NEC IPX2400 R15 using T1 QSIG to Cisco Unified Communications Manager 5.1.2 and Cisco Emergency Responder 2.0.

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Introduction

The following is an Application Note for E911 Interoperability of a Cisco Unified Communications Manager (CUCM) 5.1.2 and Cisco Emergency Responder (CER) 2.0 to a NEC-IPX2400 R15 via a Cisco 3825 T1-QSIG trunk as MGCP gateway. The CUCM system is connected to a simulated E911 Public Safety Answering Point (PSAP) via a Cisco 3825 w/ CAMA trunk registered using H323.

The Network Topology diagram shows the test set-up for interoperability between the Cisco Unified Communications Manager and Cisco Emergency Responder connected to the PBX via a Cisco 3825 (MGCP gateway) T1 QSIG trunk and connected to E911 PSAP using a Cisco 3825 H323 gateway via a CAMA trunk.

This Application Note uses the C3825 Cisco IOS-voice-gateway, however other Cisco voice gateways are also an option to use since the voice gateway implementation does not depend on the platform. Here is a list of Cisco Products capable of voice gateway functionality: Care must be taken when selecting a voice gateway platform depending on the capacity required for the intended deployments

Cisco 2800 Series Integrated Services Routers
Cisco 3800 Series Integrated Services Routers
Cisco 2600XM Series Multiservice Platforms
Cisco 3700 Series Routers
Network Topology

Limitations

Unique DID numbers must be used to associate with each Emergency Response Location to allow the return call if the 911 caller is disconnected.

Each available calling party that might dial 911 from the PBX side must have that calling party number configured in the Manually Configured Phones screen of the Cisco Emergency Responder.

System Components

Hardware Requirements

Cisco 3825 Gateway with VIC2-4FXO (CAMA trunk)
Cisco 3825 Gateway with VWIC-2MFT-T1 (QSIG)
Cisco Cat3500 switch
Cisco Unified Communications Manager server
Cisco Emergency Responder server
NEC IPX2400 PBX

Software Requirements

IOS Software release “C3825-ipvoiceK9-m.12.4 (15)T1”
IOS Software release “C3825-ADVENTERPRISEK9_IVS-M .12.4(11).T1
Cisco Unified Communications Manager 5.1.2
Cisco Emergency Responder 2.0
PBX Software: Release 15

Features

Key features supported

Calling Number

E911 ERL DID number passed to PSAP

Incoming DID calling to disconnected 911 originating caller

Conclusion

Test emergency 911 call from a PBX digital station was routed to the T1 QSIG trunk, of the Cisco Voice MGCP gateway, and was correctly associated to the appropriate Emergency Response Location. The call was connected through the Cisco 3825 CAMA trunk to the PSAP Emulator. The Emergency Response Location associated the ten digit DID call back number (ELIN) correctly and sent it to the PSAP, audio connection was also achieved. The PBX digital station was then disconnected.

A return call was originated from an incoming trunk (PSTN side) in the same Cisco Unified Communications Manager Partition. The number dialed was the DID digits of the 10 digit call back number sent to the PSAP on the previous 911 call (ELIN number). The call was routed through to the PBX digital station that had originated the E911 call. The call was disconnected and an alternate trunk was used to dial the same DID number and the call was routed through, again, to the PBX digital station that had originated the E911 call.

Test emergency 911 calls were made from each PBX digital station and Cisco IP phone. All calls were confirmed to select its associated Emergency Response Location and the associated 10 digit DID call back number. In each case, the call was disconnected and the call back number was confirmed to reach the phone that had originated the E911 call.

Emergency 911 calls made from a NEC IPX2400 PBX utilizing a T1 QSIG trunk configured as ISO, associates with the correct Emergency Response Location and routes to the associated PSAP with the correctly formatted 10 digit DID call back number.

The call back DID number routes the return call to the correct phone that had originated the E911 call from the PBX digital phone.
Configuration

Configuring Cisco Communications Manager

Partitions
Phone Partition

[Image of Cisco Unified CallManager Administration interface]

Partition Configuration

- Status: Ready

Partition Information

- Name: Phones
- Description: Phones
- Time Schedule: Not Selected
- Time Zone:
  - Originating Device
  - Specific Time Zone: Greenwich Standard Time

Buttons: Save, Delete, Reset, Add New

* indicates required item.
E911 Partition

Calling Search Space
<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Locale</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Built In Bridge</td>
<td>Default</td>
</tr>
<tr>
<td>Privacy</td>
<td>Default</td>
</tr>
<tr>
<td>Owner User ID</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Phone Load Name</td>
<td></td>
</tr>
<tr>
<td>Retry Video Call as Audio</td>
<td></td>
</tr>
<tr>
<td>Ignore Presentation Indicators</td>
<td></td>
</tr>
<tr>
<td>Allow Control of Device from CTI</td>
<td></td>
</tr>
</tbody>
</table>

### Protocol Specific Information

<table>
<thead>
<tr>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packet Capture Mode</td>
</tr>
<tr>
<td>Packet Capture Duration</td>
</tr>
<tr>
<td>Presence Groups</td>
</tr>
<tr>
<td>Device Security Profile</td>
</tr>
<tr>
<td>SUBSCRIBE Calling Search Space</td>
</tr>
<tr>
<td>Unattended Port</td>
</tr>
<tr>
<td>Require DTMF Reception</td>
</tr>
<tr>
<td>RFC2833 Disabled</td>
</tr>
</tbody>
</table>

### Certification Authority Proxy Function (CAPF) Information

<table>
<thead>
<tr>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate Operation</td>
</tr>
<tr>
<td>Authentication Mode</td>
</tr>
<tr>
<td>Authentication String</td>
</tr>
<tr>
<td>Generate String</td>
</tr>
<tr>
<td>Key Size (Bits)</td>
</tr>
<tr>
<td>Operation Completes By</td>
</tr>
</tbody>
</table>

