



PureConnect®

2020 R1

Generated:

18-February-2020

Content last updated:

07-May-2019

See [Change Log](#) for summary of changes.



CIC Multi-Site

Technical Reference

Abstract

This technical reference describes CIC Multi-Site, optional CIC software that links two or more CIC contact centers to route interactions from one location to another. Multi-Site provides a company-wide directory, universal user extensions, and other features that boost employee mobility.

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

For copyright and trademark information, see https://help.genesys.com/cic/desktop/copyright_and_trademark_information.htm.

Table of Contents

Table of Contents	2
Introduction to Interaction Multi-Site	4
Organization of material	4
About CIC client versions	4
Apply new releases	4
Multi-Site Concepts	5
How Multi-Site Differs from Status Aggregator	5
Multi-Site Supports Roaming Users	6
Each user has a Home Site	6
Traveling users log on at a Peer Site	6
License considerations	6
Connected CIC Servers Form a Collective	7
Collective Workgroup	7
User information propagates automatically	7
Company-wide directory, extensions, and agent status indicators	7
Multi-Site Messaging	7
Multi-Site RTM Client/Server Components	8
Message Flow Between CIC Sites	8
How Should a Floating User Sign at Another Location?	8
Multi-Site Installation Tasks	9
Overview of Multi-Site installation tasks	9
Install Multi-Site Server on a Dedicated Computer	10
Install Multi-Site Server and Client on a CIC server	10
Install Multi-Site RTM Client on a CIC Peer Site	12
Multi-Site Configuration and Administration Tasks	14
Understand Site Identifiers and Passwords	14
Configure the Current Site	15
Define Peer Sites	15
Configure a Peer Site to Route Calls to Another Peer Site	17
Configuration in Interaction Administrator and DCOM	17
Guidelines for User Extensions	19
Similar user extensions on different peer sites when adding servers to a collective	19
What happens if I have two sites and they do have similar user extensions?	19
Grant Permissions to Users	20
Add Users to the Collective	20
RTM Server Command Line Parameters	21
Install RTMServer as a local service:	21
Install RTMServer as a remote connection:	21
Register RTMServer as a local DCOM Server:	21
Register RTMServer as a remote DCOM object:	21
Uninstall RTMServer (either mode):	21
Change a Site ID	22
Tools and Handlers	23
Multi-Site Tools	23
Multi-Site Create Message	23
Multi-Site Get Integer	23
Multi-Site Get Note	24
Multi-Site Get String	24
Multi-Site Message Received	24
Multi-Site Put Integer	25
Multi-Site Put Note	25
Multi-Site Put String	26
Multi-Site Send Event	26
Multi-Site Send Request	27
Multi-Site Send Response	28
IpNotes Tools	29
Send a Message That Does Not Require a Response (Handler1)	31
Handler1 example	31
Send a Message That Requires a Response (Handler2)	32
Handler2 example	32
Receive a Message (Handler3)	33

Handler3 example	33
Testing and Troubleshooting	34
Verify site connection	34
Test workgroup member	34
Multi-Site RTM Servers cannot communicate	34
RTM message not transferring	34
File-based Mail Connector limitation	34
Multi-Site fails	34
CIC system cannot find a name prompt	35
CIC Server or RTM Server access denied	35
Exception thrown error	35
Change Log	36

Introduction to Interaction Multi-Site

Multi-Site is optional Customer Interaction Center (CIC) software that links two or more CIC contact centers to route interactions from one location to another. Multi-Site provides a company-wide directory, universal user extensions, and other features that boost employee mobility. It extends the CIC environment to support roaming users. For example, Multi-Site routes interactions to an agent's current location.

Multi-Site is for organizations that use CIC as the local communication system in multiple office locations. Each CIC server has its own dial plan, user base, and Notifier. Multi-Site allows spanning users to work from any location in the CIC collective as if that location were the user's home server.

Don't confuse Multi-Site with Interaction Director, another CIC extension that tells calls where to go. Director balances loads among multiple CIC sites and routes calls according to specific agent skills. Director provides cost-effective geographic call distribution between contact centers, whereas Multi-Site enhances employee mobility by making CIC servers in multiple locations work as if a single server were involved.

For example, an organization with offices in New York and Paris could use a CIC server at each site as the local communications system. Each CIC server contains an embedded PureConnect platform with its own Notifier. Once you configure the two servers for Multi-Site, they immediately make an inter-Notifier connection and start to exchange information. Multi-Site provides the following business-level capabilities:

- **Company-wide directory:** Employees in New York can access phone numbers and other information for employees in Paris and vice versa.
- **Universal user extensions:** You can configure single organizational dial plan and make it transparent to users. For example, you can set up five-digit dial plan and automatically make the necessary long-distance call to reach an employee in Paris.
- **Employee mobility:** Employees can move from location to location and still have the same communications access. For example, suppose that Pierre is an employee in Paris with an internal extension of 6734. Assume that Pierre goes to New York for three days for meetings. He can use his laptop to log on to the New York CIC system. A call to extension 6734—whether placed from New York or Paris—routes intelligently to Pierre (without going unnecessarily through Paris).
- **Real-time status:** The ClientServices component of CIC tracks the real-time status of logged on users—for example, whether they're available, in a meeting, at lunch, or on vacation. This component even knows when users are on the phone. ClientServices shares this status information automatically among multiple instances of the PureConnect Platform at different locations. In the current example, Pierre's manager in Paris can tell at a glance when he comes out of a meeting in New York.

Together, these capabilities help distributed organizations to interact more efficiently than ever before.

Organization of material

The *CIC Multi-Site Technical Reference* explains what Multi-Site is and the benefits that it provides. It's for the CIC administrator or anyone who is installing Interaction Multi-Site.

- [Multi-Site Installation Tasks](#) explains how to install Multi-Site server and client components.
- [Multi-Site Configuration and Administration Tasks](#) explains how to activate the current site, define Peer Sites, add users to the collective, and complete other routine activities.
- [Tools and Handlers](#) is for Interaction Designer authors and programmers. It discusses handler development and provides information about the Multi-Site and IpNotes tools.
- [Testing and Troubleshooting](#) provides procedures to ensure that Multi-Site is performing properly.

About CIC client versions

CIC supports two interaction management client applications. In the *CIC Multi-Site Technical Reference*, **CIC client** refers to either Interaction Connect or Interaction Desktop.

Apply new releases

For instructions on applying new releases for Multi-Site, see the PureConnect Product Information site at <https://my.inin.com/products/pages/default.aspx>.

Note: The PureConnect Product Information site requires credentials for access. If you do not have your credentials, contact your Genesys account representative.

Multi-Site Concepts

How Multi-Site Differs from Status Aggregator

The features of Multi-Site overlap somewhat with CIC Status Aggregator, an optional software module that aggregates user status information across multiple CIC servers. However, the two products serve different purposes and are appropriate in different situations:

- Multi-Site provides user mobility, while Status Aggregator provides status information.
- Multi-Site links together CIC servers that all have the same set of users, while Status Aggregator consolidates status information from users on different CIC servers.

The following table compares the features of Multi-Site to the features of Status Aggregator.

Feature	Status Aggregator	Multi-Site
Organization-wide directory	Yes	Yes
Universal user extensions (users keep their normal telephone extensions when in remote offices)	No	Yes
Real-time status	Yes	Yes
Scalable. Each Status Aggregator server efficiently handles status information for over 50,000 users and over five CIC servers.	Yes	No
Allows change of status	No	Yes
Server	Status Aggregator server. Must be on stand-alone server.	RTM server. For 200 or fewer users, can be on any CIC server. For more than 200 users, must be on stand-alone server.
Architecture	SA Server + SA clients. Each Status Aggregator server gets information from all connected CIC servers.	RTM server + CIC clients. Each RTM server gets information from the CIC servers that are in its "collective". Each CIC server must include the EMSServer subsystem.
Fault tolerance	Two or more Status Aggregator servers can be "fail-over" backups for each other.	No fail-over backup between multiple RTM servers.

For more information about Status Aggregator, see the *Status Aggregator Technical Reference* at https://help.genesys.com/cic/mergedProjects/wh_tr/desktop/pdfs/status_aggregator_tr.pdf.

Multi-Site Supports Roaming Users

Multi-Site routes interactions to an agent's current site, which is the CIC server where the agent is logged on. Users who float between multiple CIC locations are called spanning users.

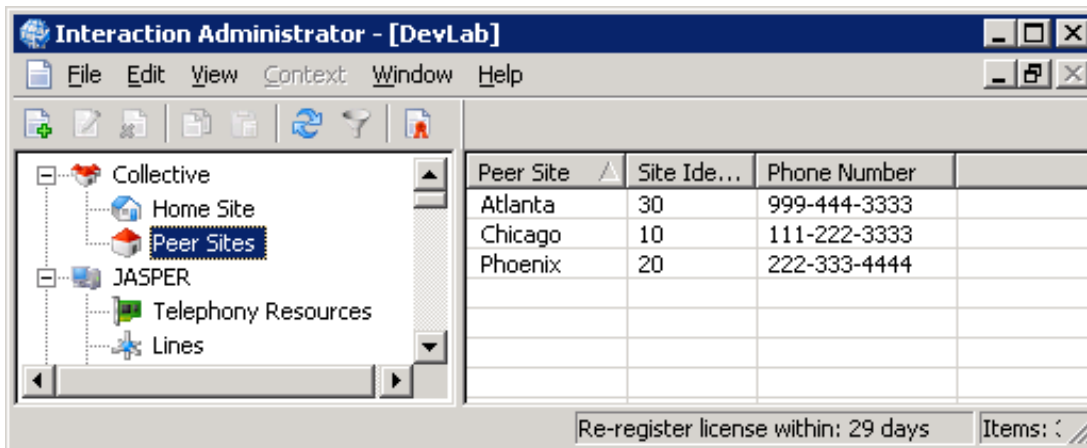
For example, suppose that a company has CIC servers at a main call center location and at two regional offices such as Boca Raton, Florida, and Paris, France. If an employee visits Boca Raton, someone dialing that person's extension from any of the other offices connects automatically to the phone that person is logged on to currently at the Boca Raton office. Multi-Site's distributed dial plan considers the user's location and routes all calls for that user to that site. The caller does not need to know where the agent is, or dial a long-distance number.

Each user has a Home Site

The CIC site where an administrator defined the user's account is the user's Home Site.

Traveling users log on at a Peer Site

When users travel to an alternate office location, they log on to the local CIC server, which is called a Peer Site. Peer Sites are CIC servers in the collective that are remote from the Home Site. Administrators define Collectives and Peer Sites in Interaction Administrator, using the Peer Sites container. For more information, see the Interaction Administrator documentation.



Multiple Peer Sites can participate in a collective. Each Peer Site has these attributes:

- A unique site name
- A unique site ID
- A telephone number
- A password

License considerations

Users cannot access software not licensed for the server onto which they are logged. When users log on to a CIC server other than their home server (where their home station is configured) in a multi-site environment, the license conditions defined on the home server apply to those users.

Connected CIC Servers Form a Collective

A Home Site and a Peer Site combination comprise a collective. A collective is a group of CIC servers that share resources. The Home Site defines specific characteristics of the CIC server that is participating in the collective. Administrators define Home Sites and Peer Sites in Interaction Administrator, using the Collective container.

