

# **Cisco ICM Software ACD Supplement for Ericsson MD110**

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# Contents

<b>Preface</b> .....	<b>vii</b>
<b>Purpose</b> .....	<b>vii</b>
<b>Audience</b> .....	<b>vii</b>
<b>Organization</b> .....	<b>vii</b>
<b>Typographic Conventions</b> .....	<b>viii</b>
<b>Other Publications</b> .....	<b>ix</b>
<b>Obtaining Documentation</b> .....	<b>ix</b>
<b>Documentation Feedback</b> .....	<b>x</b>
<b>Product Alerts and Field Notices</b> .....	<b>x</b>
<b>Cisco Product Security Overview</b> .....	<b>x</b>
<b>Obtaining Technical Assistance</b> .....	<b>xii</b>
<b>Obtaining Additional Publications and Information</b> .....	<b>xiii</b>
<b>1. Overview</b> .....	<b>15</b>
<b>1.1. MD110–PG Interface</b> .....	<b>16</b>
<b>2. MD110 Supported Devices and Distribution Model</b> .....	<b>17</b>
<b>2.1. Distribution Model</b> .....	<b>18</b>
<b>3. ICM Configuration</b> .....	<b>19</b>
<b>3.1. Peripheral</b> .....	<b>20</b>
<b>3.2. Monitored Stations/Devices</b> .....	<b>20</b>
<b>3.3. Peripheral Targets and Routes</b> .....	<b>20</b>

3.4. Trunk Groups .....	20
3.5. Trunks.....	21
3.6. Services.....	21
3.7. Skill Groups.....	22
3.8. Agents.....	23
3.9. Agent to Skill Group Mapping.....	23
3.10. Routes.....	23
3.11. Translation Routes .....	23
3.12. Dialed Numbers .....	23
3.13. Labels .....	24
3.14. Off Switch Transfers .....	24
3.15. Agent States.....	24
<b>4. Routing Limitations and Restrictions on the MD110 .....</b>	<b>27</b>
4.1. Monitoring Delivered/Divert Post Routing (CTI Queues) .....	28
4.2. Translation Routing.....	28
4.3. Ericsson MD110 Restrictions .....	28
4.3.1. Cradle to Grave Call Reporting.....	28
4.3.2. Conference Call Restrictions/Peculiarities.....	29
4.3.3. Option 1 supported.....	29
4.3.4. Cisco Call Manager (CCM) Software.....	29
4.3.5. Multiple Device Monitors.....	29
4.3.6. Non ACD ADNs not supported .....	29
4.3.7. ACD ADNs should only be used for Inbound ACD Calls.....	29
4.3.8. Limited Resources for Post-Routing, Translation Routing.....	29
4.3.9. Reporting Irregularities.....	30
<b>5. Setup Considerations .....</b>	<b>31</b>
5.1. Ericsson MD110 Configuration .....	32
<b>6. ACD Hardware and Software Requirements.....</b>	<b>35</b>
6.1. Software Versions .....	36
6.2. Licensing.....	36

**6.3. Other Considerations ..... 36**

**6.4. ACD Interface Requirements..... 37**  
     6.4.1. Setup Information required for Configuration..... 37

**7. Procmon Commands ..... 39**

    7.1. pim\_trace commands..... 40

    7.2. Procmon commands ..... 41

**8. ODBC Setup..... 43**

    8.1. PIM Title Bar ..... 44

**9. Registry Settings..... 49**

**Index ..... Index-1**

**Tables**

Table 1: Peripheral Configuration Parameters.....	20
Table 2: Agent to Skill Group Mapping .....	23
Table 3: Agent State Chart.....	24
Table 4: Translation Routing .....	28
Table 5: Setup Information required for configuration .....	37
Table 6: pim_trace commands.....	40
Table 7: Procman Commands .....	41
Table 8: PIM Title Bar .....	44

**Figures**

Figure 1: MD110—PG Interface .....	16
Figure 2: Distribution Model .....	18
Figure 3: Example ICM Service Configuration for the MD110.....	21
Figure 4: Example ICM Skill Group Configuration for MD110 .....	22
Figure 5: Ericsson MD110 Configuration Screen.....	32
Figure 6: ODBC Data Source Administrator .....	45
Figure 7: Create New Data Source.....	45
Figure 8: MS SQL Server DSN Configuration-1 .....	46
Figure 9: MS SQL Server DSN Configuration-2 .....	46
Figure 10: MS SQL Server DSN Configuration-3 .....	47
Figure 11: MS SQL Server DSN Configuration-4 .....	47
Figure 12: MS SQL Server DSN Configuration-5 .....	48

# Preface

## Purpose

This document contains the specific information you need to maintain an Ericsson MD110 ACD in a Cisco Intelligent Contact Management (ICM) environment. While other ICM documents (for example, the *ICM Configuration Guide*, and the *ICM Script Editor Guide*) cover general topics such as configuring an overall ICM system and writing scripts to route contact center requests, the *ACD Supplement for Ericsson MD110* provides specific information on configuring an Ericsson MD110 and making any necessary adjustments to the ACD configuration. This document describes ICM Software version 4.1 and above.

## 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 Enterprise 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 Ericsson MD110 ACD.

## Organization

### Chapter 1, “Overview”

This chapter provides an overview of the Ericsson MD110 support and the interface between MD110 and ACD.

### Chapter 2, “MD110 Supported Devices and Distribution Model”

Explains the supported devices and distribution model in Ericsson MD110 to manage and service call flow.

### Chapter 3, “ICM Configuration”

This chapter describes the configuration and object mapping between the ICM Software and the Ericsson MD110 ACD.

### Chapter 4, “Routing Limitations and Restrictions on the MD110”

This chapter provides the routing limitations and restrictions with MD110.

### Chapter 5, “Setup Considerations”

This chapter provides information regarding how to configure MD110.

Chapter 6, “ACD Hardware and Software Requirements”

This chapter describes the ACD Hardware and Software requirements, and the ACD Interface requirements for MD110.

Chapter 7, “Procmon Commands”

This chapter describes some of the commands accessible for the PIM through Procmon.

Chapter 8, “ODBC Setup”

The details for user to setup an ODBC DSN that points to the proper CCM Database.

Chapter 9, “Registry Settings”

This chapter describes the registry settings for MD110.

