

# CUE JTAPI Issues and Case Studies

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## Introduction

This document provides information on how to troubleshoot Cisco Unity Express (CUE) Java Telephony Application Programming Interface (JTAPI). Additionally, this document provides the information and commands on how to enable, collect, and view the different traces and logs with troubleshooting case study examples.

## Prerequisites

### Requirements

Cisco recommends that you have knowledge of these topics:

- Basic knowledge of how to configure and use Cisco Unified Communications Manager (CUCM) through the web administrative interface.
- Basic familiarity with Computer Telephony Interface (CTI) Ports and Route-Points (RPs) in CUCM.
- Basic familiarity with the Cisco Unity Express command-line interface.

### Components Used

The information in this document is based on these software and hardware versions:

- Cisco Unity Express version 3.x or later.
- Cisco Unified Communications Manager version 7.x or later.

The integration method used applies only for Cisco Unity Express with Cisco Unified Communications Manager; not with Cisco Unified Communications Manager Express (CUCME).

Cisco Unity Express must be licensed for CUCM, not CUCME. CUE can either be integrated with CUCM or CUCME at any time and licensed accordingly.

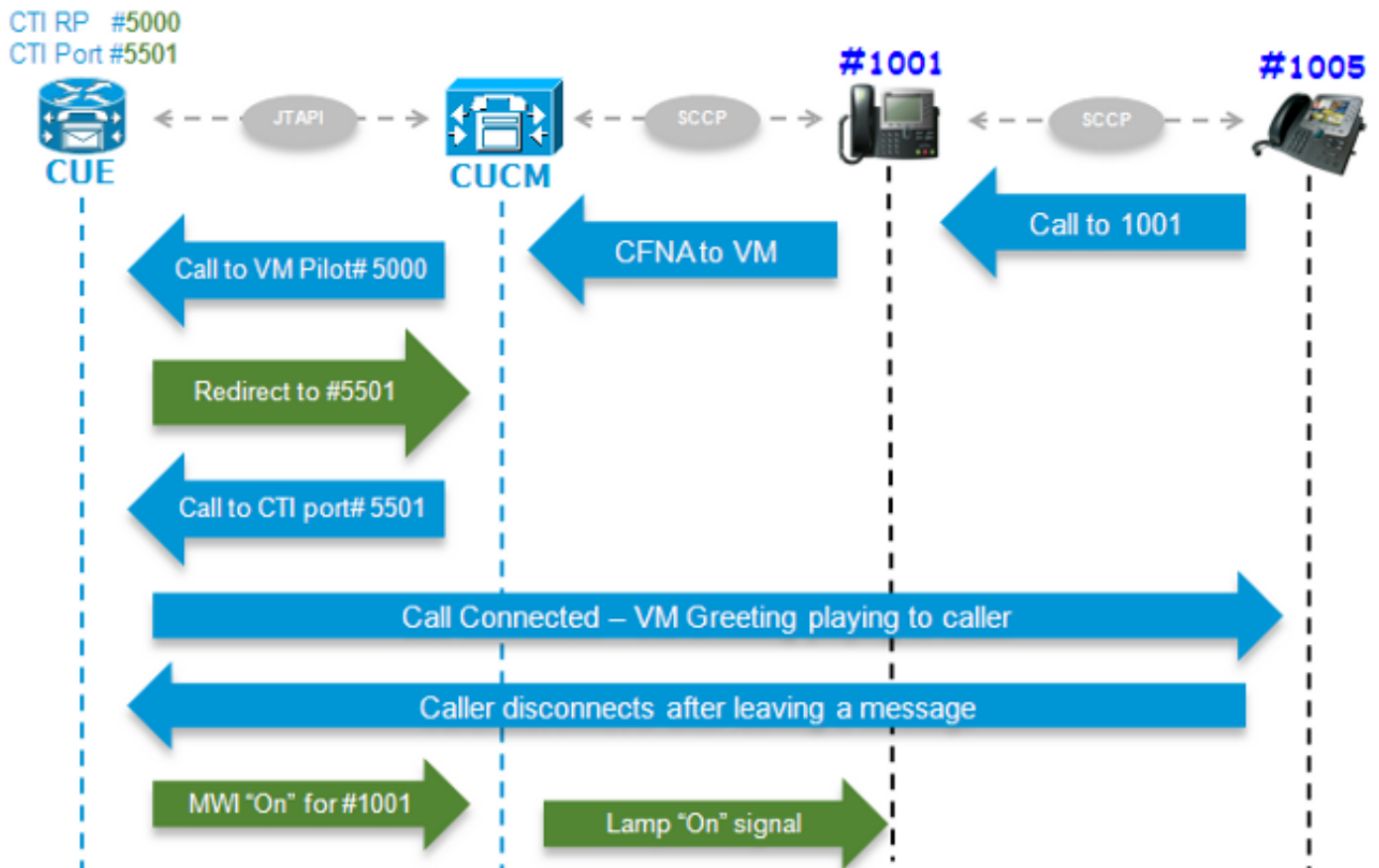
The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

## CUE JTAPI Integration with CUCM Overview

It is possible to integrate CUE with CUCM through the JTAPI protocol for voice mail (VM) and automated attendant (AA) functionality. This solution is recommended when you want to provision VM features and/or basic AA call handling for one or multiple branch sites with small numbers of users registered to a CUCM server. This does not require a full-fledged Cisco Unity Voicemail server, but a much more affordable implementation. At the same time, the CUE also provides survivability options for its branches and fails over to the Session Initiated Protocol (SIP) when connectivity to the CUCM is lost.

The CUE is able to register with the CUCM through JTAPI and controls CTI Route-Points and CTI Ports. This allows you to control and manage the CUE as an additional endpoint through the CUCM, as well as facilitate the configurations and interactions with other endpoints in the cluster.

### High-Level Call Flow Example



The end user with directory number (DN) 1005 calls the user with DN 1001. The call is forwarded after a few seconds if the call is not answered, Call Forward No Answer (CFNA), to the VM number configured on the user 1001 VM profile. The CUCM then sends the call to the configured VM Pilot 5000, which points to a CTI RP with DN 5000 that is controlled by CUE. The CUE VM application is triggered, and the call is redirected through JTAPI to an available CTI port (DN 5501) for media establishment. The audio greeting plays, and the user can leave a message or interact with the system through dual tone multi-frequency (DTMF) tones. When the caller ends the call, the CUE signals the CUCM to set the Message Waiting Indicator (MWI) lamp for extension 1001 to "On" through JTAPI. The CUCM then sends the Skinny Client Control Protocol (SCCP) message to turn on the light on the phone, as well as show the envelope indication on the display so user 1001 is aware that there is a new VM message in the mailbox.

## Enablement and Collection of Traces

There are two types of traces:

- Real-time JTAPI Cisco Communications Network (CCN) traces
- JTAPI CCN trace logs

### Real-time JTAPI CCN Traces

- Real-time JTAPI CCN traces. (Enabling these traces does not require a reload of the CUE module.)
- The output is not as extensive as the CCN trace logs, but they are not very informative either.

Enter these commands in order to enable the traces:

```
no trace all
trace ccn SubsystemJtapi all
```

Enter this command in order to verify that they are enabled:

```
CUE# show trace
MODULE ENTITY SETTING
ccn SubsystemJtapi ffffffff
```

Enter this command in order to collect the output:

```
CUE# show trace buffer ?
containing Only display events matching a regex pattern
long Show long format
short Show short format
tail Wait for events and print them as they occur !!
```

Enter **CTRL-C** to stop the real-time logging to the console.

## JTAPI CCN Trace Logs

A reload of the CUE module is required after the JTAPI CCN trace logs are enabled in order for the logs to become populated. These logs, **messages.log** and **atrace.log**, can be very detailed or cryptic as well as much more informative and detailed. There are four different logs:

- **atrace.log**

Enabled by default on network modules (NMs), but disabled by default for Advanced Integration Modules (AIMs). Enter the **log trace local enable** command in order to enable. It writes up to 10 Mb locally or to an FTP server. In order to restart the log, enter the **log trace local disable** command or the **no log trace local enable** command; then enter the **log trace local enable** command. Enter the **clear trace file** command in order to clear the **atrace.log**. The data must be decoded by the Technical Assistance Center (TAC).

- **messages.log**

These are logs that contain Syslog messages, such as Info, Warning, Error, and Fatal.

- **CiscoJtapi1.log** and **CiscoJtapi2.log**

They log all JTAPI-related signaling and events. These logs are much easier to understand and very informative. The CiscoJtapi2.log begins to populate when CiscoJtapi1.log becomes full and vice-versa.

Regardless of which traces are set, the system reverts to the default trace levels after a reload. In order to change these default settings so that they survive a reboot, you must enter the **log trace boot** command. Here is the command to enable them:

```
CUE#(CONFIG)> log console info !!
ccn trace jtapi deb all
ccn trace jtapi info all
ccn trace jtapi warn all
log trace boot
reload
```

Enter this command in order to verify that they are enabled:

```
CUE# show ccn trace jtapi
Warning: 1
Informational: 1
```

Jtapi Debugging:	1
Jtapi Implementation:	1
CTI Debugging:	1
CTI Implementation:	1
Protocol Debugging:	1
Misc Debugging:	1

Here are the steps to view the logs:

1. Enter the **show logs** command in order to view a list of the log files stored in the CUE.
2. The **.prev** file extension means that this is a backup of an older trace file and not the current active log file.
3. You can extract them to an external FTP server.
4. You can also view the output of the messages that are being logged to these files real-time from the CUE's terminal monitor.

## Collect the Trace Log Files

Extract the logs to an external FTP with these commands:

```
copy log CiscoJtapi2.log url ftp://username:password@192.168.105.1/
copy log CiscoJtapi1.log url ftp://username:password@192.168.105.1/
copy log messages.log url ftp://username:password@192.168.105.1/
copy log atrace.log url ftp://username:password@192.168.105.1/
```

Display logs to the CUE terminal monitor with the **show log name <logname>** command. Here is an example:

```
CUE# show log name messages.log ?
containing Only display events matching a regex pattern
paged Display in page mode
tail Wait for events and print them as they occur
<cr>
```

The **atrace.log** is encoded; therefore you cannot only display it real-time with the **show log name** command.

## Must-have Details Before You Check the Logs

You must obtain, at the very least, all the details outlined herein from the calls with the issue you are troubleshooting so that you can easily track and understand the traces:

- Calling Number
- Called Number
- Redirect Number
- CTI RP DN and Device Name
- CTI Port Number and Device Name
- JTAPI user
- Time range the calls took place

## Basic CTI Concepts

**Provider:** A provider of CTI services. The application establishes a CTI session by **opening** a

provider.

**User:** Applications are associated with a user.

**Device:** A device that registers to the CUCM.

**Line:** DN appearance on a CTI supported device.

**Call ID (callLegID):** Associated with one call leg in a call.

**Global Call (callID):** Identifies all the call legs for a single call.

## Common CTI Call States

```
state = 1                IDLE
state = 2 OFFERING
state = 3 ACCEPTED
state = 8 CONNECTED
```

## What Trace Logs Should Look Like

Before you are able to find incorrect signaling, you first need to know what this signaling would look like under normal operation; so this section shows snippets of the signaling outputs you would see in different scenarios when they work normally.

