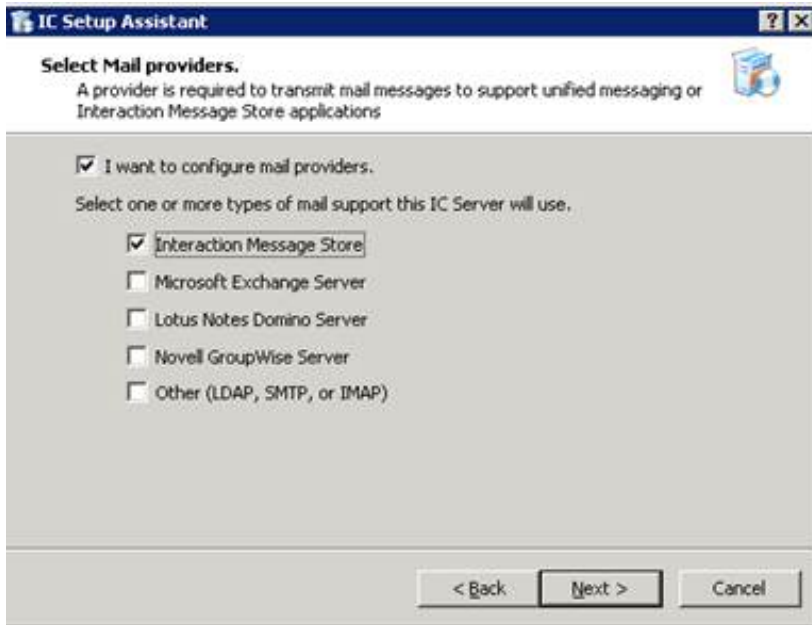

> You can choose other mail providers in addition to Interaction Message Store. For more information, see Multiple mail providers.

2. When you click **Next**, mail provider information is gathered.

3. After the mail provider information has been gathered, it is displayed in the Mail Provider Summary dialog. Confirm that the **Interaction Message Store** check box is checked in the Transports Order field, and click **Next**.
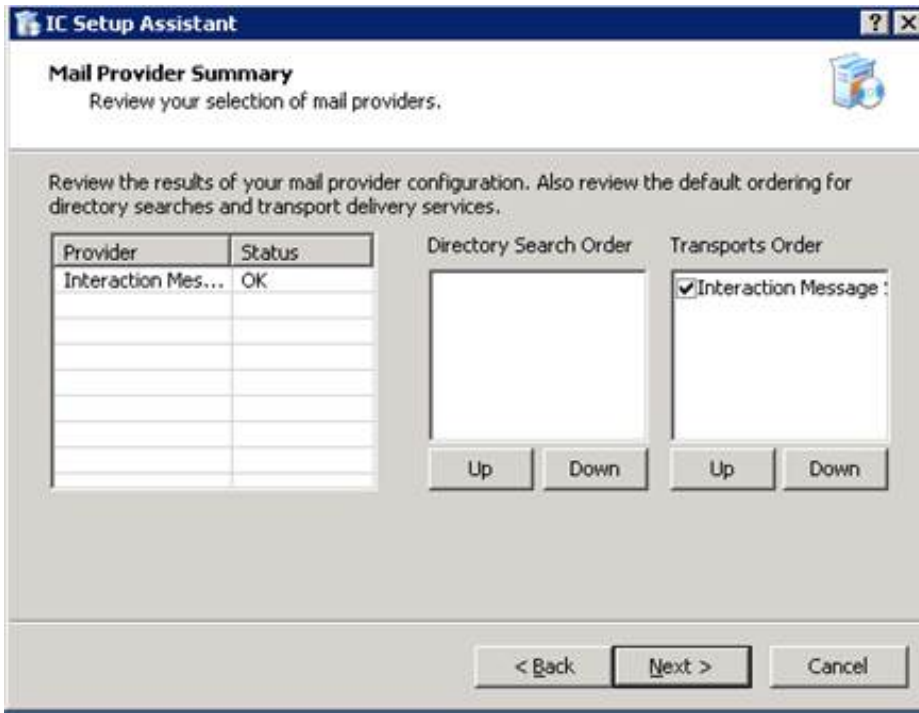
- Interaction Message Store is not listed under Directory Search Order because it does not maintain any contact information.
- Setup Assistant automatically set a default root directory for message storage in `\I3\IC\FBMC` on the CIC Server.