## 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:

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

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From this site, you will find information about how to:

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- Obtain assistance with security incidents that involve Cisco products.
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A current list of security advisories, security notices, and security responses for Cisco products is available at this URL:

<http://www.cisco.com/go/psirt>

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1 877 228-7302

1 408 525-6532

**Tip:** We encourage you to use Pretty Good Privacy (PGP) or a compatible product (for example, GnuPG) to encrypt any sensitive information that you send to Cisco. PSIRT can work with information that has been encrypted with PGP versions 2.x through 9.x.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL: [http://www.cisco.com/en/US/products/products\\_security\\_vulnerability\\_policy.html](http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html)

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:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests, or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/techsupport/contacts>

## Definitions of Service Request Severity

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**Severity 1 (S1)**—An existing network is down, or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

**Severity 2 (S2)**—Operation of an existing network is severely degraded, or significant aspects of your business operations are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

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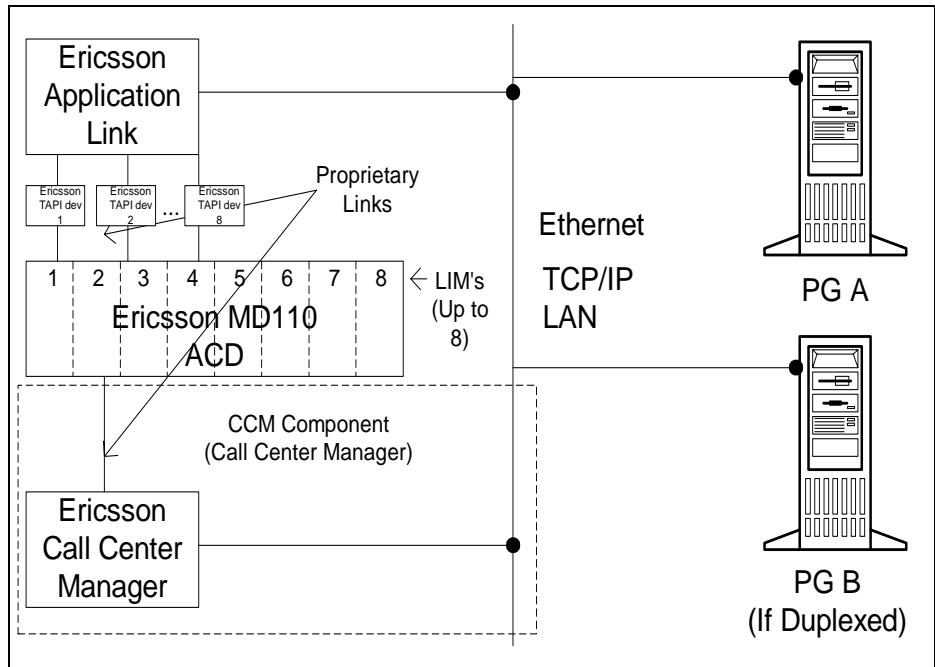
<http://www.cisco.com/en/US/learning/index.html>

# 1. Overview

This chapter contains information regarding the MD110 – PG interface, and the Computer Supported Telephony Application (CSTA) connection.

Ericsson MD110 provides a TCP server port 2555 for a CSTA connection between the Application Link software and telephony applications. This link provides all the information required for successful ICM monitoring and routing by the Ericsson MD110.

### 1.1. MD110–PG Interface



**Figure 1: MD110–PG Interface**

The Application Link does not provide information for the Agent IDs and agent group assignments. This additional information can be gathered through an ODBC link to the database that resides on the Ericsson Call Center Manager (CCM). A standby Ericsson MD110 is present which will not be utilized unless the primary Ericsson MD110 fails, drops the link, or some other detectable failure occurs.

The Ericsson PG supports duplexing if desired by the customer. Only 1 PG will be active (and connected to the MD110) at any given time if duplexing is used. When a failure occurs, the standby MD110 will be active.

## 2. MD110 Supported Devices and Distribution Model

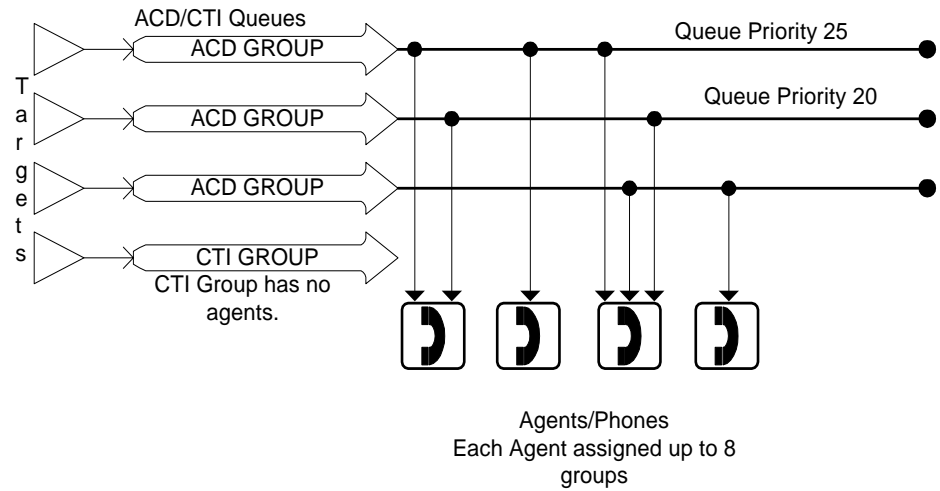
This chapter describes the Ericsson MD110 supported devices and distribution model.

The Ericsson MD110 supports up to 8000 Monitored Devices  
1000 Devices per LIM, up to 8 ACD Groups per Agent position (Phone),  
16 ACD Groups per LIM, 128 per system. MD110 supports 75 Agent  
positions per LIM, 1000 per system, up to 250 members per ACD group,  
500 per LIM, 4000 per system.

Analog Phones may NOT be used as ACD phone sets. MD110 supports  
128 ACD groups, up to 1000 Agents per system, up to 250 Agents per  
ACD group and 99 Calls are allowed in queue per ACD Group.

## 2.1. Distribution Model

The Ericsson MD110 uses ACD/CTI Groups to manage and service call flows. This map to the traditional Skill Groups modeled in the ICM Software.



- Agents may have an individual selection priority to place them ahead of other members when receiving calls.
- Queue Priorities may be used to determine which call an agent logged into multiple queues gets.

**Figure 2: Distribution Model**

## 3. ICM Configuration

In order to properly configure and maintain the ICM database, you need to understand the relationships between the MD110 database objects and the ICM database objects. By understanding the relationships between the database objects of the MD110 and ICM software, it will be easier to keep the MD110 and ICM databases synchronized (that is, up-to-date with each other).

This chapter describes how objects map between the MD110 ACD and the ICM software. It also provides information specific to configuring MD110 PG by using the Configure ICM tool. *See also:* For detailed information on the Configure ICM user interface, see the *ICM Software Configuration Guide*.

### 3.1. Peripheral

The ICM Peripheral corresponds to the Ericsson MD110 ACD.

On the Ericsson MD110 PG, there is only 1 configuration parameter. It specifies the ICM variable to map correlation data. It is used during post-routing to associate data with a call on the switch.

**Table 1: Peripheral Configuration Parameters**

Parameters	Options/arguments	Use
Configuration Parameter	PVn where n is 1-10	Specifies the variable (1-10) to set/store the correlation data.

### 3.2. Monitored Stations/Devices

The MD110 PG requires a list of ACD/CTI Groups, ODNs, and possibly ADNs depending upon whether or not the CCM link is available. This list is configured in the ICM database by placing entries in the “Peripheral Monitor” table. In order to add single devices (ACD Groups, ODNs, etc.), the Parameter field of the peripheral monitor is filled in with the device.

There are three monitor types that should be used in the peripheral monitor table. ACD\_DN should be selected for all ACD/CTI Groups and Virtual Devices. ODNs should be configured as type ‘station’, and ADNs, if configured, should be configured as type ‘routing\_device’.

Any device where post-routing or translation routing will be performed should be configured in the peripheral monitor table as type ‘virtual routing device’.