A collective is a group of connected CIC servers that can share data. CIC servers in a collective are often geographically dispersed. Administrators add each Peer Site to the collective using Interaction Administrator.

The Collective container supports multiple CIC servers working together. For example, CIC servers in Indianapolis, Indiana; Deerfield Beach, Florida; and Aix, France; could all communicate with one another allowing a person in Indianapolis to see whether another person in Deerfield is available and even whether that person is on the phone. Also, if a person visits Indianapolis, someone dialing that person's extension from any of the other sites connects automatically to the phone that person is logged on to currently in Indianapolis. When adding new employees in one city, they appear automatically in the Company Directory around the world.

You can include CIC servers in a collective running different versions of CIC. For example, when you install CIC and Multi-Site, you can establish communication with a Peer Site running a different version of CIC. Administrators configure each Peer Site using the version of Multi-Site that matches the CIC version.

Collective Workgroup

A collective workgroup is like other workgroups except that it spans the resources of multiple CIC servers. A CIC administrator creates the collective workgroup, and then adds members from the user community. Users from many sites can belong to this workgroup. Users can call and connect to anyone in the workgroup, and monitor a user's status, logged on state, and phone state.

User information propagates automatically

When adding users to a collective workgroup, the information replicates to all servers in the collective. When adding or changing attributes for users who belong to a collective workgroup, the information propagates automatically to all servers in the collective. The new or updated information appears in the company-wide directory around the world. When deleting data, the system removes all information from all servers in the collective, and from the company-wide directory.

The collective site and span workgroups can share users. User data replicates between collective sites, but not all users replicate. Only users belonging to workgroups enabled as spanning workgroups replicate.

Company-wide directory, extensions, and agent status indicators

Users who are members of a collective workgroup can visit any site in the collective and log on. The location of the user distributes immediately throughout the collective and each site is implicitly aware of the user's availability to take calls. The site that the user is logged on to becomes the user's current site.

Employees in one location can access phone numbers and other information for employees in remote locations and vice versa. To reach an employee who is working at a remote CIC site, it is not necessary to dial special digits. The system makes the necessary long-distance call in accordance with the local server's dial plan. Employees who move from location to location have the same communications access and extension number.

Multi-Site monitors the logged on status of agents in the collective workgroup. For example, it knows whether an agent is available, in a meeting, at lunch, or on the phone. Multi-site shares this status information automatically between CIC servers at multiple locations. This feature allows employees at one location to see the availability status of employees at other locations.

Multi-Site Messaging

Multi-Site provides a set of tools that gives handlers the ability to communicate with one another across multiple sites. Administrators create Multi-Site messages using Interaction Designer and they carry through the system with the help of reliable transport mechanism (RTM) technology. For more information, see [Tools and Handlers](#).

Multi-Site RTM Client/Server Components

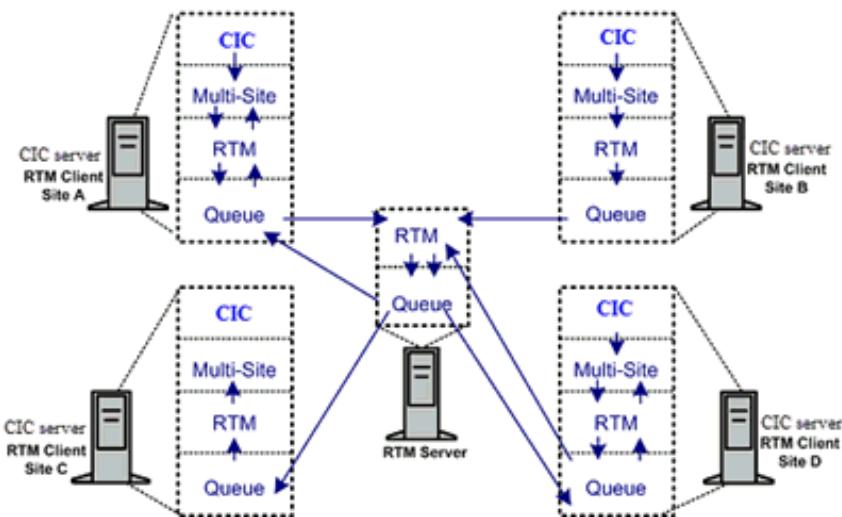
Multi-Site uses a technology called Reliable Transport Mechanism (RTM) to send messages and data between CIC servers. RTM is a message queue service that is similar to Microsoft Message Queue (MSMQ). Unlike MSMQ, RTM is optimized to maximize the performance of a CIC server. Multi-Site requires installing the following two software components:

- **Multi-Site RTM Client** runs on each CIC Server. RTM client is middleware for messages between CIC and the RTM Server.
- **Multi-Site RTM Server** is the hub through which all messages pass. You can install this COM server on a dedicated server or on one CIC server in your organization. If the number of spanning users exceeds 200, Genesys recommends installing on a dedicated server. Organizations with less than 200 spanning users can install RTM server on a CIC server. RTM Server cannot reside on a CIC server that is part of a switchover pair.

Note: When you install your CIC server, the install program copies all the files required for Multi-Site into your server directory. Those files include EMSE.exe (Multi-Site), RTMServerU.exe (message routing), RTM-related binary files, and Multi-Site (EMS) handlers. However, it does not install the Multi-Site programs except for the message routing, which it sets up as a Windows service. You need to install Multi-Site separately.

Message Flow Between CIC Sites

CIC passes Multi-Site messages to the Multi-Site RTM Client which in turn forwards the messages to the Multi-Site RTM Server. The Multi-Site RTM Server distributes the messages to the appropriate recipients. If a connection breaks between the client and server, messages deliver as soon as the communication link restores. The following figure shows a CIC environment with a stand-alone Multi-Site RTM Server and four Multi-Site RTM Clients. Arrows represent messages. Connectivity is by means of the Internet or TCP/IP-based network.



How Should a Floating User Sign at Another Location?

When users move from one CIC location to another location, their phone calls follow automatically when the users log on to the current site. This action is possible because each CIC user has a unique user name and password, and CIC uses these identifiers to detect when the user logs on and where the user is located physically. Following is the most efficient way for CIC users to log on to another CIC location:

1. Log on to Windows using your network password. CIC uses a separate password than does Windows.
2. Start the CIC client, and then provide your CIC password.
3. Change your status to Available. All calls route to that site.

Multi-Site Installation Tasks

Multi-Site supports mixed versions of CIC in a collective. However, Administrators have to configure each Peer Site using the version of Multi-Site that matches the CIC version. Accordingly, Genesys provides installation instructions for supported releases of CIC. The components that administrators need to install are Multi-Site RTM Server and Multi-Site RTM Client.

Note: If you are upgrading an existing RTM Server, running the RTM install on an existing stand-alone RTM server does not provide an upgrade option. Therefore, uninstall the existing RTM application and then install the new RTM Application.

Overview of Multi-Site installation tasks

To install and configure Multi-Site for your organization, do these installation tasks in order:

1. Decide where to install Multi-Site RTM Server. You can install Multi-Site RTM Server on a CIC server (along with Multi-Site RTM Client), or on a dedicated server.

If either of the following apply, Multi-Site RTM Server requires dedicated hardware:

- **Multi-Site needs to accommodate more than 200 spanning users.** The number of spanning users is the total number of individuals who roam between servers, rather than the total number of CIC users in the overall organization (collective).
- **All CIC servers in your organization use Switchover.** Multi-Site RTM Server cannot reside on a CIC server that is part of a switchover pair. For this reason, you must dedicate hardware even if you have less than 200 spanning users in your organization.

You do not need dedicated hardware if:

- **The total number of spanning users is less than 200 and you are setting up a CIC server that is not part of a switchover pair.** When you don't use dedicated hardware, you can install Multi-Site RTM Server and Client together using Setup Assistant.

2. To install Multi-Site RTM Server:
 - On dedicated hardware, [Install Multi-Site Server on a Dedicated Computer](#).
 - On the CIC server, [Install Multi-Site Server and Client on a CIC server](#). Multi-Site RTM Client always installs on a CIC server. You cannot install it on stand-alone hardware.

Whenever you use dedicated hardware to host the RTM server process, install Multi-Site RTM Server before installing Multi-Site RTM Client on CIC servers. When you don't use dedicated hardware, you can install Multi-Site RTM Server and Client together when using Setup Assistant to configure a CIC Server.

3. Next, [Install Multi-Site RTM Client on a CIC Peer Site](#) in the collective.
4. Finally, do all tasks listed in [Multi-Site Configuration and Administration Tasks](#).

Install Multi-Site Server on a Dedicated Computer

Install CIC Multi-Site RTM Server on a dedicated computer, after meeting the following minimum requirements.

- Multi-Site for **PureConnect 2018 R4 or later** requires at least:
 - On the CIC server, Windows Server 2016 (64-bit) or Windows Server 2012 R2 (64-bit)
 - Windows 10 version 1511.
 - Microsoft .NET Framework 4.7 or later
 - PureConnect 2018 R4 or later.
- Multi-Site for **CIC 2015 R1 through 2018 R3** requires at least:
 - On the CIC server, Windows Server 2008 R2 SP1 (64-bit) or Windows Server 2012 R2 (64-bit)
 - Windows 8.x.
 - Microsoft .NET Framework 4.5.2 or later
 - CIC 2015 up to 2018 R3.

To install the Multi-Site RTM Server on a dedicated computer

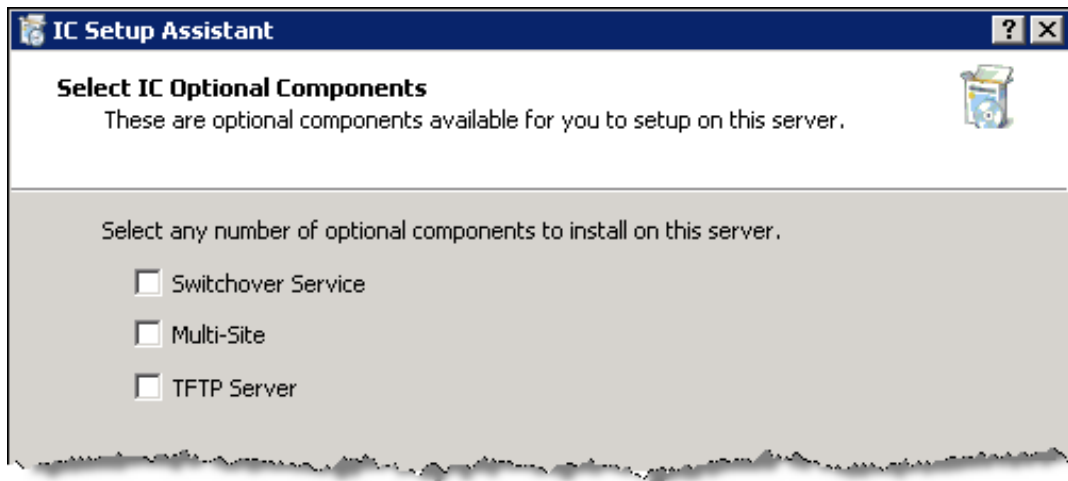
1. If you have not done so already:
 - a. Download the CIC 2015 R1 or later `.iso` file from the PureConnect Product Information site at <https://my.inin.com/products/Pages/Downloads.aspx>.
 - b. Copy the `.iso` file to a file server (non-IC server) with a high-bandwidth connection to the servers on which you plan to run the CIC 2015 R1 or later installs.
 - c. Mount the `.iso` file and share the contents to make them accessible to the servers on which you plan to run the CIC 2015 R1 or later installs.
2. Navigate to the `\Installs\Off-ServerComponents` [or `\Installs\Integrations`] directory on the file server.
3. Copy the `RTMServer_20nnRx.msi` file to the server on which you plan to run this install and double-click to start it. (In the file name, *n* represents the final two digits of the release year and *x* represents a digit such as 1.)

