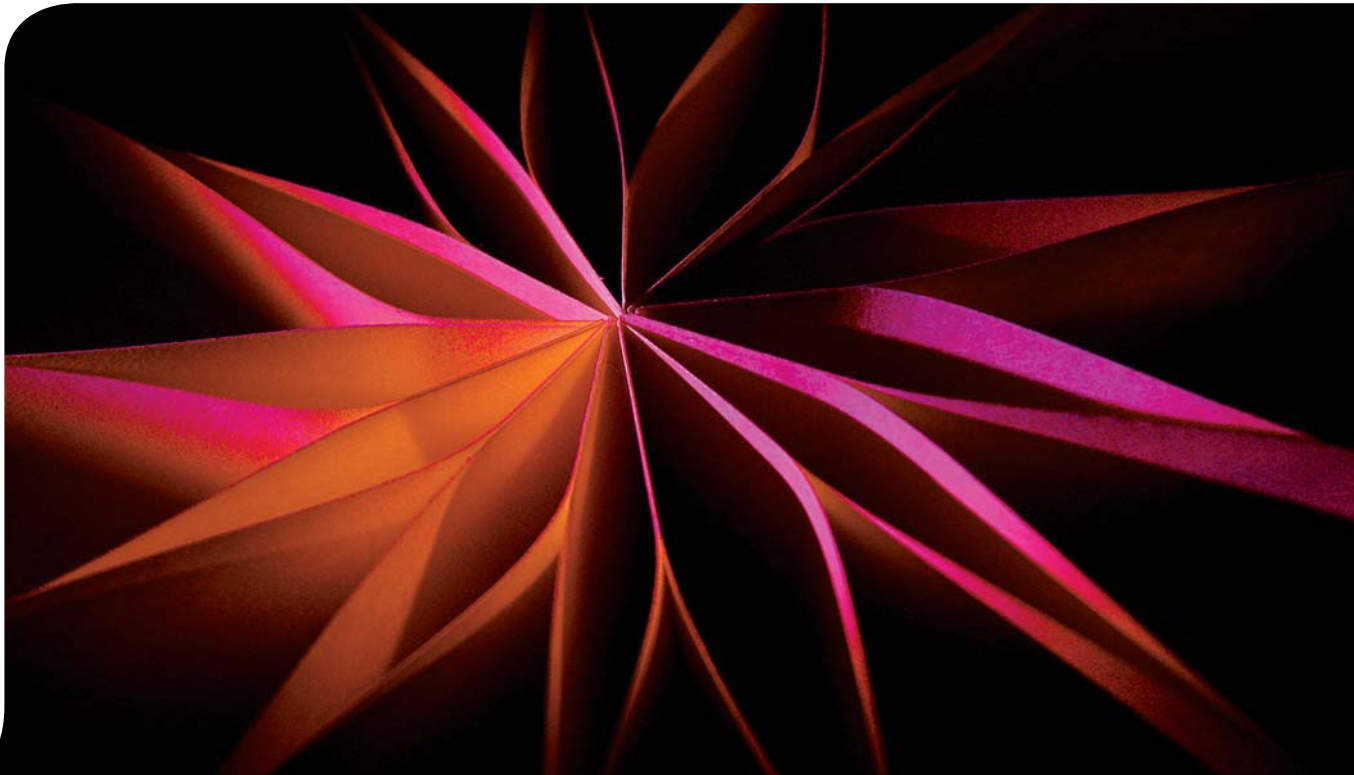


ShoreTel Contact Center Installation Guide



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Company Information

ShoreTel, Inc.
960 Stewart Drive
Sunnyvale, California 94085
Telephone: (408) 331-3300
Fax: (408) 331-3333
www.shoretel.com

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Preface

This preface provides information about the objectives, audience, and conventions of the ShoreTel *Contact Center Installation Guide*.

This guide is not intended as a user guide for the ShoreTel Contact Center Solution. It does not describe how to use the system applications in detail. For such information, refer to the other Contact Center documentation, as described in the Documentation section on page 8.

Objectives

This document describes how to get your ShoreTel Contact Center system up and running. In this guide, you will find:

- Introduction to Contact Center
- Hardware and software requirements
- Installation instructions
- Directions on configuring Contact Center
- Information on testing the Contact Center system
- Details on setting up a redundancy server system
- Overview on upgrading and maintaining Contact Center
- Installation worksheets
- Glossary

Audience

This guide is intended for professional services engineers or technical personnel responsible for system installation. The guide also provides getting started information for contact center administrators and other system users, as well as a basic overview of the applications that make up the system.

Guide Conventions

Conventions used in this guide include the following:

- Data-entry field names, hypertext links, control buttons, keywords, and other items within the system management interface are in **boldface** text.
- Information that you enter in data-entry fields is in a `data entry` font.
- **NOTE** indicates an area of special interest to the user.

Other Contact Center Documentation

The following documents offer additional information about the Contact Center system:

- Release Notes
- Administrator Guide
- Applications Interface Guide
- Installing and Implementing Enterprise Contact Center Chat
- Supervisor Guide
- Report Data Fields Reference Guide
- Using ShoreWare Agent Toolbar
- Context-Sensitive Online Help

Contact Center documentation can be found in the Documentation folder of the ShoreTel Contact Center Solution Installation CD and on the ShoreTel web site. The context-sensitive online help can be accessed from the Help menu of each Contact Center application.

Introduction

1.1 Overview

ShoreTel Contact Center is a comprehensive solution designed to control, manage, and monitor the various activities of a call center. ShoreTel offers two Contact Center solutions to address the requirements of customer service organizations:

- **Contact Center** targets medium-sized inbound Automatic Call Distributor (ACD) installations and supports large agent groups with inbound routing rules, real-time agent monitoring, historical reports, and wallboard administration.
- **Enterprise Contact Center** meets the needs of the most complex inbound-outbound, multimedia call centers by extending the capabilities of Contact Center with a powerful, rules-based routing engine that supports customizable skill sets and multimedia communications, and smoothly integrates with customer relationship management (CRM) solutions.

All Contact Center components are included in both Contact Center and Enterprise Contact Center.

1.2 Contact Center Components

The Contact Center Solution includes the following basic components:

- Contact Center Server
- One or more PCs with Full Supervisor Suite
- One or more PCs with Monitor Supervisor Suite
- One or more PCs with Agent Suite

The software modules installed with the each type of component are:

Module	Server	Full Supervisor	Monitor Supervisor	Agent
ShoreWare Contact Center Director	X	X		
Contact Center Diagnostics Console	X			
ShoreWare Contact Center Reports	X	X		
License Viewer	X	X	X	
ShoreWare Wallboard Director	X	X		
ShoreWare Agent Manager	X	X	X	
ShoreWare Agent Toolbar.		X	X	X
Graphical Contact Center Scripting	X	X		

1.2.1 Contact Center Server

The Contact Center Server software provides an intelligent routing engine and an integrated interactive voice response (IVR) package for managing call center configuration, call activity, and reporting, and for implementing the required routing plan. The server software runs on a dedicated server at your call center.

The Contact Center Server may be at the same location as the ShoreWare Headquarters Server. The Contact Center Server is a ShoreWare distributed server with the Contact Center Server software also installed. In a production environment, the Contact Center applications should **not** be run from the Contact Center Server.

The Contact Center Server interacts with the ShoreTel system as a TAPI application.

1.2.2 Supervisor Suites

The Supervisor Suites are used to administer and monitor call center activities, and to report on real-time and historical information that details or summarizes the system's performance over a specified time period. Supervisors cannot start or stop the system.

Two Supervisor Suite versions are available to customize the access levels and permissions that personnel that have to Contact Center administration, configuration, and maintenance features:

- **Supervisor Monitor.** For supervisors that only monitor call center activities, this suite includes ShoreWare Agent Manager, ShoreWare Agent Toolbar, and the License Viewer.
- **Full Supervisor.** For supervisors who also administer Contact Center, this suite provides access to all supervisor applications and ShoreWare Agent Toolbar.

The Contact Center supervisor applications are:

- **ShoreWare Contact Center Director** is used to configure the Contact Center entities and set system parameters.
- **Graphical Contact Center Scripting (GCCS)** is a tool for designing script functions used in call input based call routing (available in Enterprise Contact Center only).
- **ShoreWare Agent Manager** furnishes real-time statistical information on call center activities. The information can be displayed in tables, forms, and graphical formats.
- **ShoreWare Contact Center Reports** generates predefined and custom reports on historical call center activity. With this information, management can efficiently allocate personnel to meet call center requirements.
- **ShoreWare Wallboard Director** displays messages on a third-party wallboard display, or on an agent's PC (with the integrated Desktop Wallboard software).
- **Contact Center Diagnostics Console** indicates system status and alarms.
- **License Viewer** displays the license features and quotas.

1.2.3 Agent Suite

The Agent Suite, made up of ShoreWare Agent Toolbar, is installed on agent PCs. ShoreWare Agent Toolbar provides the agent with an easy-to-use environment for performing basic and sophisticated tasks.

1.3 Licensing

A server lock device, also known as a license dongle, is required to install and use Contact Center 5 or higher on a server. The lock device is encoded with the purchased Contact Center version and provides access to specific features. For installations that use the new dongle-less supervisor licensing scheme, the number of supervisor licenses is also encoded in the server lock. The restrictions encoded in the lock device limit access to Contact Center features and administrative functions to authorized individuals only.

The server lock is installed on the server that runs the Contact Center Server software.

Note: When you add a new License Key file (.cif), you must shut down and restart the Contact Center Server service to propagate the changed information throughout the entire system. To properly shutdown the Contact Center Server service, select **Start > Programs > Administrative Tools > Services**, and then click **Stop the Service**.

1.3.1 Server Lock Devices

ShoreTel offers two Contact Center solutions: Contact Center and Enterprise Contact Center. There is a server lock device for each solution:

- **Server with Contact Center:** Required to run the server software. Includes configuration information about the product you have, such as the number of supervisors and agents and any additional features you purchased. Optional features are licensed on a per-system basis and consist of:
 - Wallboard Support
 - Desktop Wallboard Access
 - Formula Editor
 - Work Force Management Connector
- **Server with Enterprise Contact Center:** Required to run the server software. Includes configuration information about the product you have, such as the number of supervisors and agents and any additional features you purchased. Optional features are licensed on a per agent basis and require a license for every agent who logs into a group that supports these features:
 - Voice
 - Email
 - Chat
 - Outbound Calling

The number of permitted agents is encoded in the server lock device. The number of agent licenses must equal the maximum number of agents that could be logged into Contact Center at one time.

Each IVR port has its own license in Enterprise Contact Center. The number of IVR ports is encoded in the server lock device. You need an IVR port license for every IVR port configured in the system. The total number of licenses must match the maximum number of calls connected to the system at one time. A call is connected to an IVR port whenever a call is waiting in a queue or being serviced by a call control script (CCS) or announcement.

Each inbound voice license includes an IVR port license. This provides a trunk-to-agent ratio of 2:1, such that for every call being answered by an agent, another call is queued in an IVR port. Additional IVR port licenses are required if either more than one call is queued per agent or if there is a self service module.

1.3.2 Supervisor Lock Devices

Beginning with Contact Center 5, supervisor licences are encoded in the server license, so the server lock device for each supervisor is no longer necessary. Customers upgrading to release 5 and higher have the option of continuing to use supervisor license dongles.

Two types of supervisor lock devices exist:

- **Full Supervisor:** Used to access all supervisor applications. Requires a separate license.
- **Monitor Supervisor:** Used to access a subset of supervisor applications. Requires a separate license.

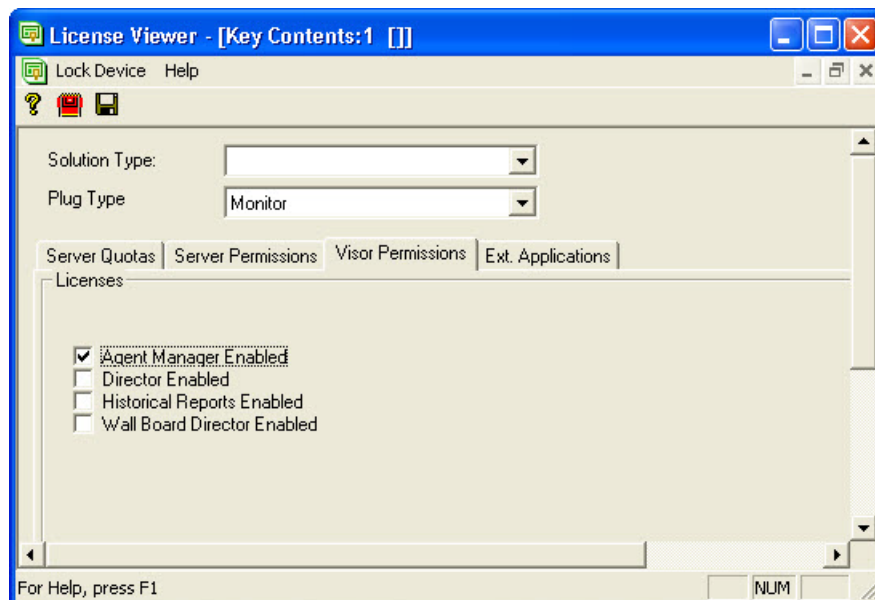
1.3.3 Viewing Licensing Information

You can view the Contact Center license information using the License Viewer.

To view license information:

- Step 1** From the Windows desktop, click **Start > Programs > ShoreTel > Contact Center > License Viewer**.

The License Viewer appears.



- Step 2** Click the appropriate tab to view information on the permissions that have been licensed.

Hardware and Software Requirements

2.1 ShoreTel Contact Center Server Requirements

ShoreTel Contact Center Server software must be installed on a dedicated computer that meets or exceeds the hardware and software requirements in this chapter and is attached to the network. This chapter defines three levels of requirements, based on the type of call center, normal loads, and activity.

For high call loads and advanced interactive voice response (IVR) activity, including large numbers of Dialed Number Identification Services (DNIS), more than 150 concurrent agents, and more than 1,000 calls per hour, please contact ShoreTel Customer Service. The support of more than 150 simultaneous users, or more than 1,500 simultaneous media ports, requires multiple servers to separate the core Contact Center, Enterprise Contact Center, and IVR engines.

Contact Center runs as a Microsoft Windows service, with multiple child processes, and conforms to standard service semantics (for example—Start, Stop, and Restart).

Depending on how your call center is set up, and the location of your agents, the server allocation recommended in this chapter should be followed to reduce latency.

Note: Blade Servers are not supported with Enterprise Contact Center since the server needs a dedicated USB port for the lock device.

2.1.1 Server Allocation

Generally, you want to have your HQ (PBX HQ) and ShoreWare Contact Center servers in the same physical location. However, if your call center includes agents in a remote location using a DVS (PBX remote server), the ShoreWare Contact Center Server should be at the remote location to reduce network latency and improve agent experience with Contact Center.

It is highly recommended that the site which has the Contact Center server always have either an HQ server or a DVS server that the agents at the site are associated with.

2.1.2 System Requirements for 1 to 149 Simultaneous Agents

The following components are required to support Contact Center Server software for a maximum of 149 agents:

- **One Core Duo Processor Server**
See [Section 2.1.6 on page 21](#) for information on the server processor requirements.
- **Memory**
See [Section 2.1.6 on page 21](#) for information on the memory requirements.
- **Hard Drive 1**
Configured with 73 GB, U160, SCSI, 1 In, 10 K RPM HDD. All drives must match for RAID configuration.
- **Hard Drive 2**
Configured with 73 GB, U160, SCSI, 1 In, 10 K RPM HDD. All drives must match for RAID configuration.
- **Hard Drive Redundancy**
RAID required. Add-in RAID card, RAID 1.
- **DVD**
- **Keyboard**
A standard Windows keyboard.
- **Monitor**
- **Mouse**
- **First Network Adapter (TCP/IP)**
- **Second Network Adapter (TCP/IP) (Optional)**
- **Serial Port #1**
- **Serial Port #2 (Optional)**
For wallboard integration
- **USB1 Port (License lock device/dongle)**
- **Operating System**
See [Section 2.1.5 on page 20](#) for details.

2.1.3 System Requirements for 150 to 299 Simultaneous Agents

The following components are required to support Contact Center Server software for a maximum of 299 agents:

- **Three Core Duo Processor Servers**
One server to run the main Contact Center core engine; two servers to run standalone distributed IVR ports (150 ports in each server).
See [Section 2.1.6 on page 21](#) for information on the server processor requirements.

- **Memory**
See [Section 2.1.6 on page 21](#) for information on the memory requirements.
- **Hard Drive 1**
Configured with 150 GB, U160, SCSI, 1 In, 10 K RPM HDD. All drives must match for RAID configuration.
- **Hard Drive 2**
Configured with 150 GB, U160, SCSI, 1 In, 10 K RPM HDD. All drives must match for RAID configuration.
- **Hard Drive Redundancy**
RAID required. Add-in RAID card, RAID 1.
- **DVD**
- **Keyboard**
A standard Windows keyboard.
- **Monitor**
- **Mouse**
- **First Network Adapter (TCP/IP)**
- **Second Network Adapter (TCP/IP) (Optional)**
- **Serial Port #1**
- **Serial Port #2 (Optional)**
For wallboard integration
- **USB1 Port (License lock device/dongle)**
- **Operating System**
See [Section 2.1.5 on page 20](#) for details.

2.1.4 System Requirements for 300 to 600 Simultaneous Agents

The following components are required to support the Contact Center Server software for up to 600 agents.

- **One Quad Core Xeon Processor Server and Four Core Duo Processor Servers**
One server to run the main Contact Center core engine; four servers to run standalone distributed IVR ports (150 ports in each server).
See [Section 2.1.6 on page 21](#) for information on the server processor requirements.
- **Additional Processor (If required)**
- **Memory**
See [Section 2.1.6 on page 21](#) for information on the memory requirements.
- **Hard Drive 1**
Configured with 150 GB, U160, SCSI, 1 In, 10 K RPM HDD. All drives must match for RAID configuration.

- **Hard Drive 2**
Configured with 150 GB, U160, SCSI, 1 In, 10 K RPM HDD. All drives must match for RAID configuration.
- **Hard Drive Redundancy**
Drives attached to PERC3-DI, RAID 5.
- **Backplane**
1X6 Hot-Pluggable HDD Backplane
- **DVD**
- **Keyboard**
A standard Windows keyboard.
- **Monitor**
- **Mouse**
- **First Network Adapter (TCP/IP)**
- **Second Network Adapter (TCP/IP)**
- **Serial Port #1**
- **Serial Port #2 (Optional)**
For wallboard integration
- **USB1 Port (License lock device/dongle)**
- **Power Supply Kit**
Redundant Power Supply 2+1
- **Operating System**
See [Section 2.1.5 on page 20](#) for details.

2.1.5 Operating Systems for Stations

Contact Center requires the following operating systems:

Server station:

- Microsoft Windows Server 2003 (SP2)
- Microsoft Windows Server 2008 32-bit (SP2)

IVR Distributed Server station:

- Microsoft Windows Server 2003 (SP2)
- Microsoft Windows Server 2008 32-bit(SP2)

Supervisor station (for the Full Supervisor Suite):

- Microsoft Vista Business (SP2)
- Microsoft Windows XP (SP2)
- Microsoft Windows 2007 (32-bit and 64-bit) versions

Agent station:

- Microsoft Vista Business (32-bit version only) (SP2)
- Microsoft Windows XP (SP2)
- Microsoft Windows 2007 (32-bit and 64-bit) versions
- Citrix Xenapps 4/4.5

Browsers Supported:

- Microsoft Internet Explorer 7.0 and 8.0, and FireFox 3.5.

2.1.6 Processors and Memory

The following table summarizes the server processor and memory requirements, based on the size of your call center.

Agents	Software Type	Core Duo		Quad Core Xeon	
		Minimum CPU	Minimum RAM	Minimum CPU	Minimum RAM
1 to 149	ECC / CC Core and IVR	1.8 GHz	2 GB		
150 to 299	ECC / CC Core and IVR	2.0 GHz	4 GB		
300 to 600	ECC / CC Quad Core and IVR			1.6 GHz	4 GB

For dual CPU configurations, use the following formula to estimate the total frequency of the system: (CPU#1_frequency + CPU#2_frequency) *0.8.

2.1.7 Remote Access

The Contact Center Server should be configured for remote access maintenance and support operations. You must enable Terminal Services on the server to allow administrators to connect using Terminal Services Client software.

2.2 ShoreTel Contact Center Clients

ShoreTel Contact Center supervisor and agent applications run on the user's PC alongside any other applications.