### 3.3. Peripheral Targets and Routes

Peripheral Targets are the means that the ICM Software maps/directs calls to Services, Skill Groups or Agents. A Peripheral Target is specified by a Network Trunk Group and a DNIS pair. Each Peripheral Target is associated with a single Route. A Route is associated with a Target Type (Skill Group, Agent, etc.). For accounting purposes, each Route is associated with a Service. It is this mapping that allows the Peripheral Gateway to associate Service when a new call arrives on the Ericsson MD110.

### 3.4. Trunk Groups

The Ericsson MD110 does not forward Trunk Group information to the PG. For this reason, Trunk Group configuration is not applicable to the PG. In order to configure peripheral targets, however, a Network Trunk Group has to be defined along with at least one Trunk Group. This Trunk Group should be used for each configured peripheral target.

### 3.5. Trunks

Individual Trunks are not monitored by the Ericsson MD110 Peripheral gateway. As a result, Trunk information is not required in the ICM configuration.

### 3.6. Services

An ICM Service has no direct mapping on the MD110. It can, however, be mapped to an ACD Group.

The DN of the ACD Group in the Peripheral Number field

The name of the Service in the Peripheral Name field

The description may optionally be filled in

All other fields should be left at their default values

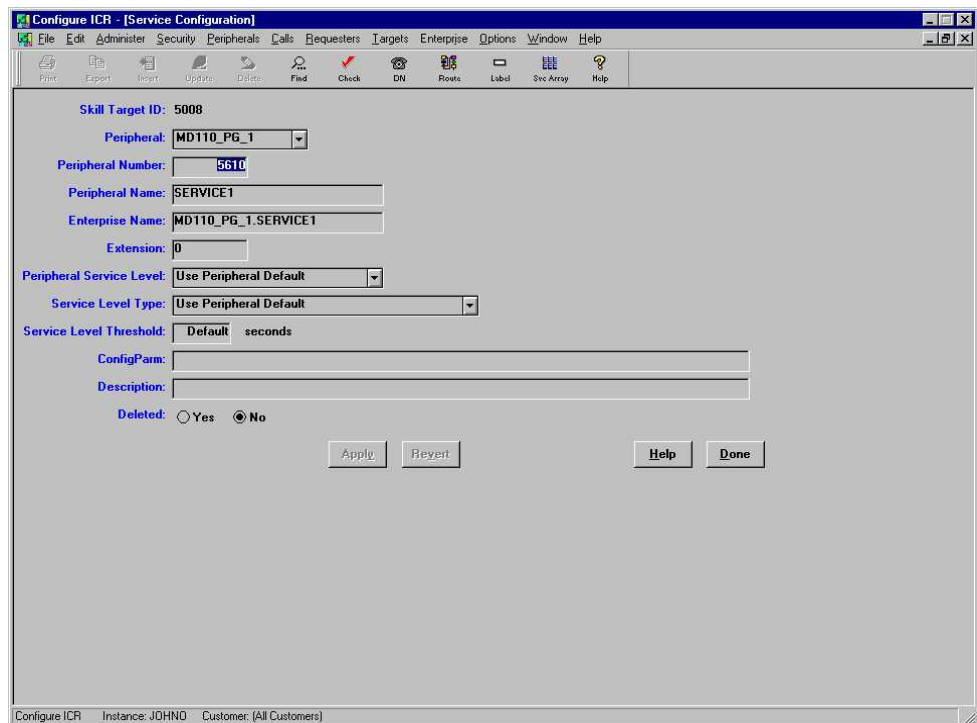


Figure 3: Example ICM Service Configuration for the MD110

### 3.7. Skill Groups

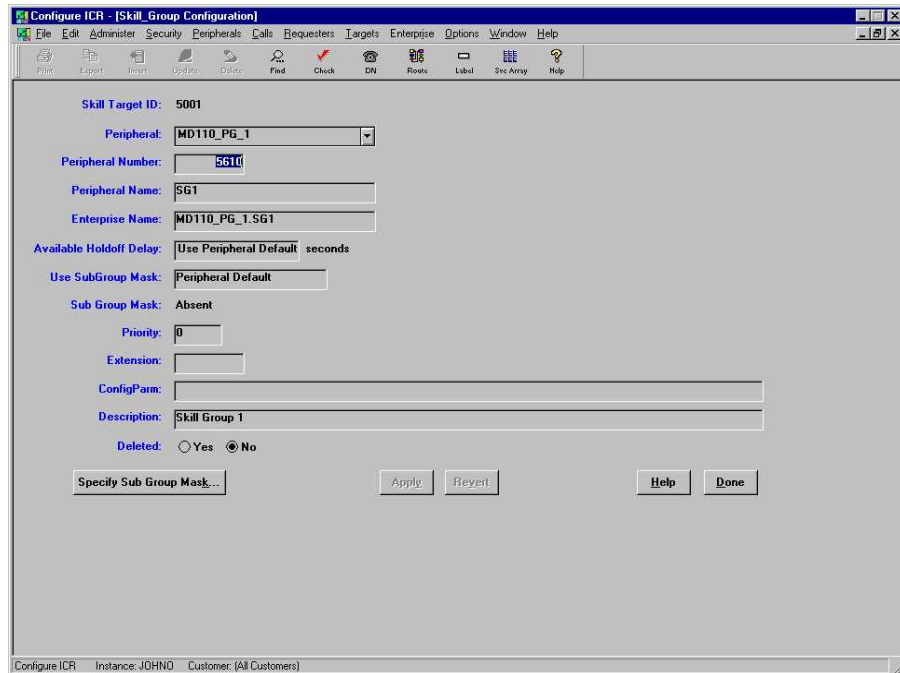
An ICM Skill Group is equivalent to an ACD group on the Ericsson MD110. The Skill Group peripheral number is the ACD Group Number on the MD110. When configuring a Skill Group in ICM Software, the user should enter the following:

The ACD group number in the peripheral number field

The name of the Skill Group in the peripheral name field

Optionally the user may enter a description in the description field

All other fields should be left at their default values



The screenshot shows the 'Configure ICR - [Skill Group Configuration]' window. The interface includes a menu bar (File, Edit, Administrator, Security, Peripherals, Calls, Requesters, Targets, Enterprise, Options, Window, Help) and a toolbar with icons for Print, Export, Import, Update, Delete, Find, Check, DN, Route, Label, Sync Array, and Help. The configuration fields are as follows:

- Skill Target ID: 5001
- Peripheral: MD110\_PG\_1 (dropdown menu)
- Peripheral Number: 5610 (text input)
- Peripheral Name: SG1 (text input)
- Enterprise Name: MD110\_PG\_1.SG1 (text input)
- Available Holdoff Delay: Use Peripheral Default seconds (checkbox)
- Use SubGroup Mask: Peripheral Default (checkbox)
- Sub Group Mask: Absent (text input)
- Priority: 0 (text input)
- Extension: (text input)
- ConfigParm: (text input)
- Description: Skill Group 1 (text input)
- Deleted:  Yes  No (radio buttons)

Buttons at the bottom include 'Specify Sub Group Mask...', 'Apply', 'Revert', 'Help', and 'Done'. The status bar at the bottom reads 'Configure ICR Instance: JOHNO Customer: [All Customers]'.