Install Multi-Site Server and Client on a CIC server

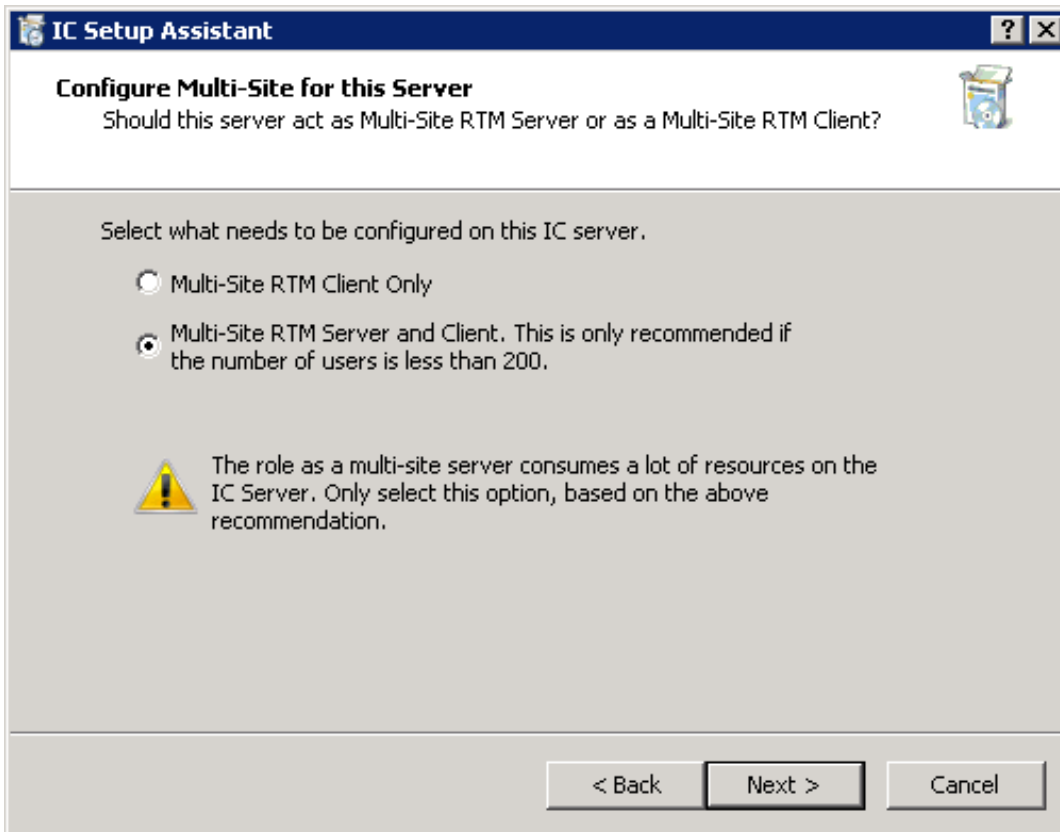
When you don't require a dedicated Multi-Site RTM Server, install Multi-Site RTM Server and Client together on a CIC server that is not part of a switchover pair. In this scenario, Multi-Site is an installation option available through Setup Assistant and supports refresh and new installs.

To install Multi-Site Server and Client on a CIC server

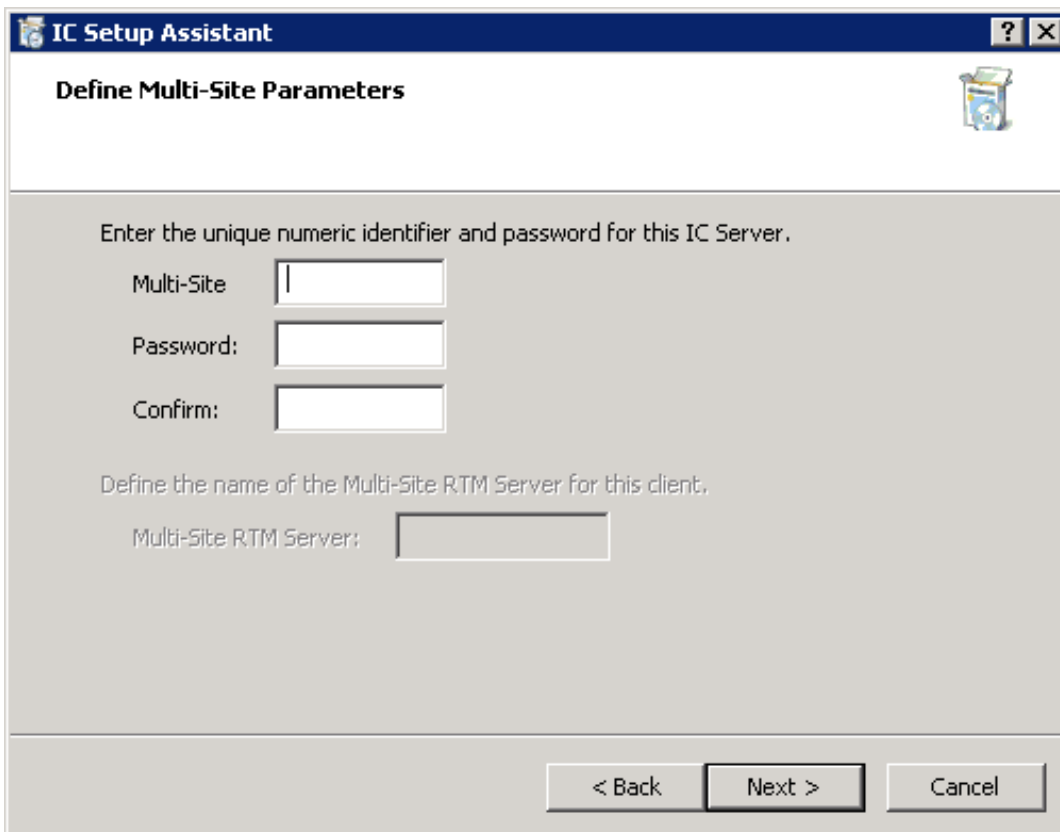
1. Start Setup Assistant, click **Options**, and then click **Proceed**.
2. If Setup Assistant prompts you to confirm your CIC administrator account, type the administrator password and then click **Next**.
3. Setup Assistant asks which option you want to install.



4. Select Multi-Site and then click **Next**. The **Configure Multi-Site for this Server** dialog box appears.
5. Click **Multi-Site Server and Client** and then click **Next**.



6. Type the name and password for the Multi-Site server and then click **Next**. The server name is an integer from 1 through 999.



Setup Assistant configures installation parameters, which can take a minute or more. When completed, the **Commit Your Choices** dialog box appears.

7. Click **Commit**. Setup Assistant installs the Multi-Site Client and Server. When completed, the **IC Setup Assistant has finished!** dialog box appears.
8. Click **Finish** to restart your computer and complete the installation.

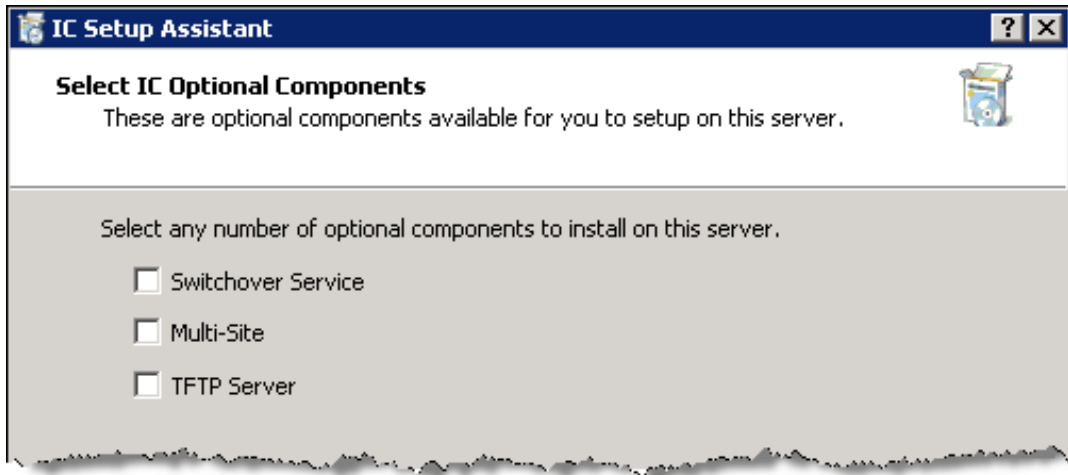
You are ready to install the Multi-Site Client on every Peer Site in the collective.

Install Multi-Site RTM Client on a CIC Peer Site

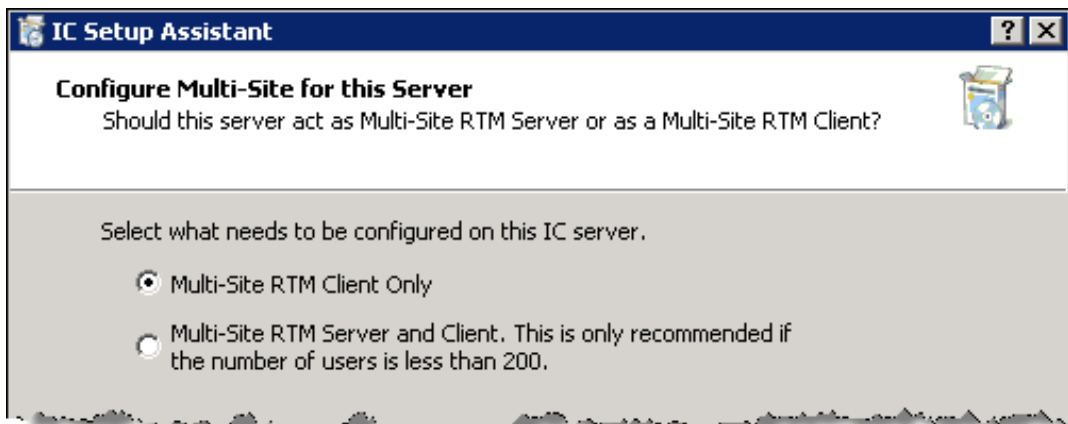
Follow this procedure to install Multi-Site RTM Client on a CIC Peer Site in the collective. Install the Multi-Site Server on a dedicated computer or another CIC server in the collective.