Also please be aware that all the signaling from these logs has been summarized to show only the relevant details because they contain very detailed information that is quite tedious and repetitive.

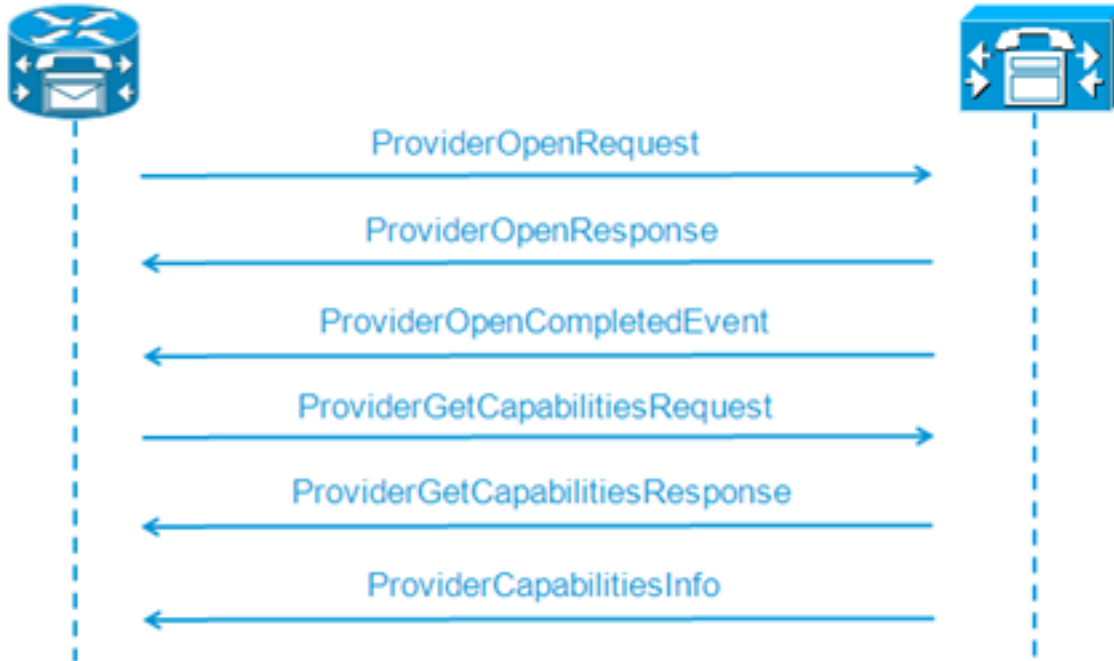
Here are the details of the configurations used:

```
Jtapi User:                tacjtapiuser
CUCM IP Address: 192.168.100.10
CUE CTI Route Point: cue_vm_ctirp
CUE CTI Port: cue_ctiport1
CUE and Phone Partition: cue_pt
IP Phone MAC: SEP0023331C29EC
CTI Route Point DN: 8000
CTI Port DN: 8501
IP Phone DN: 3001
```

## CTI RP and Port Registration

*(Outputs from the CiscoJtapi1 / Cisco Jtapi2 Logs)*

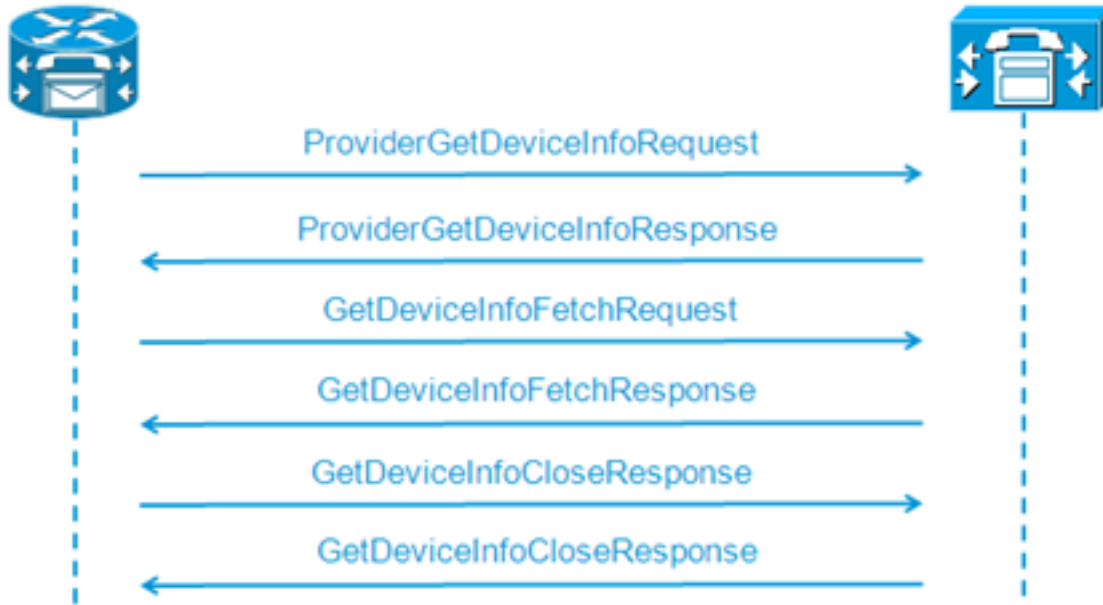
### 1. Open a Provider Connection



```

21: 12:05:23.686 CST %JTAPI-CTIIMPL-7-UNK.(P1-tacjtapiuser) ProviderID =
P1-tacjtapiuser
22: 12:05:23.739 CST %JTAPI-CTIIMPL-7-UNK.(P1-tacjtapiuser) Trying to
create normal socket connection to 192.168.100.10
23: 12:05:23.747 CST %JTAPI-CTIIMPL-7-UNK.(P1-tacjtapiuser) connected
26: 12:05:24.112 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.ProviderOpenRequest {
provider = 192.168.100.10
qbeClientVersion = Cisco JTAPI 7.0(1.1000)-1 Release
login = com.cisco.cti.protocol.UnicodeString {
unicodedisplayName = tacjtapiuser
}
applicationID = Cisco IP IVR
desiredServerHeartbeatTime = 30
pluginName = CiscoJTAPI
}
28: 12:05:24.131 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received
Response: com.cisco.cti.protocol.ProviderOpenResponse {
sequenceNumber = 0
result = 0
providerInfoString = 7.1.5.10000-12
clientHeartbeat = 30
serverHeartbeat = 30
pluginVersion = 7.1.5.10000-2
pluginLocation = http://192.168.100.10/plugins/
providerId = 16777236
}
35: 12:05:24.858 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received
Event: com.cisco.cti.protocol.ProviderOpenCompletedEvent {
eventSequence = 0
reason = 0
providerInfoString = 7.1.5.10000-12
clientHeartbeat = 30
serverHeartbeat = 30
failureDescription = null
providerId = 16777236
}
  
```

## 2. Query for Controllable Devices



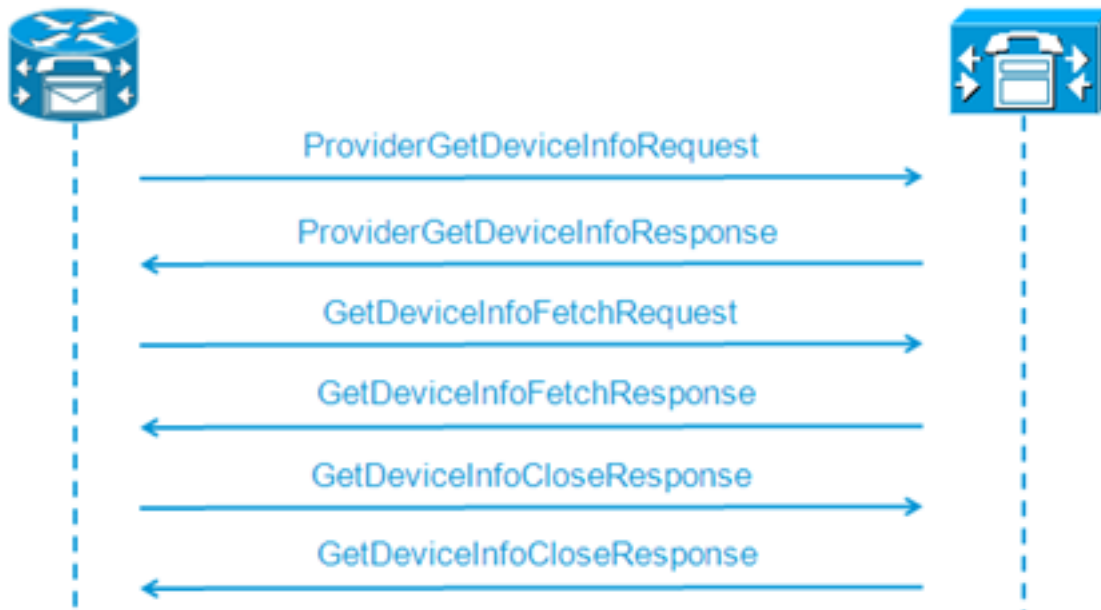
```

48: 12:05:24.864 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.ProviderGetDeviceInfoRequest {
sequenceNumber = 2
deviceGroup = 1
}
49: 12:05:24.865 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received
Response: com.cisco.cti.protocol.ProviderGetDeviceInfoResponse {
sequenceNumber = 2
result = 0
}
50: 12:05:24.865 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.GetDeviceInfoFetchRequest {
sequenceNumber = 3
}
51: 12:05:25.011 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received
Response: com.cisco.cti.protocol.GetDeviceInfoFetchResponse {
sequenceNumber = 3
result = 0
info = 2@[
com.cisco.cti.protocol.DeviceInfo {
name           = cue_ctiport1
type = 72
allowsRegistration = true
deviceID = 62
devTypeName = CTI Port
},
com.cisco.cti.protocol.DeviceInfo {
name           = cue_vm_ctirp
type = 73
allowsRegistration = true
deviceID = 61
devTypeName = CTI Route Point
}]
52: 12:05:25.012 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.GetDeviceInfoCloseRequest {
sequenceNumber = 4
}
53: 12:05:25.013 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10)
received Response: com.cisco.cti.protocol.GetDeviceInfoCloseResponse {
sequenceNumber = 4
}
54: 12:05:25.013 CST %JTAPI-MISC-7-UNK.(P1-192.168.100.10)
  
```



creating controlled devices

### 3. Obtain CTI Port Line Information



```
55: 12:05:25.024 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.DeviceGetLineInfoRequest {
sequenceNumber = 5
deviceName = cue_ctiport1
}
56: 12:05:25.026 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10)
received Response: com.cisco.cti.protocol.DeviceGetLineInfoResponse {
sequenceNumber = 5
result = 0
}
57: 12:05:25.026 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.GetLineInfoFetchRequest {
sequenceNumber = 6
}
58: 12:05:25.029 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10)
received Response: com.cisco.cti.protocol.GetLineInfoFetchResponse {
sequenceNumber = 6
result = 0
com.cisco.cti.protocol.LineInfo {
name = 8501
displayName =
maxNumberOfCalls = 4
lineInstance = 1
unicodeDisplayName = com.cisco.cti.protocol.UnicodeString {
}
partition = cue_pt
defaultIntercomTargetInfo = com.cisco.cti.protocol.LineIntercomSpeedDialInfo {
}
}
59: 12:05:25.029 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.GetLineInfoCloseRequest {
sequenceNumber = 7
}
60: 12:05:25.031 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10)
received Response: com.cisco.cti.protocol.GetLineInfoCloseResponse {
sequenceNumber = 7
result = 0
}
61: 12:05:25.042 CST %JTAPI-CTI-7-UNK.(P1-tacjtapiuser)
DeviceMap: adding device "cue_ctiport1"
```