Figure 4: Example ICM Skill Group Configuration for MD110

### 3.8. Agents

The MD110 PG does not require Agent configuration.

### 3.9. Agent to Skill Group Mapping

When the MD110 PG starts, it checks the status for each monitored device. If the CCM interface is enabled, the PIM will receive Skill Group information for that Agent. If the CCM option is not enabled, then the Skill Groups for any Agent will be configured in the peripheral monitor table for each ADN. The following table provides the mappings of Agent States on the MD110 and how they map to ICM Agent States:

**Table 2: Agent to Skill Group Mapping**

MD110 Agent Events	ICM Agent States
Agent Logged Off	AS_LOG_OUT
Agent Logged On	AS_LOG_IN
Agent Not Ready	AS_NOT_READY
Agent Ready	AS_AVAILABLE
Agent Work Ready	AS_WORK_READY
Agent Busy (Not really an event)	AS_TALKING

The PG sets the Agent State to AS\_TALKING when the Agent is connected to a call.

If the CCM software is not used, then each ADN must be configured using the */odn nnnn*, and the */skillgroup* option in the Peripheral Monitor Table.

### 3.10. Routes

An ICM Route loosely corresponds to an ACD Group on the MD110. For reporting purposes, a Route should be configured for each ACD Group that is a target of a configured ACD Group.

### 3.11. Translation Routes

To use Translation Routes on the MD110, the Route pool should use Logical DTSSs, or CTI Queues. They must be configured prior to using Translation Routing. When either of these resources is used, no other application should use these items except ICM Software during Translating Routing calls. CTI Queues are recommended over virtual devices since they do not require a physical port.

### 3.12. Dialed Numbers

Dialed Numbers on the MD110 consist of 1 to 8 numeric digits, depending upon the switch configuration. The dialed number specified in a CSTA routing request will be the ACD/CTI Group Number, ODN Number, or Virtual Device Number on the MD110.

### 3.13. Labels

ICM labels that are returned to the MD110 for routing can be any ACD/CTI Group, ODN, Virtual Device, or Hunt group number defined on the MD110.

### 3.14. Off Switch Transfers

In order to accommodate transferring to Off Switch destinations, Logical DTSs are used. A Logical DTS must be configured in the peripheral monitor table using the '/forward' parameter. That is, insert '/forward' into the config parameter field of the corresponding peripheral monitor entry. Using this method, the PIM sets external call forwarding on for the Virtual Device. When the PIM (for Translation Routing or any other routing) diverts a call to that Virtual Device, the call is forwarded by the MD110 to the selected external destination.

### 3.15. Agent States

On the MD110 and in the PIM, each ADN is seen through a different monitor. This results in a rather complex arrangement of states for the PIM and the ICM Software. The following table provides some correlation between the Agent States on the MD110, and those reflected in ICM Software.

Shaded areas are those available on the CCM monitoring screens.

**Table 3: Agent State Chart**

State/Action	MD110 Current Group State/Curr ent Agent State	MD110 Other Group States	ICM Current Group State	ICM Other Group States	Able to rcv ACD Calls	ICM Software Will Route ACD Calls
Agent idle and Available in all ADN's	Ready / Ready	Ready	AVAILA BLE	AVAILA BLE	YES	YES
Agent phone ringing	Busy / Ringing	MMB	RESERV ED	BUSY_ OTHER	NO	NO
Agent Talking on an Inbound ACD Call.	Busy / Talking	MMB	TALKIN G	BUSY_ OTHER	NO	NO
Agent Talking on Inbound ODN call	Ready / Incoming	Ready	AVAILA BLE	AVAILA BLE	YES	YES
Agent Talking on Outbound ADN Call	MMB / Outgoing	MMB	TALKIN G	BUSY_ OTHER	NO	NO

<b>State/Action</b>	<b>MD110 Current Group State/Curr ent Agent State</b>	<b>MD110 Other Group States</b>	<b>ICM Current Group State</b>	<b>ICM Other Group States</b>	<b>Able to rcv ACD Calls</b>	<b>ICM Software Will Route ACD Calls</b>
Agent Talking on Outbound ODN Call	Ready / Outgoing	Ready	AVAILA BLE	AVAILA BLE	YES	YES
Agent in Wrap-up	Busy / Clerical	MMB	WORK_ READY	BUSY_ OTHER	YES	YES  (Last Resort)
Agent has an ACD call, but it is on hold	Busy/Parke d	MMB	HOLD	BUSY_ OTHER	NO	NO



## **4. Routing Limitations and Restrictions on the MD110**

This chapter describes Divert Post-Routing (CTI Queues), Translation Routing methods used by MD110 and the restrictions on the MD110 ACD.

## 4.1. Monitoring Delivered/Divert Post Routing (CTI Queues)

CTI Queues on the MD110 can be used for agent initiated post-routing. The destination device must be on the switch and can be any dial able number. However, an off switch location should be the final destination by post-routing to a virtual device that has the external forwarding enabled.

This routing method works by the Agent dialing a CTI group number. The PG receives a delivered event for the CTI queue, and requests a route based upon the dialed number for the CTI group. The call is then diverted to the desired destination.

## 4.2. Translation Routing

Virtual Devices (Logical DTS's) or CTI Queues may be used on the MD110 for translation routing. CTI Queues are recommended since they do not take up a physical port as a resource. The destination device must be on the switch, and can be any dial able number.

**Table 4: Translation Routing**

Domain-Control Split /Skill Associations	99	600
Simultaneous Call-Classification Originators	80	600
Simultaneous Billing Change Requests	100	1,000
Simultaneous Selective Listening Disconnected Paths	75	300

## 4.3. Ericsson MD110 Restrictions

This section provides information regarding the MD110 restrictions. The following are explained:

- Cradle to Grave Call Reporting
- Conference Call Restrictions/ Peculiarities
- Option 1 Support
- Cisco Call Manager (CCM) software
- Multiple Device Monitors
- ACD ADN's
- Limited Resources for Post Routing, and Translation Routing
- Reporting Irregularities

### 4.3.1. Cradle to Grave Call Reporting

Cradle to grave call reporting is supported only for incoming and outgoing calls to ACD ADNs. Cradle to grave reporting is not supported for calls made to or from an ODN or non ACD ADN. In addition, if there are more

than four calls active on a device for ACD ADNs, cradle to grave call tracking is done only for the first four calls.

#### **4.3.2.Conference Call Restrictions/Peculiarities**

There are some scenarios on the MD110 where no conference event is sent by the switch, and no new Call ID is used for the conference. ICM Software will not consider these actual conferences since the proper events will not be received, in particular, the cases where the agent places the call through an ACD ADN.

#### **4.3.3.Option 1 supported**

Currently, for the MD110 PIM, option 1 is supported. Both the PIM configuration and the Application Link configuration should reflect this.

**Note:** Since, option 1 mode is set on the Application Link for ALL host connections; any other host applications that connect to Application Link must use option 1 also.

#### **4.3.4.Cisco Call Manager (CCM) Software**

CCM Software must be installed.