To install Multi-Site Client on a CIC server

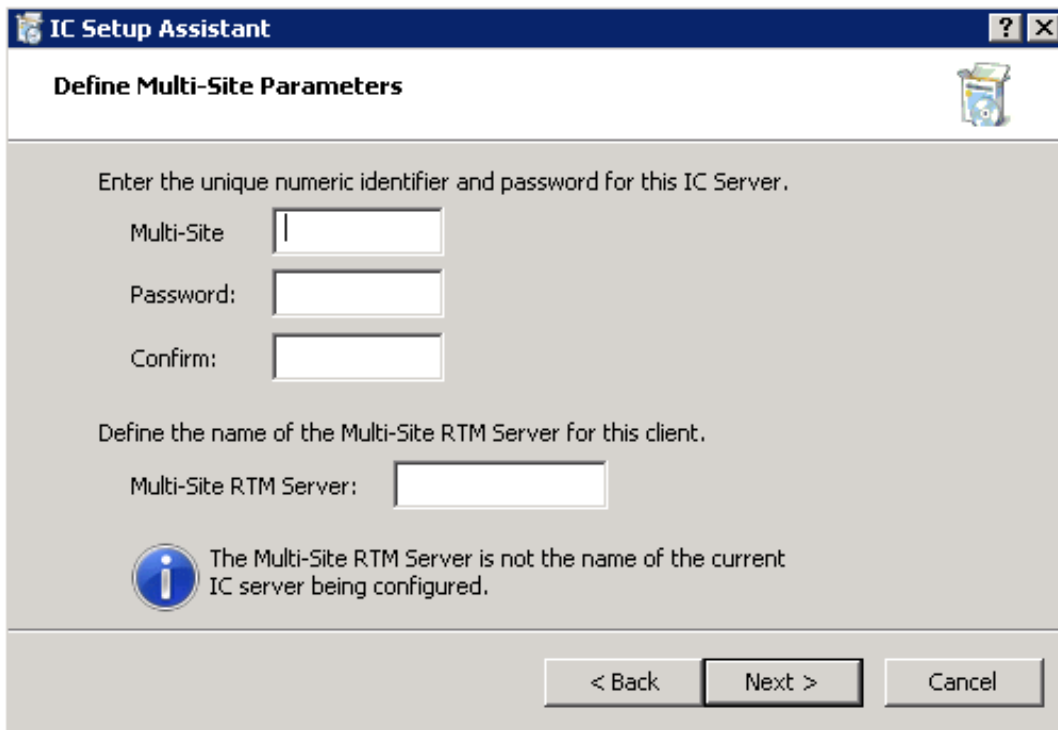
1. Start Setup Assistant, click **Options**, and then click **Proceed**.
2. If Setup Assistant asks you to confirm your CIC administrator account, type the administrator password and then click **Next**. Setup Assistant asks which option to install.



3. Select Multi-Site and then click **Next**. The **Configure Multi-Site for this Server** dialog box appears.
4. Select **Multi-Site RTM Client Only** and then click **Next**.



5. Type the name and password for the CIC server, the name of the Multi-Site Server, and then click **Next**. The server names are integers from 1 through 999.



Setup Assistant configures installation parameters, which can take a minute or more. When completed, the **Commit Your Choices** dialog box appears.

6. Click **Commit**. Setup Assistant installs the Multi-Site Client and Server. When completed, the **IC Setup Assistant has finished!** dialog box appears.
7. Click **Finish** to restart your computer and complete the installation.

Multi-Site Configuration and Administration Tasks

Configure Multi-Site to establish communication between sites by making the collective aware of the current site and its peer sites. Once all of the Multi-Site components install successfully, enable a connection between the current site and Peer Sites. This action makes the collective aware of the current site and its member users.

The following instructions assume the existence of two CIC sites configured with Multi-Site:

- [Understand Site Identifiers and Passwords](#)
- [Configure the Current Site](#)
- [Define Peer Sites](#)
- [Grant Permissions to Users](#)
- [Add Users to the Collective](#)

Understand Site Identifiers and Passwords

A site requires a Site Identifier and password. The Site ID and password allow peer sites to connect with one another. For example, suppose that there are two CIC sites, one in Boca Raton, Florida called Boca, and one in Indianapolis, Indiana called Indy. In this scenario, configuring sites for Multi-Site is a two-part process:

Steps Performed by CIC Administrator in Boca	Steps Performed by CIC Administrator in Indy
<ol style="list-style-type: none">1. The Boca administrator defines the Boca home site by creating a unique site identifier and password.2. The Boca administrator creates a peer site for Indy and uses the Indy site identifier and password to establish a connection.	<ol style="list-style-type: none">1. The Indy administrator defines the Indy home site by creating a unique site identifier and password.2. The Indy administrator creates a peer site for Boca and uses the Boca site identifier and password to establish a connection.

The diagram illustrates the cross-site configuration. On the left, a house icon represents the Boca site with 'Boca site identifier = 1' and 'Boca password = fox'. On the right, a house icon represents the Indy site with 'Indy site identifier = 2' and 'Indy password = cat'. Below these are two peer sites: 'Indy peer site' and 'Boca peer site', each with a group of people icon. Arrows show that the Boca site uses the Indy site's identifier and password to connect to the Indy peer site, and the Indy site uses the Boca site's identifier and password to connect to the Boca peer site.

Each CIC site defines other sites as peers, using the Site ID and Password of the other server. Every Peer Site has these attributes:

- Unique site name
- Unique site ID
- Telephone number
- Password

To define a Peer Site, the administrator must know the name of the Peer Site, its site ID number, password, and telephone number. To coordinate this information, you can use the same password for all sites in a collective.

Configure the Current Site

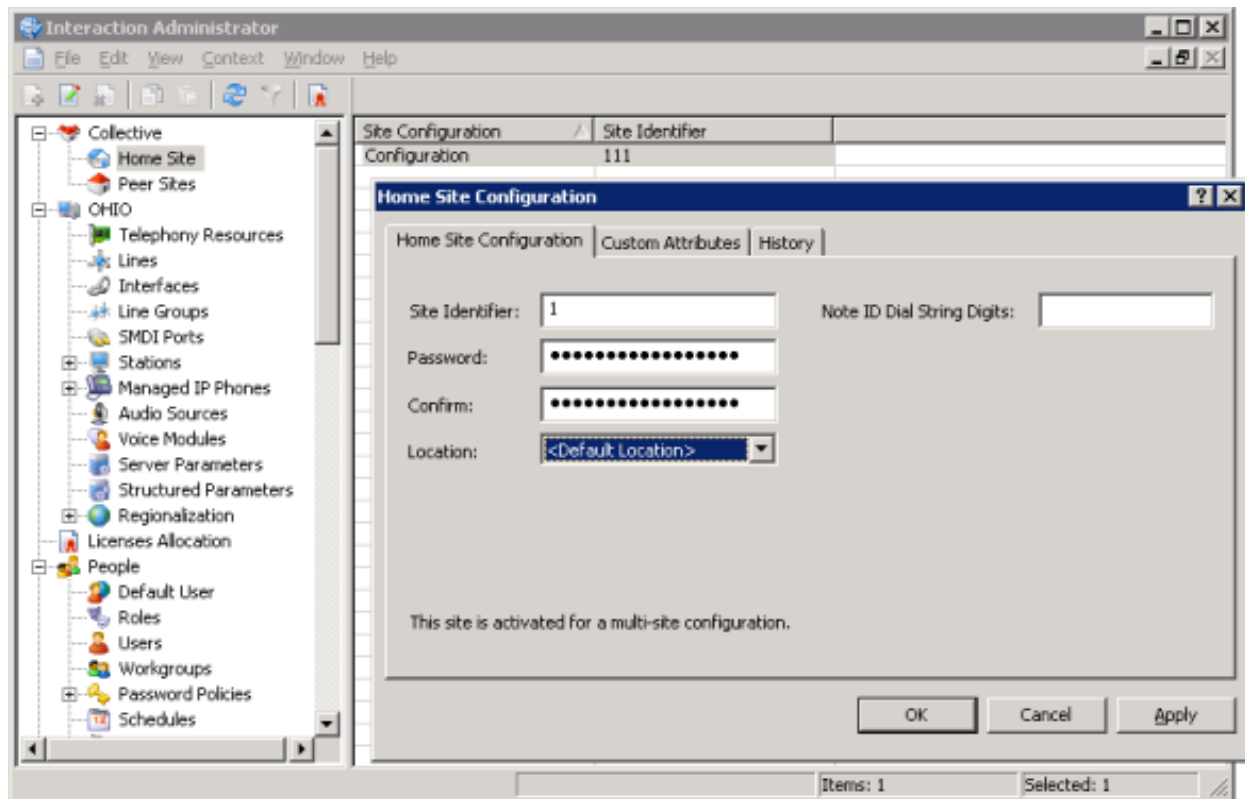
Complete this task on each CIC server to ensure proper configuration of the Home Site.

To configure the current site

1. Start Interaction Administrator.
2. Click the **Home Site** container.
3. Do one of the following:
 - To edit a configuration, double-click the **Configuration** entry.
 - To create a configuration, click **Insert**.
4. In the **Site Identifier** box, type a unique site ID for the server.
5. Type and confirm the password for other sites to use to access this server for Multi-Site purposes.

Note: You can use the same password on all sites in a collective.

The following figure illustrates how a Boca administrator defines the Boca Home Site. The Indy CIC administrator, likewise, assigns a unique site identifier and password. The key thing to understand is that the Site IDs must be unique; however, you can use the same password.



6. Leave the **Note ID Dial String Digits** box blank, unless the servers connect by a tie line. It defines digit values for the system to use to identify a call as a Multi-Site call when sending a multi-site call to a peer by means of an established tie-line connection.

When using tie lines, this box contains a default value of *90 to identify a call as a multi-site call when sending a multi-site call to a peer. This value is configurable for sites in which the default value conflicts with existing area codes. If *90 conflicts with an area code, you can assign different digits, as long as you use the same digits for all Multi-Site RTM Servers. If you change the default value, you must change the value to match in all sites of the collective.

7. Click **OK**.

Define Peer Sites

Each CIC server in the collective represents a specific call center location called a Peer Site. Each peer site has a unique name, a site identifier, a telephone number, and a password. The next step is to define peer sites, so that the current site can communicate

with other servers in the collective. Each CIC administrator performs this procedure on each CIC server that they maintain. The administrators must know the name, Site ID, telephone number, and password of peer sites before starting this procedure.

To define Peer Sites

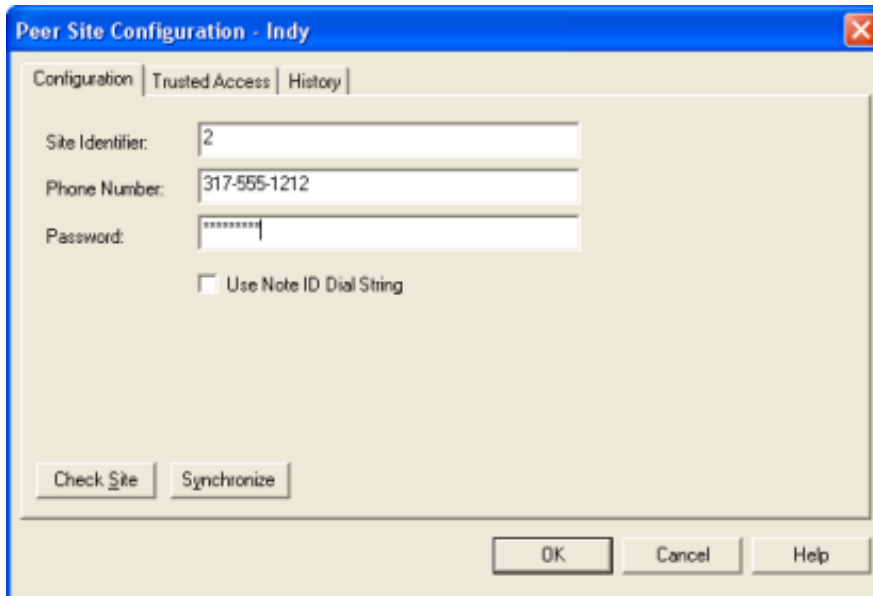
1. Start Interaction Administrator.
2. Click the **Peer Sites** container.
3. Click the **Insert** key. The **Entry Name** dialog box appears.