Certificate Operation Status: None
Note: Security Profile Contains Additional CAPF Settings.
### Expansion Module Information

<table>
<thead>
<tr>
<th>Module 1</th>
<th>&lt; None &gt;</th>
<th>&lt;--</th>
<th>Module 2</th>
<th>&lt; None &gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module 1 Load Name</td>
<td></td>
<td></td>
<td>Module 2 Load Name</td>
<td></td>
</tr>
</tbody>
</table>

### External Data Locations Information (Leave blank to use default)

<table>
<thead>
<tr>
<th>Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Directory</td>
<td></td>
</tr>
<tr>
<td>Messages</td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td></td>
</tr>
<tr>
<td>Authentication Server</td>
<td></td>
</tr>
<tr>
<td>Proxy Server</td>
<td></td>
</tr>
<tr>
<td>Idle</td>
<td></td>
</tr>
<tr>
<td>Idler Timer (seconds)</td>
<td></td>
</tr>
</tbody>
</table>

### Extension Information

- Enable Extension Mobility
- Log Out Profile: [Not Selected...]
- Login in User ID: < None >
- Log in Time: < None >
- Log out Time: < None >

### MLPP Information

- MLPP Domain: < None >
- MLPP Indication: Default
- MLPP Presence: Default

### Secure Shell Information

Secure Shell User: [Blank]
<table>
<thead>
<tr>
<th>MLPP Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MLPP Domain</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>MLPP Indication*</td>
<td>Default</td>
</tr>
<tr>
<td>MLPP Preemption*</td>
<td>Default</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secure Shell Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Secure Shell User</td>
<td></td>
</tr>
<tr>
<td>Secure Shell Password</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product Specific Configuration Layout</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Disable Speakerphone</td>
<td>Disabled</td>
</tr>
<tr>
<td>Disable Speakerphone and Headset</td>
<td>Enabled</td>
</tr>
<tr>
<td>Forwarding Delay*</td>
<td>Enabled</td>
</tr>
<tr>
<td>PC Port *</td>
<td>Enabled</td>
</tr>
<tr>
<td>Settings Access*</td>
<td>Enabled</td>
</tr>
<tr>
<td>Gratuitous ARP*</td>
<td>Enabled</td>
</tr>
<tr>
<td>PC Voice VLAN Access*</td>
<td>Enabled</td>
</tr>
<tr>
<td>Video Capabilities*</td>
<td>Disabled</td>
</tr>
<tr>
<td>Auto Line Select*</td>
<td>Enabled</td>
</tr>
<tr>
<td>Web Access*</td>
<td>Enabled</td>
</tr>
<tr>
<td>Span to PC Port*</td>
<td>Disabled</td>
</tr>
<tr>
<td>Logging Display*</td>
<td>PC Controlled</td>
</tr>
<tr>
<td>Load Server</td>
<td></td>
</tr>
<tr>
<td>Recording Tone*</td>
<td>Disabled</td>
</tr>
<tr>
<td>Recording Tone Local Volume*</td>
<td>100</td>
</tr>
<tr>
<td>Recording Tone Remote Volume*</td>
<td>50</td>
</tr>
<tr>
<td>Recording Tone Duration</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Call Forward and Call Pickup Settings

<table>
<thead>
<tr>
<th>Voice Mail</th>
<th>Destination</th>
<th>Call Pickup Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward All</td>
<td>&lt; None &gt;</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Secondary Calling Search Space for Forward All</td>
<td>&lt; None &gt;</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Forward Busy Internal</td>
<td>&lt; None &gt;</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Forward Busy External</td>
<td>&lt; None &gt;</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Forward No Answer Internal</td>
<td>&lt; None &gt;</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Forward No Answer External</td>
<td>&lt; None &gt;</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Forward No Coverage Internal</td>
<td>&lt; None &gt;</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Forward No Coverage External</td>
<td>&lt; None &gt;</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Forward on CTI Failure</td>
<td>&lt; None &gt;</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>No Answer Ring Duration (seconds)</td>
<td>&lt; None &gt;</td>
<td>&lt; None &gt;</td>
</tr>
</tbody>
</table>

### MLPP Alternate Party Settings

<table>
<thead>
<tr>
<th>Target (Destination)</th>
<th>MLPP Calling Search Space</th>
<th>MLPP No Answer Ring Duration (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; None &gt;</td>
<td>&lt; None &gt;</td>
<td>&lt; None &gt;</td>
</tr>
</tbody>
</table>
### NLPP No Answer Ring Duration (seconds)

<table>
<thead>
<tr>
<th>Line 1 on Device SEP00170EE67E8E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display (Internal Caller ID)</td>
</tr>
<tr>
<td>ASCII Display (Internal Caller ID)</td>
</tr>
<tr>
<td>Line Text Label</td>
</tr>
<tr>
<td>ASCII Line Text Label</td>
</tr>
<tr>
<td>External Phone Number Mask</td>
</tr>
<tr>
<td>Message Waiting Lamp Policy*</td>
</tr>
<tr>
<td>Ring Setting (Phone Idle)*</td>
</tr>
<tr>
<td>Ring Setting (Phone Active)</td>
</tr>
</tbody>
</table>

Display text for a line appearance is intended for displaying text such as a name instead of a directory number for internal calls. If you specify a number, the person receiving a call may not see the proper identity of the caller.

### Multiple Call/Call Waiting Settings on Device SEP00170EE67E8E

| Maximum Number of Calls*         | 4 |
| Busy Trigger*                   | 2 |
| (Less than or equal to Max. Calls) |

Note: The range to select the Max Number of calls is 1-200.

### Forwarded Call Information Display on Device SEP00170EE67E8E

- Caller Name
- Caller Number
- Redirected Number
- Dialed Number

| Save | Delete | Reset | Add New |

* Indicates required item.