#### **4.3.5.Multiple Device Monitors**

No other applications may monitor the same devices as ICM Software. This is necessary since ICM Software requires the Application Link to be in option 1 mode. This only allows ADN monitoring or ODN monitoring, but not both at the same time for any given device. ICM Software, before agent logon, will monitor the ODN then switch to monitoring the ADNs. If another application is monitoring the ODN or ADN when ICM Software needs to monitor the other, it would fail.

#### **4.3.6.Non ACD ADNs not supported**

The use of Non ACD ADNs used in any relation to ACD calls (Consults, Conferences, Transfers), is not supported. Using Non-ACD ADNs may result in incorrect Agent States being reported.

#### **4.3.7.ACD ADNs should only be used for Inbound ACD Calls**

Due to Application Link event generation limitations, the ACD ADNs should only be used for incoming ACD calls. Any inquiry calls should be made using the ODN/or inquiry key.

#### **4.3.8.Limited Resources for Post-Routing, Translation Routing**

Although a particular MD110 can be made up of many LIMs, ACD/CTI groups are limited to 16 per LIM. Virtual DTSs are physical resources so they are also expensive and limited. Although either one (or both) of these resources may be used by ICM Software for post and/or translation routing, extensive translation/post-routing may not be practical due to

resource limitations. For every Post-Routing, Translation Routing, or Virtual device that is used to route to an off switch destination, it will take one of the associated resources.

Due to this resource limitation, Post-Routing, and Translation Routing will be of limited use on the MD110.

#### **4.3.9. Reporting Irregularities**

##### **Calls Offered based upon Peripheral\_Real\_Time**

Calls offered in the Peripheral table will reflect all calls detected on the switch. This will include those 'dummy' calls that the switch generates in order to perform local functions such as Ready/Not Ready in an ACD group. Due to this, Calls Offered in the Peripheral tables will seem inflated when compared to their subsidiary counts from associated services.

##### **ODN calls not accounted**

Calls from an ODN to an ODN will not be seen by the PIM and won't be accounted for in any of the call statistics. This is due to the ODN not being monitored for each device.

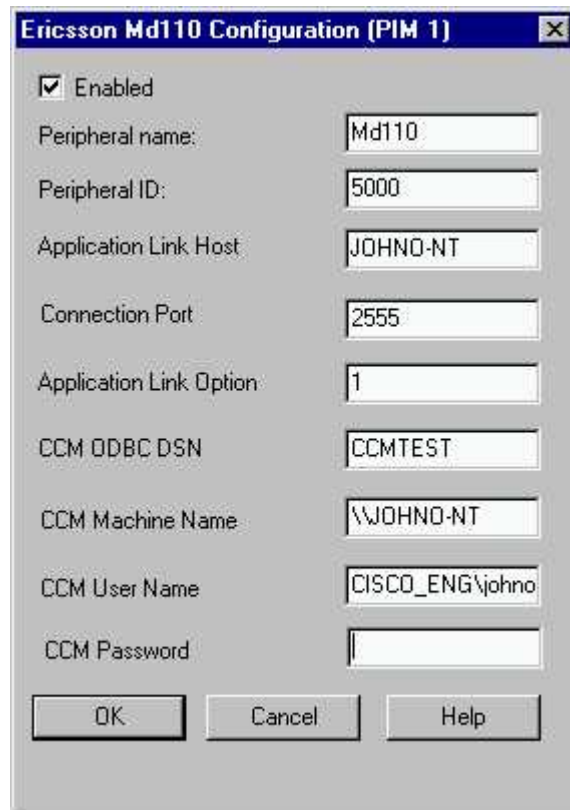
## 5. Setup Considerations

This chapter describes about the setup considerations required for Ericsson MD100.

The MD110 PIM has more parameters to be configured in comparison to most other PIMs.

## 5.1. Ericsson MD110 Configuration

Below is an example of configuration dialog.



Field	Value
Enabled	<input checked="" type="checkbox"/>
Peripheral name:	Md110
Peripheral ID:	5000
Application Link Host	JOHNO-NT
Connection Port	2555
Application Link Option	1
CCM ODBC DSN	CCMTEST
CCM Machine Name	\\JOHNO-NT
CCM User Name	CISCO_ENG\john
CCM Password	

**Figure 5: Ericsson MD110 Configuration Screen**

### Application Link Option

This value should always be set to 1, and also, the ODN/ADN monitoring checkbox on the Application Link configuration screen should be **unchecked**.

### CCM ODBC DSN

This value should be set to the DSN name the user sets up for the connection to the CCM Machine. Please refer to [ODBC Setup](#) regarding how to set up a DSN.

**Note:** If CCM ODBC DSN is not filled in, the CCM interface will not be utilized. CCM interface should ALWAYS be used except for certain testing purposes, for which the peripheral monitor table configuration method of ADNs may be used.

### CCM Machine Name

This value should be the machine name (in NT network name format) of the machine with the CCM database on it. If the PIM is on the same machine as the database, this may be left blank. If the

value is left blank, the PIM will not try to establish a trusted connection.

**CCM User Name**

This value should be the name of a user that has access to the database on the CCM machine.

**CCM Password**

The user password for the account.



## **6. ACD Hardware and Software Requirements**

This chapter describes the ACD Hardware and Software requirements and provides the licensing information.

## 6.1. Software Versions

The MD110 PG requires **Application Link 3.0 or higher** in CSTA Mode with ADN or ODN Monitoring enabled (Option 1).

The Call Center Manager (CCM) software is required for proper PIM functioning. The CCM is required since no Agent information is provided through the Application Link interface. CCM version 2.0 or higher is required.

For more information on the software versions, please refer to the Cisco ICM ACD PG Supportability Matrices.

## 6.2. Licensing

The licensing is monitored by physical devices. Only one monitor is used per physical device regardless of how many ADNs are configured for that device. Licenses are not required for CTI or ACD Groups. Licenses are also required for CCM and the Ericsson guidelines should be consulted for license information to ensure that all the devices that will be monitored by ICM Software will also be included in the CCM statistics.

**Note:** Logical DTSs possess a physical port, and thus require a license.

## 6.3. Other Considerations

It is suggested that the PG, Application Link, and the CCM software be installed on the same physical system. This is to maximize the speed of communication between the PG and Application Link and CCM software. However, there may be some circumstances where, due to performance considerations, it may be beneficial to have the CCM software on a different system.

Incase the Application Link system, the CCM system, and the PG, are separate; all three should reside on the same local LAN segment.

## 6.4. ACD Interface Requirements

The Ericsson MD110 PG requires an Ethernet connection to the Application Link. It is suggested that the Application Link should be installed on the same machine as the MD110PG. This will ensure that the communication between the PG and Application Link is efficient. If the PG is duplexed, a second Ethernet connection on the LAN will be required.

### 6.4.1. Setup Information required for Configuration

This section explains the setup information which is required to configure MD110.