Next steps:
- If you wish change the message store directory 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 do so in Interaction Administrator. See Configure IMS Mail Provider in Interaction Administrator.
- See "Specify message compression rate" in Configure IMS Mail Provider in Interaction Administrator and Manage unused mailboxes for additional message store configuration procedures.
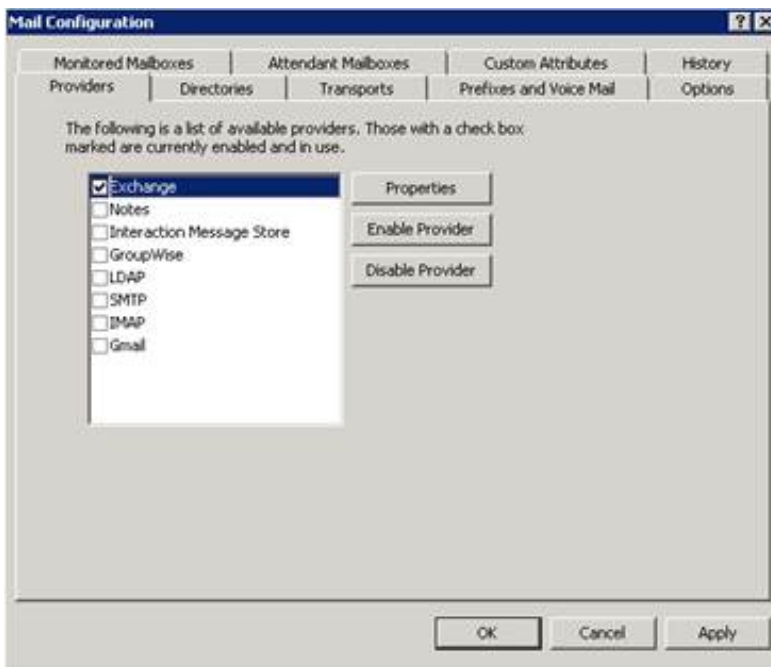
Configure IMS Mail Provider in Interaction Administrator

Complete this procedure to configure Interaction Message Store as mail provider in Interaction Administrator.

1. In Interaction Administrator, click the **Mail** container and double-click **Configuration.**
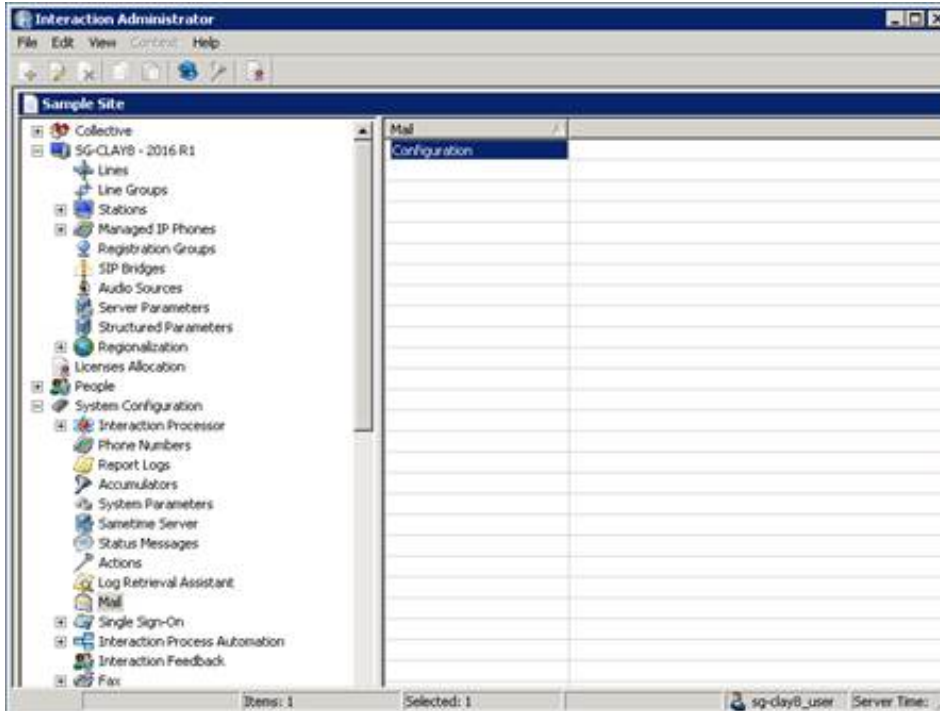
2. The **Mail Configuration** dialog appears. Click the **Providers** tab.

