



Cisco ICM Software ACD Supplement for Aastra PointSpan Agent Routing Integration

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Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
<http://www.cisco.com>
Tel: 408 526-4000
800 553-NETS (64387)
Fax: 408 526-4100

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Cisco ICM Software ACD Supplement for Aastra Pointspan ARI

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Preface

Purpose

This document contains the specific information you need to install and maintain an Aastra Pointspan Agent Routing Integration (ARI) in a Cisco Intelligent Contact Management (ICM) environment. In this environment, the Aastra ARS Gateway connects to the ICM via the ARS PG. This solution is referred to as Agent Routing Integration (ARI). This document describes how to configure the ARS Gateway component of ARI.

While other ICM documents (for example, the *ICM Configuration Guide for Cisco ICM Enterprise Edition*, and the *ICM Scripting and Media Routing Guide for Cisco ICM/IPCC Enterprise & Hosted Editions*) cover general topics such as configuring an overall ICM system and writing scripts to route contact center requests, the *ACD Supplement for Aastra Pointspan ARI* provides specific information on configuring an Aastra ARS GW and making any necessary adjustments to the Aastra ACD configuration.

Audience

This document is intended for ICM system managers. The reader should understand ICM functions as described in the *ICM Installation Guide for Cisco ICM Hosted Edition*, *ICM Configuration Guide for Cisco ICM Enterprise Edition*, and *ICM Scripting and Media Routing Guide for Cisco ICM/IPCC Enterprise & Hosted Editions*. The reader should also have specific knowledge of the Aastra PointSpan ACD.

Organization

Chapter 1, —Overview”

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

Chapter 2, —Installing and Configuring the Gateway”

Describes the installation and configuration process for the OAI client software, the ARS PG and the Aastra ARS Gateway.

Chapter 3, —ACD Configuration”

Describes items in the Aastra configuration that must be checked to ensure compatibility with the ICM software.

Chapter 4, —CRM Software Configuration”

Describes the relationships between the Aastra ACD objects and the ICM database objects. This chapter also describes Aastra-specific settings that must be confirmed in the ICM configuration.

Chapter 5, “*TM Scripting*”

Describes scripting guidelines for your configuration.

Chapter 6, “*Troubleshooting*”

Describes how to troubleshoot the Aastra ARS Gateway.

Chapter 7, “*Reporting*”

Describes reporting with Agent Routing Integration.

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 *Database Schema Handbook for Cisco ICM/IPCC Enterprise & Hosted Editions*.
- 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 Cisco ICM software, see the following documents:

- *ICM Administration Guide for Cisco ICM Enterprise Edition*
- *ICM Installation Guide for Cisco ICM Enterprise Edition*
- *ICM Configuration Guide for Cisco ICM Enterprise Edition*
- *ICM Scripting and Media Routing Guide for Cisco ICM/IPCC Enterprise & Hosted Editions*

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

- *ICM Setup and Configuration Guide for Cisco ICM Hosted Edition*.

For information on Pointspan OAI Feature, see the following Aastra documents:

- *Ethernet Access and Open Application Interface Set Up*
- *Open Application Interface, Run Time Guide.*

You can access the most current Cisco ICM documentation at this URL:

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Information about how to subscribe to the PSIRT RSS feed is found at this URL:

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The link on this page has the current PGP key ID in use.

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Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

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EMEA: +32 2 704 55 55

USA: 1 800 553-2447

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1. Overview

ARI enables the Aastra Pointspan PBX to connect to the ICM via the ICM ARS Peripheral Gateway and the ACD-specific Gateway. The diagram below depicts how the ICM, ARS PG, Aastra ARS Gateway, and Aastra PBX are connected in an ARI deployment.

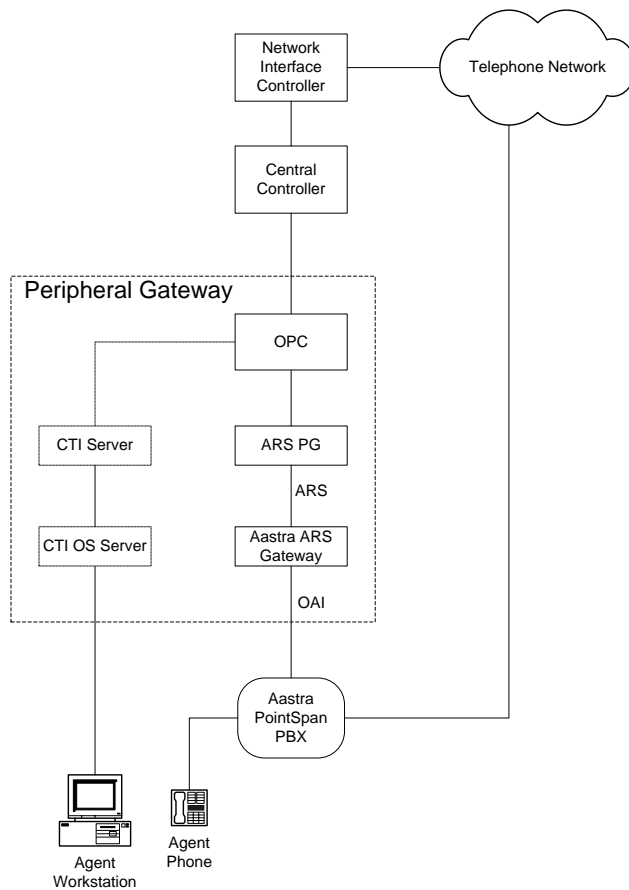


Figure 1: Aastra ARI Architecture

The Aastra ARS Gateway connects to the PointSpan using Pointspan’s Open Application Interface (OAI). OAI allows an external software application to open a Communication Channel (CC) to the Pointspan switch in order to embed telephony features.

The Aastra ARS Gateway relies on PointSpan's **OAI toolkit libraries** that provide an abstraction layer to open a communication channel to the PointSpan switch. Every communication channel operates in full duplex mode with fully independent channels for incoming and outgoing messages (seen from a switch perspective).

- **Outbound messages** are typically used by the switch to inform the ARS Gateway that a call has arrived at an OAI associated ACD group or phone and to ask for routing decisions. These messages are analyzed by ICM to make a routing decision and to generate reporting data.
- **Inbound messages** are typically used by the ARS Gateway for third-party call control where an agent can answer, transfer or terminate a call using his CTIOS client application (also called "softphone"). ICM's routing decisions are communicated to OAI using inbound messages.

This chapter describes the options for connecting the PointSpan PBX to the Cisco ICM PG. This chapter also lists the hardware and software required for the PointSpan PBX to work with the ICM software.

1.1. ACD Interface Requirements

The OAI driver is installed on the same server as the Aastra ARS Gateway and connects to the PointSpan PBX using the PointSpan switch Server primary IP Address. Each Aastra ARS Gateway needs a dedicated OAI channel. It is not possible to share an OAI channel between several Aastra ARS Gateways.

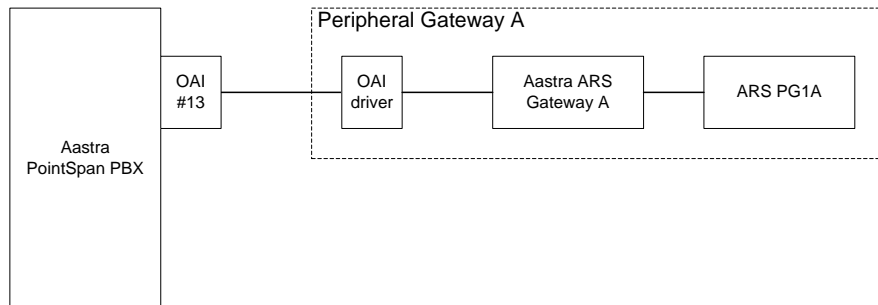


Figure 2: Aastra OAI Connectivity for Simplex PG

When started, the OAI driver opens up the OAI link to the PointSpan switch. The Aastra ARS Gateway registers to the local OAI driver to receive and send OAI messages.

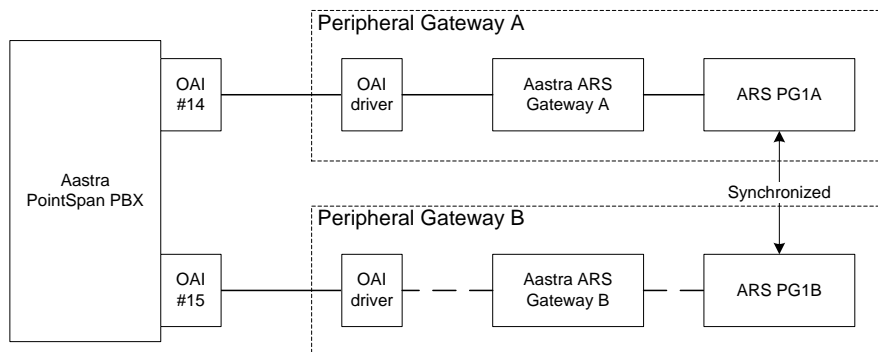


Figure 3: Aastra OAI Connectivity for Duplexed PG

As each OAI channel can only have one configured OAI client IP address, there are two different OAI channels needed for a duplexed ARS PG installation (OAI channel #14 and #15 in above picture). Both OAI drivers open up the OAI link to the PointSpan switch when started but only one Aastra ARS Gateway is active and registered to the local OAI driver. The ARS PG A is synchronized with its peer ARS PG B to control activation of only one ARS Gateway.

There is no direct connection between Aastra ARS Gateway A and Aastra ARS Gateway B.

