



ACD Administrator Guide

HiPath ProCenter
Version 5.1 SMR B

October 2003

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October 2003

Job No. 5225

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1 About This Guide

This guide provides information about the ACD Administrator application.

1.1 Who Should Use This Guide

This guide is intended for system administrators who are upgrading from a Hicom 300 E switch to the HiPath 4000 switch, and Installing HiPath ProCenter.



System administrators who will continue to use the Hicom 300 E switch after installing HiPath ProCenter should refer to BusinessView Composer documentation.

1.2 How to Use This Guide

This guide contains the following chapters:

Chapter 1, “About This Guide” describes the intended audience, the formatting conventions, and the information provided in this guide and the other guides in the HiPath ProCenter documentation set.

Chapter 2, “An Introduction to Skills-based Routing” describes how HiPath ProCenter uses skills-based routing to route calls in a call center. This chapter also shows the differences in reports between HiPath ProCenter and BusinessView Composer.

Chapter 3, “ACD Basics” describes how the ACD Administrator and the HiPath ProCenter suite work together with the components of Automatic Call Distribution (ACD).

Chapter 4, “Using ACD Administrator” describes the ACD Administrator application and how to configure the switch resources.

Chapter 5, “Troubleshooting ACD Administrator” provides troubleshooting information for the ACD Administrator.

Appendix B, “About the ACD Application Software” provides information about the ACD Administrator software.

Appendix A, “AMO Configuration for ACDAPP” describes the ACDAPP configuration.

Appendix C, “Backup and Restore of ACDAPP for the HiPath 4000” describes the backing up and restoring of data for ACDAPP.

This guide also includes glossary terms and an index.

About This Guide

Related Information

1.3 Related Information

The following guides contain more information about the HiPath ProCenter Suite.

HiPath ProCenter Administrator, Entry Suite, Version 5.1 SMR B, G281-0811

This guide describes the Administrator application. It provides information on configuring the ProCenter Entry Suite and includes a glossary of ProCenter terminology.

HiPath ProCenter Administrator User Guide, Standard and Advanced Suites, Version 5.1 SMR B, G281-0810

This guide describes the Administrator application. It provides information on configuring the ProCenter Standard and Advanced Suites and includes a glossary of ProCenter terminology.

HiPath ProCenter Browser Based Desktop User Guide, Version 5.1 SMR A, G281-0809

This guide describes the Browser Based Desktop application.

HiPath ProCenter Call Director User Guide, Version 5.1 SMR B, G281-0832

This guide describes how to configure and use the Call Director application.

HiPath ProCenter Desktop User Guide, Entry Suite, Version 5.1 SMR B, G281-0808

This guide describes the HiPath ProCenter Supervisor application.

HiPath ProCenter Desktop User Guide, Standard and Advanced Suites, Version 5.1 SMR B, G281-0807

This guide describes the HiPath ProCenter Desktop applications—the Agent, Supervisor, and Enterprise Manager applications.

HiPath ProCenter Installation Guide, Version 5.1 SMR B, G281-0806

This guide describes the HiPath ProCenter installation, including: setting up the base hardware and operating system for servers; installing required software for the various servers as well as for client computers; activating SID-enabled features; and verifying the installation.

HiPath ProCenter Operations Guide, Version 5.1 SMR A, G281-0805

This guide describes how to use the IT Monitor application and the Watchdog Server, to start and stop the ProCenter servers, and to back up and restore the ProCenter databases. A troubleshooting section provides information on resolving problems and identifying error codes in the HiPath ProCenter Suite.

HiPath ProCenter Overview Guide, Version 5.1 SMR B, G281-0804

This guide provides an overview of the HiPath ProCenter Suite—an integrated set of call center applications that apply intelligent, skills-based call routing to optimize productivity, increase customer satisfaction and improve employee morale in your call center.

HiPath ProCenter Programming Guide, Version 5.1 SMR B, G281-0802

This guide describes how to customize the Desktop applications by writing IVR scripts, custom routing functions, and Dynamic Data Exchange applications.

HiPath ProCenter Reporter User Guide, Version 5.1 SMR B, G281-0801

This guide describes the Reporter application. It contains conceptual information about the default report templates, step-by-step procedures for customizing the templates, and information on generating, printing, and exporting your reports.

HiPath ProCenter Simulator User Guide, Version 5.1 SMR A, G281-0803

This guide describes how to use the Simulator application to prepare and run simulations, and how to analyze the results of your simulations.

CRM Ready Kit for SAP CIC, Version 5.1 SMR B, G281-0837

This guide describes how to configure and use the SAP CIC CRM Integration components.

CRM Ready Kit for Siebel 2000, Version 5.1 SMR A, G281-0838

This guide describes how to configure and use the CRM Ready Kit that integrates HiPath ProCenter with Siebel 2000.

CRM Ready Kit for Siebel 7, Version 5.1 SMR B, G281-0864

This guide describes how to configure and use the CRM Ready Kit that integrates HiPath ProCenter with Siebel 7.

1.4 Formatting Conventions

The following formatting conventions are used in this guide:

Bold

This font identifies ProCenter components, window titles, and item names.

Italics

This font identifies terms or phrases which are explained in the glossary.

`Monospace Font`

This font distinguishes text that you should type, or that the computer displays in a message.

1.5 Documentation Feedback

To report a problem with this document, call your next level of support:

- Customers should call the Siemens Customer Support Center.
- Siemens employees should call the Interactive Customer Engagement Team (i-Cet).

When you call, be sure to include the following information. This will help identify which document you are having problems with.

- **Title:** HiPath ProCenter ACD Administrator User Guide
- **Order Number:** G281-0812-02

About This Guide

Documentation Feedback

2 An Introduction to Skills-based Routing

This chapter provides information about HiPath ProCenter skills-based routing for users who are familiar with FlexRouting on the Hicom 300 E. It describes how the features work and the way the features are configured.

2.1 Group-based Routing Replaced by Skills-based Routing

With FlexRouting, agents are organized into groups and calls are routed to groups. Once a call reaches a group, it is taken by an available agent (depending on the search method defined for the group.)

With the skills-based routing of HiPath ProCenter, contacts (calls) are no longer routed based solely on agent availability and the length of time calls are in queue. Instead, the application checks agent résumés and matches an agent's skills with a caller's requirements. This ensures the most efficient use of contact center resources.



In HiPath ProCenter, contacts refer to calls, callbacks, chat sessions, and email messages. Calls and callbacks are routed as described in this guide. See the *HiPath ProCenter Administrator Guide* for more information about routing.

The skills-based routing is done using one of two options:

- *RésuméRouting*—No skill levels are specified in the agents' résumés. Call steps consist of a single skill set.
- *RésuméRouting Advanced*—Call steps have a set of requirements consisting of multiple skills grouped together with AND, OR, and parentheses. Skill levels are specified in the agents' résumés.

HiPath ProCenter identifies the requirements of each call, then searches for available agents who meet these requirements. If the application finds several agents who are eligible to handle the call, it uses various criteria to determine the best available agent to handle the call.

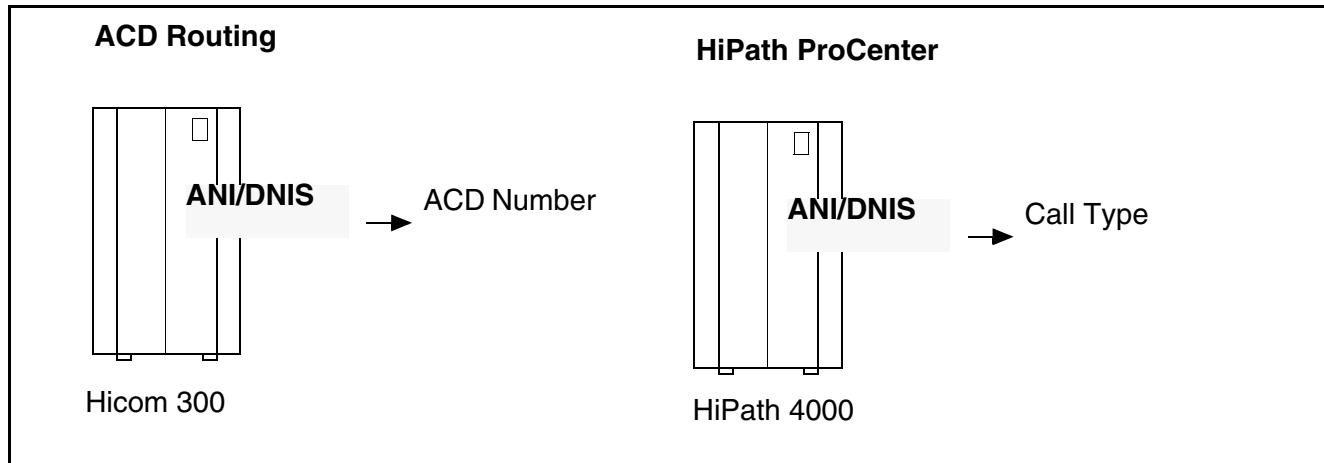
An Introduction to Skills-based Routing

Group-based Routing Replaced by Skills-based Routing

2.1.1 How HiPath ProCenter Defines Call Requirements

With HiPath ProCenter, the requirements of a call are defined not merely as an area of knowledge (as implicit in FlexRouting) but specifically as a set of skills and a level of proficiency in those skills.

Information gathered by PhoneMail, IVR, or ANI and DNIS numbers is mapped to a *call type* and, in turn, to the set of skills and proficiency levels that handling a call of that type demands.



In FlexRouting, ANI/DNIS numbers are translated to an ACD number.

In HiPath ProCenter, ANI/DNIS data are interpreted as a call type.

2.1.2 How Agents' Résumés Are Used

Each agent has a *résumé* stored in the HiPath ProCenter system. A résumé is a list of the agent's specific skills, levels of proficiency in those skills, and levels of preference for receiving calls utilizing those skills.

The application compares the call requirements—the set of skills and skill levels required to handle the call—to the résumés of available agents.

A virtual group is created for all the agents that are qualified to handle a call. Virtual groups are defined on a case-by-case basis according to the needs of the call and the availability of agents.

2.1.3 How a Call is Routed to the Best Available Agent

The application decides which agent is best suited to handle a call and routes the call accordingly.

For each type of call, call routing decisions made by the application go through three phases:

1. The first of these is the **reserve for agent** phase. If an agent ID has been specified, *RésuméRouting* will route any call of the type in question to the designated agent, if the agent becomes available within a certain amount of time, which must also be specified. This phase is optional in the sense that if no agent is designated, decision making proceeds directly to the second phase.
2. The second phase is the **match to agent** phase. The application makes the best match of call to agent.
3. Finally, the third phase—**time-out**—is entered if, within a specified period of time, no eligible, available agent has been found for a call. The call is then handled in some prescribed way, such as directed to a must-answer line.

2.2 Queues in HiPath ProCenter

The call flow for HiPath ProCenter involves two queues:

- The *RésuméRouting queue*—A special ACD queue that is actually an ACD group with no members. Calls waiting in the queue are waiting to be routed by HiPath ProCenter.



The Heartbeat Queue is only used on the 300E switches, not on the HiPath 4000 switch.

2.3 Administration Interfaces

In FlexRouting, the Composer application was used for call center configuration and also to request statistical reports about call center activity.

As explained in Section 3.2 on page 3-1, there are now two administration interfaces that work together. Their names are similar but they run on different platforms and perform different roles:

- The **ACD Administrator** is the interface to the ACD software running on the HiPath 4000. You use ACD Administrator to set up the basic resources like agents and groups that allow calls coming in to the HiPath 4000 to be routed to HiPath ProCenter. You also use ACD Administrator for configuring backup routing.

Chapter 4 in this book explains how to use ACD Administrator.

An Introduction to Skills-based Routing

Monitoring and Reporting Call Center Activity

- The **HiPath ProCenter Administrator** is the interface to the servers that run HiPath ProCenter. As such, HiPath ProCenter Administrator is the primary application to be used for configuration tasks, such as configuring agents and groups, and setting up call types and associating call types with skills.

The *HiPath ProCenter Administrator User Guide* explains how to use Administrator.

2.4 Monitoring and Reporting Call Center Activity

In FlexRouting, the Observer application was used to monitor the real-time status of ACD groups and agents. With HiPath ProCenter operating on the HiPath 4000 switch, the Observer application is no longer used.

In HiPath ProCenter, ACD groups and agents are monitored from the Supervisor Desktop. You use *views* to monitor current or historical site performance data. Views display information about agents, agent teams, agent departments, calls, call types, ACD groups, or aggregates. Refer to the *Desktop User Guide* for more information.

You can also use the HiPath ProCenter Reporter application to run historical reports that provide statistics on the day-to-day operation of your contact center. Reporter also provides configuration reports, audit reports, call-by-call tracking through the Life of Call utility, and a Graphical Report Writer utility. Refer to the *Reporter User Guide* for more information.

2.5 Integration with IVR

In HiPath ProCenter, the IVR Application Program Interface (API) software enables you to write IVR scripts for use with the HiPath ProCenter Standard and Advanced application. Functions include estimated wait time and position in queue by call type and forget-me-not queueing. The IVR API is also used to request a callback through the IVR. Each menu selection that a customer makes using an IVR corresponds to a destination ACD number.

2.6 Service Levels

In FlexRouting, service levels could be calculated by the sample size method (based on a configurable number of calls) or the cumulative method (based on a configurable period of time).

In HiPath ProCenter, service level statistics are calculated on a per-call-type basis. The sample size is always the last 24 calls of that call type. You can configure a global service interval that applies to most call types or media types. You can configure a specific service level interval for a particular call type.

Service level statistics appear on the Supervisor Desktop.

2.7 Message Boards

In FlexRouting, Composer was used to configure the message board and the messages that appeared on it. Composer supported a variety of message board products.

HiPath ProCenter works only with the MessageStream product line. HiPath ProCenter MessageStream is a rules-based communication tool that delivers real-time data and event driven alerts on incoming calls and performance statistics. Mobile devices including cellular phones, PDAs, and pagers can receive the same data, allowing the contact center managers to stay informed wherever they are.

2.8 PhoneMail Agents

In FlexRouting, you integrated PhoneMail into the call routing by configuring PhoneMail extensions as agents. The autologon feature was generally set for PhoneMail agents.

This capability carries over into HiPath ProCenter. However, you must use the HiPath 4000 Manager/Assistant to configure the PhoneMail agents.

2.9 Telephone Buttons

In FlexRouting, supervisors could use the ACD Primary Queue (ACDPQ) and ACD Primary Group Status (ACDPS) buttons to view call queue information on their telephone display.

With HiPath ProCenter, supervisors and agents have a virtual queue view that gives them this information at their Desktop. The ACDPQ and ACDPS buttons (if configured on the supervisor's telephone) will work only when the HiPath ProCenter Suite is in backup mode.

2.10 User Permissions

In FlexRouting, user permissions were defined in the switch tool. Users were either Administrators (who had access to view and change all configuration information) or supervisors, whose access was defined through Composer.