#### 4. Obtain CTI RP Line Information

```
62: 12:05:25.043 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.DeviceGetLineInfoRequest {
sequenceNumber = 8
deviceName = cue_vm_ctirp
}
63: 12:05:25.044 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10)
received Response: com.cisco.cti.protocol.DeviceGetLineInfoResponse {
sequenceNumber = 8
result = 0
}
64: 12:05:25.045 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.GetLineInfoFetchRequest {
sequenceNumber = 9
}
65: 12:05:25.047 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10)
received Response: com.cisco.cti.protocol.GetLineInfoFetchResponse {
sequenceNumber = 9
result = 0
info = 1@[
com.cisco.cti.protocol.LineInfo {
name = 8000
displayName =
permanentLineID = 52
partition = cue_pt
defaultIntercomTargetInfo = com.cisco.cti.protocol.LineIntercomSpeedDialInfo {
unicodeLabel = com.cisco.cti.protocol.UnicodeString {
}
}
}
66: 12:05:25.048 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.GetLineInfoCloseRequest {
sequenceNumber = 10
}
67: 12:05:25.058 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10)
received Response: com.cisco.cti.protocol.GetLineInfoCloseResponse {
sequenceNumber = 10
result = 0
}
68: 12:05:25.059 CST %JTAPI-CTI-7-UNK.(P1-tacjtapiuser)
DeviceMap: adding device "cue_vm_ctirp"
69: 12:05:25.059 CST %JTAPI-CTI-7-UNK.(P1-192.168.100.10)
refreshing device map: previous=0 current=2 created=2 removed=0
```

#### 5. CUE Applies Received Configuration

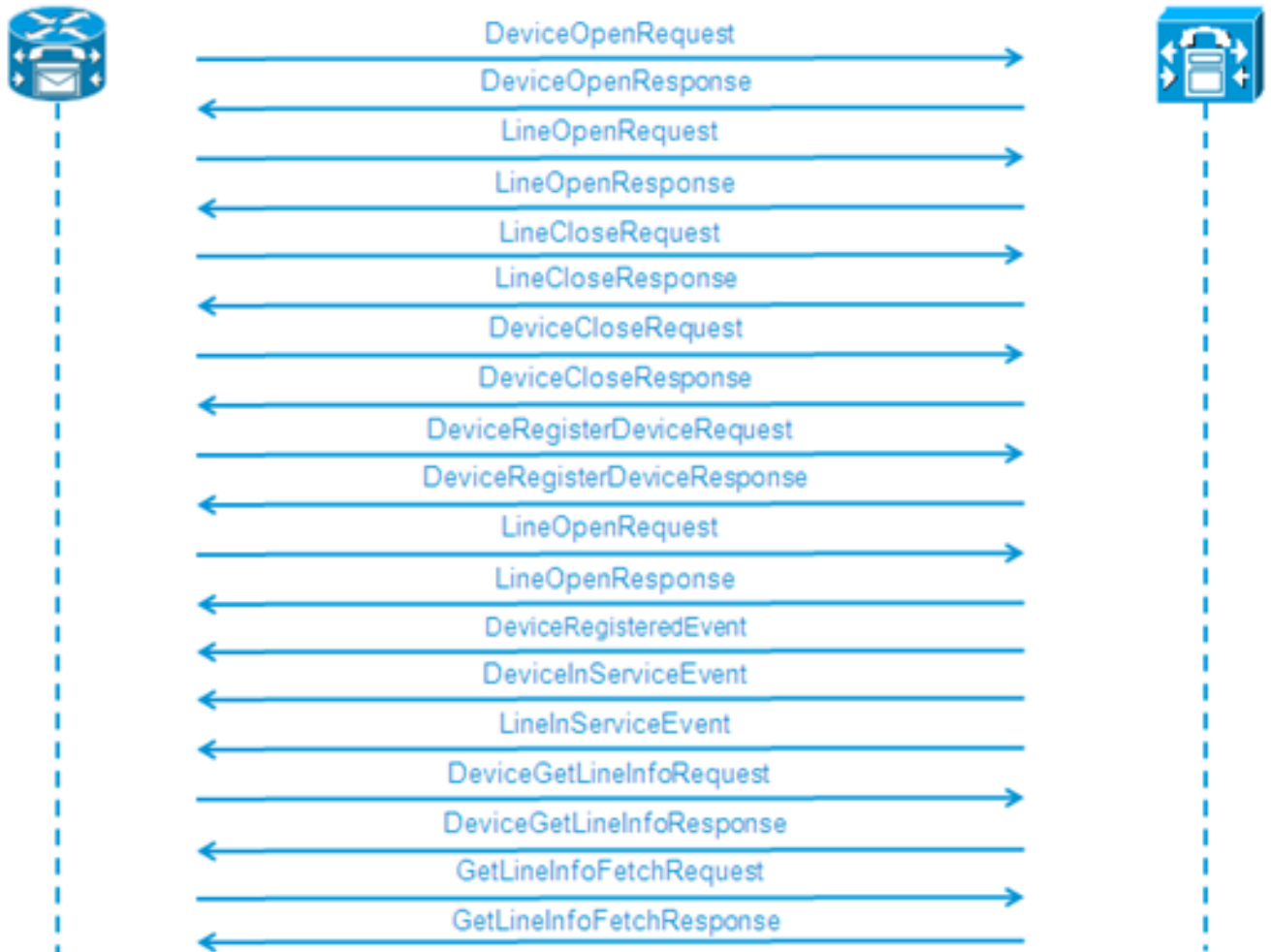
```
76: 12:05:25.064 CST %JTAPI-MISC-7-UNK.Provider 192.168.100.10
open, beginning device
initialization
77: 12:05:25.071 CST %JTAPI-JTAPI-7-UNK.(P1-tacjtapiuser)[SS_TEL_INIT]
(P1-tacjtapiuser) Request: addObserver
79: 12:05:25.073 CST %JTAPI-MISC-7-UNK.ObserverThread
(com.cisco.wf.subsystems.jtapi.SubsystemJTAPI$ProviderObserver@3d823d82):created
80:12:05:25.074 CST %JTAPI-JTAPI-7-UNK.(P1-tacjtapiuser) ProvOutOfServiceEv [#0]
Cause:100 CallCtlCause:0 CiscoFeatureReason:12
82: 12:05:25.085 CST %JTAPI-MISC-7-
UNK.ObserverThread
(com.cisco.wf.subsystems.jtapi.SubsystemJTAPI$ProviderObserver@3d823d82):
queuing com.cisco.jtapi.JtapiProviderEventSet
83: 12:05:25.084 CST %JTAPI-MISC-7-UNK.(P1-192.168.100.10)
ProviderRetryThread starting up
85: 12:05:25.084 CST %JTAPI-MISC-7-UNK.ObserverThread
(com.cisco.wf.subsystems.jtapi.SubsystemJTAPI$ProviderObserver@3d823d82)
starting up...
90: 12:05:25.102 CST %JTAPI-JTAPIIMPL-7-UNK.Partition Support 8000 in
partitioncue_pt
```

```

91: 12:05:25.102 CST %JTAPI-JTAPIIMPL-7-UNK.(P1-tacjtapiuser) cue_vm_ctirp:
Address: 8000 in partitioncue_pt created
92: 12:05:25.102 CST %JTAPI-JTAPIIMPL-7-UNK.Partition Internal Address Added
8000 in Partition cue_pt
93: 12:05:25.102 CST %JTAPI-JTAPIIMPL-7-UNK.Partition Support 8501 in
partitioncue_pt
94: 12:05:25.103 CST %JTAPI-JTAPIIMPL-7-UNK.(P1-tacjtapiuser) cue_ctiport1:
Address: 8501 in partitioncue_pt created
95: 12:05:25.103 CST %JTAPI-JTAPIIMPL-7-UNK.Partition Internal Address Added
8501 in Partition cue_pt
96: 12:05:25.103 CST %JTAPI-MISC-7-UNK.Provider "(P1-tacjtapiuser)" changing
state to IN_SERVICE
97: 12:05:25.103 CST %JTAPI-JTAPI-7-UNK.(P1-tacjtapiuser)[Thread-76]
(P1-tacjtapiuser) Request: getObservers
98: 12:05:25.103 CST %JTAPI-JTAPI-7-UNK.(P1-tacjtapiuser) ProvInServiceEv [#1]
Cause:100 CallCtlCause:0 CiscoFeatureReason:12
100: 12:05:25.103 CST %JTAPI-MISC-7-UNK.ObserverThread
(com.cisco.wf.subsystems.jtapi.SubsystemJTAPI$ProviderObserver@3d823d82):
queuing com.cisco.jtapi.JtapiProviderEventSet
101: 12:05:25.103 CST %JTAPI-JTAPIIMPL-7-UNK.Provider 192.168.100.10
initialized 2 devices
104: 12:05:25.104 CST %JTAPI-JTAPIIMPL-7-UNK:
[com.cisco.wf.subsystems.jtapi.SubsystemJTAPI$ProviderObserver@3d823d82]
delivering to providerChangedEvent
106: 12:05:25.523 CST %JTAPI-JTAPI-7-UNK.(P1-tacjtapiuser)[SS_TEL_INIT]
(P1-tacjtapiuser) Request: getAddress( 8501 )Partition = cue_pt
107: 12:05:25.526 CST %JTAPI-JTAPI-7-UNK.(P1-tacjtapiuser)[SS_TEL_INIT]
[cue_ctiport1]Request: addObserver
(com.cisco.wf.subsystems.jtapi.TAPIPortGroup$Port$AddressCallObserver@5d085d08)

