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# Interaction Optimizer

## Technical Reference

### Abstract

This technical reference document provides configuration details for Interaction Optimizer in Interaction Administrator, including licensing, access and security rights, advanced database configuration, and agent configuration. All other Interaction Optimizer functionality is performed in IC Business Manager.

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# Introduction to Interaction Optimizer

Interaction Optimizer is a workforce management (WFM) software application that simplifies the process of forecasting volumes and scheduling agents in multichannel contact centers.

Interaction Optimizer helps service organizations of all sizes successfully execute customer interaction strategies by aligning available resources with requirements. With Interaction Optimizer, you can:

- Predict and analyze contact volumes, generating more accurate forecasts
- Create and staff schedules using agent schedule preferences or a controlled bid process
- Monitor agent activity, adherence, and operations in real-time
- Achieve service goals across multiple channels

This introduction explains the intended audience for *Interaction Optimizer Technical Reference*, its assumptions about the audience, and where to find more information.

# Intended audience

This guide is intended for the following users:

- **CIC Administrators** - Use this guide to enable Interaction Optimizer license and user rights, workgroup and agent membership, and scheduling units.
- **Scheduling Administrators** - Use this guide as an overview to run and adjust volume forecasts, generate schedules, and process time-off requests.

# Prerequisites

This guide assumes that Interaction Optimizer and other CIC server components are successfully installed on the CIC server.

In addition, this guide assumes that the following role requirements have been met:

- **CIC Administrators** have attended a CIC System Administration class, or have equivalent experience with administering CIC servers using Interaction Administrator.
- **Scheduling Administrators** have attended the Interaction Optimizer training class, or have read *Interaction Optimizer Classroom Manual* for terms, definitions, and background concepts.

## For more information

Be sure to check the Product Release Information page for the latest information on PureConnect:

[https://help.genesys.com/pureconnect/desktop/pureconnect\\_product\\_releases.htm](https://help.genesys.com/pureconnect/desktop/pureconnect_product_releases.htm).

Check the PureConnect Documentation Library on the Genesys website at: <http://help.genesys.com/cic>.

# Interaction Optimizer configuration checklists

*Interaction Optimizer Technical Reference* is designed to enable a CIC administrator or a workforce scheduling administrator to effectively use the various configuration interfaces and procedures in Interaction Administrator and in the Interaction Optimizer module in IC Business Manager. See [Prerequisites](#) for a statement about the prerequisites expected in this guide.

## Initial configuration checklist

For CIC administrators setting up and configuring Interaction Optimizer, the following checklist summarizes the required steps. Each step points to the appropriate documentation for more information.

	Step
<input type="checkbox"/>	<b>Order and generate the Interaction Optimizer license</b> Before the installation, use the Activation File Management tool to manage and configure your PureConnect Interaction Optimizer license. You can access this license tool on the My Support Dashboard at <a href="https://genesyspartner.force.com/customer/GenesysCommunityLogin">https://genesyspartner.force.com/customer/GenesysCommunityLogin</a> . You must have the appropriate credentials to access this portal. See <a href="#">Interaction Optimizer licensing and installation</a> in this document for specific Interaction Optimizer license requirements.
<input type="checkbox"/>	<b>Install CIC</b> Install CIC on the CIC server. See <a href="#">Interaction Optimizer licensing and installation</a> in this document for general installation instructions.
<input type="checkbox"/>	<b>Assign access rights</b> Grant the appropriate users (for example, supervisors, schedule administrator, and so on) rights to configure and use Interaction Optimizer. See <a href="#">Assign access rights</a> and <i>Interaction Administrator Help</i> for instructions.
<input type="checkbox"/>	<b>Configure database options</b> Use the <b>Advanced Configuration</b> dialog box in the <b>Interaction Optimizer Configuration</b> container to configure database options for Interaction Optimizer. These configuration parameters affect the performance of the Interaction Optimizer forecasting and scheduling engine.

## Schedule administration checklist

For the workforce schedule administrator using Interaction Optimizer, the following checklist summarizes some of the required and optional steps. Each step points to the appropriate documentation for more information.

To learn more about each checklist item, see the Interaction Optimizer help in IC Business Manager.

	Step
<input type="checkbox"/>	<b>Day classification configuration</b> Optionally create extra day classifications to identify special days in schedules. See "Manage day classifications" in <i>Interaction Optimizer Help</i> in IC Business Manager for instructions.
<input type="checkbox"/>	<b>Agent configuration</b> Optionally define daily and weekly constraints for individual agents. See "Agents" in <i>Interaction Administrator Help</i> for instructions.
<input type="checkbox"/>	<b>Scheduling unit configuration</b> Create and configure the required scheduling units for this site. All schedules require a scheduling unit. See "Scheduling Units" in <i>Interaction Optimizer Help</i> in IC Business Manager for instructions.
<input type="checkbox"/>	<b>Volume forecast configuration</b> Optionally review historical ACD data and then generate volume forecasts to help determine future workforce needs. See "Forecasts" in <i>Interaction Optimizer Help</i> in IC Business Manager for instructions.
<input type="checkbox"/>	<b>Generate a schedule</b> Based on the headcount forecast data, generate a schedule and review. See "Scheduling" in <i>Interaction Optimizer Help</i> in IC Business Manager for instructions.
<input type="checkbox"/>	<b>Edit the schedule</b> After reviewing the generated schedule, adjust as needed based on information not available to the scheduling engine. See "Scheduling" in <i>Interaction Optimizer Help</i> in IC Business Manager for instructions.
<input type="checkbox"/>	<b>Publish the schedule</b> After incorporating all adjustments, publish the schedule for agents to see. See "Scheduling" in <i>Interaction Optimizer Help</i> in IC Business Manager for instructions.
<input type="checkbox"/>	<b>Process time-off requests</b> As needed, process time-off requests and update the schedule accordingly. See "Time off planning" in <i>Interaction Optimizer Help</i> in IC Business Manager for instructions.



# Interaction Optimizer licensing and installation

This chapter includes the following sections:

- About Interaction Optimizer licenses
- [Install Interaction Optimizer](#)

## About Interaction Optimizer licenses

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### Understanding the concurrent license allocation method

Interaction Optimizer uses the concurrent license allocation method for user access licenses. User access licenses are licenses that control whether or not a user has access to use Interaction Optimizer features in IC Business Manager. This form of licensing allows you to allocate licenses to users only and is based on the number of simultaneous users accessing a feature or function. This license method allows users to acquire available licenses during logon instead of based on configuration. In the concurrent license model, administrators configure the licenses through the Interaction Administrative interface, but Interaction Optimizer does not allocate them until the user logs on to an application. CIC maintains a list of users, available licenses, and licenses in use.

The concurrent license allocation method offers:

- Flexibility and easier administration.
  - Automatic reallocation of licenses based on shift changes.
- 

### Concurrent license acquisition rules

The rules for concurrent license acquisition are:

- A user who logs on to a client application tied to concurrent licenses acquires a concurrent license. When the user logs off, the acquired concurrent license is released. If the user logs on to another machine, the user is logged off the previous machine.
  - If a specific user acquires a license and that license is being reacquired for that same user (by any application on any machine), the previously acquired license is used and the license count is not increased.
  - Licenses for stations cannot be configured as concurrent.
- 

### Access Interaction Optimizer feature licenses

The Interaction Optimizer feature licenses appear in the Features tab of the License Management dialog. To access the **Features** tab, in Interaction Administrator click the **License** button on the Interaction Administrator toolbar, or open the **File** menu, select **License Management**, and then click the **Features** tab. The licenses include:

- I3\_FEATURE\_OPTIMIZER\_BASIC: This is the base feature license for Interaction Optimizer.
- I3\_FEATURE\_OPTIMIZER\_RTA: This feature license enables the Real Time Adherence (RTA) tracking feature.
- I3\_FEATURE\_OPTIMIZER\_ADVANCED: This feature license is not currently used. It will be implemented in a future release.
- I3\_FEATURE\_WFM\_AI\_POWERED: This feature license enables WFM AI-Powered Services. For more information see [PureConnect AI-Powered Workforce Management Technical Reference](#).

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## Review Interaction Optimizer user and station licenses

The Interaction Optimizer User and Station Licenses appear in the Licenses Allocation container and in the Users or Station Configuration Licensing tab:

- **Interaction Optimizer Access Real-time Adherence Tracking (I3\_OPTIMIZER\_SHOWRTA):** This user-only license allows generation of RTA information for each agent. If the agent doesn't have this license, then no RTA exceptions are logged on the database (or appear on RTA reports), and the user's RTA status does not appear in the Real-time Adherence view in IC Business Manager.