In HiPath ProCenter, there is one Master Administrator who assigns user types, which define the components and features available to each user in the Administrator application. A Supervisor, with Edit access to the Administrator application and **Enable Routing Permissions** selected have access to the Administrator application to configure Routing Table entries. Refer to the *HiPath ProCenter Administration Guide* for more information.

2.11 Reports

This section describes the reporting differences between FlexRouting and HiPath ProCenter.



Composer was a server-based application. HiPath ProCenter Reporter is client-based. For this reason, the PC running HiPath ProCenter Reporter must be active when you want to run reports.

HiPath ProCenter Reporter was designed as an Open-Database Connectivity (ODBC) application. The database that Reporter uses is therefore ODBC compliant and can be accessed for custom reports or exported for use in another application.

Reporter provides more reports than were available in Composer. Table 2-1 shows the reports in Reporter that correspond to the Composer reports.

ACD Report	HiPath ProCenter Equivalent
ACD Group Summary Report	Call Type Summary Report
ACD Group Detail Report	Call Type Volume Summary Reports
ACD Group Time Report	Call Type Service Summary Reports
ACD Group Answered Call Profile Report	Call Type Answered Call Profile Report (requires Call-by-Call feature)
ACD Group Abandoned Call Profile Report	Call Type Abandoned Call Profile Report (requires Call-by-Call feature)
ACD Agent Performance Summary Report	Agent Voice Peg Count Reports
ACD Agent Performance Time Report	Agent Workload Breakdown Reports - Voice Media
ACD Agent Performance Distribution Report	Agent Performance Distribution Reports
ACD Routing Table Summary Report	Not applicable
ACD Routing Table Time Report	Not applicable
ACD Routing Table Steps Report	Call Steps Report
ACD Routing Table Answered Call Profile Report	Not applicable
ACD Routing Table Abandoned Call Profile Report	Not applicable
ACD Agent Transaction Code Report	Agent Wrapup Reason Report (requires Call-by-Call feature)

Table 2-1 HiPath ProCenter Equivalent Reports (Sheet 1 of 2)

ACD Report	HiPath ProCenter Equivalent
Transaction Code Report	Call Type Wrapup Reason Report (requires Call-by-Call feature)
Source Number Report	Source Report
Source Number Server Group Report	Not applicable
DNIS/DID Report	Destination Report
Trunk Group Call Volume Report	Trunk Group Call Volume Summary Report
Trunk Group Usage Report	Trunk Group Average Usage Report or Trunk Group Percentage Usage Report
Server Group Summary Report	Not applicable
Server Group Time Report	Not applicable
Server Group Call Profile Report	Not applicable
Collected Data Report	Not applicable

Table 2-1 HiPath ProCenter Equivalent Reports (Sheet 2 of 2)

2.11.1 Reporting Differences from FlexRouting

Other reporting differences between FlexRouting and HiPath ProCenter are as follows:

- HiPath ProCenter handles multimedia contacts. Reports in Composer were telephony based; that is, only telephone call statistics were tracked. HiPath ProCenter is able to track statistics for calls, email messages, and chat sessions.
- HiPath ProCenter evaluates the performance of call types instead of groups or routing tables.
- HiPath ProCenter reports are based on call-by-call data so 15 minute, daily, weekly, and monthly reports are provided. Composer could create a report with only one summation.
- The ACD group reports in Composer are replaced by call type reports in Reporter.
- Reporter has more measurements for performance and service levels, as seen for example in the Service Performance Chart and Agent Performance Distribution Report.
- The Graphical Report Writer in Reporter allows you to create graphs with any call-by-call data. In Composer, the historical reports were viewed in either graphical or tabular format and were based on the existing historical reports.

2.11.2 Report and Database Storage Capacity

In early versions of Composer, you could save 14, 40, or 100 days of statistics, depending on the option you purchased. In the most recent version of Composer, storage of statistics was limited only by the disk capacity of your system.

In HiPath ProCenter, statistical data storage periods are configurable per time increment. Data past the configured storage period is automatically deleted each day at the database maintenance hour. When installed, the Administration application is already configured with default settings for the report storage periods. These default settings can be changed at any time.

The suggested configured values are shown in Table 2-2.

Data	Default Value	Maximum Value
15-minute	14 days	42 days
Daily	31 days	100 days
Weekly	371 days	371 days
Monthly	750 days	750 days

Table 2-2 Suggested Data Storage Periods

If you have the Call-by-Call Reporting feature, you can configure the report storage periods for call-by-call data, which includes Call Records and Wrap-up Data. This can be configured to store call-by-call data for a set number of days, or for the maximum amount of time based on the size of the customer's data.

You can also configure storage periods for the following:

- Administration audit data
- Error data
- Default routing data

3 ACD Basics

The HiPath 4000 switch connects and distributes calls within your company and between your company and the public telephone network. A part of your system is dedicated to processing the calls to your incoming call center. This part of your system is automatic call distribution (ACD).

3.1 ACD Administrator

The ACD Administrator is a simple and intuitive interface that enables you to manage and configure users and other elements for the HiPath 4000 switch. When the changes are configured in the ACD Administrator, the changes are also made in the UNIX-based software (ACDAPP) residing on the HiPath 4000 switch.

3.2 How ACD Administrator and HiPath ProCenter Work Together



When used without HiPath ProCenter, ACD Administrator provides basic queue functionality for external routing and reporting applications

ACD Administrator runs on the HiPath 4000 V1.0 platform and is used to configure contact center resources (such as agents and groups) that are also administered in the Administrator application of the HiPath ProCenter Entry, Standard, and Advanced Suites.

When used to support HiPath ProCenter, use the ACD Administrator to:

- Configure basic contact center resources (agents, groups, etc.) that must exist on the HiPath 4000 platform in order for calls to be routed to HiPath ProCenter.
- Configure ACD routing tables to handle call routing.
- Configure route control groups to handle time-of-day and calendar routing.
- Configure backup routing for the contact center in case the HiPath ProCenter Suite may be temporarily unavailable.

Refer to “Configuring the Switch for the ProCenter Suite” in the *HiPath ProCenter Administrator Guide* for complete information about configuring the HiPath 4000 to work with HiPath ProCenter.

3.3 Configuration Synchronization Feature

The Configuration Synchronization Feature allows HiPath ProCenter components and the HiPath 4000 V1.0 switch to share configuration information for the following sets of resources:

- Agents
- ACD groups
- ACD extensions
- Route control groups
- Trunk groups

The feature detects and flags differences in resource configuration between HiPath ProCenter and the HiPath 4000 V1.0 switch. It writes detected errors to a viewable Configuration Synchronization Error Log, and propagates the resource updates made in the switch to HiPath ProCenter.

The Config-Sync Server manages the synchronization-specific communication between HiPath ProCenter and the HiPath 4000 V1.0 switch. You use the Administrator application to configure the HiPath ProCenter details required by the Config-Sync Server. First, you define and configure resources in the switch. Then, in the Administrator application you define the ranges of resources, within the resource domain, whose configuration information is to be synchronized with the resources on the HiPath 4000 V1.0 switch.



Refer to Section B.2.2, “Setting up the Configuration Synchronization Feature”, on page B-4 for more information about configuring this feature.

On startup, HiPath ProCenter ensures that its configuration information for monitored resources is synchronized with that of the HiPath 4000 V1.0 switch.

3.4 Agent Features

Agent IDs, agent modes, and agent states help you track agent performance. These and other agent features are described in the following sections.

3.4.1 Agent IDs

Individual agent IDs are required in the ACD system. In many ACD environments, agents change from shift-to-shift, or move from one telephone to another. The agent logs on to an extension with the assigned ID. Only logged-on devices can receive ACD calls, and only one agent ID can be logged on to an extension at a time.

3.4.2 Agent Positions

As ACD agents are added to a group, the system assigns the agent to the next available position. However, administrators can assign the agent to a particular position in the group. This order is especially important when the agent search method is defined as “hunt”.

3.4.3 Autologon Extension

ACD devices can be configured to be logged on and placed automatically in the available mode following a restart or system reload.



Note that agents for HiPath ProCenter should not be configured as autologon.

PhoneMail devices must be configured for autologon. Voice response units and other automatic answering devices should be configured for autologon.

Autologon devices require the extension number to be associated with the logon ID. Devices that are automatically logged on must be logged off manually, or by using the Control Agent Feature (CAF) logoff. Lines with automatic logon that are put out of service by the system are logged on when they return to service.

3.4.4 Autowork



For agents to be used with HiPath ProCenter, autowork functions should be configured in HiPath ProCenter, not in ACD Administrator.

Autowork is an ACD agent option based on the agent logon ID. When enabled, autowork automatically puts the agent in Work mode, which precludes the agent from receiving ACD calls for a configurable duration following the completion of an ACD call.

The duration is from 1 to 300 seconds, with a granularity of one second between 1 to 9 seconds and in increments of 5 seconds for a duration of 10 seconds or more. An indefinite amount of autowork time can be specified.

3.4.5 Telephone Modes

Telephone modes are associated with specific buttons and LEDs on the agent telephone.

A telephone extension can be in any one of three modes:

- Available
- Unavailable
- Work

Available: The telephone extension is available to receive ACD calls. To enter available mode, a logged-on agent presses the AVAIL button or dials the AVAIL feature access code.

- The system automatically puts the logged-on agent in available state (autologon feature, described in Section 3.4.3 on page 3-3).
- When the call is completed, the agent is in the work state until the configured time limit for autowork is reached.
- A supervisor uses control agent features (CAF) to make the agent or the agent's ACD group available.

A line that is available to receive ACD calls is also available to receive non-ACD calls (internal or external).

Unavailable: The agent extension is unavailable to receive ACD calls. This is the default mode following a manual agent logon. The agent should enter the unavailable mode when away from the agent's telephone for reasons other than post-call work. To put the telephone into Unavailable mode, the agent presses the UNAVAIL button, or dials the UNAVAIL feature access code.

- A supervisor uses CAF unavailable to make the agent or the agent's ACD group unavailable.
- The service-out feature (described in Section 3.4.7 on page 3-6) places an agent in the unavailable state when the agent does not answer a call within the preconfigured time interval.

When the agent's line is in unavailable mode, it is still available to receive non-ACD incoming calls (internal or external).

Work: The agent extension is not available to receive ACD calls. The extension should be in work mode when doing post-call work. To put the telephone into Work mode, an agent presses the WORK button, or dials the WORK feature access code.

- The agent enters work mode automatically at the end of an ACD call if the agent ID is configured to do so (autowork).

When the agent's line is in work mode, it is still available to receive non-ACD incoming calls (internal or external).

After entering a mode, an agent can be in any agent state associated with that telephone mode.

3.4.6 Agent States

Agent states describe the activities of your agents.

An ACD agent can be in any one of following agent states:

Available	The extension is in available mode and the agent is idle.
Unavailable	The extension is in unavailable mode and the agent is idle.
Work	The extension is in work mode and the agent is idle.
ACD incoming	The agent is busy on an incoming ACD call.
Non-ACD incoming	The agent is busy on an external incoming non-ACD call.
Non-ACD outgoing	The agent is busy on an outgoing non-ACD call.
Non-ACD internal	The agent is busy on an internal non-ACD call.
Other	The extension is in a dialing state, or off-hook, ringing, or receiving another system tone.

Table 3-1 lists the possible agent states associated with each mode.

Agent State	Available Mode	Unavailable Mode	Work Mode
Available	X		
Unavailable		X	
Work			X
ACD Incoming	X	X	X
Non-ACD Incoming	X	X	X
Non-ACD Outgoing	X	X	X
Non-ACD Internal	X	X	X
Other	X	X	X
Note: An agent in the ACD incoming state can also be in the unavailable or work modes if an ACD call is transferred to the agent, forwarded to the agent, or picked up by the agent when the extension is in one of these modes.			

Table 3-1 Extension Modes and Agent States

3.4.7 Service-Out Feature

The Service-Out feature automatically places an available agent's telephone in the Unavailable mode when a call rings the agent's phone but the phone is not answered. This feature is typically invoked when a logged-on ACD agent leaves the phone without pressing the Unavailable feature button.

The Service-Out feature is implemented by coding a ring-no-answer system forward target for the ACD extension. Recommended targets include PhoneMail, a new ACD number pointing to an existing call type, or a must-answer extension.

Service-Out applies to ACD calls directed to the ACD extension and does not apply when the agent is in work mode.



If you have ring-no-answer routing configured in HiPath ProCenter, you should not use the Service-Out feature.

3.5 ACD Call Routing

The ACD call routing process efficiently and economically receives, routes, queues, and distributes a high volume of incoming calls. This section explains how the ACD call routing process enables you to tailor call routing and the displays that appear on your agent telephones. Figure 3-1 shows the components of the ACD call routing process integrated with an IVR and HiPath ProCenter.

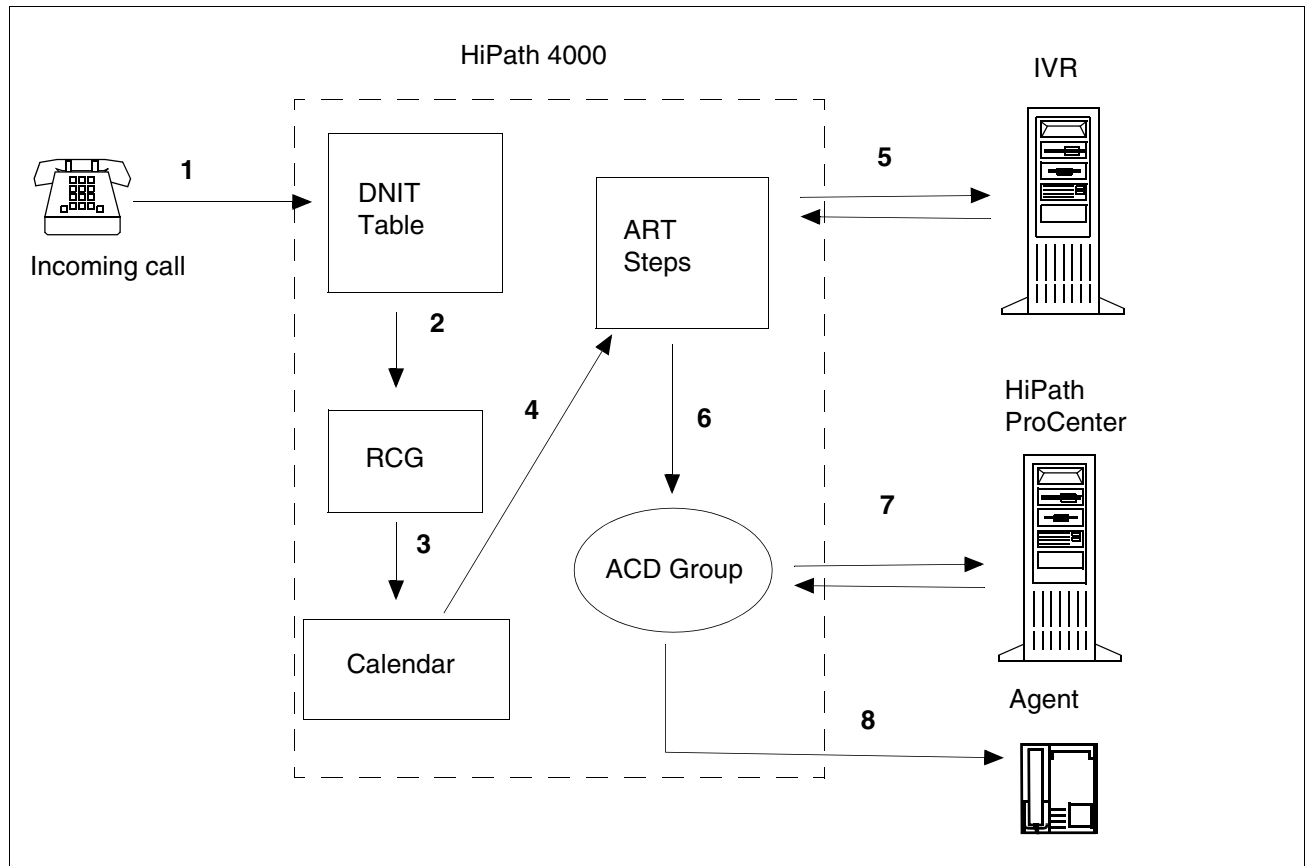


Figure 3-1 Call Routing Process

3.5.1 External Call Sources

External calls come into your ACD system on trunks. Trunks are a critical link in any telecommunications network, and function as the external source that connects the communications server to public and private networks.