Configure OAI mirrors to ensure that all relevant OAI messages are sent to both OAI channels in a duplexed environment.

The following ACD Interface requirements need to be fulfilled:

- OAI feature must be enabled on the switch with available OAI channels.
- One OAI channel is required per ARS Gateway; for a duplexed PG / ARS Gateway installation, two OAI channels are required.
- The Aastra ARS Gateway connects to the PointSpan switch over an Ethernet link.
- RS-232-C interface to PointSpan is not supported.
- The Aastra ARS Gateway requires a dedicated 100MB Ethernet LAN connection to the PointSpan PBX.

1.2. Hardware and Software Requirements

In order to work with the ICM software and the Gateway, the Aastra PointSpan PBX must be configured with the hardware and software listed in Table 1. Contact Aastra to obtain the listed software.

For hardware and software requirements specific to the PointSpan PBX, refer to the Aastra PointSpan documentation.

It is recommended that the customer also confirm with the switch vendor that the current processor in the switch can sufficiently handle the additional load of the extra required OAI channels.

Table 1: PointSpan System Requirements

Releases Supported	PointSpan Release RL40PS3.5T
Features Required	PointSpan ACD Feature Deluxe
	Software option OAI Feature enabled and available OAI Channels
	OAI Toolkit / DCP Client Version TK6.9.3 or TK7.0.0

Table 2 : ICM Software, PointSpan PBX, and Call Processing Version Compatibility

ICM Software Version	PointSpan PBX and Call Processing Versions	OAI Toolkit (PBX CTI Interface)	ARS Gateway Version
7.0(2) ES21	CP40PS3.5.I CP40PS3.5.K	6.8.1	v1.0.4
7.1(3) ES2	CP40PS3.5.I	6.8.1	V1.0.4
7.1(3) ES38	CP40PS3.5.K	6.8.1	v1.0.5 v1.0.6
	CP40PS3.5.N	6.8.6	v1.0.6
7.1(3) ES2, ES27, ES33, ES38, ES52, ES54, ES55	CP40PS3.5.N	6.8.6	v1.0.7 v1.0.8
7.1(5) ES114	CP40PS3.5.N	6.8.6	v1.0.8
7.2(5)	CP40PS3.5.N	6.8.1	v1.0.6
	CP40PS3.5.N	6.8.6	v1.0.6 v1.0.7 v1.0.8
7.2.(7) ES16, ES129 7.5(8)	CP40PS3.5.T	6.9.3	v1.0.9
		7.0.0	v1.0.10

Note: Please note that two OAI Channel licenses are required per duplexed Aastra ARS Gateway installation.

1.2.1. Supported ICM Software Features

The Aastra ARS Gateway supports the following ICM software features:

- Pre-Routing
- Post-Routing
- Enterprise CTI (includes third-party call control)
- Agent level reporting
- Duplexed PG installation
- Translation Routing
- Agent Targeting Rules

1.2.2. Unsupported ICM Software Features

The Aastra ARS Gateway does not support the following ICM software features:

- Trunk and Trunk Group Reporting
- Peripheral Service Level Reporting
- Supervisor features
- Outbound Option
- Blended Collaboration
- ICM Universal Queue
- Service Bureau Configuration with shared resources
- Device Target Configuration

1.2.3. ACD Restrictions

- Each agent device can only have one line appearance.
- Single Step Blind Transfer is not supported on Aastra Hardphones but is emulated in the ARS Gateway so is supported on the softphone.
- PointSpan PBX does not provide CED call data.
- At Aastra ARS Gateway startup and failover, calls on hold cannot be synchronized with ICM. The gateway is notified only that there is a call on hold; no further information is available. In this case, the agent is in talking state but has no call in the call appearance list. Retrieve the held call on the Aastra hardphone to synchronize with ICM.
- 3rd party call alternate is not supported.
- Call park / pickup are not supported.
- Multi-ACD Line is not supported. PointSpan OAI does not provide events on the second line.
- The PointSpan OAI does not send the Agent Unavailable event. Therefore the PointSpan agent state Unavailable is not supported in ICM deployments.
- There is no connection failover to an isolated Remote Terminal Node (RTN) in a centralized PG model. In this model the PG will connect to host PointSpan switch only. In the event of link failure between the host and the RTN, ICM will no longer be able to track activity on the RTN.
- Agent groups spanning RTNs are not supported. Agent groups split across RTNs will need to be configured as a Skill group per RTN. They may be consolidated for reporting/routing with the ICM Enterprise Skill group feature.
- Blind conference is not supported on the PointSpan switch.
- Alerting calls on agent devices can not be diverted to another destination using OAI commands. Therefore the ICM Ring-No-Answer (RONA) feature is not supported on the Aastra ARS Gateway. Use the call forward no answer feature of the Aastra PointSpan switch to forward the call to an ICM Application Pilot to request routing through ICM.

1.3. Hardphone support

Hardphone support is a feature that enables an agent to use a hard phone instead of (or in addition to) the software-based Agent Desktop to perform agent actions. Hardphones can be used in combination with soft phones. In this case the hardphone and Agent Desktop are synchronized.

Agent state changes on the Aastra PointSpan hardphone are limited to login, logout, in-work and out-of-work. Other states (including wrapup) are not supported in this version of ARS Gateway.

1.4. Virtual VRU Scripts

In the absence of an attached VRU, the Aastra PointSpan PBX can act as a VRU and run Virtual VRU scripts via ICM routing scripts. A Virtual VRU script is a configured Application Pilot and CallGuide on the Aastra switch. These Application Pilots offer call treatment to the caller.

Virtual VRU Scripts do offer basic call treatment and queuing functionality. If more extensive call treatment is required, a network VRU should be used.

2. Installing and Configuring the Gateway

See also: Refer to the *Aastra ARI Release Notes* for more information on deploying Aastra ARS Gateway, including instructions on installing and configuring the ARS PG.

Note: On each server, you can have only one Aastra ARS Gateway installed. Deployments with multiple ARS Gateways running on the same server are not supported.

The following configuration steps need to be done on the PointSpan switch prior to OAI Toolkit installation. Refer to chapter 3.1. *OAI Link configuration* for details.

- Enable the PointSpan OAI Feature on the switch
- Create OAI Link
- Configure an OAI channel for the IP Address of your Aastra ARS Gateway

2.1. Installing and configuring the OAI Toolkit

Add the new OAI channel on the PointSpan PBX prior to OAI Toolkit installation. Refer to chapter 3.1. *OAI Link configuration* on how to enable OAI and configure an additional OAI channel.

2.1.1. Installing the OAI Toolkit

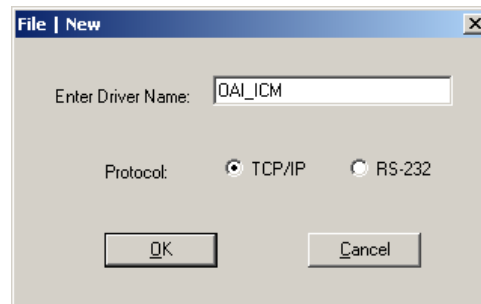
Note: Contact the switch vendor (Aastra) to obtain the OAI Toolkit

The OAI Toolkit library needs to be installed on the same server as the ARS Gateway. For OAI Toolkit library installation, refer to the OAI Toolkit documentation *Ethernet Access and Open Application Interface Set Up (254002 Ethernet Access OAI Set Up.pdf)*, chapter 4 *OAI Toolkit Installation* and documentation *OAI Run Time Guide (252002_OAI Run Time.pdf)*.

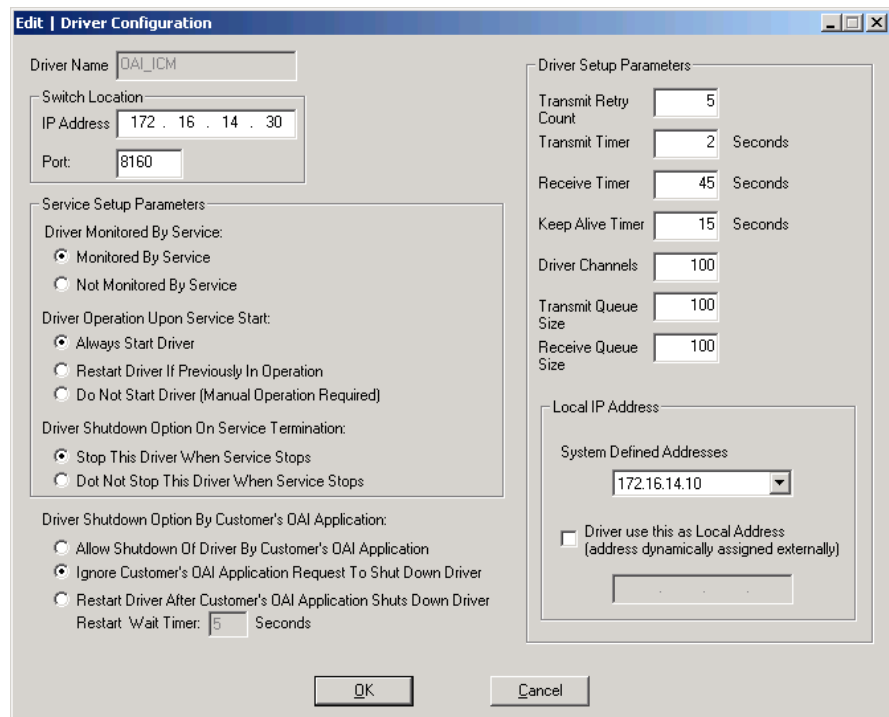
2.1.2. Configuring the OAI Toolkit

Follow these steps to configure the OAI Toolkit. Details can be found in the PointSpan documentation *OAI Run Time Guide (252002_OAI Run Time.pdf)*.