The following table summarizes the requirements for client systems:

Category	Supervisor PC	Agent PC
CPU	Pentium III 500 MHz or Pentium IV 1.6 MHz	Pentium III or Pentium IV
Memory	128 MB	128 MB
Hard Disk Space	500 MB free	300 MB free
CD	Optional	Optional
First Network Adapter	10/100 Mb	10/100 Mb
USB Port	Required (license lock device)	

Category	Supervisor PC	Agent PC
External Modem	Optional	
Operating System	Windows XP / Vista/7	Windows XP / Vista/7
Outlook 2003 SP3	If a supervisors is using Outlook 2003, required in order to use the Contact Center email feature	If an agent is using Outlook 2003, required in order to use the Contact Center email feature

Installing Contact Center

3.1 Overview

The chapter provides information on installing ShoreTel Contact Center. Details on installing Contact Center in a thin client environment, and uninstalling Contact Center, are also included.

The following process is used to install ShoreTel Contact Center:

1. Verify that the installation prerequisites have been met.
2. Gather the required installation information.
3. Install the ShoreTel Distributed Server software on the dedicated server.
4. Install the ShoreTel Contact Center Server software.
5. Start the Contact Center Server and verify its operation.
6. Install the Contact Center supervisor applications on the supervisor PCs.
7. Check the installation of the Contact Center supervisor applications by starting the applications.
8. Install ShoreWare Agent Toolbar on the agent PCs.
9. Check the installation of ShoreWare Agent Toolbar by starting the application.
10. (Optional) Install the Ghostscript component.
11. (Optional) Install distributed IVR servers.
12. (Optional) Specify an external location to store interaction data.

The ShoreTel Contact Center Solution DVD is used for all installations. The installation procedure determines which software to install from information on the lock device.

Once Contact Center has been installed, you need to configure and test the system. These activities are explained in Chapters 4 and 5 of this guide.

The Contact Center Server software and Contact Center applications support redundancy of the critical hardware components of the server. ShoreTel recommends redundancy of hard drives and power supplies to minimize system down-time and improve the recovery process in case of hardware failures. Refer to the *Contact Center Administrator Guide* for information on installing and using the ShoreTel redundant server system.

3.2 Installation Prerequisites

Before beginning the Contact Center installation, verify that the following prerequisites have been met:

- A dedicated server is available for installing ShoreTel Contact Center Server.
- ShoreTel Contact Center Server has assigned static IP addresses.
- The Aladdin HASP driver (HASP4_driver_setup.zip) is installed on the server.

The USB server lock device, required to install and use Contact Center 5 or higher on the server, uses the Aladdin HASP driver to automatically activate when plugged into a port. This driver resides on most computers. If necessary, you can download it from the Internet.

- A lock device (dongle) is available for the server.
- You have either type of Contact Center Supervisor licenses:
 - Dongle-less supervisor license system (available with release 5 and higher).
 - Legacy physical dongles, if these are retained after an upgrade from release 4.6x.
- You are familiar with the Microsoft Windows 2003, 2007, or 2008 SP2 environments.
- You have local administrator privileges to install and execute Contact Center applications on the Contact Center Server.
- If you plan to install Contact Center supervisor applications using the active directory method, Java 6 or higher must be installed on supervisor PCs (see the section Installing the Contact Center Supervisor Applications on page 30 for details).

All server and client computers must connect over a LAN that supports TCP/IP. ShoreTel recommends that you assign static IP addresses for the Contact Center Server. All other workstations (supervisors or agents) can use Dynamic Host Configuration Protocol (DHCP) if it is available.

3.3 Required Installation Information

Prior to installing the system components, make sure that you have the following required information:

- The Contact Center Server static IP addresses.
- The method for partitioning the server hard disk.
- Your power source.
- Specifics on agent workstations and telephone extensions.
- Whether you plan to implement Data Execution Prevention (DEP), for Microsoft Windows XP-based systems.
- Which supervisor licenses you will install.

3.3.1 Server Static IP Addresses

The Contact Center Server should have static IP addresses. ShoreTel considers the assignment of static IP addresses for servers to be a best practice.

3.3.2 Partitioning the Contact Center Server Hard Disk

It is recommended that Contact Center software be installed in a separate partition. However this is not mandated by the installer.

The Contact Center Server hard disk can be partitioned as follows:

- Disk C: 16 GB includes the boot disk with the operating system and basic software.
- Disk D: The remainder of the hard drive is the application disk and includes the Contact Center Server software (for installation and data).

3.3.3 Power Source

Ensure that the Contact Center Server has a protected power source, such as an uninterruptible power supply (UPS) or a protected power source.

3.3.4 Agent Workstation

ShoreTel recommends that you collect and keep a record of the following information for each agent workstation on which ShoreWare Agent Toolbar runs:

- Device IP address or name
- User telephone extension

3.3.5 Data Execution Prevention Setting

Data Execution Prevention (DEP) is an optional feature in Microsoft Windows Server 2003 and Microsoft Windows XP (SP2), but not Microsoft Windows Vista. DEP prevents applications or services from executing code from nonexecutable memory regions. DEP occasionally causes software problems with various applications, including Contact Center. When DEP is fully enabled, Contact Center may have operational delays.

To access the DEP setting:

- Step 1** On your desktop, right-click the **My Computer** icon, and then click **Properties** on the pop-up menu.
- Step 2** From the System Properties panel, click the **Advanced** tab.
- Step 3** From the Performance section, click the **Settings** button.
- Step 4** From the Performance Options panel, click the **Data Execution Prevention** tab. The option **Turn on DEP for essential Windows programs and services only** is used to turn DEP on or off.
- Step 5** Click on **OK** to save your change and to close the panels.
- Step 6** Reboot your computer for the DEP changes to take effect.

3.3.6 Supervisor Licenses

To run a supervisor application, the system requires a supervisor license for each user who logs on as a supervisor.

Beginning with Contact Center 5, supervisor licenses are encoded in the server license, so the server dongle for each supervisor is no longer necessary. Customers upgrading to release 5 and higher have the option of continuing to use supervisor license dongles. Two types of supervisor licenses are available:

- **Supervisor Monitor.** For supervisors that only monitor call center activities, this license includes ShoreWare Agent Manager, ShoreWare Agent Toolbar, and the License Viewer.
- **Full Supervisor.** For supervisors who also administer Contact Center, this license provides access to all supervisor applications and ShoreWare Agent Toolbar. Full Supervisor installations do not have access to the Contact Center Diagnostics Console or Contact Center Scripting. Full supervisors cannot start or stop the system.

Licenses of the same type can be used interchangeably on like installations. For example, if you use one supervisor license to install the supervisor applications, you can use a different supervisor license to access the applications after the installation.

Multiple supervisors can use the same PC, but only one supervisor can be logged on to that PC at a time. Supervisors can use multiple PCs with supervisor applications installed—but only if the server has an available supervisor license.

3.4 Installing the Distributed Server Software

Before installing the ShoreTel Contact Center Server software, you must install the ShoreWare Distributed Server software on the computer that is to run the Contact Center software. Refer to the *ShoreTel Planning and Installation Guide* for details. Before adding the distributed server, note the following:

- On systems containing two network interface cards (NICs), disable one card.
- Do not change the pre-set voice mail extensions.
- Do not enable or configure the Simplified Message Desk Interface (SMDI).
- Do not configure any users for voice mail on this server.

3.5 Installing the Contact Center Server

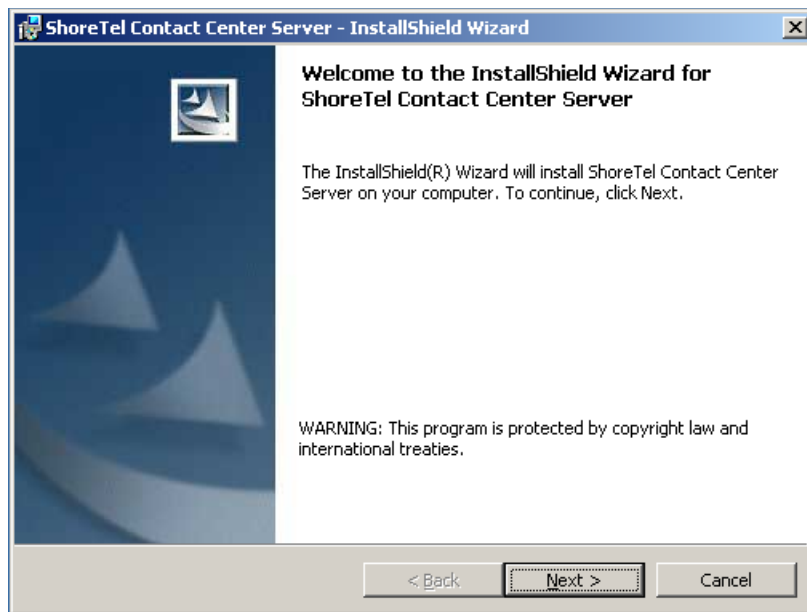
Before beginning the installation of the Contact Center Server, ensure that you have attached the correct lock device.

To install the ShoreTel Contact Center Server software:

Step 1 Verify that the server meets the basic requirements, as specified in Chapter 2.

Step 2 Verify that the server is connected to the network and has a static IP address.

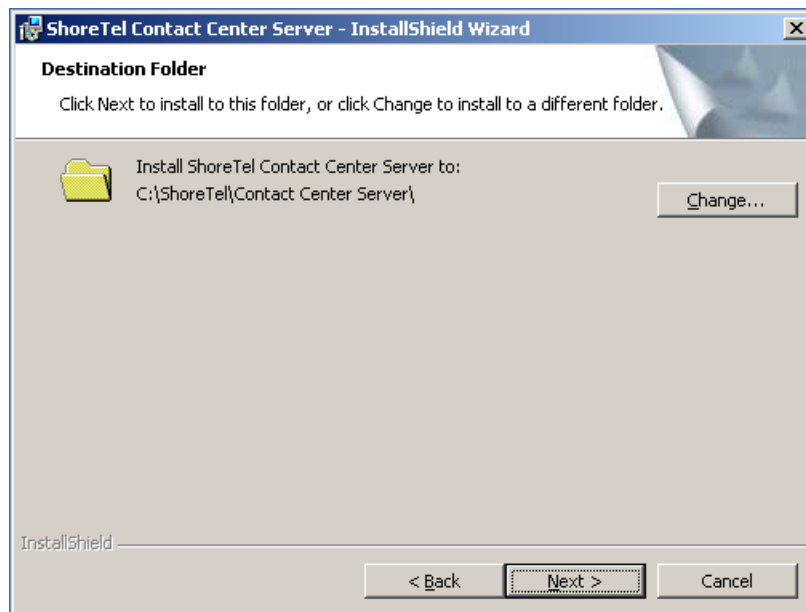
- Step 3** If the computer contains two enabled NICs, disable the NIC not running the *ShoreTel Remote Telephony Application Programming Interface (TAPI) Service Provider*.
- Server computers containing two enabled NICs may not properly install or update Contact Center software.
- Step 4** Turn on the ShoreTel Contact Center Server.
- Step 5** Log on as a Windows Administrator.
- You must install the software through a direct connection to the server. The Contact Center Server software cannot be installed through a Windows terminal server or remote desktop session.
- Step 6** Insert the lock device in one of the server's USB ports.
- If the device driver is not already installed, the installation program installs the required lock device driver. A small screen indicates this process and closes after the driver is installed. When you have installed the lock device correctly and the drivers are working, a red light inside the lock device turns on.
- Step 7** Insert the ShoreTel Contact Center Solution Installation CD.
- Step 8** In the CD's ShoreTel Contact Center Server folder, click the **setup.exe** file. A Welcome screen appears. Click **Next** to continue.



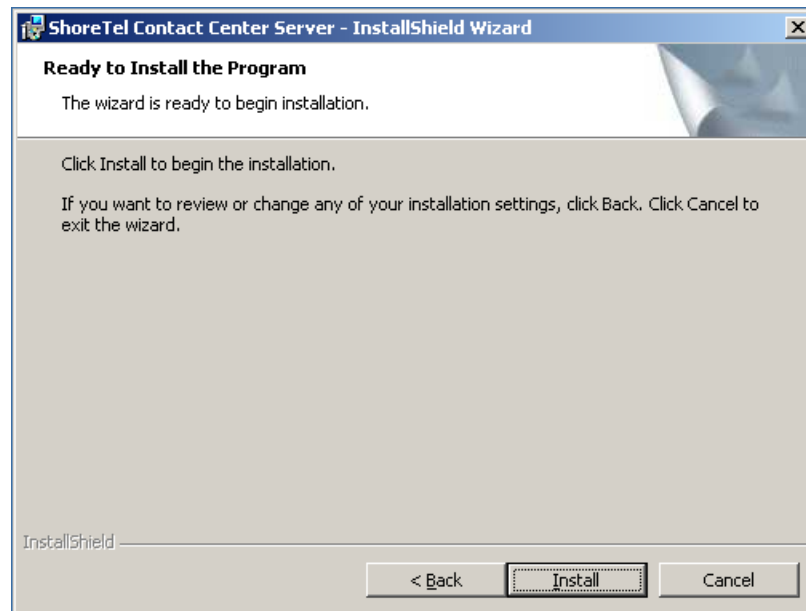
If you decide to stop the installation, click the **Cancel** button at any time throughout the process. If you want to return to the previous screen, click **Back**.

- Step 9** You are asked to accept the terms of the license agreement. Then click **Next**.
- Step 10** In the **Destination Folder** screen, click **Next** to keep the default destination and continue the installation.
- The default destination is C:\ShoreTel\Contact Center Server.

Alternatively, you can click **Change** to locate and select a different destination folder, and then click **Next**.

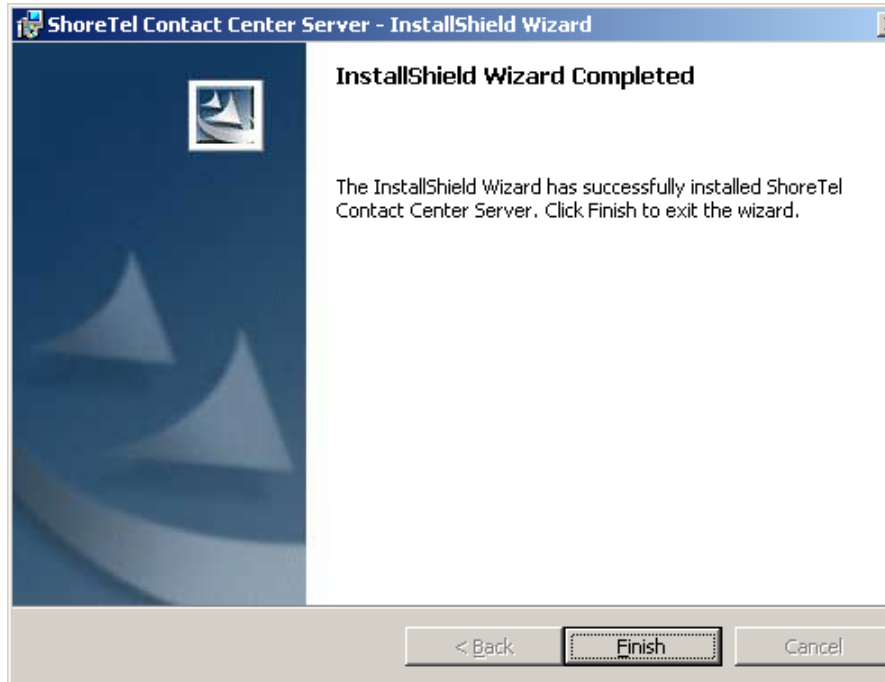


Step 11 In the resulting screen, click **Install** to begin installation of the server software.

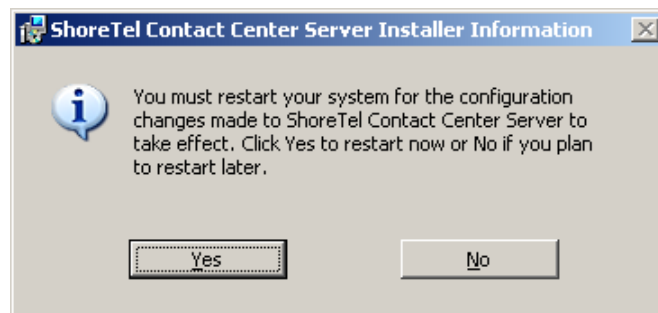


During the installation process, all files are installed into the appropriate directories. While the files are being installed, a status bar shows the progress of the process.

Step 12 In the resulting screen, click **Finish** to complete the server installation process.



Step 13 A window opens offering a choice of restarting the system immediately or waiting until later. The new installation of the server software cannot run until the system restarts.



3.6 Starting and Verifying the ShoreTel Contact Center Server

Starting with release 5.0, the ShoreTel Contact Center Server software runs as service. When the Microsoft Windows OS starts, it loads and starts the Contact Center Server services through the Windows Management Console.

Once you have started the server, you need to verify its operation. The Contact Center Diagnostics Console is a powerful yet easy-to-use tool that provides a quick look at the operational status of the system with its main components. Status information is available for viewing by all users authorized to log into the Server computer.

To start Contact Center Diagnostics Console, from the Server select **Start > Programs > ShoreTel > ShoreWare Contact Center Server > Contact Center Diagnostics Console**. The Contact Center Diagnostics Console displays LEDs indicating the status of various system components. Each LED has three colors (red, yellow, and green). When the Automatic Call Distribution (ACD), IVR, and Private Branch Exchange (PBX) LEDs are green, the system is operational. The Chat LED is yellow on systems not licensed for web chat. The online Help available from the ShoreTel Contact Center Diagnostics Console provides details on the information displayed.

To properly shutdown the Contact Center Server, select **Start > Programs > Administrative Tools > Services**, and then click **Stop the Service**.



3.7 Installing the Contact Center Supervisor Applications

ShoreTel Contact Center's supervisor applications can be installed either manually or through the active directory method that uses the Microsoft Installer (MSI). Manual installation involves using the ShoreTel Contact Center Solution DVD and installing the software on each individual PC.

The active directory installation method simplifies deployments and reduces administrative costs. Contact Center is configured, using the Windows Group Policy Object (GPO), to automatically push from the server to all computers in your call center. You must have Java installed on your supervisor machines for the Contact Center supervisor applications to work after installation using the active directory method; and network connectivity is required during the installation process. To enable the active directory installation method, follow the instructions provided by MSI.

3.7.1 Manually Installing the Contact Center Supervisor Applications

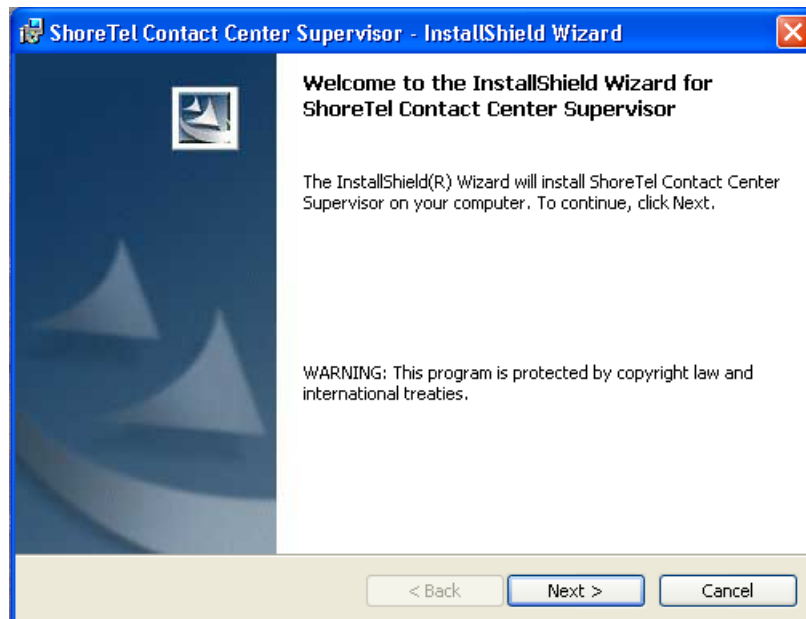
The process of manually installing the Contact Center supervisor applications is the same for both types of supervisor licenses (i.e. Full Supervisor or Monitor Supervisor). You can install the supervisor application on multiple PCs; however, a license for each supervisor position is required to access the applications.

To manually install the Contact Center supervisor applications:

- Step 1** Verify that the PC meets basic requirements, as specified in Chapter 2.
- Step 2** Connect the server to the network through the LAN adapter.
- Step 3** Turn on the supervisor PC.
- Step 4** Log on to the computer system as a local administrator.
- Step 5** Insert the ShoreTel Contact Center Solution Installation CD. The installation process begins.
- Step 6** Install the supervisor lock device by placing the lock device into the USB port of the supervisor PC.

If the device driver is not already installed, the system automatically installs it. If the lock device and drivers are installed, then a red light inside the lock device turns on. See the section [Supervisor Licenses on page 26](#) for information on supervisor licenses and the legacy lock devices (supervisor dongles).