3. Select **Interaction Message Store**, and click **Enable Provider**. The **Interaction Message Store** dialog appears.
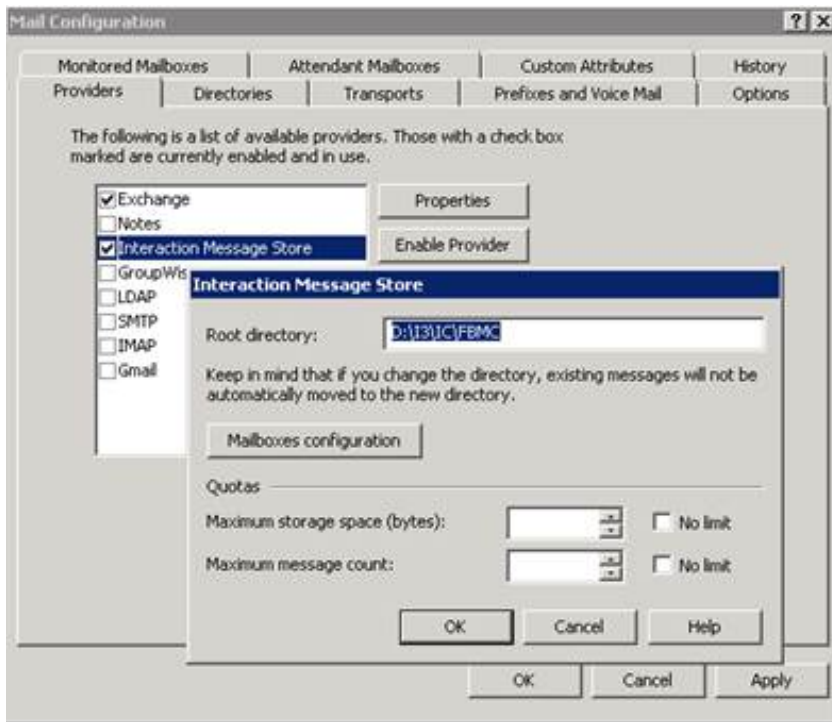
- If you plan to use the **CIC Server** as the message store, accept the default or change the directory path. Do not set the root directory to the root of the drive (i.e., `D:\FBMC`).
- If you plan to use a **network file server** as the message store, use one of the following to specify the UNC path:
  - **UNC Path Using a DNS resolved host**
    Example: `\\fileserver\FBMC`
  - **UNC Path Using an IP address for the host** This method is preferred as it removes a potential point of failure (DNS resolution).
    Example: `\\192.168.2.27\FBMC`

> If you change the directory after it has been used to store messages, existing messages are not automatically moved to the new directory. You must manually copy the messages to the new directory.