**Table 5: Setup Information required for configuration**

Item	Info
Application Link IP Address	Get from Site Manager or Application Link configuration screen
Application Link Port #	Get from Application Link configuration screen
ACD Group Numbers	Get From MD110 Configuration
CTI Group Numbers	These will be configured for ICM's Exclusive use
ODN #s	Get From MD110 Configuration
ADN configuration for each ODN (ADN #, ACD Group assignment)	This is only necessary if the CCM interface is not present
Logical DTS's or CTI Group #'s for translation routing	Get From MD110 Configuration
CTI Groups for Post Routing	Get From MD110 Configuration
CCM Database Machine Name	Get from Site Manager
User Name and Password for CCM Database	Get from Site Manager



## 7. Procmon Commands

This chapter describes some of the commands accessible for the PIM through Procmon.

The following are described:

- Pim\_trace commands

- Procman commands

## 7.1. pim\_trace commands

The following table documents the pim\_trace bits available through pim\_trace. The list can also be retrieved through the procmon ltrace command.

**Table 6: pim\_trace commands**

Trace Bit	Meaning
CSTA_MONITOR_START_messages	Will trace all Monitor Start messages
CSTA_UNIVERSAL_FAILURE_message	Will trace all failure messages
CSTA_QUERY_DEVICE_messages	Will trace all query device messages
CSTA_SNAPSHOT_DEVICE_message	Will trace all snapshot device messages
CSTA_AGENT_EVENT_message	Will trace all agent events
CSTA_CALL_EVENT_message	Will trace all call event messages
CSTA_STATUS_EVENT_message	Will trace Status event (System Status) messages
CSTA_rawdata	Will trace the raw data transmitted/received over the socket in hex
CCM_THREAD	Will trace startup, and shutdown of the CCM thread
CCM_POLL	Will trace Polls to the CCM database by the CCM thread
CCM_ADD_ODN	Will trace the detection of a new ODN in the CCM table (Login)
CCM_ADD_ADN	Will trace the detection of a new ADN in the CCM table (Login)
CCM_CHANGE_GROUP	Will trace a group change in the CCM table
CCM_CHANGE_ODN	Will trace the ODN for a given ADN being changed
CCM_CHANGE_STATUS	Will trace when the Status of an ADN changes (Ready/Not Ready)
CCM_CHANGE_PROCESS	Will trace processing changes for an entry in the CCM table
CCM_LOGIN	Will trace the processing of a detected logout

CCM_LOGOUT	Will trace the processing of a detected logout
locks	Will trace call, peripheral and agent locks
timer_call	Will trace setting/execution of call timers
timer_agent	Will trace setting/execution of agent timers
timer_monitor	Will trace setting/execution of monitor timers
timer_status	Will trace setting/excution of the status timers
nm_pings	Will trace Node manager PING messages
to_opc	Will Trace all CSTA messages that the PIM sends to OPC.
info	Will trace informative messages
monitor_id	Will trace the Monitor ID on events
inprogress_calls	Will trace information related to in progress calls.

## 7.2. Procmon commands

The following table documents specific commands that the PIM supports. These are in addition to the standard PIMLIB procmon commands.

**Table 7: Procman Commands**

Command	Use
acdmonitors, acdml	Will Display ACD Monitor List
ccminfo, ccm	Will dump the internal CCM info table since the last update. An optional parameter [/log] will send the output to the event log
reset	Will reset the PIM and connection, used for testing
setActiveSkillGroup, setGroup	Set Active Skill Group for an Agent. Used for testing only
tp_alterate_connection, alternate	Will perform a third party Alternate Call
tp_answer_call, answer	Will perform a third party Answer Call
tp_associate_data, as	Will perform a third party Associate Data
tp_clear_connection, clear	Will perform a third party Clear Connection
tp_conference_call, conference	Will perform a third party Conference Call
tp_consultation_call, consultation	Will perform a third party Consultation Call

tp_divert_call, divert	Will perform a third party Divert Connection
tp_hold_call, hold	Will perform a third party Hold Call
tp_make_call, make	Will perform a third party Make Call
tp_reconnect_connection, reconnect	Will perform a third party Reconnect Call
tp_retrieve_call, retrieve	Will perform a third party Retrieve Call
tp_sendDTMF_data, dtmf	Will perform a third party DTMF Data
tp_set_agent_state, set_state	Will perform a third party Set Agent State
tp_set_forward, forward	Will perform a third party Set Forwarding. Will also allow setting of an external Follow Me through a private service
tp_transfer_connection, transfer	Will perform a third party Transfer Connection

## 8. ODBC Setup

This chapter describes about the ODBC setup requirements. In order for the MD110 PIM CCM interface to be properly configured, it is necessary for the user to setup an ODBC DSN that points to the proper CCM Database.

## 8.1. PIM Title Bar

On the MD110 PIM, the title bar provides some additional information about the ODBC link that will allow the user to know the status of both the TCP/IP Application Link connection, and the ODBC CCM link connection.

As in other CSTA TCP/IP PIMs, when the state of the PIM is ACTIVE, the TCP/IP link is up. The same is the case with MD110. In addition, on the title bar, a string preceded with “[CCM ODBC:]” will indicate the status of the ODBC link. The following table summarizes the status:

**Table 8: PIM Title Bar**

Status	Meaning
[CCM ODBC: NOT ENABLED]	The CCM thread is disabled via config. (CCM DSN is blank)
[CCM ODBC: NOT ACTIVE]	The thread is enabled; however no status can be reported yet. (This should only be during startup)
[CCM ODBC: ERR INIT FAIL – msg]	An error occurred on the initialization of the record set through ODBC. ‘msg’ will be a specific error, which would be available in the log also.
[CCM ODBC: ERR REQUERY FAIL – msg]	An error occurred while refreshing from the CCM database. ‘msg’ will be a specific error, which would be available in the log also.
[CCM ODBC: ERR OPEN FAIL – msg]	An error occurred at the First Query of the database. ‘msg’ will be a specific error, which would be available in the log also.

Please refer to the following example of an ODBC setup.

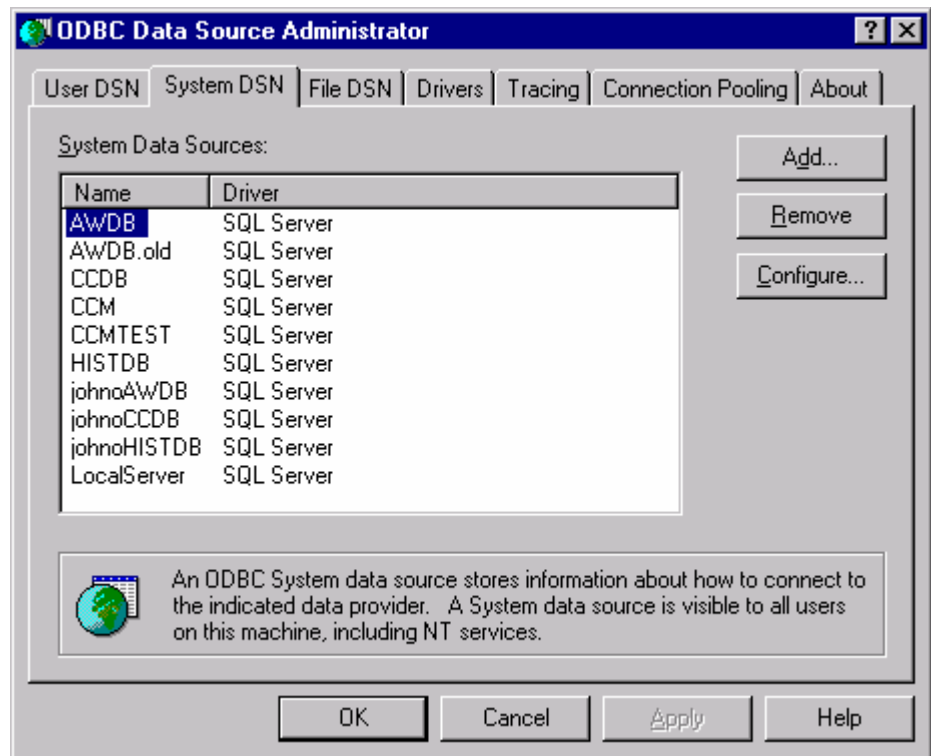


Figure 6: ODBC Data Source Administrator

Select the System DSN tab, and click Add.