- Step 7** Click the **setup.exe** file in the CD's ShoreTel Contact Center Supervisor folder. A Welcome screen appears. Click **Next** to continue.

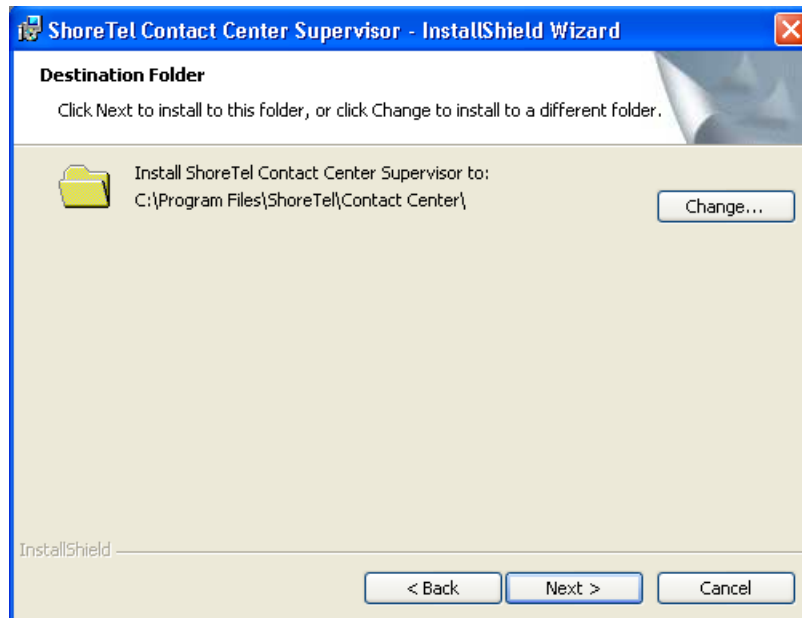


If you decide to stop the installation, click the **Cancel** button at any time throughout the process. If you want to return to the previous screen, click **Back**.

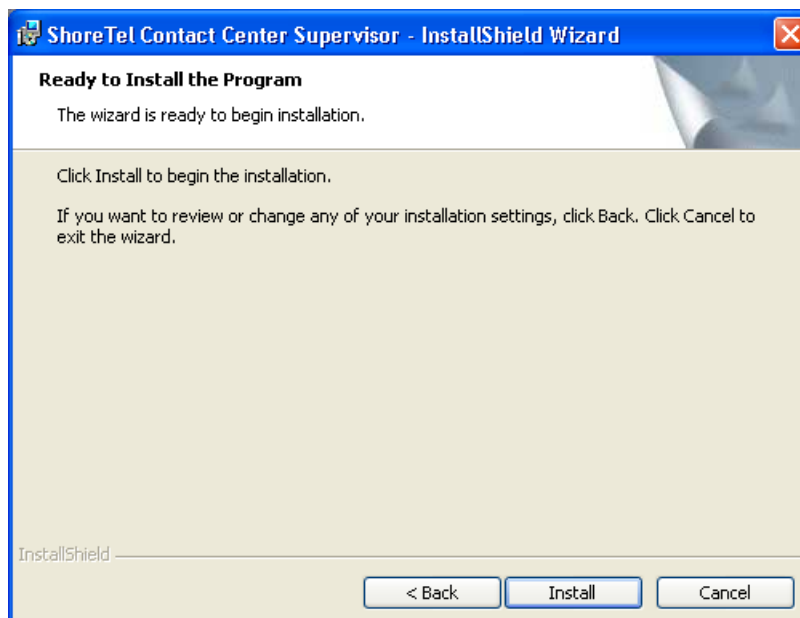
- Step 8** You are asked to accept the terms of the license agreement. Then click **Next**.
- Step 9** In the **Destination Folder** screen, click **Next** to keep the default destination and continue the installation.

The default destination is C:\Program Files\ShoreTel>Contact Center.

Alternatively, you can click **Change** to locate and select a different destination folder, and then click **Next**.

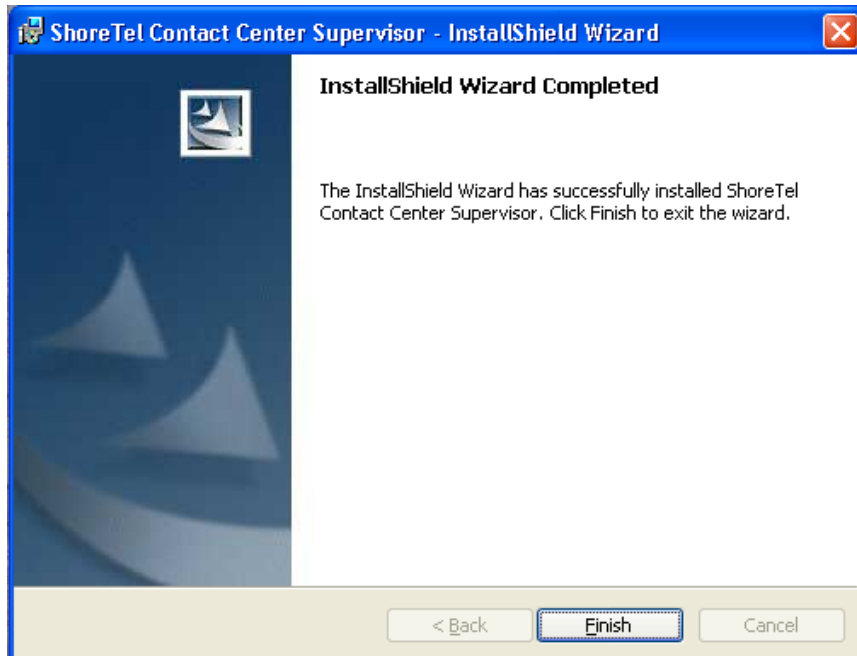


- Step 10** In the resulting screen, click **Install** to begin installation of the software.

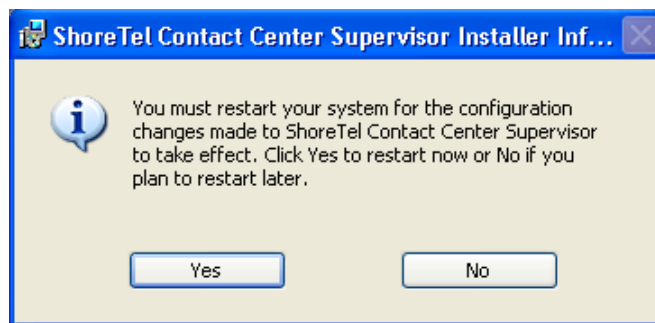


During the installation process, all files are installed into the appropriate directories. While the files are being installed, a status bar shows the progress of the process.

Step 11 In the resulting screen, click **Finish** to complete the installation process.



Step 12 A window opens offering a choice of restarting the system immediately or waiting until later. The new installation of software cannot run until the system restarts.

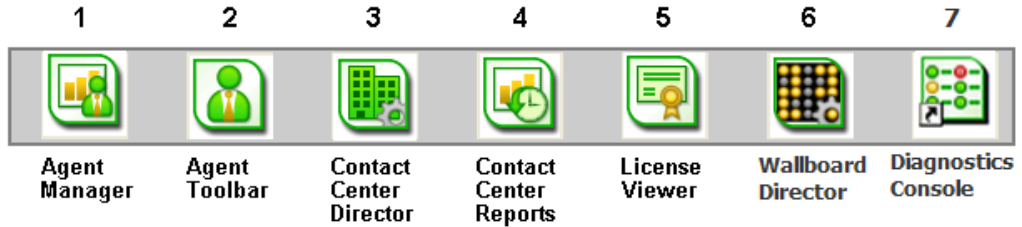


3.8 Starting the ShoreWare Supervisor Applications

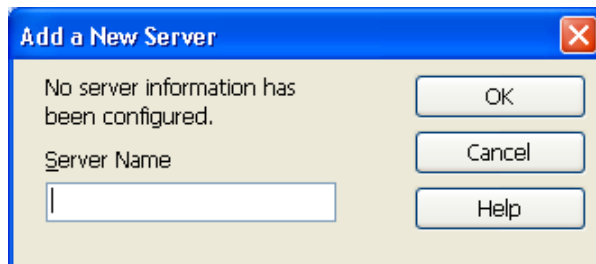
The Contact Center Server must be running before you can start a Contact Center supervisor application. Do not start or run any of the Supervisor Applications from the Contact Center Server. Supervisor applications should be used only on a supervisor PC, based on the license key. Running these applications on the server causes unexpected errors and results.

To start any of the ShoreWare Supervisor Applications:

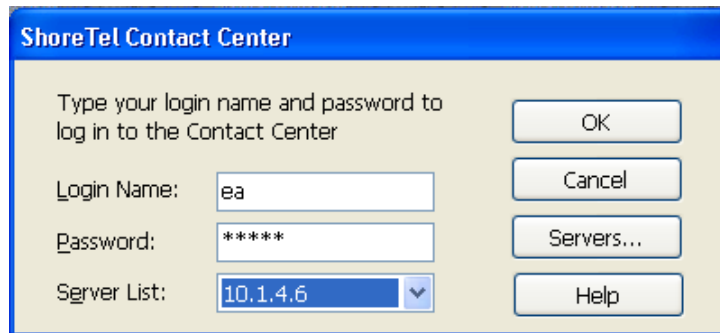
Step 1 From a supervisor PC, select **Start > Programs > ShoreTel > ShoreWare Contact Center Supervisor**, and then choose the application you want to open. The supervisor application icons are:



Step 2 If this is your first time logging onto a supervisor application, you are asked to specify your Contact Center server, and then click OK.



Step 3 In the ShoreTel Contact Center Logon window, specify your login name, password, and server IP address, and then click OK.



You can use the default login name and password, which are:

- **Default login name:** ea
- **Default password:** e1996

Each user should be assigned a unique login name and password. ShoreTel recommends that you assign different login names and passwords as soon as possible.

If your server is not listed in the drop-down menu, click **Servers** to add the server to the list. Use the resulting dialog box to add and remove servers from the list and to identify the default server.

3.9 Installing ShoreWare Agent Toolbar

ShoreWare Agent Toolbar can be installed either manually or through an active directory method that uses the Microsoft Installer (MSI). Manual installation involves using the ShoreTel Contact Center Solution DVD and installing the software on each individual PC.

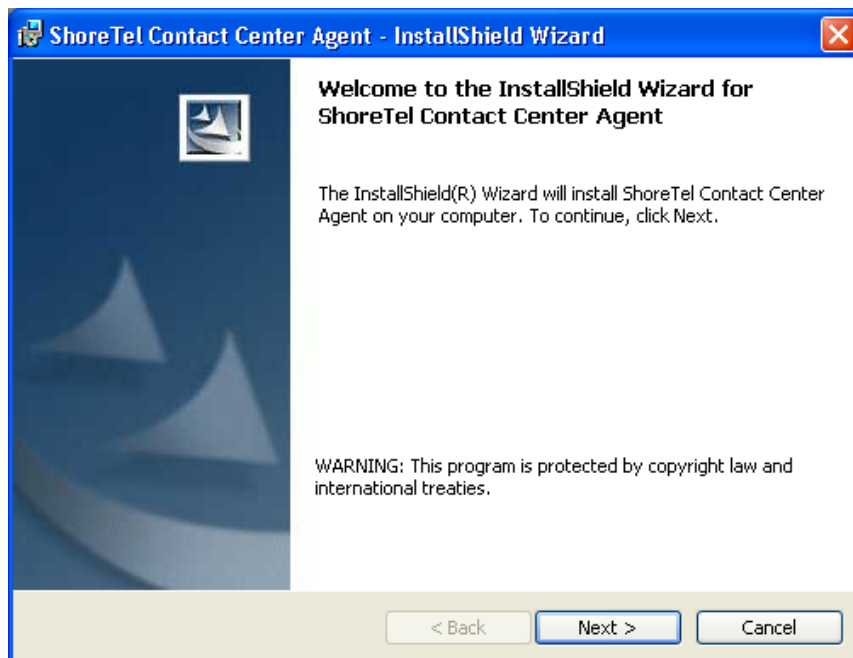
The active directory installation method simplifies deployments and reduces administrative costs. Contact Center is configured, using the Windows Group Policy Object (GPO), to automatically push from the server to all computers in your call center. Network connectivity is required during the active directory installation process. To enable the active directory installation method, follow the instructions provided by MSI.

ShoreWare Agent Toolbar can also be installed in a thin client environment. See the section Installing Contact Center in a Thin Client Environment on page 46 for details.

3.9.1 Manually Installing ShoreWare Agent Toolbar

To install ShoreWare Agent Toolbar manually, follow these steps:

- Step 1** Turn on the agent PC and log on as a local administrator.
- Step 2** Connect the agent PC to the LAN. Then Unplug any accessories attached to LPT1 or USB ports.
- Step 3** Insert the ShoreTel Contact Center Solution Installation CD.
- Step 4** From the ShoreTel Contact Center Agent folder, click the **setup.exe** file. A Welcome screen appears. Click **Next** to continue.

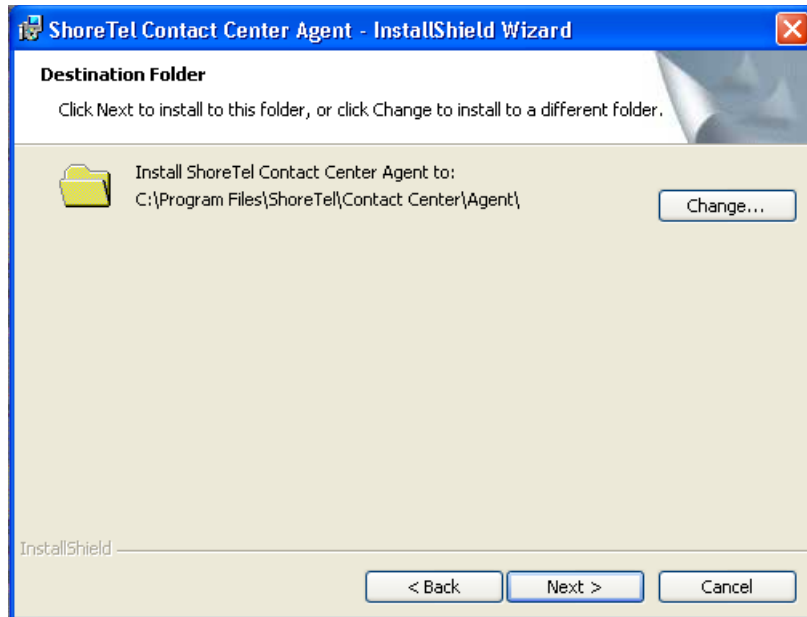


If you decide to stop the installation, click the **Cancel** button at any time throughout the process. If you want to return to the previous screen, click **Back**.

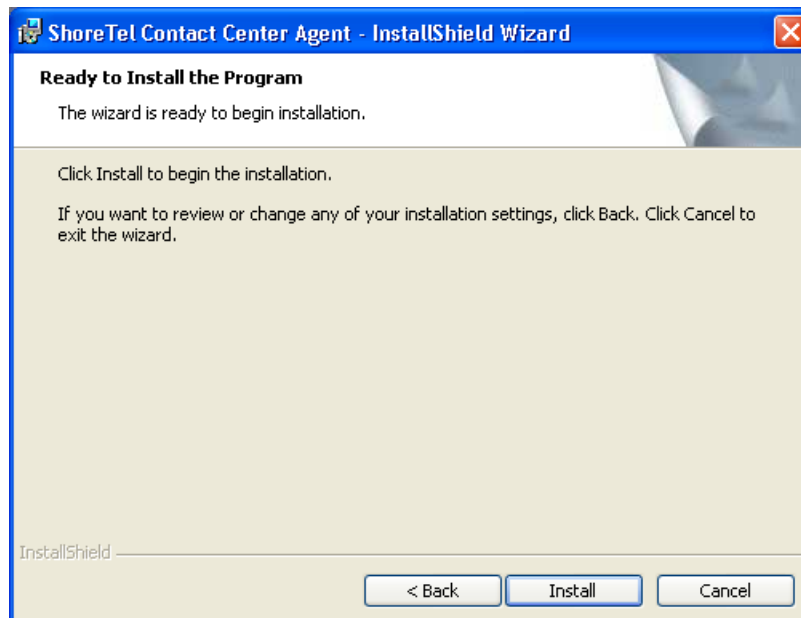
- Step 5** You are asked to accept the terms of the license agreement. Then click **Next**.

- Step 6** In the **Destination Folder** screen, click **Next** to keep the default destination and continue the installation.

The default destination is C:\Program Files\ShoreTel>Contact Center\Agent. Alternatively, you can click **Change** to locate and select a different destination folder, and then click **Next**.

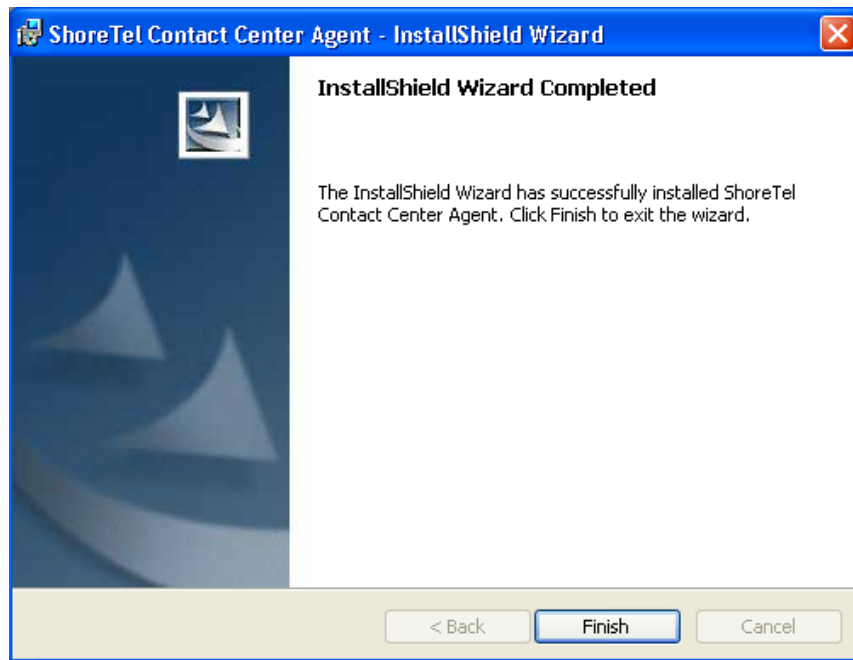


- Step 7** In the resulting screen, click **Install** to begin installation of the software.



During the installation process, all files are installed into the appropriate directories. While the files are being installed, a status bar shows the progress of the process.

Step 8 In the resulting screen, click **Finish** to complete the installation process.



Step 9 Reconnect all devices.

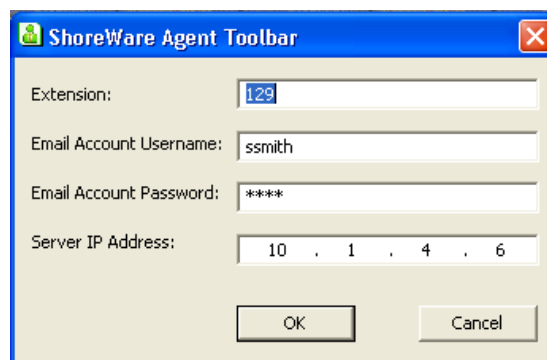
3.10 Starting ShoreWare Agent Toolbar

The Contact Center Server must be running before you can start ShoreWare Agent Toolbar. Do not start or run ShoreWare Agent Toolbar from the Contact Center Server. ShoreWare Agent Toolbar should be used only on a supervisor or agent PC, based on the license key. Running this ShoreWare Agent Toolbar on the server causes unexpected errors and results.

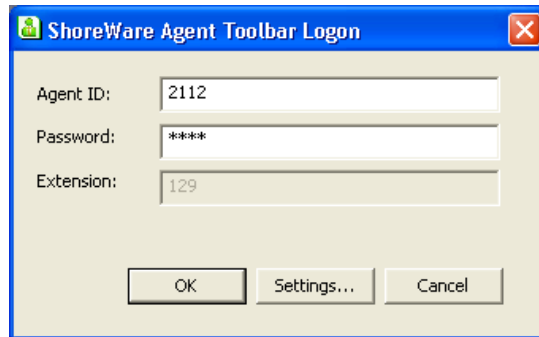
To start ShoreWare Agent Toolbar:

Step 1 From a supervisor or agent PC, select **Start > Programs > ShoreTel > ShoreWare Contact Center Agent > ShoreWare Agent Toolbar**.

Step 2 If this is your first time logging on to ShoreWare Agent Toolbar, you are asked to specify your Extension, Email Account Username, Email Account Password, and Server IP Address (which should be filled in by default). Then click **OK**.

