

# Cisco Unified ICM ACD Supplement for Rockwell Spectrum

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# Preface

## Purpose

This document contains specific information you need to maintain a Meridian Peripheral Gateway (PG) in a Cisco Unified Intelligent Contact Management (Unified ICM) environment. It is intended to be used as the Meridian-specific companion to the Cisco Unified ICM documentation set.

While other Unified ICM documents (for example, the *Configuration Guide for Cisco Unified ICM/Contact Center Enterprise and Hosted*, and the *Scripting and Media Routing Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted*) cover general topics such as configuring an overall Unified ICM and writing scripts to route contact center requests. The *Cisco Unified ICM ACD Supplement for Rockwell Spectrum* provides specific information on configuring a Spectrum PG and making any necessary adjustments to the Rockwell Spectrum ACD configuration.

## Audience

This document is intended for system managers. The reader should understand Unified ICM functions as described in the *Installation and Setup Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted*, *Configuration Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted*, and *Scripting and Media Routing Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted*. The reader should also have specific knowledge of the Rockwell Spectrum ACD.

## Organization

### Chapter 1, “Overview”

Provides an overview of ACD interface and hardware and software requirements.

### Chapter 2, “ACD Configuration”

Describes items in the Spectrum configuration that must be verified to ensure compatibility with the Unified ICM.

### Chapter 3, “Web Setup Tool and ICM Configuration”

Provides information about setting up connections for the Spectrum ACD with the Peripheral Gateway.

### Chapter 4, “Spectrum TPCC/TPAC Services”

Lists and describes the services for third party telephony that are supported by the Spectrum PIM.

#### Chapter 5, “Media Blender Configuration for Rockwell Spectrum”

Describes what you need to know and do to configure the Cisco Media Blender for use with the Rockwell Spectrum ACD.

Note: Media Blender Configuration for Rockwell Spectrum is not supported for Unified ICM 8.0 and above.

#### Appendix A, “Eicon Card Configuration”

Gives screenshots of WAN Services Configuration for the Rockwell Spectrum ACD.

## Typographic Conventions

This manual uses the following conventions:

- Boldface type is used for emphasis; for example:  
Real-time information **is not** stored in the central database.
- Italic type indicates one of the following:
  - A newly introduced term; for example:  
*A skill group* is a collection of agents who share similar skills.
  - A generic syntax item that you must replace with a specific value; for example:  
IF (*condition, true-value, false-value*)
  - A title of a publication; for example:  
For more information see the *Installation and Setup Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted*.
- Sans serif type with small caps is used to represent keys on your keyboard; for example:  
Press the SHIFT key to select a range of items.
- An arrow (→) indicates an item from a pull-down menu. For example, the Save command from the File menu is referenced as File→Save.

## Other Publications

For more information on Unified ICM, see the following documents:

- *Administration Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted*
- *Installation and Setup Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted*
- *Configuration Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted*
- *Scripting and Media Routing Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted*

For information on Cisco Network Applications Manager (NAM), see the following documents:

- *Product Description Guide for Cisco Unified ICM Hosted*
- *Setup and Configuration Guide for Cisco Unified ICM Hosted Edition*
- *Multiple-NAM Setup and Configuration Guide for Cisco Unified ICM Hosted*

## **Obtaining Documentation, Obtaining Support, and Security Guidelines**

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[Hhttp://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html](http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html)

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# 1. Overview

The Rockwell Spectrum ACD is connected to the Peripheral Gateway (PG) via two separate connections:

- The first connection provides access to a Spectrum port, which is configured for a Supervisor CRT terminal.
- The second connection provides access to a Spectrum Transaction Link port.

## 1.1. ACD Interface Requirements

For a (minimum) simplex configuration, the Spectrum PG requires:

- One X.25 or TCP/IP Transaction Link port.
- Transaction Link Software (X.25 or TCP/IP version).
- Supervisor CRT Serial Port

**Note:** Prior to Release 5.1.1, the Spectrum Transaction Link could not be shared among more than a single CTI application. As a result, the Unified ICM PG required exclusive access to the Transaction Link. However, in the Spectrum Release 5.1.1 and beyond, the Transaction Link can be shared by more than a single CTI application.

- Duplex PGs require two Supervisor CRT ports, although at any given time only one CRT port will be operational. The operational port will be that which is physically connected to the active Peripheral Gateway.

**Note:** Duplex PG configuration with TCP/IP version can be configured with single or dual Transaction Link ports. Duplex PGs are supported only in ICM 2.0 and beyond and via TCP/IP only. Dual Transaction Links are supported only in ICM 4.1 and beyond via TCP/IP only. In case of the Duplex PG configuration using TCP/IP, both the PGs should be configured to connect to the same Transaction Link IP address and port number as both sides are never active at the same time. Therefore, both PGs should be seen as the same application by the switch.

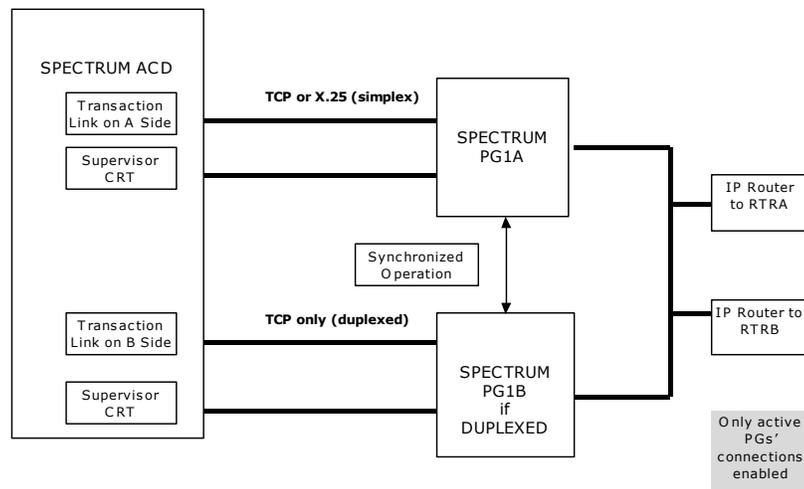


Figure 1: Rockwell Spectrum Hardware Configuration

For Single Transaction Link configuration, both the PGs are configured to connect to the same Transaction Link as both sides are never actively connected to Transaction Link at the same time. Therefore, both the PGs should be seen as the same application by the switch.

For Dual Transaction Link configuration, each side of the PG is configured to a Transaction Link on a different Transaction Link Card. Therefore, if one Transaction Link Card goes down, the Dual Transaction Link configuration provides for more fault tolerance. Each Transaction Link Card will have its own IP address to the network. Both PGs in Dual Transaction Link configuration are actively connected to Transaction Link Points at the same time, although only one PG is actively processing the calls. Therefore, both the PGs should be seen as the different applications by the switch (only supported by ICM 4.1 version and later).

### 1.1.1. Spectrum Port

When the Spectrum ACD is connected to the PG in order to provide access to a Spectrum Port, the communication between the Peripheral Gateway and the Supervisor CRT port is via a 4800 or 9600 baud serial communication line.

- The Supervisor CRT port is used to obtain two types of information:
  - Agent directory numbers for all Skill Groups in Unified ICM config
  - Spectrum local time

When the PG first begins operation, it queries the Spectrum over the Supervisor CRT link to obtain the list of configured Agents as seen on the Spectrum. The Agents identified in the query response will be dynamically added to the Unified ICM configuration. After the PG is initialized, the Spectrum local time is obtained periodically over the Supervisor CRT link, which is used to synchronize Unified ICM reporting intervals with those of Spectrum.

The PIM configuration registry “SupervisorCRTWaitTimeout” setting, defines the total query time for an agent group over the CRT link, a serial communications link for Rockwell Spectrum Supervisors. Normally, it takes 4-8 seconds for the ACD to respond to a query. The default setting is 1200000 (20 minutes). Therefore, the suggested setting is defined by multiplying the number of configured agents in the largest Agent Group by 4 for a 9600 baud rate, and by 8, for a baud rate of 4800.

**Note:** If more than 300 agents are configured with a baud rate of 9600, the suggested setting is defined by multiplying the number of agents configured in the largest Agent Group by 4.

Each Peripheral Gateway requires a dedicated Supervisor CRT port. Duplex Peripheral Gateways will therefore require two Supervisor CRT ports, although at any given time only one CRT port will be operational. The operational port will be that which is physically connected to the active Peripheral Gateway.

### 1.1.2. Spectrum Transaction Link Port

For the Spectrum ACD to access the Spectrum Transaction Link port, each Peripheral Gateway requires a dedicated Transaction Link connection. This connection makes use of either the X.25 data link, which is provided by the PDI (I or II) card or the TCP/IP interface provided by the PDI III card.

The Spectrum Transaction Link port and the PG communicate using the X.25 protocol at a baud rate of 19.2KB or the TCP/IP interface over LAN. The Spectrum PG receives and sends data over both the Supervisor CRT and the Transaction Link to obtain real-time call processing state information.

The Transaction Link connection provides the majority of the information needed by the PG. The Transaction Link is used to support the Call State Event Notifications, Agent State Queries, Agent State Change Notifications, Agent Group Membership, and Host Routing. Call State Events and Agent State Change Notifications are sent unsolicited by the Spectrum, while Agent State Queries are initiated by the PG. Agent State Queries are generally issued to synchronize state when the PG first begins operation. The Spectrum Transaction Link Host Routing feature is used by the PG to implement the Unified ICM Post-Routing feature which allows the Unified ICM CallRouter to direct calls that have terminated on the Spectrum.

The Spectrum Transaction Link must be configured to operate correctly with the Unified ICM. This configuration involves allowing Transaction Link access to Trunk Groups and the Agent classes of service targeted by the Unified ICM CallRouter. It is also necessary to supplement the default Transaction Link messages with “Inform Host” or “Inform Host Call Status” application vector steps in order to enhance call state tracking. These enhanced messages are required for proper operation of the Unified ICM.

### 1.1.3. Duplex PG Configuration using TCP/IP

There are two choices available in the case of the Duplex PG configuration using TCP/IP.

- First is single Transaction Link configuration. Both PG A and PG B are configured with Transaction Link point A equal to Transaction point B. Both the PGs are configured to connect to the same Transaction Link IP address and port number as both sides are never actively connected to Transaction Link at the same time. Therefore, both the PGs should be seen as the same application by the switch.
- Second is Dual Transaction Link configuration. Both PGs are configured to different Transaction Link points. They are Transaction Link Ports on different Transaction Link Cards. Dual Transaction Link Cards configuration gives more fault tolerance in case one of the two Transaction Link cards goes down. Each Transaction Link Card has its own IP address to the network. Both PGs in Dual Transaction Link

configuration are actively connected to Transaction Link Points at the same time. Therefore, both the PGs should be seen as different applications by the switch (only supported in ICM 4.1 up).

### **Spectrum Dual Transaction Link Configuration**

The Spectrum PDI III card can communicate with up to 6 different hosts. Logical Links are configured via the ENT-SDP command using a NSUID value of TLCC1-TLCC6. Considering the load factors, it is recommended that a maximum of three PGs be connected to a PDI III card.

## **1.2. Hardware and Software Requirements**

The Spectrum PG supports Spectrum Software releases 4.0 and beyond. The Spectrum must be provisioned to be X.25 Transaction Link capable, which will require a PDI I or a PDI II card port. The Transaction Link on the LAN feature, which is available only for Spectrum Release 5.1.1 and beyond, allows the Spectrum Transaction Link to use the TCP/IP interface over a 10BaseT Ethernet LAN via a PDI III card. This LAN feature is available only in Cisco ICM Release 2.0 and beyond. The Spectrum must be provisioned to provide a dedicated Supervisor CRT port for use by the PG. Supervisor CRT ports require a port on a PDI I or PDI II card. The Spectrum documentation should be consulted when provisioning PDI ports to calculate loading factors to ensure that a given card is not over-loaded.

## **1.3. Supported Unified ICM Features**

The Spectrum PG supports the following Unified ICM features:

- Pre-Routing
- Post-Routing
- Enterprise CTI (includes third-party call control)
- Agent reporting
- Duplexed PG implementation

## **1.4. Unified ICM Features Not Supported**

The present release of the Spectrum PG does not support Trunk Group real-time reporting.

## **1.5. Support for Spectrum Release 7.01.a and 7.01.b**

ICM 4.1.4 and later, has full support for all the new messages that the Spectrum Release 7.01a and 7.01b have added.

Prior to this release the new features and messages of Spectrum Release 7.01.a and 7.01.b will not be supported and have to be disabled on the switch by using the ED-SYS command.

Note they are disabled by default, but to shut them off set them all to N: TLAGNTSTATE=N, TLUNPLGGD=N, UNSHLDRTRV=N, UNSCALLDLD=N.

All subsequent releases from ICM release 4.1.4 on will have full support for the new features and messages in Spectrum ACD Release 7.01.a and 7.01.b, therefore the following parameters can be enabled or disabled depending on whether the customer wants to use the feature. Each of those parameters should be set to 'yes' if you want to take advantage of the new feature of Release 7.01.a and 7.01.b. If the new feature is not needed then each can be set to 'no'.