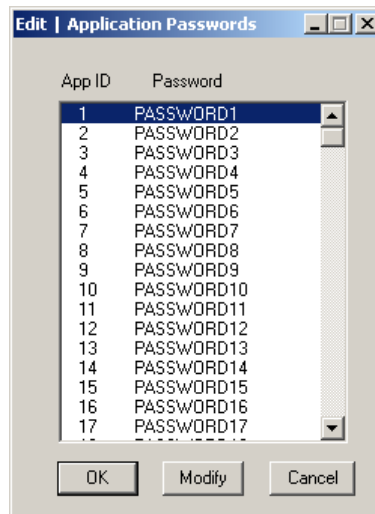
1. Run the OAI Driver Control Program, **DCP.exe**.
2. Create a new driver. Enter driver name **OAI_ICM** and choose **TCP/IP** as Protocol. Only **OAI_ICM** is a valid driver name for the Aastra ARS Gateway.



3. Configure the new driver by selecting **Driver Configuration** from the menu. Enter the PointSpan switch Server Primary IP Address in the field **IP Address**. **Port** defines the switch connection port. Enter the port number as defined in the PointSpan OAI link configuration (default is 8160). For more information on the Driver Configuration screen please refer to the Aastra PointSpan documentation.



4. Change your OAI application password by selecting **Application Passwords** from the menu. App ID must match the application configured for your OAI channel on the PointSpan switch. See section *3.1.3 Configuring OAI Channels* for more details on the OAI channel configuration.

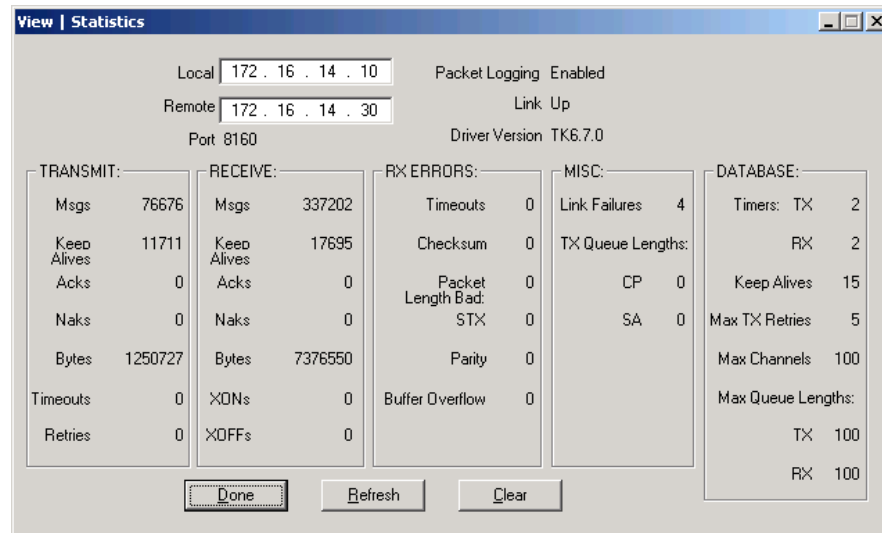


5. Set up the OAI driver as NT Service **PointSpan OAI Toolkit Service**, and set to **Automatic start**. This ensures that the OAI driver is always started after rebooting the server. Refer to the Aastra documentation on how to set up the OAI driver as NT Service.

2.1.3. Test the OAI link to the PointSpan switch

Using DCP.exe in your OAI toolkit directory, you can test the link status to the PointSpan switch. Start the driver and then check the link status in the *Statistics* window. The link status must be *Link Up*.

For more information on the Statistics screen please refer to the Aastra PointSpan documentation.



2.2. Installing and configuring the ARS PG

Early deployment of the new ARS Gateway PG is done using a “masquerading” technique impersonating an IPCC System PIM. What this means is that the user first must install all the necessary IPCC System PG/PIM’s, then apply the Engineering Special (ES) patch to replace some executables (e.g. PG node, Router node) with new code to support the new features in a transparent mode.

For ARS PG ES installation and configuration instructions please refer to the *Aastra ARI Release Notes*.

3. ACD Configuration

Some configuration settings on the Aastra PointSpan PBX must be changed to ensure proper operation with the ICM software.

This chapter describes these settings. It also provides guidelines that will help you maintain your Aastra PointSpan and ICM configurations.

The following steps are needed to configure the PointSpan to work with the Aastra ARS Gateway:

- Creating an OAI Link and configuration of one or more OAI Channels and mirrors.
- Enabling your User Group for the new OAI channel
- Setting up Agent Devices
- Setting up Application Pilots and CallGuides for ICM Post-Routing or Translation Routing
- Setting up additional Application Pilots and Call Guides for local queuing

Additional steps are needed to enable hardphone support:

- Setting up Agents
- Setting up default Agent Pilots (Skillgroups)

Note: Please note that in the following configuration screens that only those items in **BOLD** reflect actual settings the user should be concerned with and their values. All other settings are shown for clarification and context purposes only and may or may not match those on the customers ACD. For more information on these values, refer to the Aastra Pointspan documentation.

3.1. OAI Link configuration

As stated before, the Aastra ARS Gateway connects to the PointSpan PBX using the Open Application Interface (OAI). This interface needs to be enabled and properly configured on the switch.

3.1.1. Determining OAI feature availability

To determine if the OAI Feature is enabled on the PointSpan switch and how many OAI channels are available, you can use the SPAR Feature Availability display. Use the SPAR command on the switch to display the Feature Availability screen and the System Parameters. For detailed description of the SPAR command, refer to the Aastra PointSpan documentation.

```

SELECT COMMAND => spar
SELECT MODE:  PRINT, DISPLAY, UPDATE, TITLES => d
ENTER DISPLAY TYPE or ?.....S => f

FEATURE AVAILABILITY:
  DELUXE AUTO CALL DISTRIBUTION.....YES
  ACD CallNet.....YES
  ACD CDR EVENT.....YES
  ..
  ..
  OPEN APPLICATIONS INTERFACE.....YES
  MAXIMUM PDI OAI CHANNELS.....12
  MAXIMUM ETHERNET OAI CHANNELS.....100
  ..
RETURN CONTINUES DISPLAY..... =>

```

```

SELECT COMMAND => spar
SELECT MODE:  PRINT, DISPLAY, UPDATE, TITLES => d
ENTER DISPLAY TYPE or ?.....S => s

*** SYSTEM PARAMETERS      05/23/06      21:40:25
SID...SITE ID.....BSA
...
NMC...# OAI MIRROR CHANNELS LICENSED.....16
NTC...# OAI TRANSPORT CHANNELS LICENSED..15
NOC...# ETHERNET OAI CHANNELS LICENSED...10
...
RETURN CONTINUES DISPLAY..... =>

```

3.1.2. Creating OAI Link

Please refer to the Aastra documentation *254002 Ethernet Access OAI Set Up.pdf* for how to create OAI Links and Channels.

3.1.3. Configuring OAI Channels

Every Aastra ARS Gateway needs a dedicated OAI channel.

Use the CCN command on the PointSpan switch to setup and display the OAI channels.

```

Aastra Pointspan

MCU-B Primary

Command => ccn

```

OAI	CCN	TASK	INI	CCS	PRI	NOO	MOU	NUS	NOM	NIM	PORT	HOSTNAME/INA.PORT
13	1	A01	1	2	M	0	0	0	5472	1265	8160	172.16.14.6.2485
14	2	A01	1	2	M	0	0	0	43	22	8160	172.16.14.24.1526
15	3	A01	1	2	M	0	0	0	148	62	8160	172.16.14.27.1045
.												
.												

Use the MI command on the Pointspan to setup OAI channel mirrors where needed.

```

Aastra Pointspan

MCU-B Primary

Command => mi

```

OAI	CCN	LINK	INI	OOS	CCS	NUS	NOO	NMD	NOM	NIM	MIRRORing	OAI:CCN
13	1	ETHER	1	0	2	0	0	5472	5472	1265	14:2	15:3
.												
.												

3.1.4. Enabling OAI channel in User Groups

For all User Groups you want to use with your ARS PG, you need to configure the correct OAI number and OAI Application ID.

Use the command UGRP to configure your User Groups.

```

SELECT COMMAND => ugrp
SELECT MODE: PRINT, DISPLAY, UPDATE, TITLES => d
USER GROUP NUMBER (1-1000) OR ?..... => 1

```

```

SELECT SUBCOMMAND or ? => ugp

** USER GROUP PARAMETERS FOR USER GROUP #1          01/10/06  23:12:22
.
.
IUG...InteMail LAMP MESSAGE USER GROUPS.....OWN
OCC...OAI NUMBER FOR OAI ASSOCIATED MEMBER.....13
OAP...OAI APPLICATION ID.....1
AGN...ATTENDANT GROUP .....NONE
.
.

```

3.2. Setting up Devices

To setup an Aastra device for use with Aastra ARS Gateway, the parameter OAM (OAI associated member) must be true for both the device and the line configuration. Also verify that the User Group parameter is set to a User Group enabled for the correct OAI channel.