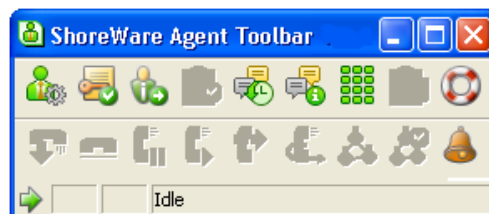


- Step 3** In the ShoreWare Agent Toolbar Logon window, specify your Agent ID, password, and Extension (which should be filled in by default), and then click OK.



If you need to change the extension, or other agent information, click **Settings** and specify the appropriate information as explained in step 2, above.

Once connected to the server, Agent Toolbar opens.



3.11 Installing the Ghostscript Component (Optional)

Supervisors can now export historical reports to the PDF format. However, this feature is only available if the freeware component Ghostscript, an interpreter for the PostScript language and for PDF, has been installed on the supervisor's machine.

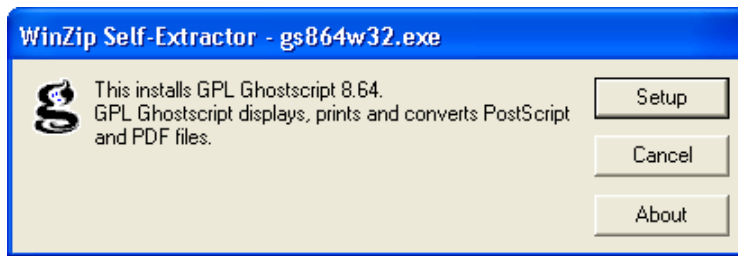
The use of Ghostscript is subject to the terms and conditions of the GNU General Public License (GPL). You should read the GPL before installing Ghostscript. A copy of the GPL is available on the GNU Project web site (at <http://www.gnu.org/licenses/gpl.html>).

To install Ghostscript:

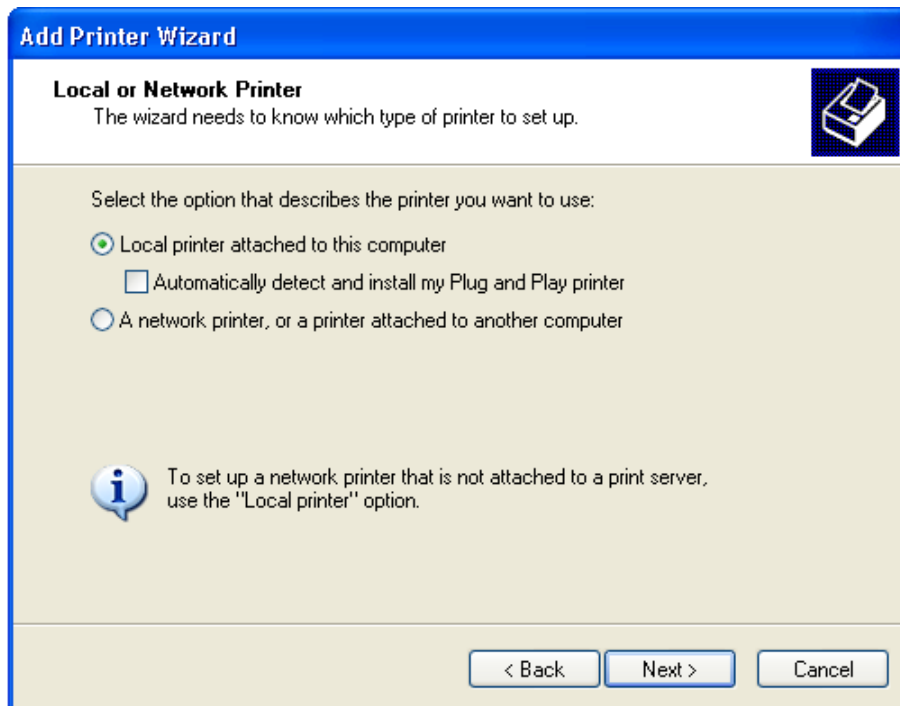
- Step 1** Download and run the most recent version of the ghostscript executable file (for example `gs864w32.exe`).

The ghostscript executable file can be found at the Sourceforge.net Web site. Point your browser to <http://sourceforge.net/projects/ghostscript/>. Click on the most recent Ghostscript release. In the Summary description on the page displayed, click on the link provided for more information. A window opens with a list of downloadable files. Click on the link for the executable (for example `gs864w32.exe`). In the Security window, click on **Run**.

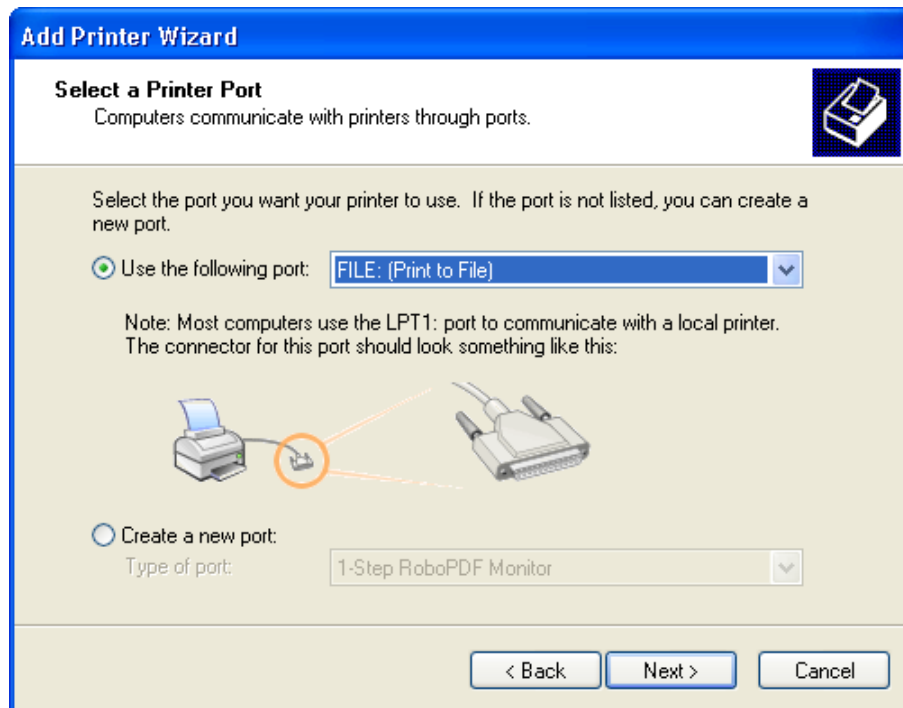
- Step 2** In the Self-Extractor window, click **Setup**.



- Step 3** In the Setup window, you can change the default installation directory and other options. Then click **Install**.
- Step 4** From the Windows Printers and Faxes window (Settings > Control Panel > Printers and Faxes), choose **File > Add Printer**.
- Step 5** Using the Add Printer Wizard, select the **Local Printer Attached to this Computer** option.

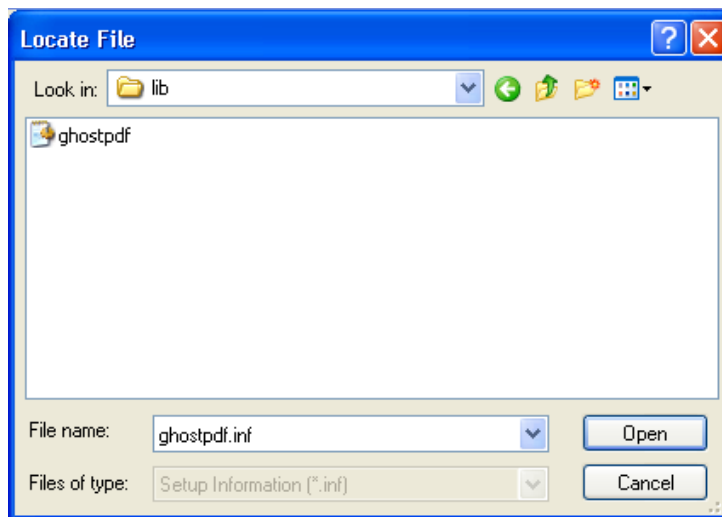


- Step 6** Then select the port **FILE: (Print to File)**.

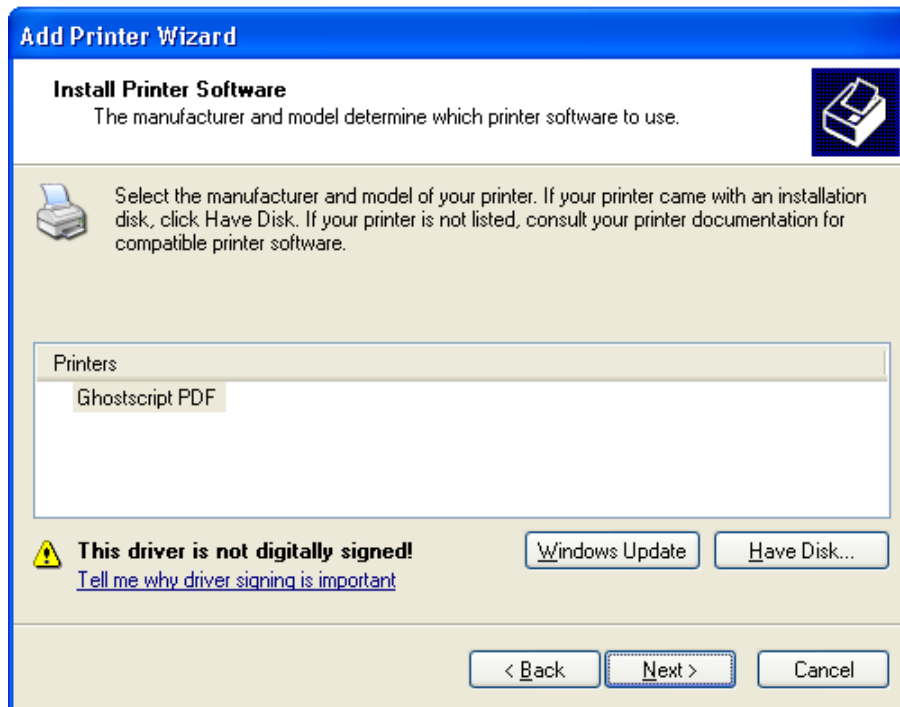


Step 7 In the Install Printer Software window, click **Have Disk**. In the resulting window, click **Browse** to locate and select the **ghostpdf.inf** file.

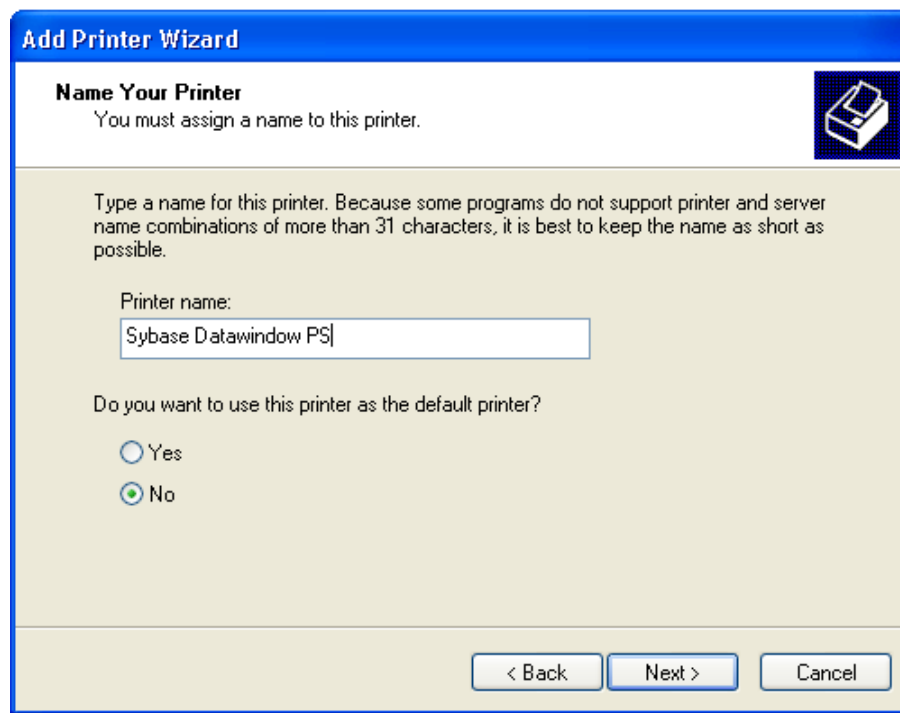
The default location of the ghostscript.inf file is C:\Program Files\gs\[version]\lib.



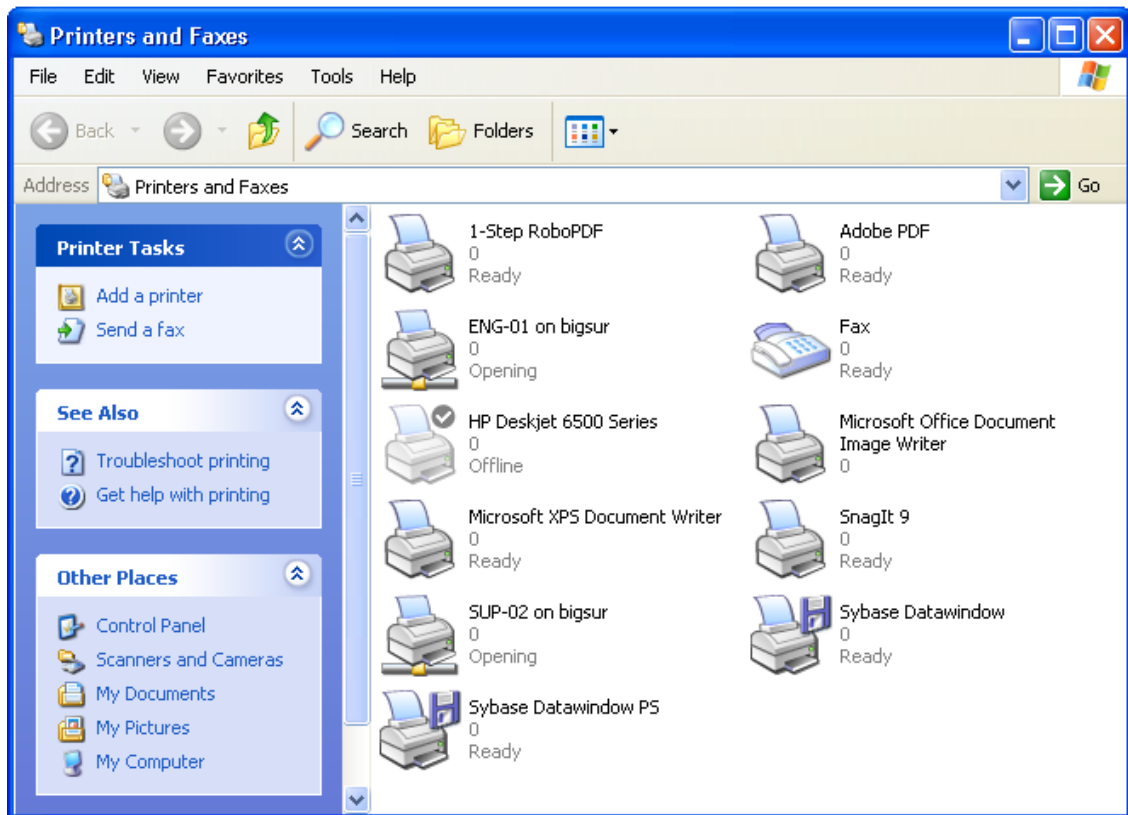
Step 8 Click **Open**, and then **OK**. The Ghostscript PDF printer is displayed in the Printers list. Then click **Next**.



- Step 9** In the Name Your Printer window, enter **Sybase Datawindow PS** in the Printer Name field. You must enter this printer name exactly as indicated or the feature will not work.



- Step 10** Finish using the Add Printer Wizard, selecting the appropriate options. The Sybase Datawindow printer appears in the Windows Printers and Faxes window.



3.12 Installing Distributed IVR Servers (Optional)

Distributed IVR servers can be used to scale the system to more agents. The IVR or media servers perform the functions of playing queued music, playing announcements, or self service modules. Distributed IVR servers are managed by the main Contact Center Server, which distributes the load between the multiple IVR/media servers if more than one server is used. Hardware keys or dongles are not required for the distributed server. The procedure is for standalone type installations only.

To install a distributed IVR server, on the IVR station machine:

Step 1 Install the Distributed Voice Server (DVS).

Note: A TAPI Application Server License is required for the DVS running the distributed IVR server.

Step 2 Configure the route points that you will use as IVR ports. This is done on the server where the route points for the Contact Center IRN's are configured).

Step 3 Install Contact Center by clicking the `setup.exe` file in the ShoreTel Contact Center IVR folder on the Installation CD. After installation, restart the Contact Center Server (see section Installing the Contact Center Server on page 26).

Step 4 On the Contact Center Server, start ShoreWare Contact Center Director. Then from the **System** entity < **IVR Ports** tab, add a new IVR Client. This process is described in the *Contact Center Administrator Guide*.

3.13 Specifying an External Location for Interaction Data (Optional)

ShoreTel Contact Center provides interaction reports on inbound voice activity including IRNs, IVR Port numbers, scripts played, and the agent that answered the call. By default, interaction data is generated on your Contact Center Server, and then stored locally. If you prefer to have the information stored on an external machine, you can specify an external installation.

To specify an external location for interaction data:

- Step 1** Click the **setup.exe** file in the Contact Center Server Setup folder > ShoreTel CCIR folder. A Welcome screen appears. Click **Next** to continue.

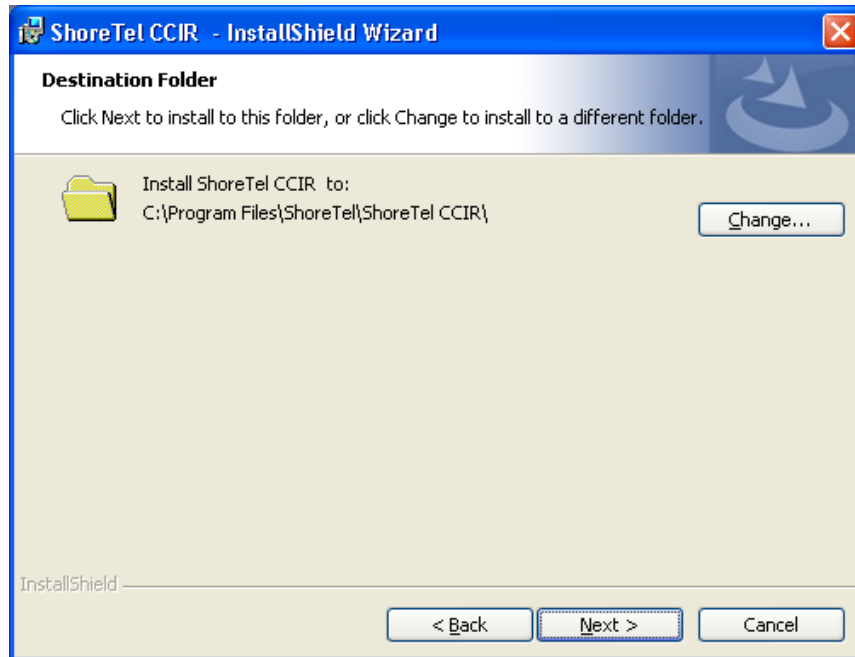


- Step 2** You are asked to accept the terms of the license agreement. Then click **Next**.

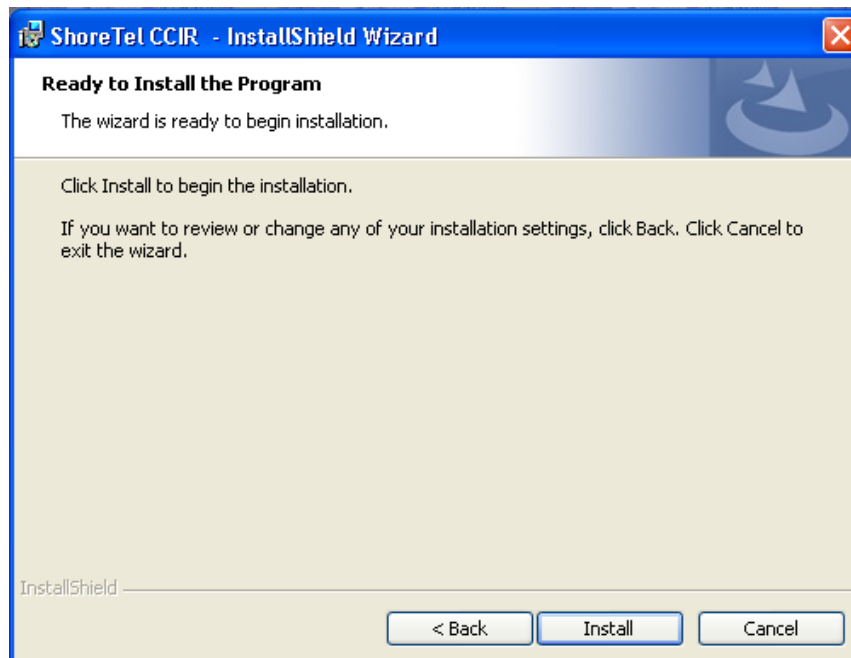
- Step 3** In the **Destination Folder** screen, click **Next** to keep the default destination and continue the installation.