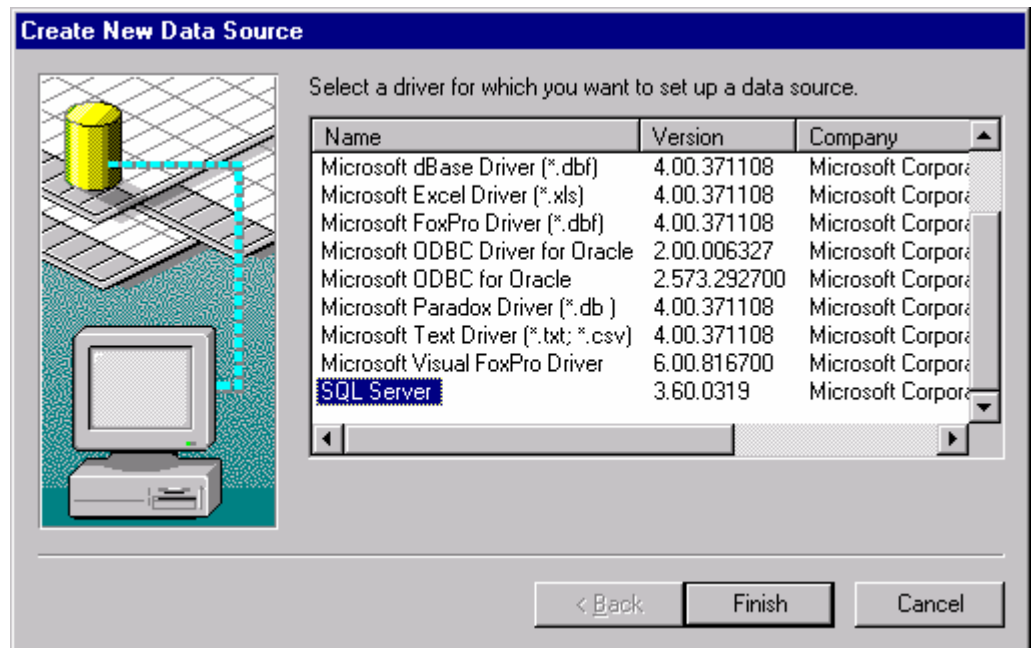
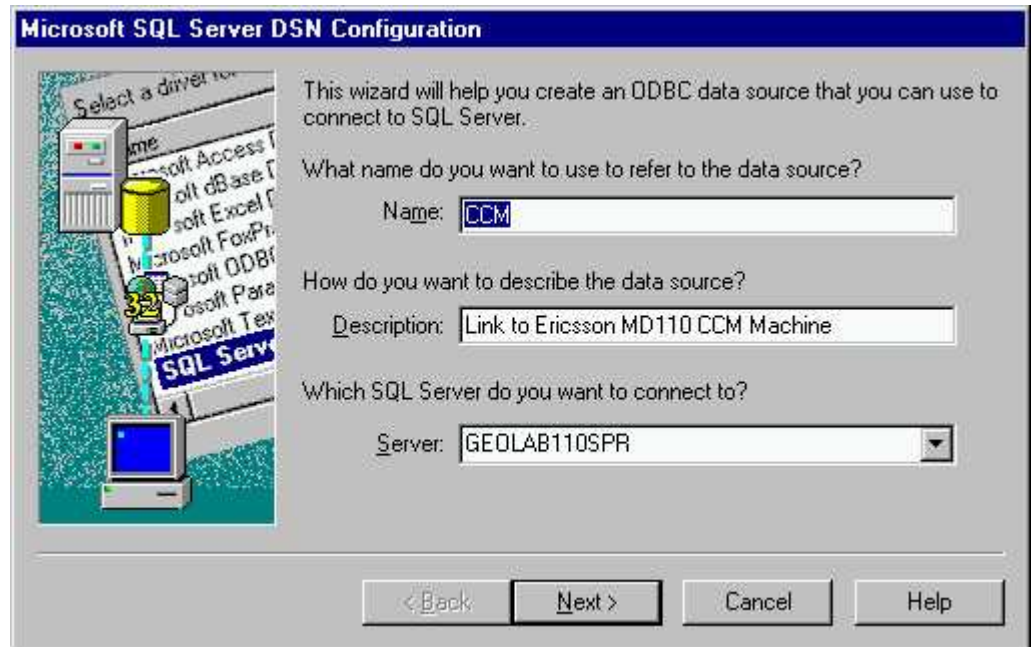


Figure 7: Create New Data Source

Select SQL Server as a driver and then select Finish.



**Figure 8: MS SQL Server DSN Configuration-1**

Set up a SYSTEM DSN for whatever name you like. CCM is suggested. This is the name you will insert into the CCM ODBC DSN field of the PIM property dialog. Please enter the name of machine where the CCM database resides in the Server field.



**Figure 9: MS SQL Server DSN Configuration-2**

Select the Windows NT security option. The PIM will set up a trusted connection to the CCM machine.

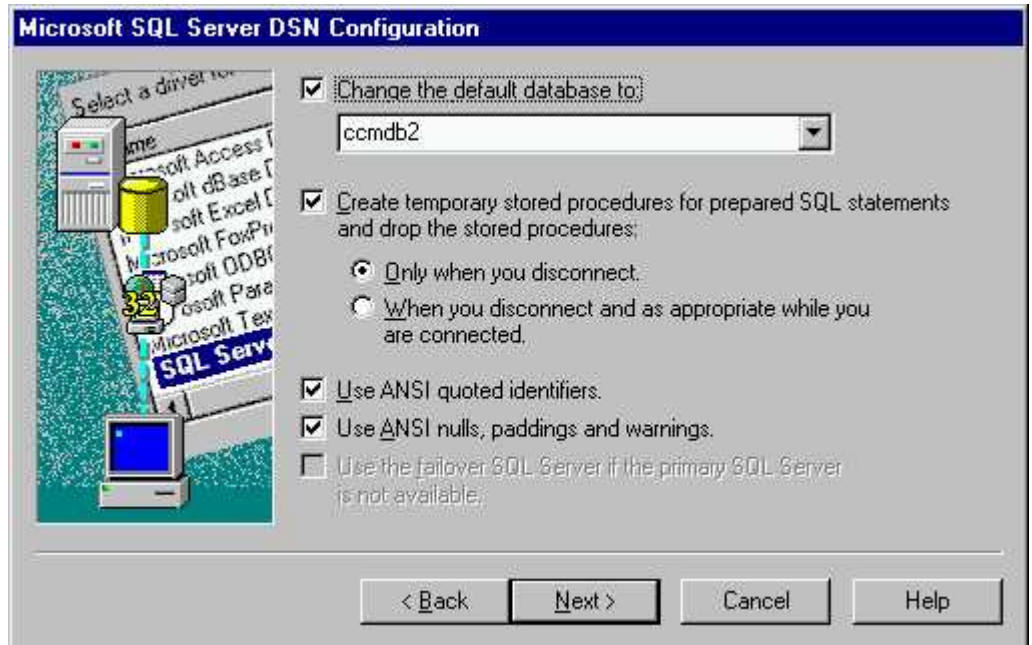


Figure 10: MS SQL Server DSN Configuration-3

Select the ccmdb2 (This could change) database to use.