** Changes to Line or Directory Number settings require a restart.
### CTI Route Points

![Cisco Unified CallManager Administration](image)

**Find and List CTI Route Points**

<table>
<thead>
<tr>
<th>Status</th>
<th>2 records found</th>
</tr>
</thead>
</table>

**Search Options**

Find CTI Route Points where Device Name begins with

**Search Results**

<table>
<thead>
<tr>
<th>Device Name</th>
<th>Description</th>
<th>Device Pool</th>
<th>Calling Search Space</th>
<th>Status</th>
<th>IP Address</th>
<th>Copy</th>
</tr>
</thead>
<tbody>
<tr>
<td>R9211</td>
<td>R9211</td>
<td>Default</td>
<td>E911css</td>
<td>Registered with CM-Titanic</td>
<td>172.20.140.254</td>
<td>Q</td>
</tr>
<tr>
<td>RPELIN013</td>
<td>RPELIN013</td>
<td>Default</td>
<td>E911css</td>
<td>Registered with CM-Titanic</td>
<td>172.20.140.254</td>
<td>Q</td>
</tr>
</tbody>
</table>

- Add New
- Select All
- Clear All
- Delete Selected
- Reset Selected

Rows per Page 50
CTI Route Point 911
<table>
<thead>
<tr>
<th><strong>No Answer Ring Duration (seconds)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Pickup Group: &lt; None &gt;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>MLPP Alternate Party Settings</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Target (Destination)</td>
</tr>
<tr>
<td>MLPP Calling Search Space: &lt; None &gt;</td>
</tr>
<tr>
<td>MLPP No Answer Ring Duration (seconds)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Line 1 on Device RP911</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Display (Internal Caller ID)</td>
</tr>
<tr>
<td>ASCII Display (Internal Caller ID)</td>
</tr>
<tr>
<td>External Phone Number Mask</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Multiple Call/Call Waiting Settings on Device RP911</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: The range to select the Max Number of calls is: 1-10000</td>
</tr>
<tr>
<td>Maximum Number of Calls*</td>
</tr>
<tr>
<td>Busy Trigger*</td>
</tr>
<tr>
<td>(Less than or equal to Max. Calls)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Forwarded Call Information Display on Device RP911</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Caller Name</td>
</tr>
<tr>
<td>Redirected Number</td>
</tr>
<tr>
<td>Dialed Number</td>
</tr>
</tbody>
</table>

- Indicates required item.

** Changes to Line or Directory Number settings require restart.
CTI Route Point 913

Cisco Unified CallManager Administration

CTI Route Point Configuration

**Status**
- Status: Ready

**Device Information**
- Registration: Registered with Cisco Unified CallManager CM-Titanic
- IP Address: 172.20.140.254
- Device Name: RPELIN913
- Device Description: RPELIN913
- Device Pool: Default
- Calling Search Space: E911css
- Location: Hub_Name
- User Locale: < None >
- Media Resource Group List: < None >
- Network Hold MOH Audio Source: < None >
- User Hold MOH Audio Source: < None >

**Association Information**
- Line [1] - 913000000000 in E911

* indicates required item.
### Directory Number Configuration

**Directory Number Information**
- **Directory Number**: 913000000000
- **Route Partition**: E911
- **Description**
- **Alerting Name**
- **ASCII Alerting Name**
- **Associated Devices**: RPELIN013

**Directory Number Settings**
- **Voice Mail Profile**: < None > (Choose <None> to use system default)
- **Calling Search Space**: E911css
- **Presence Group**: Standard Presence group

**Presence Group**
- **Standard Presence group**
- **AAR Group**: < None >
- **User Hold MOH Audio Source**: < None >
- **Network Hold MOH Audio Source**: < None >

**Call Forward and Call Pickup Settings**

<table>
<thead>
<tr>
<th>Voice Mail</th>
<th>Destination</th>
<th>Calling Search Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward All</td>
<td>or</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Secondary Calling Search Space for Forward All</td>
<td>or</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Forward Busy Internal</td>
<td>or</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Forward Busy External</td>
<td>or</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Forward No Answer Internal</td>
<td>or</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Forward No Answer External</td>
<td>or</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Forward No Coverage Internal</td>
<td>or</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Forward No Coverage External</td>
<td>or</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Forward on CTI Failure</td>
<td>or</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>No Answer Ring Duration (seconds)</td>
<td></td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Call Pickup Group</td>
<td>&lt; None &gt;</td>
<td></td>
</tr>
</tbody>
</table>

**MLPP Alternate Party Settings**
- **Target (Destination)**
- **MLPP Calling Search Space**: < None >
- **MLPP No Answer Ring Duration (seconds)**

**Line 1 on Device RPELIN013**
- **Display (Internal Caller ID)**
- **ASCII Display**

---

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Note: A Backup CER server was not used during testing therefore CTI route point for 912 was not created.
### Line 1 on Device CERSec1

**Display (Internal Caller ID)**

Display text for a line appearance is intended for displaying text such as a name instead of a directory number for internal calls. If you specify a number, the person receiving a call may not see the proper identity of the caller.

- **ASCII Display**
  - (Internal Caller ID)
- **Line Text Label**
- **ASCII Line Text**
- **Label**
- **External Phone Number Mask**
- **Message Waiting Lamp Policy**

**Multiple Call/Call Waiting Settings on Device CERSec1**

Note: The range to select the Max Number of calls is: **1-200**

- **Maximum Number of Calls**
  - 4
- **Busy Trigger**
  - 2

**Forwarded Call Information Display on Device CERSec1**

- **Caller Name**
- **Caller Number**
- **Redirected Number**
- **Dialed Number**

- **Save**
- **Delete**
- **Reset**
- **Add New**

---

1. * indicates required item.
2. ** indicates required item.
### Route Patterns for ELINs