**Note:**

Interaction Supervisor views are located in IC Business Manager.

- **Interaction Optimizer Client Access (I3\_ACCESS\_OPTIMIZER):** This user/station license enables agents to view their schedule within the CIC client.
- **Interaction Optimizer Real-time Adherence (I3\_ACCESS\_OPTIMIZER\_RTAA) :** This user/station license is required for a supervisor to view real-time adherence data or actual work in multiple applications, for example, IC Business Manager, CIC client, and Interaction Supervisor.
- **Interaction Optimizer Schedulable (I3\_OPTIMIZER\_SCHEDULABLE):** This user-only license is required if the user is scheduled with Optimizer.

## Install Interaction Optimizer

The Interaction Optimizer subsystem and all of its components are automatically installed on the CIC server during the CIC installation. It is not an optionally installed component. The Interaction Optimizer module is activated in IC Business Manager and the Interaction Optimizer administrative configuration options appear only after a valid CIC license that includes the Interaction Optimizer feature is applied to a properly installed and configured CIC server.

For more information about installing CIC, see [PureConnect Installation and Configuration Guide](#).

# Interaction Optimizer configuration

This chapter discusses the necessary configuration of Interaction Optimizer features in Interaction Administrator. The sections included are:

- Access Rights Assignment
- Advanced Configuration
- Agent Configuration

If a user does not have any Interaction Optimizer Access Control Rights or Security Rights, the Interaction Optimizer workspace does not appear in IC Business Manager. After an administrator grants the user an access control or security right and the user restarts or refreshes IC Business Manager, the Interaction Optimizer workspace appears.

**Note:**

For field-level information on configuration in Interaction Administrator, see the Interaction Administrator help.

## Interaction Optimizer in IC Business Manager

Use the Interaction Optimizer module in the Interaction Center Business Manager application to perform the majority of configuration tasks, including:

- Configure client options
- Configure server options
- Map status messages to activity types
- Manage special days (day classifications)
- Configure scheduling units
- Configure forecast and schedule entries
- Complete the steps to create forecasts and schedules
- Manage time-off requests
- Make normal scheduling edits
- Apply time off requests
- Publish the schedule
- Manage shift trading requests
- View real-time adherence (RTA) events on current or previous schedules
- Use intraday monitoring to compare activity
- Activity Types Configuration
- Day Classification Configuration
- Scheduling Unit Configuration

**Note:**

For more information, see *Interaction Optimizer Help* in IC Business Manager.

## Assign access rights

Interaction Optimizer uses admin access, access control rights, and a security right to control user access to Optimizer functionality in Interaction Administrator, Interaction Optimizer module in IC Business Manager, and the CIC clients. These rights are not displayed unless the Optimizer base feature license has been enabled.

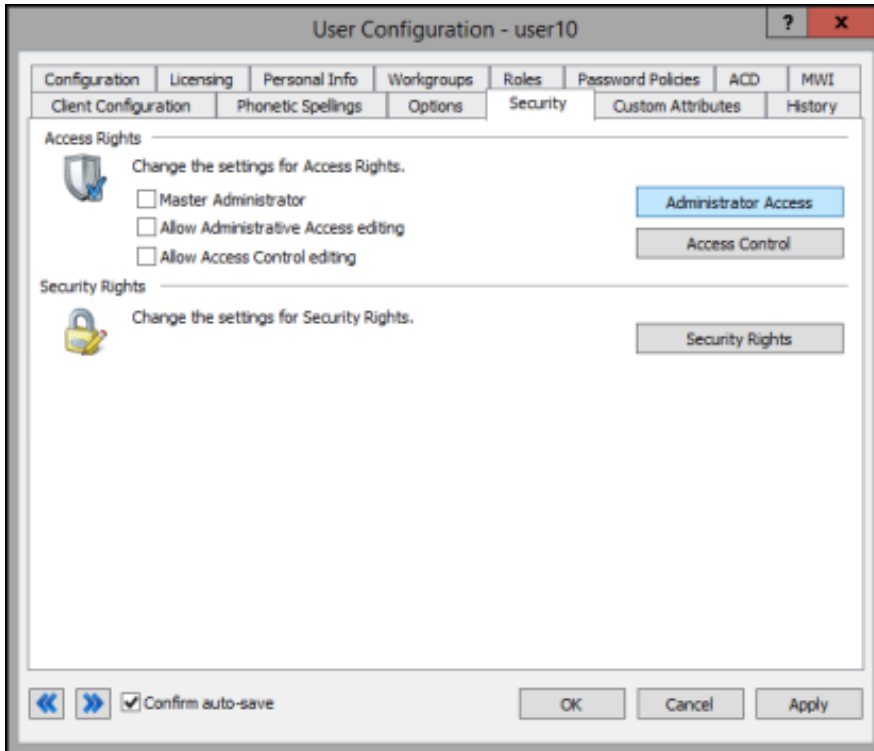
## Assign administrator access

Administrators assign access rights to the Default User, Roles, User, or Workgroup in Interaction Administrator. Interaction Optimizer uses the following admin access rights (typically assigned to a CIC administrator or scheduling administrator), all of which are inheritable (see "Configuration Property Inheritance" in *Interaction Administrator Help* for an explanation of inheritance properties):

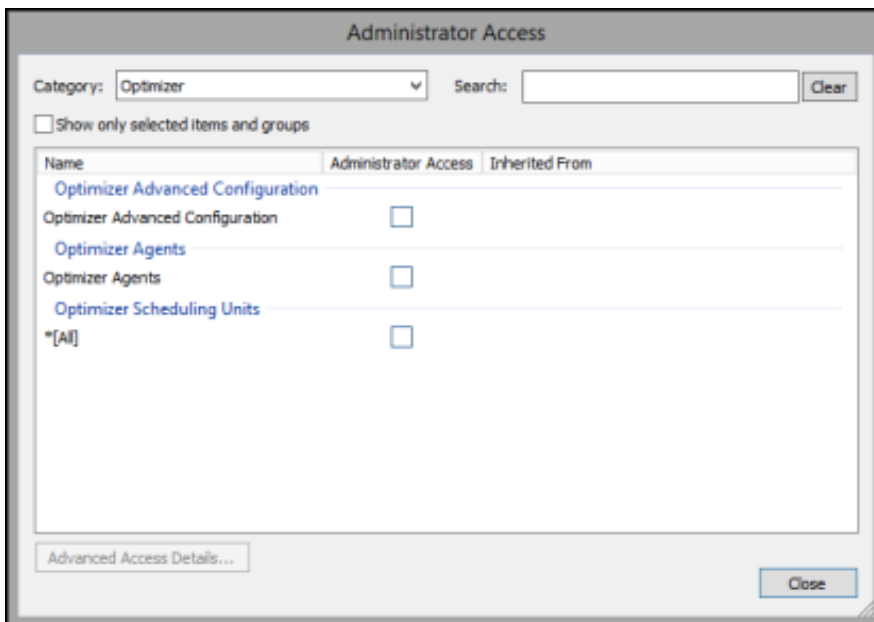
- **Optimizer Advanced Configuration:** This right gives the user access to the **Advanced Configuration** sub-container in the **Interaction Optimizer** node of **Interaction Administrator**, where client, server, and database options are configured.
- **Optimizer Agents:** This right gives the user access the **Agents** sub-container in the **Interaction Optimizer** node of **Interaction Administrator**, where agents are added to Optimizer, and agent constraints are configured.

Assign the administrator access rights

1. Expand the **People** node, select **Users**, and double-click the user to whom you want to assign the right.
2. Click the **Security** tab, and then click **Administrator Access**.



3. Click the arrow at the end of the **Category** drop-down list and select **Optimizer**.



4. Click the check box that corresponds to the right you want to assign the user.
5. Click **Close** and on the **Security** page, click **OK** to save the change.  
The user has access to the selected Interaction Optimizer feature.

## Assign access control rights

Assign access control rights to the Default User, Roles, User or Workgroup in Interaction Administrator.

Access control rights for Optimizer are assigned per scheduling unit, which gives administrators the option of allowing a particular user to view or edit something in one scheduling unit, but not all scheduling units. To grant rights to all scheduling units, select the

[All] checkbox for the appropriate option.