➤ **Modifications in the Spectrum Release 7.01.a**

Spectrum Release 7.01.a contains the following changes and new messages:

1. Position Status Change Message (TLAGNTSTATE): This message has been changed to provide the Agent State in addition to the Agent Activity. Also the Activity Message element has some new states, which tell whether the Agent or Supervisor plugs or unplugs their headset.
2. Three unsolicited messages were added. Unsolicited Held, Unsolicited Retrieved, and Unsolicited Call Dialed Message (UNSHLDRTRV, UNSCALLDLD): They allow Agent initiated hold, retrieve, and call dialed to be tracked and handled by Unified ICM. Previously these messages were only supported when using third party call control. Thus when these events were Agent initiated, the Unified ICM could not handle them previous to the new hotfix.
3. Activity & Agent State Message Elements (TLUNPLGGD): These message elements were changed to provide information about the Head Set being plugged/unplugged from the phone.

➤ **Modifications in the Spectrum Release 7.01.a**

Spectrum Release 7.01.b contained the following new messages:

1. Make Media Call Message: This message was added to request the ACD to allocate a media port and route a media call to the application specified in the message.
2. Media Call Accepted and Routed Message: This message indicates that the ACD has successfully allocated a media port and placed the media request into the specified application.
3. Announcement Info: This message indicates the announcement numbers of all the messages associated with a PLAY telescript step. These numbers are then associated by another host application with textual information such as "Thank you for calling. Your call is important".

## 2. ACD Configuration

Configuring the Spectrum ACD to support the Spectrum PG requires the following: Provisioning a Transaction Link port using either the X.25 data link or TCP implementation over LAN and Supervisor CRT port, modifying the Agents Class of Service, enabling the Transaction Link for Trunk Groups, and the modification of Routing and Application Telescripts.

## 2.1. Transaction Link Port Configuration

Configuring a Transaction Link port involves provisioning a port on the Spectrum as well as establishing a physical connection to the Spectrum PG via a cable in case of the X.25 data link implementation. A twenty-five foot cable and a synchronous null-modem adapter will be supplied by Cisco to establish this connection for the X.25 Data Link connection.

Alternatively, the Transaction Link on the LAN feature allows the Spectrum Transaction Link to have a TCP/IP interface over 10BaseT Ethernet LAN via the PDI III card. Two Transaction Links ports are needed configured on the two PDI III cards for Duplex PG with DualLink configuration.

### 2.1.1. Port Provisioning for X.25 Implementation

This section describes the requirements for interfacing with the Spectrum PG. The Spectrum PG must be assigned a port on either a PDI I or PDI II card. The port must be configured as a Transaction Link port. The port characteristics should be as follows:

**Table 1: Transaction Link Port Characteristics for X.25 Implementation**

| Port Characteristics | Value  |
|----------------------|--------|
| Device Type          | X25PVC |
| Baud Rate            | 19200  |
| Parity               | None   |
| Number of Bits       | 8      |
| Stop Bits            | 1      |
| Duplex               | FULL   |
| Circuit              | RS232  |
| Flow Control         | RTSCTS |

After provisioning, install the cable to Spectrum PG.

**Note:** Do **not** restore the port to service until the cable is in place, as this would result in Spectrum Alarms being generated. Restoring the port will enable the Transaction Link application running on the Spectrum.

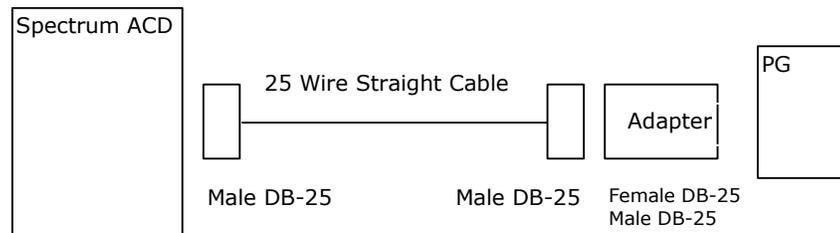
### 2.1.2. Transaction Link Cable Specifications for X.25 link

The connection between the PG and the Spectrum ACD is made using synchronous communications protocols. Synchronous communications protocols require that clocking signals be passed between both parties on a connection. On RS-232 cables, clocking signals are generally provided on pins 15 and 17 of the cable. Cables used in synchronous connections must therefore pass the signals end to end on these pins. The cable provided by Cisco is a straight cable (no crossovers, i.e. 1 to 1, 2 to 2, etc.), which

contains conductors for all twenty-five signals including the crucial clocking signals. If it is necessary to extend or replace this cable for a longer cable, a straight cable that passes all twenty-five signals end to end is required.

**Note:** Cables must be evaluated very carefully when determining suitability since asynchronous (or terminal cables) may look similar, but these cables generally do not pass the clocking signals since asynchronous communication does not require clocking. Use of an asynchronous cable will result in an inoperable Transaction Link.

In addition to the straight cable, Cisco will provide a synchronous null-modem eliminator adapter. The adapter has been specially designed to crossover the dataset leads and clocking signals to eliminate the need for short haul modems. The connector supplied by Cisco must be used in any cable configuration. As a customer, you need not substitute in house connectors for this part since it is a custom connector (Belkin P/N A4A602-16298 Cisco V.24 Null Modem Adapter).



**Figure 2: Transaction Link Cable Diagram using X.25 data link**

Following is the correct pin-out for a Synchronous Null Modem Adapter, DB-25 connector on both ends:

```

1<->1
2<->3
3<->2
4&5<->8
6<->20
7<->7
8<->4&5
15&17<->24
20<->6
24<->15&17

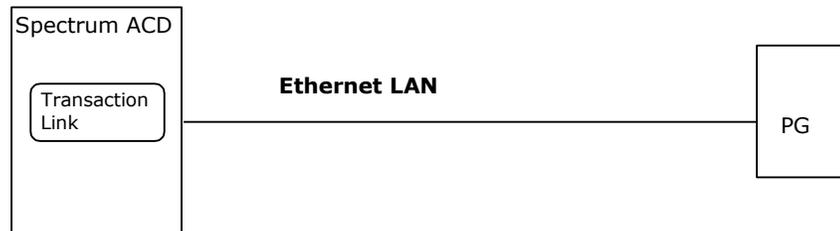
```

**Note:** An Asynchronous Null Modem Adapter used for connecting a CRT or Printer will not work in X.25 as leads 15,17, & 24 are needed to pass the synchronous clocking for X.25.

### 2.1.3. Port Provisioning for TCP/IP Implementation

All sessions are initiated by the PG. The Spectrum acts as the server system. The PG initiates a session by establishing a socket connection to the port configured to provide the Transaction Link on the LAN capability. The PG client uses the Internet IP address associated with the LAN SDP

(port 2) of the PDI III card to which it is attempting to connect. The connection port address is calculated by multiplying the card-relative port number of the SDP configured for this feature by 2 and adding 3100 to it. For example, if SDP A-08-16-23 is configured with a TLLAN device type, the port address to which to connect is  $((23*2) + 3100) = 3146$ . A session can be terminated by either the PG or Spectrum simply by closing the socket that is being used to communicate. The Spectrum will only do this if SDP or the PDI III card is taken out of service.



**Figure 3: Transaction Link Diagram using TCP over Ethernet LAN**

## 2.2. Supervisor CRT Link

Configuring a Spectrum Supervisor CRT port involves provisioning a port on the Spectrum as well as establishing a physical connection to the Spectrum PG via a cable. A twenty-five foot cable and asynchronous null-modem adapter will be supplied by Cisco to establish this physical connection. If the Duplex PG configuration has been purchased, two ports must be provisioned and Cisco will supply two sets of cables and connectors. In addition, a user account must be created for use by the Cisco PG which is capable of performing the following commands: ACT-USER, CANC-USER, RTRV-SECU-USER, ABT-CMD, RTRV-STAFF, and RTRV-HDR.

### 2.2.1. Port Provisioning

This section describes the requirements for interfacing the Supervisor CRT Link with the Spectrum PG. The Spectrum PG must be assigned a port on either a PDI I or PDI II card. The port must be configured as a CRT port. The port characteristics should be as follows:

**Table 2: Supervisor CRT Port Characteristics**

| Port Characteristics | Value        |
|----------------------|--------------|
| Device Type          | ADDS4000     |
| Baud Rate            | 4800 or 9600 |
| Parity               | None         |
| Number of Bits       | 8            |

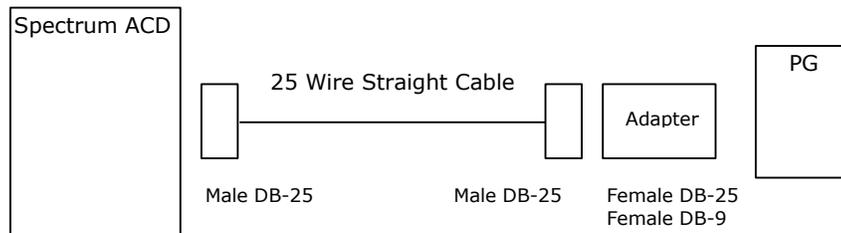
|              |         |
|--------------|---------|
| Stop Bits    | 1       |
| Duplex       | FULL    |
| Circuit      | RS232   |
| Flow Control | XONXOFF |

After provisioning, the cable to Spectrum PG should be installed. Restoring the port will enable the CRT driver running on the Spectrum.

### 2.2.2. Supervisor CRT Specifications

The connection between the PG and the Spectrum ACD is made using the asynchronous serial communications protocol. The cable provided by Cisco is a straight cable (no crossovers, i.e. 1 to 1, 2 to 2, etc.), which contains conductors for all twenty-five. If it is necessary to extend or replace this cable for a longer cable, a straight cable that passes all twenty-five signals end to end is required. In addition to the straight cable, Cisco will provide an asynchronous null-modem eliminator adapter, which is DB-25 Female on the cable end and DB-9 female on the PG end.

**Note:** As a customer, do **not** substitute in-house connectors for this part since they may not be electrically equivalent.



**Figure 4: Supervisor CRT Link Cable Diagram**

### 2.2.3. Supervisor CRT User Account

A user account should be created with a UserId of CISCO and a Password of CISCO. The user privilege code for this user account should be A3&P3&M3, which allows this account to access the above CRT commands.

## 2.3. Unified ICM Required Routing Telescript Changes

The Unified ICM requires you, as the customer, to modify the existing Spectrum routing telescripts to accurately track calls from the time they arrive at the Spectrum. To accomplish this task, you need to add a single telescript INFORM HOST step. If the Unified ICM Translation Routing feature is to be implemented, an additional REQUEST HOST step will be required in the routing telescript to request a host route. See the sections that follow for details.

### 2.3.1. Call Arrival

The INFORM HOST ON ARRIVAL telescript step causes a call arrival message to be sent to the PG each time a call arrives at the Spectrum. The PG begins tracking calls upon receiving the arrival message. Failure to insert the INFORM HOST step will result in the call not being tracked until later in the call delivery sequence. The net result is that the call time reported by the Unified ICM may not be accurate. The inaccuracy of the reported call time varies based on the call type (ACD, DID, etc.) and the destination as determined by the routing telescript. The inaccuracy can range from a few hundred milliseconds to many seconds depending on the Trunk Group configuration, Agent class of service, and application telescripts that the call passes through. It is therefore required that **all** routing telescripts contain an INFORM HOST step as early as possible in the routing telescript.

### 2.3.2. Translation Routes

The Cisco Translation Routing feature requires that a REQUEST HOST telescript step be added to all routing Telescripts that process Translation Routes. The REQUEST HOST step causes a route request message to be sent to the PG for the given call. The PG will respond to this message by presenting a destination to the Spectrum, which in turn will send the call to the specified destination. This step should only be added to those Routing Telescripts, which process Translation Routed calls. Failure to add this step will cause Translation Routed calls to be incorrectly delivered. Adding this step to a Routing Telescript, which is not processing translation routed calls may cause calls to be incorrectly delivered.

### 2.3.3. Basic Routing Telescript Example

```
1 RETRIEVE NETWORK INFORMATION
2 INFORM HOST ON ARRIVAL
3 ROUTE TRANSLATION
```

### 2.3.4. Translation Routing Telescript Example

```
1 RETRIEVE NETWORK INFORMATION
2 REQUEST HOST INSTRUCTION ON ARRIVAL 2 SECONDS
3 ROUTE TRANSLATION
```

## 2.4. Unified ICM Required Application Telescript Changes

The current Unified ICM product requires you, as the customer, to modify existing application telescripts in order to supplement the default information the Spectrum sends over the Transaction Link. The supplemental changes are sent over the Transaction Link using the INFORM HOST ON SI application vector step. The Spectrum PG decodes the host\_info portion of the INFORM HOST ON SI step to determine a call's supplemental state. These steps are used to inform the PG that a call has been offered to a Spectrum application, a call has been queued to a

Spectrum Agent group, or to specify Caller Entered Digits collected on the Spectrum.

The Release 5.2 of the Spectrum ACD introduces a new message, called the Call Status message, which is used to enhance the Subscriber Information feature on the Transaction Link. The reason for using the INFORM HOST CALL STATUS step is that it will help in providing better statistics on the Spectrum ACD. It must be understood that although the INFORM HOST CALL STATUS step can provide an alternative to the INFORM HOST ON SI application vector step, except in case of Post-Routing, they may both exist on the same telescript. To support Post-Routing on the Spectrum ACD, the customer must still insert application vector steps to perform a REQUEST HOST ON SI telescript step. The new implementation is supported only in ICM Release 2.5 and beyond.