```

## 6. Obtain Control of the CTI Devices and Lines



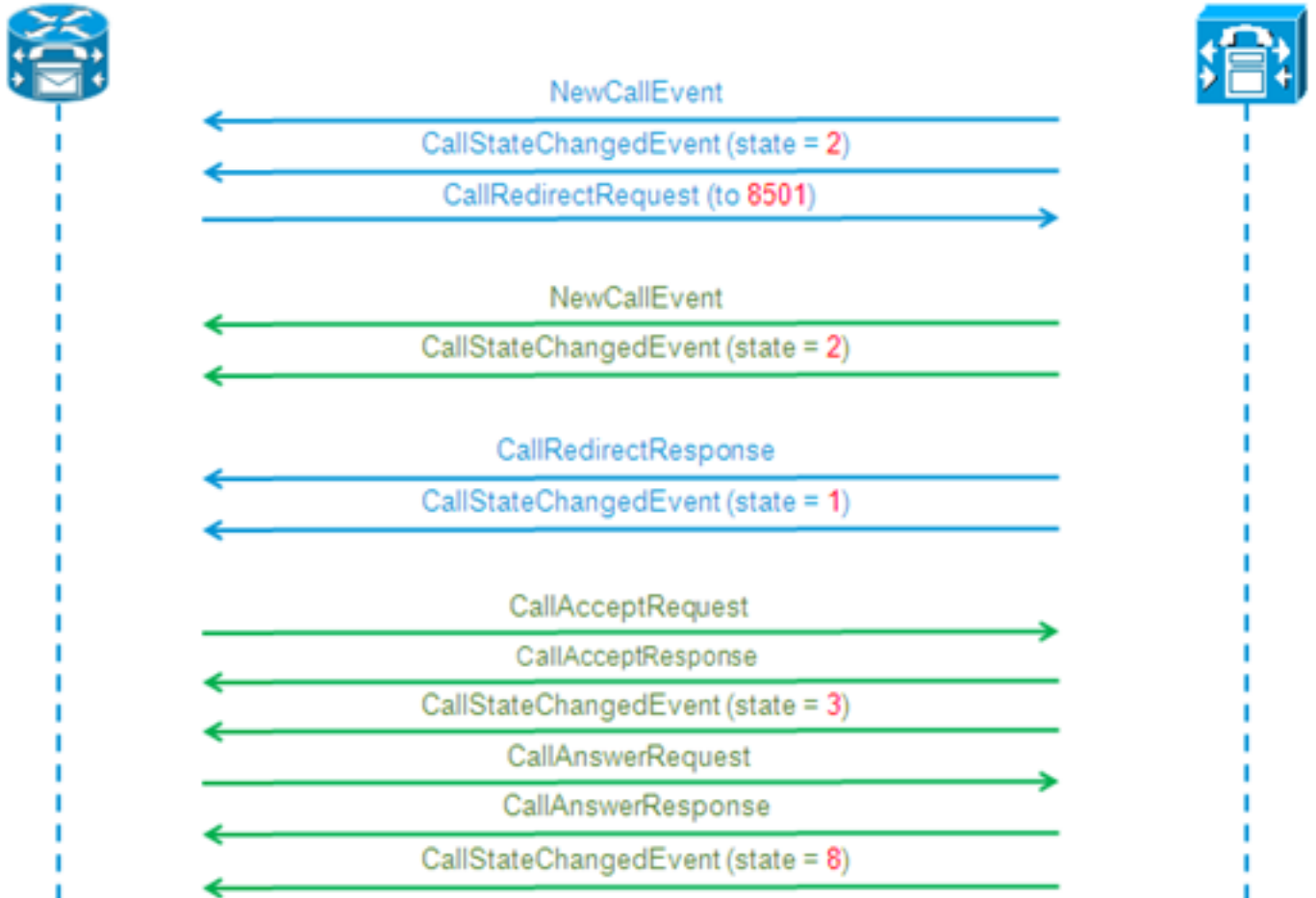
109: 12:05:25.528 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS\_TEL\_INIT]  
**sending:**  
com.cisco.cti.protocol.**DeviceOpenRequest** {  
deviceName = **cue\_ctiport1**  
}  
110: 12:05:25.533 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10)  
**received** Response:  
com.cisco.cti.protocol.**DeviceOpenResponse** {  
result = 0  
}  
111: 12:05:25.533 CST %JTAPI-CTI-7-UNK.(P1-tacjtapiuser) **DeviceMap: opening**  
**device "cue\_ctiport1"**  
112: 12:05:25.533 CST %JTAPI-JTAPIIMPL-7-UNK.(P1-tacjtapiuser) Terminal  
"cue\_ctiport1" out of service  
113: 12:05:25.534 CST %JTAPI-JTAPI-7-UNK.(P1-tacjtapiuser) [cue\_ctiport1]  
CiscoTermOutOfServiceEv [#2] Cause:100 CallCtlCause:0 CiscoFeatureReason:12  
119: 12:05:25.544 CST %JTAPI-JTAPIIMPL-7-UNK:Address [cue\_ctiport1:8501:  
cue\_pt.(0,0)] out of service  
120: 12:05:25.544 CST %JTAPI-JTAPI-7-UNK.(P1-tacjtapiuser) [8501:cue\_pt]  
CiscoAddrOutOfServiceEv [#3] Cause:100 CallCtlCause:0 CiscoFeatureReason:12  
121: 12:05:25.546 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS\_TEL\_INIT]  
**sending:** com.cisco.cti.protocol.**LineOpenRequest** {  
**deviceName** = **cue\_ctiport1**  
**lineName** = **8501**  
}  
122: 12:05:25.582 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) **received**  
Response: com.cisco.cti.protocol.**LineOpenResponse** {  
134: 12:05:25.670 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS\_TEL\_INIT]  
**sending:** com.cisco.cti.protocol.**LineCloseRequest** {  
135: 12:05:25.673 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) **received**  
Response: com.cisco.cti.protocol.**LineCloseResponse** {  
138: 12:05:25.674 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS\_TEL\_INIT]  
**sending:** com.cisco.cti.protocol.**DeviceCloseRequest** {  
139: 12:05:25.681 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) **received**  
Response: com.cisco.cti.protocol.**DeviceCloseResponse** {  
141: 12:05:25.683 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS\_TEL\_INIT]  
**sending:** com.cisco.cti.protocol.**DeviceRegisterDeviceRequest** {  
deviceName = cue\_ctiport1  
142: 12:05:25.687 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) **received**  
Response: com.cisco.cti.protocol.**DeviceRegisterDeviceResponse** {  
result = 0  
**name** = **cue\_ctiport1**  
allowsRegistration = true  
}  
143: 12:05:25.687 CST %JTAPI-CTI-7-UNK.(P1-tacjtapiuser) **DeviceMap: opening**  
**device "cue\_ctiport1"**  
150: 12:05:25.688 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS\_TEL\_INIT]  
**sending:** com.cisco.cti.protocol.**LineOpenRequest** {  
deviceName = cue\_ctiport1  
lineName = 8501  
151: 12:05:25.690 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) **received**  
Response: com.cisco.cti.protocol.**LineOpenResponse** {  
152: 12:05:25.691 CST %JTAPI-JTAPIIMPL-7-UNK:cue\_ctiport1: Lines opened  
153: 12:05:25.739 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) **received**  
Event: com.cisco.cti.protocol.**DeviceRegisteredEvent** {  
deviceInfo = com.cisco.cti.protocol.DeviceInfo {  
allowsRegistration = true  
controllable = true  
}  
156: 12:05:25.739 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) Received  
DeviceRegisteredEvent  
160: 12:05:25.740 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) **received**  
Event: com.cisco.cti.protocol.**DeviceInServiceEvent** {  
162: 12:05:25.741 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) **received**

```
Event: com.cisco.cti.protocol.LineInServiceEvent {  
}
```

## Basic Call Forwarded to Voicemail

(Outputs from the CiscoJtapi1 / Cisco Jtapi2 Logs)

### New Call and Redirection to Available Port



### New Call and Redirection to Available Port

```
12:46:00.396 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Event:  
com.cisco.cti.protocol.NewCallEvent {  
deviceName = cue_vm_ctirp  
callLegID = 25626132  
callID = 9040  
callingParty = 3001  
calledParty = 8000  
callingPartyName = Ext 3001 - Phone  
callingPartyDeviceName = SEP0023331C29EC  
unModifiedCalledParty = 8000  
unModifiedOriginalCalledParty = 8000  
unModifiedLastRedirectingParty =  
}  
12:46:00.400 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Event:  
com.cisco.cti.protocol.CallStateChangeEvent {  
callLegID = 25626132  
state = 2
```

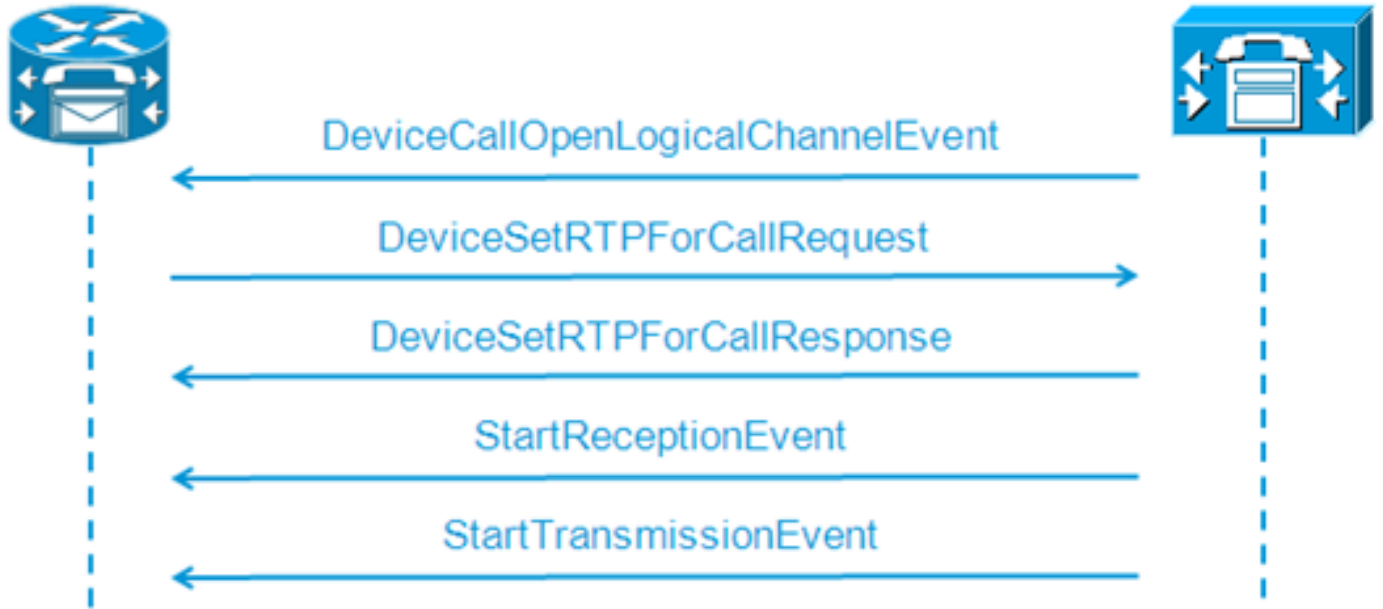


```
farEndpointSpecified = true
fwdDestinationAddress =
reason = 68501
callingParty = 3001
callingPartyName = Ext 3001 - Phone
calledParty = 8000 }
12:46:00.481 %JTAPI-JTAPIIMPL-7-UNK: {(P1-tacjtapiuser) GCID=(1,9040)->ACTIVE}
Initializing to OFFERING for 8501:cue_pt Cause=CAUSE_REDIRECTED Reason= 6
12:46:00.481 %JTAPI-JTAPIIMPL-7-UNK: {(P1-tacjtapiuser) GCID=(1,9040)->ACTIVE}
Received a redirected call -- lastRedAddress is 8000
12:46:00.487 %JTAPI-CTI-7-UNK.(P1-tacjtapiuser){Line:cue_ctiport1:8501:cue_pt.
(1,24)|Call:[GCID=(9040/1),CID=25626133]} CallStateChanged [ state=OFFERING
cause=NOERROR]
12:46:00.489 %JTAPI-CTI-7-UNK.(P1-tacjtapiuser){Line:cue_vm_ctirp:8000:cue_pt.
(1,28)|Call:[GCID=(9040/1),CID=25626132]} CallStateChanged [ state=IDLE cause=
NOERROR destType=IN_CLUSTER destCM=1 fwdDestination=8501]
```