The following access control rights are granted automatically—a user with the **Create** right, but not the **Modify** right, is automatically granted the **Modify** right. In addition, if the user has a **Modify** right but not the **View** right, the system automatically grants **View** rights. The available Interaction Optimizer access control rights are:

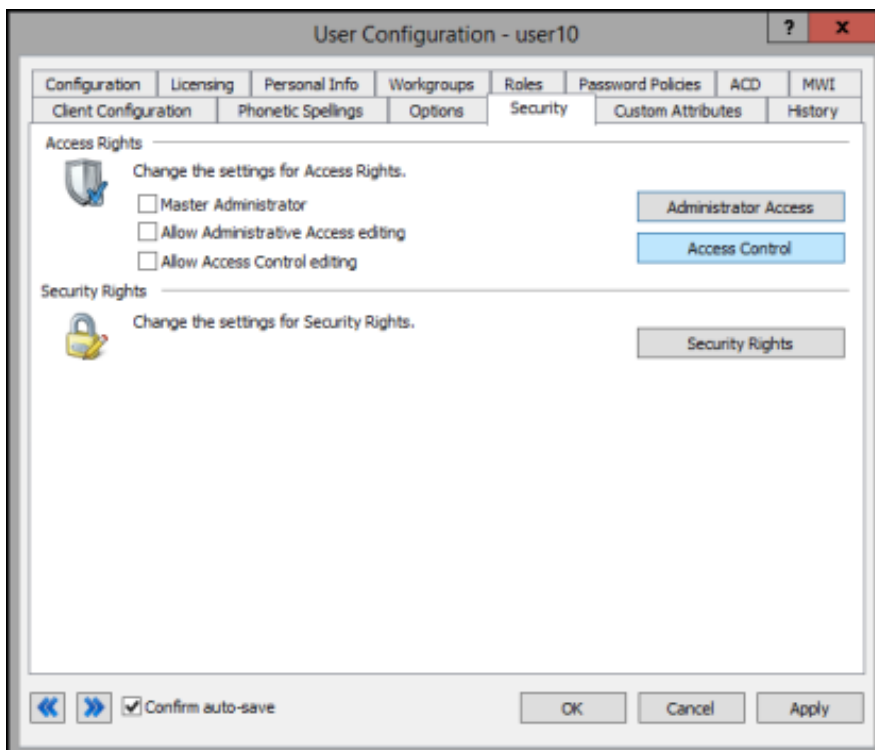
- **Agent Groups:** This right controls the Optimizer agent groups a user can view or modify in the Interaction Optimizer module in IC Business Manager.
- **Forecasts:** This right controls the Forecasts a user can create, view, or modify in the Interaction Optimizer module in IC Business Manager.
- **Interaction Optimizer Master Administrator:** This right assigns master administrator access to Interaction Optimizer module features in IC Business Manager. If a user has master administrator rights, the system grants that user the rights for all other Optimizer access control rights, regardless of the user's other rights settings.

For example, a user with the master administration right for the "Orders" scheduling unit, automatically receives **View, Modify, Create, and Delete** rights for **Agent Groups** in the "Orders" scheduling unit, even if those rights are not selected in the **Agent Groups** area. This feature provides an efficient way to turn on all rights at one time.

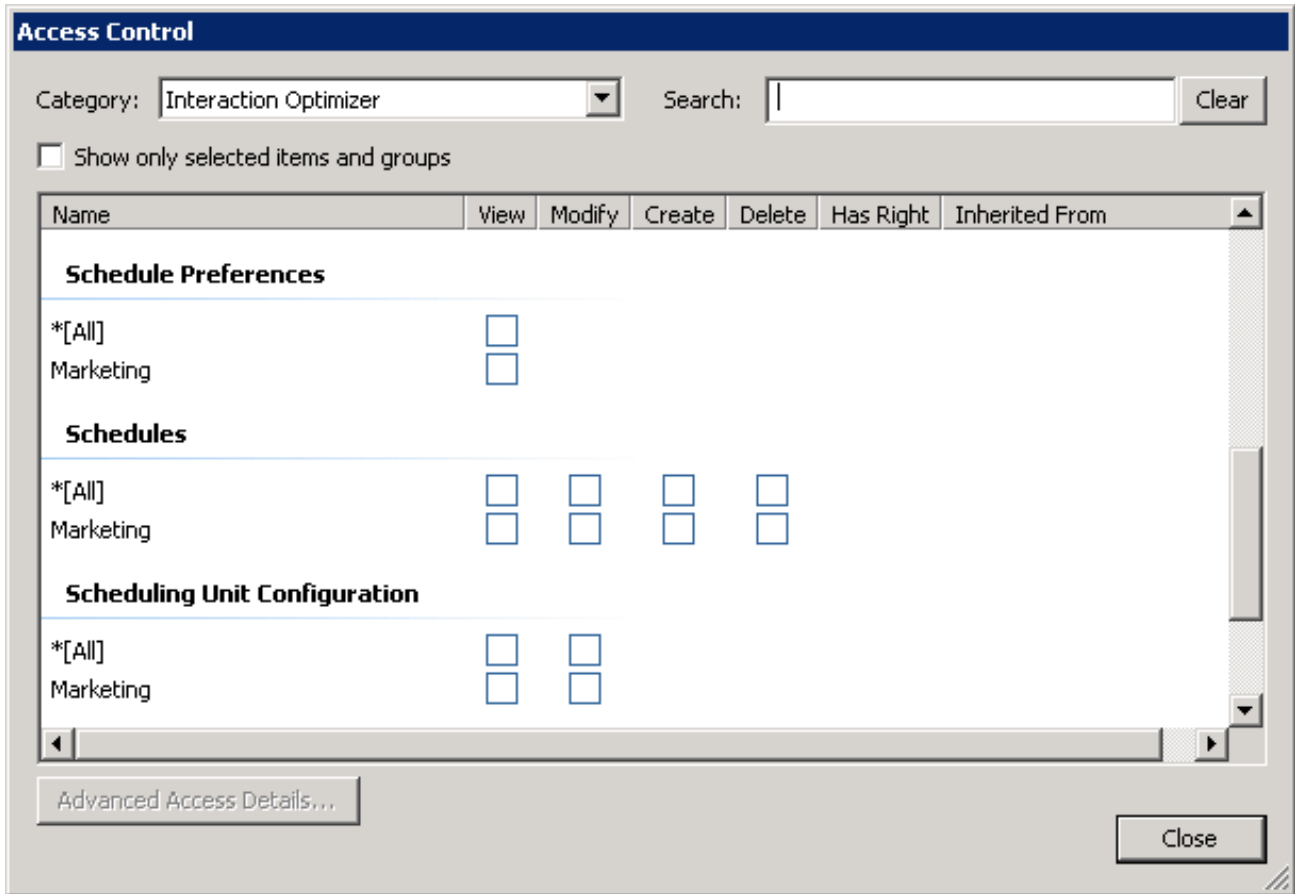
- **Intraday Monitoring:** This right controls whether a user can view Intraday Monitoring in the Interaction Optimizer module in IC Business Manager.
- **Real-time Adherence:** This right controls whether a user can view or modify Real-time Adherence in the Interaction Optimizer module in IC Business Manager.
- **Schedule Preferences:** This right controls whether a user can view scheduling preferences in the Interaction Optimizer module in IC Business Manager.
- **Schedules:** This right controls whether a user can view, modify, create, or delete schedules in the Interaction Optimizer module in IC Business Manager.
- **Scheduling Unit Configuration:** This right controls whether a user can view or modify scheduling unit configuration in the Interaction Optimizer module in IC Business Manager.
- **Shift rotations:** This right controls whether users can view, modify, create, edit, or delete shift rotations in the Interaction Optimizer module in IC Business Manager.
- **Shift Trading:** This right controls whether users can view, modify, create, edit, or delete shift trading requests in the Interaction Optimizer module in IC Business Manager.
- **Shifts:** This right controls whether users can view, modify, create, edit, or delete shifts in the Interaction Optimizer module in IC Business Manager.
- **Time off requests:** This right controls whether users can view, modify, create, edit, or delete time off requests in the Interaction Optimizer module in IC Business Manager.

Assign the Interaction Optimizer access control rights

1. Expand the **People** container, select **Users**, and double-click the user to whom you want to assign the right.
2. Click the **Security** tab, and then click **Access Control**.



- Click the arrow at the end of the **Category** drop-down list and select **Interaction Optimizer**.



- Scroll to the appropriate access control right, select the check box for the specific rights you want to assign to the user.
- Click **Close** and on the **Security** page, click **OK** to save the change.  
The user now sees the selected Optimizer plug-ins in IC Business Manager.