In our example scenario, the Boca administrator creates a Peer Site for Indy and the Indy administrator creates a Peer Site for Boca.



4. Type the name of the peer site and then click **OK**. The **Peer Site Configuration** dialog box appears.

Continuing with our example, the Boca administrator defines Indy as a Peer Site using Indy's Site ID, phone number, and password. The Indy administrator defines Boca as a Peer Site using Boca's Site ID, phone number, and password.



Site Identifier: Unique number that identifies the CIC site to add to the collective as a Peer Site.

Phone Number: Phone number of the CIC site to add to the collective as a Peer Site. The system uses the phone number to route a call to a user when the user is logged on to that Peer Site.

Password: Password of the CIC site to add to the collective as a Peer Site. Passwords are case-sensitive.

Use Note ID Dial String: If selected, indicates to CIC that when a Tie Line handles a Multi-Site call, use Tie Line optimization to handle the call efficiently. Peer Sites connect by Tie Lines and PSTN. When establishing a Tie Line between two sites, CIC uses this feature to process Multi-Site calls more efficiently.

5. Complete the information and then click **Check Site** to validate the information provided. If the system establishes a connection, a message appears indicating that the connection was successful. If the system cannot log on to the Peer Site, a message displays indicating that the information is incorrect. Correct the information and then click **Check Site**.
6. When the check is successful, click **OK**.

7. In the **Peer Site Configuration** dialog box, click **Synchronize**. A message appears indicating that the system sent a message requesting synchronization to occur.
8. Click **OK**. It can take several minutes for synchronization to complete. The **Peer Site Configuration** dialog box appears.
9. In the **Peer Site Configuration** dialog box, click **OK**. The completion of this process establishes a connection between the current CIC site and Peer Site and allows you to view the status of users who belong to that peer site.
10. To confirm that synchronization succeeded, click the **Users** container. The users from the site you just established connection with appear in Interaction Administrator's list view. Ensure that these users are members of a workgroup that you enabled to span all sites. See [Add Users to the Collective](#).

Configure a Peer Site to Route Calls to Another Peer Site

There are three main steps in configuring a Peer Site to route calls to another Peer Site in a collective:

1. Create a Tie Line. You do this step outside CIC.
2. Configure Dial Plan to route the call to the number associated to the Peer Site.
3. Use the Default Profile and the extended menu of 9 > 0 for Multi-Site routed calls. Genesys recommends using a dedicated Attendant Profile at each site to catch the EMS Calls.

Configuration in Interaction Administrator and DCOM

You must configure Multi-Site correctly in Interaction Administrator and DCOM. Incorrect configuration is a common cause of problems in using Multi-Site.

Interaction Administrator configuration

Route Calls to a Peer Site

- In Interaction Administrator, go to **Collective | Peer Sites** and obtain the phone number of the Peer Site.
- If the Peer Site is not in the **Collective | Peer Sites** container, define the site first.

In Interaction Administrator, set the following values.

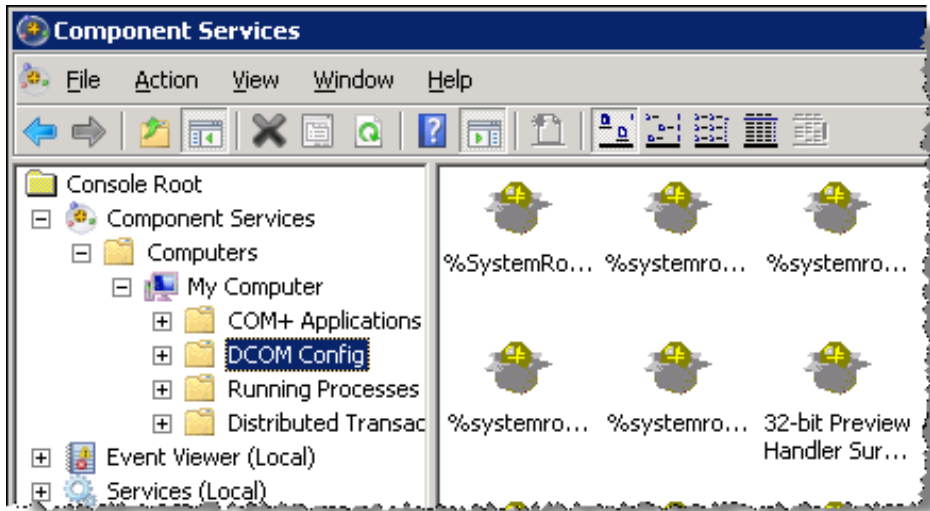
Home Site	
Site Identifier	Unique number in your Multi-Site "cluster."
Password	CIC administrator account password for this CIC server.
Note ID Dial String Digits	Leave as *90. Don't ever change it.
Peer Site	
Name	Name of each server that you want local users to span.
Site Identifier	Number that identifies the Peer CIC server. You set this ID in the Peer's Home Site container.
Phone Number	Phone number to reach the Peer Site. You can use any number of digits, as long as the dial plan can "pick it up."
Password	Peer CIC server password. You set this password in the Peer's Home Site container.
Use Note ID Dial String	Only select this check box if there is a direct ISDN Tie Line between sites. You can clear this check box for any environment and it works correctly.
SIP Line	
	Create one SIP line for each Peer Site.
Proxy	IP address of corresponding CIC server.
Access	Select the Denied Access check box.
	Add the IP address of the corresponding CIC server.
Line Group	Create one line group for each Peer Site.
Use as Dial Group	Select this check box.
Members	Add the corresponding CIC server.
Dial Plan	
	Create one dial plan for each Peer Site.
Input Pattern	Phone number that you set in the corresponding Peer Site container.
Classification	Local.
Dial Group	Select the corresponding Line Group.
Classification	Local.
Dial String	<i>[Corresponding Phone Number]</i> @SERVERNAME
	Simulate Peer Site phone numbers to confirm that the call routes to the correct CIC server.
Workgroup	
	Create a workgroup named <code>Multisite_SERVERNAME</code> where <code>SERVERNAME</code> is the name of your RTM server.
	Add spanning users to the workgroup.
Workgroup Spans Sites (on the Configuration tab)	Select this check box.
Attendant	
Note: Genesys recommends using a dedicated Attendant Profile at each site to catch the EMS Calls.	
Default Schedule	The default profile and its schedule handle Multi-Site calls correctly.
	Add a greeting.
Repetition	Set this value to 3 so that the greeting repeats three times.
Wait	Set this value to 15 so that there are 15 seconds between repetitions.
Listen for Extension Dialing	Clear this check box.
9 - Extended Menu	Do not set as the default action.
0 - Multi-Site	Do not set as the default action.
Subroutine	EMSSystemIVRCustomizations

DCOM configuration

Configure the RTM server and Peer Sites.

To configure the RTM Server

1. On the Windows Start menu, click Run, type `DCOMCNFG`, and then click OK. The Component Services window appears.
2. Click Component Services > Computers > My Computer > DCOM Config.



3. Right-click RTMServer and then click Properties.
4. On the Location tab, select the Run Application on This Computer check box.
5. Close the dialog box.

To configure the Peer Site CIC servers

1. On the Windows Start menu, click Run, type DCOMCNFG, and then click OK. The Component Services window appears.
2. Click Component Services > Computers > My Computer > DCOM Config.
3. Right-click RTMServer and then click Properties.
4. On the Location tab, select the Run Application on The Following Computer check box.
5. Type RTM SERVERNAME, where SERVERNAME is the name of the RTM server.
6. Close the dialog box.

Guidelines for User Extensions

Multi-Site does not allow you to place calls to the station extensions of a peer server. You can only call user extensions. For example, Server A and Server B are peers. From a station or CIC client connected to Server A, you cannot call a station on Server B. You can call a user on Server B, either by dialing that user's extension, or by clicking that user's name in the CIC client.

Similar user extensions on different peer sites when adding servers to a collective

It is always important to plan ahead when creating user extensions in Interaction Administrator. Base this planning on the growth of the current site and continued growth of other sites or other CIC systems. Multi-Site can connect multiple CIC systems into a collective and with the *automatic propagation of user information*, replicate user information throughout the collective. The reason this planning is so important is the issue of duplicating user extensions.

A user who spans sites (a *spanner*) on a CIC server that is part of a collective of CIC servers cannot have the same user extension as another user that spans sites (a *spanner*) on another CIC server in that collective. In other words, there is an issue if User A on Server 1 who is part of a workgroup that spans sites has an extension of 8001 and User B who is part of a workgroup that spans sites on Server 2 has an extension of 8001. They replicate through the collective with this extension but have a problem getting calls and other services. This issue does not affect users who are not *spanners*, they are unique to their specific servers.

What happens if I have two sites and they do have similar user extensions?

Use extensive planning when changing user extensions. If you add a user to a workgroup that spans sites, assign a unique user extension. Following are a couple of examples:

- Change the user extension all together.
For example, User A on Server 1 has an extension of 8001, change it to 8801.
- Add a digit to the beginning of the user's extension.
For example, User A on Server 1 has an extension of 8001, change it to 18001 {for Server 1, User A extension 8001; User B on Server 2 has an extension of 8001, change it to 28001 {for Server 2, User B extension 8001.

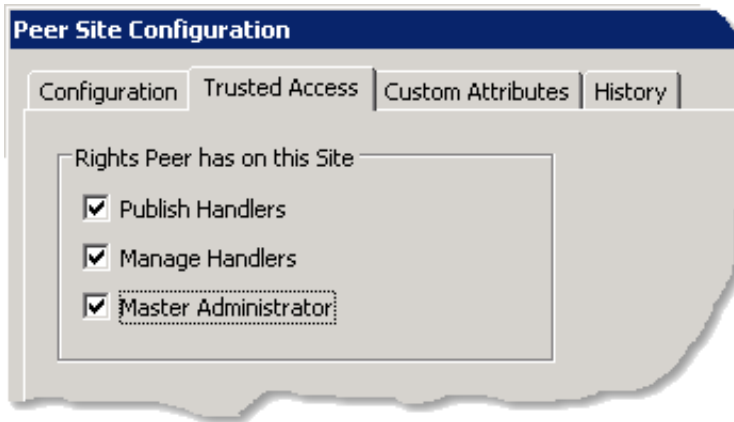
Grant Permissions to Users

You can define a set of permissions for users who log on to your site. For example, when a user from the Indy site logs on to the Boca site, the Boca system knows what rights the Indy user has. You can allow users to publish and manage handlers but not have master administrator permissions enjoyed at their home site. You can turn on or off user permissions at any time.