To distinguish between different groups of trunks, each trunk group is given a number and, optionally, a name.

3.5.1.1 Trunk Address Information

Trunks can be categorized by how they handle address information. Address information is made up of digits that are carried over a trunk and received as a part of the call process.

Address information enables the system to:

- Identify which calls are ACD calls and which are not, even though they may have come in on the same trunk.

ACD Basics

ACD Call Routing

- Route the call to an appropriate destination.

The following paragraphs explain the different types of address information.

3.5.1.2 Destination Numbers

The **destination number** of a call is the called-party number received by the communications server. In some cases, it may not be the original number dialed by the calling party because a public or a private network can translate the number as part of its routing of the call.

Most trunk services, including dialed number identification service (DNIS) and direct inward dialing (DID), provide information on the destination of the call.

3.5.1.3 Source Numbers

The **source number** of a call is the number of the calling party received by the communications server. Source numbers are optional, and may not be supplied with all calls. This number can be a 7 or 10-digit public telephone number, the main number of a private branch exchange (PBX), or a private network number.

Automatic number identification (ANI) is an example of a trunk service that provides a source number.

3.5.1.4 No Address Information

Some trunks do not send any address information to the PBX. These trunks are called dedicated incoming trunks (DITs) or hotline trunks. When DITs are configured, they are assigned destination numbers which allow them to be routed as if they had address information. Calls received on these trunks are routed identically, that is, either all ACD or all non-ACD.

3.5.2 Internal Call Sources

An internal call is a call between two extensions. An internal telephone user (including attendants or ACD agents) can directly call a destination ACD number. A call from an internal source is not translated, although the calling number can be configured in a source number translation table.

3.5.3 ACD Numbers

An incoming ACD call can have a source number, a destination number, or both.

If the destination number is a destination ACD number, the call becomes an ACD call. The destination number does not, however, have to be received as a destination ACD number. Incoming digits can also be passed into digit translation (DTRAN) tables. DTRAN tables translate the destination numbers into destination ACD numbers. Destination ACD numbers are dialable extensions that can also be used by internal callers.

Destination ACD numbers have various characteristics that can be configured in ACD Administrator. These characteristics include route control groups (RCGs), queue priorities, audible IDs, telephone display information, and routing options. If a routing option is set to destination, the call is processed using the destination ACD number's configured characteristics. A destination ACD number is also used to assign the call to a source number translation table.

Source translation tables convert individual source numbers to source ACD numbers.

Source ACD numbers can also be used to route calls. Source ACD numbers differ from destination ACD numbers in two ways:

- Source ACD numbers cannot be dialed.
- Source ACD numbers do not have a routing option.

If the routing option of a destination ACD number is set to source, the call is processed using the source ACD number's configured characteristics. Routing on the source ACD number allows two calls (from different sources) made to the same destination ACD number to be routed differently. If no source ACD number is present, the call is processed using the destination ACD number's characteristics.

The primary advantage to the ACD call process is that it allows routing to take place based on a combination of ACD source and ACD destination numbers.

3.5.3.1 ACD Call-Limit Threshold

You can limit the number of external ACD calls permitted at any one time from a specific source ACD number or to a specific destination ACD number. You can also limit the number of external ACD calls at any one time on a specific trunk group.

When a defined limit is reached, subsequent callers receive a busy signal and are not processed. When the number of calls falls below the configurable limit, subsequent calls are processed.

3.5.3.2 Telephone Displays

An ACD call can cause two displays to appear on the agent's telephone display: calling party information and called party information.

The source (calling party) information is always displayed first. It is not necessary to route on the source to display the message text associated with a source ACD number.

When a two-line message is sent to a one-line telephone display, the first line of the message appears and is then replaced by the second one.

Figure 3-2 shows an example in which the first line identifies the party making the call. The second line identifies the party receiving the call.



Figure 3-2 Example of Telephone Display

Telephone displays can have up to 24 alphanumeric characters.

Default Telephone Displays: If no telephone display is configured for a source ACD number, the system displays one of the following defaults, listed in order of priority:

1. The calling party number and name as received
2. The calling party number as received
3. The trunk group name (for external calls only)

Calls arriving on a dedicated trunk with no address information can be configured to display text, but all of these calls will have the same display. There is no default destination display for destination ACD numbers.

Calls that are handled by the IVR are assigned to an eligible and available agent. Call information received by the IVR, such as the ANI and DNIS, can be displayed on the agent's telephone.

3.5.3.3 Audible Source ID Recording

In addition to visual displays, ACD numbers can also be used to select an audible source identification. An audible source ID is a recording that agents hear before an ACD call is connected.

The recorded announcement is continuous and announces the origin of the call for a preconfigured amount of time. Only one audible ID recording per ACD call is heard by an agent. If an ACD call is transferred, the audible source ID is heard by the receiving agent before the call is connected. The ID recording used is determined by the ACD number that routes the call.

3.5.4 Route Control Groups

An ACD number directs a call to a route control group (RCG). Each RCG is identified by a unique number.

RCGs enable the system to route calls differently, depending on the time of day and the day of the week. This allows you to set up different types of routing for after-hours and weekends. The same RCG can be assigned to multiple ACD numbers.

3.5.5 Shift Sets and Shifts

Each RCG is associated with a shift set for each day of the week. Each shift set is identified by a unique number.

A shift set consists of one or more shifts that, together, cover a 24-hour period. A shift is a period of time during the 24 hours in which calls are assigned to a particular ACD routing table (ART).

3.5.6 ACD Routing Tables

An ACD Routing Table (ART) is assigned to each shift. An ART is a series of steps that determine how an ACD call is processed.

Once the system assigns a call to an ART, it becomes an ACD call. A call made directly to the extension number of a logged-on agent is not an ACD call because it did not hit an ART.

There are two categories of ART steps: **fixed** and **conditional**. Each fixed step in an ART is performed sequentially. A conditional step or a “GOTO” step directs the call to a specific step in the ART.

4 Using ACD Administrator

This chapter explains the user interface of the ACD Administrator. It also explains how to use the ACD Administrator application to configure the following:

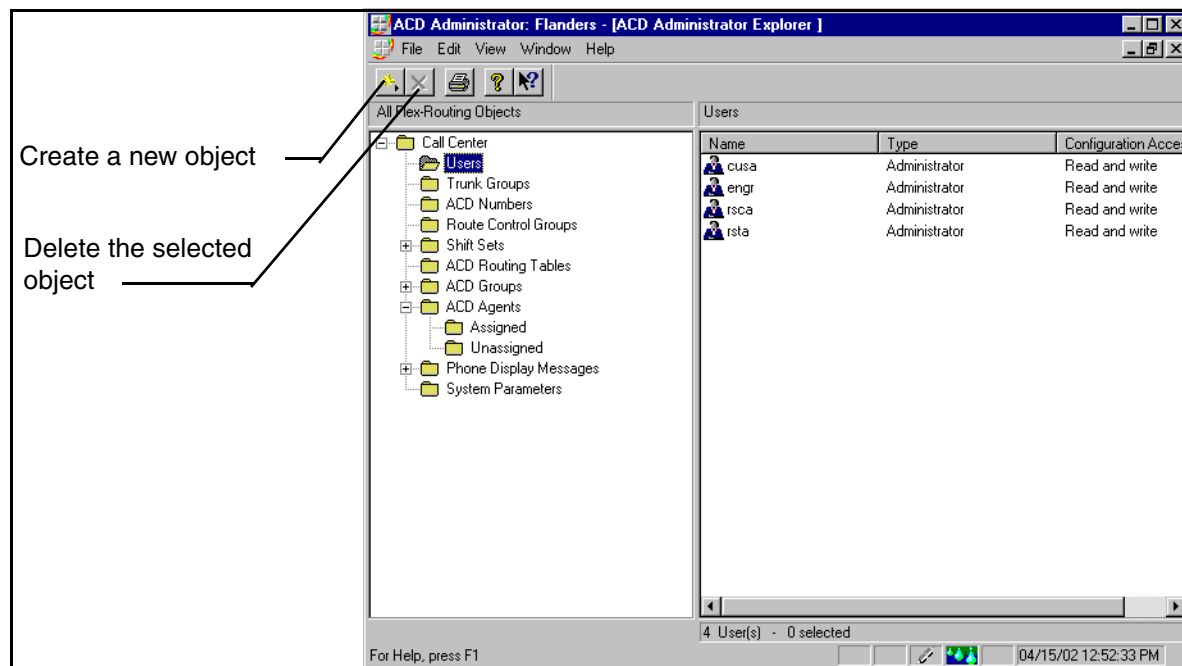
- Users
- Trunk Groups
- ACD Numbers
- Route Control Groups
- Shift Sets
- ACD Routing Tables
- ACD Groups
- ACD Agents
- Phone Display Messages
- System Parameters

4.1 Getting Started with ACD Administrator

The ACD Administrator application appears much like Microsoft Windows Explorer. The main window has a menu bar and toolbar to provide access to the functionality of the application. The left pane shows the components of your call center in folders, and the right pane shows the details of the selected folder.

Using ACD Administrator

Getting Started with ACD Administrator



Use standard Windows features in ACD Administrator, such as:






- Drag a border to resize a column border in a table
- Drag the bar to resize the panes of the window
- Right-click to open a pop-up menu, containing commands you can perform on the selected item
- Select multiple items with Shift-Click (a consecutive list) or Ctrl-Click (single items)
- Use “drag and drop” to move agents from one ACD group to another.

4.1.1 Status Bar

The status bar contains text and icons that provide information about the status of your system.



If you click a command, a menu appears. By moving the pointer over the items on the menu, you can see an explanation of that command in the message area of the status bar.

Icon	Description
	A configuration task is pending. Double-click the icon to get the status of the current task.
	The ACD Administrator is connected to the ACD server.
	The ACD Administrator is not connected to the ACD server.
	The configuration stream is on.
	The ACDAPP is out of sync with the ACD Administrator.

4.1.2 Getting Help

On the **Help** menu, click **Contents and Index** to search for information in the table of contents or the index.

Use the following features of the user interface to find out more information about the current topic:

Button

What happens



Click this button, and then click an element in a window or dialog box to view information about the section of the window or dialog box.



Click this button to view help about the current window or dialog box.

4.1.3 Preferences for the Interface

On the **Edit** menu, click **Options** to configure your preferences for the following:

- Whether you are asked for confirmation whenever you delete or drag and drop an item.
- In countries where more than one language is available, your language preference.

Using ACD Administrator

Using ACD Administrator for Configuration Tasks

4.2 Using ACD Administrator for Configuration Tasks



When you enter data (such as the name of an ACD agent) in ACD Administrator, any alphanumeric character is acceptable except the “pipe” character (|), quotation marks (“”), and a leading blank. An entry cannot begin with a space.

There are various ways to get started with configuration tasks. For example, to create a new ACD agent, you can:


- On the **Edit** menu, point to **Create New**, and then click **Agent**.
- Select the item you want to create in the left pane, and then click **Create** on the tool bar
- Open the pop-up menu (expand ACD Groups, right-click the group for the new agent, and click **Create Agent**)

When you create or edit the items in your call center, you change the properties of the item. For example, to change the properties of the Agent, whose logon ID is 012316, the ACD Administrator displays the **Properties** dialog box.

Once you have made a configuration change and clicked **OK**, a check mark appears over the edited object in the right pane of the ACD Administrator Explorer. The check mark remains until the change has been completed on the ACD server and the switch. (The check mark does not appear when changes are made to the steps of an ART or when Calendar dates are changed for an RCG).

The ACD Administrator interface has some special features that make configuration tasks easier.

Feature	Description and Example
Yellow button (☺)	A yellow button indicates that the field must be completed in the dialog box.

Feature	Description and Example
Copy From	The Copy From button on a Properties dialog box allows you to copy all but the unique properties of an item to another item in one step. For example, you can create a new agent by entering just the agent's name and logon ID and then copy all the other properties from another agent.
Just in Time Configuration 	Configuration tasks that require prerequisites are made simpler with “just-in-time” configuration. For example, you cannot assign an agent to an ACD group that does not exist. But in the course of creating the agent, you can click the Create ACD Group button and create the ACD group when you need it.
Find References	The find references feature allows you to find every instance where ACD groups, agents, RCGs, ARTs, and shift sets are referenced. This feature ensures that you know the implications of modifying or deleting an item in your call center. For example, you can find which shifts reference an ART that you are deleting and reassign a different ART to those shifts.

4.3 Configuring Users

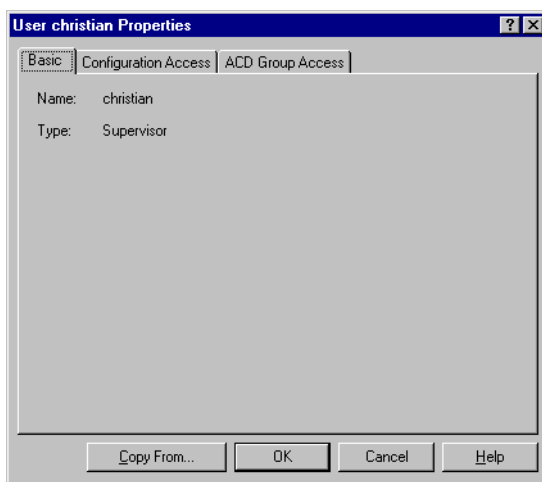
This section explains how to use ACD Administrator to configure users.