## CTI Port Accepts Redirected Call

```
12:46:00.490 %JTAPI-JTAPI-7-UNK.(P1-tacjtapiuser)[SS_TEL_CALL_CONN_OFFERED:8501]
[[8501:cue_pt/(P1-tacjtapiuser) GCID=(1,9040)->ACTIVE]->OFFERED]Request: accept()
12:46:00.491 %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_CALL_
CONN_OFFERED:8501] sending: com.cisco.cti.protocol.CallAcceptRequest {
callLegID           = 25626133
}
12:46:00.495 %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Response:
com.cisco.cti.protocol.CallAcceptResponse {
result              = 0
}
12:46:00.498 %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Event:
com.cisco.cti.protocol.CallStateChangedEvent {
callLegID           = 25626133
state = 3
12:46:00.499 %JTAPI-CTI-7-UNK.(P1-tacjtapiuser){Line:cue_ctiport1:8501:cue_pt.
(1,24)|Call:[GCID=(9040/1),CID=25626133]} CallStateChanged [ state=ACCEPTED
cause=NOERROR]
12:46:00.502 %JTAPI-JTAPIIMPL-7-UNK.(P1-tacjtapiuser) Terminal "cue_ctiport1"
in service
12:46:00.503 %JTAPI-JTAPIIMPL-7-UNK: {(P1-tacjtapiuser) GCID=(1,9040)->ACTIVE}
Handling
External STATE_RINGBACK for 3001:cue_pt
12:46:00.517 %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10)
[ENG_TASK:0x98bca5a08_voicebrowser.aef] sending:
com.cisco.cti.protocol.CallAnswerRequest {
callLegID = 25626133
}
12:46:00.522 %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Response:
com.cisco.cti.protocol.CallAnswerResponse {
result              = 0
}
12:46:00.530 %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Event:
com.cisco.cti.protocol.CallStateChangedEvent {
callLegID           = 25626133
state = 8
```

## Media Negotiation

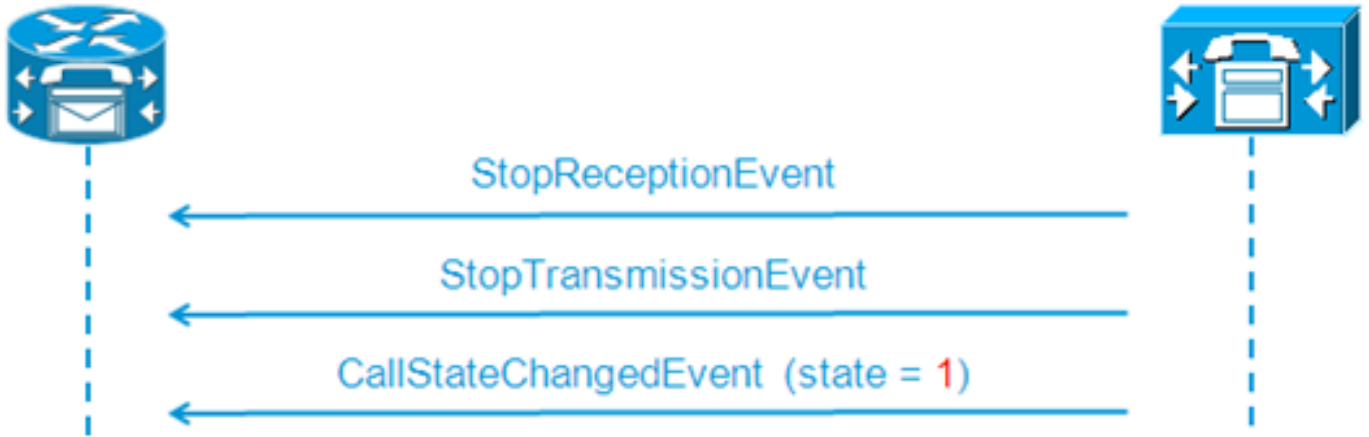


```

12:46:00.531 %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Event:
com.cisco.cti.protocol.DeviceCallOpenLogicalChannelEvent {
callLegID          = 25626133
compressionType = 4
}
12:46:00.531 %JTAPI-CTI-7-UNK.(P1-tacjtapiuser){Line:cue_ctiport1:8501:
cue_pt.(1,24)|Call:[GCID=(9040/1),CID=25626133]} CallStateChanged
[ state=CONNECTED cause=NOERROR]
12:46:00.537 %JTAPI-JTAPI-7-UNK.(P1-tacjtapiuser)[SS_TEL_OPEN_LOGICAL_CHANNEL:
8501][cue_ctiport1]
Request: setRTPParams(CiscoRTPParams192.168.105.224/16384)
12:46:00.537 %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_OPEN_
LOGICAL_CHANNEL:8501] sending:
com.cisco.cti.protocol.DeviceSetRTPForCallRequest {
callLegID          = 25626133
ipAddress          = -529946432
rtpPortNumber      = 16384
}
12:46:00.540 %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Response:
com.cisco.cti.protocol.DeviceSetRTPForCallResponse {
result = 0
}
12:46:00.591 %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Event:
com.cisco.cti.protocol.StartReceptionEvent {
callLegID = 25626133
ipAddr = -529946432
rtpPortNumber = 16384
compressionType = 4
}
12:46:00.596 %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Event:
com.cisco.cti.protocol.StartTransmissionEvent {
callLegID = 25626133
ipAddr = -1167415104
rtpPortNumber = 22668
compressionType = 4
}
  
```

## Call Disconnection





```

12:46:09.438 %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Event:
com.cisco.cti.protocol.StopReceptionEvent {
callLegID = 25626133
}
12:46:09.438 %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Event:
com.cisco.cti.protocol.StopTransmissionEvent {
callLegID = 25626133
}
12:46:09.441 %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Event:
com.cisco.cti.protocol.CallStateChangedEvent {
callLegID          = 25626133
state = 1
cause = 16
12:46:09.443 %JTAPI-CTI-7-UNK.(P1-tacjtapiuser){Line:cue_ctiport1:8501:
cue_pt.(1,24)|Call:[GCID=(9040/1),CID=25626133]} CallStateChanged
[ state=IDLE cause=NORMALCALLCLEARING]

```

## MWI On/Off Signaling

### CUE Turns MWI Lamp on for Line 3001

```

12:46:02.714 CST %JTAPI-JTAPI-7-UNK.(P1-tacjtapiuser)[Thread-88][8501:cue_pt]
Request:
setMessageWaiting ( 3001,true )
12:46:02.714 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [Thread-88]
sending: com.cisco.cti.protocol.LineSetMessageWaitingRequest {
sequenceNumber = 57
lineName       = 3001
lampMode = 2
}
12:46:02.718 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received
Response: com.cisco.cti.protocol.LineSetMessageWaitingResponse {
sequenceNumber = 57
result = 0
}

```

### Dialed DTMF Number '3' to Delete the Message from the Mailbox

```

12:55:52.145 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Event:
com.cisco.cti.protocol.DtmfEvent {
eventSequence = 70
callLegID = 25626160
digit      = 3
}

```

```
}
12:55:52.145 CST %JTAPI-CTIIMPL-7-UNK.(P1-192.168.100.10) EventThread handling
event com.cisco.cti.protocol.DtmfEvent[70]
12:55:52.146 CST %JTAPI-CTI-7-UNK.(){Line:cue_ctiport1:8501:cue_pt.(1,64)|Call:
[GCID=(9047/1),CID=25626160]}
DTMF [digit=3]
```

## CUE Turns MWI Lamp off for Line 3001

```
12:55:52.209 CST %JTAPI-JTAPI-7-UNK.(P1-tacjtapiuser)[Thread-86][8501:cue_pt]
Request: setMessageWaiting ( 3001,false )
12:55:52.209 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [Thread-86] sending:
com.cisco.cti.protocol.LineSetMessageWaitingRequest {
sequenceNumber = 62
lineName           = 3001
lampMode = 1
}
12:55:52.212 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Response:
com.cisco.cti.protocol.LineSetMessageWaitingResponse {
sequenceNumber = 62
result = 0
}
```

## Real-time CCN Logs

*(Outputs from the Real-Time CCN Logs)*

This is how the same call from the previous example herein appears when the real-time CCN logs are collected instead.

## Call Setup

```
12:46:00.425 ACCN TELS 0 assigned STANDARD-worker-8
12:46:00.425 ACCN TELS 0 Route Connection=[8000:cue_pt/(P1-tacjtapiuser) GCID=
(1,9040)->ACTIVE]->OFFERED, reason=1...
12:46:00.426 ACCN TELS 0 Call.received() JTAPICallContact[id=7,type=Cisco JTAPI
Call,implId=9040/1,active=true,state=CALL_RECEIVED,inbound=true...
12:46:00.429 ACCN TELS 0 Route Connection: [8000:cue_pt/(P1-tacjtapiuser)
GCID=(1,9040)->ACTIVE]->OFFERED, CTI Port selected: TP[id=0,implId=8501,
state=IN_USE]
12:46:00.429 ACCN TELS 0 RouteCallObserver.callChangedEvent: redirecting to
8501, css=default
12:46:00.480 ACCN TELS 0 Call.associated() JTAPICallContact[id=7,type=Cisco
JTAPI Call,implId=9040/1,active=true,state=CALL_RECEIVED,
12:46:00.480 ACCN TELS 0 Route Connection: [8000:cue_pt/(P1-tacjtapiuser)
GCID=(1,9040)->ACTIVE]->OFFERED has 1 current sessions active.
12:46:00.484 ACCN TELS 0 CallID: 7, MediaID: 9040/1 CallCtlConnOfferedEv
received for CTI Port: 8501, lastRedirectedAddress: 8000
12:46:00.490 ACCN TELS 0 assigned STANDARD-worker-9
12:46:00.490 ACCN TELS 0 Route TR[num=8000], event=(P1-tacjtapiuser) 9040/1
CallCtlConnDisconnectedEv 8000:cue_pt [#108] Cause:100 CallCtlCause:0
CiscoCause:0 CiscoFeatureReason:6, cause=CAUSE_NORMAL[100],
meta=META_CALL_REMOVING_PARTY[131]
12:46:00.499 ACCN TELS 0 CallID: 7, MediaID: 9040/1 Accepting call for CTI
Route Point: 8000 on CTI Port: 8501, ciscoCause=31
12:46:00.501 ACCN TELS 0 Call.accepted() JTAPICallContact[id=7,type=Cisco
JTAPI Call,implId=9040/1,active=true,state=CALL_RECEIVED...
12:46:00.501 ACCN TELS 0 CallID:7 MediaId:9040/1, TerminalConnection to
Terminal: cue_ctiport1 is RINGING, [8501:cue_pt/(P1-tacjtapiuser)]
```

```
GCID=(1,9040)->ACTIVE]->ALERTING
12:46:00.504 ACCN TELS 0 CallID:7 MediaId:9040/1 com.cisco.jtapi.
CiscoTermInServiceEvImpl received
12:46:00.504 ACCN TELS 0 TR[num=8000] Get TriggerMap[] return:
{secondaryDialogGroup=0, primaryDialogGroup=0}
12:46:00.513 ACCN TELS 0 Call.attributed() JTAPICallContact[id=7,type=Cisco
JTAPI Call,implId=9040/1,active=true,state=CALL_RECEIVED,...
12:46:00.513 ACCN TELS 0 CallID:7 MediaId:9040/1 Task:41000000008 associated
with Task ID: 41000000008
12:46:00.533 ACCN TELS 0 CallID:7 MediaId:9040/1 Task:41000000008,
TerminalConnection to Terminal:cue_ctiport1 is ACTIVE
12:46:00.534 ACCN TELS 0 Call.answered() JTAPICallContact[id=7,type=
Cisco JTAPI Call,implId=9040/1,active=true,state=CALL_ANSWERED,...
12:46:00.536 ACCN TELS 0 CallID:7 MediaId:9040/1 Task:41000000008
com.cisco.jtapi.CiscoMediaOpenLogicalChannelEvImpl received
12:46:00.593 ACCN TELS 0 CallID:7 MediaId:9040/1 Task:41000000008
com.cisco.jtapi.CiscoRTPInputStartedEvImpl received
12:46:00.597 ACCN TELS 0 CallID:7 MediaId:9040/1 Task:41000000008
com.cisco.jtapi.CiscoRTPOutputStartedEvImpl received
```

