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CIC Workstation Applications in Citrix and Remote Desktop Services Environments

Technical Reference

Abstract

This document describes support for CIC client-side applications in Citrix and Terminal Services environments including requirements, installation, and troubleshooting.

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

For copyright and trademark information, see
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Introduction to CIC Workstation Applications in Citrix and Remote Desktop Services Environments

The *CIC Workstation Applications in Citrix and Remote Desktop Services Environments Technical Reference* describes support for CIC client-side applications in Citrix and Remote Desktop Services environments including requirements, installation instructions, and troubleshooting tips.

Audience

The audience for this document includes Citrix/Remote Desktop Services and CIC administrators and anyone else who wants to better understand the CIC client-side applications in a Citrix or Remote Desktop Services environment.

Note:

In Windows Server 2008 R2 and earlier versions, Remote Desktop Services was called Terminal Services. This document applies to Remote Desktop Services.

CIC client-side applications supported on Citrix and Remote Desktop Services

PureConnect supports applications such as Interaction Desktop, Interaction Voicemail Player (requires Outlook), Interaction Supervisor, Interaction Recorder Client, and Interaction Screen Recorder Capture Client (for capturing screens from applications running through XenApp) in the following remote application server environments:

- Citrix® XenApp 7.16
- Remote Desktop Services on Windows Server 2012 R2 or 2016

Multi-platform and remote users are encouraged to run these supported CIC client-side applications with the Citrix or Remote Desktop Services client.

For the most up-to-date information about supported versions, see <http://testlab.genesys.com/>.

Supported IC Business Manager modules and CIC user applications

The CIC client-side applications that are supported on Citrix and Remote Desktop Services clients are categorized as either user applications or IC Business Manager modules.

- Supported user applications are Interaction Desktop, Interaction Voicemail Player, and Interaction Screen Recorder Capture Client.

Note: For information about support for SIP Soft Phone, see [Limitations to using CIC client-side applications in Citrix and Remote Desktop](#).

- Supported IC Business Manager modules are Interaction Supervisor and Interaction Recorder Client.

For more information about the CIC user and IC Business Manager applications, see the *PureConnect Installation and Configuration Guide* at https://help.genesys.com/cic/mergedProjects/wh_tr/desktop/pdfs/Installation_Configuration_Guide.pdf.

IC Server Manager application is not recommended with Citrix

Genesys does not recommend running any of the application modules installed by the IC Server Manager installation program on Citrix clients. Examples of IC Server Manager modules are Interaction Administrator and Interaction Process Automation Designer.

Install the Server Manager modules on an administrator's or developer's workstation, outside the Citrix environment. In a production environment, do not run these application components directly from the CIC server.

For more information about IC Server Manager modules, see the *PureConnect Installation and Configuration Guide* at https://help.genesys.com/cic/mergedProjects/wh_tr/desktop/pdfs/Installation_Configuration_Guide.pdf.

Third-party application support

Genesys supports our customers using Citrix and Remote Desktop Services to the best of our ability, although we cannot guarantee the reliability of third-party applications and equipment. Customers using these third-party applications do not in any way void their support and maintenance agreement.

Genesys Customer Care does not provide support for any aspect of Citrix XenApp or Windows Remote Desktop Services. For support on these products, contact the manufacturer directly.

- Citrix XenApp and the suite of supporting applications are considerable. Locate information regarding Citrix setup, licensing, and usage from Citrix directly at www.Citrix.com. If you choose to deploy any CIC client-side applications using Citrix, we highly recommend having a trained and certified Citrix Administrator on staff.
- Windows Remote Desktop Services is a Microsoft product. For setup and licensing information, see www.microsoft.com.

Check these websites regularly for updates and hotfixes for your applications.

About Citrix and Remote Desktop Services

Remote Desktop Services is a component of Microsoft Windows and Microsoft Windows Server. It enables access from almost any computing device to a server running Windows-based programs or the full Windows desktop. Users can connect to a terminal server to run programs and use network resources on that server.

Following is a short description of Windows Server 2016 Remote Desktop Services, taken from the Microsoft website.

- Remote Desktop Services (formerly known as Terminal Services) accelerates and extends desktop and application deployments to any device, improving remote worker efficiency, while helping to keep critical intellectual property secure and simplify regulatory compliance.
- Remote Desktop Services enables virtual desktop infrastructure (VDI), session-based desktops, and applications, allowing users to work anywhere.
- Microsoft RDS provides three deployment choices so that customers can have the flexibility to deploy the right type of VDI desktop for their users, all from a single platform. Customers can host either sessions-based desktop, pooled virtual machines, or personal virtual machines.