Use the commands FONE and DIRN to verify or update the device configuration.

```

SELECT COMMAND => fone
SELECT MODE: PRINT, DISPLAY, UPDATE => d
ENTER LOCATION, WORK AT HOME or ?..... => 1.2.5.1

DISPLAY FORMAT: N, D, P, B or ?.....B =>
** STATION DEFINITION:          12/24/05  15:31:10

***...STATION.....PORT: 001.2.05.01
***...STATION EQUIPMENT TYPE.....ITES
BTP...BUTTON TEMPLATE NUMBER.....5
SUG...STATION USER GROUP NUMBER.....1
OAM...OAI ASSOCIATED MEMBER.....YES
DND...DO NOT DISTURB ALLOWED.....YES
DNS...DO NOT DISTURB STATUS.....INACTIVE
AND...ALPHANUMERIC DISPLAY.....YES
AHL...AUTOMATIC HOLD.....NO
HRC...SWITCHHOOK RINGER CUTOFF.....NO
DPT...DTMF PASSTHROUGH TIMING INDEX.....NONE
ADD...ADT ANALOG SIDE DTMF DIALING.....NO
EAC...EMERGENCY ASSOCIATED CPN.....NONE
LPR...LINE PRESELECT TYPE.....PRIME
PLB...PRIME LINE PRESELECT BUTTON #.....1

```

BUTTON	TYPE	LINE/FEATURE ID
1.PL.ACD.VOICE LINE	DISP AGENT	DRN:20010 -UGP:1...RING
		HFA - INACTIVE
		OAI1
2.....VOICE LINE	DISP	DRN:40000 -UGP:1...RING
.		
.		

```

SELECT COMMAND => dirn
SELECT MODE: PRINT, DISPLAY, UPDATE, SEARCH, VACANT => d
DIRECTORY NUMBER or - or ?..... => 20010
USER GROUP..... => 1

** VOICE LINE DEFINITION                12/24/05      15:42:43
DRN...DIRECTORY NUMBER.....20010
UGP...USER GROUP NUMBER.....1
COS...CLASS OF SERVICE.....10
CPG...CALL PICKUP GROUP NUMBER.....0
HNC...HOME NNP NUMBER.....(NONE)
AAL...ACD AGENT LINE.....YES
ACD...HOME ACD PILOT NUMBER.....30012 /1
WUP...WRAP-UP ALLOWED.....YES
AIP...AGENT IDLE QUEUE PRIORITY.....1
ASO...AGENT AUTO-SIGNON.....NONE
HUN...HUNT PILOT NUMBER.....NONE
OAM...OAI ASSOCIATED MEMBER.....YES
APR...AUTOMATIC PRIVACY RELEASE.....NO
CAD...100 NUM ABBREVIATED DIALING.....NO
DIA...STATION DIAGNOSTIC ALLOWED.....NO
FIE...CALL FORWARD - INTERNAL/EXTERNAL...NO
CFN...CALL FORWARD - NO ANSWER.....INACTIVE
CFB...CALL FORWARD - BUSY.....INACTIVE
CFA...CALL FORWARD - ALL.....INACTIVE
HOT...HOT LINE DIRECTORY NUMBER.....INACTIVE
OHA...OFFHOOK ALERT DESTINATION NUMBER...INACTIVE
TOD...TIME OF DAY RESTRICTIONS.....NO
CNC...NATIONAL CALLING PARTY # CONTENTS..USER GROUP
CNI...USER GROUP CALLING PARTY #.....1 = 512-259-4631
INN...INSIDE CALL, NAME/NUMBER FIRST...NAME
ONN...OUTSIDE CALL, NAME/NUMBER FIRST...NUMBER

STATION      TYPE  BUTTON  RING OPTION
001.2.05.01 ITES    1      RING
DISP AGENT-ACD

OAI1

Team Membership:
    
```

```
NONE
END OF DISPLAY
```

3.3. Setting up Agents

If hardphone support is enabled in ICM Peripheral Monitor table, Agents must be configured on the Aastra PointSpan switch.

The parameter Agent Identification (AID) must match the Peripheral Agent ID on ICM. An agent login password can be set using the Agent Password (PSW) parameter, however this password is only used when the agent logs in on the hardphone. If the agent logs in using an Agent Desktop the entered password must match the one set in ICM Agent Explorer and not on the switch.

The ACD Pilot directory number (PLT) needs to be set to a default Home ACD Pilot that does not receive any calls. Please note that the initial agent sign-on mode parameter (ISM) of that ACD Pilot must be set to WORK.

Note: The Home ACD Pilot is primarily used to allow agent login on the hardphone and has no relationship with the configured ICM skillgroups.

```
SELECT COMMAND => agid
SELECT MODE: PRINT, DISPLAY, UPDATE, RESTORE => d
RANGE OF IDs, NAMES or ?.....I => i
AGENT ID or ?..... => 120010
USER GROUP NUMBER..... => 1
** AGENT IDENTIFICATION DEFINITION      12/24/05  15:28:02
AID...AGENT IDENTIFICATION.....120010
UGP...USER GROUP.....1
***...CALL CENTER NUMBER.....1
***...AGENT STATUS.....OFFLINE
PLT...HOME ACD PILOT DIRECTORY NUMBER...30013
***...CURRENT ACD PILOT.....30013/1
PSW...AGENT PASSWORD.....NONE
AVL...ASSOCIATED VOICE LINE DIRECTORY...20010
NME...AGENT NAME.....test 10
WUP...WRAP-UP ALLOWED.....YES
AIP...AGENT IDLE QUEUE PRIORITY.....0
DAS...DYNAMIC AGENT SIGNON.....ALLOWED
RAG...ROAMING AGENT.....YES

Team Membership:
NONE
```


3.4. Changes to Support Post-Routing

To support ICM Post-Routing, you need to set up Application Pilots and CallGuides on the Aastra switch. These ICM Routing Application Pilots must be configured as Dialed Numbers on ICM.

3.4.1. Application Pilots for ICM Route Requests

An ICM Route Request is sent out from the ARS Gateway to ICM when the call is delivered to the Application Pilot. The Pilot Directory Number must be configured as Dialed Number String in DialedNumber Configuration.

It is important that the Application Pilot is enabled and configured for the correct OAI channel. Use the command ACD to setup or verify the parameters OAM, OCC and OAP.

The CallGuide1 (CG1) defines the CallGuide started when a call hits this application pilot. Do not use Night CallGuides (NCG) for ICM Routing Application Pilots. Set parameter NCG to NONE.

```

SELECT COMMAND => acd
SELECT MODE: PRINT, DISPLAY, UPDATE, TITLES, CHANGE, ADMIN
=> d
PILOT DIRECTORY NUMBER, A, or ?..... => 30023
USER GROUP..... => 1

DISPLAY OPTION: G; P; -; or ?..... => -
PILOT 30023/1.....Pilot 30023
** AUTOMATIC CALL DISTRIBUTION DEFINITION 30023 01/11/06
10:56:25
OAM...OAI ASSOCIATED MEMBER.....YES
OCC...OAI COMMUNICATIONS NUMBER.....13
OAP...OAI APPLICATION ID.....1
CDM...CALL DISTRIBUTION METHOD.....LONGEST IDLE
*** CALL DEFLECTION CRITERIA ***
LQD...LONGEST QUEUE DURATION.....NONE
QMX...MAX QUEUE SIZE.....255
DPT...ADDITIONAL PILOT FOR DEFLECTION..NONE
CDD...CALL DEFLECTION DESTINATION.....NONE
PLE...CDR PILOT EVENT ENABLED.....YES
AGE...CDR AGENT EVENT ENABLED.....NO
RNF...RING-NO-ANSWER FORWARD TREATMENT...RING FOREVER
MUS...PILOT MUSIC SOURCE.....CALLER'S USER GRP
MUT...HELD/TRANSFER MUSIC SOURCE.....CALLER'S USER GRP
CTM...CONTINUE MUSIC UNTIL AGENT CONNECT.NO
CAR...CALL ALERTING RING TYPE.....STANDARD RING
API...ACD PROFILE INTERVALS.....5
CDI...CALL DURATION PROFILE INTERVALS....5

```

```
ULS...UPDATE LAMPS AFTER SIGNOFF.....YES
QLT...QUEUED LAMP THRESHOLD.....1
AQS...AUDIBLE QUEUE STATUS FEATURE.....NO
TAT...TARGET TIME TO ANSWER THRESHOLD....30
MAQ...MIN AVE QUEUE TIME FOR ANNG STEP...5
QSI...IQ SAMPLE INTERVAL.....Not Applicable
NIM...INITIAL ACD GROUP MODE.....ACTIVE
ACN...ANSWER CALLS WHEN NIGHT INVOKED...YES
WRP...PILOT WRAP-UP.....NONE
WRA...AGENT GROUP WRAP-UP.....NONE
WRI...WRAP-UP - INBOUND NON-ACD CALLS...NONE
WRO...WRAP-UP - OUTBOUND CALLS.....NONE
PAS...PERMANENT AGENT SIGN-ON.....NO
ISM...INITIAL AGENT SIGN-ON MODE.....IDLE
AOF...AGENT SIGN-OFF MODE.....TERMINATE AUTO-
ANSWER AND SIGN-OFF
RAH...RETURN TO HOME GROUP ON SIGNOFF....NO
DAS...ALLOW AS AGT DYNAMIC SIGNON TARGET.NO
ADN...AUTO DO NOT DISTURB WHEN "OFFLINE".NO
NRD...AGENT NOT READY ALLOWED.....NO
SVF...SUPERVISOR STATION PORT.....NONE
PSW...ACD GROUP PASSWORD.....NONE
AWM...ACD WHISPER MESSAGE SOURCE GROUP...NONE
DLS...DIRECTORY LOOKUP SYSTEM.....NO
CRS...CALL ROUTE SCHEDULING.....NO
AUN...AGENT UNAVAILABLE .....NOT ALLOWED
AWR...AGENT WORK ALLOWED.....NO
WTV...TIME ALLOWED FOR AGENT WORK.....NO
UTV...TIME ALLOWED FOR AGENT UNAVAILABLE.NO
NRT...MAX TIMES WRAP/WORK BUTTON ALLOWED.UNLIMITED
MOD...AGENTS INCOMING CALLS DISPLAY.....CURRENT PILOT
FNR...CALL FWD NO ANSWER TIME (seconds)..0
DST...DESTINATION ID ON EXIT.....CURRENT PILOT
OBL...ORIGINATOR BILLING.....NO
HNP...HOME NNP NUMBER .....NONE
CWE...CALL WAITING TERMINATION.....NO
SAT...SHORT ABANDON TIME (seconds).....NONE
NCG...NIGHT CALL GUIDE.....NONE
CG1...CALL GUIDE 1.....200
```

```
** AGENT ID ASSIGNMENT
```

3.4.2. Call Guides for ICM Route Requests

In the CallGuides for ICM Routing Application Pilots, the call handling is defined in case the ICM Route Request fails.