The default destination is C:\Program Files\ShoreTel\ShoreTel CCIR.

Alternatively, you can click **Change** to locate and select a different destination folder, and then click **Next**.

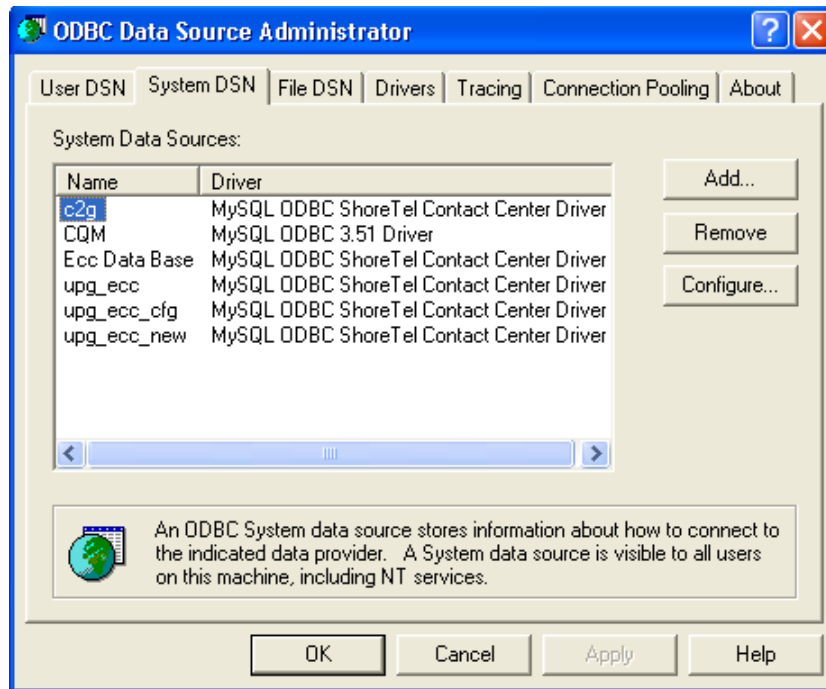


Step 4 In the resulting screen, click **Install** to begin installation of the software.



The setup process installs MySQL and the database structure. While the files are being installed, a status bar shows the progress of the process.

- Step 5** In the resulting screen, click **Finish** to complete the installation process.
- Step 6** Create the ODBC connection to the external machine by choosing from the **Control Panel > Administrative Tool > Data Sources (ODBC) > System DSN tab > c2g**.



Step 7 Click **Configure**. Use the resulting dialog box to specify the connection parameters. The Server IP address should be the IP address of the new external CCIR server. You do not need a username or password. Make sure that you change the port number from 4306 to 6306. Then click **OK**.

Step 8 Create the database connection in **Contact Center** by selecting from **ShoreWare Contact Center Director > the System entity > Interfaces tab > DB Connections tab**.

Step 9 Select **New**. In the Properties dialog box, specify the appropriate information for the connection. You may want to name the new connection **External C2G** and rename the existing **C2G** connection **Internal C2G**.

Additional information on the Properties dialog box can be found in the section **Configuring External Database Connections** in the *Contact Center Administrator Guide*.

Step 10 Identify the external location to store interaction data by selecting from **ShoreWare Contact Center Director > the System entity > Interfaces tab > CCIR tab**.

Step 11 From the Database Connection drop-down menu, select the external CCIR connection. Specify the number of days to keep the records and the fields for reporting. Then click **Save**.

Additional information can be found in the section **Configuring Contact Center Interaction Reports** in the *Contact Center Administrator Guide*.

3.14 Installing Contact Center in a Thin Client Environment

You can install and configure ShoreWare Agent Toolbar in a server-based computing, or thin client, environment. In this environment, all desktop applications are installed on a server, and users access these applications from the server. Because the server performs all the application processing, the user's PC can be a terminal that has minimal processing power and memory. Microsoft Windows Thin Client and Citrix are common examples of thin client environments.

Of the Contact Center applications, only ShoreWare Agent Toolbar can be run from the server in a thin client environment. The Contact Center Server must be run on the local server; Contact Center supervisor applications can only be run on supervisor PCs.

3.14.1 Installing and Configuring Agent Toolbar in a Thin Environment

To install Agent Toolbar in a thin environment, follow the regular installation procedures described in the section [Overview on page 23](#). However, you must install the software on the client servers rather than on the agent PCs.

In a thin environment, because Agent Toolbar is not associated with a specific extension, you need to change the shortcut for Agent Toolbar so that the agent is prompted for an extension number during logon. To do so:

Step 1 From the Start menu, click **Programs > ShoreTel > Contact Center >Agent Toolbar**, and then right-click **Properties**.

Step 2 In the dialog box, edit the **Target** field by adding `ext=prompt` at the end of the string. The complete string should look like

```
C:\Program Files\ShoreTel\Contact Center\Agent\bin\ShoreWareAgent.exe"ext=prompt"
```

Step 3 Click **Apply**. Agents will now have to enter an extension number in addition to their ID and password.

3.15 Uninstalling Contact Center

The process for uninstalling Contact Center involves removing the server, the database directories, and the client applications from your machine.

Note: When Contact Center is uninstalled, the database remains untouched. You can make a copy of this database and store it elsewhere to access later, or you can delete the database as part of the uninstall process.

3.15.1 Uninstalling the Contact Center Server and Database Directories

To uninstall the Contact Center server and database directories:

Step 1 From the Control Panel, select **Add or Remove Programs**.

Step 2 Select **ShoreTel Contact Center Server Software**, and then click the **Change/Remove** button.

All server software components, excluding the database directory, are removed from your system.

Step 3 Manually delete the database directory **DbProvider** from your system.

The directory is located on your system where Contact Center was previously installed.

Your server is now ready for a new installation of Contact Center Server.

3.15.2 Uninstalling the Contact Center Client Applications

To uninstall the Contact Center client applications:

Step 1 From the Control Panel, select **Add or Remove Programs**.

Step 2 Select **ShoreTel Contact Center Supervisor** or **ShoreTel Contact Center Agent**, and then click the **Change/Remove** button.

All client software components are removed from your system.

Your computer is now ready for a new installation of the Contact Center client applications.

Intergrating Contact Center with the ShoreTel System

4.1 Overview

The ShoreTel system and the ShoreTel Contact Center Solution connect by way of a software interface in an IP network. This interface conforms to the industry-standard Telephone Application Programming Interface (TAPI) and allows the system and application to exchange call control information. It also allows interaction with audio play files and can respond to a caller's keypad input.

The ShoreTel system interfaces to Contact Center are:

- **Destinations:** Dialable extensions in the ShoreTel system configured as route points that deliver calls to the Contact Center intelligent routing numbers (IRNs).
- **IVR Ports:** An interface between callers and interactive voice response (IVR) scripts, which are configured as route points in the ShoreTel system. IVR ports support caller interactions and connect a caller to music or announcements while the caller waits in a queue.
- **Agents:** Normal extensions in the ShoreTel system that an agent has in a call center. Agent extensions are monitored by Contact Center to make routing decisions and for reporting.
- **Trunks:** Normal trunks in the ShoreTel system monitored by Contact Center to provide reporting.

Integrating the ShoreTel Contact Center Solution with a ShoreTel system requires ShoreWare 7.5 or later. This chapter assumes that you have successfully installed:

- ShoreWare Distributed Server software
- ShoreWare Contact Center Server software

In addition, the Contact Center Diagnostics Console must display green for the ACD, IVR, and PBX LEDs, as explained in Chapter 3.

4.2 The Integration Process

Once the Contact Center Server has been installed, you need to integrate Contact Center with the ShoreTel system. This involves:

1. Setting up user groups
2. Identifying server route points
3. Specifying supervisor licenses
4. Setting up agent phones.
5. Setting up data sources used by ODBC connections.
6. Preparing to use Contact Center Interaction Reports (CCIR) and Event Feeds (Optional).

Integrating Contact Center with the ShoreTel system requires familiarity with ShoreTel system requirements and administration. For more information, please review the *ShoreTel Planning and Installation Guide*.

4.3 Setting Up User Groups

Setting up user groups is the first step in integrating Contact Center with the ShoreTel system.

To setup a user group:

- Step 1 Launch ShoreWare Director and log on as an administrator.
- Step 2 In the navigation frame, click the Users > User Groups link. The User Groups page appears.

User Groups Help						
Add new						
Name	Permissions					
	Telephony Features	Call	Voice Mail	SMDI	Account Codes	DID AS CESID
Account Code Service	Minimally Featured	No Restrictions	No Mail Box	None	Disabled	Yes
Anonymous Telephones	Minimally Featured	Internal Only	No Mail Box	None	Disabled	Yes
Executives	Fully Featured	No Restrictions	Large Mail Box	None	Disabled	Yes
House Telephones	Minimally Featured	Internal Only	No Mail Box	None	Disabled	Yes
IP Telephones	Minimally Featured	Internal Only	No Mail Box	None	Disabled	Yes
Managers	Partially Featured	No Restrictions	Medium Mail Box	None	Disabled	Yes
Staff	Partially Featured	Long Distance Calling	Medium Mail Box	None	Disabled	Yes
Voice Mail Notification	Minimally Featured	No Restrictions	No Mail Box	None	Disabled	Yes

- Step 3 Click **Add new**. The Edit User Groups page opens.

User Groups

Edit User Group

[New](#) [Copy](#) [Save](#) [Delete](#) [Reset](#) [Help](#)

[modify new](#)

[Edit this record](#) [Refresh this page](#)

Name:

COS - Telephony: [Go to this Class of Service](#)

COS - Call Permissions: [Go to this Class of Service](#)

COS - Voice Mail: [Go to this Class of Service](#)

Send Caller ID as Caller's Emergency Service Identification (CESID).

Send DID as Caller's Emergency Service Identification (CESID).

Account Code Collection:

Show Call Manager users a list of account codes when dialing.

Outgoing Trunk Groups (Access Code):

Analog Loop Start (9)
 Digital Loop Start (9)
 Digital Wink Start (9)
 Shared PRI (9)

Simplified Message Desk Interface Mode:

User Profile:

Toolbar 1: [Go to this Toolbar](#)

Toolbar 2: [Go to this Toolbar](#)

Toolbar 3: [Go to this Toolbar](#)

Step 4 Enter the following information in the page fields

- **Name:** This is a descriptive name of the group you are adding or editing.
- **COS – Telephony:** This is the telephony features permissions CoS associated with the user group.
- **COS – Call Permissions:** This is the call permissions CoS associated with the user group.
- **COS – Voice Mail:** This is the voice mail permissions CoS record associated with the user group.
- **Simplified Message Desk Interface Mode:** Select from **None**, **External Voice Mail**, or **ShoreTel Voice Mail**. Select External Voice Mail if an application server is functioning as a PBX for a legacy voice mail system. Select ShoreTel Voice Mail if an application server is functioning as a voice mail server for a legacy PBX.

- **Account Code Collection:** Select from **Disabled**, **Optional**, or **Forced** account code collection for the selected user group.
 - **Disabled**—Account collection is not active for this group.
 - **Optional**—Users are prompted to enter an account code. If no account code is entered, the call is completed without account code records.
 - **Forced**—Users must enter an account code for all calls outside the bounds of the call permissions set for the user.
- **Show Call Manager users a list of account codes when dialing:** Enabling this option allows Call Manager users to select an account code from the complete list of account codes when prompted for an account code. Disable this feature if you want to restricts the user's knowledge of account codes.
- **Send Caller ID as Caller's Emergency Service Identification (CESID):** The caller ID configured on the User's page is the telephone number sent to the service provider when a user dials an emergency services number (e.g., 911 in the U.S.). Default setting is checked on. If this option is not selected, the outbound caller ID will be either the user's DID or the site's CESID.
- **Send DID as Caller's Emergency Service Identification (CESID):** This is the telephone number sent to the service provider when a user dials an emergency services number (e.g., 911 in the U.S.) from their home phone. If this option is not selected and Send Caller ID as Caller's Emergency Service Identification (CESID) is also not selected, the outbound caller ID will be the site's CESID.
- **Outgoing Trunk Groups (Access Code):** These are the trunk groups to which this user group has access for outgoing calls.

Step 5 Click Save.

Step 6 Repeat steps 4-5 for each user group you need.

4.4 Identifying Server Route Points

Route points enable calls to be terminated and controlled by the Contact Center Server on the ShoreTel network.

To identify server route points, you need to:

- Create route points for Contact Center Intelligent Routing Numbers (IRNs)
- Create route points for Contact Center interactive voice response ports (IVRs)

An IRN is a route point for incoming calls that get directed to the Contact Center Server Software. With these route points, Contact Center has complete access to call control signalling (using TAPI) and the actual voice media stream (using TAPI and wave APIs).

ShoreTel Contact Center Server Software IVRs are used to transmit queue messages, prompts, and music-on-hold to callers currently connected to Contact Center through the ShoreTel system.

4.4.1 Creating IRN Route Points

You must create a route point for each IRN port you plan to use.

To create a route point:

Step 1 Launch ShoreWare Director and log on as an administrator.

Step 2 In the navigation frame, click the **Route Points** link. The Route Points page appears.

Name	Extension	Schedules		
		On-Hours	Holiday	Custom
CC-IVR1	4821			
CC-IVR2	4822			
CC-IVR3	4823			
CC-IVR4	4824			
CC-IVR5	4825			
Sales-IRN	4820			
Support-IRN	4900			

Step 3 Click **Add new**. The Edit Route Point page opens.

Step 4 Enter the following information in the page fields

- **Name.** The descriptive name of the IRN route point, such as Sales_IRN.
- **Extension.** The extension number of the route point. Each route point extension must be unique. Any calls sent to this extension are routed to a corresponding IRN defined on the Contact Center Server.
- **Backup Extension.** The backup extension of the route point. If the route point does not answer after the specified number of rings (for example, if the server is unavailable or there is a network problem), the call is routed to this extension. With this feature, you can configure backup call routing in case of failures.
- **User Group.** From this drop-down menu, assign a user group to the route point. Select the **Executives User Group**, which has the appropriate Class of Service with full features.
- **Route Point Server.** From this drop-down menu, select the ShoreWare Distributed Server on which the Contact Center Server software resides.
- **Mailbox (server).** Ensure that this check box is **not** selected.
- **Call Stack Depth.** Set the Call Stack Depth to 30. With this feature, you can specify the maximum number of simultaneous calls that can be stacked on the route point extension. When this number is met, additional inbound calls will be routed to the call forward busy destination.

ShoreTel™
ShoreWare Director
 Logoff Administrator

Administration

- Users...
- Trunks...
- IP Phones...
- Switches
- Call Control
- Voice Mail...
- Auto-Attendant...
- Workgroups
- System Directory
- Application Servers
- Conference Bridges
- Sites
- System Parameters...
 - Account Codes
 - Administrative Permissions...
 - Batch Update Utility
 - BOOTP Server
 - Call Handling Mode Defaults...
 - Contact Information
 - Dialing Plan
 - Administrative Permissions...
 - Batch Update Utility
 - BOOTP Server
 - Call Handling Mode Defaults...
 - Contact Information
 - Dialing Plan
 - Licenses...
 - Other
 - Route Points
 - SNMP
 - System Extensions
- Preferences

Maintenance

Documentation

Route Points
 Edit Route Point

[New](#) [Copy](#) [Save](#) [Delete](#) [Reset](#) [Help](#)

Edit this record [Refresh this page](#) * modified

Name:

Extension:

Backup Extension: [Search](#)

DID:

DNIS: [Edit DNIS Map](#)

User Group:

Route Point Server:

Mailbox (server) [Voice Mail Delivery and Notification](#)

Accept Broadcast Messages

Include in Dial By Name Directory

Make Number Private

Fax Redirect

Call Stack Depth:

Recorded Name: [Record](#) [Play](#) [Erase](#) [Import](#)

Voice Mail Password: Confirm:

▼ **On-Hours** ▶ Off-Hours ▶ Holiday ▶ Custom

Schedule: [Edit this schedule](#)

Call Handling:

Call Forward: Always No Answer/Busy Never

Always: Extension: [Search](#)
 External: (e.g. 9+1 (408) 331-3300)

Busy: Extension: [Search](#)
 External: (e.g. 9+1 (408) 331-3300)

No Answer: Extension: [Search](#)
 External: (e.g. 9+1 (408) 331-3300)

No Answer Number of Rings:

Mailbox:

Greeting: [Record](#) [Play](#) [Erase](#) [Import](#)

Assistant: [Search](#)

Enable Message Notification

- **Call Forward.** These buttons enable you to specify when calls are forwarded after the specified number of rings or when the call stack is full. The conditions are Always, No Answer/Busy, and Never. Select No Answer/Busy.
- **Busy Destination.** When the No Answer/Busy call forward condition is selected, calls are forwarded to this extension immediately if the user's call stack is full. You can also forward calls to an external number (access code required).
- **No Answer Destination.** When the No Answer/Busy call forward condition is selected, calls are forwarded to this extension after the specified number

of rings. You can also forward calls to an external number (access code required).

- **No Answer Number of Rings.** When the No Answer/Busy call forward condition is selected, this option specifies the number of times the phone rings before the call is forwarded to the No Answer Destination.

Step 5 Click Save.

Step 6 Repeat steps 4-5 for each IRN and IVR port you plan to create in ShoreWare Contact Center Director.

Step 7 Restart the Contact Center Server.

The Contact Center Server needs to be restarted whenever a new route point is created.

4.4.2 Creating IVR Route Points

You must create a route point for each IVR port you plan to use.

IVRs are set up similarly to IRNs, with the main difference being that IRNs can have a call stack of 16. With IVRs you must set up a route point for each IVR. There can be only one IVR per caller connected to the system. In other words, there must be an IVR available for every individual caller in the ShoreTel Contact Center queue. IVRs are not assigned to a particular Call Group. For example, Sales and Customer Support do not require separate IVRs. The IVRs can be used for both Sales and Customer Support.

To create an IVR route point:

Step 1 Launch ShoreWare Director and log on as an administrator.

Step 2 In the navigation frame, click the **Route Points** link. The Route Points page appears.

Name	Extension	Schedules		
		On-Hours	Holiday	Custom
CC-IVR1	4821			
CC-IVR2	4822			
CC-IVR3	4823			
CC-IVR4	4824			
CC-IVR5	4825			
Sales-IRN	4820			
Support-IRN	4900			

Step 3 Click **Add new**. The Edit Route Point page opens.

Step 4 Type the following parameters that appear on the *Edit Route Point* page.

- **Name:** Type a descriptive name of the IVR route point—such as **IVR-01**, **IVR-02**, and so forth.
- **Extension:** This is the extension number of the route point. Each route point extension must be unique. No calls are dialed into IVR extensions. The extensions are used only for calls originating from Contact Center Server. ShoreTel recommends that you use extensions to help manage the IVRs.
- **Backup Extension:** This is the route point backup extension. If the route point does not answer after the specified number of rings (for example, the server is unavailable or the network has problem), the call is routed to this extension. With this feature, you can configure backup call routing in case of failures.
- **User Group:** With this drop-down list, you can assign a user group to the route point. Select Executives User Group, which has the appropriate Class of Service with full features.
- **Route Point Server:** Select the ShoreWare Distributed Server on which you installed the ShoreTel Contact Center Server Software.
- **Mailbox (server):** Ensure that this check box is not selected.
- **Call Stack Depth:** Set the Call Stack Depth to 1. You cannot stack calls on an IVR route point.
- **Call Forward:** With these buttons, you can specify when calls are forwarded after the specified number of rings or when the call stack is full. The conditions are **Always**, **No Answer/Busy**, and **Never**. Select **Never**.

Step 5 Click **Save**.

Step 6 To configure another IVR route point, click **Copy**, and then type a new name and extension for the new IVR route point.

Step 7 Restart the Contact Center Server.

The Contact Center Server needs to be restarted whenever a new route point is created.

4.5 Specifying Supervisor Licenses

In Contact Center 5.0 and above, supervisor licenses are registered on the server lock device. Whether you use the dongle-less approach or continue to use license dongles, the consumption of licenses is based on the supervisors who are logged on to the server. (Each position requires a license.) The maximum number of supervisor licenses is 128.