Following is a short description of Citrix XenApp, taken from the Citrix website:

Citrix XenApp is an on-demand application delivery solution that enables any Windows application to be virtualized, centralized, and managed in the datacenter and instantly delivered as a service to users anywhere on any device.

Requirements

The Remote Desktop Services role is included with Windows Server 2012 R2 and later versions. Citrix XenApp must be installed on the same server as Remote Desktop Services. Citrix XenApp and Remote Desktop Services licenses are required.

Architecture

Citrix XenApp and Remote Desktop Services extend the model of distributed computing by allowing computers to operate as both thin and fat clients simultaneously. At the hardware level, a thin client is a device that relies on a server for applications and data, and performs little or no application processing. Thus a thin client (often called a terminal) requires relatively small amounts of RAM and local disk storage capacity. A typical computer (sometimes called a fat client) usually has more RAM and a larger disk drive so it can handle all of an application's code and data locally.

Centralized computing resources

Citrix XenApp and Remote Desktop Services allow centralized management of some or all computing resources for each client connected to the server and provide each user with their own working environment.

Limitations to using CIC client-side applications in Citrix and Remote Desktop Services

Following are some limitations to using CIC client-side applications in Citrix and Remote Desktop Services environments.

Audio

If using Interaction Voicemail Player, users may be limited in voice mail playback.

- If your CIC Server uses Interaction Voicemail Player, you can use the Handset Audio Service to re-direct the playback of voice mail message to a station phone or remote number.
- Voicemail playback works if the user is logged on to Outlook through Citrix XenApp. Clicking a voicemail message in Outlook launches a Citrix instance of Interaction Voicemail Player. However, if Outlook is on the user's computer and Interaction Voicemail Player is on the Citrix server, clicking a voice mail message in Outlook will not use the Voicemail Player through Citrix. Users can still open the .wav file by browsing for the correct file in Interaction Voicemail Player if they have access to the folder where the file is located.
- A user without any audio support can dial into the system to listen to messages.

Note:

Adding audio support to Citrix XenApp and/or Remote Desktop Services requires extra network bandwidth. The quality of the audio may be poor when clients are connected across low-bandwidth connections.

Graphics

To conserve network bandwidth, consider suppressing the splash screen for Interaction Desktop and the other supported CIC client-side applications (not all the supported applications have splash screens). The splash screen is the graphic containing product and company information that appears while the application is starting.

To suppress the splash screen, use the `-disableSplashScreen` command-line argument.

1. In the Citrix management console, select the Interaction Desktop application > properties > application > location > command line arguments.
2. Enter `-disableSplashScreen`

You can also use this argument with Interaction Center Business Manager.

This argument tells the applications to suppress the splash screen that is normally displayed during start-up.

When the splash screen is transmitted to a remote desktop client over the network, the transmission consumes extra network bandwidth and forces the user to wait before accessing the application.

For more information about user configuration options, see the *Interaction Desktop Help* at https://help.genesys.com/cic/mergedProjects/wh_icde/desktop/client_introduction_idt.htm.

Although this is not an issue with CIC client-side applications, the graphics quality of Citrix XenApp and Remote Desktop Services may be degraded and not appear to be as clear as when running the application locally.

SIP Soft Phone

SIP Soft Phone is an on-screen dial pad that can be used to place and control calls from the Windows desktop using SIP-based communications. The SIP Soft Phone application requires the use of a USB headset to deliver audio to the user. SIP Soft Phone is a feature component in the CIC User Applications installation program.

SIP Soft Phone has two validated deployment solutions:

- Install on the user's local workstation operating system.
- Use via Citrix XenApp or XenDesktop.

Note: As of 2018 R1, SIP Soft Phone has successfully passed functional testing in a Citrix environment (XenApp/XenDesktop). However, audio quality cannot be guaranteed as the RTP audio is routed via the Citrix Receiver thin-client to Citrix servers before being routed to endpoints and/or PureConnect media servers. In addition, this traffic is managed by a proprietary Citrix messaging protocol. Therefore, server processing, along with network routing and congestion, affect the quality of all calls and recordings and are beyond the control of the PureConnect platform.

Installing the CIC client-side applications on the Citrix server

Installation of any of the supported CIC client-side applications occurs only on the Citrix XenApp server. This is a major advantage for software updates and upgrades.

The installation process is almost the same as installing the CIC client-side applications on an individual's client workstation. Before running the CIC User Applications install or the IC Business Manager Applications install, Windows must be in Install mode. This is required for Windows when programs will be used by multiple users.