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Description</th>
<th>Partition</th>
<th>Route Filter</th>
<th>Associated Device</th>
<th>Copy</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-911</td>
<td></td>
<td>E911</td>
<td></td>
<td>172.20.192.102</td>
<td>b</td>
</tr>
<tr>
<td>11-811</td>
<td></td>
<td>E911</td>
<td></td>
<td>172.20.192.102</td>
<td>b</td>
</tr>
<tr>
<td>13-811</td>
<td></td>
<td>E911</td>
<td></td>
<td>172.20.192.102</td>
<td>b</td>
</tr>
<tr>
<td>3333</td>
<td>NEC route 4xxx</td>
<td></td>
<td></td>
<td>81/30/D51-0@RI-3823</td>
<td>b</td>
</tr>
<tr>
<td>4000</td>
<td>NEC route 4xxx</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Translation Pattern for ELINs

Translation Pattern Configuration

Status
- Status: Ready

Pattern Definition
- Translation Pattern: 408527XXXX
- Partition: E911
- Description: 
- Numbering Plan: < None >
- Route Filter: < None >
- MLPF Precedence: Default
- Calling Search Space: E911css
- Route Option: Route this pattern
- Provide Outside Dial Tone
- Urgent Priority

Calling Party Transformations
- Use Calling Party's External Phone Number Mask
- Calling Party Transform Mask
<table>
<thead>
<tr>
<th><strong>MLPP Precedence</strong></th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Calling Search Space</strong></td>
<td>E911css</td>
</tr>
<tr>
<td><strong>Route Option</strong></td>
<td>Route this pattern</td>
</tr>
<tr>
<td><strong>Provide Outside Dial Tone</strong></td>
<td>No Error</td>
</tr>
<tr>
<td><strong>Urgent Priority</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Calling Party Transformations**
- **Use Calling Party’s External Phone Number Mask**
- **Calling Party Transform Mask**
- **Prefix Digits (Outgoing Calls)**
- **Calling Line ID Presentation** | Default |
- **Calling Name Presentation** | Default |

**Connected Party Transformations**
- **Connected Line ID Presentation** | Default |
- **Connected Name Presentation** | Default |

**Called Party Transformations**
- **Discard Digits** | <None> |
- **Called Party Transform Mask**
- **Prefix Digits (Outgoing Calls)** | 013 |

* indicates required item.
PSAP Gateway configuration (CAMA TRUNK)
T1-QSIG Gateway
## Gateway Configuration

### Status
- Status: Ready

### Device Information
- **Product**: Cisco MGCP T1 Port
- **Gateway**: Ri-3823
- **Device Protocol**: Digital Access PRI
- **Registration**: Registered with Cisco Unified CallManager CM-Titanic
- **IP Address**: 172.20.192.21
- **End-Point Name**: S1/SU0/DS1-0@Ri-3823
- **Description**: S1/SU0/DS1-0@MGCP 3823
- **Device Port**: Default
- **Call Classification**: Use System Default
- **Network Locale**: < None >
- **Packet Capture Mode**: None
- **Packet Capture Duration**: 0
- **Media Resource Group List**: < None >
- **Location**: Hub_None
- **AAR Group**: < None >

### Load Information

### Multilevel Precedence and Preemption (MLPP) Information
- **MLPP Domain**: < None >
- **MLPP Indication**: Off
- **MLPP Preemption**: Disabled

### Interface Information
- **PRI Protocol Type**: PRI ISDN QSIG T1
- **Protocol Side**: Network
- **Channel Selection Order**: Bottom Up
- **Channel # Type**: Timeslot Number
- **PCM Type**: μ-law
- **Delay for first restart (1/8 sec ticks)**: 32
- **Delay between restarts (1/8 sec ticks)**: 4
- **Inhibit restarts at PRI initialization**: [ ]
- **Enable status poll**: [ ]
- **Unattended Port**: [ ]

### Call Routing Information - Inbound Calls
- **Significant Digits**: All
- **Calling Search Space**: Phonenumber
- **AAR Calling Search Space**: < None >
- **Prefix DN**: 

### Call Routing Information - Outbound Calls
### Call Routing Information - Outbound Calls

- **Calling Party Presentation**
  - Default
- **Calling Party Selection**
  - Originator
- **Called party IE number type unknown**
  - Cisco CallManager
- **Calling party IE number type unknown**
  - Cisco CallManager
- **Called Numbering Plan**
  - Cisco CallManager
- **Called Numbering Plan**
  - Cisco CallManager
- **Number of digits to strip**
  - 0
- **Caller ID DN**
  - 
- **SMDI Base Port**
  - 0

### PRI Protocol Type Specific Information

- **Display IE Delivery**
- **Redirecting Number IE Delivery - Outbound**
- **Redirecting Number IE Delivery - Inbound**
- **Send Extra Leading Character in Display IE**
- **Setup non-ISDN Progress Indicator IE Enable**
- **MCON Channel Number Extension Bit Set to Zero**
- **Send Calling Name In Facility IE**
- **Interface Identifier Present**
- **Interface Identifier Value**
  - 0
  - Default
- **Connected Line ID Presentation (QSIG Inbound Call)**

### UI/UE Configuration

- **Passing Precedence Level Through UI/UE**
  - Security Access Level

### Product Specific Configuration Layout

- **Line Coding**
  - E164
- **Framing**
  - ESF
- **Clock**
  - External
- **Input Gain (-6.14 db)**
  - 0
- **Output Attenuation (-6.14 db)**
  - 0
- **Echo Cancellation Enable**
  - Enable
- **Echo Cancellation Coverage (ms)**
  - 8

### Notes

1. * indicates required item.
2. ** indicates applies to DMS-100 protocol only.
3. *** applies to DMS-200 and DMS-250 protocol only.
4. **** may be required to force ringback from some PBXs.
5. ***** Device reset is not required for changes to Packet Capture Mode and Packet Capture Duration.
## Route Pattern to QSIG Trunk