## Call Disconnection

```
12:46:09.442 ACCN TELS 0 CallID:7 MediaId:9040/1 Task:41000000008
com.cisco.jtapi.CiscoRTPInputStoppedEvImpl received
12:46:09.443 ACCN TELS 0 CallID:7 MediaId:9040/1 Task:41000000008
com.cisco.jtapi.CiscoRTPOutputStoppedEvImpl received
12:46:09.447 ACCN TELS 0 CallID:7 MediaId:9040/1 Task:41000000008
gets TermConnDroppedEv, meta code:132, cause code:100
12:46:09.447 ACCN TELS 0 CallID:7 MediaId:9040/1 Task:41000000008,
TerminalConnection to Terminal: cue_ctiport1 is DROPPED, 9040/1
12:46:09.448 ACCN TELS 0 CallID:7 MediaId:9040/1 is removed from call session
mapping in Session[id=0x60db88402,parent=null,active=true,state=SESSION_IN_USE,
time=1354733160426], result:true
12:46:09.466 ACCN TELS 0 Call.abandoned() JTAPICallContact[id=7,type=Cisco
JTAPI Call,implId=9040/1,active=false,state=CALL_DISCONNECTED,...
12:46:09.466 ACCN TELS 0 CallID:7 MediaId:9040/1 Task:41000000008, released TP
[type=Cisco CTI Port,id=0,implId=8501,active=false,state=IDLE] from 8000, and
releasing udpPort 16384
12:46:09.467 ACCN TELS 0 CallID:7 MediaId:9040/1 Task:41000000008
com.cisco.jtapi.TermObservationEndedEvImpl received
```

## Troubleshooting Case Studies

### Connectivity Issues

In this scenario, the CUE ports and triggers do not register with the CUCM due to of lack of connectivity between the CUE and the CUCM.

```
CUE# show log name CiscoJtapi1.log tail
!! or show log name CiscoJtapi2.log tail
456: 13:20:28.331 CDT %JTAPI-MISC-7-UNK.(P20-) started preloading classes
457: 13:20:28.331 CDT %JTAPI-MISC-7-UNK.(P20-) finished preloading classes
461: 13:20:28.331 CDT %JTAPI-CTI-7-UNK.(P20-) EventThread queue size
threshold is 25
462: 13:20:28.331 CDT %JTAPI-CTI-7-UNK.(P20-) Provider retry interval is set
to 30 seconds
463: 13:20:28.331 CDT %JTAPI-CTI-7-UNK.(P20-) Client desired server heartbeat
time is set to 30 seconds
464: 13:20:28.331 CDT %JTAPI-CTI-7-UNK.(P20-) CTI request timeout is is set to
```

```

30 seconds
465: 13:20:28.331 CDT %JTAPI-CTI-7-UNK.(P20-) Provider open request timeout
is set to 200 seconds
467: 13:20:28.331 CDT %JTAPI-CTI-7-UNK.(P20-) Provider Reconnect attempts is
set to 0
468: 13:20:28.331 CDT %JTAPI-CTI-7-UNK.(P20-) JAVA Socket Connect Timeout is
set to 15 seconds
469: 13:20:28.332 CDT %JTAPI-CTIIMPL-7-UNK.(P20-) Provider.info(CCMEncryption:
:encryptPassword was successful)
471: 13:20:28.334 CDT %JTAPI-JTAPIIMPL-7-UNK.ProviderImpl(): calling
jtapiProperties.getSecurityPropertyForInstance()
472: 13:20:28.334 CDT %JTAPI-JTAPIIMPL-7-UNK.(P20-tacjtapiuser ) TraceModule:
JTAPI version Cisco Jtapi version 7.0(1.1000)-1 Release
473: 13:20:28.334 CDT %JTAPI-JTAPIIMPL-7-UNK.(P20-tacjtapiuser ) Route Select
Timeout is 5000 msec
474: 13:20:28.335 CDT %JTAPI-JTAPIIMPL-7-UNK.(P20-tacjtapiuser ) Jtapi post
condition timeout is set to 15 seconds
476: 13:20:28.335 CDT %JTAPI-CTIIMPL-7-UNK.(P20-tacjtapiuser ) Opening server
"192.168.100.10" login "tacjtapiuser "
477: 13:20:28.335 CDT %JTAPI-CTIIMPL-7-UNK.(P20-tacjtapiuser ) ProviderID =
P20-tacjtapiuser 478: 13:20:28.337 CDT %JTAPI-CTIIMPL-7-UNK.(P20-tacjtapiuser )
Trying to create normal socket connection to 192.168.100.10
479: 13:20:38.338 CDT %JTAPI-JTAPI-7-UNK:[DefaultJtapiPeer]PlatformExceptionImpl
caught:
Unable to create provider --

```

**Note:** The timestamp seconds go from 13:20:28 to 13:20:38; therefore, we can tell the CUE was not able to open the TCP socket for 10 seconds before acknowledgement of inability to create provider.

## Authentication Issues

In this scenario, the CUE ports and triggers fail to register with the CUCM because the passwords configured between the CUE and the CUCM do not match.

## CCN Log

```

CUE# show trace buffer tail
Press CTRL-C to exit...
140053.173 ACCN TELS 0 TAPIPortGroup Leaving getActiveCCM(), retvalnull
140123.184 ACCN TELS 0 TAPIPortGroup Enter getActiveCCM()
140123.184 ACCN TELS 0 TAPIPortGroup getActiveCCM() subsystemstate3
140123.184 ACCN TELS 0 TAPIPortGroup getActiveCCM() subsystemJTAPI is not
in service or partial service
140123.184 ACCN TELS 0 TAPIPortGroup Leaving getActiveCCM(), retvalnull

```

## atrace.log

```

14:12:18.681 ACCN TELS 0 JTAPI_PROVIDER_EVENT:JTAPI Provider state is changed:
JTAPI provider name=192.168.100.10,Event=ProvShutdownEv received
14:12:18.682 ACCN TELS 0 SS_LOGIN:JTAPI Login String: Module=JTAPI Subsystem,
JTAPI login string=192.168.100.10;login=tacjtapiuser ;passwd=****;appinfo=
Cisco IP IVR
14:12:18.682 ACCN TELS 0 PROVIDER_CLEANUP:Cleaning up JTAPI provider:
Module=JTAPI Subsystem,JTAPI provider name=192.168.100.10
14:12:18.682 ACCN TELS 0 TAPIPortGroup 1 getNumPorts() for Cisco CTI Port = 2
14:12:18.682 ACCN TELS 0 TPG[id=1,state=PARTIAL_SERVICE] removeRoute() -
TR[num=9500]
14:12:18.682 ACCN TELS 0 TPG[id=1,state=PARTIAL_SERVICE] removeRoute() -

```

```

TR[num=9000]
14:12:18.682 ACCN TELS 0 MwiAddress.clear: [addrStr=, addr=null, inService=false,
isRegistered=false]
14:12:18.682 ACCN TELS 0 MwiAddress.unregister: [addrStr=, addr=null,
inService=false, isRegistered=false]
14:12:18.682 ACCN TELS 0 TAPIPortGroup 1 getNumPorts() for Cisco CTI Port = 0
14:12:18.682 ACCN TELS 0 Number of CTI ports = 0
14:12:18.682 ACCN TELS 0 calculateSubsystemState
14:12:18.682 ACCN TELS 0 TPG[id=1,state=PARTIAL_SERVICE] Triggers: ISV = 0,
OOS = 0, PARTIAL = 0
14:12:18.682 ACCN TELS 0 TAPIPortGroup 1 getNumPorts() for Cisco CTI Port = 0
14:12:18.682 ACCN TELS 0 calculateSubsystemState -> Groups: ISV = 0, OOS = 0,
PARTIAL/OTHERS = 1
14:12:18.682 ACCN TELS 0 calculateSubsystemState -> Triggers: ENABLED = 0,
DISABLED = 2, CONFIG ERR = 0
14:12:18.682 ACCN TELS 0 calculateSubsystemState -> subsystem partial in
service, unchanged cause:
A number of route points are OOS - TR[num=9000], TR[num=9500]; A number of
CTI ports are OOS - TPG[id=1,state=PARTIAL_SERVICE].Ports[9590]
14:12:18.689 ACCN TELS 0 SS_PARTIAL_SERVICE:JTAPI subsystem in partial service:
Failure reason=A number of route points are OOS - TR[num=9000], TR[num=9500];
A number of CTI ports are OOS - TPG[id=1,state=PARTIAL_SERVICE].Ports[9590]
14:12:18.689 ACCN TELS 0 GET_NEW_PROVIDER:Attempt to get JTAPI provider
14:12:18.693 ACCN TELS 0 Calling updateJTAPIPackage: 192.168.100.10
Module=JTAPI_PROVIDER_INIT,Exception=com.cisco.jtapi.PlatformExceptionImpl:
Unable to create provider
-- bad login or password.
14:12:18.828 ACCN TELS 0 EXCEPTION:com.cisco.jtapi.PlatformExceptionImpl:
Unable to create provider
-- bad login or password.