Begin the script with a WAIT 5 step to allow ICM to find a target for this call and transfer the call to the new destination. After the WAIT step, you can define the default call handling if there is no answer to the ICM Route Request within the wait time. For example, you can play an announcement, divert the call to a default service, or disconnect the call.

```

SELECT COMMAND => acdc
SELECT MODE: PRINT, DISPLAY, UPDATE, TITLES => d
SPECIFY CALL GUIDE NUMBER or - ..... => 200

    ICM Route Request Call Guide

*** CALL GUIDE 200      USER GROUP 1      CALL CENTER 1      11/25/05      11:37:18

*** CALL GUIDE DEFINITIONS:

*** CALL GUIDE STEPS:

STEP  TYPE
-----
1      WAIT
      WAIT TIME.....5 SECONDS      TONE.....SILENCE
2      PLAY TONE
      TONE.....RE-ORDER      DURATION.....10 SECONDS
3      DISCONNECT CALL
4      LAST
SPECIFY CALL GUIDE NUMBER or - ..... =>
    
```

3.4.3. Translation Routing

For Translation Route targets, the same switch configuration is needed as for an Application Pilot for ICM Route Requests as described in chapter 3.4.1.

On ICM, the configuration is different. Create an ICM translation route and add all Translation Route target DNIS values in Peripheral Monitor table.

3.5. Changes to Support Virtual VRU Scripts

To support local queuing on Aastra PointSpan PBX, the switch can act as VRU and run Virtual VRU Scripts controlled by ICM routing scripts. You need to set up Application Pilots and CallGuides on the Aastra switch and configure these Application Pilots as Network VRU scripts and Peripheral Monitor entries on ICM.

The call treatment for a specific Virtual VRU Scripts is defined in the CallGuide. The CallGuide may play announcements or play music until an available agent is available. When call control should return to ICM the last step in the CallGuide must be a “Forward Call” step to your SCI RESULT Application Pilot.

3.5.1. Virtual VRU Script Application Pilots

For Virtual VRU Script Application Pilots the same switch configuration is needed as for an Application Pilot for ICM Route Requests. The only difference is the associated CallGuide; set the CG1 parameter to your CallGuide for that Virtual VRU Script.

3.5.2. Virtual VRU Script Call Guide SCI Result

The SCI RESULT Application Pilot is called at the end of a Virtual VRU Script to indicate to ICM that the Virtual VRU Script has ended. The Application Pilot Directory Number must be configured as “SC_RESULT” in ICM Peripheral Monitor table. See section 4.2. *Peripheral Monitor Configuration* for more details.

Begin the script with a WAIT 5 step to allow ICM to continue with the ICM Script and transfer the call to the new destination. After the WAIT step, you can define the default call handling if there is no answer to the SCI Result message within the wait time. For example, you can play an announcement, divert the call to a default service, or disconnect the call.

```

SELECT COMMAND => acdc
SELECT MODE: PRINT, DISPLAY, UPDATE, TITLES => d
SPECIFY CALL GUIDE NUMBER or - ..... => 723

ARS SCI Result

*** CALL GUIDE 723      USER GROUP 1      CALL CENTER 1      05/23/06      22:12:55

*** CALL GUIDE DEFINITIONS:

*** CALL GUIDE STEPS:

STEP  TYPE
-----

```

```

1      WAIT
      WAIT TIME.....5 SECONDS      TONE.....SILENCE
2      PLAY TONE
      TONE.....RE-ORDER      DURATION.....10 SECONDS
3      DISCONNECT CALL
4      LAST
SPECIFY CALL GUIDE NUMBER or - ..... =>

```

3.5.3. Virtual VRU Script Call Guides

Define a CallGuide on the Aastra switch for each of the Virtual VRU Scripts you need. Define the call treatment, and make sure that the last step is always a —Forward Call” to your SCI RESULT Application Pilot.

An example of a Virtual VRU Script is the following CallGuide that plays an announcement and then gives the control back to ICM.

```

SELECT COMMAND => acdc
SELECT MODE: PRINT, DISPLAY, UPDATE, TITLES => d
SPECIFY CALL GUIDE NUMBER or - ..... => 726

      ARS SCI Prompt2

*** CALL GUIDE 726      USER GROUP 1      CALL CENTER 1      05/24/06      10:42:43

*** CALL GUIDE DEFINITIONS:

*** CALL GUIDE STEPS:

STEP  TYPE
-----
1      SPEAK ANNUNCIATOR MESSAGE
      ANNUNCIATOR GROUP.....53      ANNUNCIATOR MESSAGE.....4
      ANNUN WAIT TIME.....10 SECONDS      ANNUN UNAVAILABLE STEP.....NEXT
      AGENT INTERRUPT.....YES
2      FORWARD CALL
      DESTINATION .....30723
3      LAST
SPECIFY CALL GUIDE NUMBER or - ..... =>

```

For call queuing on the Aastra switch, define a Virtual VRU Script that does not immediately return control to ICM but plays different announcements or music.

The following example is a simple queuing script that plays a tone and waits for a minute before control is given back to ICM to continue the routing script.

```

SELECT COMMAND => acdc
SELECT MODE: PRINT, DISPLAY, UPDATE, TITLES => d
SPECIFY CALL GUIDE NUMBER or - ..... => 727

ARS SCI Queue

*** CALL GUIDE 727      USER GROUP 1      CALL CENTER 1      05/23/06      22:18:20

*** CALL GUIDE DEFINITIONS:

*** CALL GUIDE STEPS:

STEP  TYPE
-----
1     PLAY TONE
      TONE.....ZIP-ZIP
2     WAIT
      WAIT TIME.....5 SECONDS      TONE.....SILENCE
3     PLAY TONE
      TONE.....ZIP-ZIP
4     WAIT
      WAIT TIME.....60 SECONDS      TONE.....SILENCE
5     FORWARD CALL
      DESTINATION .....30723
6     LAST
RETURN CONTINUES DISPLAY..... =>

```

3.6. RONA Support

Alerting calls on agent devices cannot be diverted to another destination using OAI commands. Therefore the ICM Ring-No-Answer (RONA) feature is not supported on the Aastra ARS Gateway. Use the call forward no answer feature of the Aastra PointSpan switch to forward the call to an ICM Application Pilot to request routing through ICM.

The following steps are needed to configure RONA support for your Aastra ARS Gateway:

- Configure an ICM Application Pilot and CallGuide on the Aastra PointSpan switch for your RONA number. See chapter 3.4.

Changes to Support Post-Routing for more information.

- Configure the Call Forward – No Answer (CFN) parameter on your agent devices. The parameter CFN must be set to your RONA number.
- The RONA timeout for the agent devices is configured in the User Group Configuration on the Aastra PointSpan switch. Set the FNR timer to your RONA timeout.
- In ICM Script Explorer create an ICM Rona Script that handles your RONA calls.
- In ICM add your RONA number as Dialed Number and associate it to your ICM Rona Script using a CallType.
- In the Agent Desk Settings configure the Ring No Answer Time. Set this value to 1 second below your Rona timeout.

3.7. Maintaining Your Configuration

For all changes other than deletions made to your configuration, first make the change on the Aastra PBX, and then in the ICM Configuration. This ensures that the PG sees configuration updates made on the Aastra PBX systems.

If you are deleting objects, first remove references to those objects in ICM, and then delete the objects from the Aastra PBX. This ensures that deleted objects are not used in routing decisions. For example, if you were to remove a dialed number for a specific trunk group and DNIS, you would first remove references to this dialed number on the ICM; this prevents ICM from routing calls to that dialed number while you are removing the dialed number from the ACD.

4. ICM Software Configuration

In order to properly configure and maintain the ICM database, you need to understand the relationships between the Aastra PointSpan PBX database objects and the ICM database objects.

By understanding the relationships between the database objects of the Pointspan PBX and ICM software, it will be easier to keep the PointSpan PBX and ICM databases synchronized (that is, up-to-date with each other).

This chapter describes how objects map between the Aastra PBX and the ICM software. It also provides information specific to configuring an Aastra ARS Gateway by using the Configure ICM tool.

See also: For detailed information on the Configure ICM user interface, see the *ICM Software Configuration Guide*.

4.1. Peripheral Configuration

In ICM software terms, the PointSpan PBX corresponds to a peripheral. The ICM software treats all contact center devices (e.g., ACDs, PBXs, IVR systems) as peripherals.