Do one of the following to activate the system for Install mode at the Citrix XenApp server:

- Use the **Add/Remove Programs** tool in the Control Panel to install the CIC User Applications or IC Business Manager Applications. Use the **Add New Program** link to browse to the CIC User Applications or IC Business Manager Applications installation program on the CIC Server.
- From a DOS command line, type: `change user /install`

If you use this option, you can return to normal execution mode by rebooting or at a DOS command prompt typing: `change user /execute`

Either of these methods will place Windows in Install mode.

During the CIC client-side application installation, make the choices appropriate for your environment. There is no need to make special installation choices to run in a Citrix environment. For installation instructions, see the *PureConnect Installation and Configuration Guide* at https://help.genesys.com/cic/mergedProjects/wh_tr/desktop/pdfs/Installation_Configuration_Guide.pdf.

Note:

Not all the features/components available to install in the CIC User Applications or IC Business Manager Applications installation programs are supported in Citrix and Remote Desktop Services. For more information, see [CIC client-side applications supported on Citrix and Remote Desktop Services](#) and "SIP Soft Phone" in [Limitations to using CIC client-side applications in Citrix and Remote Desktop Services](#).

Remote Desktop Services access for users and groups

Windows Active Directory users and groups must have the appropriate permissions in Windows Server to access Remote Desktop Services.

Startup profile settings

Interaction Desktop automatically creates a default profile for a user the first time he or she logs in. The profile, named `Default.ininprofile` by default, contains the user, encrypted password, and other settings to use for future logins. The settings in the profile are based on data specified in the Startup Configuration Editor. For a description of the Startup Configuration Editor, see the *Interaction Desktop Help* at

https://help.genesys.com/cic/mergedProjects/wh_icde/desktop/client_introduction_idt.htm.

In a Citrix environment, all instances of Interaction Desktop run on the Citrix server rather than the users' workstations. This means that the `*.ininprofile` file is located on the Citrix server. When a specific instance of Interaction Desktop is launched, Interaction Desktop needs to know where on the Citrix server to find that user's profile file.

Note the following:

- Interaction Desktop detects whether the user is running in a Citrix environment and disables certain features, such as the **Activate existing instance** and **Confirm multiple instances** options in the Startup Configuration Editor.
- If **<this computer>** is specified in the **Station Type** field of the Startup Configuration Editor, the `%CLIENTNAME%` variable is used to display the local PC name instead of the Citrix server name as was shown previously.
- Environment variables are supported in the `.ininprofile` profile file.

Profile location

In a Citrix environment, profile settings are saved, by default in this folder on the Citrix server:

```
%appdata%\Interactive Intelligence\InteractionDesktop\Profiles or  
%userprofile%\AddData\Roaming\Interactive Intelligence\InteractionDesktop\Profiles.
```

This translates to `C:\Users\username\AppData\Roaming\Interactive Intelligence\InteractionDesktop\Profiles`.

For information about passing the workstation name to the profile, see [Passing the workstation name to the profile](#).

Passing the workstation name to the profile

There are two methods you can use to pass the workstation name to the profile. For more information about profile settings, see [Startup profile settings](#).

Method 1

To ensure that the `.ininprofile` file that is loaded is specific to the user who is logged into the local workstation:

1. In the Citrix management console, select the Interaction Desktop application > properties > application > location > command line arguments.
2. Enter the equivalent of the following:

```
"C:\Program Files\Interaction Desktop\InteractionDesktop.exe" "%userprofile%\Application Data\Interactive Intelligence\InteractionClient\Profiles\default.ininprofile"
```

This command line entry specifies the location of Interaction Desktop on the Citrix server. It also specifies one command line parameter indicating the location of the `*.ininprofile` file that will be used when Interaction Desktop launches.

Notice that the specified environment variable is `%userprofile%`.

Method 2

Follow these steps:

1. On the Citrix server, create a folder, such as `C:\myI3ClientFolder`. The folder will hold an `.ininprofile` file for each agent workstation on the network.
2. In the folder you created in the previous step, create an `.ininprofile` file for each workstation on the network.

The name of each file should be `(machinename).ininprofile`

Refer to an existing `default.ininprofile` file for syntax information.

Note:

- The `.ininprofile` file should specify to use Windows login authentication:

```
WindowsLoginAuthentication=True
```

- The `.ininprofile` file should specify the name of the workstation:

```
Workstation=(machinename)
```

Or, if you prefer to use an environment variable:

```
Workstation=%CLIENTNAME%
```

3. In the Citrix management console, select the Interaction Desktop application > properties > application > location > command line arguments, and then enter the equivalent of the following:

```
"C:\Program Files\Interaction Desktop\InteractionDesktop.exe"
```

```
"C:\myI3ClientFolder>\%CLIENTNAME%.ininprofile"
```

Troubleshooting guidelines

There are multiple troubleshooting paths one can take when an application isn't running correctly through Citrix or Remote Desktop Services. The following are some troubleshooting suggestions. This list is not meant to be an exhaustive troubleshooting procedure or strategy.