There are two types of users: *administrators* and *supervisors*.



When you modify a supervisor's access, the changes do not go into effect until the next time the supervisor logs in. If users are logged on while their configuration access is being changed, they must log off and then log on again for the changes to take effect.

The **Basic** tab of the **User Properties** dialog box is only for users who are administrators.

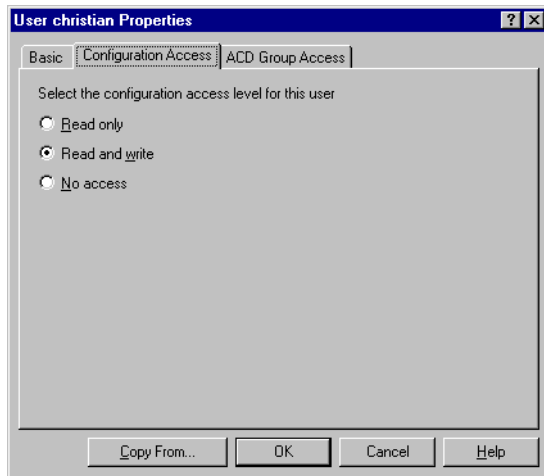


The name and type of user is displayed for reference.

Using ACD Administrator

Configuring Users

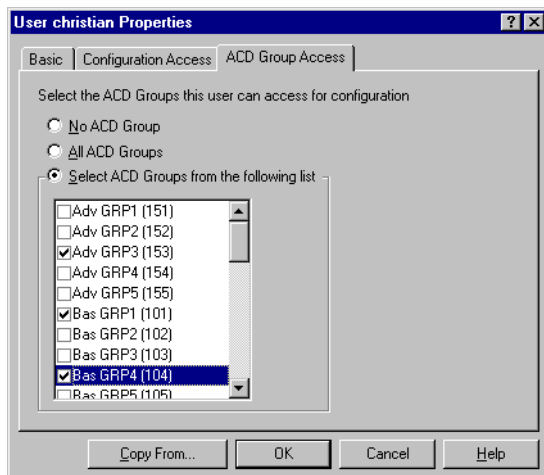
Use the **Configuration Access** tab to configure the access level for the user:



The configuration access can have one of three levels:

- | | |
|----------------|---|
| Read only | The supervisor can only view the configuration information in ACD Administrator but cannot make any changes. |
| Read and write | Allows the supervisor to view and change the configuration. Read and write access allows the supervisor to create new ACD groups. When a supervisor creates a new group, the supervisor has immediate access to that group. |
| No access | The supervisor cannot view or make changes to any information in ACD Administrator. |

Use the **ACD Group Access** tab to configure a supervisor's access to configuration information for specified ACD groups.



The settings on this tab determine the supervisor's access to agents. If the supervisor has no access to an ACD group, the supervisor cannot view or modify the properties of agents in that group.

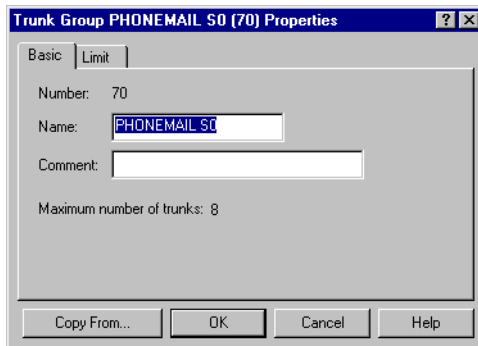
The three levels of access are:

- | | |
|------------------|--|
| No ACD Group | Prevents the supervisor from accessing configuration and reports on any ACD group. |
| All ACD Groups | Gives the supervisor configuration and report access to all existing ACD groups and to all ACD groups created in the future. |
| Select from list | Allows you to select the specific ACD groups that the supervisor can access for configuration. |

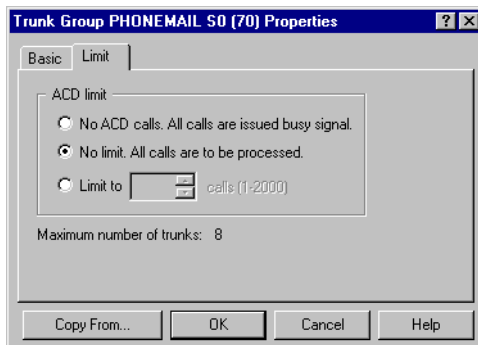
4.4 Configuring Trunk Groups

Trunk groups are created on the HiPath 4000, but you can change the name or comment using the ACD Administrator.

Use the **Basic** tab to enter a name and a description for the trunk definition.



Use the **Limit** tab to define the ACD limit.



The following describes the ACD limit options:

Using ACD Administrator

Configuring ACD Numbers

No ACD calls	Trunks in this trunk group should not receive incoming ACD calls. All ACD calls receive a busy signal.
No limit	All incoming ACD calls to trunks in this trunk group will be processed.
Limit to	Limits the number of incoming ACD calls to trunks in this trunk group to a number equal to or less than the maximum number of trunks in this trunk group.

4.5 Configuring ACD Numbers

An ACD Number is the telephone number that calling devices dial, to access the agents in an ACD group. ACD numbers can be Destination numbers or Source numbers.

Use the **Basic** tab to assign the ACD numbers a name and a comment.

The screenshot shows the 'ACD Number 40108 Properties' dialog box with the 'Basic' tab selected. The 'Number' field is set to '40108'. The 'Routing Option' is set to 'Destination'. The 'Name' field contains 'AdvPT001'. The 'Comment' field contains 'Advanced Pilot 40108'. At the bottom, there are buttons for 'Copy From...', 'OK', 'Cancel', and 'Help'.

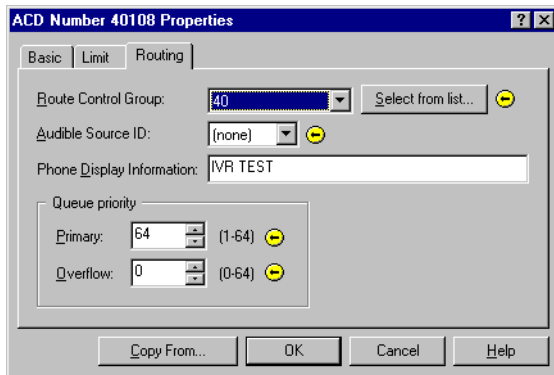
Use the **Limit** tab to limit the number of ACD calls to this ACD number.

The screenshot shows the 'ACD Number 40108 Properties' dialog box with the 'Limit' tab selected. Under the 'ACD call limit' section, there are three radio button options: 'No ACD calls. All calls are issued busy signal.', 'No limit. All calls are to be processed.' (which is selected), and 'Limit to' followed by a text box containing '1' and a label 'calls [1-1024]'. At the bottom, there are buttons for 'Copy From...', 'OK', 'Cancel', and 'Help'.

The ACD call limit can have one of three options:

No ACD calls	All incoming ACD calls to this ACD number should receive a busy signal.
No limit	All incoming ACD calls to this ACD number should be processed.
Limit to	The number of incoming calls (1-1024) to this ACD number should be processed before a caller receives a busy signal.

Use the **Routing** tab to set routing options for calls to ACD Numbers:



Set the following options on this tab:

Route Control Group	The RCG that the ACD number will use to route calls.
Audible Source ID	The port number associated with the recording device for the recording heard by the agents before the call is connected.
Phone Display Information	The information that displays on the agents' telephones before a call routed on the ACD number is connected.
Queue Priority	<p>When working with HiPath ProCenter, do not change from default.</p> <ul style="list-style-type: none">• Primary indicates a call's priority in the first ACD group that it hits in an ACD routing table.• Overflow indicates the call's priority in the second and subsequent groups that it hits. Zero indicates that the primary queue priority value should be used when a call overflows to another ACD group.

4.5.1 Queuing Priority

ACD routing allows calls routed to a busy group to be queued for that group while ACD continues searching for an available agent in other groups.

Calls can be queued for a group, but not for an agent. If none of the agents in a group are available, the call is queued to the group and the next step in the ACD Routing Table (ART) is processed. There is no reason to configure a route-to-group step to a specific group more than once in an ART, because once a call is queued to a group, it remains queued until the call is answered or abandoned. See Section 4.8 on page 4-15 for information about configuring ARTs.

When the call reaches the last step in the ART, it remains in all queues to which it was assigned until the call is answered, the caller abandons the call, or the call leaves the ART using end-of-shift routing.

Using ACD Administrator

Configuring ACD Numbers

Calls can be queued simultaneously for up to 16 groups. The system continually monitors the status of all groups with queues. When an agent becomes available in any of the groups, the call with the highest priority in queue for that group is assigned to the agent.

By default, a call's chronological order is maintained among the calls queued for the same group, and the call in queue the longest is connected first when an agent becomes available.



When working with HiPath ProCenter, do not change queue priorities from the default.

Priority Queuing: You can process different types of calls by assigning each a specific priority level. This ensures that calls are queued in the appropriate order. A call's priority is associated with an ACD number. The priority given to a call can be based on the trunking service, ANI information, DNIS number, or any combination.

A call's priority can also be increased based upon time in queue. Using the configured priority level, calls that have been answered by PhoneMail or a voice-response unit can return callers to the appropriate queue with increased priority.

There are 64 priority levels: 1 is the highest, 64 the lowest. Calls with higher priorities move to the top of the queue regardless of whether other calls have been in the queue longer.

There are two kinds of call priorities:

- **Primary queue priority** This is the order of preference given to a call queueing for a group for the first time in an ART.
- **Overflow queue priority** This is the order of preference given to a call queueing for a group for the second and subsequent times in the same ART.

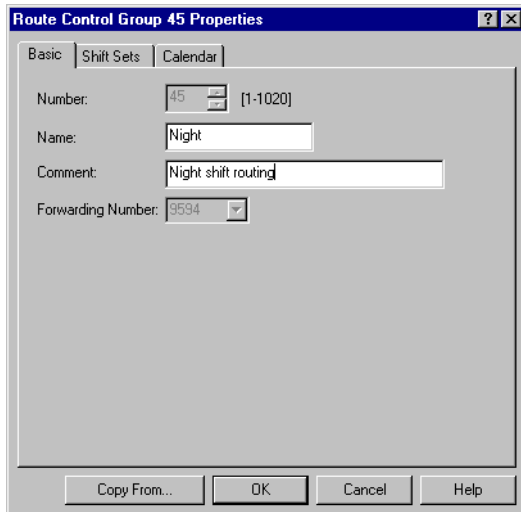
You can assign both a primary and an overflow queue priority to each ACD number.

Chronological order is maintained in each priority. You can set different priority levels for external and internal calls. One way to set different priority levels is to assign one RCG to different ACD numbers, reserving one for internal use. Another way is to route internal calls on source, using a different priority for the external calls.

4.6 Configuring Route Control Groups (RCGs)

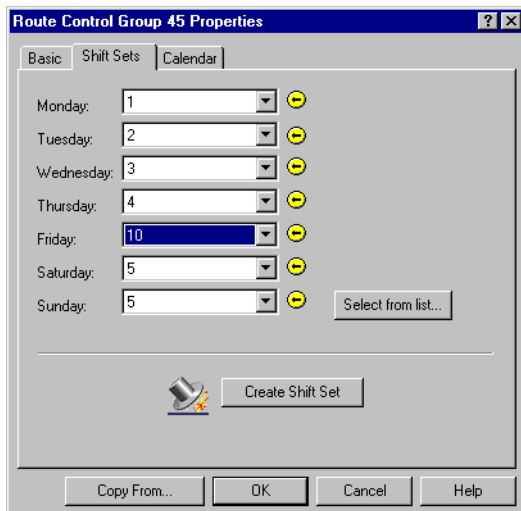
A Route Control Group (RCG) is a part of the ACD routing configuration in the switch that assigns calls from a particular ACD number to an ACD group, via shift sets and ACD routing tables (ARTs). Each route control group is defined by a unique number between 1 and 1020.

Use the **Basic** tab of the **Route Control Properties** dialog box to enter the number, name and comment for the RCG.



The image shows the 'Route Control Group 45 Properties' dialog box with the 'Basic' tab selected. The dialog has three tabs: 'Basic', 'Shift Sets', and 'Calendar'. The 'Basic' tab contains the following fields: 'Number' (45, with a range [1-1020]), 'Name' (Night), 'Comment' (Night shift routing), and 'Forwarding Number' (9594). At the bottom are buttons for 'Copy From...', 'OK', 'Cancel', and 'Help'.

Use the **Shift Sets** tab to assign a shift set to this RCG for each day of the week.



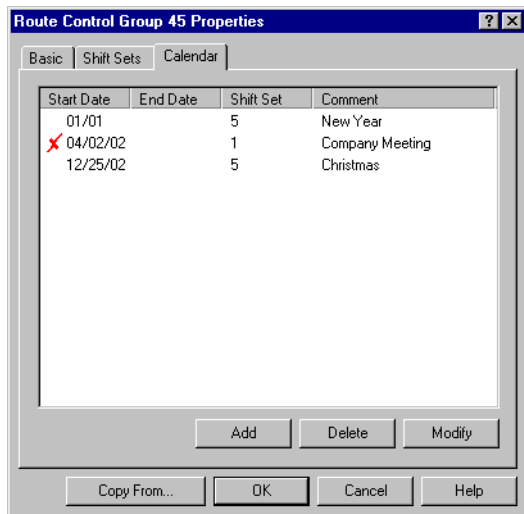
The image shows the 'Route Control Group 45 Properties' dialog box with the 'Shift Sets' tab selected. The dialog has three tabs: 'Basic', 'Shift Sets', and 'Calendar'. The 'Shift Sets' tab contains a list of days of the week with corresponding shift set numbers in dropdown menus: Monday (1), Tuesday (2), Wednesday (3), Thursday (4), Friday (10), Saturday (5), and Sunday (5). Each dropdown has a yellow minus button to its right. Below the list is a 'Select from list...' button. At the bottom of the main area is a 'Create Shift Set' button with a small icon. At the very bottom are buttons for 'Copy From...', 'OK', 'Cancel', and 'Help'.

Click **Create Shift Set** to create a new shift set that you can assign to this RCG.

Use the **Calendar** tab to configure special routing for specific days of the year. You can add a new date, modify an existing date, or delete a date.

Using ACD Administrator

Configuring Route Control Groups (RCGs)



Dates that have expired are marked with a red X. The system does not automatically delete expired dates.

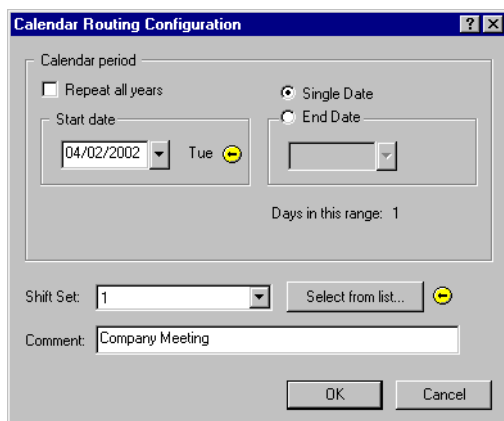
You can configure unique routing for a specific date or range of dates (up to one year). You can enter information for special days of the year that occur on the same date every year, such as Christmas, and for other holidays that may occur on specific dates during the year or future years.