### Route Pattern Configuration

<table>
<thead>
<tr>
<th>Pattern Definition</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route Pattern</td>
<td>XXX</td>
</tr>
<tr>
<td>Route Partition</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Description</td>
<td>NEC route 4xxx</td>
</tr>
<tr>
<td>Numbering Plan</td>
<td>&lt; Not Selected&gt;</td>
</tr>
<tr>
<td>Route Filter</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>MLPD Precedence</td>
<td>Default</td>
</tr>
<tr>
<td>Gateway/Route List</td>
<td>51/SU0/DS1-9@Ri-3825</td>
</tr>
<tr>
<td>Route Option</td>
<td>Route this pattern</td>
</tr>
<tr>
<td>Call Classification</td>
<td>OffNet</td>
</tr>
</tbody>
</table>

- Allow Device Override: [ ]
- Provide Outside Dial Tone: [ ]
- Allow Overlap Sending: [ ]
- Urgent Priority: [ ]
- Require Forced Authorization Code: [ ]
- Authorization Level: 0
- Require Client Matter Code: [ ]
SNMP service must be active

Note: For detailed information regarding QSIG interoperability between CUCM and NEC PBX go to:
Configuring Cisco Emergency Responder

Cisco Unified Communications Manager Details
Telephony Settings

<table>
<thead>
<tr>
<th>Specify telephony attributes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Route Point for Primary Cisco ER Server</td>
<td>111</td>
</tr>
<tr>
<td>Route Point for Standby Cisco ER Server</td>
<td>912</td>
</tr>
<tr>
<td>PSAP Callback Route Point Pattern</td>
<td>913000000000X</td>
</tr>
<tr>
<td>ELIN Digit Strip Pattern</td>
<td>913</td>
</tr>
<tr>
<td>UDP Port Begin</td>
<td>32000</td>
</tr>
<tr>
<td>Inter Cisco ER Group Route Pattern</td>
<td></td>
</tr>
<tr>
<td>IP Type of Service (00-FF)</td>
<td>0x b0</td>
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<tr>
<td>Onsite Alert Prompt Repeat Count</td>
<td>2</td>
</tr>
<tr>
<td>Use IP Address from call signaling</td>
<td></td>
</tr>
</tbody>
</table>

* indicates required item
Server Settings

Select Server
- Publisher (primary)

Modify Server Settings
- Server Name: Publisher
- Host Name: CER

Debug Package List
- CER_DATABASE
- CER_REMOTEUPDATE
- CER_PhoneTrackingEngine
- CER_ONSITEAlert
- CER_CALLENGINE

Trace Package List
- CER_DATABASE
- CER_REMOTEUPDATE
- CER_PhoneTrackingEngine
- CER_ONSITEAlert
- CER_CALLENGINE

* indicates required item
## ERLs List


### Find ERL Data

<table>
<thead>
<tr>
<th>Status</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ready</td>
<td></td>
</tr>
</tbody>
</table>

### ERL Search Parameters

Find ERL where  ERL Name contains  

Find and show 30 items per page

### ERL (1 – 4 of 4)

<table>
<thead>
<tr>
<th>ERL Name</th>
<th>Route/Translation Pattern-ELIN</th>
<th>Origin Alert ID</th>
<th>Street Name</th>
<th>Community Name</th>
<th>State</th>
<th>Edit</th>
<th>Copy</th>
<th>Delete</th>
<th>Audit Trail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default</td>
<td>109911-6000</td>
<td>tasman</td>
<td>cisco</td>
<td>ca</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>view...</td>
</tr>
<tr>
<td>Test 1</td>
<td>10911-4085274...</td>
<td>tasman</td>
<td>big sky</td>
<td>ca</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>view...</td>
</tr>
<tr>
<td>Test 2</td>
<td>11911-4085274...</td>
<td>tasman</td>
<td>cisco</td>
<td>ca</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>view...</td>
</tr>
<tr>
<td>Test 3</td>
<td>13911-4085273...</td>
<td>tasman</td>
<td>cisco</td>
<td>ca</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>view...</td>
</tr>
</tbody>
</table>
## ERL Information for Test 1

### ERL Settings

<table>
<thead>
<tr>
<th>ERL Name</th>
<th>Test 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>Test ERL (Used for Synthetic Testing)</td>
<td>☐</td>
</tr>
</tbody>
</table>

### ELIN Settings

<table>
<thead>
<tr>
<th>Route/Translation pattern</th>
<th>Add</th>
<th>Update</th>
<th>Remove</th>
<th>10911-4085274054</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELIN</td>
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<td></td>
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</tbody>
</table>

### Onsite Alert Settings

<table>
<thead>
<tr>
<th>Available Onsite Alert IDs</th>
<th>Add</th>
<th>Remove</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Onsite Alert IDs for the ERL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

### ERL Address

<table>
<thead>
<tr>
<th>ALI Details</th>
<th>Edit ALI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Update | Copy | Cancel Changes | Close

* indicates required item
## ERL Information for Test 2

### ERL Settings

**ERL Name**  
*test 2*

**Description**

**Test ERL (Used for Synthetic Testing)**

### ELIN Settings

**Route/Translation pattern**

**ELIN**

**Add**

**Update**

**Remove**

**11911-4085274050**

### Onsite Alert Settings

**Available Onsite Alert IDs**

**Onsite Alert IDs for the ERL**

**Add**

**Remove**

### ERL Address

**ALI Details**

**Edit ALI**

**Update**

**Copy**

**Cancel Changes**

**Close**
ERL Information for test 3

**ERL Settings**

- **ERL Name**: test 3
- **Description**: 
- **Test ERL (Used for Synthetic Testing)**: 

**ELIN Settings**

- **Route/Translation pattern**: 
- **ELIN**: 13911-4085273011

**Onsite Alert Settings**

- **Available Onsite Alert IDs**: 
- **Onsite Alert IDs for the ERL**: 

**ERL Address**

- **ALI Details**: 