### 2.4.1. Call Event Notifications

The Unified ICM requires you, as the customer, to modify existing application telescripts in order to supplement the default information the Spectrum sends over the Transaction Link. The supplemental messages are sent over the Transaction Link using the INFORM HOST ON SI or INFORM HOST CALL STATUS application vector step. The Spectrum PG decodes the host\_info portion of the INFORM HOST ON SI step to determine a call's supplemental state, or this information is implicitly contained in the INFORM HOST CALL STATUS step. These steps are used to inform the PG that a call has been offered to a Spectrum application, a call has been queued to a Spectrum Agent group, or to specify Caller Entered Digits collected on the Spectrum.

#### Call Offered

The Call Offered message defines when a call has been offered to a Spectrum application. The Call Offered message is defined by an INFORM HOST ON SI vector step where the host\_info string is set to 'OFFERED\_xxx', where xxx represents the Spectrum application number (Unified ICM Service Peripheral Number) associated with the Call. When using the INFORM HOST CALL STATUS step, the application number is present in the Call Status message associated with the call. This step should be very close to the beginning of the telescript, and there should not exist any branches within the script that will not execute this step.

```
1      INFORM HOST ON SI DIGIT FOR 'OFF_1'
      OR
1      INFORM HOST CALL STATUS DIGIT
```

#### Example 1. Call Offered Message

This INFORM HOST CALL STATUS DIGIT vector step can also be used in place of the INFORM HOST ON SI DIGIT vector step. This step does not require the 'OFF\_xx' as it automatically informs Cisco Unified ICM about the call offered, queued, or customer-entered-digits collected.

### Call Queued Message

The Call Queued message defines when a call has been queued for a Spectrum Agent group. The Call Queued message is defined by an INFORM HOST ON SI vector step where the host\_info string is set to 'QUEUED\_xxx', where xxx represents the Spectrum Agent group number to which the call was queued. The QUEUED INFORM HOST step should be placed after the QUEUE AGENT GROUP vector step. It is also necessary to insert a 1-second delay step between the QUEUE AGENT GROUP STEP and the INFORM HOST 'QUEUED' step due to the timing window in Spectrum telescript processing. When using the INFORM HOST CALL STATUS step, the queued Agent groups are present in the Call Status message associated with the call.

```
1    QUEUE AGENT GROUP 80
2    DELAY 1
3    INFORM HOST ON SI DIGIT FOR 'Q_80'
      OR
1    QUEUE AGENT GROUP 80
2    INFORM HOST CALL STATUS DIGIT
```

### Example 2. Call Queued Message

#### Caller Entered Digits Message

The Caller Entered Digits message makes it possible to Post Route a call based on digits collected by the Spectrum in an Application Telescript. The Caller Entered Digits message is defined by an INFORM HOST ON SI vector step or the INFORM HOST CALL STATUS vector step where the host\_info string is set to 'CED', and the collected digits are contained in the application telescript variable "DIGIT". The CED INFORM HOST step should be placed before requesting a Post Route with the REQUEST HOST vector step. Multiple CED messages may be sent for a given call, although only the CED message immediately preceding the REQUEST HOST vector step will be used by the Unified ICM to determine the route.

```
1    COLLECT 4 IN DIGIT
2    INFORM HOST ON SI DIGIT FOR 'CED'
      OR
1    COLLECT 4 IN DIGIT
2    INFORM HOST CALL STATUS DIGIT FOR 'CED'
```

### Example 3. Caller Entered Digits Message

#### 2.4.2. Post-Routing on the Spectrum ACD

To support Post-Routing on the Spectrum ACD, the customer must insert application vector steps to perform a REQUEST HOST ON SI telescript step.

**Note:** The host digits field of the INFORM HOST step may be used to consolidate the “offered” message with a route request in cases where the route request occurs in the beginning of the application telescript.

If Caller Entered Digits are to be passed to the Unified ICM routing script, the “CED” message must precede the REQUEST HOST vector step.

```

1      REQUEST HOST ON SI DIGIT FOR 'OFF_1'
      OR
1      COLLECT 4 IN DIGIT
2      INFORM HOST ON SI DIGIT FOR 'CED'
3      REQUEST HOST ON SI DIGIT FOR 'OFF_1'

```

#### Example 4. Route Request Message

**Note:** Starting ICM 6.0 SR1 ES14, Post Routing was enhanced on the Spectrum PG to look up the Dialed Number used to Post Route the call. The Spectrum PG will look for the ‘Dialed Number’ in this order:

1. Extension field of the Unified ICM Peripheral Service XXXX where XXXX is the OFF\_XXXX part of the Post Route ACD telescript message (if present).  
or
2. DNIS provided by the ACD in the Call Arrival Message.  
The reason why this is an enhancement is that the ACD messaging interface must present a DNIS to the PIM prior to Post Route, but, it doesn't in all cases. In cases where DNIS is absent, see resolution below.

**Resolution:** Create a Unified ICM Peripheral Service in the Unified ICM database with Peripheral Number = XXXX where XXXX is the OFF\_XXXX part of the Post Route ACD telescript message. In the extension field of this Service configuration, fill in the Dialed Number for this Service, i.e. same dialed number configured in the Unified ICM to look up the correct Unified ICM script to post route this call. The PG change will look for this Dialed Number first and only if it doesn't find one, it will use the DNIS it knows about (from ACD). This will return the correct label and the call will be post routed correctly.

## 2.5. Customer Migration Strategy

The Call Status message is available only in the Release 5.2 of the Spectrum ACD. Prior to this release, you, as the customer, must include the INFORM HOST ON SI step in the application telescripts to provide the call supplemental state to indicate that the call has been offered to a Spectrum application, or the call has been queued to certain Agent groups, or to specify Caller Entered Digits collected on the Spectrum.

In the Release 5.2 and beyond, you, as the customer, do not necessarily need to change the telescripts, unless you want to use the INFORM HOST CALL STATUS step as an alternative to INFORM HOST ON SI step, which will help in providing better statistics on the Spectrum ACD. The Spectrum PIM will support both the old and the new methods. The

advantages and configuration changes for the new method using the INFORM HOST CALL STATUS STEP are listed below. The new implementation is supported only in ICM Release 2.5 and beyond.

The Call Status message provides the following advantages in using the subscriber information feature as compared to the prior implementation:

1. The Spectrum ACD continues executing telescripts for a period of time after a call has been connected to an Agent. This race condition can allow the Spectrum to send a Subscriber Info Queued message after the call has been connected. This could lead to calls being counted as queued for the entire talk time which makes inaccurate the longest queued call and thereby the expected delay. Currently, the PIM ignores queued indications for calls that are in connect state. The Call Status message will help in accurate tracking of the Agent groups to which the call is queued. This also allows for an accurate report of the longest queued call and thereby the expected delay.
2. When a call comes off an Agent group in the queue, the call status message is used to accurately track the remaining Agent groups to which the call is queued. This is done by de-queuing the Agent groups to which the call is no longer queued.
3. The Call Status message prevents a possible human error which could result by editing the application telescripts incorrectly in the case of specifying the application to which the call is offered, or in the case of specifying the Agent groups to which the call is queued.

You, as the customer, must modify the application telescripts in the following situations when using the INFORM HOST CALL STATUS step:

1. When the call is offered to a Spectrum application, the INFORM HOST CALL STATUS is used to indicate the Application ID (Unified ICM service peripheral number) to which the call is offered.
2. The application telescript may initiate an overflow request, and if that is successful, the telescript must perform INFORM HOST CALL STATUS step, to indicate to the host of the pending overflow, along with any other information that would apply to this scenario.
3. To specify the Caller Entered Digits, the application telescripts must perform the INFORM HOST CALL STATUS step, such that the host information string in the Call Status message is set as 'CED', and the digits are in the Telescript Digit variable.
4. To support Post-Routing on the Spectrum ACD, the customer must insert application vector steps to perform a REQUEST HOST ON SI telescript step.

## 2.6. Agent Class of Service

For Spectrum Releases 5.1 and beyond, the **HOSTAGNTCFG** flag must be enabled for each Class of Service whose Agents will receive calls routed by the Unified ICM. Setting this bit will allow call events (established and cleared) to be sent to the PG when an Agent is connected

or disconnected from a call. In addition, this bit will cause the Spectrum to send Agent state change messages to the PG over the Transaction Link as an Agent transitions through the various prevalent states. Failure to set this bit will inhibit the ability of the Unified ICM to accurately track Agent State.

Prior to Spectrum Release 5.1, the Transaction Link enabled bit must be set for each Class of Service whose Agents will be routed calls by the Unified ICM.

## 2.7. Trunk Group

Prior to the Spectrum Release 5.1, the Transaction Link enabled bit must be set for each Trunk Group to which the Unified ICM will route calls. As of Release 5.1 and later, the **HOSTFLAG** bit must be enabled for each Class of Service whose trunks will receive calls routed by the Unified ICM. Setting this bit will allow call events (arrival, offered, queued, CED) to be sent to the PG when a call arrives on a given trunk. Failure to set this bit will inhibit the ability of the Unified ICM to accurately track call times since the call will not be seen at the time it enters the switch.

**Note:** It is necessary to remove and restore from service the T1 cards that are associated with the Trunk Group for the change to take affect.

## 2.8. Example Application Telescripts

The following examples illustrate the use of the application telescript steps required to implement the supplemental Transaction Link message required by the Unified ICM. These scripts are provided solely for the purpose of illustrating the supplemental messages and are not intended to represent realistic application telescripts.

### 2.8.1. Basic Application Telescript Example Using INFORM HOST ON SI step

```
1 START TONE RINGBACK
2 INFORM HOST SI DIGIT FOR 'OFF_1'
3 QUEUE AGENT GROUP 1
4 DELAY 1 SECONDS
5 INFORM HOST SI DIGIT FOR 'Q_1'
6 DELAY 20 SECONDS
7 PLAY ANNOUNCEMENT 5
8 GOTO 6
```

### 2.8.2. Basic Application Telescript Example Using INFORM HOST CALL STATUS step

```
1 START TONE RINGBACK
2 INFORM HOST CALL STATUS DIGIT
3 QUEUE AGENT GROUP 1
4 INFORM HOST CALL STATUS DIGIT
5 DELAY 20 SECONDS
```

```
6 PLAY ANNOUNCEMENT 5  
7 GOTO 5
```

### 2.8.3. Post-Routing Telescript Example

```
1 PLAY ANNOUNCEMENT 63  
2 REQUEST HOST ON SI IN DIGIT FOR 'OFF_1' 10 SECONDS  
3 IF RESULT EQ FAILURE GOTO 5  
4 ROUTE TRANSLATION  
5 QUEUE AGENT GROUP 1  
6 DELAY 1 SECONDS  
7 INFORM HOST SI DIGIT FOR 'Q_1'  
8 DELAY FOREVER
```

## 2.9. Maintaining your Configuration

It is preferred that changes made to your configuration be accomplished first on the Spectrum ACD, then in the Unified ICM database. This will ensure that the PG sees the configuration updates on the Spectrum ACD system.

It is imperative that the Spectrum ACD, and Unified ICM database configurations are kept synchronized (that is, up-to-date with each other). Inaccurate or incomplete data could result in configuration errors.

To resolve reporting problems, which occur due to configuration errors, you must identify the difference between the configuration statistics of the Cisco Unified ICM, and the Spectrum ACD. Then, select the service that shows the largest discrepancy and verify the routing and the application telescripts for the correct implementation of the INFORM HOST steps, and the call flow. Also, enable the SEND CONFIG INFO TO HOST feature on the Agent, and the ALLOW HOST TRANSACTION feature on the Trunk Group Class of Service. You must deactivate, and reactivate, the trunks after you enable the ALLOW HOST TRANSACTION feature.

For the Unified ICM to be updated with all Agent activity changes from the ACD, and to resolve any missing activity reports from the ACD, ensure that the Agent Configuration parameter, ACTRPT, is set to Y.

## 3. Web Setup Tool and Unified ICM Configuration

The Web Setup tool is used to install Unified ICM components such as the Rockwell Spectrum PG software. This chapter provides information about the relationships between the database objects of the Rockwell Spectrum and the Unified ICM systems that help you properly configure the PG and maintain the Unified ICM database.

*See also:* For detailed information on the Configure Unified ICM user interface, see the *Configuration Guide for Cisco Unified ICM/Contact Center Enterprise and Hosted*.

## 3.1. Peripheral

The Unified ICM Peripheral corresponds to the Spectrum ACD.

### 3.1.1. Peripheral Configuration Parameters

The following table defines the fields allowed in the Unified ICM's Peripheral Configuration parameter in the Peripheral Table. Note the Supervisor CRT Login ID and password are specified when the Peripheral Gateway is installed. These values will become the default values. Values specified in the Peripheral Configuration string will override the default values.

**Table 3: Peripheral Configuration Parameter Element Descriptions**

| Field Delimiter | Peripheral Configuration Parameter Description   |
|-----------------|--|
| /crtid          | String specifying the switch login ID to be used when accessing the Supervisor CRT port. |
| /crtpword       | String specifying the password to be used when logging into the Supervisor CRT port.     |

The following is an example of a Unified ICM Peripheral Configuration String:

```
/crtid USER1 /crtpword SECRET
```

## 3.2. Peripheral Targets

An Unified ICM Peripheral Target is a network target identified by a Trunk Group and DNIS that terminates on the Spectrum ACD. A Peripheral Target is required for all DNIS and Trunk Group(s) through which an incoming call arrives.