Routing based on calendar dates takes precedence when determining call routing within an RCG. If calendar dates have not been defined for a particular date, routing is based on the current day of the week.

You can configure special calendar routing up to the year 2095 for dates that reoccur annually or one-time-only dates.

A total of 32,000 date ranges can be configured system wide.

When you click **Add** or **Modify**, the **Calendar Routing Configuration** dialog box appears.



The RCG routes calls to the specified shift set only for the period specified by the start and end dates that you enter.

- Calendar period
- **Repeat all years** indicates that the calendar routing entry should be valid for every year.
 - **Single date** indicates that the calendar routing entry is for a single date only.
 - **Start Date** is the date to begin calendar routing.
 - **End Date** is the date that calendar routing ends and call routing returns to day-of-the week routing specified for this RCG on the Shift Set dialog box.
- Shift Set An existing shift set. Use **Select from list** to choose a shift set to assign to this RCG for the specified calendar routing dates.
- Comment A comment (up to 24 alphanumeric characters) to identify this calendar routing entry.

4.7 Configuring Shift Sets

Use the **Create New Shift Set** dialog box to create a shift set. A shift set is a beginning and end of a time period that calls should be routed in a particular way. The end time of the first shift should not be after the beginning of the second shift set. The shift sets should not overlap.

Use the **Basic** tab to specify an identification number, a name (up to 10 alphanumeric characters), and a comment (up to 24 alphanumeric characters) to the shift set.

The screenshot shows the 'Create New Shift Set' dialog box with the 'Basic' tab selected. The dialog has a title bar with a question mark and close button. Inside, there are two tabs: 'Basic' and 'Shifts'. The 'Basic' tab contains three input fields: 'Number' with a value of 35 and a range indicator [1-1020], 'Name' with the text 'Shiftset35', and 'Comment' which is empty. At the bottom, there are four buttons: 'Copy From...', 'OK', 'Cancel', and 'Help'.

Use the **Shifts** tab to enter the start and time for the shift set.

Using ACD Administrator

Configuring Shift Sets

When you create a shift set, you must create at least one shift to assign to the shift set. Fill in the options described below and click **Create the shift**.

Shift set	The number of the shift set.
Start Time (hh:mm AM/PM)	Created by the system, based on the end time of the previous shift. This shift cannot overlap the previous shift. Shifts must cover a 24-hour period.
End Time (hh:mm AM/PM)	The time that the shift ends. Do not enter the final minute of the shift. For example, enter 7:29 for a shift that ends at 7:30.
Name	The name (up to 10 alphanumeric characters) of the shift.
Comment	A comment (up to 24 alphanumeric characters) for the shift.
ACD Routing Table	An ART from the list that the shift will route to.

Each shift in a shift set is configured with an end-of-shift routing option. This **Reroute calls at the end of the shift** option determines how calls in queue are handled at the end of a shift. Calls can either remain in queue in the current ART or be reassigned to another ART.

Click **Create ACD Routing Table** to create a new ART for this shift set.

4.8 Configuring ACD Routing Tables

Use the **ACD Routing Table Properties** dialog box to configure ACD Routing Tables (ARTs).

Consider the following before you modify your ART configuration:

- Do not route a call to a group and then to an agent in that group because the call is queued to the group and is answered by the next available agent.
- Do not route a call to the same group twice; the call queues for the group and is answered as soon as an agent is available. A call can be queued for a maximum of 16 groups.
- To stop processing a step, modify the step action to skip or delete the step.

For a route-to-offsite step, include a trunk access code as part of the step value. For example, if you need to dial 9 to get to the offsite number, include 9 in the step value.

- The system saves statistics for either 14 or 40 days. If you delete an ART, its statistics are saved, referenced by the ART number. So if you create a new ART within that time period that has the same number as the deleted ART, the statistics can be skewed.
- An ART cannot be deleted if it is assigned to a shift. Right-click the ART and click **Find References** to find the shift sets and shifts that reference the ART. You can then change the shift set so that it references a different ART.
- When editing ART steps, it is not necessary to click **OK** after each step that is changed.
- All new ART steps are inserted as a skip step. Right-click the step to change it to another step.

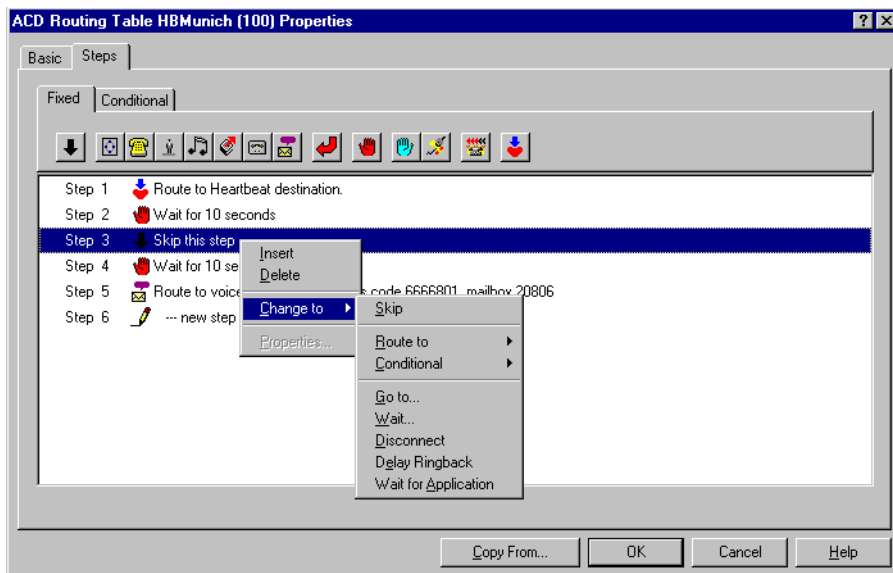
Use the **Basic** tab to assign a name (maximum 8 alphanumeric characters) and a comment (maximum 24 alphanumeric characters) to the ACD Routing Table.

The screenshot shows a dialog box titled "ACD Routing Table Adv ART1 (151) Properties". It has two tabs: "Basic" and "Steps". The "Basic" tab is selected. Inside the dialog, there are three input fields: "Number:" with a value of "151" and a range "(16-4000)", "Name:" with a value of "Adv ART1", and "Comment:" with a value of "Advanced Routing 151". At the bottom of the dialog, there are four buttons: "Copy From...", "OK", "Cancel", and "Help".

Using ACD Administrator

Configuring ACD Routing Tables

Use the graphical view on the **Steps** tab to configure steps in an ART.



This dialog box provides icons and a graphic view for configuring with steps in an ART.

ART steps can be:

- Fixed—See Section 4.8.1 or
- Conditional—See Section 4.8.2.

4.8.1 Fixed ART Steps

Fixed step routing is a standard feature of the ACD call process. Up to 64 steps can be configured for each ART.

Fixed steps direct the system to route the call to a target (such as a group or a recording), or direct an action to be taken (for example, Wait <number of seconds>). You configure the order as well as the types of steps for each ART, depending on your requirements.

This section describes the types of fixed steps that you can configure in an ART. These steps are listed in alphabetical order.

Delay
Ringback



This step is used to delay ringback to the caller. This step is used when Look Ahead Routing will be invoked via a Route to Offsite ART step, where the call can be offered to another call center. When configured, this must always be the first step in the ART. This step can also be used within a route without using a Route to Offsite step.

Disconnect



The system disconnects the call on reaching this step. This step can be used after playing a recording to inform after-hours callers about normal business hours. This ensures that excess charges are not incurred in case a caller fails to hang up. This step can also be used in Look Ahead Routing to reject a call offered to another call center or give the caller busy when Delay Ringback is the first step in the ART.

Goto



The system routes the call to a specific step number in the current ART. Processing begins at this step and continues through the rest of the steps in the ART. When configuring a GOTO step, the step value must be a valid step number in the current ART. You cannot use a GOTO step that contains a loop that includes a Route to Group step.

Route to ACD Group



When the system routes the call to the specified ACD group, one of the following occurs:

- If there is an agent in the group who can accept the call, the system assigns the call to the agent.
- If there are no agents in the group who can accept the call, the call is queued to the group and the system processes the next step in the ART.

Route to Agent



When the system routes the call to the specified agent, one of the following occurs:

- If the agent is free to take ACD calls (agent is logged on, in the Available state and idle), the system assigns the call to the agent.
- If the agent cannot receive calls, the system performs the next step in the ART. The call does not queue for the agent.
- If the agent extension has been forwarded to another extension with ring-no-answer forwarding, then the second extension is rung if the first extension is not answered.

Route to extension



When the system routes the call to the specified extension, one of the following occurs:

- If the extension is busy, the call proceeds to the next step in the ART.
- If the extension is idle, the call is assigned immediately.
- If the extension has been forwarded to another extension with ring-no-answer forwarding, the second extension is rung if the first extension is not answered.

An extension can be any one of the following:

- A destination ACD number
- An extension where an ACD agent is logged on
- An extension where no ACD agent is logged on
- An attendant number
- A hunt group pilot number

An extension cannot be:

- An RCG forwarding number
- A source ACD number

Using ACD Administrator

Configuring ACD Routing Tables

Route to
Heartbeat
destination



This step routes to the extension of offsite number provided by HiPath ProCenter in the system status (heartbeat) message

Route to music
port



The system routes the call to a specified music source. Music sources can be tape devices or FM tuners. The system supports a maximum of 32 ACD music ports. (Ordinances vary on the use of FM tuners for this purpose. Check with your local authorities.)

- Separate music sources can be configured for each unique route-to-music step in an ART or sources can be shared. A single music source can handle up to 100 calls simultaneously.
- The step that follows a route-to-music step influences how the music option is implemented:
 - If the next step is a route-to-recording step, the caller remains connected to music until a recording is available.
 - If a wait step follows the music step, the caller remains connected to music for the number of seconds indicated in the wait step. If the step is configured to wait 0 seconds, the caller remains connected to music until the call is assigned to an agent or the call is abandoned.
- If an agent becomes available while the caller is connected to music, the music connection is released and the call is assigned to the agent.

Route to offsite
number



The system routes the call to the specified offsite number. A trunk access code may precede the offsite number depending on whether the distribution is on the network or off the network. If a trunk cannot be connected to the call, or if the remote CorNet communications server does not accept the call, the system processes the next step in the ART.

Route to
recording



The system routes the call to the specified recording source. The recorded announcement on the device begins when the connection is made. This is called a fixed-start recording. Up to 5025 callers can be simultaneously connected to the same recording. The system supports a maximum of 206 recorded announcement ports.

If an agent becomes available while callers are connected to the recording, the recording connection is released and the call with the highest priority is connected to the agent.

- If no agent becomes available before the recording completes, the call goes to the next step in the ART.
- Multiple route-to-recording steps are often used to give the caller updated information about the status of the call. For example, the first announcement could state that “All agents are busy now. Your call will be answered in the order received.” A second announcement could state “We’re sorry for the delay. All agents are still busy.”

Route to Voice Mail This step routes the call to a voicemail box.

Mail



Skip



The system will deactivate the step and go to the next step in the ART. New steps are inserted as skip steps.

Wait



When this step appears in the ART, the existing state of the call remains unchanged for the specified number of seconds, or until an agent is available in a queued-for group.

- If no agent becomes available during that time, the system processes the next step in the ART unless the step is configured to wait zero seconds.
- If the wait step is configured to zero seconds, the caller remains connected to the current step until the call is assigned to an agent or the call is abandoned.
- You can configure a ringing delay period by inserting a wait step as the first ART step; however, the wait period must be greater than zero.

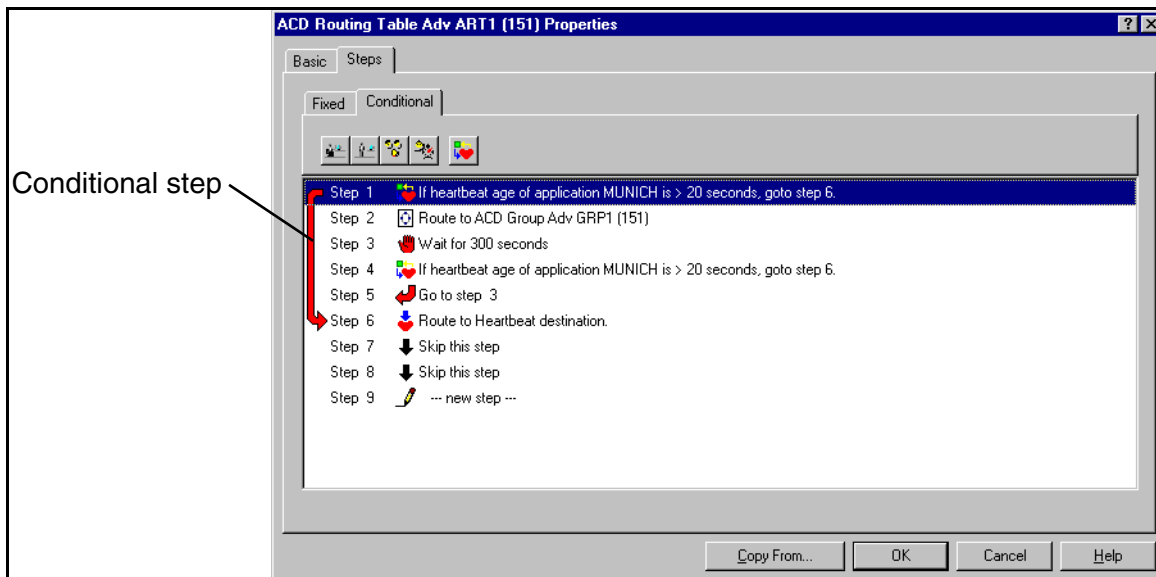
Wait for application

This step is used only after a conditional Heartbeat step. It causes call routing to pause and wait for the application.



4.8.2 Conditional ART Steps

Conditional routing steps begin with an “If...” statement.



Using ACD Administrator

Configuring ACD Routing Tables

The following conditions can be used for conditional steps:



Number of agents logged on



Number of agents in the available state



Number of calls in queue for the group



Age of the oldest call in queue



Age of the system status (heartbeat) message

- Error conditions in connecting to the IVR server. One, two, or all three of the following conditions can be specified:
 - The call failed to connect to the IVR server.
 - The call waited in queue for the IVR server but failed to connect within the time period specified in the Time Out option in the Route to Server step.
 - The connection failed while the call was connected to the IVR server.
- Whether the IVR server has returned a specified value

If the conditions specified are met, the call is directed to go to the specified step.

If the conditions are not met, the system processes the next step in the ART.

Using multiple conditional steps allows you to have several criteria for deciding whether to route a call to a specific group.