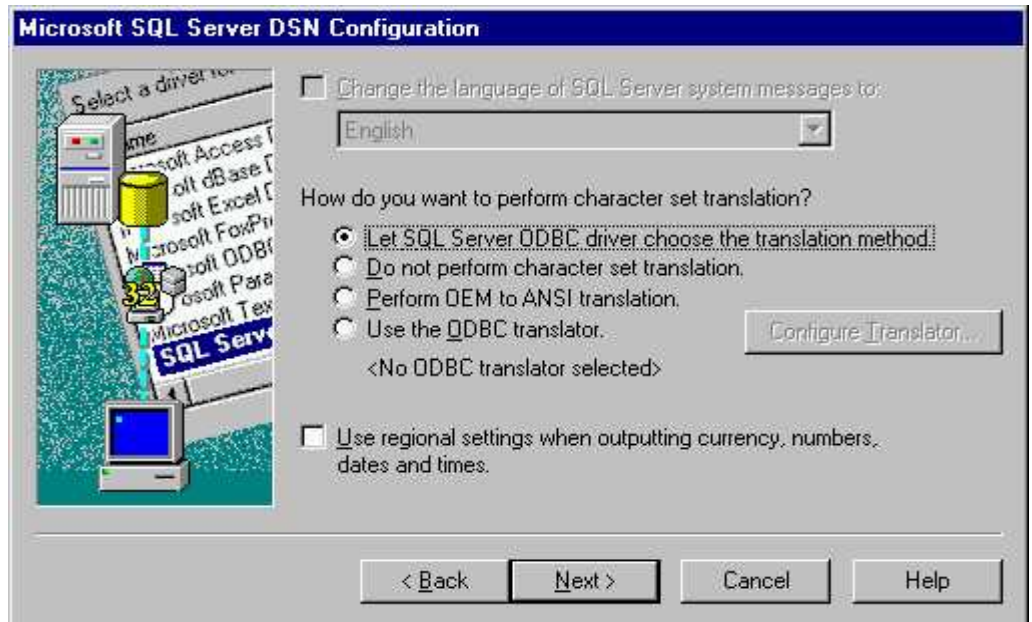


Figure 11: MS SQL Server DSN Configuration-4

Click Next to go to the next screen.

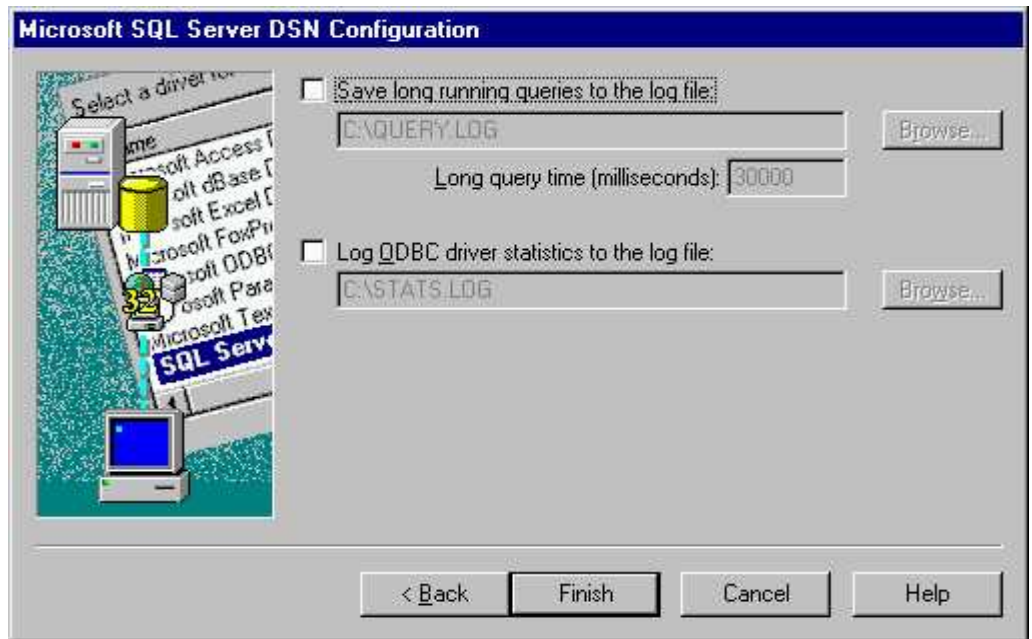


Figure 12: MS SQL Server DSN Configuration-5

Click Finish to complete the DSN Configuration.

---

## 9. Registry Settings

The PIM being up or down is irrelevant of the CCM link acquiring data, etc. However, in a duplexed PG situation it may be desired to force the PIM down and cause a switch to the other side if the link to CCM either never becomes active, or is inactive for a certain period of time.

To accomplish this, there is a currently optional registry setting that if present can specify the maximum allowable time that can elapse without getting a successful 'poll' of information from this link. The registry item is:

```
HKEY_LOCAL_MACHINE\SOFTWARE\GeoTel\ICR\{Customer}\{Node\PG\CurrentVersion\  
PIMS\pim{n}\Mdl10Data\Dynamic\MaxCCMDeadSeconds
```

It should be a DWORD value if you need to add it. If it is greater than zero (0) it specifies the number of seconds maximum that is acceptable without any CCM link activity. A value of 60 (1 minute) or 120 (two minutes) is suggested.. This value **MUST be greater than dynamic\CCMPollInterval** and should not be made too short since the initialization time of the link must be considered. This depends upon a lot of factors but in general values of less than 20-30 seconds are not recommended.



# Index

## A

Agent States, 24  
Agent to Skill Group Mapping, 23  
Agents, 23

## C

Cradle to Grave Call Reporting, 28

## D

Dialed Numbers, 23  
Distribution Model, 17, 18

## E

Ericsson MD110 Restrictions, 28

## L

Labels, 24  
Licensing, 36

## O

ODBC Setup, 43  
Off Switch Transfers, 24

## P

Peripheral Targets and Routes, 20  
PIM Title Bar, 44  
Procmon Commands, 39

## R

Registry Settings, 49  
Reporting Irregularities, 30  
Routes, 23  
Routing Limitations, 27

## S

Services, 21  
Skill Groups, 22  
Software Versions, 36

## T

Translation Routes, 23  
Translation Routing, 28  
Trunk Groups, 20  
Trunks, 21