To grant permissions to users

1. In Interaction Administrator, click **Peer Site**.
2. Open the Peer Site for which to set user rights. The **Peer Site Configuration** dialog box appears.
3. Click the **Trusted Access** tab. *Trusted Access* refers to the ability a user has when logged on to a Peer Site.

For example, a user could have permissions to publish and manage handlers, but not have master administrator permissions enjoyed at the home site level.



Publish Handlers: If selected, allows users who are logged on to the Peer Site to publish new or updated handlers on the CIC server. This option applies only to users who have the Interaction Designer program and have authorization to update production handlers or create new handlers on the CIC telephony server. If cleared, users who attempt to publish handlers from Interaction Designer receive an appropriate error message.

Manage Handlers: If selected, allows users who are logged on to the Peer Site to add or remove handlers published to the CIC server. If cleared, users who attempt to manage handlers from Interaction Designer receive an appropriate error message.

Master Administrator: If selected, allows users who are logged on to the Peer Site to 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 permissions. All property pages (especially **Admin Access** and **Access Control**) for the **Default User**, **User**, and **Workgroup** containers are visible to master administrators. Other accounts without master administrator permissions cannot do these actions.

4. Select the permissions to allow and then click **OK**.

Add Users to the Collective

To add users who are members of a workgroup to the collective, enable the workgroup to span sites. Spanning allows sharing and replicating of member users between sites. The following steps assume that the workgroup exists.

To add users to the collective

1. In Interaction Administrator, click **Workgroup**.
2. From the list view, open the workgroup to allow to span multiple sites.
3. On the **Configuration** tab, select **Workgroup Spans Sites** and then click **OK**.
4. Click the **Members** tab.
5. Under **Available Users**, select the users you want to add to the spanning workgroup and then click **Add**. The users appear under **Currently Selected Users**.
6. Click **OK**. The completion of this process adds members of the workgroup to all connected Peer Sites. Interaction Administrator displays data and the status of members of the workgroup in its list view when you select the Users container.

Note: Workgroup memberships span and replicate across multiple sites, but workgroup queue information don't.

RTM Server Command Line Parameters

You can start `RTMServerU.exe` using optional command-line parameters that register it as a local service or as a remote connection. These modes of operation have different DCOM and Service settings, so Genesys created command-line parameters to make it easier for PureConnect Customer Care or a setup program to configure or reconfigure Multi-Site.

Install RTMServer as a local service:

```
/Service [/Username={username}] [/Password={password}]
```

This option installs RTMServer as a service in the SCM and registers it for DCOM. Optionally, you can provide a user name and password, but it fails to install if it is not a valid username/password combination.

Example: `RTMServerU.exe /Service /Username=UserAccount /Password=Password`

Install RTMServer as a remote connection:

Installing RTMServer as a remote connection renames or removes the LocalServer32 entries applicable only to the service.

Example: `RTMServerU.exe /RemoteServer=RemoteServerName`

Register RTMServer as a local DCOM Server:

Example: `RTMServerU.exe /RegServer`

Registers it as a DCOM server for running on the local computer

Register RTMServer as a remote DCOM object:

```
/RegClient={machine}
```

Registers it as a remote DCOM object for running on `{machine}`

Example: `RTMServerU.exe /RegClient=machine`

Uninstall RTMServer (either mode):

```
/UnRegServer
```

Unregisters it as a DCOM client/server and removes it from the SCM. Each registration option undoes the others, so it is not necessary to run `/UnRegServer` between each use.

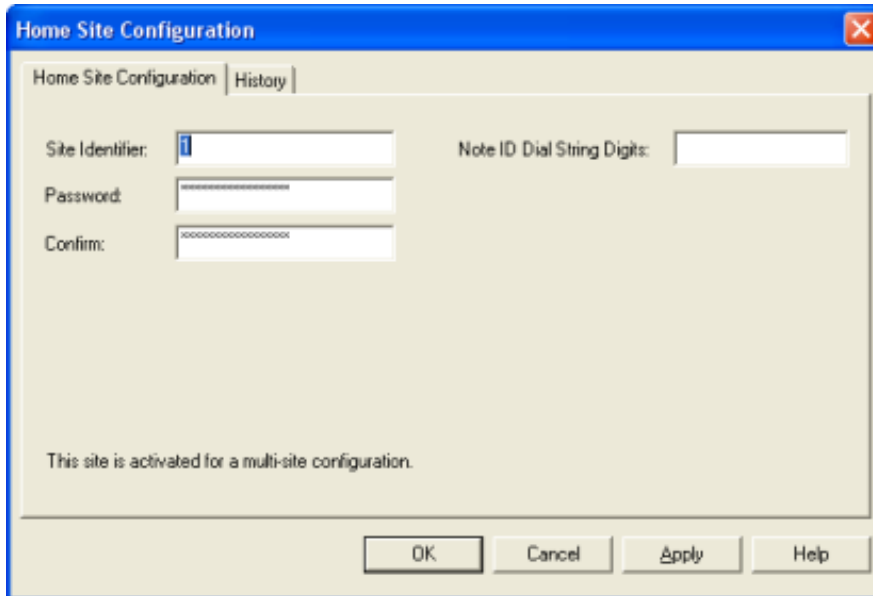
Example: `RTMServerU.exe /UnRegServer`

Change a Site ID

Note: Changing the Site ID can cause problems. If you change the Site ID, synchronization with Peer Sites halts until you use IC System Manager to restart EMS (Multi-Site) on the servers where you changed the Site ID. You also have to delete all users with the old Site ID from every replicated server, recreate them on the home server, and then resync.

To change a Site ID to give a CIC server a unique ID

1. In Interaction Administrator, click **Home Site** and then double-click **Configuration**. The **Site Configuration** page appears.



The screenshot shows a dialog box titled "Home Site Configuration" with a blue title bar and a close button (X) in the top right corner. The dialog has two tabs: "Home Site Configuration" (selected) and "History". The main area contains the following fields:

- Site Identifier:** A text box containing the number "1".
- Note ID Dial String Digits:** An empty text box.
- Password:** A text box with masked characters (dots).
- Confirm:** A text box with masked characters (dots).

Below the fields, there is a message: "This site is activated for a multi-site configuration." At the bottom of the dialog, there are four buttons: "OK", "Cancel", "Apply", and "Help".

2. In the **Site Identifier** box, type a number that uniquely identifies this CIC site and then click **OK**.

A home site with a unique ID can be part of a collective.

Tools and Handlers

Every CIC server has an event-handling engine called an Interaction Processor (IP). As part of its responsibility, the IP engine invokes handlers including those handlers that communicate with one another across multiple sites. You create Multi-Site messages in handlers using a set of Multi-Site and IpNotes tools available in Interaction Designer.

Using the Multi-Site messaging tools, you can construct an arbitrary message format within a handler and receive that message in another handler on a remote server. The order in which you add the various elements to the message determines the format of the message. On the receiving end, the handler must read the elements from the message in the correct order. The handler checks the element type when it reads it, so an attempt to read the wrong element type results in an error.

When a message is ready to send, the sender specifies a destination site ID; and the object and event values to use to start the notification on the receiving server.

Messages send asynchronously, requiring no response, or synchronously, where the sending tool waits a specified amount of time for the return of a response message. The handler reads the response message in the exact same way as the original message by using the `get` tools in the same order as the sender used the `put` tools.

To assist you with understanding how these tools work, Genesys provides three sample message handlers. Along with these samples are detailed descriptions of the parameters associated to each tool. These samples provide guidance on how to set the inputs and what to do with the outputs of each tool.

For more information, see:

- [Multi-Site Tools](#)
- [IpNotes Tools](#)
- [Send a Message That Does Not Require a Response \(Handler1\)](#)
- [Send a Message That Requires a Response \(Handler2\)](#)
- [Receive a Message \(Handler3\)](#)

Multi-Site Tools

Following are the available Multi-Site tools (and one initiator). The data types that you can add to and retrieved from a message are any of the Interaction Designer (ID) defined types Integer, String, and IpNotes. For more information about IpNotes, see [IpNotes Tools](#).

Multi-Site Create Message

Creates a message in the system and then provides a handle to it as an output. The handle is an input to all other tools that operate on the message. An asterisk (*) indicates an external data type.

Parameter	Process	Data Type	Description
Message Handle	Output	Message Handle*	Valid handle to the newly created message.
Success	Exit	Not applicable	Path taken when the message creates successfully.
Failure	Exit	Not applicable	Path taken when message creation fails.

Multi-Site Get Integer

Reads a data element from the message that the supplied handle specified. An asterisk (*) indicates an external data type.

Parameter	Process	Data Type	Description
Message Handle	Input	Message Handle*	Valid handle to the message.
Integer Value	Output	Integer	Value read from the message. The output doesn't contain a valid value unless taking the success exit path.
Success	Exit	Not applicable	Path taken when reading the value from the message is successful.
Failure	Exit	Not applicable	Path taken when the operation fails or when the element read from the message is not the correct type.

Multi-Site Get Note

Reads an IpNote from the message that the supplied handle specified. An asterisk (*) indicates an external data type.

Parameter	Process	Data Type	Description
Message Handle	Input	Message Handle*	Valid handle to a message.
Note Name	Input	String	Name of the note to read from the message. For more information about how to create and manage notes, see IpNotes Tools .
Success	Exit	Not applicable	Path taken when reading the note from the message is successful.
Failure	Exit	Not applicable	Path taken when the operation fails or when the element read from the message is not the correct type.
Note Name Mismatch	Exit	Not applicable	Path taken when reading a note from the message and its name does not match the one supplied. Unlike other message elements, the name of a note is integral to the note data. The system requires a note name so that it can better check for an error in retrieving notes and guaranteeing that a sent note element has the same name on multiple servers.

Multi-Site Get String

Reads a data element from the message that the supplied handle specified. An asterisk (*) indicates an external data type.

Parameter	Process	Data Type	Description
Message Handle	Input	Message Handle*	Valid handle to a message.
String Value	Output	String	Value read from the message. The output doesn't contain a valid value unless taking the success exit path.
Success	Exit	Not applicable	Path taken when the value read from the message is successful.
Failure	Exit	Not applicable	The path taken when the operation fails or when the element read from the message is not the correct type.

Multi-Site Message Received

Starts the handler that processes a specific message. This initiator allows the handler author to type a string value for both the Event ID and Object ID. When receiving a notification with matching Event and Object IDs, it triggers the initiator. The same initiator receives messages sent as events and requests. In the latter case, certain outputs that contain return information for a response contain valid values. If the message sends as an event, those outputs are zero.

Parameter	Process	Data Type	Description
Label	Input	String	Name for the initiator.
Object ID	Input	String	String value that matches the Object ID you set in Multi-Site Send Event or Multi-Site Send Request .
Notification Event	Input	String	String value that matches the Event ID you set in Multi-Site Send Event or Multi-Site Send Request .
Message Handle	Output	Message Handle	Valid message to the incoming message from which the data elements are read.
Response Correlation ID	Output	Integer	Unique identifier for this message when the message sends synchronously. Otherwise, this value is zero. If the message requires a response, the value of the variable contains a non-zero value. This value must pass unchanged to Multi-Site Send Response .
Response Destination ID	Output	String	Value that identifies the source of the request when the message sends synchronously. Otherwise, the value is an empty string. This value must pass unchanged to Multi-Site Send Response .