4.9 Configuring ACD Groups

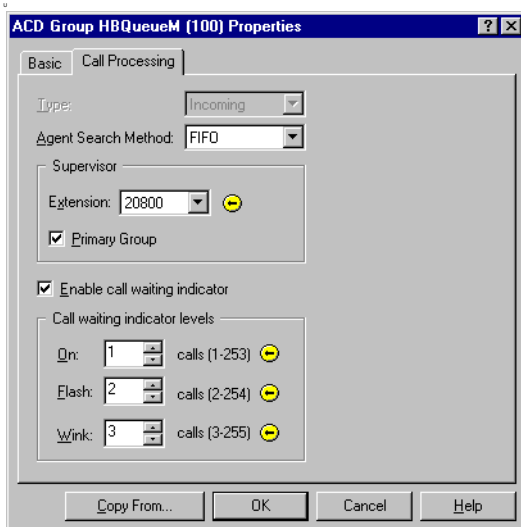
This section explains how to use ACD Administrator to configure ACD groups. Note that ACD groups are used only when HiPath ProCenter is in backup mode.

In the **ACD Group Properties** dialog box, there are two tabs for configuring the ACD groups. Use the **Basic** tab to view and enter the name and comment for the ACD group.



The number is assigned to the ACD group by your system administrator, who also defines the number of ACD groups in your system.

Use the **Call Processing** tab to set up the information on how calls are routed.



Using ACD Administrator

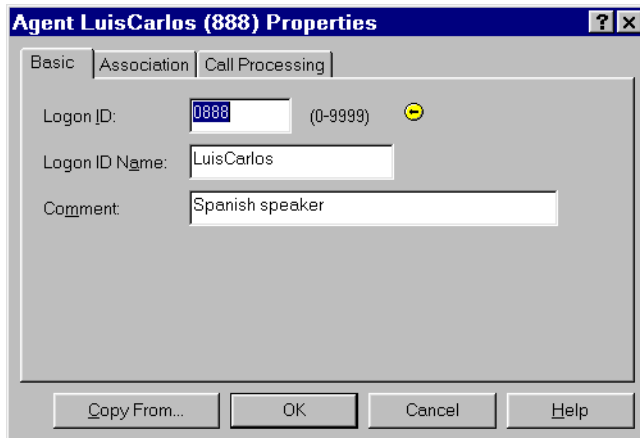
Configuring ACD Groups

Type	<p>The type of ACD group:</p> <ul style="list-style-type: none">• PhoneMail for groups composed of PhoneMail devices• Incoming for all other groups
Agent Search Method	<p>If more than one agent is available in an ACD group, one of the following methods is used to search for the next available agent:</p> <ul style="list-style-type: none">• FIFO: The system selects the agent position that has been idle the longest. This is the default.• Distribution: The system starts its search at the agent position following the last agent position to receive a call, distributing the work.• Hunt: The system always begins its search at the first agent position in the group, hunting for an agent.
Supervisor Extension	<p>The target extension for this group's agent-to-supervisor messages. Each ACD group has one supervisor extension. You can configure the same supervisor extension for multiple groups.</p>
Primary Group	<p>The group that the supervisor monitors by pressing the ACD Primary Queue (ACDPQ) or ACD Primary Group Status (ACDPS) button on the telephone. If the same supervisor extension is assigned to multiple groups, only one can be the primary group.</p> <p>If you are using ACD Administrator with the HiPath ProCenter Suite, this feature works only when the HiPath ProCenter Suite is in backup mode.</p>
Call Waiting Indicator Levels	<p>Enable to choose whether light-emitting diodes (LEDs) on agent telephones display the number of calls in queue or not. If you are using ACD Administrator with the HiPath ProCenter Suite, this feature works only when the HiPath ProCenter Suite is in backup mode.</p> <p>Choose one of:</p> <ul style="list-style-type: none">• On: When indicators are enabled, the number of calls required to turn the LEDs on.• Flash: When indicators are enabled, the number of calls required to trigger flashing LEDs. (Must be greater than the value for On).• Wink: When indicators are enabled, the number of calls required to trigger winking LEDs. (Must be greater than the value for Flash.) <p>If not enabled, the LEDs do not display the number of calls in queue.</p>

4.10 Configuring ACD Agents

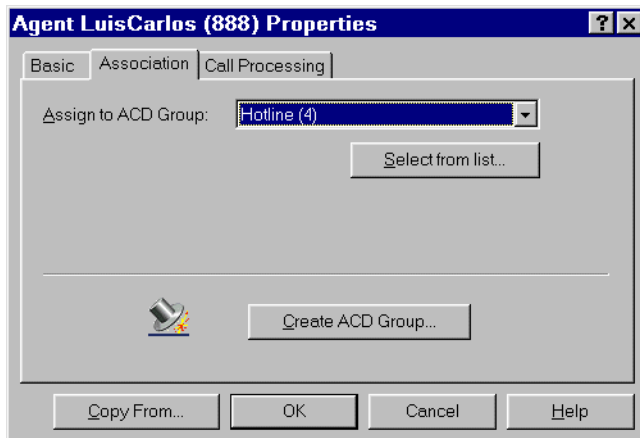
Use the **Agent Properties** dialog box to configure ACD agents.

Use the **Basic** tab to enter the Logon ID, the Logon name, and a comment for the ACD agent. The **Login ID** should be unique.



The image shows the 'Agent LuisCarlos (888) Properties' dialog box with the 'Basic' tab selected. The dialog has three tabs: 'Basic', 'Association', and 'Call Processing'. The 'Basic' tab contains the following fields: 'Logon ID' with the value '0888' and a range indicator '(0-9999)' and a yellow smiley face icon; 'Logon ID Name' with the value 'LuisCarlos'; and 'Comment' with the value 'Spanish speaker'. At the bottom of the dialog are four buttons: 'Copy From...', 'OK', 'Cancel', and 'Help'.

Use the **Association** tab to assign the agent to a group.



The image shows the 'Agent LuisCarlos (888) Properties' dialog box with the 'Association' tab selected. The dialog has three tabs: 'Basic', 'Association', and 'Call Processing'. The 'Association' tab contains the following elements: 'Assign to ACD Group' with a dropdown menu showing 'Hotline (4)'; a 'Select from list...' button; a 'Create ACD Group...' button with a speaker icon; and a 'Copy From...' button. At the bottom of the dialog are four buttons: 'Copy From...', 'OK', 'Cancel', and 'Help'.

If you do not want to assign the agent to a particular group at this time, select (not assigned).

Click **Create ACD Group** to create a group that the agent will be assigned to.

Use the **Call Processing** tab to set up the automatic sequences for agents.

Using ACD Administrator

Configuring ACD Agents

The screenshot shows the 'Agent LuisCarlos (888) Properties' dialog box with the 'Call Processing' tab selected. The 'Position' field is set to 6 (range 1-1000). The 'Autologon Extension' is set to 25131. The 'Enable autowork' checkbox is checked. Under 'How long should autowork mode be enabled?', the 'For' radio button is selected with a value of 30 seconds (range 1-300). The 'Until the agent cancels it' radio button is unselected. At the bottom are buttons for 'Copy From...', 'OK', 'Cancel', and 'Help'.

Position	Positions are used to determine which agent receives the next call, based on the agent search method.
Autologon Extension	An autologon extension automatically logs the agent on and puts the agent in available mode. This is normally assigned to PhoneMail extensions.
Enable Autowork	<p>Indicate that the agent automatically goes into work mode at the end of each ACD call.</p> <p>Only agents in groups configured as Incoming can have autowork enabled through ACD Administrator. For agents in PhoneMail groups, you can enable autowork with the AMO AGENT.</p> <p>If you are using ACD Administrator with the HiPath ProCenter Suite, this option should always be disabled. (Autowork is set in the HiPath ProCenter Suite agent configuration.)</p> <p>If enabled, enter the number of seconds that the agent remains in work mode or click Until the agent cancels it to indicate that the agent remains in autowork for an indefinite period of time.</p> <p>(If you want a value between 1 and 10 seconds in this field, you must enter it manually.)</p>

4.10.1 Modifying ACD Groups and Agents

Consider the following when modifying ACD groups and agents:

- You cannot modify agent IDs if they are referenced in an ART step. You must first remove them from the ART before modifying them.
- If you move an agent to another group, the agent takes the next available position in the new group unless you specify otherwise.
- An ACD group containing PhoneMail devices must have type = PhoneMail.

4.10.2 Deleting ACD Groups and Agents

Consider the following when deleting ACD groups and agents:

- You cannot delete ACD groups and agents if they are referenced in an ART step. You must first delete them from the ART.
- If you delete an ACD group or agent, you lose all statistics associated with that group or agent. However, if you recreate the ACD group or agent ID, you would be able to access the statistics.

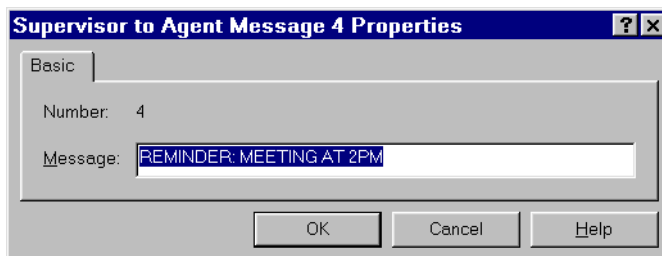
You can easily configure an agent for a specific ACD group. Right-click the ACD group and select **Create Agent**. This automatically puts the agent in the specified group.

4.11 Configuring Phone Display Messages

You can configure three types of phone display messages:

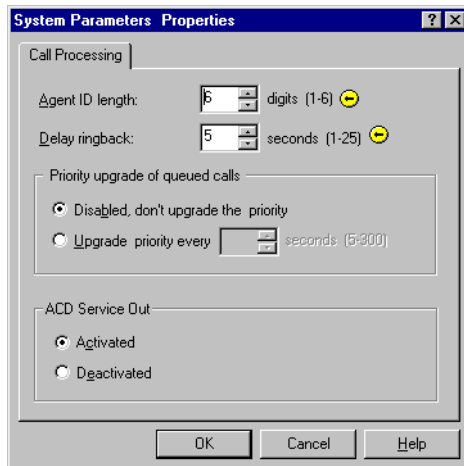
- Agent-to-supervisor messages (up to eight messages)
- Supervisor-to-agent messages (up to eight messages)
- Emergency messages (one message)

Use the **Message Properties** dialog box to configure the phone display messages assigned to the **Number**. The message can contain up to 24 alphanumeric characters, including spaces.



4.12 Configuring System Parameters

Use the **System Parameters Properties** dialog box to configure system parameters for call processing.



In the dialog box for configuring system parameters, you set the configurations for call processing:

Agent ID length	The number of digits in the agent ID for all agents in the system.
Delay ringback	The number of seconds that the system waits before sending a ringing tone to the caller. This is used when the first step in an ART is Delay ringback .
Priority upgrade of queued calls	Disable the change priority feature of ACD calls in queue, or specify the number of seconds after which the priority of a queued ACD call is upgraded.
ACD Service Out	<p>When Activated, the Service Out feature automatically places an agent in Unavailable mode if a call rings the agent's phone, is not answered and is forwarded by the system to the Ring-No-Answer target. It ensures that if an agent leaves the phone without going into Unavailable mode that subsequent calls will be handled by other agents. Click Deactivated to disable this feature for all agents.</p> <p>When deactivated, the calls can be system-forwarded, but the agent's phone remains in AVAILABLE mode.</p>

5 Troubleshooting ACD Administrator

Table 5-1 contains the error messages and suggested actions for ACD Administrator.

Error Message	Cause	Suggested Actions
The server was closed. The application will be closed. Call service.	The server closed the connection and the application cannot recover the link. Possible internal error.	Wait a few minutes and restart the client application. If the same message appears, then contact the system administrator.
There is a problem in the communication with the server. The application will be closed.	There is a problem in communication between ACD Administrator and the ACD server. Possible causes are a problem in the physical connection or in the connection configuration (wrong host IP address).	Check both the physical connection and connection configuration. If these items are okay then contact the system administrator.
The server cannot login this application because the maximum number of users has been reached. The application will be closed.	The number of ACD Administrator users on an ACD server exceeds the limit of 50.	Contact the system administrator to identify other ACD Administrator users who are logged on but not actively using the application. Log them off and try again.
The server cannot login this application because of an internal error. The application will be closed.	The application ID is not registered on the server, or the given entry point is not registered on the server.	Contact the system administrator
On each PC, there can only be one instance of ACD Administrator connected to a particular PC. Since such an instance already exists, your request to start ACD Administrator cannot be completed.	A second logon was attempted, through ACD Administrator, to the same ACD server but with a different user name.	The previous connection to the ACD server must be terminated before logging on with another user name.

Table 5-1 ACD Administrator Error Messages (Sheet 1 of 3)

Troubleshooting ACD Administrator

Error Message	Cause	Suggested Actions
The attempt to start ACD Administrator failed. Please verify that ACD Administrator is correctly installed.	An internal error occurred while checking for another instance of the application.	Try to run the application again. If the same message appears, contact the system administrator.
The application could not connect to the server because there is an error in the request/response socket. The application will be closed. Please check if the server is running and try again.	Initialization of the notification link to the ACD server has failed. It may be caused by a problem in the physical connection, in the connection configuration, or in the ACD server.	Check the physical connection and the configuration connection. If these items are okay, contact the system administrator.
The ACD Administrator application is disabled on the ACD server (error code number). The application will exit.	The application is disabled on the ACD server.	Try to run the application again. If the same message appears, then contact the system administrator.
Cannot log in to server due to an error in the link with the ACD server.	There is a problem in the link to the ACD server. It may be caused by a problem in the physical connection, in the connection configuration, or in the ACD server.	The user should check the physical connection and the configuration connection. If these items are okay, contact the system administrator.
An error occurred in establishing a connection to the ACD Name Server. The application will exit.	Certain environment variables may be missing; the PC may not have been rebooted after installation, the ACD server may have restarted or may not have completed initialization.	Wait several minutes and try to run the application again. If the message appears again, reinstall the application. If the message appears again, contact the system administrator.
An error occurred in establishing a session with the ACD Server.		
A communication error occurred to the ACD Server. The application will be closed.		

Table 5-1 ACD Administrator Error Messages (Sheet 2 of 3)

Error Message	Cause	Suggested Actions
Not able to log in as usual	From UNIX window, run command <code>procadmin -l grep secm</code>	If either of the SecM processes are not active, use the command <code>procadmin -s -g SecM</code> to start them

Table 5-1 ACD Administrator Error Messages (Sheet 3 of 3)

A AMO Configuration for ACDAPP

ACDAPP configuration in the HiPath 4000 is considerably simpler than in 6.6/ACD-G, for the following two reasons:

- ACDAPP no longer provides statistics. As a result, ACDAPP no longer connects to the ACL event stream and therefore does not need the AMO DAPPL/XAPPL or CPSM.
- ACDAPP now resides on the ADP rather than a separate server. ACDAPP now invokes the AMOs needed for configuration as part of the A&S Platform Installation process.