**All** TrunkGroup/DNIS combinations that are in any way connected with the handling of any incoming ACD call should be configured in the Unified ICM as a Peripheral Target to ensure complete call monitoring.

Those calls that do not map to a valid Peripheral Target are associated with the Service defined in the host digits field of the INFORM HOST ON SI 'OFFERED' or 'INFORM HOST CALL STATUS' application vector step. If the Unified ICM cannot determine a route for the call, it uses the default route defined for the peripheral. By defining a default route for each peripheral, you ensure that the Unified ICM captures route-information for every call.

### 3.3. Trunk Groups

A Spectrum ACD Trunk Group is equivalent to a Unified ICM Trunk Group. The Trunk Group number, as defined on the ACD (e.g. Trunk Group 5) is the Unified ICM Trunk Group Peripheral Number. The Unified ICM Trunk Group Extension is not used by the Spectrum PG. The Number of Trunks field should be provided to allow the Unified ICM to track the utilization of Trunks within a Trunk Group.

### 3.4. Trunks

Individual Trunks are not monitored by the Spectrum Peripheral gateway. As a result, Trunks need not be entered in the Unified ICM configuration; and, therefore, no special configuration consideration is required for individual Trunks.

### 3.5. Services

A Unified ICM Service maps directly to a Spectrum Application. The Service Peripheral Number is equivalent to the Application Number as known on the Spectrum ACD. The extension field of the Unified ICM service maps to the Directory Number (DN) of the Spectrum Application.

The Peripheral Service Level field must be set to “Calculated by Call Center”.

### 3.6. Skill Groups

A Spectrum Agent Group is equivalent to the Unified ICM Skill Group. The ACD’s Agent Group Number is the Unified ICM Skill Group Peripheral Number. For all the releases before the release 5.2 of the Spectrum ACD, the Skill Group could be between 1 and 200. For the release 5.2 and greater of the Spectrum ACD, the Skill Group can now be between 1 and 1000. The Unified ICM Skill Group Extension is not used by the Spectrum PG.

No special configuration information is required for the Skill Group for the Spectrum ACD. If the MAXAGRP ACD system parameter is set to 256 or higher, the TwoByteAgentGroups setting in the Unified ICM registry must be set equal to 1 (default 0).

If the MAXAGRP ACD system parameter is set for less than 256, the TwoByteAgentGroup setting in the NT Registry must have a value of 0. You can add this setting by editing the PIM section of the Web Setup Tool, or by specifying the following in the NT Registry:

```
\Software\Geotel\ICM\cust_inst\PGxx\PG\CurrentVersion\PIMS\pimx\SpectrumData\Config\TwoByteAgentGroups
```

### 3.7. Skill Group to Service Mappings

The Unified ICM Skill Group to Service mapping corresponds to the list of Spectrum ACD Agent Groups selected throughout an Application Telescript for a given Spectrum Application. The Skill Groups are mapped

to the Unified ICM Service which is identified by the Unified ICM Service Peripheral Number.

### 3.8. Agents

The Unified ICM Agent corresponds to the Spectrum ACD Agent. The Unified ICM Agent Peripheral Number is the Spectrum ACD Directory Number assigned to the Agent. In other words, the Agent Peripheral Number is equivalent to the Agent's directory number as configured on the Spectrum ACD.

**Note:** Agents are dynamically configured by the PG if the Supervisor CRT link has been provisioned. If the Supervisor CRT link has not been provisioned, or if the Spectrum Release is 5.1 or earlier, each Agent must be configured. A configured Agent minimally requires that the Agent directory number be specified in the extension field.

### 3.9. Agent to Skill Group Mapping

When an Unified ICM Agent is configured, the Agent by default is not associated with any Skill Groups. It is necessary to associate the Agent with the Skill Groups which correspond to the Agent Groups configured on the Spectrum. The association is made via the Agent/Skill\_Group dialogue box. In cases where the Supervisor CRT link has been provisioned, or if the Spectrum Release is 5.1 or later, this association is not necessary.

**Table 4: Prevalent Agent State Definitions**

| ACD Agent State | Definition  |
|-----------------|---|
| UNAVAILABLE     | Agent has successfully signed into a console and is not available to handle application calls |
| BUSY            | Agent is currently handling a call and is therefore not available to handle application calls |
| CALLWORK        | Agent console CALLWORK lamp is lit and Agent is not available to handle application calls     |
| SIGNEDOFF       | Agent is not currently signed into a console  |
| AVAILABLE       | Agent is available to handle application calls, available console lamp lit                    |

**Table 5: Cisco/SpectrumACD Agent State Mappings**

| Cisco Agent State | Derivation from Spectrum Console Lamps and Prevalent Agent State |
|-------------------|--|
| Not Ready         | Any state where available console lamp is not lit                |
| Ready             | Any state where available console lamp is lit                    |

|              |  |
|--------------|--|
| Available    | AVAILABLE                                      |
| WorkNotReady | CALLWORK and available console lamp is not lit |
| WorkReady    | CALLWORK and available console lamp is lit     |
| TalkingIn    | BUSY with inbound call on ACD Line 1           |
| TalkingOut   | BUSY with outbound call on ACD Line 1          |
| TalkingOther | BUSY on position call or supervisor assist     |
| Logged Out   | SIGNEDOFF                                      |

Care must be taken when mapping Skill Groups to a given Agent. The Skill Group priority (PRI or SEC) must agree with the Agent definition on the Spectrum. If the Spectrum and the Unified ICM Skill Group to Agent mapping do not agree, Unified ICM routing telescripts will not behave as one might expect.