- **Update**  **Copy**  **Cancel Changes**  **Close**

* indicates required item
LAN Switch identifying

<table>
<thead>
<tr>
<th>LAN Switch Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch Host Name / IP Address</td>
</tr>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Enable CAM based Phone Tracking</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LAN Switches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add LAN Switch</td>
</tr>
<tr>
<td>172.20.230.250</td>
</tr>
</tbody>
</table>

* indicates required item
Switch Port Details

The image shows the Switch Port Details page of the Cisco Emergency Responder Administration interface. The page displays the status as Ready and includes search parameters for finding ports. The page also lists switch ports with details such as ERL Name, Switch IP Address, interface name, location, phone extension, phone IP address, and phone type. The last phone tracking was done at August 27, 2007 5:42:05 PM PDT.
<table>
<thead>
<tr>
<th>Switch Port Details</th>
<th>View</th>
<th>FqE0/8</th>
<th>FqE0/9</th>
<th>FqE0/10</th>
<th>FqE0/11</th>
<th>FqE0/12</th>
<th>FqE0/13</th>
<th>FqE0/14</th>
<th>FqE0/15</th>
<th>FqE0/16</th>
<th>FqE0/17</th>
<th>FqE0/18</th>
<th>FqE0/19</th>
<th>FqE0/20</th>
<th>FqE0/21</th>
<th>FqE0/22</th>
<th>FqE0/23</th>
<th>FqE0/24</th>
<th>3012</th>
<th>172.20.230.33</th>
<th>Cisco 7961</th>
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</thead>
<tbody>
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<td>172.20.230.250</td>
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<tr>
<td>Switch Port Details</td>
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</tbody>
</table>
Defining Manual Phones (PBX Stations)

### Find and List Manually Configured Phones

- **Status**
  - Ready

- **Manual Phone Search Parameters**
  - Find manual phones where **Line Number** contains
  - Find and show 20 items per page

### Manually Configured Phones (1 - 2 of 2)

<table>
<thead>
<tr>
<th>Line Number</th>
<th>ERL Name</th>
<th>IP Address</th>
<th>MAC Address</th>
<th>Location</th>
<th>Edit</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>4050</td>
<td>Test 2</td>
<td></td>
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<tr>
<td>4054</td>
<td>Test 1</td>
<td></td>
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</tbody>
</table>

- Add new Manual phone

### Modify Manual Phone

- **Status**
  - Please enter any change for the current Manual Phone

- **Modify Manual Phone**
  - **Line Number**: 4050
  - **MAC Address**
  - **IP Address**
  - **Phone Type**
  - **Version**
  - **Location**
  - **ERL Name**: test 2

- Update, Cancel Changes, Add new Manual phone
Cisco CMM IOS Gateway MGCP configuration for QSIG connectivity

Ri-3825#sh ver
Cisco IOS Software, 3800 Software (C3825-IPVOICEK9-M), Version 12.4(15)T1, RELEASE SOFTWARE (fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Wed 18-Jul-07 11:23 by prod_rel_team

ROM: System Bootstrap, Version 12.3(11r)T2, RELEASE SOFTWARE (fc1)

Ri-3825 uptime is 4 weeks, 6 days, 23 hours, 15 minutes
System returned to ROM by reload at 17:08:17 UTC Tue Jul 24 2007
System image file is "flash:c3825-ipvoicek9-mz.124-15.T1.bin"

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:

If you require further assistance please contact us by sending email to
export@cisco.com.

Cisco 3825 (revision 1.0) with 224256K/37888K bytes of memory.
Processor board ID FTX0946A1BT
2 Gigabit Ethernet interfaces
48 Serial interfaces
2 Channelized T1/PRI ports
2 Voice FXS interfaces
DRAM configuration is 64 bits wide with parity enabled.
479K bytes of NVRAM.
62720K bytes of ATA System CompactFlash (Read/Write)

Configuration register is 0x2102

**Ri-3825#sh run**

Building configuration...

Current configuration : 2419 bytes
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname Ri-3825
enable password cisco

no aaa new-model

network-clock-participate slot 1
no network-clock-participate slot 2
network-clock-select 1 T1 1/0/0

voice-card 0
no dspfarm

voice-card 1
dspfarm

voice-card 2
no dspfarm

ip cef

no ip domain lookup

ip host CM-Titanic 172.20.140.254 >======Active Host
ip host CM-SPURS 172.20.192.254
multilink bundle-name authenticated

isdn switch-type primary-qsig
!  
!  
archive
log config
hidekeys
!
!
controller T1 1/0/0
framing esf
linecode b8zs
pri-group timeslots 1-24 service mgcp
!
controller T1 1/0/1
shutdown
framing esf
linecode b8zs
cablelength short 399
pri-group timeslots 1-24 service mgcp
!
!
!
!
interface GigabitEthernet0/0
ip address 172.20.192.21 255.255.255.0
duplex auto
speed auto
media-type rj45
!
interface GigabitEthernet0/1
no ip address
shutdown
duplex auto
speed auto
media-type rj45
interface Serial1/0/0:23
  no ip address
  encapsulation hdlc
  isdn switch-type primary-qsig
  isdn timer T310 120000
  isdn protocol-emulate network
  isdn incoming-voice voice
  isdn bind-l3 ccm-manager
  no cdp enable

interface Serial1/0/1:23
  no ip address
  encapsulation hdlc
  shutdown
  isdn switch-type primary-qsig
  isdn incoming-voice voice
  isdn bind-l3 ccm-manager
  no cdp enable

ip route 0.0.0.0 0.0.0.0 172.20.192.1

ip http server
no ip http secure-server

control-plane

voice-port 1/0/0:23

voice-port 1/0/1:23
! voice-port 2/0/0
!
voice-port 2/0/1
!
ccm-manager mgep
ccm-manager music-on-hold
ccm-manager config server CM-Titanic
ccm-manager config
!
mgep
mgep call-agent CM-Titanic 2427 service-type mgep version 0.1
mgep dtmf-relay voip codec all mode out-of-band
mgep rtp unreachable timeout 1000 action notify
mgep modem passthrough voip mode nse
mgep package-capability rtp-package
mgep package-capability sst-package
mgep package-capability pre-package
no mgep package-capability res-package
no mgep package-capability fxr-package
no mgep timer receive-rtp
mgep sdp simple
mgep fax t38 inhibit
mgep rtp payload-type g726r16 static
!
mgep profile default
!
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!
!
!
stopbits 1
line vty 0 4
password cisco
login
!
scheduler allocate 20000 1000
!
end