A.1 Relation to the TNS (Transport Naming Service) Configuration

There is a relationship between the CPTP AMO commands used in configuring ACDAPP and the Transport Naming Service (TNS) entries. The TNS entries are a kind of database for the RMX part of the server.

The ACDAPP script `ua_tns.x` is called during the post-install phase of the installation of ACDAPP. It creates TNS entries by invoking the binary `/opt/bin/tnsxcom`. Three entries are created:

- A local entry for the ACDAPP server named `CCMSCNFG`
- A remote entry for FAMOS using the name `FAMOS2` and port 102
- A remote entry for DBSYNC using the name `DBSYNC1` and port 102

This `ua_tns.x` script can be found in `/opt/ccms/bin`.

AMO Configuration for ACDAPP

Current Version of the ACDAPP AMO Command File

A.2 Current Version of the ACDAPP AMO Command File

ACDAPP, the AMO command file, invokes from its post-install script, four calls to CPTP as well as calls to update the DB. These calls to EXEC-UPDAT will likely soon be removed from the ACDAPP command file. Instead, a single EXEC-UPDAT will be performed on behalf of all the A&S Platform components at the end of the installation.

```
ADD-CPTP:DPCON, , "CCMSCSRV", "192.0.2.5";  
ADD-CPTP:DPCON, , "CCMSDBSY", "192.0.2.5";  
ADD-CPTP:APPL, , "FAMOS2", "CCMSCSRV", "CCMSCN-  
FG", YES, 102, 102, "FAMOS2", "CCMSCNFG";  
ADD-CPTP:APPL, , "DBSYNC1", "CCMSDBSY", "CCMSCN-  
FG", YES, 102, 102, "DBSYNC1", "CCMSCNFG";  
EXE-UPDAT:A1, ALL;  
EXE-UPDAT:BP, ALL;  
ENDE
```

A.3 Purpose of the CPTP Commands

The CPTP commands set up a logical connection between the RMX and the UNIX side of the server.

In the first two commands, two connections are defined, one for the ACDAPP Configuration Server and one for the ACDAPP DB Sync component, using TYPE=DPCON. The second parameter, number, is not filled in. This is simply a number to be assigned to the connection. Since the number parameter is left blank, the system assigns the next free number.

The third parameter, DPPROC, is a text string that specifies a name for the connection. This name must match the DPPROC name used in the corresponding ADD-CPTP:APPL command.

The required names are:

CCMSCSRV = ACDAPP Configuration Server

CCMSDBSY = ACDAPP DB Sync component

The IP address used is now 192.0.2.5 as opposed to 192.0.2.16, the IP address for the ACDAPP server which was used in 6.6/ACD-G.

In the next two commands, an association is made between the previously defined UNIX side entities and the RMX side entities to which they connect.

The first text string parameter, EMSAPPL, is a name which must match one of the two remote names set up by the TNS script. The values FAMOS2 and DBSYNC1 are used.

The second text string parameter, DPPROC, must match the strings used in the TYPE=DP-CON commands.

The third text string parameter, DPAPPL, must match the TNS local entry for ACDAPP.

The next parameter, MSGBASED (i.e. Message Based), is set to yes indicating that the connection uses discrete messages rather than a byte stream.

The next parameter, LOCPORT, refers to the port 102 set up by the TNS script.

The next parameter, FARPORT, refers to the port 102 set up by the TNS script.

The next two parameters, refer to the two entities being connected, either FAMOS2 and CCM-SCNFG or DBSYNC1 and CCMSCNFG.

A.4 Troubleshooting

If ACDAPP is not properly configured, ACDAPP cannot communicate with FAMOS. This prevents ACDAPP from executing AMOs. As a result, any DB Sync attempt will fail because ACDAPP executes the REGEN function of several AMOs to synchronize its database with the PBX. Also, any activation attempts will fail, since ACDAPP runs AMO FUNCT to determine the language of the switch.

Error	Diagnosis	Resolution
<ul style="list-style-type: none"> Activation fails and the log file contains text: <code>mh -regen utility failed</code> db init fails and the log file contains text: <code>mh -regen utility failed</code> 	<ul style="list-style-type: none"> Via the AMO interface, execute: <code>regen-cptp</code>; verify that 4 commands are shown for CCMS, corresponding to those shown in Section A.2 on page A-2. Via the UNIX command line, execute: <code>cifcct</code> The output should show two connections for CCMS, one for FAMOS2 and the other for DBSYNC1. Check the TNS entries using the command <code>tnsxprop</code> in the UNIX window. Verify that there are entries for DBSYNC1 and FAMOS2. 	<ul style="list-style-type: none"> If the AMOs are missing, then execute the AMOs shown in Section A.2 on page A-2. If the TNS entries are missing, re-install the TNS entries by executing the following from the UNIX shell <code>sh ua_tns.x create</code> The <code>ua_tns.x</code> script is in <code>/opt/ccms/bin</code>.

Table A-1 Troubleshooting Problems with ACDAPP

B About the ACD Application Software

The ACDAPP runs on the HiPath 4000 switch provides the basis for sophisticated skills-based routing with the HiPath ProCenter Entry, Standard, and Advanced Suites. The information is configured using the Desktop application, ACD Administrator.

When used without HiPath ProCenter Suites, ACDAPP provides simple call routing.

B.1 Differences Between the Hicom 300 E and HiPath 4000 ACD

- ACDAPP previously was installed on its own server. In the current release, it runs on the Administration and Data Processor (ADP) server which is internal to the HiPath 4000.
- The switch management tool (HiPath 4000 Manager/Assistant) is used to perform administrative tasks for ACDAPP, such as backup and restore, activation and deactivation, database synchronization.
- The Security Management component of the switch management tool (HiPath 4000 Manager) is used to administer users. UDSC is no longer used.
- The configuration capabilities of Composer are now in ACD Administrator.
- In the earlier release (Hicom 300 E), ACDAPP provided the basis for historical and real-time reports via Composer and Observer. In the current release, Composer and Observer are no longer used. Monitoring Real Time statistics is performed in the Desktop Application. Reports are provided through the HiPath ProCenter Reporter application.
- PhoneMail agents can be configured only in the HiPath 4000 Manager. They cannot be configured with the ACD Administrator.
- The Logging Manager component is now used to examine errors logged by ACDAPP.
- The procedure for upgrading to the current version of ACD Administrator is different than the procedure for BusinessView Composer. Composer was downloaded via the Software Download application. ACD Administrator is downloaded from the web.
- Previously, after upgrading the ACDAPP package, it was always necessary to activate ACDAPP in an additional step. Now, if ACDAPP was activated before the upgrade, it will automatically be activated after the upgrade.

About the ACD Application Software

Prerequisites and Maintenance

B.2 Prerequisites and Maintenance

This section provides a list of the tasks that you must perform before you can use ACD Administrator. It also provides a list of the tasks that you may need to perform to maintain the ACDAPP software.

For more information on each of these tasks, refer to the Help that is part of the HiPath 4000 Assistant.

Task	Quick steps
Prerequisites	
Create users and assign their passwords and other properties.	From the HiPath 4000 Manager Launchpad, click Security Management . Click Feature and User Management . Click User Administration .
Create access right groups with the appropriate access rights for your users. Refer to Section B.2.1 on page B-4 for more information about access right groups.	From the HiPath 4000 Manager Launchpad, click Security Management . Click Feature and User Management . Click Access Right Group Configuration .
Assign an access right to each user that you created.	From the HiPath 4000 Manager Launchpad, click Security Management . Click Feature and User Management . Click Access Right Configuration .
Download the install program for ACD Administrator from the HiPath 4000 Manager.	From the HiPath 4000 Manager Launchpad, click Utilities . Click Call Center Administration . Click the ACDAPP Home page. Click Download ACD Administrator . Follow the instructions that are provided.
Install ACD Administrator.	Double-click the install program and use the Wizard to install ACD Administrator.
Start ACD Administrator from the Launchpad.	From the HiPath 4000 Manager Launchpad, click Utilities . Click Call Center Administration . Click the ACDAPP Home Page . Click ACD Administrator .

Table B-1 Prerequisite and Maintenance Tasks (Sheet 1 of 2)

About the ACD Application Software
Prerequisites and Maintenance

Task	Quick steps
Start ACD Administrator from the Windows Start menu.	Click Start and point to Programs and then click ACD Administrator . The first time you use this method, you must first configure the server and then log in. Log in with a password is required each time you start ACD Administrator from the Start menu.
Maintenance	
Install ACDAPP.	This is done automatically with the HiPath 4000.
Upgrade ACDAPP.	From the HiPath 4000 Manager Launchpad, click Software Management . Use the Software Transfer and Software Activation tools. Instructions for using these tools are provided on the web page.
Back up and restore ACDAPP database. For more information, refer to Appendix C.	From the HiPath 4000 Manager Launchpad, click Software Management . Use the Backup and Restore tool.
Synchronize databases.	From the HiPath 4000 Manager Launchpad, click Utilities . Click Call Center Administration . Click the ACDAPP Home Page . Click Synchronize Data .
Activate and deactivate ACDAPP.	From the HiPath 4000 Manager Launchpad, click Utilities . Click Call Center Administration . Click the ACDAPP Home Page . Click Activate/Deactivate .

Table B-1 Prerequisite and Maintenance Tasks (Sheet 2 of 2)

B.2.1 Assigning Access Rights

You must assign access rights to the people who will use ACD Administrator or perform other contact center tasks.

Access rights are organized into Access Right Groups. The HiPath 4000 Assistant folder called “All Features of Call Center Management Application” contains three default access right groups:

- ACD Administrator User—Can have full access, limited access, or no access to configuration information, depending on what you configure in ACD Administrator. Same as “supervisor”. Note that the supervisor initially has no access until access is configured in ACD Administrator.
- Call Center Configuration Administrator—Can view and change configuration information for all ACD groups in the system and can administer supervisors. Same as “administrator”
- Check ACDAPP Status—Allows user to check the status of ACDAPP.

Besides these three access right groups that are specific to contact centers, you can configure other groups with additional access rights.



Note that the configuration order in the HiPath 4000 Assistant is to first configure users, then the access right groups, then assign an access right group to each user.

B.2.2 Setting up the Configuration Synchronization Feature

To use the Configuration Synchronization feature of HiPath ProCenter, you must set up (in the HiPath 4000 Assistant) a user ID with a fixed password that never expires. You must assign this user ID the access right “All features of Call Center Management Application”.

If you do not complete this procedure, the resource domain ranges cannot synchronize with the switch upon startup, and the Domain Configuration Tool in the Administrator application cannot retrieve synchronized switch resources.

C Backup and Restore of ACDAPP for the HiPath 4000

Backup and Restore of ACDAPP is performed via the Backup and Restore utility of the HiPath 4000 Assistant.

C.1 Backup & Restore Home Page



You reach this site by opening the Software Management folder of the HiPath 4000 Manager/Assistant and clicking **Backup & Restore**.

This site includes information about the actual status of backups and restores, the configured schedules, and the last backups.

Backup and Restore of ACDAPP for the HiPath 4000

Backup

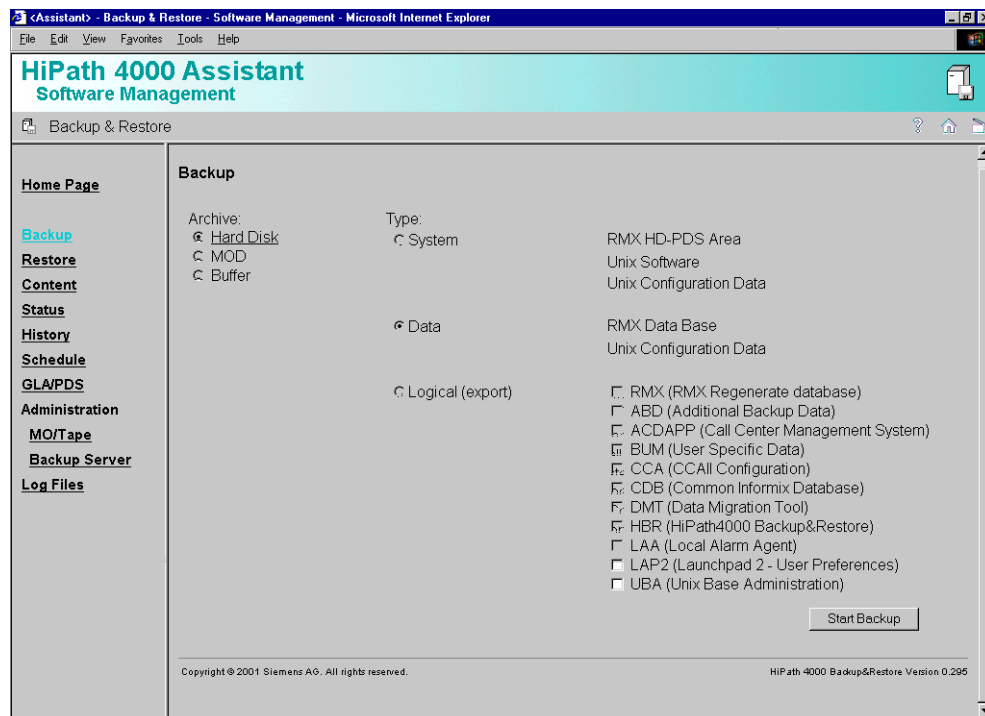
C.2 Backup

There are three types of backup: system, data, and logical.

- System** Backs up both code and data. This is generally only needed when the HiPath 4000 has serious problems.
- Data** Backs up all of the components registered for backup, including ACDAPP. If the backup of any of the individual components fails, the whole backup fails. This type of backup can be scheduled on a periodic basis, e.g. weekly
- Logical** Performed on a per component basis, with the user checking which components should be backed up. Include any or all of the following:
- ACDAPP
 - Common Informix Database
 - HiPath 4000
 - RMX Regenerate database
 - Unix Base Administration (UBA)

The backup can be done to:

- MO: magneto-optical disk
- HD: hard disk
- Buffer: a logical area on the hard disk
- Backup server



Backup example for ACDAPP:

1. On the **Backup & Restore** home page, click **Backup**.
2. On the **Backup** page, select the desired Archive type (for example, Hard Disk). Select the **Data** Type. Select **ACDAPP (Call Center Management System)**.



MOD and Backup Server are displayed only if they are really configured.

3. Click **Start Backup**.
4. A pop-up window prompts you for confirmation. Click **OK**.
5. A pop-up window indicates that the backup has been successfully started. Click **OK**.
6. Click **History** on the Side Panel to check the result of the Backup (Section C.4 on page C-6).

C.2.1 Notes on Using Buffers

A buffer is a special area on the HiPath 4000 hard disk used to transfer backup sets from the HiPath 4000 system to a remote server or from a remote server to the HiPath 4000.