## Assign security rights

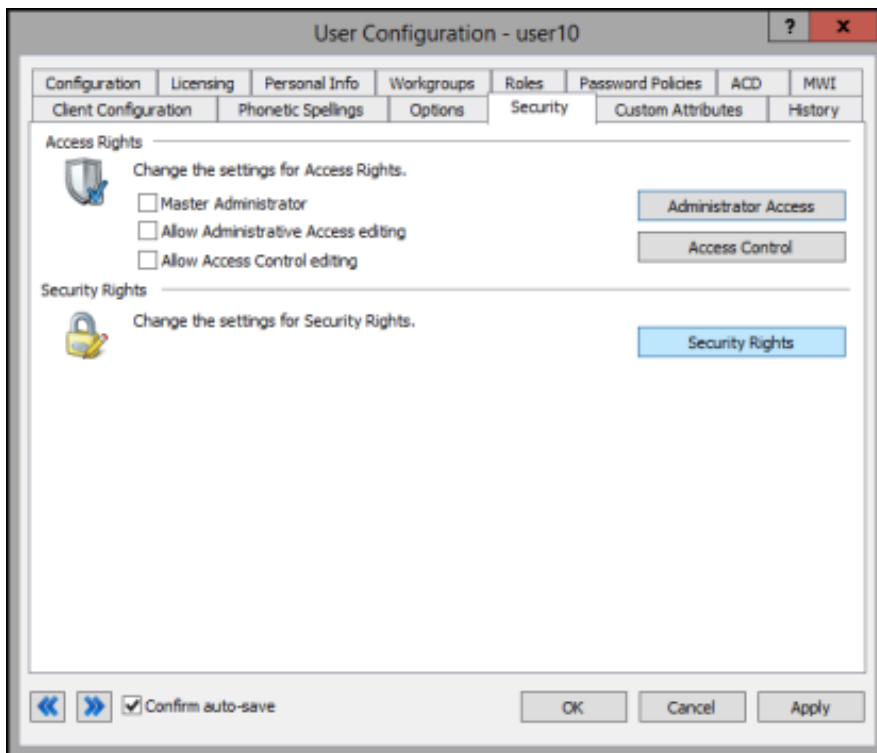
Security rights can be assigned to the Default User, Roles, User or Workgroup in Interaction Administrator. Interaction Optimizer uses the following security rights:

- **Agent can bid on schedules:** This right controls whether the **Schedules for Bidding** dialog is displayed and available for the agent in the CIC client and allows the agent to rank proposed schedules and submit bids for preferred schedules.
- **Agent can see rank:** This right controls whether an agent can see his or her rank in a submitted schedule bid, but not the number of agents also bidding on the same schedule, in the CIC client.
- **Agents can see relative rank:** This right controls whether an agent can see his or her ranking relative to the group of agents bidding for the same preferred schedule. For example, an agent can see if he or she is 4 out of 10 agents bidding for a preferred schedule.
- **Agent can specify schedule preferences:** This right controls whether the **Schedule Preferences** menu option is displayed and available for the agent in the CIC client. This right allows the agent to submit scheduling preferences through the client. The agent uses pre-defined work preference types to describe preferred schedules and indicate these work preferences in fixed intervals. An interval can be as short as 15 minutes or as long as the agent requires. This right is inheritable.
- **Agent can submit time off:** This right controls whether a user can submit time off in the CIC client.
- **Agent can trade shifts:** This right controls whether a user can trade shifts in the CIC client.
- **Can create activity codes:** This right controls whether a user can create activity codes in the IC Business Manager's Optimizer view.
- **Can create day classifications:** This right controls whether a user can create day classifications in the IC Business Manager's Optimizer view.
- **Can create scheduling units:** This right controls whether a user can create his or her own scheduling units in in the IC Business Manager's Optimizer view.
- **Can delete activity codes:** This right controls whether a user can delete activity codes in the IC Business Manager's Optimizer view.

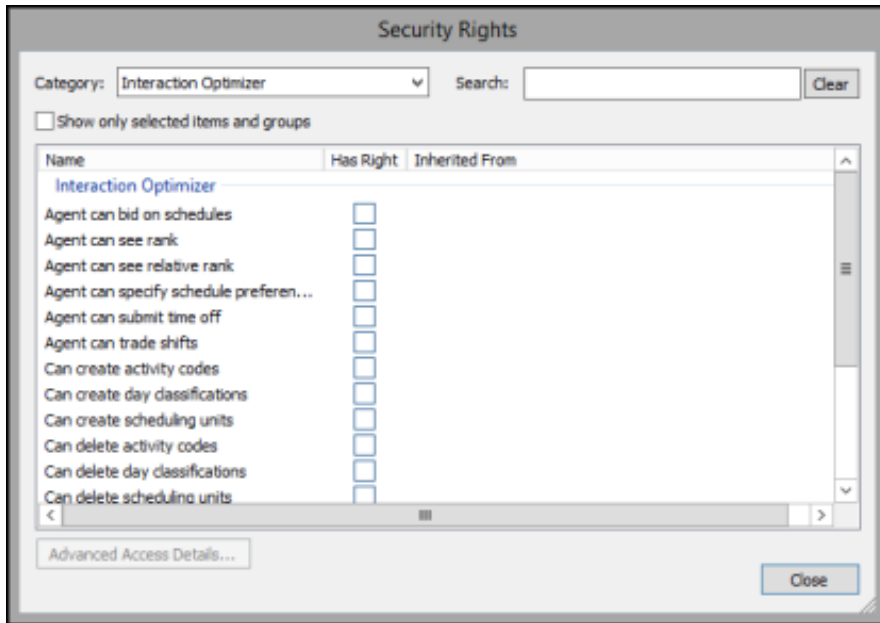
- **Can delete day classifications:** This right controls whether a user can delete day classifications in the IC Business Manager's Optimizer view.
- **Can delete scheduling units:** This right controls whether a user can delete a scheduling unit in Interaction Administrator.
- **Can modify activity codes:** This right controls whether a user can modify activity codes in Interaction Administrator.
- **Can modify activity types mapping:** This right controls whether a user can modify activity types mapping in IC Business Manager.
- **Can modify day classifications:** This right controls whether a user can modify day classifications in IC Business Manager.
- **Can view activity codes:** This right controls whether a user can create activity codes in the IC Business Manager's Optimizer view.
- **Can view activity types mapping:** This right controls whether a user can view activity types mapping in the IC Business Manager's Optimizer view.
- **Can view day classifications:** This right controls whether a user can view day classifications in the IC Business Manager's Optimizer view.

### Assign security rights

1. Expand the **People** container, select **Users**, and double-click the user to whom you want to assign the right.
2. Click the **Security** tab, and then click **Security Rights**.



3. Click the arrow at the end of the **Category** drop-down list and select **Interaction Optimizer**.



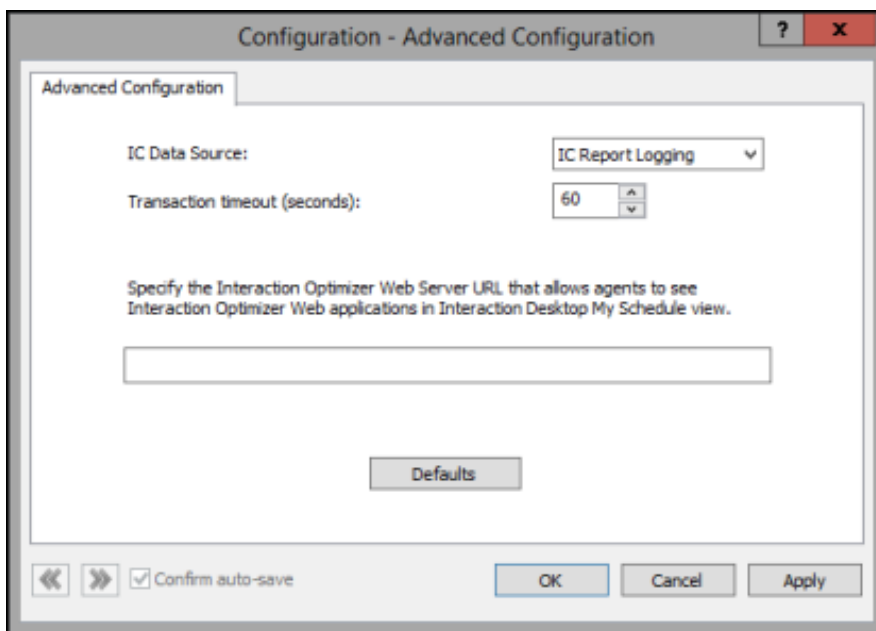
4. In the **Interaction Optimizer** section, select the check box that corresponds to the security right you want to assign the user.
5. Click **Close** and on the **Security** page, click **OK** to save the change. The user has access to the selected Interaction Optimizer feature in the CIC client, IC Business Manager, and Interaction Administrator.

## Advanced data source configuration

Interaction Optimizer uses the settings in the **Advanced Configuration** sub-container in the **Interaction Optimizer** container to configure the behavior of the Interaction Optimizer data source and database transactions.