Cisco 3825 IOS Gateway H323 configuration for CAMA trunk connectivity

Router#sh ver
Cisco IOS Software, 3800 Software (C3825-ADVENTERPRISEK9_IVS-M), Version 12.4(11)
)T1, RELEASE SOFTWARE (fc5)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Thu 25-Jan-07 17:16 by prod_rel_team

ROM: System Bootstrap, Version 12.3(11r)T2, RELEASE SOFTWARE (fc1)

Router uptime is 1 week, 3 days, 17 hours, 23 minutes
System returned to ROM by power-on
System image file is "flash:c3825-adventerprisek9_ivs-mz.124-11.T1.bin"

This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
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to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
If you require further assistance please contact us by sending email to export@cisco.com.

Cisco 3825 (revision 1.0) with 223232K/38912K bytes of memory.
Processor board ID FTX0946A1BV
2 Gigabit Ethernet interfaces
24 Serial interfaces
1 Channelized T1/PRI port
1 Virtual Private Network (VPN) Module
2 Voice FXO interfaces
2 Voice FXS interfaces
DRAM configuration is 64 bits wide with parity enabled.
479K bytes of NVRAM.
62720K bytes of ATA System CompactFlash (Read/Write)

Configuration register is 0x2102
Router#sh run
Building configuration...

Current configuration : 2545 bytes

! version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname Router
!
boot-start-marker
boot system flash:c3825-adventerprisek9_ivs-mz.124-11.T1.bin
boot-end-marker
!
logging buffered 10000000
no logging console
enable password cisco
!
no aaa new-model
no network-clock-participate slot 1
voice-card 0
dspfarm
dsp services dspfarm
!
voice-card 1
dspfarm
!
ip cef
!
!
multilink bundle-name authenticated
!

isdn switch-type primary-dms100
!
!
!

voice service voip
  allow-connections h323 to h323  == H323 protocol
  allow-connections h323 to sip
  allow-connections sip to h323
  allow-connections sip to sip
h323
sip
!
!
!
!
!
!
!
!
!
!
!
!
!
controller T1 1/0/0
  framing esf
linecode b8zs
pri-group timeslots 1-24
interface GigabitEthernet0/0
ip address 172.20.192.102 255.255.255.0
duplex auto
speed auto
media-type rj45
no keepalive
!
interface GigabitEthernet0/1
no ip address
shutdown
duplex auto
speed auto
media-type rj45
no keepalive
!
interface Serial1/0:23
no ip address
encapsulation hdlc
isdn switch-type primary-dms100
isdn incoming-voice voice
no cdp enable
!
ip default-gateway 172.20.192.1
ip route 0.0.0.0 0.0.0.0 172.20.192.1
!
!
ip http server
no ip http secure-server
!
!
!
!
!
!
control-plane

voice-port 0/0/0 === CAMA signaling
signal cama KP-0-NPA-NXX-XXXX-ST
dial-type mf
timing hookflash-out 500
description CAMA

voice-port 0/0/1

voice-port 0/2/0
station-id name Test Analog
station-id number 7055

voice-port 0/2/1
station-id name RI-NGUYEN
station-id number 4085261122
caller-id enable

voice-port 1/0/0:23

sccp local GigabitEthernet0/0
sccp ccm 172.20.8.254 identifier 1 version 4.1
sccp

sccp ccm group 1
associate ccm 1 priority 1
associate profile 1 register mtp0015f90d1590

dspfarm profile 1 mtp
codec g711ulaw
maximum sessions software 10
associate application SCCP
shutdown
!
!
dial-peer voice 911 pots
destination-pattern 911
no digit-strip
port 0/0/0
forward-digits all
!
dial-peer voice 999 voip
description call in PSTN simulation
destination-pattern .T
session target ipv4:172.20.140.254
!
!
gateway
timer receive-rtp 1200
!
sip-ua
retry options 0
!
!
!
gatekeeper
shutdown
!
!
!
line con 0
exec-timeout 0 0
password cisco
login
stopbits 1
line aux 0
stopbits 1
line vty 0 4
    exec-timeout 0 0
    password cisco
    login
line vty 5 10
    exec-timeout 0 0
    password cisco
    login
!
scheduler allocate 20000 1000
!
end
CAMA voice-port config

Router#sh voice port 0/0/0

Foreign Exchange Office 0/0/0 Slot is 0, Sub-unit is 0, Port is 0
Type of VoicePort is FXO
Operation State is DORMANT
Administrative State is UP
The Last Interface Down Failure Cause is Administrative Shutdown
Description is CAMA
Noise Regeneration is enabled
Non Linear Processing is enabled
Non Linear Mute is disabled
Non Linear Threshold is -21 dB
Music On Hold Threshold is Set to -38 dBm
In Gain is Set to 0 dB
Out Attenuation is Set to 3 dB
Echo Cancellation is enabled
Echo Cancellation NLP mute is disabled
Echo Cancellation NLP threshold is -21 dB
Echo Cancel Coverage is set to 64 ms
Echo Cancel worst case ERL is set to 6 dB
Playout-delay Mode is set to adaptive
Playout-delay Nominal is set to 60 ms
Playout-delay Maximum is set to 250 ms
Playout-delay Minimum mode is set to default, value 40 ms
Playout-delay Fax is set to 300 ms
Connection Mode is normal
Connection Number is not set
Initial Time Out is set to 10 s
Interdigit Time Out is set to 10 s
Call Disconnect Time Out is set to 60 s
Ringing Time Out is set to 180 s
Wait Release Time Out is set to 30 s
Companding Type is u-law
Region Tone is set for US
Analog Info Follows:
Currently processing none
Maintenance Mode Set to None (not in mtc mode)
Number of signaling protocol errors are 9
Impedance is set to 600r Ohm
Station name None, Station number None
Translation profile (Incoming):
Translation profile (Outgoing):