4.1.1. Peripheral Configuration Parameters

Create a new peripheral of type ‘IPCC System’ for your ARS peripheral. Typically, the Configuration Parameters fields within the Peripheral Configuration window are left blank. The required peripheral configuration parameters are set automatically in the NT registry during PG setup.

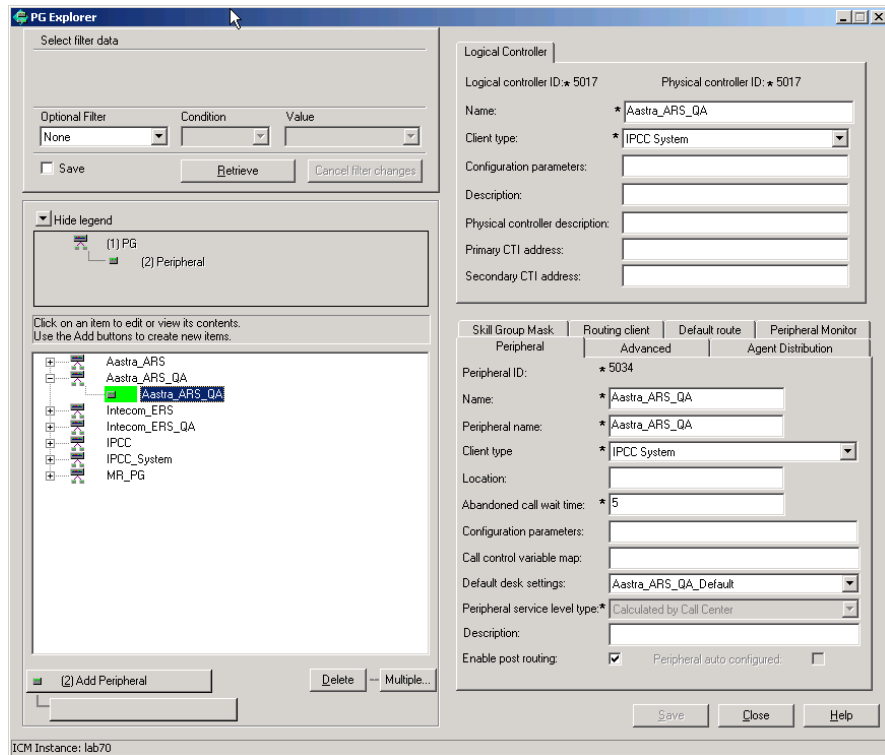


Figure 4: ICM Peripheral Configuration

4.2. Peripheral Monitor Configuration

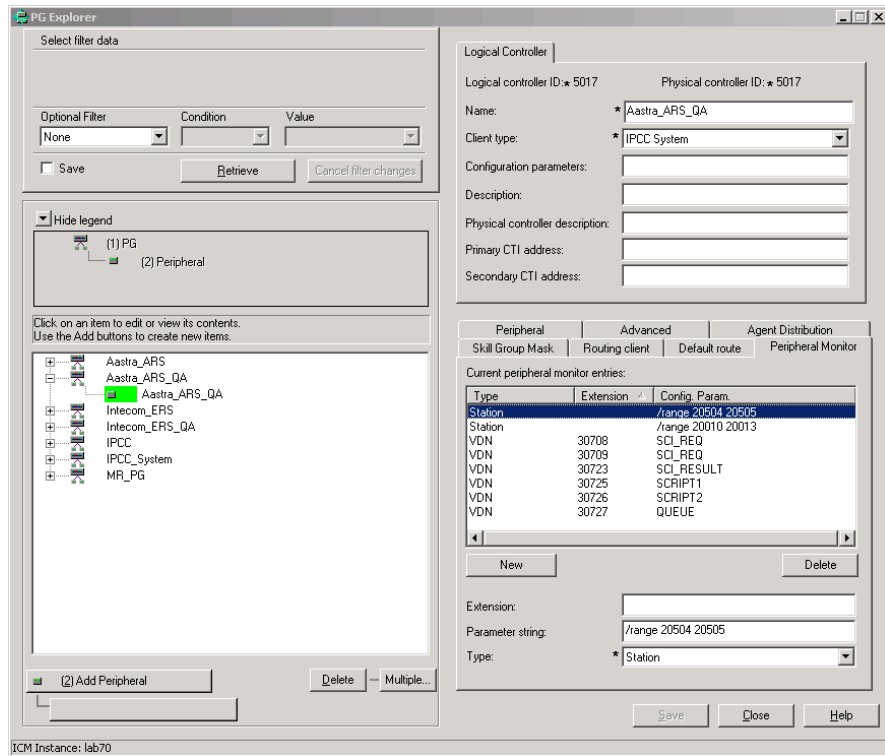


Figure 5: ICM Peripheral Monitor Configuration

Peripheral Monitor Type	PointSpan PBX
Station	Agent Devices
VDN / -SCI_REQ”	Application Pilot for ICM Translation Routing
VDN / -SCI_RESULT”	Application Pilot for Virtual VRU Script Support.
VDN	Virtual VRU Script

4.2.1. Agent Devices

Each agent device that needs to be monitored is configured as Peripheral Monitor Entry of type station. You can configure a range of agent devices using the `/range`” parameter in the Parameter string field. Optionally, you can configure a single extension by specify the low extension as the same as the high extension in the `/range` parameter.

Hardphone support can be switched on or off using the `-h`” command in the Parameter string field. Default is hardphone support enabled. To switch

off hardphone support add `-h n` to your agent devices Parameter string field.

See the *Aastra ARI Release Notes* for more details on agent device configuration.

4.2.2. Translation Route Target DNIS

Every Translation Route Target DNIS that is configured for this peripheral must be configured in the peripheral monitor table. Set Type to `-VDN`, the Config. Param. to `-SC_REQ` and enter the DNIS value in the Extension field.

4.2.3. Virtual VRU Scripts

For Virtual VRU Script support you need to configure your Virtual VRU Scripts in the Peripheral Monitor table. All Virtual VRU Scripts configured on the switch must have an entry of type VDN and the Extension set to the ACD Pilot Directory number. The Virtual VRU Script name in the Config. Param. field must match the exact name configured in the Network VRU Script List.

Additionally there must be one entry of type VDN and Config. Param. `-SC_RESULT` in order to give the control back to ICM after a Virtual VRU Script is finished.

4.3. Skill Group Configuration

Configure ICM Skillgroups as described in *IPCC Installation and Configuration Guide for Cisco IPCC Enterprise Edition*.

4.4. Agent Configuration

Configure your agents using the Agent Configuration tools. If hardphone support is enabled the AgentID (Peripheral number) must match the Agent Identification configured on the Pointspan PBX. If an unconfigured agent logs in to a monitored device, the router dynamically creates this agent in ICM configuration database.

The ICM Software and PointSpan PBX agent mapping is as follows:

ICM Software	PointSpan PBX
Agent	Agent
Agent Peripheral Number	Agent Identification

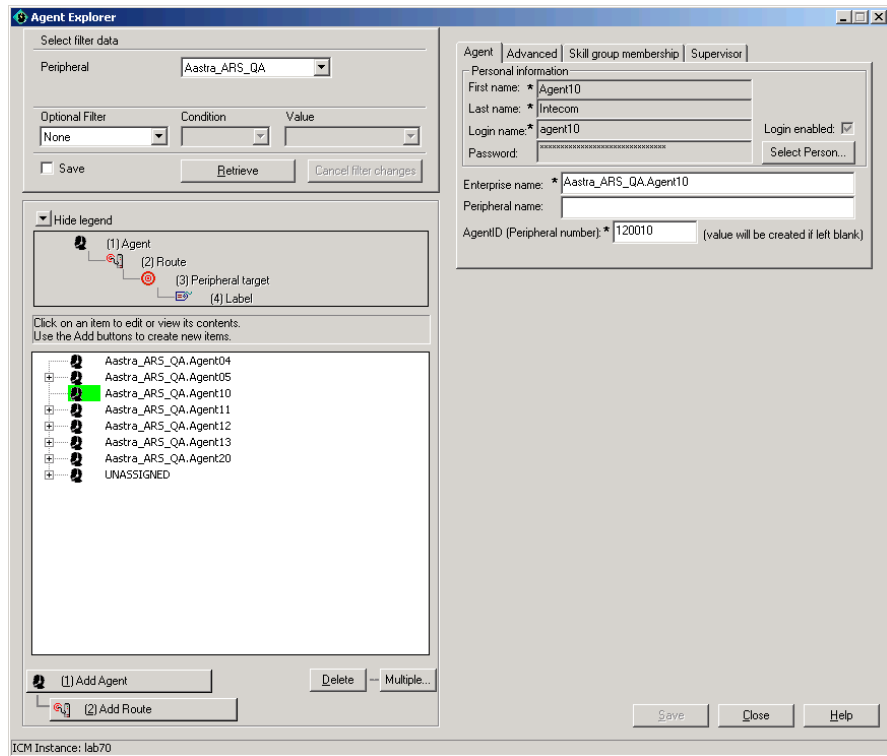


Figure 6: ICM Agent Explorer

4.5. Agent States for hardphone support

The following table lists the PointSpan PBX agent states and their definitions.