### Access the Advanced Configuration dialog box

1. In Interaction Administrator expand the **Interaction Optimizer** node, and click **Configuration**.
2. In the right pane double-click **Advanced Configuration** . The **Configuration – Advanced Configuration** dialog opens:





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## About advanced configuration

Best practice recommends you use the default settings created during installation. Do not change these values unless requested to do so by a certified PureConnect Customer Care Representative.

Field	Description
IC Data Source	The data source that Interaction Optimizer uses to locate the tables of data necessary to generate volume and headcount forecasts, and to generate schedules. The data source is set during installation.
Transaction Timeout (seconds)	The number of seconds before a database transaction will timeout. Database performance could be involved in a transaction timeout, but there could also be overall databases problem, network load issues, etc. The default value for this setting is 10 seconds. Acceptable values are 10 through 3600 seconds.
Web Server URI for Interaction Client .NET	Adding the URL for Interaction Optimizer - Web Edition allows agents the My Schedule view from Interaction Optimizer - Web Edition in the CIC client. When you specify the URL for Interaction Optimizer - Web Edition, the CIC client no longer displays the .NET version of the My Schedule view.
Defaults	Return these settings to the default values.

## Agent configuration

Interaction Optimizer uses the settings in the Agents – Configuration dialog box to add agent schedule exceptions (constraints) to weekly shift definitions. The scheduling engine uses these settings when it generates schedules for agents. For example:

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### Daily agent constraint example

John Smith is one of many agents who are assigned to a weekly shift definition. However on Tuesdays, John must leave an hour early (4:00 P.M.) to attend physical therapy sessions. You can add this exception as a *Daily Agent Constraint* by setting the **Latest Shift Stop Time** value to 4:00 P.M.

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### Weekly agent constraint example

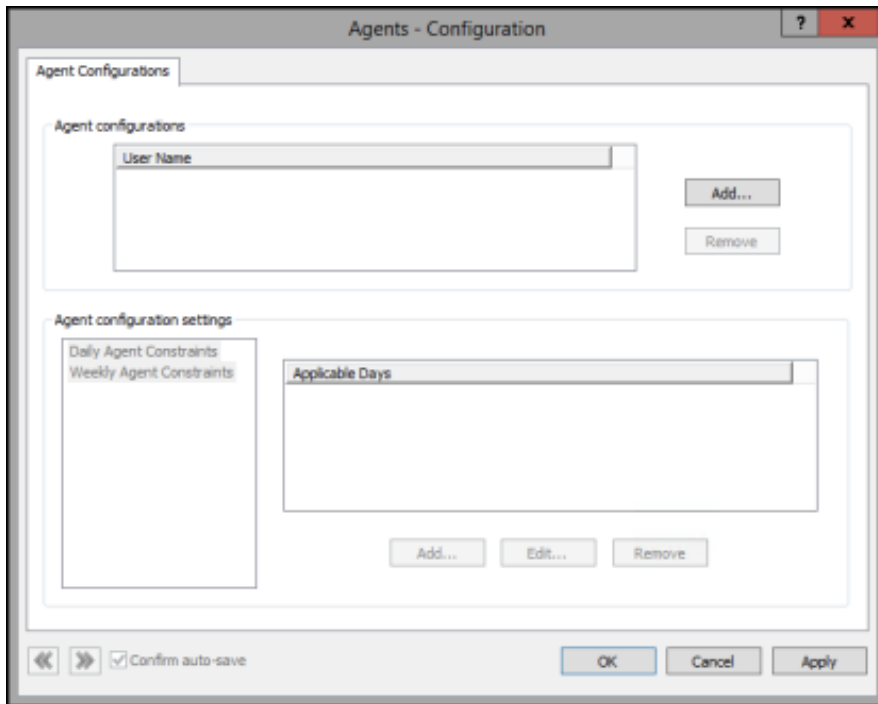
Sally Jones is normally paid for 40 hours a week. She is one of many agents assigned to a weekly shift definition. However every day of the week for several weeks, Sally will be attending a "Lunch and Learn" session during her lunch break. These sessions are considered paid time. You can add this exception as a *Weekly Agent Constraint* by setting the **Minimum Paid Time** value to 45 hours.

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## Access the Agents–Configuration dialog box

1. In Interaction Administrator expand the **Interaction Optimizer** node.
2. Expand the **Configuration** node and select **Agents**.
3. In the right pane, double-click **Configuration**.

The **Agents–Configuration** dialog opens:



### Add an agent

The **User Name** box contains the names of the agents for whom agent schedule exceptions have been configured.

1. In the **Agent configurations** area, click **Add**.  
The **Available Users** dialog box opens.
2. Select the names of the agents for whom agent schedule exceptions have been configured and click **OK**.

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## Agent configuration settings–Daily Agent Constraints dialog box

Configure the availability constraints for the selected agent. Occasionally, agents have work schedule conflicts that need to be accounted for in the shift schedule. These conflicts are less common to schedule around than the more general shift constraints that apply to everyone.

Interaction Optimizer uses the most constrained value of the daily agent availability constraints and the daily shift constraints, using the maximum of the minimums and the minimums of the maximums.

For example, if an agent's minimum paid time in the daily agent availability constraint has a value of 0, but the agent's minimum paid time in the daily shift constraint has a value of 2, the daily shift constraint value of 2 is used because it's more constrained.

Field	Description
Shift configuration	<p>In this section, set start, stop and paid time for this agent. Hours and minutes can be specified in each field. Click on the hours position or the minutes position, then click the up or down arrow keys. Each active day that is assigned a constraint, is listed as an <b>Active Day</b> in the <b>Agent Configuration</b> dialog box.</p> <ul style="list-style-type: none"> <li>• <b>Earliest Shift Start Time.</b> Select this check box to set the earliest time in the AM or PM hour this agent will be allowed to start the shift. 8:00 AM is the default value for this setting.</li> <li>• <b>Latest Shift Stop Time.</b> Select this check box to set the latest time in the AM or PM hour this agent can end the shift. 5:00 PM is the default value for this setting.</li> <li>• <b>Minimum Paid Time.</b> Select this check box to set the minimum time in hours this agent can be paid for this shift. 4 hours is the default value for this setting. For example, a value of 0 means that the agent is not required to have any paid time for that day.</li> <li>• <b>Maximum Paid Time.</b> Select this check box to set the maximum time in hours this agent can be paid for this shift. 10 hours is the default value for this setting.</li> </ul>
Applicable if scheduled on	Select the days that this agent is available for a shift.
Activities	This section lists the scheduled activities during a shift for the selected agent. The <b>Activity Type</b> , <b>Earliest Start</b> , <b>Latest Start</b> , and <b>Activity Length</b> are displayed. Click <b>Add</b> to add a new activity, click <b>Edit</b> to change the existing activity, or click <b>Remove</b> to remove an activity for the selected agent.

## Agent Activity Configuration dialog box

The **Agent Activity Configuration** dialog box opens when you click **Add** in the **Activities** area of the **Daily Agent Availability** dialog box. Use this page to configure an agent activity. An agent activity is an activity that a specific agent completes during the agent's shift. An agent activity is different than a shift activity. A shift activity is a reoccurring activity for all agents in the shift. The settings for agent activities either compliment or override the settings for shift activities.

Field	Description
Activity Type	Select an activity type from the list. Activity types are mapped to agent status in <b>Activity Types</b> .
Length	Set the duration of the activity. Use the format HH:MM. The default length is 1 hour. The minimum length is 5 minutes.
Start Time Configuration	Use the section to specify the start time settings for this activity for this agent. Select the hour or minute position to change the time.
Use Relative Times	Select this check box to use times relative to start times. If selected, <b>Earliest Start Time From Shift Start</b> and <b>Latest Start Time From Shift Start</b> appear below. If this check box is not selected, absolute times are used. Absolute times are represented by A.M. and P.M. If the agent is assigned different shifts, then use relative time so that the settings are valid for all of the agent's shifts. For example, select 2:00 hours from shift start rather than 10:00 A.M.
Earliest Start Time (From Shift Start)	Select the hour or minute position, and then use the up and down arrows to set the earliest time this activity can start. The default value for this field is 8:00 A.M.
Latest Start Time (From Shift Start)	Select the hour or minute position, and then use the up and down arrows to set the latest time this activity can start. The default value for this field is 9:00 A.M.
Start Time Increment	<p>Select the hour or minute position, and then use the up and down arrows to set the increment in minutes that this activity can start. The default value for this field is 15 minutes. The system uses this increment during schedule generation. To avoid excessive work or time for schedule generation, the number of possible start times cannot exceed 50.</p> <p>For example, if the earliest activity start time is 9:00 A.M., the latest start time is 10:15 A.M., the start time increment is 15 minutes, and the length is 15 minutes, then the scheduling process would first try scheduling this activity at 9:00, then at 9:15, then at 9:30 and so on every 15 minutes until 10:15.</p>