ShoreWare Contact Center Director identifies the number of Full Supervisor (Full Visor) and Monitor Supervisor (Monitor Only) licenses you have.

If you are using license dongles, note that:

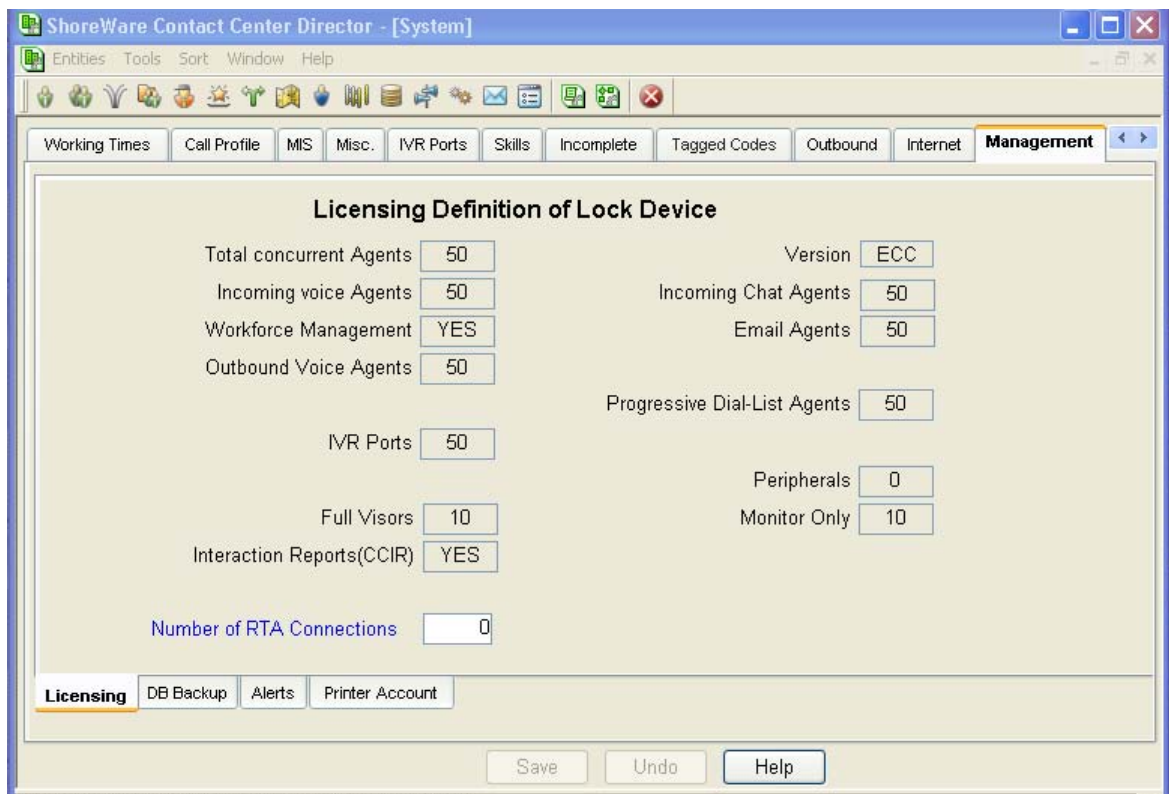
- The system continues to work with a dongle at the supervisor's position.
- In the License Viewer, all supervisor licensing fields indicate 0. Because of this, keep a record of the supervisor dongles you are using.

- The system automatically assigns the license the Monitor Supervisor permissions. As needed, you can assign a supervisor Full Supervisor capabilities.

When you add a new dongle-less supervisor, the associated license type must be defined in ShoreWare Contact Center Director. Each supervisor who logs on consumes a license of the type that was assigned to the supervisor. An additional, undocumented, Full Supervisor license is available on the server for support purposes by ShoreTel personnel.

To specify the number and types of supervisor licenses:

- Step 1** From ShoreWare Contact Center Director, select the System entity > Management tab.
- Step 2** Click the Licensing tab (in the left-lower corner of the Management window). Licenses other than supervisor roles are also identified in this window.



- Step 3** Enter the number of supervisors in the box for each license type. The total number you enter cannot exceed the number of purchased supervisor licenses of each type.

- Step 4** Click Save.

4.6 Setting Up Agent Phones

ShoreTel Contact Center Solution supports agent positions based on phone only. Agents using phones can perform only the following Automatic Call Distribution (ACD) management activities:

- Log on to, and log off from, primary groups
- Release
- Resume

When phone-only agents are logged on, they receive calls as defined by the routing policy and are monitored as regular agents by the ShoreWare Supervisor applications.

To set up the Phone-Only agent positions in ShoreWare Contact Center Director:

- Define four specific Intelligent Routing Numbers (IRNs) in ShoreWare Contact Center Director. Each IRN will have a default destination or a predefined ACD interactive voice response (IVR) Script.

The ACD actions are performed by dialing the IRN Dial Number and following the instructions.

4.7 Setting up Data Sources used by ODBC Connections

The Contact Center system uses information from an external database to direct the routing of calls, in call control scripts, in dial lists, and for other functions. The system relies on Open Database Connectivity (ODBC) to support the API for accessing external databases.

Part of the process of configuring an external database connection is to set up the data sources used by your ODBC Connections. Refer to the section Configuring External Database Connections in the *Contact Center Administrator Guide* for details.

4.8 Preparing to use CCIR and Event Feeds (Optional)

ShoreTel Contact Center Interaction Reports (CCIR) and Event Feeds provide additional data on call center activities.

CCIR reports on inbound voice activity including IRNs, IVR Port numbers, scripts played, and the agent that answered the call. If your organization plans to use CCIR, you need to do the following:

1. Contact the ShoreTel Developer Network to receive documentation on the database schema and support on creating these reports.
2. By default, interaction data is generated on your Contact Center Server, and then stored locally. If you prefer to have the information stored on an external machine, you can specify an external installation. See the section Specifying an External Location for Interaction Data (Optional) on page 43 for details.

3. Using ShoreWare Contact Center Director, identify the external database connection containing data on your inbound voice activity. Refer to Chapter 4 of the *Contact Center Administrator Guide*. Note that the default ODBC connector is 6306.
4. Specify the CCIR parameters using ShoreWare Contact Center Director, as explained in the *Contact Center Administrator Guide* in Chapter 4.

Event feeds allow your organization to access information, through the implementation of an API, on agent and group activity using third-party applications. If your organization plans to use event feeds, you need to do the following:

1. Contact the ShoreTel Developer Network to receive documentation and support on the APIs.
2. Using ShoreWare Contact Center Director, determine the number of connections you need. See the *Contact Center Administrator Guide* for details.
3. Identify the port and event feed properties using ShoreWare Contact Center Director. This process is explained in the *Contact Center Administrator Guide*.

Testing Contact Center

5.1 Overview

After you have configured Contact Center you need to test the system to ensure that Contact Center is installed properly and operating correctly. This involves creating the basic components of the system using ShoreWare Director and ShoreWare Contact Center Director, and then verifying that calls are being received and routed correctly. For detailed information on using ShoreWare Contact Center Director, refer to the *Contact Center Administrator Guide*.

The process of testing Contact Center involves:

1. Create a supervisor
2. Add an agent
3. Configure an agent group
4. Create an IRN
5. Configure an IVR port
6. Verify that your call center can receive calls.
7. Verify that an inbound call reaches an agent.

5.2 Creating a Supervisor

Supervisors are responsible for specific groups of agents. They monitor agent performance and call center activities. Each supervisor is assigned authorization attributes that allow or prevent access to system operations.

To create a supervisor:

- Step 1** From ShoreWare Contact Center Director, select the **Supervisors** entity.
- Step 2** Click **New** (in the lower-left corner of the window). The **New Supervisor Wizard** opens.
- Step 3** Enter the supervisor's name and password.
- Step 4** If this person is already in the system as an agent, select the name from the **Agent Name** drop-down menu.
- Step 5** In the **Supervisor Permissions** area, select the appropriate permissions for the supervisor. These permissions are

- **Supervisor Administrator.** Can access and modify all system entities.
- **Entity Administrator.** Can access and modify all system entities, except for supervisor details.
- **Entity Monitoring.** Limited access to supervisor and wallboard administration. To configure a supervisor with Entity Monitoring level access, the following check boxes must be configured according to the functionality that you want to assign to the supervisor
 - **Can View Agent Manager.** Can view and update real-time data in ShoreWare Agent Manager.
 - **Can View Contact Center Reports.** Can view and update historical data in ShoreWare Contact Center Reports.
 - **Can Administrate Reader Board.** Can modify wallboard scenarios.

Step 6 Click **Finish**.

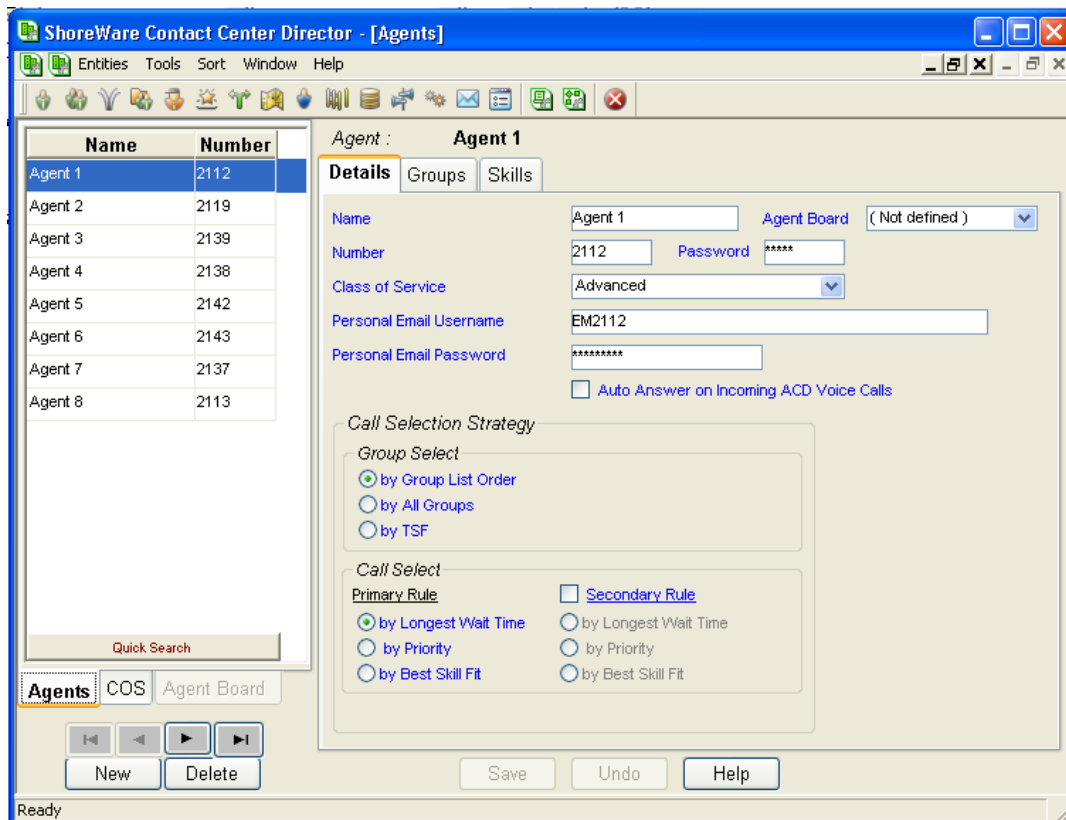
5.3 Adding an Agent

Agents handle contacts routed to them by the ShoreTel Contact Center Solution. Each agent is equipped with a telephone, and begins work by logging on to the system.

To add an agent:

Step 1 From ShoreWare Contact Center Director, select the Agents entity.

Step 2 From the Agents configuration window, click the Agents tab (in the bottom left corner of the window), and then click New.



Step 3 In the New Agent Details window, enter the name, number, and password of the new agent in the appropriate fields, and then click Next.

The 'New Agent Wizard' window displays the 'New Agent Details' section. It contains the following text and fields:

Enter Name, unique Number (ID) and Password of the new agent.
Press Next to complete.

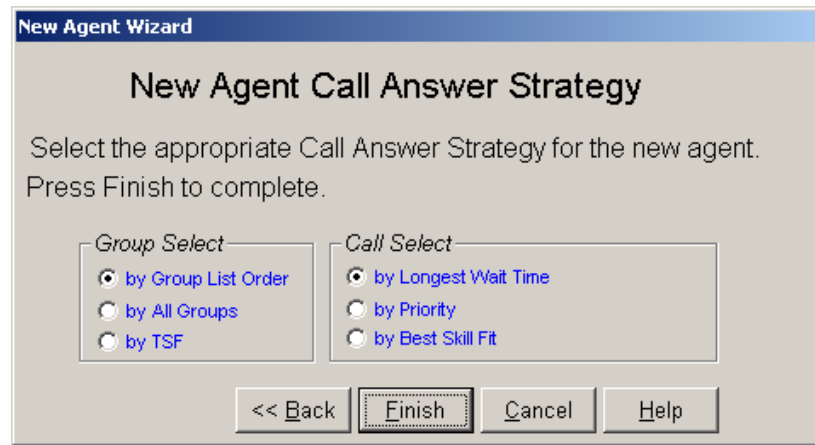
Name:

Number:

Password:

Buttons: Next >>, Cancel, Help

- Step 4** In the New Agent Call Answer Strategy window, click **Finish** to accept the default settings. You can change these settings later. The new agent appears in the agents list.



5.4 Configuring an Agent Group

Agent groups form specialized units that receive and place calls. A group is a destination of the service entity in ShoreTel Contact Center Solution. Calls delivered to the group are presented to the most appropriate agent according to the specified routing policy.

A service defines how a call is processed. Every incoming call to the call center is assigned to a specific service, such as sales of specific products, banking services, or travel agency services, and so on.

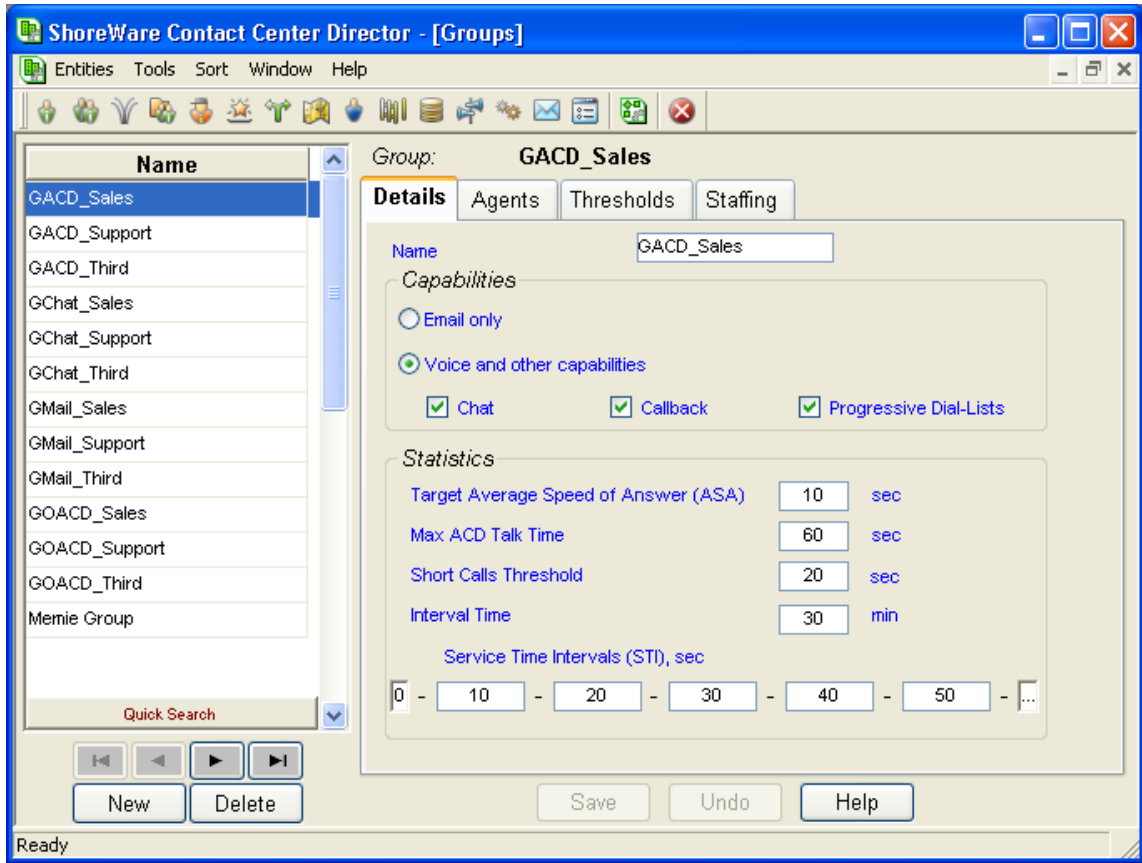
The process of configuring agent groups involves:

1. Creating a group
2. Adding agents to the group
3. Assigning services to the group

5.4.1 Creating a Group

To create a group:

- Step 1** From ShoreWare Contact Center Director, select the Groups entity.
- Step 2** In the Groups configuration window, click **New** (in the lower-left corner of the window).



Step 3 In the New Group Details window, enter a name for the group. For example, Sales Group.



Step 4 Click Finish.

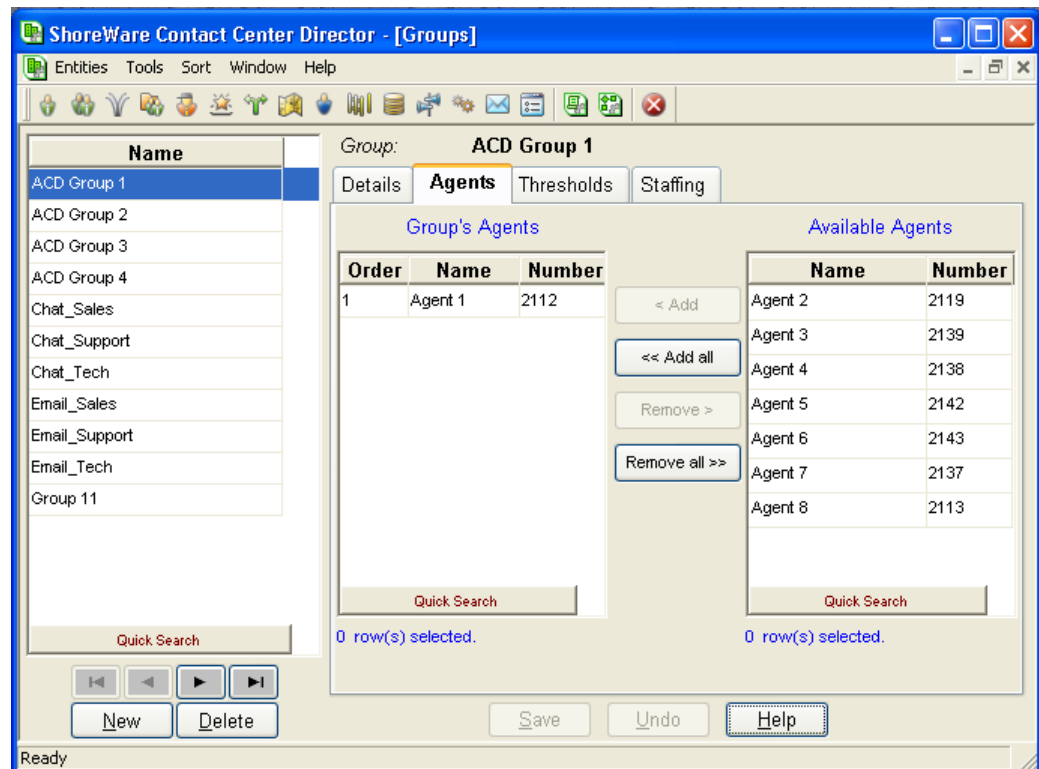
5.4.2 Add an Agent to the Group

To add an agent to the group:

Step 1 From ShoreWare Contact Center Director, select the **Groups** entity.

Step 2 Select the group to which you want to add agents.

Step 3 Click the **Agents** tab.



Step 4 Select an agent from the list that you want to add to the group, and then click **Add**.