Backups to a buffer archive create a backup set named `backup_set` in the `/IO_BUF/OUTPUT` directory (* contains the date, time and possibly additional information). The backup set created in this manner can be transferred to a remote server by Hicom File Manager (HFM) or FTP.

In the opposite direction, that is, when restoring a backup set from a remote server to the HiPath 4000, the set is transferred from the remote server to the `/IO_BUF/INPUT` directory by HFM or FTP and stored under the name `backup_set*` (* can be any string). You can then control the process using **Archive directory** or activate it with **Restore**. The new backup set is automatically copied to the `/IO_BUF/OUTPUT` directory and removed from the `/IO_BUF/INPUT` directory.

C.2.2 Notes on Using an MO Disk

Both RMX and Unix support the MO device in the HiPath 4000. However, the device can be used exclusively by RMX (e.g. to store a copy of the PDS) or Unix to save data and/or code.

Access to the MO device by RMX and Unix is synchronized manually by activating and deactivating the MO controller, using the AMO DSSM.

By default, the MOD is reserved for ADP-RMX.

Access to the MOD is controlled as follows:

Backup and Restore of ACDAPP for the HiPath 4000

Restore

- When the MOD controller is activated: The MOD is reserved for RMX
- When the MOD controller is deactivated: The MOD is reserved for Unix

When the MOD is reserved for UNIX, all data on the MOD medium is overwritten by the backup routine without first displaying a security prompt.

C.3 Restore

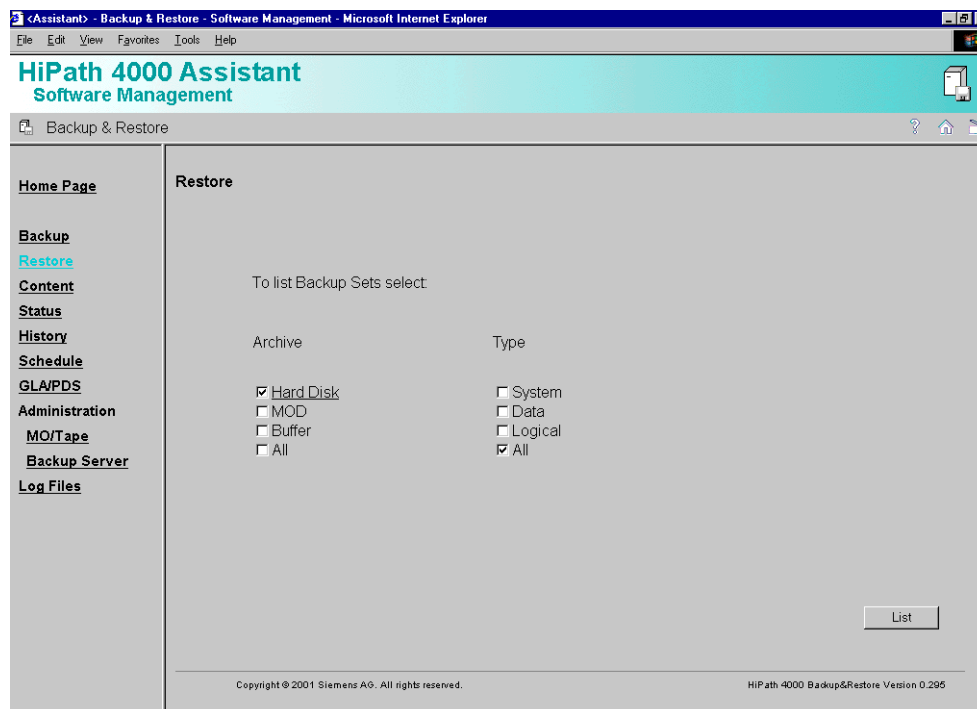
There are three types of restore: system, data, and logical.

System Restores both code and data for all subsystems and is generally only needed when there are serious problems with the switch.

Data Restores the data of all of the components that were backed up in a data backup

Logical Restores the selective restore of components backed up in the logical backup

Restore example for ACDAPP:



ACDAPP must be deactivated before you start the restore.

1. On the Home Page, click **Restore**.
2. On the Restore page, select an **Archive** and **Type** (for example, **Hard Disk**). Click **List**.



MOD and Backup Server are displayed only if they are really configured.

3. On this site select the correct backup set:

	Unit	Type	Archive	Date/time	System no.	Software	M/A (manual/automatic)
<input type="radio"/>	<input type="checkbox"/> ACDAPP	Logical	Hard Disk	2002-02-11 11:38	00000000	HiPath4000V10 SA07 RL01	M
<input type="radio"/>	<input type="checkbox"/> UNIX_CFDATA <input type="checkbox"/> RMX	Data	Hard Disk	2002-02-11 12:07	00000000	HiPath4000V10 SA07 RL01	M
<input type="radio"/>	<input type="checkbox"/> UNIX_CFDATA <input type="checkbox"/> RMX	Data	Hard Disk	2002-02-13 11:05	00000000	HiPath4000V10 SA07 RL01	M

Refresh Restore Set

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4. Click **Restore Set** to restore the selected backup set.
5. A pop-up window prompting you for confirmation appears. Click **OK**.
6. A pop-up window appears, indicating that the restore has been successfully finished and that the system will reboot in 20 seconds. Click **OK**.

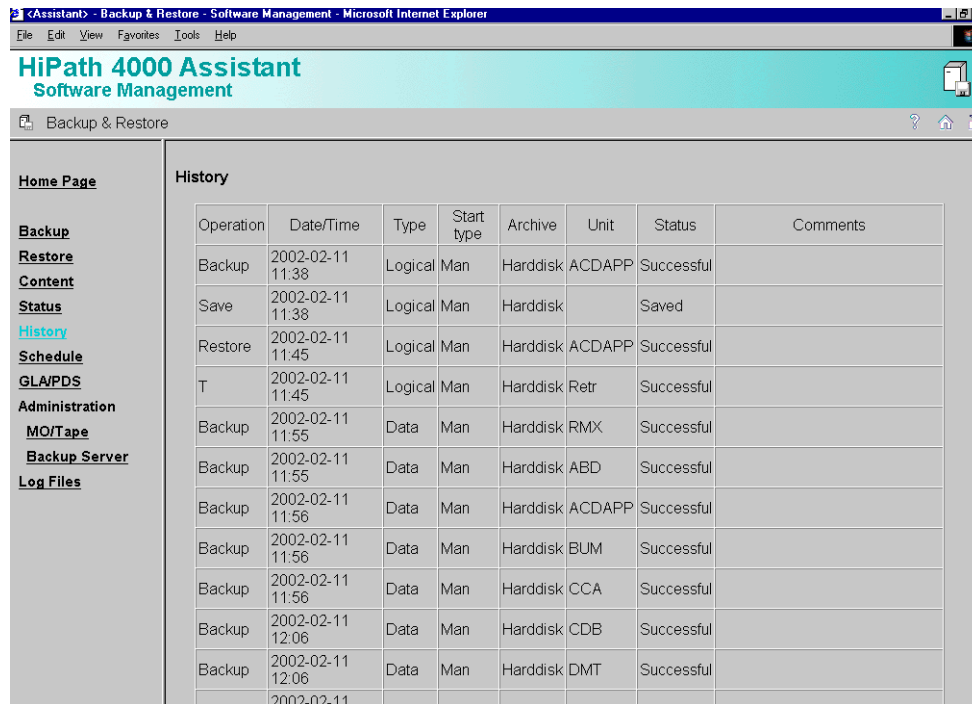
Backup and Restore of ACDAPP for the HiPath 4000

History

C.4 History

This window includes information about the time, the type, and the status of all executed backups and restores.

The window is also very useful for checking the success of the executed backups and restores (Status column).



The screenshot shows the 'HiPath 4000 Assistant Software Management' window. The 'History' tab is selected, displaying a table of operations. The sidebar on the left contains links for Home Page, Backup, Restore, Content, Status, History (selected), Schedule, GLAPDS, Administration, MO/Tape, Backup Server, and Log Files. The table has columns for Operation, Date/Time, Type, Start type, Archive, Unit, Status, and Comments.

Operation	Date/Time	Type	Start type	Archive	Unit	Status	Comments
Backup	2002-02-11 11:38	Logical	Man	Harddisk	ACDAPP	Successful	
Save	2002-02-11 11:38	Logical	Man	Harddisk		Saved	
Restore	2002-02-11 11:45	Logical	Man	Harddisk	ACDAPP	Successful	
T	2002-02-11 11:45	Logical	Man	Harddisk	Retr	Successful	
Backup	2002-02-11 11:55	Data	Man	Harddisk	RMX	Successful	
Backup	2002-02-11 11:55	Data	Man	Harddisk	ABD	Successful	
Backup	2002-02-11 11:56	Data	Man	Harddisk	ACDAPP	Successful	
Backup	2002-02-11 11:56	Data	Man	Harddisk	BUM	Successful	
Backup	2002-02-11 11:56	Data	Man	Harddisk	CCA	Successful	
Backup	2002-02-11 12:06	Data	Man	Harddisk	CDB	Successful	
Backup	2002-02-11 12:06	Data	Man	Harddisk	DMT	Successful	
	2002-02-11						

C.5 Schedule

In the Schedule window you can start a Data backup via a specific time schedule.

The screenshot shows the 'HiPath 4000 Assistant Software Management' web interface. The 'Backup & Restore' section is active, and the 'Schedule' tab is selected. The sidebar on the left contains links: Home Page, Backup, Restore, Content, Status, History, Schedule (highlighted), GLA/PDS, Administration, MO/Tape, Backup Server, and Log Files. The main area displays the 'Schedule' configuration form with the following fields:

Status	Frequency	Time	Synchronize	Archive
Disabled	Weekly	22:00	Yes	Hard Disk

Below the form are buttons for 'Refresh', 'Start now', and 'Add New'. At the bottom, there is a copyright notice: 'Copyright © 2001 Siemens AG. All rights reserved.' and the version number: 'HiPath 4000 Backup&Restore Version 0.205'.

The following options can be configured for the schedule:

Status	Enabled, Disabled, Once
Frequency:	Daily, Weekly, Mondays Sundays
Time:	hh:mm
Synchronize:	Yes/No
Archive	Backup Server, MOD, Buffer, Hard Disk



If 'Synchronize' has been activated, first the data from the memory is saved to the hard disk and 'EXEC-UPDAT' is performed on the RMX side; only then is the backup performed.

If the status is set to 'Once', the backup will take place only once at the configured time and is then set to the default values (Disabled, Weekly, 22:00, Yes, Hard Disk).

C.6 Administration Backup Server

The customer backup server is administered in the Administration Backup Server screen. The following configuration data has to be defined:

- Transfer protocol
- IP address
- Host name
- Directory on the remote server (remote directory)
- Login

Depending on the protocol used, not all of this information is required.

The screenshot shows the 'HiPath 4000 Assistant Software Management' window. The left sidebar contains a navigation menu with links: Home Page, Backup, Restore, Content, Status, History, Schedule, GLA/PDS, Administration, MO/Tape, Backup Server (highlighted), and Log Files. The main content area is titled 'Administration Backup Server'. It features two radio buttons for 'NFS' and 'FTP'. Below these are input fields for 'IP Address' (with a hint '(Don't use IP Address together with Host Name)'), 'Host Name', 'Directory', 'Login', 'Password', and 'Account'. A 'Comments' text area contains the message '110: Customer Backup Server not configured.'. At the bottom right are 'Refresh', 'Test', and 'Configure' buttons. The footer shows 'Copyright © 2001 Siemens AG. All rights reserved.' and 'HiPath 4000 Backup&Restore Version 0.295'.

C.6.1 Transfer Protocols

HBR supports the following transfer protocols:

NFS When you select the NFS Transfer Protocol, only the input fields IP Address, Host Name, and Destination Directory are displayed. In other words, only these fields need to be filled in.

FTP When you select the FTP Transfer Protocol, the input fields IP Address, Host Name, Destination Directory, Login, Password and Account are displayed. Additional information is required for login, password and account.

C.6.2 Input Fields

IP Address Enter the IP address of the remote server here. The input fields IP Address and Host Name are both used to identify the system. If you have entered the IP address, there is no need to enter the host name and vice versa.

Host Name Enter the host name of the remote server here. The input fields IP Address and Host Name are both used to identify the system. If you have entered the Host Name, there is no need to enter the IP Address and vice versa.

Destination Directory Enter the destination directory on the remote server.

Login (only needed for FTP) Enter the user name that is to be used for logging onto the remote server.

Password (only needed for FTP) Enter the password associated with the user name that is to be used for logging onto the remote server.

Account (needed only for FTP) Enter another account password. This information needs to be entered for some operating systems such as UNIX for example.

Comments show status messages such as 'Customer Backup Server not configured' if the server is not configured, for example.

C.7 Function of the Buttons

Refresh Updates screen display.

Test Tests the settings

Configure The backup server is configured on the basis of the data entered.



For backup to an NFS server, shared access must be granted on the remote server.

The customer system administrator is responsible for granting the ACDAPP server access to the remote server.

The customer system administrator should make sure that enough disk space is available for the backup.

C.8 Import and Export

The import of pre-HiPath 4000 data will be done through the Data Migration Tool (DMT) component of the HiPath 4000 platform, not by means of Backup and Restore.

In the future, import and export between versions of the HiPath 4000 will be performed by logical backup and restore.

Backup and Restore of ACDAPP for the HiPath 4000

Import and Export

Glossary

administrator	An administrator can view and change configuration information and for all ACD groups in the system. An administrator can also create supervisors and assign their user access. You cannot limit an administrator's access.
ACD agents	Members of ACD groups who handle calls in a call center. All agents use IDs. Agents can be members of more than one group if they have multiple IDs. Channels in a PhoneMail system can be configured as agents in a PhoneMail ACD group.
ACD group	A group of agents who answer customer calls. Each ACD group has its own members (agents). The system supports a maximum of 255 groups. A maximum of 1000 agent logon IDs can be assigned to a group
ACD numbers	The primary vehicle to initiate ACD call routing. An ACD number is a routing number that has an RCG as its target.
ART	ACD Routing Table: A series of steps that you configure to determine how an ACD call is routed.
autologon	Feature that automatically logs the agent on to a predetermined extension and places the agent in available mode. This feature is configured for the extensions of devices such as PhoneMail or voice-response units. This is normally assigned to interactive voice response (IVR) units and is not available for HiPath ProCenter agents.
autowork	A feature that automatically places the agent into work mode after every ACD call. An agent in work mode cannot receive any ACD calls.
Calendar routing	A feature that allows you to assign a shift set to a specified date or range of dates.
RCG	Route Control Group: The means that ACD software uses to route calls coming into a call center based on the day of the week, time of day, or a specific date. Each RCG contains a shift set entry for each day of the week and each calendar entry.
Shifts	A period of time when calls are routed to a particular ART. Shifts are organized into shift sets.
Shift sets	Consist of one or more shifts that together cover a 24 hour period.
supervisor	A supervisor can have full access, limited access, or no access to configuration information and reports.

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