Counts Toward Paid Time	Select this check box if this activity counts toward paid time. For example, lunch is normally not considered paid time.
Counts Toward Contiguous Work Time	Select this check box if this activity counts toward contiguous work time. For example, if an agent needs to attend a meeting from 7:00 A.M. to 8:00 A.M. and then start a shift at 8:00 A.M., this meeting is considered contiguous work time. Schedule generation uses this setting when it assigns activities to an agent. It factors in the minimum and maximum contiguous work time constraints settings in <b>Daily Shift Constraints</b> .
Replaces Shift Activity of the Same Type	Select this check box if this activity should replace another activity of the same type. For example, if this is a lunch activity type, and an agent needs to take lunch exactly at 12:00 P.M., but the weekly shift definition specifies lunch anytime between 11:30 and 1:30, then the schedule generation will force the lunch activity in the 12:00 to 1:00 time slot.  If this check box is not selected and this activity type exists in the <b>Activities</b> section of the <b>Daily Shift Constraints</b> , then the agent will have this activity scheduled in addition to existing activities. By default, this check box is not selected.
Attendance Requirement Type	Select any of the following values: <ul style="list-style-type: none"> <li>• <b>Unspecified</b> - This is the default selection. This option does the following things: <ul style="list-style-type: none"> <li>◦ Discards schedules that have skipped agent activities (all remaining activities to be scheduled do not have a start time greater than or equal to the current time).</li> <li>◦ Suppresses schedules that end in agent activities that are both non-paid and non-contiguous.</li> <li>◦ Suppresses schedules that have unscheduled agent activities that are both paid and contiguous.</li> </ul> </li> <li>• <b>Do Not Schedule</b>: This option causes the scheduling engine to ignore this agent activity.</li> <li>• <b>Optional</b>: This option causes the scheduling engine to keep schedules that meet minimum constraints and that have optional, unscheduled agent activities.</li> <li>• <b>Include</b>: This option causes the scheduling engine to discard potential schedules that do not contain the scheduled agent activity.</li> </ul> <p><b>Note:</b> If required <b>Include</b> activities occur during a paid time-off request, then the required activities are ignored. Instead, a schedule containing the time-off request is created.</p>
Description	Enter a description of the activity. You can enter up to 2000 characters. The description appears in a tooltip when a user moves their cursor over an activity in a schedule in Interaction Administrator or Interaction Client. It also appears if you double-click an activity to edit it.

## Configure daily agent availability constraints

1. In the **Agent configuration settings** area, select **Daily Agent Constraints** and do one of the following:
  - To add a constraint, click **Add**. Complete the Daily Agent Availability Constraints dialog box.
  - To edit a constraint, select the constraint and then click **Edit**.
  - To remove a constraint, select the constraint and then click **Remove**.
2. Click **OK**.

## Agent configuration settings—Weekly Agent Constraints dialog box

Weekly Agent Constraints specify the requirements for paid time, shift time, and shift days for the selected weekly shift definition:

**Note:**

There are default values for each configurable item, however the defaults are not enabled unless you select the corresponding check boxes. By default, the scheduling engine uses the maximums of the maximums and minimums of the minimums to generate schedules for agents.

Field	Description
<b>Minimum Paid Time</b>	Select this check box to set the agent's desired minimum number of paid hours per week. In the box, type any value between 0 and 168. The default value is 20 hours.
<b>Desired Maximum Paid Time</b>	Select this check box to set the agent's desired maximum number of paid hours per week. In the box, type any value between 0 and 168. The default value is 40 hours. For example, an agent might want to work 50 paid hours a week to earn extra income.  <b>Note:</b> If the desired service level cannot be met, the scheduling process schedules agents above their maximum number of desired paid time hours.
<b>Absolute Maximum Paid Time</b>	Select this check box to specify the agent's absolute maximum paid time in hours per week. In the box, type any value between 0 and 168. The default value is 50 hours. For example, a company may not allow any agent to work more than 40 paid hours a week.  <b>Note:</b> The scheduling process observes the absolute maximum paid time hours regardless if the agents can meet the desired service level.
<b>Minimum Time Between Shifts</b>	Select this check box to set the minimum number of hours between shifts for the agent. In the box, type any value between 0 and 168. The default value is 12 hours. For example, a company might allow agents to work a 3:00 P.M. to 11:00 P.M. shift on Monday, and then another shift at 7:00 A.M. to 3:00 P.M. on Tuesday. In this case, set the minimum time between shifts to 8 hours.
<b>Maximum Days</b>	Select this check box to set the maximum number of days that the agent can work. In the box, type any value between 1 and 7. The default value is 7 days.

### Configure weekly agent constraints

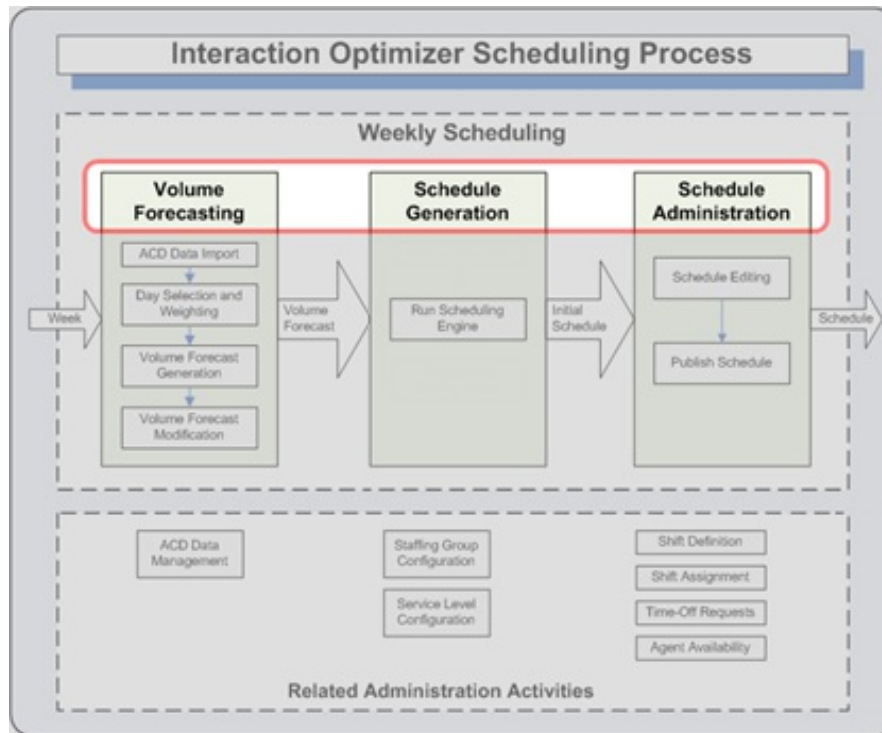
1. In the **Agent configuration settings** area, select **Weekly Agent Constraints**.
2. Specify the requirements for paid time, shift time, and shift days for the selected weekly shift definition.
3. Click **OK**.

# Working with the scheduling process

The schedule administrator is responsible for reviewing ACD data, configuring and adjusting interaction volume forecasts, generating and adjusting the schedule, publishing the schedule and processing time-off requests.

## Phases of the scheduling process

The Interaction Optimizer scheduling process includes three distinct phases:



- **Volume Forecasting** – Interaction Optimizer calculates the number of interactions per route group per time slice based on historical ACD data. Administrators can manually adjust the volume forecast after it is generated, as necessary.

**Note:**

A route group is a group of interactions which share requirements for workgroup, skill set, and media type. See [Understanding route groups](#) for more details.

- **Schedule Generation** – Interaction Optimizer uses the volume forecast along with the weekly and daily shift definitions (and associated constraints and activities), agent constraints, and activities, and accepted time off requests to arrive at a generated schedule.
- **Schedule Administration** – The schedule administrator alters the generated schedule in Interaction Optimizer Administration as necessary, and publishes it from there to the agents. For more information, see the Interaction Optimizer help in IC Business Manager.

# Understanding the role of the scheduling unit in the scheduling process

The entire schedule creation process is based on a scheduling unit. Scheduling units partition workgroups, interactions, and users into logical groups that represent a set of things that are scheduled together. Scheduling units enable you to create, manage and view forecasts, schedules and adherence events for a group of workgroups as a single unit.

Create scheduling units in IC Business Manager from the Interaction Optimizer **Home** page. For more information, see "Create a new scheduling unit" in *Interaction Optimizer Help*.