Voice card specific Info Follows:
Signal Type is cama
Cama Type is KP-0-NPA-NXX-XXXX-ST
Battery-Reversal is enabled
Number Of Rings is set to 1
Supervisory Disconnect is signal
Answer Supervision is inactive
Hook Status is On Hook
Ring Detect Status is inactive
Ring Ground Status is inactive
Tip Ground Status is inactive
Dial Out Type is mf
Digit Duration Timing is set to 75 ms
InterDigit Duration Timing is set to 65 ms
Pulse Rate Timing is set to 10 pulses/second
InterDigit Pulse Duration Timing is set to 750 ms
Percent Break of Pulse is 60 percent
GuardOut timer is 2000 ms
Minimum ring duration timer is 125 ms
Hookflash-in Timing is set to 600 ms
Hookflash-out Timing is set to 500 ms
Supervisory Disconnect Timing is set to 350 ms
OPX Ring Wait Timing is set to 6000 ms
NEC IPX2400 Configuration

The NEC requires a substantial amount of programming and circuit card switch settings to properly install T1 PRI. It is beyond the scope of this document to provide the entire configuration, therefore the NEC information below is directed to NEC techs.

The switch settings and software references in this document assume a familiarity with the NEC 2400. It is highly recommended to have a NEC ISDN certified technician setup the NEC portion.

Configure in the following sequence:
- Install Circuit Card
- Configure all software

Circuit Card Configuration (PA-24PRTB)

<table>
<thead>
<tr>
<th>Switch</th>
<th>Position</th>
<th>Description</th>
<th>Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB</td>
<td>Make Busy</td>
<td>Down</td>
<td></td>
</tr>
<tr>
<td>LB</td>
<td>Internal Loop Back</td>
<td>Off</td>
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<tr>
<td></td>
<td>External Loop Back</td>
<td>Off</td>
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<tr>
<td></td>
<td>Payload Loop Back</td>
<td>Off</td>
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<td></td>
<td>Dch Control Block MBR</td>
<td>Off</td>
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<tr>
<td>SENSE</td>
<td>Protocol</td>
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<td>0 = CCIS (NEC proprietary)</td>
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DISS 03/31/05 10:08:19:965000 IPX-R15_IP

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Build QSIG Route

**ARTD**

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Note 1: On the B-channel ARTD table, parameter IND must be set to ‘1’ for Name display, to disable Name display feature on the trunk change the value of IND to ‘0’.

Note 2: On the B-channel ARTD table, parameter DC must be set to equal the maximum number of digits in the PBX’s station numbers.
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Build the dial plan to access the QSIG route (Assumes dummy route has been built and ARRC is assigned properly)

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AOPR

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<tr>
<th>Starting</th>
<th>Ending</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDPTN 0</td>
<td>TDPTN 0</td>
</tr>
<tr>
<td>OPR 3</td>
<td>OPR 3</td>
</tr>
<tr>
<td>RA Order 0</td>
<td>RA Order 0</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>TDPTN</th>
<th>OPR</th>
<th>RA Order</th>
<th>RA End</th>
<th>Route</th>
<th>SKIP</th>
<th>PNL</th>
<th>OVFT</th>
<th>PRSC</th>
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<tbody>
<tr>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>#</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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</tbody>
</table>
### Dterm Data (Digital Stations)

#### ASDT

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>TN 1</td>
<td>TN 1</td>
</tr>
<tr>
<td>STN 4050</td>
<td>STN 4064</td>
</tr>
</tbody>
</table>

| TN | STN | LENS | TEC | RES | SPC | ETN | KD | CO | CE | HC | HP | PH | HL | HD | NS | D1 | D2 | XC | SS | WS | IT | LNL | LHN |
|----|-----|------|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|
| 1  | 4050| 4063 | 12  | 1   | 1   | 1   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 1  | 4054| 4063 | 12  | 1   | 1   | 1   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

#### ANND (Name display for Dterms)

<table>
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</thead>
<tbody>
<tr>
<td>Tenant 1</td>
<td>Tenant 1</td>
</tr>
<tr>
<td>Station 4050</td>
<td>Station 4064</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Tenant</th>
<th>Station</th>
<th>Name Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4050</td>
<td>Pluto</td>
</tr>
<tr>
<td>1</td>
<td>4064</td>
<td>Donald Duck</td>
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</table>
ADKS (Assigns soft key pattern to Dterm station)

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<th>Ending</th>
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</thead>
<tbody>
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<td>Tenant 1</td>
<td>Tenant 1</td>
</tr>
<tr>
<td>Station 4050</td>
<td>Station 4854</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Tenant</th>
<th>Station</th>
<th>Soft Key Pattern</th>
<th>Line Key Pattern</th>
<th>Page Scroll Key</th>
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</thead>
<tbody>
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<td>1</td>
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<td>1</td>
<td>3</td>
<td>0</td>
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<tr>
<td>1</td>
<td>4854</td>
<td>1</td>
<td>1</td>
<td>0</td>
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### Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAMA</td>
<td>Centralized Automatic Message Accounting</td>
</tr>
<tr>
<td>PSAP</td>
<td>Public Safety Answering Point</td>
</tr>
<tr>
<td>CER</td>
<td>Cisco Emergency Responder</td>
</tr>
<tr>
<td>CUCM</td>
<td>Cisco Unified Communications Manager</td>
</tr>
</tbody>
</table>
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