1. Verify other applications, other than the CIC client-side applications, will run under your Citrix environment. For example, try running notepad.exe. If this is a new Citrix environment, trying other applications may give you insight into publishing applications and the Citrix clients.
2. Verify that the application can run successfully at the Citrix application server, outside of Citrix. For example, if you have installed Interaction Desktop and it won't start for a Citrix user:
 - a. Go to the physical Citrix application server where Interaction Desktop was installed.
 - b. Run the desktop shortcut or the application shortcut from the Start > Programs menu. If Interaction Desktop does not run from the Citrix application server, determine the cause of the problem from this point.
3. If the Interaction Desktop is not launching for the Citrix user, check the permissions on the Citrix application server. Domain users must have full permissions in the folder where the Interaction Desktop was installed (e.g., C:\Program Files\Interactive Intelligence). From the console of the Citrix server, click Programs, point to Administrative Tools, and then click Local Security Policy. Expand the Local Policies node, and then expand the User Rights Assignments node. Grant the user group or individual user both of the following rights:
 - Create Global Objects
 - Create Permanent Shared Objects
4. If PureConnect Customer Care recommends tracing on Interaction Desktop, the PureConnect tracing utility must be published and deployed for the user, just as any other Citrix deployed application.
5. Running with roaming network profiles should not adversely affect the CIC client-side applications.

An issue has been discovered in which a user who does not deliberately exit Interaction Desktop but logs off of the workstation is not able to log on to Interaction Desktop at a different workstation. If this is the case, the Citrix Administrator may need to terminate CIC client-side applications from the Citrix XenApp console. Further investigation and testing is planned regarding this issue.

6. If you're not getting sound through your speakers or the sound quality is poor, keep in mind that audio quality is controlled through Citrix policies. You may need to adjust the setting for the maximum amount of bandwidth for client audio mapping, or the client device sound quality setting.
7. If the Interaction Supervisor with Historical Reporting and/or Interaction Report assistant licensing is not able to run reports in an Oracle environment, there can be many possible items to check. In the past, we found that the path to the Interaction Supervisor application (e.g. C:\Program Files\Interactive Intelligence) needed to be added to the PATH environment variable on the Citrix application server. This may or may not fix the issue. The network user ID that will be used to run the reports at the client workstation must be a local administrator on the Citrix application server. If reports will not be used, no global local machine permissions are required.
8. Many of our customers run Interaction Desktop remotely in a Citrix environment. This is encouraged if your client users are truly remote users. However, running the client remotely (select this option from the login dialog for Interaction Desktop) is not a requirement to deploy the applications through Citrix. Running Interaction Desktop remotely in any environment should be a deliberate choice and not just left up to the user's discretion.

Change Log

The following table lists the changes to the *CIC Workstation Applications in Citrix and Remote Desktop Services Environments Technical Reference* since the CIC 3.0 GA release.

Date	Change
04-November-2011	Updated for 4.0 initial release.
28-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 Product Information site URLs, and copyright and trademark information.
29-September-2015	- Updated documentation to reflect the addition of two CIC client applications, Interaction Desktop and Interaction Connect and the removal of Interaction Client .NET Edition. - Removed references to support for Interaction Fax, as it is not supported in Citrix and Remote Desktop Services.
08-December-2015	Added information about the <code>-disableSplashScreen</code> command line argument.
09-June-2016	- Updated references to "Terminal Services" to "Remote Desktop Services." - Updated XenApp and Windows Server requirements.
20-September-2017	- Replaced references to <code>default.i3client</code> with <code>default.ininprofile</code>. <code>Default.i3client</code> was used by Interaction Client. <code>Default.ininprofile</code> is now used by Interaction Desktop. - On page 6, under "The profile location", updated the location of the default profile folder from <code>\Documents and Settings\user.name\ApplicationData\Interactive Intelligence\InteractionClient\Profiles</code> to <code>C:\Users\username\AppData\Roaming\Interactive Intelligence\InteractionDesktop\Profiles</code>. - Updated stylesheet applied to this document. - Copyright and Trademark Information. - Applied Genesys terminology.
09-March-2018	Updated SIP Soft Phone to reflect support as of 2018 R1.
11-April-2018	Updated the supported IC Business Manager modules section to refer to SIP Soft Phone information.
20-June-2019	Reorganized the content only, which included combining some topics and deleting others that just had an introductory sentence such as, "In this section..."