```

## CiscoJtapi1.log / CiscoJtapi2.log

```

6318: 14:22:26.653 CDT %JTAPI-CTIIMPL-7-UNK.(P62-tacjtapiuser ) Trying to
create normal socket connection to 192.168.100.10
6319: 14:22:26.654 CDT %JTAPI-CTIIMPL-7-UNK.(P62-tacjtapiuser ) connected
6321: 14:22:26.654 CDT %JTAPI-PROTOCOL-7-UNK.(P62-192.168.100.10)
[SS_TEL_REINIT] sending: com.cisco.cti.protocol.ProviderOpenRequest {
provider = 192.168.100.10
qbcClientVersion = Cisco JTAPI 7.0(1.1000)-1 Release
login = com.cisco.cti.protocol.UnicodeString {
unicodedisplayName = tacjtapiuser
}
filter = com.cisco.cti.protocol.ProviderEventFilter {
deviceRegistered = true
deviceUnregistered = true
desiredServerHeartbeatTime = 30
}
6331: 14:22:26.781 CDT %JTAPI-PROTOCOL-7-UNK(P62-192.168.100.10)
received Event: com.cisco.cti.protocol.ProviderOpenCompletedEvent {
eventSequence = 251
reason = -1932787616
providerInfoString = 7.1.2.21900-5
failureDescription = Directory login failed - authentication failed.
providerId = 16777255
}
6333: 14:22:26.781 CDT %JTAPI-PROTOCOL-7-UNK.(P62-192.168.100.10)
received Event: com.cisco.cti.protocol.ProviderClosedEvent {
eventSequence = 252
reason = 4
}
6338: 14:22:26.781 CDT %JTAPI-PROTOCOL-7-UNK.(P62-192.168.100.10)
Received ProviderClosedEvent

```

```

6339: 14:22:26.781 CDT %JTAPI-PROTOCOL-7-UNK.(P62-192.168.100.10)
received Event: com.cisco.cti.protocol.ProviderOutOfServiceEvent {
eventSequence = 253
PROVIDER_OUT_OF_SERVICE_EVENT = 200
}
6343: 14:22:26.782 CDT %JTAPI-JTAPI-7-UNK:[DefaultJtapiPeer]
PlatformExceptionImpl caught: Unable to create provider -- bad login or password.
6344: 14:22:26.881 CDT %JTAPI-CTIIMPL-7-UNK.(P62-192.168.100.10) ReceiveThread:
caught java.net.SocketException: The socket was closed

```

## User not CTI-enabled

In this scenario, the CUE ports and triggers fail to register with the CUCM because the JTAPI application user has not been added to the **Standard CTI Enabled** permission group in the CUCM side. Therefore, even when the user credentials authenticate accordingly, the JTAPI user, **tacjtapiuser** in this case, cannot control any devices through CTI and JTAPI.

## CiscoJtapi1.log / CiscoJtapi2.log

```

11590:14:41:08.768 CDT %JTAPI-PROTOCOL-7-UNK.(P115-192.168.100.10)
[ProviderRetryThread] sending:
com.cisco.cti.protocol.ProviderOpenRequest {
provider = 192.168.100.10
qbcClientVersion = Cisco JTAPI 7.0(1.1000)-1 Release
login = com.cisco.cti.protocol.UnicodeString {
unicodedisplayName = tacjtapiuser
}
applicationID = Cisco IP IVR
desiredServerHeartbeatTime = 30
requestTimer = 0
cmAssignedApplicationID = 0
pluginName = CiscoJTAPI
}
11593:14:41:08.770 CDT %JTAPI-PROTOCOL-7-UNK.(P115-192.168.100.10)
received Response: com.cisco.cti.protocol.ProviderOpenResponse {
sequenceNumber = 117
result = 0
providerInfoString = 7.1.2.21900-5
clientHeartbeat = 30
serverHeartbeat = 30
requestTimer = 5
pluginVersion = 7.1.2.10000-5
pluginLocation = http://192.168.100.10/plugins/
providerId = 16777220
}
11600: 14:41:08.899 CDT %JTAPI-PROTOCOL-7-UNK.(P115-192.168.100.10)
received Event: com.cisco.cti.protocol.ProviderOpenCompletedEvent {
eventSequence = 461
reason = -1932787617
sequenceNumber = 117
failureDescription = Directory login failed - User not present in Standard
CTI Users group.
providerId = 16777220
}
11608:14:41:08.900 CDT %JTAPI-PROTOCOL-7-UNK.(P115-192.168.100.10)
received Event:
com.cisco.cti.protocol.ProviderOutOfServiceEvent {
eventSequence = 463
PROVIDER_OUT_OF_SERVICE_EVENT = 200
}

```

## CUCM CTI Manager Service is Down

In this scenario, the CUE ports and triggers cannot register because the CUCM CTI Manager Service is down or in an abnormal status. It receives a "connection refused" error for the CUE's connection attempt to JTAPI TCP port 2748.

```
18956: 16:25:45.516 CDT %JTAPI-CTIIMPL-7-UNK.(P200-) Provider.
info(CCMEncryption::encryptPassword was successful)
18957: 16:25:45.516 CDT %JTAPI-CTIIMPL-7-UNK.(P200-) application did
not set appinfo, creating default
18958: 16:25:45.516 CDT %JTAPI-JTAPIIMPL-7-UNK.ProviderImpl(): calling
jtapiProperties.getSecurityPropertyForInstance()
18959: 16:25:45.516 CDT %JTAPI-JTAPIIMPL-7-UNK.(P200-tacjtapiuser )
TraceModule: JTAPI version Cisco Jtapi version 7.0(1.1000)-1 Release
18960: 16:25:45.516 CDT %JTAPI-JTAPIIMPL-7-UNK.(P200-tacjtapiuser )
Route Select Timeout is 5000 msec
18961: 16:25:45.516 CDT %JTAPI-JTAPIIMPL-7-UNK.(P200-tacjtapiuser )
Jtapi post condition timeout is set
to 15 seconds
18962: 16:25:45.516 CDT %JTAPI-JTAPIIMPL-7-UNK.(P200-tacjtapiuser )
IgnoreFwdDestination
set to false
18963: 16:25:45.516 CDT %JTAPI-CTIIMPL-7-UNK.(P200-tacjtapiuser )
Opening server "192.168.100.10" login "tacjtapiuser "
18964: 16:25:45.516 CDT %JTAPI-CTIIMPL-7-UNK.(P200-tacjtapiuser )
ProviderID = P200-tacjtapiuser
18965: 16:25:45.517 CDT %JTAPI-CTIIMPL-7-UNK.(P200-tacjtapiuser )
Trying to create normal socket connection to 192.168.100.10
18966: 16:25:45.518 CDT %JTAPI-JTAPI-7-UNK:[DefaultJtapiPeer]
PlatformExceptionImpl caught:
Unable to create provider -- 192.168.100.10/192.168.100.10:2748 -
Connection refused
```

## Configuration Mismatch

In this scenario, the CUE is not able to register the JTAPI trigger with the number 9999 because the CTI RP it should match is not configured, or it has not been added to the "controllable devices" for the user on the CUCM side. The CUE realizes this after it receives the **GetDeviceInfoFetchResponse** from the CUCM and notices that there is not a device in the provider domain, which refers to all the controllable devices by that user, which would match the trigger number it has configured locally. The CUE then does not try to send a **DeviceOpenRequest** for that specific trigger and instead only reports the exception in the traces. The CUE still tries to register all other devices that are within the provider's domain sent by the CUCM.

```
13:27:58.864 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Response:
com.cisco.cti.protocol.GetDeviceInfoFetchResponse {
com.cisco.cti.protocol.DeviceInfo {
name = cue_vm_ctirp
}
}
13:27:58.960 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.DeviceGetLineInfoRequest {
deviceName = cue_vm_ctirp
}
13:27:58.962 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.GetLineInfoFetchRequest
13:27:58.964 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Response:
com.cisco.cti.protocol.GetLineInfoFetchResponse{
```

```
name = 8000
}
13:27:58.966 CST %JTAPI-CTI-7-UNK.(P1-tacjtapiuser) DeviceMap: adding device
"cue_vm_ctirp"
13:27:59.427 CST %JTAPI-JTAPI-7-UNK: InvalidArgumentExceptionImpl caught:
Address 9999 is not in provider's domain.
```

**Note:** Even when the trigger 9999 is configured locally in the CUE, it is not part of the provider domain received from the CUCM, and therefore, does not register.

## CUE continues to open line 8000; which is included in the provider's domain

```
13:28:00.953 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.DeviceOpenRequest {
deviceName = cue_vm_ctirp
13:28:00.979 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.LineOpenRequest {
deviceName = cue_vm_ctirp
lineName = 8000
13:28:00.983 CST %JTAPI-JTAPIIMPL-7-UNK:cue_vm_ctirp: Lines opened
13:28:00.997 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.DeviceRegisterDeviceRequest
deviceName = cue_vm_ctirp
13:28:01.000 CST %JTAPI-CTI-7-UNK.(P1-tacjtapiuser) DeviceMap: opening device
"cue_vm_ctirp"
13:28:01.001 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) [SS_TEL_INIT]
sending: com.cisco.cti.protocol.LineOpenRequest {
lineName = 8000
13:28:01.012 CST %JTAPI-JTAPIIMPL-7-UNK:cue_vm_ctirp: Lines opened
13:28:01.164 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Event:
com.cisco.cti.protocol.DeviceRegisteredEvent {
13:28:01.165 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Event:
com.cisco.cti.protocol.DeviceInServiceEvent {
13:28:01.166 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received Event:
com.cisco.cti.protocol.LineInServiceEvent {
13:28:01.168 CST %JTAPI-JTAPIIMPL-7-UNK.(P1-tacjtapiuser) Terminal
"cue_vm_ctirp" in service
```

## CUCM Call Routing Issue

In this scenario, the user with DN 3001 calls the CUE to check his VM. The call is presented to the CUE's VM pilot (CTI RP) with DN 8000. The CUE then requests the call to get redirected to its media CTI port with DN 8501, but the call fails to get redirected because the CSS configured for DN 3001 does not have access to the PT where the CTI port's DN is assigned.

```
12:56:01.392 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received
Event: com.cisco.cti.protocol.NewCallEvent {
deviceName = cue_vm_ctirp
callLegID = 25626135
callID = 9041
callingParty = 3001
calledParty = 8000
originalCalledParty state = 2
}
12:56:01.404 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10)
[SS_TEL_ROUTE_CALL_EV] sending: com.cisco.cti.protocol.CallRedirectRequest {
callLegID = 25626135
```



```

redirectAddress          = 8501
}
12:56:01.397 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received
Event: com.cisco.cti.protocol.CallStateChangedEvent {
callLegID = 25626135
state = 2
}
12:56:01.450 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received
Response: com.cisco.cti.protocol.FailureResponse {
result = -1932787660
description    = redirect failure
}
12:56:01.450 CST %JTAPI-JTAPI-7-UNK:[[8000:cue_pt/(P1-tacjtapiuser)
GCID=(1,9041)->ACTIVE]->OFFERED]InvalidPartyExceptionImpl caught:
Request failed because of an invalid destination.
12:56:05.456 CST %JTAPI-PROTOCOL-7-UNK.(P1-192.168.100.10) received
Event: com.cisco.cti.protocol.CallStateChangedEvent {
callLegID = 25626135
state = 1
cause          = 17
}
12:56:05.456 CST %JTAPI-CTI-7-UNK.(P1-tacjtapiuser){Line:cue_vm_ctirp:
8000:cue_pt.(1,28)|Call:[GCID=(9041/1),CID=25626135]}CallStateChanged
[ state=IDLE cause=USERBUSY]
12:56:05.457 CST %JTAPI-CTI-7-UNK:{ALL EXTERNAL ADDRESSES|Call(P1-tacjtapiuser)
GCID=(1,9041)->ACTIVE} ExternalCallStateChanged
[ state=IDLE cause=17 processEvent= reason =1 ]
12:56:05.457 CST %JTAPI-JTAPI-7-UNK.(P1-tacjtapiuser) 9041/1 ConnDisconnectedEv
3001:cue_pt [#160]
Cause:17 CallCtlCause:0 CiscoCause:17 CiscoFeatureReason:12
12:56:05.457 CST %JTAPI-JTAPI-7-UNK.(P1-tacjtapiuser)[(P1-192.168.100.10)
EventThread][SEP0023331C29EC] Request: getCallingTerminal()
12:56:05.457 CST %JTAPI-JTAPI-7-UNK.(P1-tacjtapiuser) 9041/1
CallCtlConnDisconnectedEv 3001:cue_pt [#161] Cause:17 CallCtlCause:0
CiscoCause:17 CiscoFeatureReason:12= 8000

```

## License Issues

In this scenario, the CUE is unable to register its ports and triggers because the licenses for the VM ports have not been activated. No registration attempts are seen in the captures because of the same reason.