Next steps: See "Specify message compression rate" in Configure IMS Mail Provider in Interaction Administrator and Manage unused mailboxes for additional message store configuration procedures.

Specify message compression rate

CIC enables you to choose a compression type for both long and short voice mails. The message compression format determines the size of the message files, and thus the amount of storage space required. Voice mail compression options are configured on the **Prefixes and Voice Mail** tab of the **Mail Configuration** dialog.
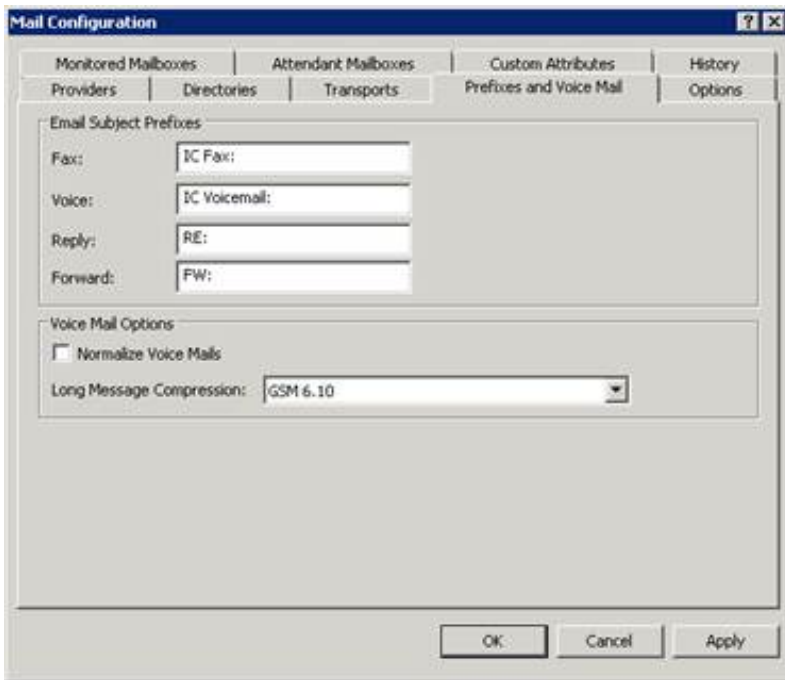
Refer to the following table when choosing a compression format type and its corresponding compression rate.

Associated Compression Format	Compression Rate	Example: 30 second voice mail
DSP Group TrueSpeech	8 kbps	240 kilobits
GSM 6.10 (default)	13 kbps	390 kilobits
G711 Mu-Law PCM	64 kbps	1920 kilobits

Choosing a lower kbps compression rate produces a smaller file, but takes up more processing time. Choosing a higher kbps compression rate takes less processing time, but results in a lager file (in which audio quality may be perceived as better than smaller files). As a general rule, use a faster compression method if speed is important and storage space is not an issue. Use TrueSpeech if you are more concerned with the file size and less concerned about the speed in which recordings get compressed.