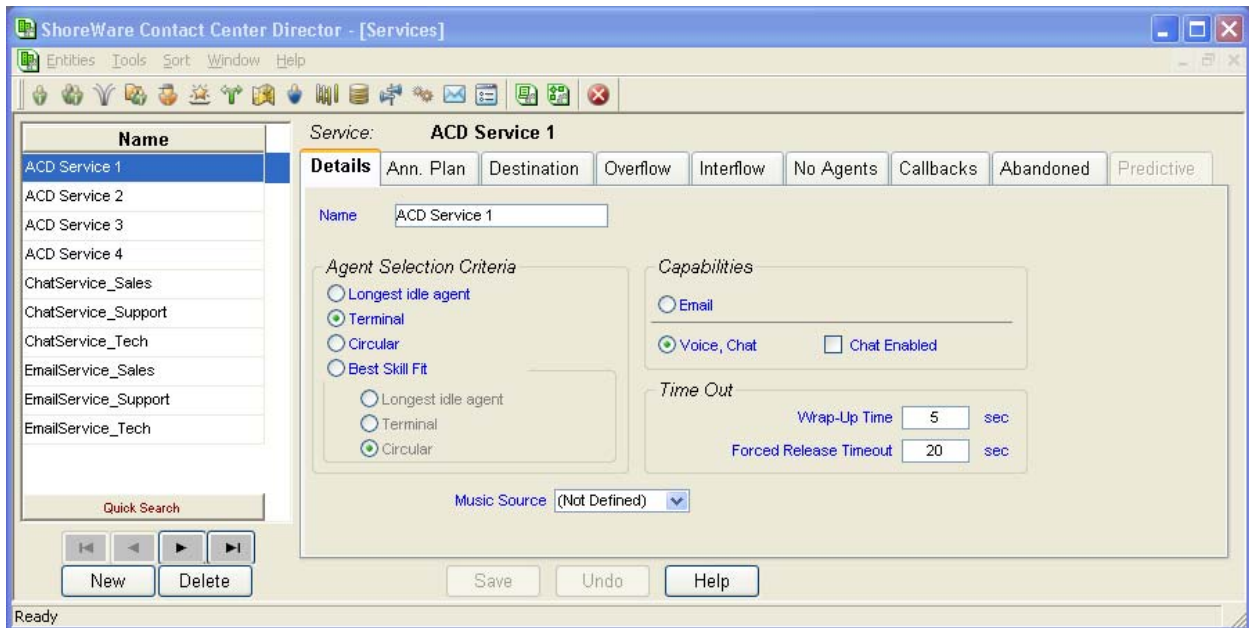
Step 5 Click **Save**.

5.4.3 Assigning a Service to the Group

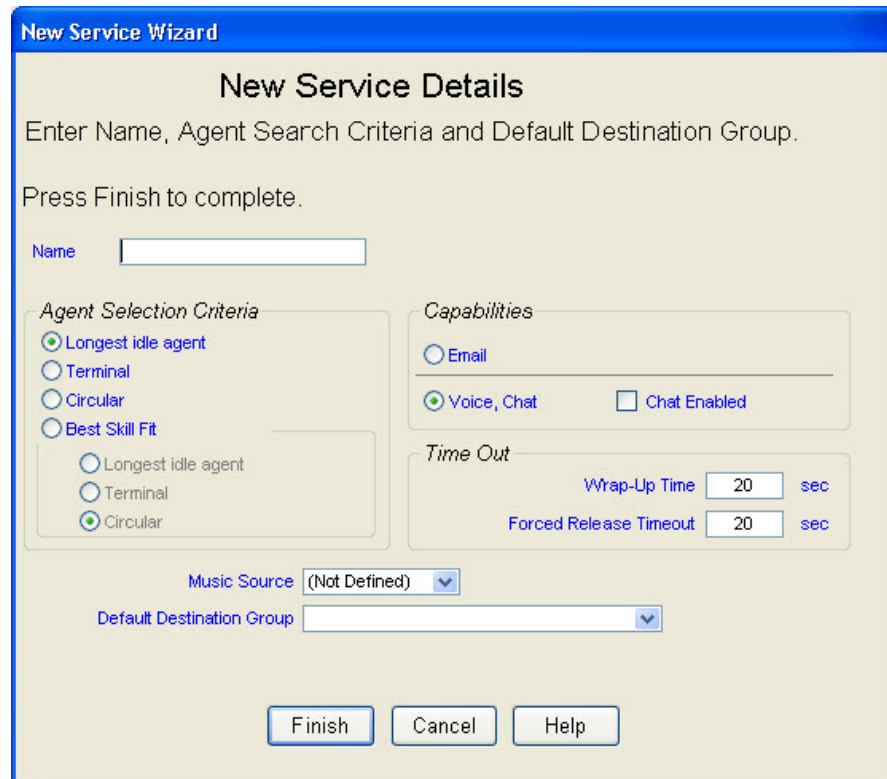
To assign a service to the group:

Step 1 From ShoreWare Contact Center Director, select the **Services** entity.

Step 2 In the Service configuration window, click **New** (in the lower-left corner of the window).



Step 3 In the New Service Details window, use the default options, except for the following



- **Name.** The name of the service, for example Sales_Service.
- **Music Source.** The system connects a call waiting in queue to a music source. Select **CC Script** from the drop-down menu and then **Sample Music** from the resulting adjacent drop-down menu.
- **Default Destination Group:** From the drop-down menu, select the group you created previously (i.e., Sales Group).

Step 4 Click Finish.

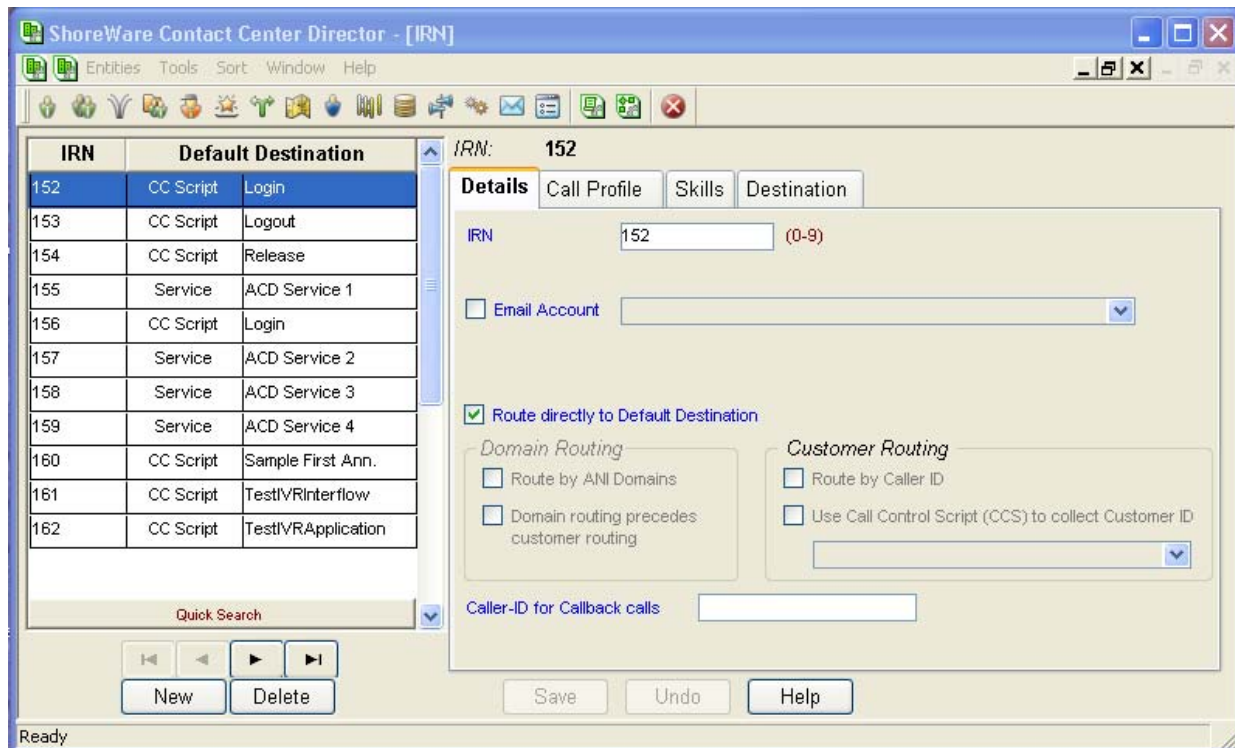
5.5 Creating an IRN

IRNs are used as entry points to the routing system. Each IRN can be used to define rules for routing the incoming call to various destinations, including services. These rules can also update the call profile, including the call's priority and defining the skills required by the call.

To create an IRN:

Step 1 From ShoreWare Contact Center Director, select the IRN entity.

The IRN configuration window appears.



Step 2 Click New (in the lower-left corner of the window).

In the New IRN Details window, use the default options, except for the following:

- **IRN.** The extension for the group.
- **Default Destination.** Select **Service** from the drop-down list, and then select the group for the extension.

Step 3 Click **Route directly to Default Destination**.

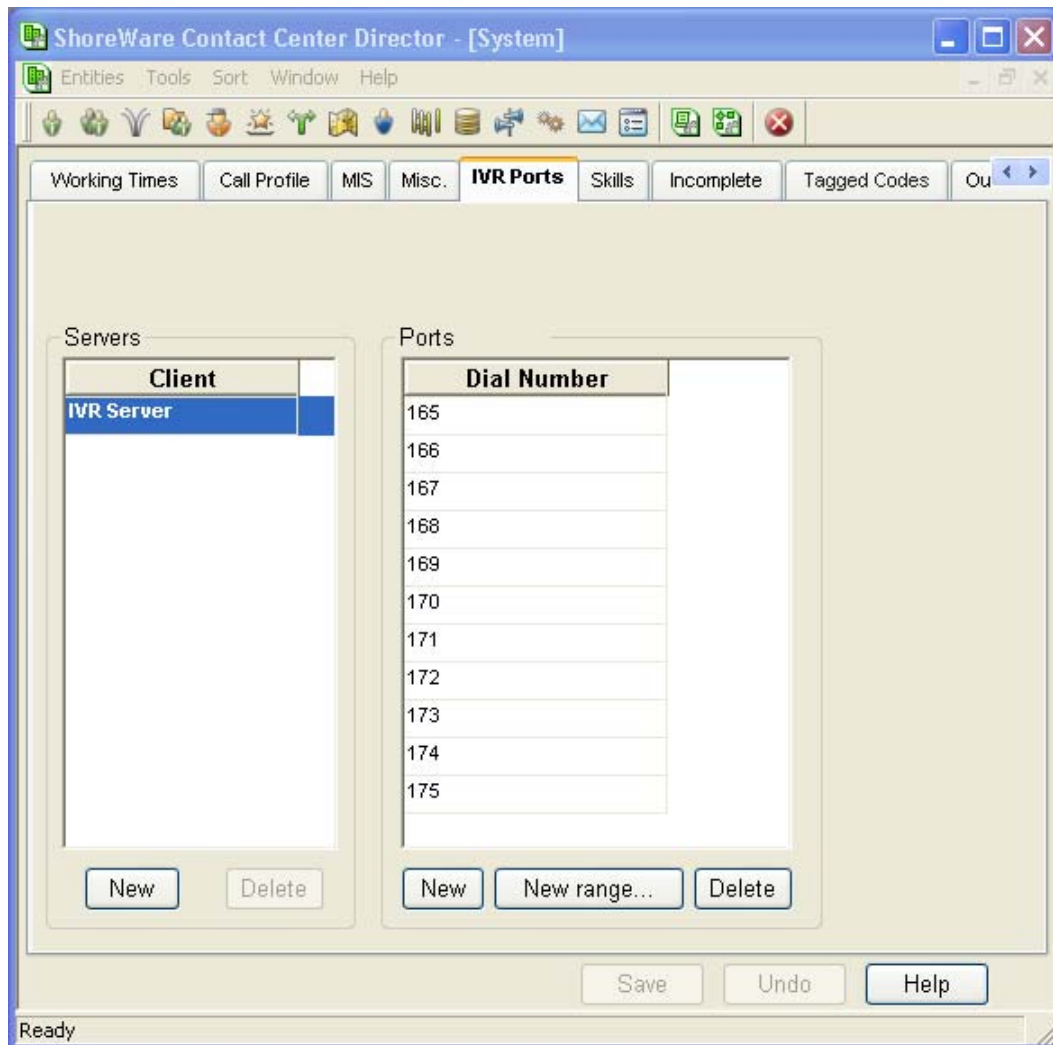
Step 4 Click **Finish**.

5.6 Configuring an IVR Port

The IVR subsystem in the Contact Center performs various activities including auto-attendant services, announcements, outbound generation of calls, and interactive operations with the caller. IVR ports are first configured as Route Points in ShoreWare Director.

To configure an IVR Port:

- Step 1** From ShoreWare Contact Center Director, select **System** entity > **IVR Ports** tab.
- Step 2** In the IVR Ports window, click **New** (below the Servers list). Then enter the name of the distributed server.
- Step 3** Click **New Range** (below the Ports list). Enter the dial numbers created in ShoreTel Director, starting with channel 1.



Step 4 Click Save.

Verify that the contact center can receive calls

5.6.1 Verifying the Call Center Can Receive Calls

Once you have created the basic components of Contact Center, you need to verify that your call center can receive calls.

To verify that the call center can receive calls:

- Dial one of the Contact Center extensions.

You will hear a message from Contact Center. Because no agents are logged on and no call handling has been applied, the call will not reach an agent.

5.7 Verifying an Inbound Call Reaches an Agent

To verify that an inbound call reaches an agent, you need to:

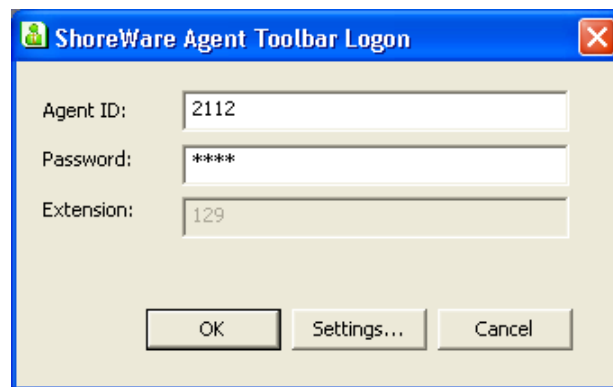
1. Log on to Contact Center as an agent.
2. Call into the system.

5.7.1 Logging on as an Agent

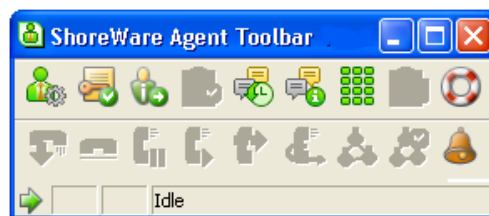
To log on as an agent:

Step 1 Launch ShoreWare Agent Toolbar.

Step 2 In the ShoreWare Agent Toolbar Logon window, specify your Agent ID, password, and Extension (which should be filled in by default), and then click OK.



Once connected to the server, Agent Toolbar opens.



5.7.2 Calling into the System

To call into the system:

- From a phone not associated with Contact Center, dial the extension of the group of which the agent is a member.

The call will be sent directly to an agent logged on to a workgroup. ShoreWare Agent Toolbar changes from green to yellow, and the phone rings.

Upgrading, Maintaining, and Troubleshooting Contact Center

6.1 Upgrading Contact Center

Upgrading from a previous version of Contact Center is similar to the installation process. However, there are a few things you need to be aware of:

- You can directly upgrade to Contact Center 6 from Contact Center 5 or 5.1.
- If you are upgrading from Contact Center Server 5 to 6, you need to also upgrade your agents to ShoreWare Agent Toolbar 6. Any attempts to run ShoreWare Agent Toolbar 5 using the Contact Center 6 server results in an application error.

For upgrades from Contact Center Server 5.1 to 6, you may need to upgrade your agents to ShoreWare Agent Toolbar 6. If an upgrade is required, agents receive a system message when logging into Agent Toolbar.

- Windows Server 2008 32-bit support for ShoreTel Contact Center is now available for existing Contact Center systems. This means that if you are running Contact Center on Windows Server 2003, you can now upgrade to Windows Server 2008.

However, you do need to uninstall the ShoreTel platform before upgrading to Windows 2008, and then reinstall the ShoreTel platform. Refer to the ShoreTel Planning and Installation guide for specific instructions.

- It is now mandatory for supervisors to use a password to log into Contact Center applications. If any of your supervisor accounts do not have specified passwords, you must edit the account to include a password. These passwords are now casesensitive.

Supervisor accounts are created, and edited, using ShoreWare Contact Center Director. Refer to the Contact Center Administrator Guide for details.

- You must manually backup and then reinstall any custom files you have saved in the ShoreWare Contact Center directory (such as reports, IVR prompts, and databases). These files are deleted during the upgrade process.
- If you plan to upgrade Contact Center supervisor applications using the active directory push method, Java 6 or higher must be installed on supervisor PCs.

- For previously saved historical reports containing fields removed in Contact Center 6, the report is automatically updated to no longer include these fields. Reports made up entirely of removed fields are displayed without data.

If a report includes user-defined formulas utilizing removed fields, the formula is automatically deleted from the system and the report updated to no longer include the formula, when upgrading to Contact Center 6. Your users can avoid this situation by editing their formulas so that they do not include removed fields, before upgrading to Contact Center 6.

6.1.1 Upgrading the Contact Center Server

If you choose to migrate to the dongle-less supervisor approach (as described in the section on Licensing on page 11), the server's dongle is updated with the total number of supervisor licenses. If you want to continue using dongles and increase the number of licenses, you can buy more license dongles from ShoreTel Customer Service.

To upgrade the Contact Center Server:

Step 1 Insert the ShoreTel Contact Center Solution Installation CD. In the CD's ShoreTel Contact Center Server folder, click the setup.exe file.

Step 2 Follow the instructions in the section Installing the Contact Center Server on page 27.

6.1.2 Upgrade Methods for Client Applications

The Contact Center client applications (i.e. the supervisor applications and ShoreWare Agent Toolbar) can be upgraded either manually or through the active directory push method that uses the Microsoft Installer (MSI). Manual installation involves using the ShoreTel Contact Center Solution DVD and installing the software on each individual PC.

The active directory installation method simplifies deployments and reduces administrative costs. Contact Center is configured, using the Windows Group Policy Object (GPO), to automatically push from the server to all computers in your call center. You must have Java installed on your supervisor machines for the Contact Center supervisor applications to work after installation using the active directory method; and network connectivity is required during the installation process. To enable the active directory installation method, follow the instructions provided by MSI.

To manually upgrade the Contact Center Client applications:

Step 1 Insert the ShoreTel Contact Center Solution Installation CD.

Step 2 From the ShoreTel Contact Center Supervisor folder for supervisor applications, or from ShoreTel Contact Center Agent folder for ShoreWare Agent Toolbar, click the setup.exe file.

Step 3 For supervisor applications, follow the instructions in the section Manually Installing the Contact Center Supervisor Applications on page 31. For ShoreWare Agent Toolbar, refer to the section Manually Installing ShoreWare Agent Toolbar on page 35 for the additional steps to follow.

Note: You can only upgrade applications already installed on a PC. This means that if the computer only has ShoreWare Agent Toolbar installed, you cannot upgrade supervisor applications on that PC.

6.1.3 Updating Your Contact Center Licenses

Updates to your Contact Center licenses involves applying a new License Key file, provided by ShoreTel, to the system.

To update Contact Center licenses:

- Step 1** Shut down the Contact Center Server service from the Windows desktop by choosing from the Start menu > Programs > Administrative Tools > Services, and then click **Stop the Service**.



- Step 2** Copy the new License Key file (.cif) to the server's \bin directory located in the product root folder (by default d:\ShoreTel>Contact Center server\bin).

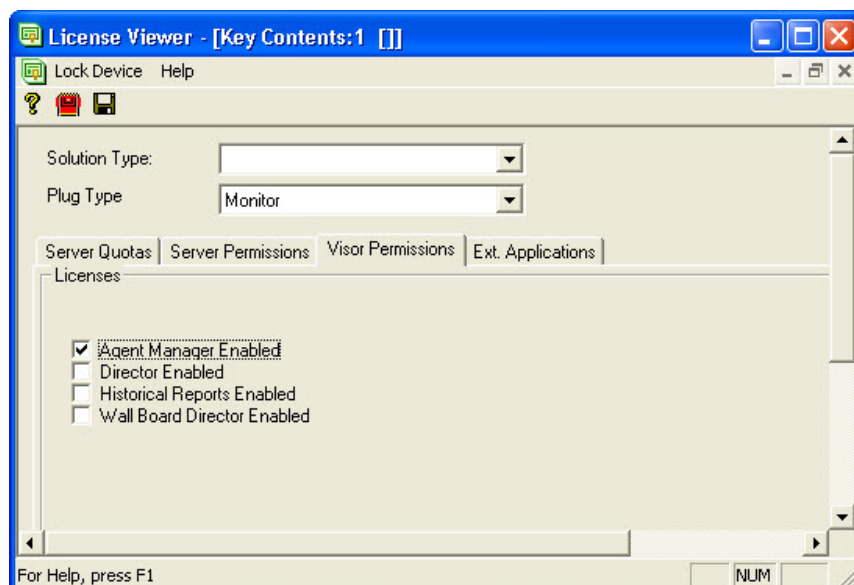
The system automatically updates the license keys on the dongle, and then deletes the copy of the new License Key file (.cif) from the server.