A scheduling unit encompasses a single contact center or site. It is not a method of partitioning workgroups within a contact center. Interaction Optimizer can produce forecasts and schedules for more than one contact center. If your company has two or more distinct contact centers, not sharing resources and not processing the same set of interactions, then you can create separate scheduling units for each separate contact center. You can create multiple scheduling units for the same contact center or site if the types of interactions are different.

If you have installed Interaction Multi-Site to link two or more CIC contact centers, you use separate scheduling units to create forecasts and schedules for each contact center/site.

**Note:**

See *CIC Multi-Site Technical Reference* in the **Technical Reference Documents** section in the [PureConnect Documentation Library](#) on the CIC server for more details on multi-site installation and configuration.

## Agents and workgroup relationships

An agent can be a member of more than one workgroup. If all the workgroups to which the agent belongs are contained in the same scheduling unit, Interaction Optimizer schedules the agent according to the rules in the scheduling unit's weekly shift definition parameters or the daily and weekly agent constraints.

When the agent's workgroup assignments cross scheduling units, since the agent can only be assigned to one weekly shift definition at a time, Interaction Optimizer schedules the agent in the scheduling unit which contains the weekly shift definition to which the agent has been assigned.

## Understanding route groups

A route group is a group of interactions which share requirements for workgroup, media type, and skill set. Route groups are not explicitly configured in Interaction Optimizer; however they are based on historic ACD data and are used in volume and headcount forecasting.

## Adjustments to the volume forecast

In addition to historical data, several factors are taken into account when local forecasting interaction volume for a specified time slice. The schedule administrator can affect the volume forecast by changing:

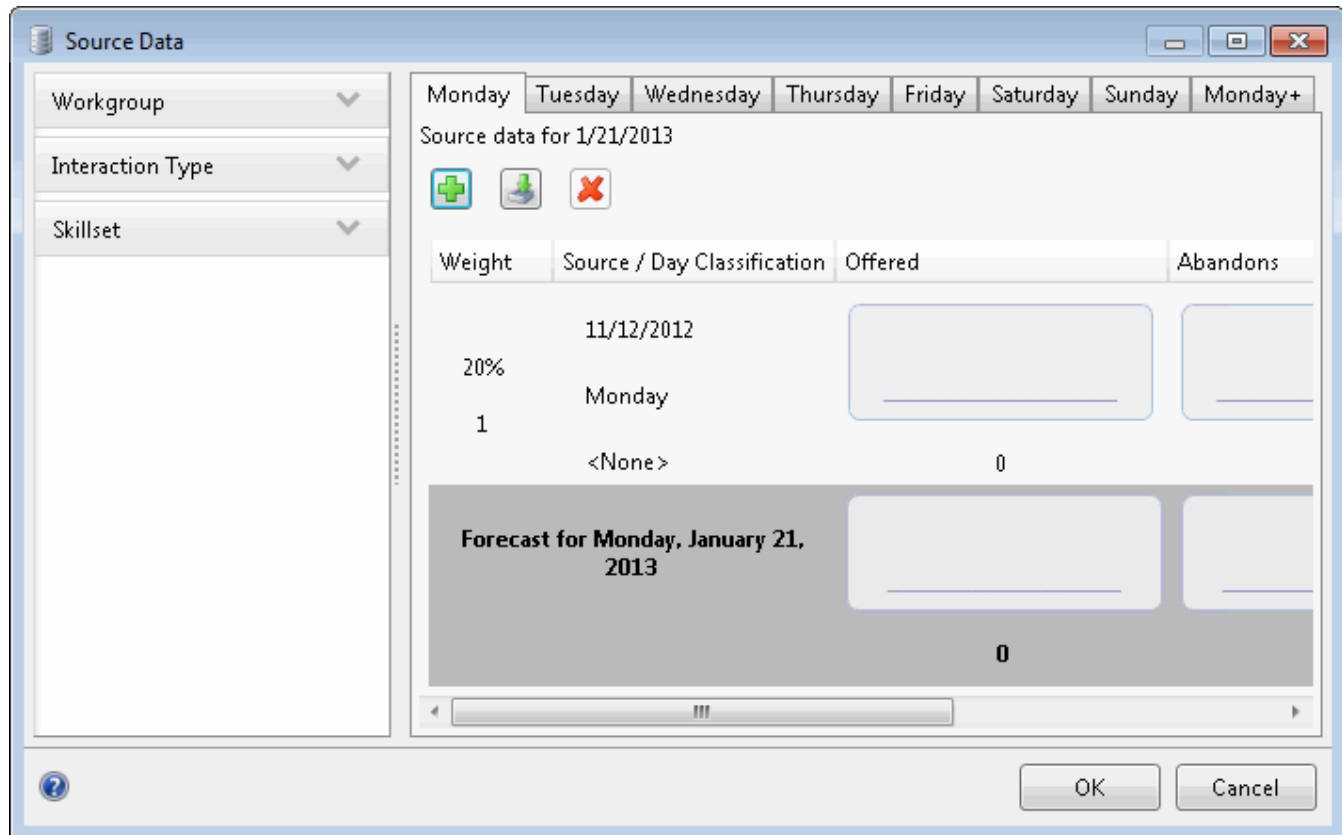
- The number of historical weeks' data used to forecast the next week's schedule.
- The days used as the historical basis for the volume forecast.
- The weight applied to a specified day's data.

After the volume forecast is generated, the schedule administrator can adjust values for the anticipated number of interactions, average talk time, or after call work (ACW) time. This enables you to adjust for factors that may not be reflected in the historical data, such as new employees, holidays, product releases, marketing campaigns. You can also adjust the volume forecast to compensate for incomplete historical data if there was an interruption in the interaction data collection process.

AI-powered forecasting determines the source data to use for a forecast. Therefore, the ability to configure the data and add days to a forecast does not apply to AI-Powered forecasts.

## Review historical source data

For a local forecast, you can view a graphical representation of such historical data as interactions, average handle time, and so on in the **Source Data** dialog box in the **Interaction Optimizer** module of **IC Business Manager**. Information in this dialog box helps you determine which days to choose and how to weigh or remove data. The **Source Data** dialog is unavailable for an AI-powered forecast.



For more information about reviewing and managing source data, see *Interaction Optimizer Help* in IC Business Manager.

## Generate and modify a volume forecast

After you select and adjust the historical data for your new schedule, you can forecast the volume of interactions for the period covered by this new schedule.

Headcount forecasting is not part of the Interaction Optimizer module for IC Business Manager. Interaction Optimizer creates the headcount forecast automatically and cannot be manually edited, making it easier to create a schedule.

For detailed information about generating and modifying forecasts, see the Interaction Optimizer help in IC Business Manager.

## Export and import volume forecast data

Export forecast data from a local forecast or an AI-powered forecast in the Interaction Optimizer module of IC Business Manager. Data can be exported into or imported from an Excel spreadsheet.

Import local forecast data in the Interaction Optimizer module of IC Business Manager. You can import data from an Excel spreadsheet for a local forecast. You cannot import data for an AI-powered forecast.

This section details the format and content of data exported from the **Volume Forecast** dialog box.

The following illustration shows data exported into an Excel spreadsheet:



ExampleForecastExport - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Add-Ins Acrobat

Calibri 11 A A Wrap Text General

Paste B I U Merge & Center \$ % .00 .00 Conditional Formatting Format as Table Cell Styles Insert Delete Format Sort & Filter Editing