Table 3: PointSpan PBX Agent States

PointSpan PBX Agent State	Definition
Agent Signed OFF	Agent is not logged in
Agent Idle	Agent is logged in and available to receive a call
Agent Busy ACD Call	Agent is talking on an ACD call. <i>n/a for ARI hardphone support.</i>
Agent Work	Agent is not available to take a call. He is talking on a non-ACD call or he is in Wrapup/Work state.
Agent Wrap	Agent is in after call wrapup state. <i>n/a for ARI hardphone support</i>
Agent Unavailable	Agent is logged in but unavailable to take a call. <i>n/a for ARI hardphone support</i>

If hardphone support is enabled for an agent device then the agent states are synchronized between ICM and the Aastra PointSpan hardphone. Table 4 shows how ICM agent states are mapped to the PointSpan PBX states in hardphone support mode.

Table 4: ICM Software-PointSpan PBX Agent State Mapping

ICM Agent State	Mapping to PointSpan PBX Agent States
Not Ready	Agent Work
Ready	Agent Idle
Available	Agent Idle
WorkReady	N/A
WorkNotReady	N/A
TalkingIn	N/A
TalkingOut	N/A
TalkingOther	N/A
BusyOther	N/A
Reserved	N/A
Hold	N/A
Logged Out	Agent Signed OFF

Note: Because of a limitation on the OAI Interface the PointSpan agent state UNAVAILABLE is not sent to ICM. Therefore the PointSpan agent state UNAVAILABLE is not supported in an ICM deployment.

4.6. Agent Targeting Rules

Configure ICM Agent Targeting Rules as described in the *Aastra ARI Release Notes*.

4.7. Network VRU

Create a Network VRU Type 9 for your Aastra ARS Peripheral. The network VRU is necessary to support Virtual VRU Scripts on your Aastra switch.

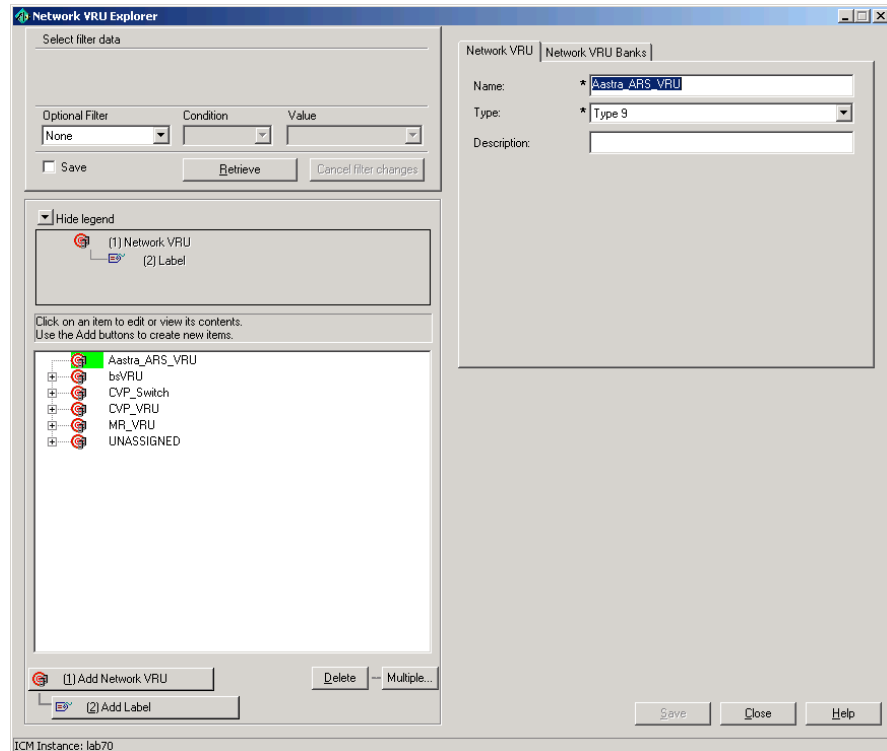


Figure 7: ICM Network VRU Explorer

The network VRU you created for the Aastra ARS Peripheral must be configured in your Peripheral configuration. Open the PG Explorer and select your network VRU in the Network VRU field on the Advanced tab.

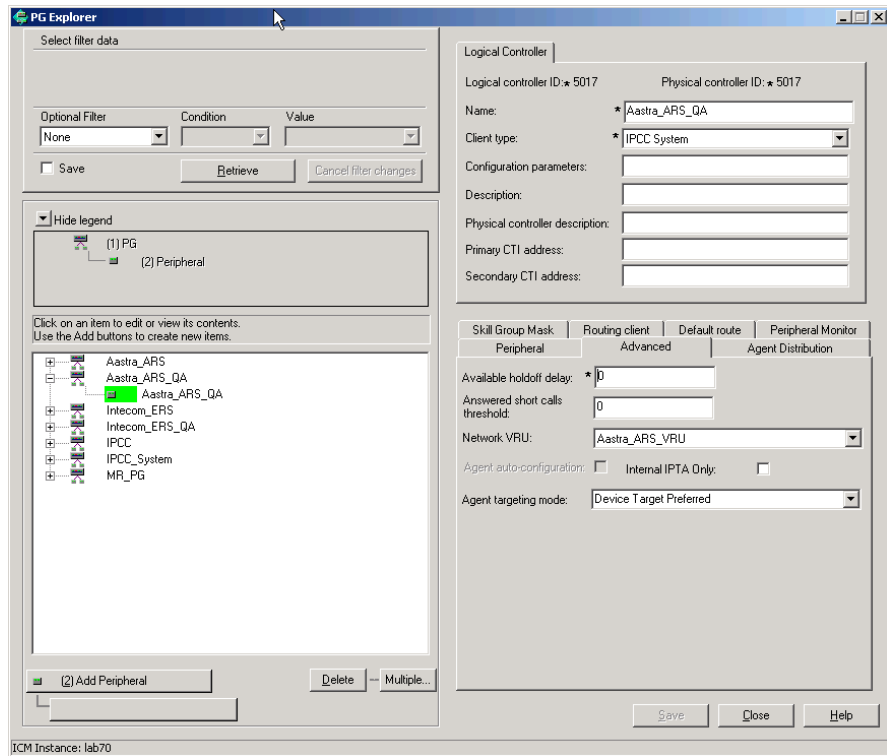


Figure 8: ICM PG Explorer Advanced Tab

4.8. Network VRU Scripts

Configure all your Virtual VRU Scripts on your Aastra switch in the Network VRU Scripts List. Only VRU Scripts configured in this list can be used in your ICM Script.

Note that all of those scripts must be configured in the Peripheral Monitor Table as type VDN.

Configuration	Description
Name	Enterprise name for the VRU script. This name must be unique for all VRU scripts in the system. This name is displayed in ICM Script.
Network VRU	Choose your Aastra Peripheral Network VRU.
VRU script name	Technical script identifier. This name must be unique for your peripheral and match the VDN entry in Peripheral Monitor table.
Timeout	Script timeout. Without a response from the Aastra switch within this time ICM assumes the script failed.

Configuration params	not used
Interruptible	Checked, indicates the script can be interrupted.

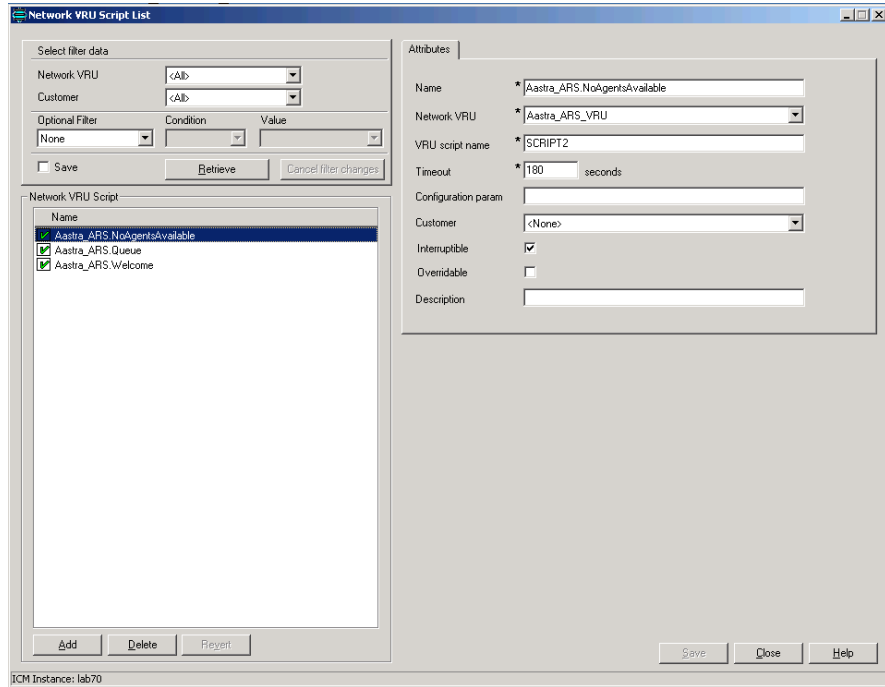


Figure 9: ICM Network VRU Script List

4.9. Translation Route Configuration

Translation routes are supported on the Aastra ARS Gateway. Configuration of translation routes is consistent to any other TDM switch. Please refer to overall ICM documentation for more details.

Please note that the Translation Route Target DNIS values must be configured in the Peripheral Monitor table as type VDN with configuration param string `_SCI_REQ`.

Do not configure Dialed Numbers for Translation Route Target DNIS.

4.10. Maintaining Your Configuration

For all changes other than deletions made to your configuration, first make the change on the Aastra PBX, and then in the ICM Configuration. This ensures that the PG sees configuration updates made on the Aastra PBX systems.