- Step 3** Restart the Contact Center Server service.

- Step 4** Check that the changes to your Contact Center licenses have been propagated throughout the entire system from Contact Center Director > System entity > Management tab > Licensing tab.

If the licensing changes do not appear in Contact Center Director:

- Step 1** Launch the Contact Center License Viewer from the Windows desktop by choosing Start menu > Programs > ShoreTel > Contact Center > License Viewer. The License Viewer appears.



- Step 2** The message Lock Device Read Successfully appears. Click OK.
- Step 3** Record the alpha-numeric License Key serial number that appears in square brackets beside Key Contents (eg. [1A2B 3C4D]).
- Step 4** Identify and record the Contact Center build number by choosing from the **Help** menu > **About**.
- Step 5** Contact ShoreTel TAC at 1-800-742-2348 for assistance. Have available the new License Key file, the License Key file serial number, and the Contact Center build number.

6.2 Backing Up Contact Center

Backing up your Contact Center system is an important part of server maintenance. Regular backups ensure that in the event of a server or application failure, the downtime and data loss experienced by your call center is kept to a minimum. The location and handling of your backups should follow your organization's business continuity policies for mission critical systems. It is recommended that you keep a copy off-site to ensure availability of all database backups.

The folders and files listed here are critical components of your Contact Center configuration. By default, all of these components can be found on the server in C:\Program Files\ShoreTel\Contact Center Server\; your installation path may vary.

In addition, your particular configuration may include components that are critical to the system, but are not part of Contact Center. These can include ODBC settings or local Microsoft Access files required by Contact Center for database integrations. Make sure you back up these components as well, according to the manufacturer's specifications.

- Agent Configurations (C:\Program Files\ShoreTel\Contact Center Server\Agents) - This folder contains all configurations for Agent Toolbar. This folder is crucial if you have any screenpop configurations.
- Active Database (C:\Program Files\ShoreTel\Contact Center Server\DBProvider\data\ecc) - This folder contains the active Contact Center database. These files should not be touched or backed up while the Contact Center MySQL service is running. Doing so can corrupt the database or cause a service outage.
- IVR Voice\Wave Files (C:\Program Files\ShoreTel\Contact Center Server\IVR) - All of the sound files for the Contact Center IVR applications and announcement plans reside in this folder. This includes both custom files and the default language files included with Contact Center.
- Email Index (C:\Program Files\ShoreTel\Contact Center Server\bin\EMAILS.DAT) - If your Contact Center system is configured for email routing, this file contains the index of all of email currently downloaded by Contact Center.
- Email Storage (C:\Program Files\ShoreTel\Contact Center Server\Storage\Erstorage) - If your Contact Center system is configured for email routing, this folder contains the individual downloaded email files.
- Database Backup (C:\Program Files\ShoreTel\Contact Center Server\backup) - Contact Center automatically backs up its database to this folder by default. The backup folder contains the entire contents of the data directory in the following format:

xYYYY-MM-DD-hh-mm, where

- x - This value will indicate the type of backup that was made
- d - Daily
- m - Monthly
- w - Weekly
- c - Configuration only backup
- n - Now; On-demand backup from Contact Center Director
- YYYY - The full 4 digit year
- MM - Two digit month
- DD - Two digit year
- hh - Hour of backup completion
- mm - Minute of backup completion

The Contact Center database can be backed up either automatically or manually. You should use an automatic backup application to backup the other critical components.

6.2.1 Automatically Backing Up Contact Center

The Contact Center system automatically backs up its database at 22:00 server time every night. By default, the database is backed up to the folder C:\Program Files\ShoreTel\Contact Center Server\backup. Using ShoreWare Contact Center Director, you can change the location of the database backups, the time and date of the execution, and the number of generations kept, and generate a backup log. Refer to Chapter 4 of the Contact Center Administration Guide for information.

Your backup application should automatically backup the following critical components: from their respective directories:

- Agent Configurations
- IVR Voice\Wave Files
- Email Index (if applicable to your configuration)
- Email Storage (if applicable to your configuration)
- Database Backup

It is recommended that you automatically backup these components on a similar schedule to the settings in Contact Center. For example, if Contact Center is backing up its database every night at 22:00, your backup application should pick up these files a minimum of two hours later. All automatic backups should be scheduled for off-peak times for minimum impact to Contact Center functionality, since it adds an additional load on the system.

6.2.2 Manually Backing Up the Contact Center Database

Contact Center is capable of performing on-demand backups of its entire database (configuration and historical database). Manual backups should be performed before any major changes are done to the system, like upgrading to a newer version of Contact Center, to ensure that the system can be rolled back without any data loss. Manual backups should be done during off-peak hours, as it puts a load on the Contact Center database.

Contact Center can also export its existing configuration, without historical data, to a separate database. This kind of backup is usually done in conjunction with ShoreTel support for lab work and troubleshooting, since the configuration database is usually significantly smaller than the full database.

Details on manually backing up the Contact Center Database are in Chapter 4 of the Contact Center Administration Guide.

6.3 Restoring Contact Center

With proper backups, the Contact Center system can be restored from simple issues such as configuration mistakes, to rebuilding the system from scratch in the case of catastrophic server failure.

You can restore either individual components of Contact Center, or restore the entire system.

6.3.1 Restoring Contact Center Components

If individual files are configured incorrectly or damaged, you need to only restore the specific component.

6.3.1.1 Restoring Agent Configurations

To restore the agent configuration etas.ini files, all agents must exit Agent Toolbar and be logged out of the Contact Center system.

To restore agent configurations:

Step 1 Copy the backup of the Agent folder to C:\Program Files\ShoreTel>Contact Center Server\Agents.

Step 2 Overwrite any existing files.

Agents can now log back into Agent Toolbar; the system uses the newly restored files for their configurations.

6.3.1.2 Restoring IVR\Wave Files

The IVR\Wave files can be replaced at any time, even when the server is operational.

To restore an IVR\Wave file:

- Copy the backup files to located in C:\Program Files\ShoreTel>Contact Center Server\IVR.

The next call to access an IVR or Wave file uses the newly restored file.

6.3.1.3 Restoring the Database

Restoring the Contact Center database requires shutting down the server, and so should be done during non-business hours if at all possible. For emergency restoration, all agents should be logged out and incoming calls should be rerouted to alternate destinations until you can ensure that the restoration has been completed successfully. In the event of a database failure or corruption, keep the defective database in case it is required by ShoreTel TAC.

To restore the Contact Center database:

Step 1 Stop the ShoreTel Contact Center service.

Step 2 Stop the ShoreTel-MySQLCC service.

Step 3 Locate the database you want to restore.

In Contact Center 5.0 and later, the database is located in the folder
C:\ShoreTel\Contact Center Server\backup\.>d/w/n>>YYY-MM-DD-hh-mm>\Data.

Step 4 Copy and rename the C:\Program Files\ShoreTel\Contact Center Server\DBProvider\Data folder. This ensures that you have a backup copy of this directory if needed.

Step 5 Copy the entire >d/w/n>>YYY-MM-DD-hh-mm>\Data folder into the C:\ShoreTel\Contact Center Server\DBProvider folder.

The files in \Data folder are replaced with the current database files.

Step 6 Restart the ShoreTel-MySQLCC service.

Step 7 Restart the ShoreTel Contact Center service.

Step 8 Ensure that the restored data is available.

You can check that the restored data is being used by running a report or by launching ShoreWare Contact Center Director and viewing your system information.

6.3.2 Restoring the Entire Contact Center System

You should restore the entire Contact Center system in cases of catastrophic hardware or software failure. If you have a hardware failure, the new server will need to meet the system requirements of required by Contact Center and must have the same IP address as the failed server. Refer to Chapter 2 for these hardware requirements.

The newly installed replacement server must be brought up to the level of a new installation. This means installing Contact Center and the Distributed Voicemail Software. The version of the Contact Center software needs to match the previously installed version, even if a newer version is available. This ensures that Contact Center can be put back into a functioning state before an upgrade is attempted. For help with a basic installation of Contact Center, see Chapter 3.

To restore the Contact Center System:

Step 1 Restore the database, as explained in the section Restoring the Database on page 75.

Step 2 Restore agent configurations. See the section Restoring Agent Configurations on page 75 for details.

Step 3 Restore the IVR/Wave files, as detailed in the section Restoring IVR\Wave Files on page 75.

Step 4 (Optional) Restore data on email by copying the backup of the email index to C:\Program Files\ShoreTel>Contact Center Server\bin, and the backup of the email storage to C:\Program Files\ShoreTel>Contact Center Server\Storage.

Step 5 Restart Contact Center and verify restoration of configuration and historical reporting data.

6.3.3 Moving the Contact Center Installation to a New Server Partition

Scenario: Contact Center is installed on a server partition that is running out of space. You would like to move the Contact Center installation to a new partition on the same server.

Resolution:

Step 1 Shut down Contact Center and the MySQL services.

Step 2 Copy the /DbProvider/data folder to a backup location.

Step 3 Uninstall Contact Center, and then reboot the server.

Step 4 Delete the Contact Center Server folder on the server.

Step 5 Reinstall Contact Center on the correct partition, and then reboot the server.

Step 6 Shut down Contact Center and the MySQL services.

Step 7 Overwrite the /DbProvider/data folder with the backup copy from the previous installation.

Step 8 Restart Contact Center and the MySQL services.

6.4 Troubleshooting Contact Center

This section provides information on problems or errors you may encounter when installing and using ShoreTel Contact Center.

6.4.1 Error 1720

Error 1720: There is a problem with this Windows Installer Package. A script required for this install to complete could not be run. Contact your support personnel or package vendor.

Scenario: Windows Server 2008 is attempting to install Contact Center. The error appears during the Contact Center installation process, when the installer is creating the database schema.

Resolution: In the Windows Control Panel, turn on the Windows firewall. You are prompted to start the firewall service, click Yes. Then turn off the Windows firewall; if you leave the firewall on, the server cannot find the license dongle.

6.4.2 TMS or DTAS Error

Scenario: If a TMS or DTAS error occurs, Contact Center automatically logs out all agents from ShoreWare Agent Toolbar and the system.

Resolution: You must manually restart Contact Center in order to ensure correct call routing after the error, and to enable your agents to log back onto the system.

Installation Worksheets

A.1 Overview

To simplify the installation process, use the attached worksheets.

A.2 Site General Information

Site Name _____
Address _____

A.3 Contacts

#	Name	Title	Phone #1	Phone #2	Email

A.4 About the Company

A.5 Network Information

Server Type _____ Version _____
ShoreTel Contact _____
Center Server IP _____

Backup Information _____
Backup Location _____ Schedule _____

A.6 ShoreWare Agent Manager Computers

#	Computer Name	Type Full/Monitor	OS (NT/2K/XP/Vista)	Comments
1.				
2.				
3.				
4.				
5.				
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27.				
28.				
29.				
30.				
31.				
32.				

A.7 ShoreWare Agent Computers

#	Computer Name	Type Full/Monitor	OS (NT/2K/XP/XP)	Comments
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
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32.				

Glossary

Agent: Agents handle contacts routed to them by the ShoreTel Contact Center Solution. Each agent is equipped with a telephone, and begins work by logging on to the system.

The ShoreTel Contact Center Solution supports two types of agents:

- The first type of agent is equipped with the ShoreWare Agent Toolbar Software and a telephone, and begins work by logging on to the system. To log on, each agent enters a unique agent identification ID and password.
- The second type of agent is equipped with a telephone only. These agents begin work by logging on to the system. To log on, each agent dials a predefined intelligent routing number (IRN) and, at the voice prompt, dials their agent ID.

Agent Group: Agent groups form specialized units that receive and place calls. A group is a destination of the service entity in ShoreTel Contact Center Solution. Calls delivered to the group are presented to the most appropriate agent according to the specified routing policy.

When all the agents in a group are busy or unavailable, the ShoreTel Contact Center Solution places calls in a queue and activates the Announcement Plan, as well as overflow and interflow actions, as defined.

When no agents are logged on to the group, calls are routed to the No Agents destination defined on the service.

Agent Search Criteria: The method by which an available agent is selected for a call that enters the service.

Agent State: A graphical representation of the agent's status indicates the activity and the state of an agent at any given time.

Agent Station (or workstation): Agents use an agent workstation composed of a Windows-based PC and a phone, or else just a phone. Each agent is defined in the ShoreTel Contact Center Solution and is identified by a unique ID and password. The ShoreTel Contact Center Solution supports the "free seating" concept and routes calls by agent ID.

Automatic Call Distribution (ACD): The ShoreTel system uses ACD to distribute calls in the contact center. ACD activity and performance within the ShoreTel Contact Center Solution is statistically evaluated, recorded, and reported.

Automatic Number Identification (ANI): ANI is the series of digits sent by the Public Switched Telephone Network (PSTN) to the ShoreTel System. An ANI contains the dial number of the caller.

Average Speed of Answer (ASA): ASA is the average time it takes a call to be answered from the time it was received.

Call Answer Strategy: The method by which an incoming call is routed to the agent, when the agent becomes available. The strategy includes two stages: 1) Determining the set of calls to be considered for routing and 2) Selecting from that set a single call to route to the agent.

Call Priority: A priority level on a scale of 1–100 is assigned to each call, where 100 is the highest priority. The priority is initially set to a defined value at the IRN level and increases by wait time, as defined.

Call Profile: A collection of dynamic properties attached to each ACD call.

Dial Numbers: Dial numbers are used within the ShoreTel system to identify entities that can be a source of, or destination for, a call. For instance, an extension number specific to the group identifies an agent group. When this number is dialed, the call enters the group as an ACD call. Incoming trunks are routed to this extension number to connect callers to the agent group.

Dynamic Host Configuration Protocol (DHCP): DHCP enables individual computers on an IP network to extract their configurations from a server (the DHCP server) or servers, reducing the work of administering a large IP network.

Extension Number: An extension or directory number.

First Announcer: An announcement that is heard once when a caller first enters the queue.

Historical Reports Interval: A system-wide amount of time defining the increments by which all collected data and statistical information is stored in the database for future analysis and reporting.

Incomplete Call Destination: The destination of calls that have not been answered or handled to completion. This is a system-wide destination that completes the handling of such calls.

Interflow: Interflow transfers calls waiting over the amount of interflow time to a different destination. Interflow parameters are defined per service.

Intelligent Routing Number (IRN): IRNs are dial numbers used as entry points to the routing system. Each number can be used to define rules for routing the incoming call to various destinations, including services, call control scripts, and devices. The IRN is reached from the ShoreTel system by dialing the extension number assigned to the route point, which is then sent to the corresponding IRN.

Lock Device: The software lock device, or dongle, attached to the USB port. The ShoreWare Contact Center Server Software and ShoreWare Supervisor applications cannot be installed or operate without this device.

Mandatory Announcer: An announcement heard by all callers upon entering the service, regardless of the availability of agents.

Multiple Document Interface (MDI): ShoreTel Contact Center Solution screens are based on the MDI display method. Using this method, all the ShoreTel Contact Center Solution work windows are contained within the work area of the main MDI window.

The work area is the region inside the main window where all the work takes place, and where the output is displayed. The supervisor uses work windows to define contact center entities, and view, generate, and modify reports. There may be several active work windows open at any given time for each ShoreTel Contact Center Solution application (including minimized windows). In addition, MDI enables you to tile or cascade multiple windows in the main window.

Overflow: An algorithm designed to improve the way waiting calls are handled, by expanding the number of potential agents to answer the call. Overflow is activated after the overflow timeout, by adding groups of agents as the destination of the call.

Real-Time Interval: The real-time reports reflect the actions and activities performed by monitored ACD entities on the contact center, along with various performance information based on statistic calculations. The ShoreTel Contact Center Solution uses a sliding window time period and reports statistical performance information over this amount of time.

The sliding time period is managed by the real-time interval and may be differently defined for each group, with intervals varying from 3 to 60 minutes. The real-time

interval “moves” in increments of 1/60 of the defined period. (That is, if the defined period is set to 15 minutes, the increment will be 15 seconds.)

Reports: To obtain accurate performance information about the contact center, a supervisor or manager can use the ShoreTel Contact Center Solution reports. These reports provide a picture of ACD activity that can be assessed and analyzed. The information can be displayed as either real-time or historical reports in various formats.

Real-time reports display the dynamic status of ACD activity. Historical reports summarize past ACD activity, after it is recorded in the database.

Report Template: The ShoreTel Contact Center Solution comes with a set of predefined report templates (default reports), which cover the full range of information available. In addition to predefined report templates, you may also design and customize user-defined templates for historical reports.

Templates provide a virtually unlimited reservoir of report formats that can be generated in a simple and straightforward manner. You can also modify templates for your specific requirements.

Templates can be saved as private or public, with unique names for future use.

Routing by ANI/Caller ID: This item describes how calls are routed by ANI / Caller ID.

A call enters the IRN with ANI. (ANI is information about the source of the call received from the central office.) The IRN has the option to route the call by ANI. The ShoreTel Contact Center Server then goes to the customer's table or an external database, and searches for the customer according to the ANI received.

A call enters the IRN without ANI. Whenever a call enters the IRN without ANI, the IRN sends the call to a Call Control Script (CCS). The ShoreTel Contact Center Server sends the call to the defined CCS. This CCS prompts the user to enter the customer information and copies it to the ANI field in the call profile. The call returns from the CCS to the IRN. The system then goes to the customer's table or an external database, and searches for the customer according to the ANI entered by the CCS.

If the customer is found, the ShoreTel Contact Center Server uses the customer information and tries to route the call, using that information.

If the customer is not found, the call is routed to the default destination of the IRN (or one of the IRN's alternate destinations).

Routing Method: The ShoreTel Contact Center Solution offers the contact center administrator a variety of call routing methods, including Route by ANI, Best Fit, Agents Skills, and others.

Script: Call Control Scripts define call treatment. A script is a set of actions that is performed on a call according to logical and/or physical events (for example, “Route the call to a specific destination”. Or “Let the caller hear music or special announcements”).

Secondary Announcer: Announcements played periodically while the caller is waiting in the queue.

Service: A service defines how a call is processed. Every incoming call to the contact center is assigned to a specific service, such as sales of specific products, banking services, or travel agency services, and so on.

Service Time Interval (STI): STIs are the time periods for which the call service is monitored for real-time or historical statistical data purposes. The STI is determined for each group in the system in ShoreWare Contact Center Director. It is used to generate histograms for statistical analysis.

ShoreTel Contact Center Server: The ShoreTel Contact Center Server provides intelligent routing for the contact center, as well as enhanced skill-based routing functionality for calls to agents.

Super Group: A super group is a collection of agent groups aggregated for statistical and reporting purposes. Super groups may contain several agent groups. They are used mainly to represent the hierarchy of the company–division–department. An agent group may belong to more than one super group.

Supervisor: Each supervisor is responsible for specific groups of agents. Using the ShoreWare Supervisor Applications, supervisors monitor agent performance and the contact center activities. Each supervisor is assigned authorization attributes that allow or prevent access to system operations.

Authorized supervisors can determine the routing plans for ACD calls, as well as which information is included in reports. In addition, supervisors can change the information displayed on the Wall Boards under their control. They can also be assigned privileges for managing groups, including adding and removing agents for specific groups.

Supervisor Applications: Supervisor Applications include the ShoreWare Agent Manager and Contact Center Reporting software, which provide real-time online information and historical reports on the performance of the contact center.

Target Service Factor (TSF): TSF is the percentage of calls answered within the Target ASA, out of all the calls that are routed to the group. This factor indicates how well the group is providing the level of service defined for it, based on the Target ASA. Abandoned and overflowed calls are considered as answered after the Target ASA.

Transmission Control Protocol/Internet Protocol (TCP/IP): TCP/IP is the basic communication language or protocol of the Internet. In many places, it is used as a communication protocol in intranets and extranets.

Trunk: A trunk is a channel of conversation between the Public Switched Telephone Network (PSTN) and the ShoreTel System. These lines carry all the ACD calls, as well as external non-ACD calls, to and from the system.

Trunk Group: A trunk group is a collection of trunk lines grouped together to act as a single line unit, with its own specific name and extension number. A trunk group is usually routed to a specific agent group.

Wrap-Up Codes: A code entered by an agent during the wrap-up time in order to provide additional information for evaluating the actions of the contact center. In most cases, wrap-up codes provide information for evaluating calls for reporting purposes, including types of call (request or complaint); level of required action (urgent, regular, or low); status of the deal (closed, needs recall); and so on.

Wrap-Up Time: An amount of time at the end of an ACD call in which an agent performs additional operations related to the call. This wrap-up time is set on the ShoreTel system, and reported by the ShoreTel Contact Center Solution for each agent. It is also reported as part of the Treatment Time (that is, the time it took to handle the call from the time the call entered the system).

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