Clipboard Font Alignment Number Styles Cells

I7 0

	A	B	C	D	E	F	G	H	I	J	K
1	Interval Start UTC Date	Duration in Seconds	Workgroup Name	Interaction Type	Skill Set	Number of Interactions	Completed	Average Talk Time in Seconds	Average ACW Time in Seconds	Abandons	Number ACW
2	10/8/2012 12:00 PM	1800	Packaging/Packaging Supplies	Chats	-	8	5	389.8	0	0	0
3	10/8/2012 12:30 PM	1800	Packaging/Packaging Supplies	Chats	-	14	12	621.83	0	0	0
4	10/8/2012 1:00 PM	1800	Packaging/Packaging Supplies	Chats	-	18	16	673.94	0	0	0
5	10/8/2012 1:30 PM	1800	Packaging/Packaging Supplies	Chats	-	22	20	728.8	0	0	0
6	10/8/2012 2:00 PM	1800	Packaging/Packaging Supplies	Chats	-	29	29	610.31	0	0	0
7	10/8/2012 2:30 PM	1800	Packaging/Packaging Supplies	Chats	-	25	26	614.73	0	0	0
8	10/8/2012 3:00 PM	1800	Packaging/Packaging Supplies	Chats	-	33	31	568.58	0	0	0
9	10/8/2012 3:30 PM	1800	Packaging/Packaging Supplies	Chats	-	30	33	567.21	0	0	0
10	10/8/2012 4:00 PM	1800	Packaging/Packaging Supplies	Chats	-	29	29	564.17	0	0	0
11	10/8/2012 4:30 PM	1800	Packaging/Packaging Supplies	Chats	-	29	30	568.37	0	0	0
12	10/8/2012 5:00 PM	1800	Packaging/Packaging Supplies	Chats	-	30	30	554.97	0	0	0
13	10/8/2012 5:30 PM	1800	Packaging/Packaging Supplies	Chats	-	37	29	613.66	0	0	0
14	10/8/2012 6:00 PM	1800	Packaging/Packaging Supplies	Chats	-	36	39	670.05	0	0	0
15	10/8/2012 6:30 PM	1800	Packaging/Packaging Supplies	Chats	-	30	36	685.36	0	0	0
16	10/8/2012 7:00 PM	1800	Packaging/Packaging Supplies	Chats	-	29	29	551.1	0	0	0
17	10/8/2012 7:30 PM	1800	Packaging/Packaging Supplies	Chats	-	20	22	592	0	0	0
18	10/8/2012 8:00 PM	1800	Packaging/Packaging Supplies	Chats	-	29	26	521.77	0	0	0
19	10/8/2012 8:30 PM	1800	Packaging/Packaging Supplies	Chats	-	32	30	628.87	0	0	0
20	10/8/2012 9:00 PM	1800	Packaging/Packaging Supplies	Chats	-	30	33	548.03	0	0	0
21	10/8/2012 9:30 PM	1800	Packaging/Packaging Supplies	Chats	-	26	27	587.07	0	0	0

Column Name	Description
Interval Start UTC Time	This is the beginning of the UTC time interval in which the interactions occurred. The time of day appears as HH:MM. Hours are in 24 hour time (00 - 23), and minutes are 00-59.
Duration in Seconds	The duration of this period, in seconds. This value is set in Interaction Administrator, <b>Server Parameters</b> container, <b>QueuePeriodStatisticsInterval</b> parameter. By default it is set for 1800 seconds (30 minutes). Do not change it in this file unless you have changed this server parameter when you installed CIC, before you started collecting statistics.  <b>Note:</b> All numeric statistics apply to interactions that take place from the value in the time column up through the value in the duration column.
Workgroup Name	The name of the ACD workgroup.

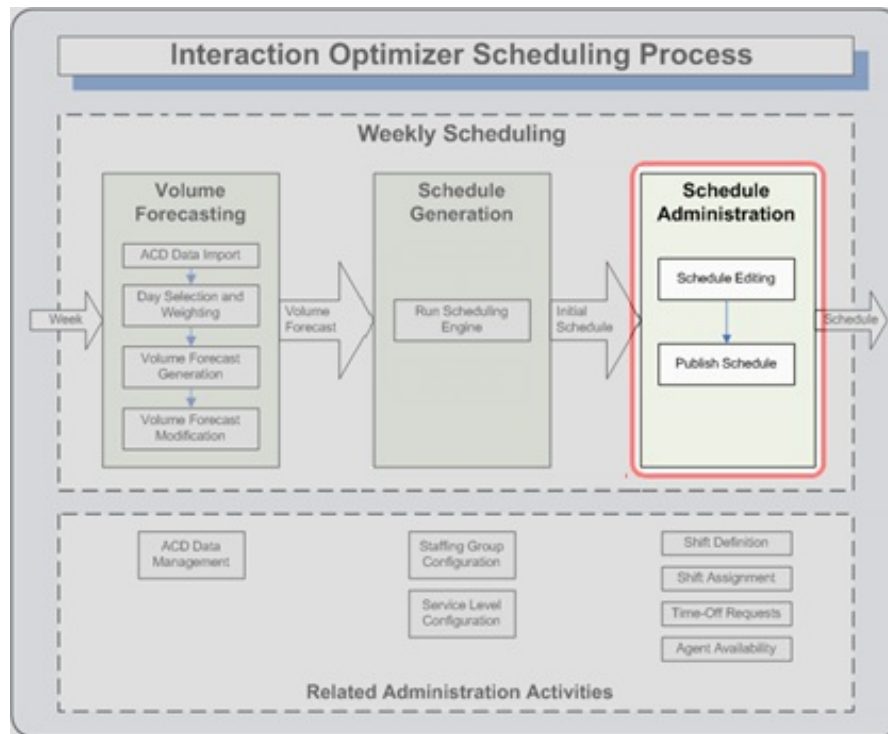
Interaction Type	<p>The interaction type. To enable combinations of the three available interaction types, each one has been assigned an integer which, when converted to <i>base 2</i> (binary), indicates which media type(s) is (are) selected.</p> <p>The following list helps decode the <b>interaction type</b> column to the combinations of interaction each integer represents.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><b>Note:</b> Having more than one interaction type in a specified data row indicates that the row's data represents more than one route group; all the other columns would be the same for each route group.</p> </div> <table border="1"> <thead> <tr> <th>Integer Value</th> <th>Media Type(s)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Call</td> </tr> <tr> <td>2</td> <td>Chat</td> </tr> <tr> <td>3</td> <td>Call, Chat</td> </tr> <tr> <td>4</td> <td>Email</td> </tr> <tr> <td>5</td> <td>Call, Email</td> </tr> <tr> <td>6</td> <td>Chat, Email</td> </tr> <tr> <td>7</td> <td>Call, Chat, Email</td> </tr> </tbody> </table>	Integer Value	Media Type(s)	1	Call	2	Chat	3	Call, Chat	4	Email	5	Call, Email	6	Chat, Email	7	Call, Chat, Email
Integer Value	Media Type(s)																
1	Call																
2	Chat																
3	Call, Chat																
4	Email																
5	Call, Email																
6	Chat, Email																
7	Call, Chat, Email																
Skill Set	<p>This is the skill set of the agent handling the interactions. It can be * (asterisk) to represent a summary row, - (hyphen) to represent no specific skill, or can be a   (pipe) separated list.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><b>Note:</b>   is the pipe character, which is typically the shift of the backslash key.</p> </div>																
Number of Interactions	The number of interactions offered in the time interval.																
Completed	The number of interactions completed by the agents in the time interval.																
Average Talk Time in Seconds	The time in seconds that all of the interactions in this time slice took to process.																
Average ACW Time in Seconds	The number of after call work occurrences for interactions.																
Abandons	The number of abandoned called for interactions.																
Number ACW	The time in seconds that all of the after call work occurrences took for this time slice.																

## Adjust a schedule

Schedule Administration is the process of adjusting a schedule for information not available to the scheduling engine, such as new marketing campaigns, catalog drops, bill due dates, and other factors.

You may notice that weekly shift constraints or specific agent exception shift constraints sometimes cause unworkable schedules to be generated. Maintenance of this configuration data may be necessary and a schedule may need to be regenerated to have a workable starting point. Or you may need to make only minor adjustments by hand to the generated schedule before publishing it.

When you republish a schedule, the CIC client alerts agents that a new schedule is available. Agents can view their schedules on a tab in The CIC client.



## Working with schedules

Generate new schedules in the Interaction Optimizer module, available in IC Business Manager. In addition, use the Interaction Optimizer module to publish, change, and remove existing schedules.

Copy a schedule from another forecast schedule entry or duplicate a pending, published, or non-published schedule in IC Business Manager. For detailed information about generating schedules, see *Interaction Optimizer Help* in IC Business Manager.

# Change Log

The following changes have been made to *Interaction Optimizer Technical Reference*, since Customer Interaction Center (CIC) version 4.0 product availability.

Date	Changes
16-August-2013	Updated features available exclusively in Interaction Optimizer module of IC Business Manager only and in Interaction Optimizer module of IC Business Manager and Interaction Administrator; particularly managing scheduling units and related tasks.
26-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 Interactive Intelligence Product Information site URLs, and copyright and trademark information.
22-July-2015	Updated functionality that was moved from Interaction Administrator to IC Business Manager. Additional updates include general formatting, licensing clarification, and current copyright page.
28-July-2016	Updated the definition of Interval Start UTC Time.
14-September-2017	Updated document for Genesys rebranding.
01-February-2018	Converted documentation source to HTML5.
27-September-2018	Update for new Activation File Management tool for managing and configuring PureConnect product licenses.
8-May-2019	Update for AI-powered forecasting.
12-September-2019	Added link to PureConnect Installation and Configuration Guide in the Install Interaction Optimizer topic.
30-April-2020	Updated links from my.inin.com to new locations.