## Summary from the decoded atrace.log:

```

2551 11:45:17.178 LLMA LAPI 0 Llama: getMaxVmPortCount():
2547 11:45:17.178 LLMA LVMP 0 LlamaVmPortQuery: get(): maxCount
2551 11:45:17.178 LLMA LSDB 0 Llama: getMaxVmPortCount(): LlamaSysdbUser():
getInt(): Getting int /sw/apps/limitsManager/vmPort/query/maxCount returns 0
2551 11:45:17.178 LLMA LAPI 0 Llama: getMaxVmPortCount(): count: 0
2551 11:45:17.178 WFSP JTRG 0 WFSysdbNdJtapiTrg::getMaxSessions for trigger
for app: voicemail 0
2551 11:45:17.178 WFSP JTRG 0 WFSysdbNdJtapiTrg::commit warning session
value exceeded license max
2551 11:45:17.181 WFSP JTRG 0 com.cisco.aesop.sysdb.xactSysdbException:
Session value exceeds license limit
2551 11:45:19.654 LLMA LVMM 0 LlamaVmMbxQuery: get(): licenseStatus
2575 11:45:19.654 LLMA LSDB 0 Llama: showVoicemail(): LlamaSysdbUser():
getInt(): Getting int /sw/apps/limitsManager/vmMbx/query/licenseStatus returns 2
2575 11:45:19.657 LLMA LLMT 0 voicemail disabled, voicemail mailbox
activation count has been set to zero
3456 11:45:23.114 LLMA LAPI 0 Llama: getMaxPortCount():
2555 11:45:23.114 LLMA LPRT 0 LlamaPortQuery: get(): maxCount

```

```

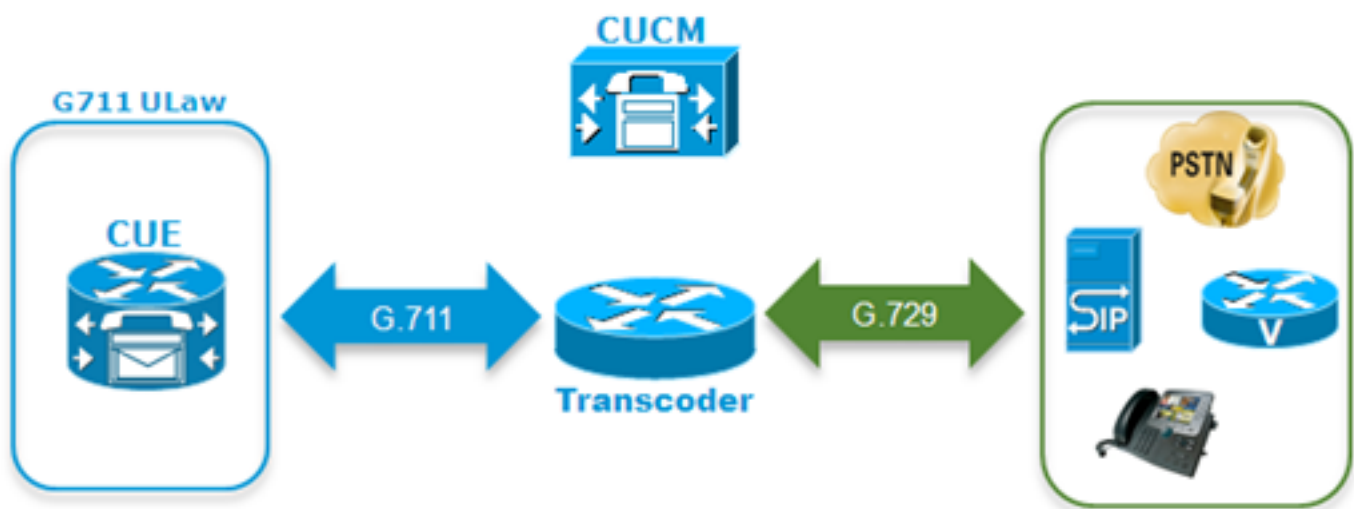
3456 11:45:23.115 LLMA LSDB 0 Llama: getMaxPortCount(): LlamaSysdbUser():
getInt(): Getting int/sw/apps/limitsManager/port/query/maxCount returns 0
3456 11:45:23.115 LLMA LAPI 0 Llama: getMaxPortCount(): count: 0
3456 11:45:28.727 ACCN TELS 0 CueCiscoCall:getMajorVer() jtapi version=
7.0(1.1000)-1 majorVer=7
3456 11:45:28.785 ACCN TELS 0 JTAPI Login Str:
192.168.100.10;login=tacjtapiuser ;passwd=****;appinfo=Cisco IP IVR
3456 11:45:28.785 ACCN TELS 0 Actual Login Str:
192.168.100.10;login=tacjtapiuser ;passwd=cisco;appinfo=Cisco IP IVR
3477 11:45:31.330 ACCN TELS 0 Got JTAPI provider: Cisco Jtapi version
7.0(1.1000)-1 Release
3621 11:45:31.338 ACCN TELS 0 JTAPI_PROVIDER_EVENT:JTAPI Provider
state is changed: JTAPI provider name=192.168.100.10,Event=
ProvOutOfServiceEv received
3621 11:45:31.352 ACCN TELS 0 JTAPI_PROVIDER_EVENT:JTAPI Provider state
is changed: JTAPI provider name=192.168.100.10,Event=ProvInServiceEv received
3621 11:45:31.353 ACCN ATJT 0 checkConnectivity:
urlString:http://192.168.100.10/CCMpluginsServer/CiscoJTAPIClient.exe
3477 11:45:34.130 ACCN TELS 0 SS_OUT_OF_SERVICE:JTAPI subsystem in
out of service: Failure reason=A number of route points are OOS; A number of
CTI ports are OOS - all ports in TPG
3751 11:45:48.558 ACCN TELS 0 TAPIPortGroup: getActiveCCM() subsystemJTAPI
is not in service or partial service

```

## Best Practices

CUE only supports the G711ulaw codec; therefore in almost every deployment a transcoder is required for the CUE to communicate with other devices or trunks that use different codecs (includes G711Alaw). The same applies for DTMF interworking with devices that only support in-band DTMF where a Media Termination Point (MTP) resource is also required. Because of these limitations, Cisco recommends to:

- Create an isolated Device Pool for usage of only the CUE's CTI RPs and CTI ports. In the event that more than one CUE is integrated with CUCM, then create a Device Pool per CUE.
- Create a separate region only for the CUE's RP and ports and apply it to that isolated Device Pool.
- Ensure the region is configured to allow only G711 with all other regions.
- Ensure a Media Resource Group List (MRGL) with transcoding resources available is applied to the Device Pool of the CUE's CTI RP and CTI ports so that these have access to a transcoder resource, when needed.



- If the user is unable to navigate through the voice menus with DTMF tones, then it is possible that an MTP resource must be added to the MRGL of the CUE devices.

## Create a Separate VM Profile for the CUE in the CUCM

In order to avoid some recent issues observed with the CUCM CTI manager, it is recommended to associate all phones to the CUE's JTAPI user on the CUCM side, instead of only the CTI RPs and ports.

If Survivable Remote Site Telephony (SRST) functionality is desired:

- Ensure the corresponding SIP trigger is configured for each JTAPI trigger on the CUE.
- Ensure dial-peers are added to the branch router in order to allow calls to be routed to the CUE module through SIP while in SRST mode.
- Configure the External Number Mask of each of the CTI Route Points, as well as the mask for the CFU (Call Forward Unregistered) field in the CUCM to ensure the CUCM routes the calls destined for the branch office module through the local public switched telephone network (PSTN) gateway when connectivity between the CUCM and CUE has been lost or if automated alternate routing (AAR) is invoked. Additional translation rules might be required for the branch router to be able to route inbound calls from the PSTN to the CUE module as well.
- If Direct Transfer to VM configuration approach is present in the CUCM side, and the user wants to maintain this functionality while in CME-SRST, then you must use the old dummy-DN with the Call Forward All (CFA) configuration approach that was used for CME before the **TransferToVM** softkey became available. Refer to [Transfer a Caller Directly into a Unity Express Mailbox](#) for more information. Here is an example of how this can look. Please keep in mind this can only be done if **CME-SRST** is used and not legacy **SRST** with call-manager-fallback. Assume the DNs are in the range 200-299. Call comes in for x201. Configure an **ephone-dn** with this command:

```
ephone-dn 99
number 2..
call-forward all <VM Pilot>
```

In the dial-peer pointing to CUE: Use an outbound translation rule and profile to strip out the prefixed asterisk ("\*") and replace the **Redirect Dialed Number Information Service (RDNIS)** back to the original 3 digit number, for example, 201, or with the full E.164 number in case the **phonenumber** was configured with the full DID inside the CUE. Ensure the Diversion header of the INVITE that is sent to the CUE matches the **phonenumber** configured for the user on the CUE side.

## Checklist for Port Registration Troubleshooting

1. **Check the configuration on the CUCM side:** Are the CTI Manager, CallManager, and Administrative XML (AXL) web services enabled and started? Have the CTI ports and route-points been configured and assigned a unique DN? Is the JTAPI user CTI enabled, and does it have AXL API access? Does the JTAPI user have control of all CTI route-points and ports? Sometimes it is a good idea to restart the CTI Manager service on all servers after the configuration is added. However, this could be service impacting and its advisable to schedule a maintenance window, because this affects all other devices that use CTI and JTAPI with the CUCM, such as Unified Contact Center Express (UCCX), IP Manager Assistant (IPMA), Attendant Console, 3rd Party AA or ACD applications, and so on.
2. **Check the configuration on the CUE side:** Is the **call-agent** defined as CUCM? Have the port licenses been enabled? Evaluation licenses are acceptable for initial configuration. Are you able to ping the CUCM? Have the JTAPI user credentials been added properly, and have the **call-agents** been defined? Has the module been reloaded so that the configuration

changes are applied? If the CTI RP and port are not imported from the CUCM automatically, then try to manually add the port DNs under **ccn subsystem jtapi**, as well as the **jtapi** triggers for each CTI-RP and reload the module.

If all of these items are confirmed, then your next step is to obtain JTAPI traces on the CUE and possibly CUCM CTI traces in order to further isolate the issue.

## Related Information

- [Set Up and Gather Trace Data in CUE](#)
- [Troubleshooting Cisco Unity Express System Features](#)
- [CallManager for Cisco Unity Express Configuration Example](#)
- [CUCM Voice-Mail Profile Configuration](#)
- [Cisco Unity Express Deployment Models](#)
- [Best Practices for Deploying Cisco Unity Express](#)
- [CUCM Transcoding](#)
- [CUCM MTP](#)
- [Technical Support & Documentation - Cisco Systems](#)