Manage unused mailboxes

Administrators can delete unused mailboxes in the **Interaction Message Store Mailboxes Configuration** dialog, available by selecting **Mailboxes Configuration** from the **Interaction Message Store** dialog.
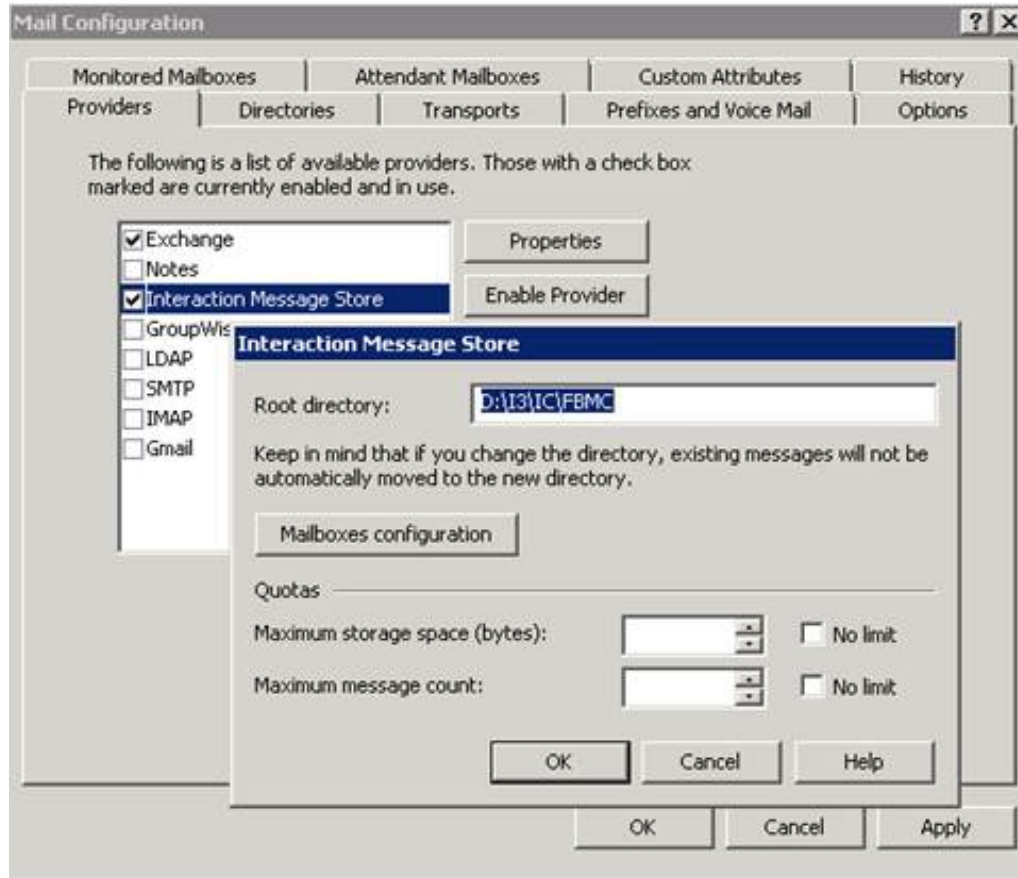
Check **Show Only Unused Mailboxes**, select unused mailboxes from the **Mailbox** list, and click **Delete Mailbox**.

When a mailbox is deleted, the directory structure associated with it still remains. The administrator must manually purge the remaining account data and directory structure associated with the deleted mailbox.

How users access voice mail and fax messages

CIC users can access **voice mail messages** from Interaction Desktop or the telephone user interface (TUI). All voice mail functions, such as Listen, Save, Forward, Skip, Play, and Delete are available.

Fax messages can be viewed from Interaction Desktop or forwarded to another fax number via the TUI.

For a complete list of functions, see *Interaction Desktop help* or the *Interaction Desktop and Telephone User Interface quick reference* materials, available in the **Quick Reference Materials** section of the PureConnect Documentation Library.

Change Log

The following table lists the changes to the *Interaction Message Store Technical Reference* since its initial release.

Date	Changes
01-August-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 PureConnect Product Information site URLs, and copyright and trademark information.
06-October-2015	Updated document to reflect transition to Interaction Desktop in CIC 2015 R3, removal of Interaction Client .NET Edition in CIC 2016 R1, and rebranding in CIC 206 R1.
28-February-2017	Removed all references to quotas, including the "Set message quotas for users" section.
11-May-2018	Rebranded from Interactive Intelligence to Genesys.
25-September-2018	Removed G.726 32 kb/s compression format from Configure IMS Mail Provider in Interaction Administrator topic. Updated link to PureConnect Documentation Library
14-June-2019	Reorganized the content only, which included combining some topics and deleting others that just had an introductory sentence such as, "In this section...".