**Note:** To update the Agent State to Talking<sup>1</sup> as soon as the agent dials a call, you need to set the config registry DWORD (EnableAgtStateOnCallInit) to 1 in the following path:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Cisco System, Inc.\ICM\

```

### 3.10. Translation Routes

Translation Routes are supported on the Spectrum ACD Peripheral Gateway.

### 3.11. Routes

An Unified ICM Route is one or more Unified ICM Peripheral Targets that are logically equivalent, i.e., they identify the same logical target on the Spectrum ACD.

### 3.12. Routing Client

The Spectrum PG supports Post-Routing and can therefore be considered a Routing Client. To configure a Routing Client for the ACD, the Unified ICM Routing Client Peripheral entry should be set to the Unified ICM Peripheral defining the configured Spectrum ACD. The PG can route to the following: directory number, application, LWN (Logical WorkStation Number), or Target Party Number.

To initiate a Post Route, call processing on the Spectrum ACD must execute a REQUEST HOST ON SI application vector step. The responding Unified ICM label is an encoded Spectrum target which could

---

<sup>1</sup> This functionality is available on ICM 6.0 SR8 ES4, ICM 6.0 SR10, as well as ICM 7.1(4) onwards.

translate to an application or Agent/supervisor directory number or LWN or a Target Party Number. The Spectrum will issue a route request to the PG upon executing the REQUEST HOST ON SI vector step. The PG will request a route from the Unified ICM CallRouter. The label returned from the Unified ICM CallRouter will specify the target directory number which will then be forwarded to the Spectrum via a route response. If a time-out value was specified in the REQUEST HOST ON SI vector step, the route response must arrive within the specified time-out interval. If the response fails to arrive within the time-out interval, the application telescript will continue execution at the step that follows the REQUEST HOST ON SI step.

The Routing Client Configuration Parameters string should be empty.

### **3.12.1. Route Request**

The Spectrum ACD sends a route request to the PG via the INFORM HOST application vector step if the Instruction Needed flag is set. The Spectrum Application ID should be specified in the host digits field.

### **3.12.2. Route Select**

The PG receives the selected route information from the Router and converts it into a Spectrum Transaction Link route response message, which is sent to the Spectrum ACD. The resulting Label is an encoded Spectrum directory number. The directory number may identify an individual Agent or a Spectrum application. The label can additionally specify new values for call priority or call intercept level.

### **3.12.3. Label Syntax**

The Unified ICM label specifies a target and one or more options. The target can be of four types: a Directory Number (Agent or application), a Logical Workstation Number, an Application Identifier, or a Target Party Number. These distinct target types restrict the Unified ICM label to specifying a single target. The label can also specify optional values for Call Priority, Call Intercept Level, and Originating Announcement. The label may specify the target and the option specifiers in any order.

#### **Specifying Targets**

You specify targets in an Unified ICM label by providing an alpha prefix followed by a numeric value (for example, D5001). The alpha prefixes are not case-sensitive. The label parsing algorithm identifies a given target type based on its alpha prefix.

The prefixes include:

- **D** Directory number
- **L** Logical workstation
- **A** Application identifier
- **T** Target Party Number

Follow these prefixes with the numeric value of the target. The following table provides some examples:

| To specify...                                | Include this sub-string in the label: |
|--|---------------------------------------|
| Directory 5001 as the target                 | D5001                                 |
| Logical Workstation 272 as a target          | L272                                  |
| Application 3 as the target                  | A3                                    |
| Target Party Number 1800xxxxxx as the target | T1800xxxxxx                           |

**Note:** A valid label can only specify a **single** target type. Labels that specify multiple target types or invalid numeric target values (as defined in the following table) are invalid and will cause the switch telescript to default-route the call. If you specify a label with an invalid target, the Spectrum ACD executes the step following the REQUEST HOST ON SI step in the application telescript. If you specify an invalid option, the option is ignored. Releases later than Cisco ICM Release 8.5(2) will have full support (1-17) digits for the new prefix ‘T’ (Target Party Number).

Target values are validated based on the target type as shown below:

**Table 6: Target Validation Criteria**

| Target Type                | Validation Criteria   |
|----------------------------|-----------------------|
| Directory Number           | 1-5 Numeric Digits    |
| Application Identifier     | Numeric Value 1-200   |
| Logical Workstation Number | Numeric Value 1-65535 |
| Target Party Number        | 1-17 Numeric Digits   |

**Specifying Options**

In addition to a target, a label may also specify options. The Spectrum ACD currently allows you to modify the following call parameter options:

- Call Priority
- Call Intercept Level
- Originating Announcement.

As in the case of label targets, each option includes an alpha prefix followed by a numeric value. The option prefixes include:

- **P** Call priority
- **I** Call intercept level
- **O** Originating announcement

If you omit an option, its value remains unchanged. A label may make use of none, one, two, or all three optional fields. A label may not, however, contain more than one instance of a particular option. For example, to specify that a call be assigned a priority of 10 (P10), an intercept level of 20 (I20), and an originating announcement of 100 (O100), you would create a label with the following sub-string:

P10I20O100

**Note:** P10I20O100, I20P10O100, and O100I20P10 are all functionally equivalent since the order is not important. Each option specified in the label is validated and invalid options are ignored. The label option validation criteria is shown below:

**Table 7: Option Validation Criteria**

| Option                   | Validation Criteria |
|--------------------------|---------------------|
| Priority                 | Numeric Value 1-16  |
| Intercept Level          | Numeric Value 1-32  |
| Originating Announcement | Numeric Value 1-999 |

### EXAMPLES

A target and options may be combined in various combinations to specify a label. A list of sample labels is shown below:

- ‘D5001’ - Call routed to directory number 5001
- ‘d5001’ - Same as above, prefix letters are not case dependent
- ‘L272’ - Call routed to Logical Workstation number 272
- ‘A3’ - Call routed to Spectrum Application 3
- ‘A3L272’ - Invalid label, multiple targets specified
- ‘D500001’ - Invalid label, greater than 5 digits specified
- ‘I31D2000P6’ - Call routed to directory number 2000, call priority set to 6 and call intercept level set to 31
- ‘D2000P6I31’ - Same as above since target/option specifier is order independent

### 3.13. Maintaining your Configuration

It is preferred that changes made to your configuration be accomplished first on the Spectrum ACD, then in the Unified ICM database. This will ensure that the PG sees the configuration updates on the Spectrum ACD system. When upgrading the Spectrum ACD to a new version, be sure to enter the Spectrum ACD Version in the Web Setup Tool as a number. For

example, Spectrum ACD Version 7.01.A should be entered as 7.01.10 and 7.01.B should be entered as 7.01.11.

It is imperative that the Spectrum ACD, and Unified ICM database configurations are kept synchronized (that is, up-to-date with each other). Inaccurate or incomplete data could result in configuration errors.

To resolve reporting problems, which occur due to configuration errors, you must identify the difference between the configuration statistics of the Cisco Unified ICM, and the Spectrum ACD.

Check the MAXAGRP setting on the ACD and the PG. If the MAXAGRP ACD system parameter is set to 256 or higher, the TwoByteAgentGroups setting in the Unified ICM registry must be set equal to 1 (default 0). If the MAXAGRP ACD system parameter is set for less than 256, the TwoByteAgentGroup setting in the NT Registry must have a value of 0.

**Note:** For the registry changes to take effect, you must stop and start the PG services.

Review the Service\_Member table to verify whether the Unified ICM Skill\_Group and Service configurations match the Spectrum Agent Group and Application configuration. Set the SubGroupMask property in the Unified ICM Peripheral or Skill\_Group tables based on the agent skill levels.



## 4. Spectrum TPCC/TPAC Services

The Unified ICM provides support to Third Party Services using the existing CTI Server architecture. This chapter describes the TPCC/TPAC access provided by the Spectrum PIM.

**Note:** The Spectrum TPCC/TPAC services are available only in ICM Release 3.0 and above.

## 4.1. Overview

The support for Third Party Services uses the existing CTI Server Architecture to provide TPCC and TPAC access. The CTI Client will request a Third Party Service via the Unified ICM CTI Server Process. The Unified ICM CTI Server Process forwards the request to OPC running on the Peripheral Gateway. The OPC process then informs the PIM associated with the CTI Client that is making the request. The PIM then requests the services from the ACD CTI Interface on behalf of the CTI Client. The ACD response to the requested CTI service is then forwarded to the OPC process, then back to the CTI Server process and then to the requesting CTI Client.

## 4.2. Spectrum TPCC Services

The Third Party Call Control Telephony Services allow applications to establish, answer and terminate Unified ICM calls at a telephone device on behalf of the CTI Client Application. The list below shows the TPCC Services supported by the Spectrum PIM.

- **TPServices::CSTAAlternateCall**

The `cstaAlternateCall` Service is supported by a compound action in the PIM. The PIM would have to implement `HoldCall` to place the current call on HOLD. Following a positive acknowledgment from the `HoldCall`, the PIM will request a `RetrieveCall`.

- **TPServices::CSTAAnswerCall**

The Transaction Link provides no CTI support to allow an Agent to answer a specified call. The only thing the PIM can do is make the Agent available when a call is alerting the Agent.

- **TPServices::CSTAClearCall**

The PIM is required to perform a `ClearConnection` for all parties associated with the call when this message is received.

- **TPServices::CSTAClearConnection**

The `cstaClearConnection` Third Party Service is serviced by the Transaction Link function `ClearConnection`.

- **TPServices::CSTAConferenceCall**

The `cstaConferenceCall` Service is supported by a compound action in the PIM for an Agent having an active party and a held party. The PIM must send the `Retrieve Call Message` for the held call while one call is already active at the Agent's device. If two calls are on HOLD, the PIM must send a `Retrieve Call message` for both calls.

- **TPServices::CSTAConsultationCall**

The `cstaConsultationCall` Service is supported by a compound action in the PIM. The PIM would have to implement `HoldCall` to place the current call on HOLD. Following a positive acknowledgment from `HoldCall`, the PIM will request a `MakeCall`.

- **TPServices::CSTAHoldCall**

The cstaHoldCall Third Party Service is serviced by the Transaction Link function HoldAgentCall.

- **TPServices::CSTAMakeCall**

The cstaMakeCall Third Party Service is serviced by the Transaction Link function MakeAgentCall.

- **TPServices::CSTAMakePredictiveCall**

The cstaMakePredictiveCall Third Party Service is serviced by the Transaction Link function MakePredictiveCall.

- **TPServices::CSTARReconnectCall**

The cstaReconnectCall Service is supported by a compound action in the PIM. The PIM must send a Clear Connection message followed by a Retrieve Call request.

- **TPServices::CSTARRetrieveCall**

The cstaRetrieveCall Third Party Service is serviced by the Transaction Link function Retrieve Call.

- **TPServices::CSTATransferCall**

The support for cstaTransferCall will require the PIM to invoke one of two Transaction Link functions depending on the state of the calls involved. The NewPartyTransfer function supports blind transfers when a call is associated with an active TRUNK. The TransferCall function supports transferring a position call to a position, an application or an off-net number. This is used when a call is associated with only an Agent Position.

### 4.3. Spectrum TPAC Services

- **TPServices::CSTASetAgentState**

The cstaSetAgentState Third Party Services are serviced by the SetFeatureAccess function. The SetFeatureAccess Service is used to perform the following Agent feature accesses: Login, Logout, Available, Unavailable, and Call Work.

The SetFeatureAccess mechanism optionally takes a Primary and Secondary Agent Groups at the time of login. If the Primary Agent Group is not provided, the switch performs the login for the Agent with the configured Agent Group assignments on the switch. The SetFeatureAccess allows Third Party applications to override the switch configuration for an Agent.

### 4.4. Caveats

The following restrictions should be kept in mind and are a result of the Spectrum ACD functionality:

- When a call is Conferenced, both the original call and the consult call continue to exist. Therefore, both calls will appear on the Conference

Controller's call appearance and each can be individually controlled. If, as the Controller, you want to drop out of the Conference, you have to perform a Transfer between the other two parties so they can continue talking.

- A Conference call is limited to 3 parties.
- Blind Conference is not supported.
- There is no CTI support to allow an agent to answer a specific call. An agent can be made to go to Available so an alerting call can be auto-answered.
- Spectrum requires the AgentID field to contain the AgentInstrument (a.k.a. AgentExtension) for all agent control requests except the Login request. For the Login request, the actual AgentID is required (assuming that AgentID is distinct from AgentInstrument/AgentExtension).
- The Login request also requires the PositionID, which is an indication of the physical phone/device that the agent intends to log into.
- Agent is required to be in the NotReady state to either make a call or to Logout.
- Logout request needs a Reason code.
- When the PG fails over, active calls are lost. Therefore, agents with an active call must go to the IDLE state (no calls) before full CTI operation can be resumed.

## 5. Media Blender Configuration for Rockwell Spectrum

This chapter discusses what you need to know and do to configure the Cisco Media Blender for use with the Rockwell Spectrum ACD.

**Note:** Media Blender Configuration for Rockwell Spectrum is not supported for Unified ICM 8.0 and above.

## 5.1. Media Blender Integration with the Unified ICM system software

The Media Blender software is integrated with Unified ICM and the Unified ICM routes calls through the Media Blender by means of the Cisco CTI Driver.

The Media Blender provides support for IPCC and legacy ACDs, including the Rockwell Spectrum, using the Cisco CTI driver. A new firewall gateway service allows CCS (Cisco Collaboration Server), which resides outside a firewall, to communicate with an Unified ICM Peripheral Gateway(s) that resides inside the firewall. An example of a FirewallGateway.properties file is shown later in this document.

## 5.2. Key Property Files

You need to edit or check the following Media Blender property files:

- Blender.Properties
- ACD.ciscocti.properties
- Collaboration.properties (copied from CCS)
- Phantoms.properties
- <Connection\_CMB>.properties (copied from CCS)
- Service.FWGW.properties
- FirewallGateway.properties
- Resource.properties
- Agentmapping.properties

The following two of these files are connection property files that you need to copy from the collaboration **CCS** (Cisco Collaboration Server) system to the **CMB** (Cisco Media Blender) system:

- Collaboration.properties
- <Connection\_CMB>.properties

The appropriate directory paths to copy from and to are listed below under the associated property file names.

**Note:** The user names the <Connection\_CMB>.properties file. By doing so, the user can create a meaningful name for the site; for example, a name containing the names of the machines that are linked.

### 5.2.1. Blender.Properties

In the CiscoMB\Servlet\Properties\Blender\**blender.properties** file, configure the following two properties as follows. This means that you uncomment the two lines setting these properties in the property file:

**medium1=ACD.ciscocti.properties**

Required. The Medium1 property identifies the property file for the ACD medium used with the Media Blender. **Note** that this property file must reside in the same directory as `blender.properties`. The file used for the Rockwell Spectrum is `ACD.ciscocti.properties`.

**medium2=Collaboration.properties**

Required. The **Medium2** property identifies the property file for the call queuing medium and should be listed after `medium1`. **Note** that this property file must reside in the same directory as `blender.properties`. The file gets created by the Cisco Collaboration Server and needs to be copied to the Cisco Media Blender directory. See section 5.2.3 on the `Collaboration.properties` file for further information.

**Verbose=8**

Optional. Add the `verbose=8` entry to the property file if you want to enable more test related information in the blender logs

**Service1=Service.jwgw.properties**

Required. Uncomment `Service1` to enable Firewall Gateway Service.

### 5.2.2. ACD.ciscocti.properties

In the CiscoMB\Servlet\Properties\Blender\**ACD.ciscocti.properties** file, edit or add the following property settings:

- **callclassfield=callclass**

If you require multiple strategies, you must configure `callclasses.properties`

Required.

Example: **callclassfield=**

- **callclasstable=callclasses.properties**

The name of the field in the web callback request containing the call class

Required.

Example: **callclasstable=**

- **peripheral.type=Rockwell**

Required. Uncomment the line with the Rockwell peripheral type.

- **peripheral.id**=<insert here the peripheral ID, as defined in the Unified ICM PG Explorer>  
Required.  
Example: peripheral.id=5007
- **peripheral.hostname**=<insert here the host name for CTI Server for this peripheral>  
Required. This is the peripheral name or the Agent PG's IP address to the peripheral.  
Example: peripheral.hostname=m2pg10a
- **peripheral.hostport**=<insert here the host port of CTI Server for this peripheral>  
Required. This can be obtained from the process window title bar of the CTI Server connected to the Agent PG. This is the primary port connection between the media blender and the peripheral.  
Example: peripheral.hostport=42027
- **peripheral.hostname2**=  
The name of the backup peripheral that connections to the media blender.  
Optional.  
Example: m2pg10b
- **peripheral.hostport2**=  
The backup port connection between the media blender and the peripheral.  
Optional.  
Example: 43027
- **peripheral.username**=<insert here the peripheral user name>  
Required.  
Example: peripheral.username=cmb-m2cmb3
- **peripheral.password**= (If there is no password, you can leave this blank)  
Optional.  
Example: peripheral.password=
  - **passwordfile**=phantompasswords.properties  
The name of the file that contains agent passwords for auto-login. This is only used for phantom lines that need actual agents logged into them.  
Optional.  
Example: passwordfile=phantompasswords.properties (this is passwords.properties in pre 5.0 versions)

- **peripheral.comment=** /\*Enter optional comments here\*/  
Optional.  
Example: peripheral.comment=/\* m2cmb3 is attached to a Rockwell ACD via M2PG8a \*/
- **physicallocationfile=**  
The name of the file that contains the map between agent logical ids and instrument numbers. This is only used for phantom lines that require agents logged into them.  
Example: **physicallocationfile=**phantomagents.properties (this is agents.properties in pre 5.0 versions)
- **phantompool=phantoms.properties**  
Required if you are using any phantom strategies.  
The name of the file that contains the list of phantoms. This file must be used if you are using phantom strategies.
- **autoanswer=true**  
Optional.  
Set this to true so that the Media Blender answers Media Blender-controlled incoming calls for the agent. There is no need for the agent to answer the agent's phone.
- **readyaftersignon=true**  
Required.  
Set this to true to place an agent in the ready state after auto-login.
- **ignoreareacode=**<insert here the area code and, if you want, the exchange that you want to have ignored>  
Optional. However, it must be set if you want the area code or part of the phone number ignored. This is used for internal testing with the next property so that calls can be routed by their last digits only.  
Example: Ignoreareacode=978322
- **permittedphonenumlength=**<insert here the phone digits>  
Optional. However, this must be used if you are using the Ignoreareacode property. This specifies the number of digits, beginning with the last one that is used to route a number. Do not use commas to separate number length options. Use spaces to separate the numbers. The following example says that the system will route calls by 10, 5, or 4 digits.  
Example: Permittedphonenumlength=10 5 4  
**Note:** The properties ignoreareacode and permittedphonenumlength must be set up appropriately to place the call to the customer.
- **delayonassignanswer=1000**  
This determines how many milliseconds the Media Blender should wait before answering a phantom call. Recommended value is **1000**.

- **delayonassignhold=1000**  
Determines how many milliseconds Media Blender should wait before placing a phantom call on hold from the agent's phone. Recommended value is **1000**.
- **Delayonassigncallout=1000**  
Used for PhantomConsultRelease and PhantomConsultNoRelease strategies.
- **delayonassigndropphantom= 2000**  
Determines how many milliseconds Media Blender should wait before dropping the phantom line. Recommended value is **2000**.
- **Delayonassigncallout=1000**  
Determines how many milliseconds Media Blender should wait before placing an outbound call to the caller from the agents phone. Recommended value is **1000**.
- **dropphantomdelay=2000**  
When using the phantomNoCallRelease strategy, this property is used so that the agents can go to 'CALLWORK' and then to UNAVAILABLE..
- **peripheral.agentlogoutreasoncode=**  
Provides a reason code for the agent when logging out from Collaboration Server. Valid values are 1 through 6.  
Example: peripheral.agentlogoutreasoncode=4
- **agentmapping.properties**  
Maps both agent and phantom extensions to their logical IDs.  
Example:  
2007=200705001  
2008=200805001  
2011=201105001  
2012=201205001
- **phantomloginthreshold=100**  
Determines the minimum percentage of phantom agents configured in the phantom pool file that should get logged in to the phone. The default is 100.  
Example: phantomloginthreshold=70

### 5.2.3. Collaboration.properties

This properties file is created by the Collaboration Server. You need to manually copy the **Collaboration.properties** file from the collaboration **CCS** (Cisco Collaboration Server) system to the **CMB** (Cisco Media Blender) system.

The directory paths to copy from and to are as follows:

**From:**

<CCS\_dir>\servlet\properties\cmb\connection\_name\blender\collaboration.properties

**To:**

<Cisco\_MB\_directory>\servlet\properties\blender\collaboration.properties

### 5.2.4. Phantoms.properties

In the CiscoMB\Servlet\Properties\Blender\**phantoms.properties** file, add or edit the ID list of all your phantom agents and their types. You can use the agent's ID or the agent's extension number as an ID. D=DIGITAL is the only valid type. Use the format **ID\_number=D**.

Required.

Example: 5584=D  
5583=D

### 5.2.5. phantomagents.properties

This file was called agents.properties in pre 5.0 versions.

The list of phantom agent ids and their physical devices. The phantom is used to queue the call to the caller.

Required.

Format: Voice Agent ID = Terminal ID

Example: 2011=2011  
2012=2012

### 5.2.6. phantompasswords.properties

(called Phantompasswords.properties in pre 5.0 versions)

The list of phantom agent ids and their passwords.

Format: Voice Agent ID = Terminal ID

Example: 2011={enc:2}LDI3Nw= =  
2012={enc:2}LDI3OA= =

**Note:** When adding agents and their passwords to this file, add them as '218=218' and when Blender is started, the password will automatically be encrypted.

### 5.2.7. <Connection\_CMB>.properties

This properties file is created by the Collaboration Server, but you have to name it when you are configuring the Collaboration server for the media blender. You might put in the name the names of the two machines it connects.

You need to manually copy the **Connection\_CMB.properties** file from the collaboration **CCS** Cisco Collaboration Server system to the Cisco Media Blender system.

The directory paths to copy from and to are:

**From:**

<CCS\_dir>\servlet\properties\cmb\conn\_name\<Connection\_CMB>.properties

**To:**

<CMB\_dir>\servlet\properties\<Connection\_CMB>.properties

#### An Example <Connection\_CMB>.properties File