Multi-Site Put Integer

Adds an integer value to the message that the supplied handle specified. An asterisk (*) indicates an external data type.

Parameter	Process	Data Type	Description
Message Handle	Input	Message Handle*	Valid handle to a message.
Integer Value	Input	Integer	Value to add to the message.
Success	Exit	Not applicable	Path taken when the value adds to the message successfully.
Failure	Exit	Not applicable	Path taken when the operation fails.

Multi-Site Put Note

Adds an entire IpNote element to a message that the supplied handle specified. An asterisk (*) indicates an external data type.

Parameter	Process	Data Type	Description
Note Name	Input	String	Name of an existing note to add to the message. For more information about how to create and manage notes, see lpNotes Tools .
Message Handle	Input	Message Handle*	Valid handle to a message.
Success	Exit	Not applicable	Path taken when the value adds to the message successfully.
Failure	Exit	Not applicable	Path taken when the operation fails.
Unknown Note Name	Exit	Not applicable	Path taken when the name of the note supplied does not match that of an existing note.

Multi-Site Put String

Adds a text string to the message that the supplied handle specified. An asterisk (*) indicates an external data type.

Parameter	Process	Data Type	Description
Message Handle	Input	Message Handle*	Valid handle to a message.
Value	Input	String	Value to add to the message.
Success	Exit	Not applicable	Path taken when the value adds to the message successfully.
Failure	Exit	Not applicable	Path taken when the operation fails.

Multi-Site Send Event

Sends the message that the supplied handle specified to another handler on a remote server or to multiple servers. The Event and Object IDs specified determine which handler the message triggers. Handler execution continues as soon as the message sends and expects no response. An asterisk (*) indicates an external data type.

Parameter	Process	Data Type	Description
Message Handle	Input	Message Handle*	Valid handle to a message.
Destination	Input	String	Site ID as configured at each site in Interaction Administrator. Although the value is a number, the input must be a string. You can use an asterisk (*) to broadcast a message.
Object ID	Input	String	Value to use for the Object ID to include with the message notification to the receiving handler. To trigger a handler, this value must match the value specified in the Object ID input on the Multi-Site Message Received initiator.
Event ID	Input	String	Value to use for the event ID to include with the message notification to the receiving handler. To trigger a handler, this value must match the value specified in the Notification Event input on the Multi-Site Message Received initiator.
Success	Exit	Not applicable	Path taken when the value sends successfully. Note: Although the handler sends the message successfully, this value does not mean that the intended handler received it.
Failure	Exit	Not applicable	Path taken when the operation fails.

Multi-Site Send Request

Sends the message that the supplied handle specified to another handler on a remote server or to multiple servers. The Event and Object IDs specified determine which handler the message triggers. Handler execution continues only after receiving a response or the timeout period expires. An asterisk (*) indicates an external data type.

Parameter	Process	Data Type	Description
Message Handle	Input	Message Handle*	Valid handle to a message.
Destination	Input	String	Site ID as configured at each site in Interaction Administrator. Although the value is a number, the input must be a string. You can only specify one destination for a request.
Object ID	Input	String	Value to use for the Object ID to include with the incoming message notification on the receiving server. To trigger a handler, this value must match the value specified in the Object ID input on the Multi-Site Message Received initiator.
Event ID	Input	String	Value to use for the event ID to include with the incoming message notification on the receiving server. To trigger a handler, this value must match the value specified in the Notification Event input on the Multi-Site Message Received initiator.
Timeout	Input	Input	Number of milliseconds to wait for a response to the message. A value of zero means to wait forever.
Response Message Handle	Output	Message Handle	Handle to the response message when receiving one in time. This output only contains a valid value when taking the success path.
Success	Exit	Not applicable	Path taken when sending the message successfully and receiving a response within the time specified.
Failure	Exit	Not applicable	Path taken when the operation fails.
Timeout	Exit	Not applicable	Path taken when the timeout period expires before receiving a response message.

Multi-Site Send Response

Sends a response message that the supplied handle specified back to the source of the original message. By using the Response Correlation ID obtained from the Multi-Site Message Received initiator, the response message routes automatically to the correct handler that is waiting for it. An asterisk (*) indicates an external data type.

Parameter	Process	Data Type	Description
Message Handle	Input	Message Handle*	Valid handle to a message.
Response Correlation ID	Input	Integer	Value used to route the response back to the sender of the original message. The server assigns this value and can only obtain it from the Response Correlation ID output on the Multi-Site Message Received initiator.
Response Destination ID	Input	Integer	Value used to route the response back to the sender of the original message. The server assigns this value and can only obtain it from the Response Destination ID output on the Multi-Site Message Received initiator.
Success	Exit	Not applicable	Path taken when the response adds to the message successfully. Note: Although the handler sends the response successfully, this value does not mean that the intended handler received it.
Failure	Exit	Not applicable	Path taken when the operation fails.

IpNotes Tools

The IpNotes tool set allows the handler author to store and retrieve named entities consisting of an arbitrary number of named attributes of any of the ID-defined types Integer, String, or Date/Time. Each attribute is a list of values of a particular type. An IpNote is available to all handlers on a server and is accessible by name. You can remove IpNotes explicitly, or they self-destruct after a time interval specified at creation. For more information about configuring the parameters of each tool, see the *Interaction Designer Help* at https://help.genesys.com/cic/mergedProjects/wh_id/desktop/hid_introduction.htm.

Tool	Description
Create Note	Creates a note that is accessible by name from any handler on the local server. The author can specify the number of minutes for the note to live before removing itself. Otherwise, the note exists until explicitly removed. Creating the note does not put any information into it. You add attributes using the update tools.
Get Notes Attribute Date/Time	Retrieves the attribute of the specified type with the name specified on the input. The output is a list of the correct type. The list can be empty. You can handle the list using the list tools. If the handler cannot find an attribute with the supplied name or one exists but it is the wrong type, the handler takes the appropriate error exit paths.
Get Notes Attribute Integer	Retrieves the attribute of the specified type with the name specified on the input. The output is a list of the correct type. The list can be empty. You can handle the list using the list tools. If the handler cannot find an attribute with the supplied name or one exists but it is the wrong type, the handler takes the appropriate error exit paths.
Get Notes Attribute String	Retrieves the attribute of the specified type with the name specified on the input. The output is a list of the correct type. The list can be empty. You can handle the list using the list tools. If the handler cannot find an attribute with the supplied name or one exists but it is the wrong type, the handler takes the appropriate error exit paths.
Remove Note	Removes a note created previously. If a handler removes a note, it ceases to exist for any handler that tries to retrieve it after that.
Update Notes Attribute Date/Time	Adds, replaces, or removes values from an IpNotes attribute. Provide the name of the attribute along with a list of the proper type containing the values to add or remove. You can specify one of three operations with this tool: append, replace, or remove. If the choice is append or remove, the attribute must exist already. Specifying replace causes replacement of the entire contents of the attribute. You can also use this option for the initial update.
Update Notes Attribute Integer	Adds, replaces, or removes values from an IpNotes attribute. Provide the name of the attribute along with a list of the proper type containing the values to add or remove. You can specify one of three operations with this tool: append, replace, or remove. If the choice is append or remove, the attribute must exist already. Specifying replace causes replacement of the entire contents of the attribute. You can also use this option for the initial update.
Update Notes Attribute String	Adds, replaces, or removes values from an IpNotes attribute. Provide the name of the attribute along with a list of the proper type containing the values to be add or remove. You can specify one of three operations with this tool: append, replace, or remove. If the choice is append or remove, the attribute must exist already. Specifying replace causes replacement of the entire contents of the attribute. You can also use this option for the initial update.

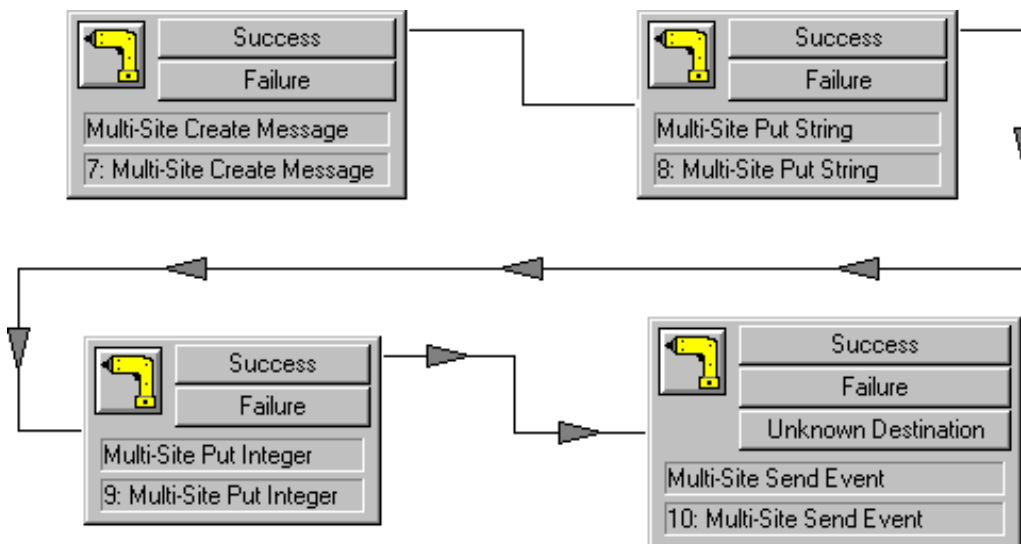
Send a Message That Does Not Require a Response (Handler1)

You can create a handler to send a message to a single server or all servers in a collective. The message does not require a response.

Handler1 example

The following example shows how to create a message that results in a message handler that you can supply to other Multi-Site message tools. The message includes a text string and integer, and the message sends as an event.

1. In Interaction Designer, click the **Multi-Site** tab and then add the following tools to a blank handler page:
 - Multi-Site Create Message
 - Multi-Site Put String
 - Multi-Site Put Integer
 - Multi-Site Send Event
2. Set the appropriate parameters for each tool. For more information, see [Multi-Site Tools](#).
3. Connect each tool so that the handler looks similar to the following:



4. Name and save the new handler.

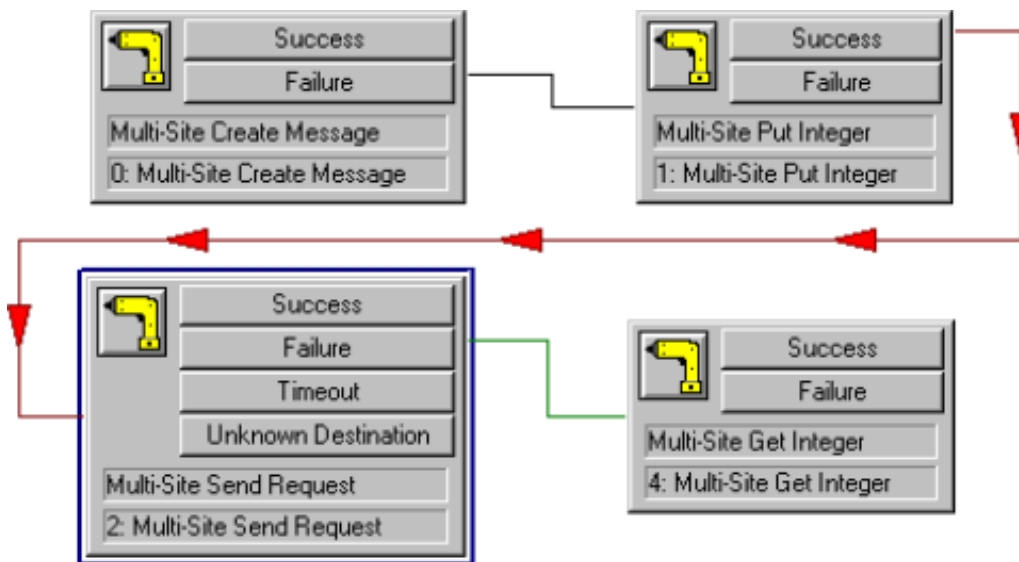
Send a Message That Requires a Response (Handler2)

You can create a handler that sends a message to a specific server and then waits a specified time for a response.