If you are deleting objects, first remove references to those objects in ICM, and then delete the objects from the Aastra PBX. This ensures that deleted objects are not used in routing decisions. For example, if you were to remove a dialed number for a specific trunk group and DNIS, you would first remove references to this dialed number on the ICM; this prevents ICM from routing calls to that dialed number while you are removing the dialed number from the ACD.

5. ICM Scripting

ICM Scripting for Aastra ARS is similar to IPCC scripting. Refer to the document *ICM Scripting and Media Routing Guide for Cisco ICM/IPCC Enterprise & Hosted Edition*.

5.1. ICM Scripting using Virtual VRU Scripts

Virtual VRU Scripts are invoked using the Run External Script node in ICM Script Editor.

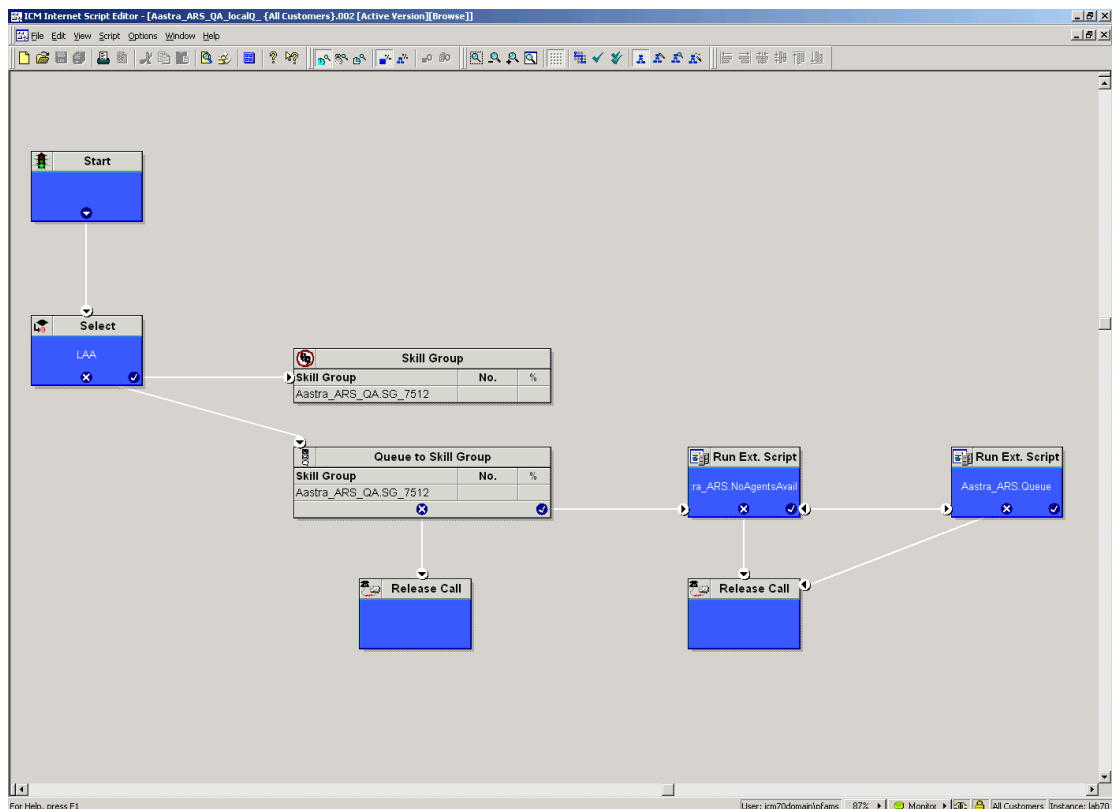


Figure 10: ICM Script using Virtual VRU Scripts

6. Troubleshooting

6.1. Gateway Startup

For gateway startup issues, review the logs using ICM dumplog tool. PIM messages can be found in pim1_ems file, ARS Gateway output in arsgw1_ems file. Refer to the ICM product documentation for directions on using the ICM dumplog tool.

Symptom: Gateway stays in IDLE state after startup.

Cause: The ARS Gateway waits for the PIM to open up a connection and send an OPEN_REQ message. Note that in a duplexed system side B gateway is only connected from PIM when side A goes down.

Action: Verify PIM configuration in registry. *TelephonyServerHostName* and *TelephonyServerServiceName* setting must match the gateway IP address and IcmPort configuration. These registry keys are configured in ..\PG\CurrentVersion\PIMS\pim1\ARSDATA\Config\ and ..\PG\CurrentVersion\ARS\ARSGw1\ARSDATA\Config\.

Symptom: Gateway goes to state ACTIVATING and then back to IDLE. Error message in gateway log —Driver is down”. Response to PIM OPEN_REQ message is a FAILURE_CONF(E_CTI_CTI_SERVER_OFFLINE, —Driver is down”)

Cause: Gateway cannot open up a connection to the OAI channel because the configured channel is not started.

Action:

- 1) Verify OAI client driver *_OAI_ICM'* is configured as described in section 2.1. *Installing and configuring the OAI Toolkit*.
- 2) Verify gateway registry setting *DriverName* is set to *_OAI_ICM'*. This key is in ..\PG\CurrentVersion\ARS\ARSGw1\ARSDATA\Config\
- 3) Start the OAI client driver *_OAI_ICM'* using DCP.exe.
- 4) Restart the ARS Gateway

Symptom: Gateway goes to state ACTIVATING and then back to IDLE. Error message in gateway log —Invalid version or password”. Response to PIM OPEN_REQ message is a FAILURE_CONF(E_CTI_CTI_SERVER_OFFLINE, —Invalid version or password”)

Cause: Gateway cannot open up a connection to the OAI channel because the OAI password is invalid.

Action:

- 1) Verify OAI application password is configured as described in section 2.1. *Installing and configuring the OAI Toolkit*. For application A01 the default value is `_PASSWORD1`.
- 2) Verify gateway registry setting *Password* is set to `_PASSWORD1`. This key is in `..\PG\CurrentVersion\ARS\ARSGW1\ARSDATA\Config\`
- 3) Restart the OAI client driver `_OAI_ICM` using DCP.exe.
- 4) Restart the ARS Gateway.

6.2. Call and agent state recovery at gateway startup

When the ARS Gateways starts up and connects to the PointSpan switch it recovers call and agent state for the monitored devices. This is also the case after an ARS Gateway or ARS PG failover.

Symptom: Call on hold is not shown on Agent desktop after ARS gateway or PIM restart.

Cause: Calls on hold cannot be recovered by the ARS Gateway at startup if the call is connected to either an external or unmonitored device.

Action: Retrieve held call on hardphone.

Symptom: Consultation call is not shown as consultation call on Agent desktop after ARS gateway or PIM restart. Reconnect button is not enabled on Agent desktop. Same applies to consult call for conference.

Cause: Calls on hold cannot be recovered by the ARS Gateway at startup if the call is connected to either an external or unmonitored device. Therefore the consultation call is the only call active on the device and shown as normal call.

Action: Complete transfer or reconnect to held call on hardphone.

6.3. Agent Login and state change

Symptom: Agent cannot login using the CTIOS Agent Desktop. Error message `_The request specified an invalid logon device.`

Cause: The login instrument is not known to the Aastra ARS Gateway.

Action: Verify that the login instrument is a valid device extension, the device is configured in the peripheral monitor table and that the device is associated to the correct OAI channel. See chapter 3.2. *Setting up Devices* and 4.2.1 *Agent Devices* for more details.

Symptom: Agent cannot login using the CTIOS Agent Desktop. Error message `_The request specified an invalid agent password.`

Cause: Password in login request does not match the password configured in ICM Agent Explorer configuration.

Action: Verify the agent password using ICM Agent Explorer. See chapter 4.4. *Agent Configuration* for more details.

Symptom: Agent cannot login using the CTIOS Agent Desktop. Error message `_The request specified an invalid AgentID.`

Cause: The agent ID is unknown to ICM.

Action: Verify the agent is configured in ICM Agent Explorer and at least one Skillgroup is assigned to the agent. See chapter 4.4. *Agent Configuration* for more details.

Symptom: Agent can login using the CTIOS Agent Desktop but is not logged in on hardphone. It is not possible to log agent in using hardphone only.

Cause: Hardphone support may not be activated for this device.

Action: The agent device must be configured for `_hardphone support` in ICM Peripheral Monitor table. To active hardphone support on agent device configure it using the `_h` parameter. See chapter 4.2.1 *Agent Devices* for more details.

Symptom: Initial agent state mismatch when agent logs in using the CTIOS Agent Desktop with hardphone support enabled. Initial agent state on ICM / CTIOS Agent Desktop is Not Ready. Agent state on the hardphone must be IN-WORK but is IDLE.

Cause: The initial agent sign-on mode on the agents Home ACD Pilot must be set to `_WORK` to match the initial agent state on ICM.

Action: On the agents Home ACD Pilot set the ACD parameter ISM (Initial agent sing-on mode) to `_WORK`. See chapter 3.3. *Setting up Agents* for more details.

Symptom: ICM agent state is RESERVED, HOLD or TALKING but there is no active call on his hardphone.

Cause: Agent or call state mismatch between ICM and Aastra switch.

Action: Go off-hook and on-hook again on your hardphone to resync ICM. If the agent state does not change then logout your ICM Agent on the desktop and login again. If you cannot login the agent in this state then logout and login the agent on the hardphone. This resets the agent state in the ARS Gateway and ICM.

7. Reporting

Reporting for Aastra ARS is the same as IPCC Reporting. Refer to the document *Reporting Guide for IPCC Enterprise & Hosted Editions*.

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