```
## -----##
## RMI Properties ##
## -----##
conn6_cmb.rmi.Name=conn6_cmb
conn6_cmb.rmi.RemoteHost=m2ccs6
conn6_cmb.rmi.RemoteRegistryPort=1099
conn6_cmb.rmi.RemotePassword={enc:2}Zm9v
conn6_cmb.rmi.LocalRegistryPort=1099
conn6_cmb.rmi.LocalPassword={enc:2}Zm9v
conn6_cmb.rmi.Description=
conn6_cmb.rmi.DisableAutoConnect=false
conn6_cmb.rmi.PollingHeartbeatCount=2
conn6_cmb.rmi.ConnectionAttempts=1
```

**Note:** The **HOSTS** file in the system32/drivers/etc directory should contain the host and IP address mappings for all the machines involved with RMI Firewall Gateway connections.

**Verify** and/or add entries as necessary on the CCS and CMB machines.

### 5.2.8. Service.FWGW.properties

In the CiscoMB\Servlet\Properties\Blender\service.FWGW.properties file, set autostart to true for the Firewall Gateway service.

Required.

Example: **autostart=true**

### 5.2.9. FirewallGateway.properties

The FirewallGateway.properties file is stored in the CiscoMB\Servlet\Properties directory. The following is an example FirewallGateway.properties file. The property values in bold are examples. You need to replace the bold text with the correct values for your system's configuration.

**Note:** If there is only a primary CTI Server host, either comment-out the **backup** server or use the same information as the primary. If you do not do this, the cmb.log file will fill an 1800 K file, 3 files per minute!

```
#####
# FirewallGateway.properties #
#####

#-----
#- Agent Reporting and Management (ARM) section
#-----

# Set the value of this property to false if there is no ARM
#connection
FirewallGateway.ARM.active=true

# Edit <Connection_CMB> in the following properties
FirewallGateway.ARM.LocalService=conn6_cmb_CMB_ARM
FirewallGateway.ARM.RemoteService=conn6_cmb_CCS_ARM
FirewallGateway.ARM.RMIProps=conn6_cmb.properties

# Edit <PrimaryHostname> and <BackupHostname> in the following
#properties
FirewallGateway.ARM.plugin.param.primaryCtiServerHostname=m1pg4a
(or IP address)
FirewallGateway.ARM.plugin.param.backupCtiServerHostname=m1pg4b
(or IP address) * use the same info as for the primary connection
OR just comment the line out (#)
```

```
# Edit <PrimaryServerPort> and <BackupServerPort> in the
#following properties
FirewallGateway.ARM.plugin.param.primaryCtiServerPort=42027
FirewallGateway.ARM.plugin.param.backupCtiServerPort=43027

# Do not edit the following properties
FirewallGateway.ARM.ACKType=ACK_ALL
FirewallGateway.ARM.ACKMaxDelay=5000
FirewallGateway.ARM.flushOnDisconnect=false
FirewallGateway.ARM.plugin.messageSpecsFile=CCSGED188ARMDefs.xml
FirewallGateway.ARM.plugin.class=com.cisco.msg.plugin.socket.CTIS
erverPlugin
FirewallGateway.ARM.plugin.param.topicCreator=com.cisco.ics.ccs.b
us.ICMCcsTopicCreator
FirewallGateway.ARM.plugin.param.waitForApplication=10

#-----
#- Media Routing (MR) section - Primary
#-----

# Set the value of this property to false if there is no MR
connection
FirewallGateway.MR_Primary.active=true
# Edit <Connection_CMB> in the following properties
FirewallGateway.MR_Primary.LocalService=conn6_cmb_CMB_MRI
FirewallGateway.MR_Primary.RemoteService=conn6_cmb_CCS_MRI
FirewallGateway.MR_Primary.RMIProps=conn6_cmb.properties

# Edit <Port> in the following property
FirewallGateway.MR_Primary.plugin.param.port=2000

# Do not edit the following properties
FirewallGateway.MR_Primary.ACKType=ACK_ALL
FirewallGateway.MR_Primary.ACKMaxDelay=5000
FirewallGateway.MR_Primary.flushOnDisconnect=false
FirewallGateway.MR_Primary.plugin.messageSpecsFile=MR.xml
FirewallGateway.MR_Primary.plugin.class=com.cisco.msg.plugin.sock
et.MediaRoutingPIMPlugin
FirewallGateway.MR_Primary.plugin.param.waitForApplication=10
```

```

#-----
#- Media Routing (MR) section - Backup
#-----

# Set the value of this property to false if there is no backup
MR connection
FirewallGateway.MR_Backup.active=true

# If the preceding property line is false, you can disregard the
following Edit lines
# and comment out the next 3 lines.
# Edit <Connection_CMB> in the following properties
FirewallGateway.MR_Backup.LocalService=conn6_cmb_CMB_MRI
FirewallGateway.MR_Backup.RemoteService=conn6_cmb_CCS_MRI
FirewallGateway.MR_Backup.RMIProps=conn6_cmb.properties

# Edit <Port> in the following property
FirewallGateway.MR_Backup.plugin.param.port=2000

# Do not edit the following properties
FirewallGateway.MR_Backup.ACKType=ACK_ALL
FirewallGateway.MR_Backup.ACKMaxDelay=5000
FirewallGateway.MR_Backup.flushOnDisconnect=false
FirewallGateway.MR_Backup.plugin.messageSpecsFile=MR.xml
FirewallGateway.MR_Backup.plugin.class=com.cisco.msg.plugin.socket.MediaRoutingPIMPlugin
FirewallGateway.MR_Backup.plugin.param.waitForApplication=10

```

### 5.2.10. Resource.Properties

The Resource.properties file is located in the C:\Program Files\New Atlanta\ServletExec ISAPI\ServletExec Data\default directory. This file allows you to add a user name by which you can log into the Media Blender.

### 5.2.11. agentmapping.properties

The agentmapping.properties file maps the agent extension to the agent logical ID for all agents configured on the Rockwell Spectrum ACD.

Edit the agentmapping.properties file and add a line for each agent (for example: 2007, 2008, 2009, 2010, 2011, 2012, and so on.). Then **restart** the media blender.

### Example Resource.Properties File

**Note:** Before doing the following, you need to **create** the user “qaadmin” through Microsoft Windows (Go to Programs → Administrative Tools

→ Computer Management. When the Computer Management window displays, select System Tools, then Local Users and Groups. Right click on the Users directory to add a new user. Make the new user a member of “Administrator”.) Then **restart** the Blender IIS Admin and WWW services.

The following example adds the user **qaadmin** to login as Blender Administrator.

```
Blender.groups=  
Blender.users=Administrator, qaadmin  
BlenderNew.groups=  
BlenderNew.users=Administrator, qaadmin  
wlPageCompile.groups=  
wlPageCompile.users=Administrator, qaadmin
```

## 5.3. Voice and Chat CTI Call Strategies

The available CTI strategies are designed to provide appropriate callback in different configurations and for different call strategies.

### 5.3.1. Voice Call Strategies

The following two CTI strategies can be used with voice calls.

#### **PhantomWaitRelease**

Media Blender dials into a queue using one of the phantom lines. Once the agent answers, the phantom line is placed on hold while Media Blender places an outbound call to the caller using the agent's second line. Once the caller answers the phone, the phantom line is released.

#### **PhantomWaitNoRelease**

This strategy is similar to PhantomWaitRelease except that the phantom line stays connected to the agent for the length of the call. This provides for a more detailed agent handle time reporting from the ACD, but it requires a larger pool of phantom lines. **One phantom** line is allowed for each caller.

#### **PhantomWaitOneLine**

This strategy is similar to PhantomWaitRelease, except that it drops the phantom call **before** placing the outbound call from the agent to the original caller. It is intended for use in contact centers where the agent phones are unable to handle two simultaneous calls. The strategy must only be used if the switch has been programmed to place the agent in a non-ready state as soon as the phantom call is dropped; otherwise, there is a small window of time where it is possible for another queued call to get routed to that agent before the Blender has a chance to place the outbound call.

### 5.3.2. Chat Session Strategies

The following three CTI strategies can be used for chat sessions. Note that when a chat session is active, the agent's phone is unavailable.

**PhantomNoCallRelease**

Use this strategy if you want to provide chat sessions and if your ACD is configured to place agents in a busy state as soon as their phones disconnect. This strategy connects to an agent but releases the phantom line immediately. The agent is placed in a busy state, allowing the agent and caller to engage in a text chat session uninterrupted.

**PhantomNoCallNoRelease**

Use this strategy if you want to provide chat sessions and if your ACD does not support the automatic busying out of agents. The Media Blender uses the phantom line to select the agent; however, the phantom does not release the agent's phone until the session is complete. This provides for more accurate reporting, but requires a larger pool of phantom lines.

**PhantomNoCallNoHold**

This strategy is similar to the PhantomNoCallNoRelease strategy except that the call from the phantom line to the agent is not placed in the hold state. Rather it remains in the talking state. For reporting purposes, this strategy has the ACD report that the agent is talking while using a chat.

**5.3.3. CTI Strategies for Rockwell Spectrum**

Rockwell Spectrum is supported with Unified ICM CTI Server for Unified ICM integration on Windows 2000. The following table lists the CTI strategies that can be used for the Rockwell Spectrum supported by the basic Media Blender configuration:

PhantomWaitRelease  
PhantomWaitNoRelease  
PhantomNoCallRelease  
PhantomNoCallNoRelease  
PhantomNoCallNoHold

**5.3.4. Routing Address and Routing Numbers**

When a callback request comes in, the Media Blender retrieves the routing address from the callback form and matches it to the ADN routing number. The ACD then routes the request to the appropriate agent.

The **Routing Address** is a code embedded in the Blender Callback HTML form used by the caller. The Routing Address is set in a hidden field, RoutingAddr, on the Callback form. Cisco provides a sample callback form (`<CCS dir>/pub/html/forms/callFormACD.html`) that the CCS administrator can use to create the callback form for your site.

The **Routing number** is equal to a value unique to the CDN routing number logic on the Rockwell Spectrum.

See a switch administrator to obtain appropriate routing numbers. In most cases, it will be necessary to create a new routing number, such as ADN on the switch for use with the Collaboration Server application. Refer to the *Cisco Media Blender Switch Administration Guide* and consult a switch administrator for more information.

## 5.4. Configuring the Rockwell Spectrum Phone

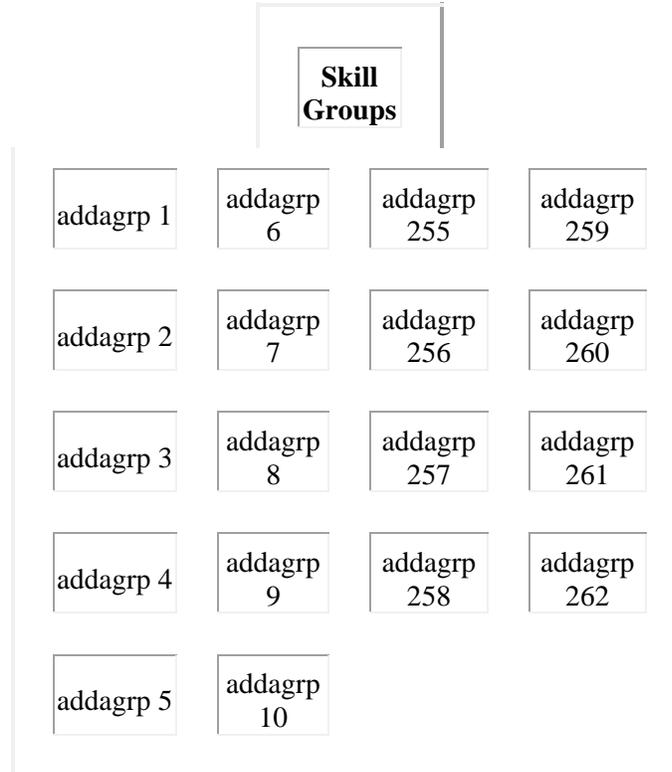
Configure your agents, skill groups, services, and any phantom phones.

- Rockwell switch is a CSTA-like (Computer Supported Telecommunications Application) ACD.
- It is not a PBX
- Agent extension cannot be reached unless the agent has logged into the physical phone, i.e., the Spectrum console.
- The agents, skill groups, and services that are configured on the Rockwell Spectrum ACD must also be configured in Unified ICM using the Unified ICM Configuration Manager.

### 5.4.1. Configure the Skill Groups

The following example adds the skill groups 1-10 and 255-262 (Numbers) on the Rockwell phone.

#### An Example Skill Group Configuration on a Rockwell Spectrum



### 5.4.2. Example service ID configuration

In the following example, 5001, 5002, and so on are service IDs and 1, 2, and 255 are skill groups.

- addapp 1 5001 1 2
- addapp 2 5002 1 2
- addapp 3 5003 1 2
- addapp 4 5004 1 2
- addapp 5 5005 255 255

### 5.4.3. Example Trunk Group Number Configuration with Peripheral IDs

In the following example, 1 through 4 are trunk group numbers, 12 through 24 are the number of trunks, 5001 and 5002 are drives, and arrival is the trunk type.

- addtrkgrp 1 24 5001 /arrival
- addtrkgrp 2 22 5002 /arrival
- addtrkgrp 3 12 5001 /arrival
- addtrkgrp 4 24 5001 /arrival
- addtrkgrp 5 12 5001 /arrival
- addtrkgrp 6 12 5001 /arrival

### 5.4.4. Example Agent Configuration

In the following example, agent IDs 2001 through 2006 are agent phones in LAB A while agent IDs 2007 through 2012 are agent phones in LAB B. The format is Agent ID, Skill Groups Primary and Secondary, Wrapup Time, Position ID

- addagt 2001 1 2 /wrapup 15 /lwn 265 LAB A
- addagt 2002 2 3 /wrapup 15 /lwn 266
- addagt 2003 1 2 /wrapup 15 /lwn 267
- addagt 2004 2 5 /wrapup 15 /lwn 268
- addagt 2005 1 4 /wrapup 15 /lwn 271
- addagt 2006 3 7 /wrapup 15 /lwn 272
  
- addagt 2007 255 255 /wrapup 15 /lwn 273 LAB B
- addagt 2008 255 255 /wrapup 15 /lwn 274
- addagt 2009 256 256 /wrapup 15 /lwn 275
- addagt 2010 256 256 /wrapup 15 /lwn 276
- addagt 2011 257 257 /wrapup 15 /lwn 277
- addagt 2012 257 257 /wrapup 15 /lwn 278

In the simulator file, uncomment the following:

```
# Startsl 0 TransactionLink and Supervisor CRT Threads startxl 0
```

### Example Configuration Settings in the Unified ICM PG Setup for the Rockwell Spectrum ACD

```
Peripheral name: spectgrum_pg12
Peripheral ID: 5003
Spectrum Revision: 8.0.0
Two Byte Groups: 1
Supervisor ID: ACME INC
Supervisor Password: ACME INC
CRT port: 1
CRT baud rate: 9600
Transaction link: TCP
X25 port: 1
Hostname: 99.99.999.999
Port number: 6666
```

## 5.5. Testing the Rockwell Switch

### 5.5.1. Create a CCS Agent for the Rockwell Spectrum Phone

1. Log into the **Cisco Collaboration Server Administration and Data Server**.
2. Click **Agents** → **Create**. Then click **Next**.
3. Enter the agent's **login name** (first and last name) and password. Then enter the voice agent's ID and press **Next**.
4. Leave **ICM Routing** as the default and click **Apply**.
5. If you select the **Terminal ID**, the physical phone extension for agent creation, then the agent will automatically be logged into the same terminal all the time and cannot switch terminals by using the "ACD Blended Login" form in CCS.

**Note:**

- You have to use the instrument ID of the phones instead of the phone extension.  
For example: Agent LoginID: 5571  
Terminal: 5571
- If you want the agents to be able to select the "allow agent to change terminals" option when they log in, then you should not enter a terminal ID. If you do not select this option, it will restrict you to only that terminal; so you are required to enter a terminal ID.

See the *About Settings for Blended Collaboration Agents* subsection in the *Collaboration Agents* section in the *Cisco Collaboration Server Administrator Guide* for more information.

6. Enter the **Rockwell ACD Password** if required. Otherwise, leave it blank for any Agent ID.
7. Enter the assigned **skill group number**. For example: #5560

**Note:** When agents log in from Collaboration Server, they must provide their position ID as a part of the ACD password in this

format: <ACDpassword>, <positioned>. For example: 5582, 5581

### 5.5.2. Log in a Blended Collaboration Agent on a Rockwell Phone

1. Access the **//CCS-Host-Server/**
2. Access the **'ACD Blended Login, Change Terminals'** link
3. Enter the agent's **login name** and **password**.  
For example: **Rockwell2007**, weblines.
4. Enter the **Terminal ID** in the Terminal # field.  
For example: 2007, 5572, 5573 or 5574
5. Enter the **ACD Password** (if required)  
For example: 273
6. Click **LOGIN**.

The Cisco Collaboration Server Single Session Chat user interface should show the Agent as logged into the Blended Collaboration user interface.

**Note:** You can make an agent 'not ready' by pressing the **Not Ready** button.

### 5.5.3. Make a Blended Collaboration Caller Request to a Rockwell Agent/Phone

1. **Agent:** Access the **//CCS-Host-Server/**
2. **Agent:** Access the **'Blended ACD caller.'** To do so, enter the Caller's First and Last name.
3. **Agent:** Enter the **Caller's Phone Number:** For example: 978 322-4501 or 978 322-4502. Always use the extension number of the **Rockwell** phone for the caller's phone number.
4. **Agent:** Enter the **Script Number** for making a blended collaboration call. For example: **Rockwell\_DN**, where DN is the dialed number label name used in the Unified ICM Configuration Manager.

The Agent's phone will light up at the instrument button (the bottom right button). This means the phantom phone is being used.

The Caller's phone will ring and light up at the Extension button.

5. **Caller:** Presses the Caller's **Extension** button.

The Agent and Caller will now be connected through the phones AND in an active session through Collaboration.

#### 5.5.4. Log In an Agent on a Rockwell Spectrum Phone

1. Press the **SignIn** button (below the text in the window).
2. Enter the agent's ID (extension number) and the directory ID (For example 05001) and press **Enter**.
3. Leave password field blank. Press **Enter** again.

**Note:** The Available button acts like the Traffic Light for CCS agents.

#### 5.5.5. Place a Call on a Rockwell Spectrum Phone

1. **Calling Agent:** The **Available** button must be **OFF**
2. **Calling Agent:** Presses the **line** button.
3. **Calling Agent:** Enters the receiving agent's 4-digit extension number.  
The receiving agent's line button lights up.
4. **Receiving Agent:** Presses the **Extension** button on receiving agent's phone.

The agents are now talking.

**Note:** Press the **Release** button to hang up the call.

#### 5.5.6. Transfer a Call on a Rockwell Spectrum Phone

1. Execute **LOGIN** and place a call (Refer to section 5.5.5 for steps to 'Place a call...').
2. **Calling Agent:** Presses a second line button.
3. **Calling Agent:** Enters the agent's 4-digit extension to whom the call is to be transferred, and presses Enter.  
Receiving agent's line button lights up.
4. **Receiving Agent:** Presses the receiving agent's **Extension** button.
5. **Calling Agent:** Presses the **Transfer** button again.

Receiving agent and caller are now talking.

**Note:**

- The Originating Agent is no longer connected with the call.
- If the receiving agent is not available, the originating agent has no indication of this and the originating agent will remain in a **HOLD** state until the Line button is manually pressed making the session active again.

### 5.5.7. Place a Conference Call on a Rockwell Spectrum Phone

1. Execute **LOGIN** and place a call (Refer to section 5.5.5 for steps to 'Place a call...').
2. **Calling Agent:** Presses a second line button.
3. **Calling Agent:** Enters the second agent's ID (4-digit extension to whom the call is to be conferenced) and presses **Enter**. The Receiving agent's line button lights up.
4. **Receiving Agent:** Presses the receiving agent's **Extension** button.
5. **Calling Agent:** Presses the **Conference** button again to complete the connection.

Both agents and caller are now talking.

**Note:** Press the **Release** button to hang up the call. If the initiating agent drops from the conference, the session gets dropped.

### 5.5.8. Making an Agent Not Ready

You can make an agent 'not ready' by pressing the **Busy** button twice.

## 5.6. Glossary

### ACD

Automatic Call Distributor. Also called a switch, an ACD is a specialized phone system designed for handling incoming and outgoing calls.

### ACD Medium

The ACD medium on the Cisco Media Blender handles CTI messages coming from an ACD.

### Agent

An individual who receives and handles customer calls and web-based requests within a call center.

### BAPI (Blender Application Programming Interface)

The CCS BAPI interface connects to a Cisco Media Blender remote medium.

### Blended Collaboration

In the basic Media Blender integration, a blended collaboration session is one that is blended with the ACD. Blended Collaboration sessions typically begin when a caller submits a Web-based request by clicking a callback button on a web page. The caller completes a callback form and the Collaboration Server retrieves caller information (name, phone number, skill group). The Media Blender then blends the information over to the ACD, which provides a callback to the customer. The

customer and agent talk on the phone and are linked in a collaborative Web session.

Blended collaboration in the Unified ICM integration is provided when the agent is assigned by Unified ICM (when using IPCC) or by the ACD (when using a legacy ACD). When Unified ICM selects an agent for the task, the Web collaboration interface appears on the agent desktop. At the same time, the agent's telephone places an outbound call to the customer.

### **Callback Button**

A button placed on a web site used by the caller to initiate a blended Collaboration session.

### **Callback Page**

A form sent to the caller to retrieve caller information, such as name, telephone number, and skill group.

### **Caller**

An individual submitting a phone call or web-based request to a call center.

### **Call Manager**

The Cisco Call Manager (CCM) is a computer platform that provides traditional PBX telephony features and functions to packet telephony devices such as Cisco IP phones and Voice over IP (VoIP) gateways. The Call Manager also supports supplementary and enhanced services such as hold, transfer, forward, conference, automatic route selection, speed dial, and last number redial.