Handler2 example

The following example shows how to create a message in much the way as in Handler1; however, you only put an integer into the message. The message structure is fundamentally different from Handler1 and the receiving handler must recognize the difference in the two messages and unpack them accordingly. For more information about the receiving handler, see [Receive a Message \(Handler3\)](#).

1. In Interaction Designer, click the **Multi-Site** tab, and then add following tools to a blank handler page:
 - Multi-Site Create Message
 - Multi-Site Put Integer
 - Multi-Site Send Request
 - Multi-Site Get Integer
2. Set the appropriate properties for each tool. For more information, see [Multi-Site Tools](#).
3. Connect the tools so that the handler looks similar to the following:



4. Name and save the handler.

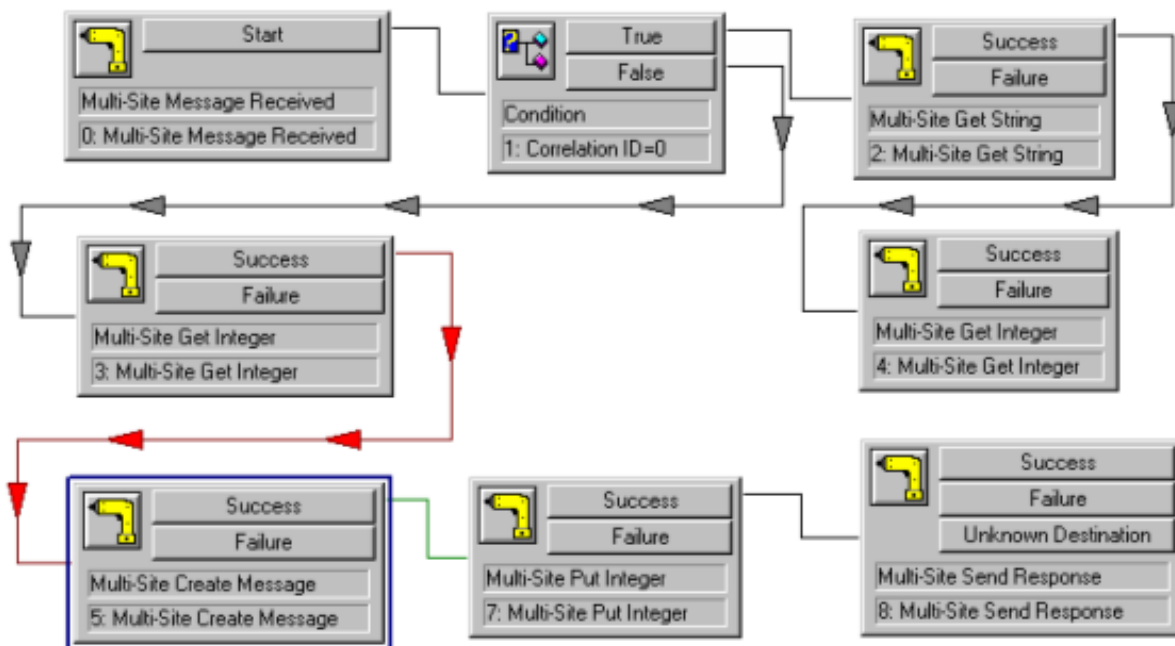
Receive a Message (Handler3)

You can create a handler that can receive a message and then decide whether the message is a request that requires a response or an event that doesn't. The receiving handler bases the decision on the correlation ID that the initiator provides. If the correlation ID is equal to zero, the message is an event. If the correlation ID is not equal to zero, the message is a request.

Handler3 example

Handler3 example assumes that the message came from either Handler1 or Handler2. Start Interaction Designer and follow these steps:

1. From the **File** menu, click **Change Initiator**. The **Interaction Handler Initiators** window appears.
2. Select **Multi-Site Message Received** and then click **OK**. Interaction Designer adds Multi-Site Message Received to a blank handler page.
3. Click the **Multi-Site** tab and then add the following tools to the handler page:
 - Multi-Site Get String
 - Multi-Site Get Integer (2)
 - Multi-Site Create Message
 - Multi-Site Put Integer
 - Multi-Site Send Response
4. Set the appropriate parameters for each tool. For more information, see [Multi-Site Tools](#).
5. On the **Basic** tab, add the **Condition** tool and then set the Boolean so that zero takes the True exit path.
6. Connect the tools so that the handler looks similar to the following:



7. Name and save the handler.

Testing and Troubleshooting

This information assists you in ensuring that your Multi-Site installation is performing properly.

Verify site connection

In Interaction Administrator, click **Check Site** at each site to verify connectivity to each of its Peer Sites.

Test workgroup member

Test a member of a workgroup that spans sites.

- Add a user to a spanning workgroup and verify that the user replicates to other sites.
- Remove a user from all spanning workgroups and verify deletion of the user from other sites.
- Change the status of a spanning user and verify that all sites display the correct status.
- Exit/Enter the CIC client for a spanning user and verify that all sites show the user as Not logged in/Logged in.
- Place a call as a spanning user and verify that all sites show the user as **On the phone**.
- Place a call from ServerA to UserA by dialing the user's extension (or directly from the CIC client).
- As UserA (logged on ServerA), place a call from ServerA to UserB (logged on ServerB) by dialing the user's extension (or directly from the CIC client). Verify that the call goes straight to the user and skips the IVR on ServerB. Verify that UserB's CIC client shows the call as originating from UserA.

Multi-Site RTM Servers cannot communicate

Some versions of the CIC Multi-Site RTM Server install set the Services identity to **Local System Account** and the DCOM identity to **The System Account**. As a result, Multi-Site RTM Servers are unable to communicate with each other. The workaround is to start the Services Control Panel applet.

To start the Services Control Panel applet

1. Right-click the RTM Server process and click **Properties**.
2. Click **This Account** to use the identity of the logged on domain user.
3. Restart RTM Server to put changes into effect.

RTM message not transferring

For the following issues, click **Check Site** in Interaction Administrator to ensure that RTM messages are transferring between the computers:

- Cannot see caller name and extension numbers
- Get the default IVR option when calling across servers
- Status not updating
- Receive voice mail when in available status
- Telephone Handset playback issues

Verify the following:

- User is a member in a spanning workgroup
- Sites are in sync regarding the user's current status
- User is not on the phone

File-based Mail Connector limitation

Multi-Site is incompatible with a combination of FBMC-only (File-based Mail Connector) sites and other sites that use mail connectors (for example, Exchange and Notes).

Multi-Site fails

If you have Multi-Site RTM server and RTM client installed on one CIC server, and you install Microsoft Visual C++ 6.0 with Service Pack 2, it can cause Multi-Site to fail.

When installing the Service Pack 2 software, the installation program asks whether you want to replace existing files with newer version files. Click **No**. If you click **Yes**, the program overwrites the following files:

- olepro32.dll
- oleaut32.dll
- asycfilt.dll
- stdole2.tlb

Overwriting these files causes Multi-Site to fail and requires that you reinstall Multi-Site.

CIC system cannot find a name prompt

If users are receiving a message that the CIC system cannot find a name prompt, you might have to move the location of the resources directory.

Multi-Site replicates all prompt locations exactly as they are on the home site. For Multi-Site RTM Client to find prompts on other servers, all your servers need to have their resources directory installed on the same letter drive.

CIC Server or RTM Server access denied

Only do these steps if you configured the computes as indicated in [Multi-Site Configuration and Administration Tasks](#) and you are still experiencing issues. If you see event log errors on either the CIC server or RTM Server about access being denied, do the following:

1. Run `dcomcnfg.exe` on the RTM Server computer.
2. Scroll down until you see **RTMServer**.
3. Click it and then click **Properties**.
4. Click the **Security** tab.
5. Click **Use custom access permissions**.
6. Click **Edit**, and configure it so that **Everyone** has **Allow Access**.
7. Select the **Use custom launch** permission.
8. Click **Edit**, and configure it so that only **System** has **Allow Launch**.
9. Select **Use default configuration permissions**.

Exception thrown error

If you see errors in the trace log that resemble `Exception thrown during GetRTMMessage HR=`, the COM registration is corrupt.

Do one of the following, depending on which server you are seeing the error:

- To fix the issue on the CIC server with RTM Server installed, do the following
 - a. Open a Command Prompt window and go to the `\i3\ic\server` directory.
 - b. Type in the command window `rtmserveru -Service`. Only the command prompt appears.
 - c. Type `regsvr32 rtmserverps`. A window appears, stating **DllRegisterServer in rtmserverps.dll succeeded**.
 - d. Run `dcomcnfg.exe` and reconfigure the RTMServer settings.
 - e. Restart your computer.
- To fix the issue on the CIC server without RTM Server installed, do the following:
 - a. Open a Command Prompt window and go to the `\i3\ic\server` directory.
 - b. Type in the command window `rtmserveru -RegServer`. Only the command prompt appears.
 - c. Type `regsvr32 rtmserverps`. A window appears, stating **DllRegisterServer in rtmserverps.dll succeeded**.
 - d. Run `dcomcnfg.exe` and reconfigure the RTMServer settings.
 - e. Restart your computer.

Change Log

The following table lists the changes to the *CIC Multi-Site Technical Reference* since its initial release.

Change	Date
31-October-2011	Initial release of this document for IC 4.0.
12-January-2012	<ul style="list-style-type: none"> Updated and tweaked install-related material and a few other places. Added two new sections in Chapter 3 to provide more specific guidance about configuring Interaction Administrator and DCOM for Multi-Site. Updated copyright and platform statement pages.
19-November-2013	<ul style="list-style-type: none"> Finalized example of configuring Multi-Site in IA for routing to peer sites. Updated copyright and made a few minor tweaks.
24-September-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.
11-August-2015	Updated documentation to reflect the addition of two CIC client applications, Interaction Desktop and Interaction Connect.
14-January-2016	Updated document formatting and copyright statements.
07-April-2017	Updated copyright statement and removed reference to Interaction Client Web Edition.
03-May-2017	Updated .NET Framework 4.0 to 4.5.2 or later.
21-September-2017	Rebranded to Genesys.
19-March-2018	Updated document format.
15-June-2018	Added Microsoft .NET Framework 4.7 requirement for PureConnect 2018 R4 or later.
07-May-2019	Reorganized the content only, which included combining some topics and deleting others that just had an introductory sentence such as, "In this section...".