### **CCT**

Call Control Table. A table located in a switch, such as a Call Routing Script, that determines the call characteristics for routing purposes.

### **Central Controller**

The computer or computers running the Unified ICM CallRouter and the Unified ICM Database Manager. In addition to routing calls, the Central Controller maintains a database of data collected by the Peripheral Gateways (PGs) and data that the Central Controller has accumulated about the calls it has routed.

### **Collaboration Medium**

The Collaboration medium communicates with the Cisco Collaboration Server (CCS) and accepts and shares session and agent-related events with the other CMB media.

### **Collaboration Server**

The Cisco Collaboration Server (CCS) is an application that provides contact centers with the ability to handle Web requests. CCS allows contact center agents to share information with customers over the Web—including Web pages, forms, and applications—while at the

same time conducting a voice conversation or text chat using nothing more than a common Web browser.

### **CTI**

Computer Telephony Integration. A term for connecting a computer to a telephone switch. The computer issues telephone switch commands to move the calls around.

### **CTI Driver**

Software designed to accommodate the CTI package and middleware used in a Media Blender configuration. The CTI driver supports the legacy ACDs when Media Blender is a part of the Unified ICM integration.

### **CTI strategy**

Software that determines the call flow of the outbound call to the caller.

### **Driver**

A module that controls data transferred to and received from peripheral devices.

### **Firewall Gateway Service**

The Media Blender firewall gateway service allows the Collaboration Server, which resides outside a firewall, to communicate with an Unified ICM Peripheral Gateway that resides inside the firewall.

### **Unified Intelligent Contact Management (Unified ICM)**

The Cisco system that implements enterprise-wide call distribution across call centers. Unified ICM provides Pre-Routing®, Post-Routing®, and performance monitoring capabilities.

### **Interactive Voice Response (IVR)**

A telecommunications computer, also called an Voice Response Unit (VRU) that responds to caller entered touch-tone digits. The IVR responds to caller-entered digits in much the same way that a conventional computer responds to keystrokes or a click of the mouse. The IVR uses a digitized voice to read menu selections to the caller. The caller then enters the touch-tone digits that correspond to the desired menu selection. The caller entered digits can invoke options as varied as looking up account balances, moving the call within or to another ACD, or playing a pre-recorded announcement for the caller.

### **JRMP**

Java Remote Message Protocol. The wire-level protocol to transport RMI calls and objects.

### **Legacy ACD**

Any of the following ACDs supported in the Unified ICM integration that use the Cisco CTI driver:

- Avaya (Lucent) Definity ECS G3

- Aspect CallCenter
- Nortel Meridian 1
- Nortel Symposium
- NEC NEAX 2400
- Rockwell Spectrum
- Siemens Hicom 300E

### **Media Blender Administrator**

An individual responsible for installing, configuring, and administering the Media Blender.

### **Media Routing Domain**

The Media Routing Domain (MRD) is a collection of skill groups and services that are associated with a common communication medium. Unified ICM uses an MRD to route a task to an agent who is associated with a skill group and a particular medium. MRDs are assigned in Unified ICM configuration and have unique IDs across the enterprise.

### **Media Routing Peripheral Gateway (MR PG)**

An Unified ICM PG that is capable of routing media requests of different kinds; for example, email and Web callback. An MR PG supports multiple media routing clients by placing multiple, independent Peripheral Interface Managers (PIMs) on a PG platform.

### **Medium**

An electronic form of session-based information. Media Blender functions as an event bus and shares events between participating media. In a typical installation, Media Blender shares events between a Collaboration medium and an ACD medium.

### **Peripheral Gateway (PG)**

The computer and process within the Unified ICM system that communicates directly with the ACD, PBX, or IVR at the call center. The Peripheral Gateway reads status information from the peripheral and sends it to the Central Controller. In a private network configuration, the Peripheral Gateway sends routing requests to the Central Controller and receives routing information in return.

### **Peripheral Interface Manager (PIM)**

The Cisco proprietary interface between a peripheral and the Peripheral Gateway (PG).

**Phantom Line**

Phone lines set aside for providing callback to customers. Used with Phantom line CTI strategies, phantom lines wait in queue on behalf of the caller, ensuring that the caller receives callback only when an agent is available.

**PhantomLoginThreshold (property)**

The minimum percentage of phantom agents, configured in a phantom pool that should get logged into the phones. Default is 100%.  
phantomloginthreshold=<1-100>.

Only %1 out of %2 phantoms are logged in and is less than the phantom login threshold (%3 percent). Current configuration of Cisco Media Blender requires a minimum number of phantoms to login successfully. This is determined by the phantomloginthreshold property in ACD.ciscocti.properties file.

Unavailability of phantom phones might affect the performance of Cisco Media Blender. Make sure the phantoms are configured properly in the property files. Logout any agents already logged into the phantom phones. Restart the Media Blender if any problem arises during startup.

**Phantom Strategy**

A CTI strategy that places a call in the ACD queue and waits for call assignment (agent selection). Once the agent is selected, the outbound call is placed to the customer.

**PBX**

Private Branch eXchange, a smaller version of the phone company's larger central switching office.

**RMI**

Remote Method Invocation. A remote procedure mechanism for communicating between two Java programs within (potentially) separate Java Virtual Machines.

**Routing Logic**

Logic set up on the ACD to ensure calls are routed to agents who possess appropriate skills.

**Routing Script**

A script that Unified ICM executes to find the destination for a call. A routing script might examine information about several possible targets before choosing the best destination. You can schedule different scripts to execute for different types of calls and at different times and dates. Use the Script Editor to create, modify, and schedule routing scripts.

**Switch**

An Automatic Call Distributor (ACD) or PBX.

### **Switch Administrator**

An individual responsible for ACD administration. The switch administrator must work with the Media Blender Administrator to ensure proper communication between Media Blender and the ACD.

### **Web Administrator**

An individual responsible for creating and maintaining HTML pages and forms as they relate to the Media Blender.

### **Web Callback**

A feature of the Cisco Collaboration Server (CCS) that allows a customer to use a "call me" button on a company's Web site. The resulting callback request is handled by either an ACD (for Basic Media Blender) or the Unified ICM (for Media Blender in the Unified ICM integration). Web callback, sometimes referred to as "callback only," is for simple callbacks that do not involve blended Web collaboration or blended text chat.

# Appendix A: Eicon Card Configuration

This section shows snapshots of WAN Services Configuration for the Rockwell Spectrum.

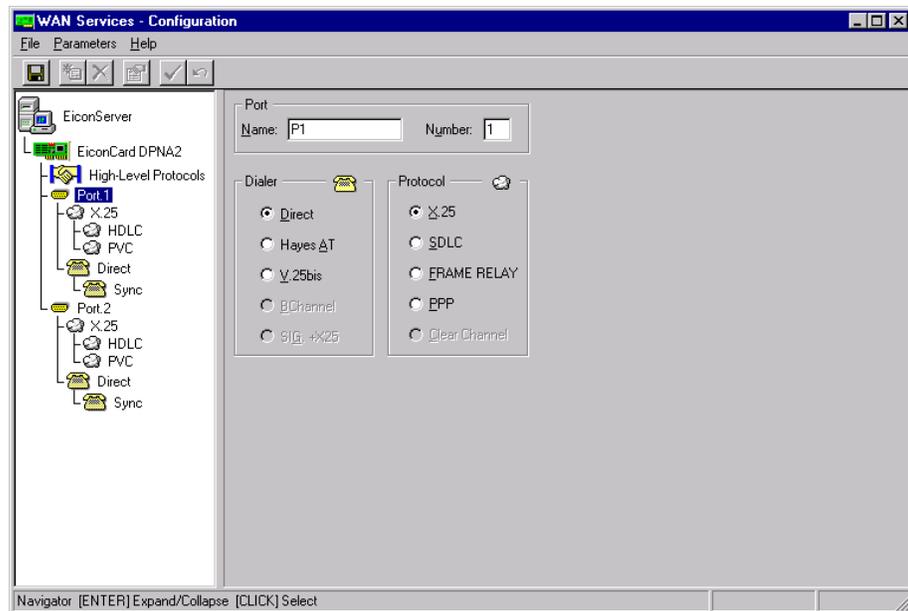


Figure 5: WAN Services Configuration - Port Settings

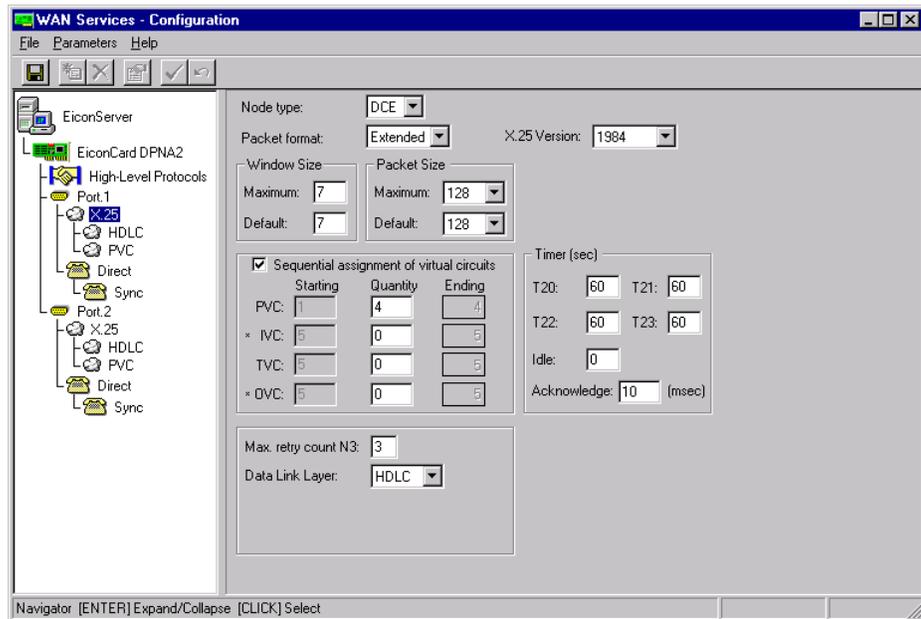


Figure 6: WAN Services Configuration - X.25 Settings

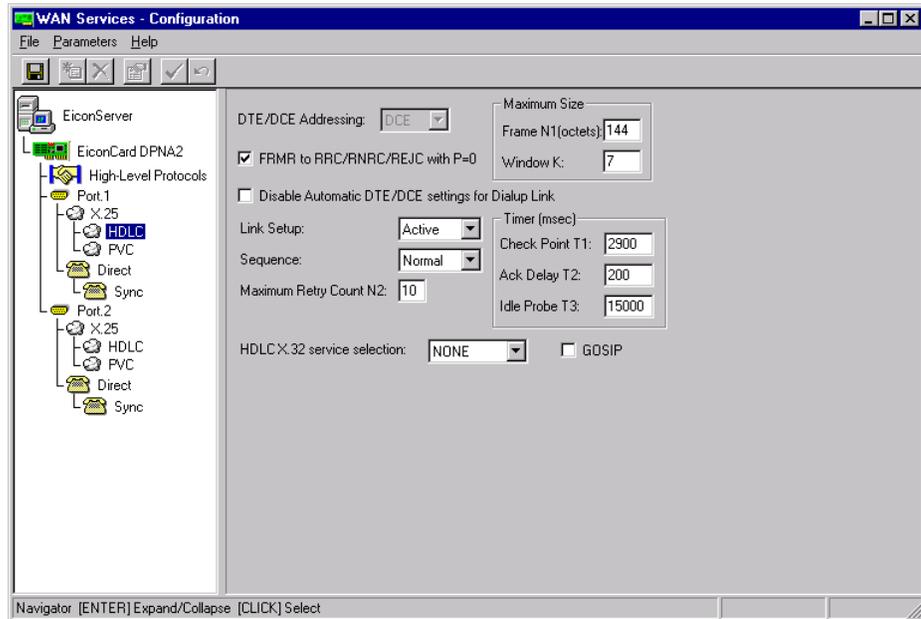
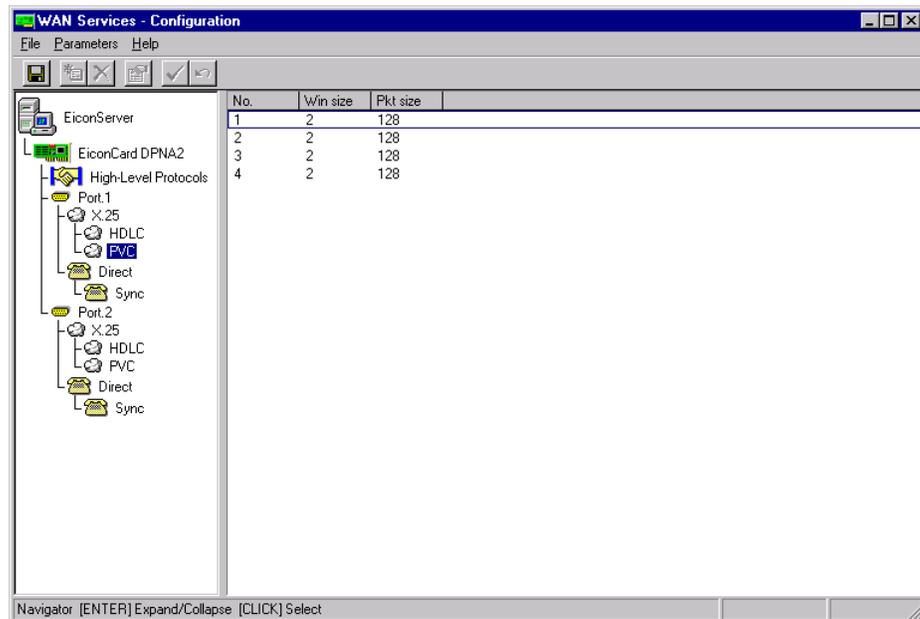
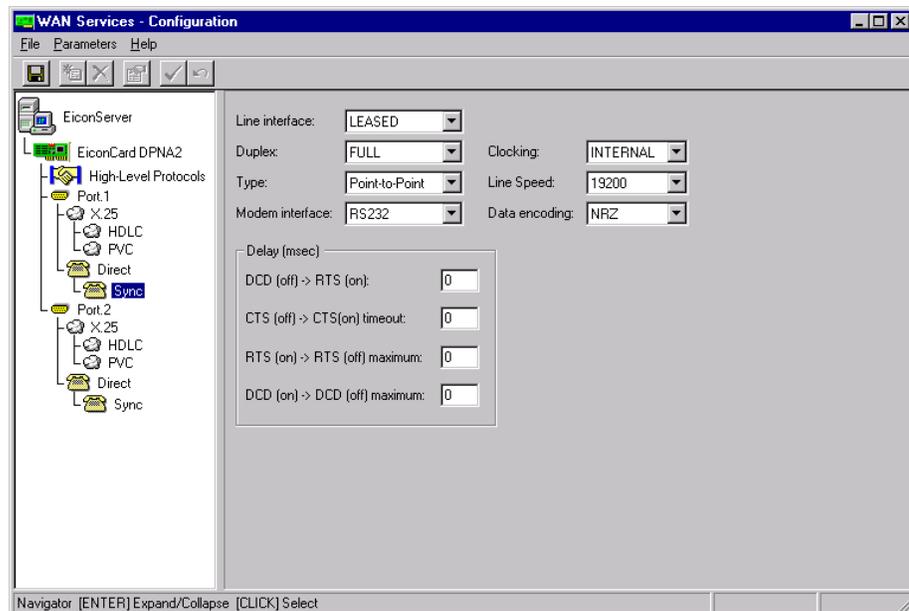


Figure 7: WAN Services Configuration - HDLC Settings



**Figure 8: WAN Services Configuration - Sync Settings**



**Figure 9: WAN Services Configuration - PVC Settings**



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