

# VOICEGENIE

VoiceGenie 7  
CCPSS7 System Reference Guide

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## Table of Contents

<b>Proprietary / Copyright Information</b>	<b>3</b>
<b>Notice</b>	<b>3</b>
<b>Trademarks</b>	<b>3</b>
<b>Table of Contents</b>	<b>4</b>
<b>Revision History</b>	<b>6</b>
<b>1 Introduction</b>	<b>7</b>
1.1 Terminology	7
<b>2 Directory Structure</b>	<b>7</b>
2.1 SS7 Connector	7
2.2 Brooktrout NS700	8
<b>3 SS7 Support</b>	<b>9</b>
3.1 Supported SS7 Protocol Layers	9
3.1.1 SS7 Interface Implementation	9
3.1.2 MTP Support	9
3.2 ISUP mode of operations	9
3.2.1 Normal	10
3.2.2 Early Media	10
3.2.3 Answer Transfer	11
3.3 Transfers	11
3.3.1 Bridge	12
3.3.2 Release Link Trunk (RLT) Transfer	12
3.3.3 Ringback Transfer Mode	14
<b>4 SS7 Connector Configuration</b>	<b>15</b>
4.1 SS7 Configuration	15
Physical links	16
4.1.1 MTP2	18
4.1.2 MTP3 and ISUP	19
4.1.3 ISUP Circuit Administrative States	20
4.1.4 ISUP Timers	22
4.1.5 ISUP Circuit Control	24
4.1.6 ISUP Call Parameters	25
4.1.7 Switching	27
4.2 General Configuration	28
<b>5 Redundancy Manager Configuration</b>	<b>28</b>
5.1 CCP-RM Configuration	29
<b>6 SIP Configuration</b>	<b>33</b>
<b>7 Appendix A – Health SNMP Gets</b>	<b>35</b>

7.1 SS7 Connector	35
7.2 Call Control Platform Redundancy Manager	35
<b>8 Appendix B – Logging Traps for CCP-RM</b>	<b>37</b>
8.1 Severity – Critical (LOG_0)	37
8.2 Severity – Error (LOG_1)	37
8.3 Severity – Warning (LOG_2)	37
<b>9 Appendix C – Logging Traps for SS7 Connector</b>	<b>39</b>
9.1 Severity – Critical (LOG_0)	39
9.2 Severity – Error (LOG_1)	39
9.3 Severity – Warning (LOG_2)	39
<b>10 Appendix D - Alarms</b>	<b>41</b>

## Revision History

Version	Date	Change Summary	Author/Editor
1.0	January 16 <sup>th</sup> , 2004	Initial release	Henry Lum
2.0	May 3 <sup>rd</sup> , 2004	Version 1.2 updates	Henry Lum
3.0	June 15 <sup>th</sup> , 2004	Added redundancy Information	Henry Lum
4.0	October 6 <sup>th</sup> , 2004	Version 7.0 updates	Henry Lum
5.0	February 2 <sup>nd</sup> , 2005	Version 7.0 updates	Henry Lum
5.1	March 23 <sup>rd</sup> , 2005	Version 7.0 updates	Andrew Ho

## 1 Introduction

This document contains all reference information for the SS7 Connector, including configuration parameters, logging/metrics entries, directory structures and alarm codes (and their associated recommended responses).

### 1.1 Terminology

The following table gives definitions of some acronyms that are used throughout this document:

Acronyms	Full Definitions
ASR	Automated Speech Recognition (Engines/Technologies)
CLC	Command Line Console -- A command line interface that can be used to query information and issue commands
MRCP	Media Resource Control Protocol -- Adopted by the VoiceGenie Media Platform to control ASR and TTS resources
SRM	Speech Resource Management -- A component integrated into the VoiceGenie Media Platform to provide Speech Recognition and Synthesis functionalities to the application developers
SMC	System Management Console -- A web based tool for administering clusters of VoiceGenie VoiceXML Platforms
OA&M	Operation, Administration and Management
TTS	Text To Speech (Engines/Technologies)

The following sections may contain references to terminology that has become:

Historical Terms	New Terms
CCP-SS7/CCPSS7	SS7 Connector
PhoneWeb Software / NeXusPoint 6.4.x Software	VoiceGenie 7 Software
Cluster Management Platform (CMP)	OA&M Framework
Voice Resource Manager (VRM)	Speech Resource Management (SRM)
VoiceGenie Management Console (VMC)	System Management Console (SMC)

## 2 Directory Structure

### 2.1 SS7 Connector

SS7 Connector home directory will reside in /usr/local/ccp-ss7. The following table lists the subdirectories/files and their description:

File	Description
------	-------------

bin/ccpss7	SS7 Connector platform executable
config/ccpss7.cfg	SS7 Connector Configuration file
config/ccpss7_provision.dat	SS7 Connector Provision service persisted in a file
config/ccp-ss7.xml	SS7 Connector XML definition file
script/ss7_isup	SS7 Connector ISUP stack startup script
script/ss7_mtp3	SS7 Connector MTP3 stack startup script
script/ss7_mpac	SS7 Connector MTP1/2 stack startup script
script/restart_mpac	MTP1/2 restart script
script/restart_ccpss7	SS7 Connector restart script
script/start_ccpss7	SS7 Connector start script
script/stop_ccpss7	SS7 Connector stop script
logs/CMP.log.ccpss7	SS7 Connector log file.

CCP-RM home directory will reside in /usr/local/ccp-rm. The following table lists the subdirectories/files and their description:

File	Description
bin/ccprm	CCP-RM platform executable
config/ccprm.cfg	CCP-RM Configuration file
config/ccprm_provision.dat	CCP-RM Provision service persisted in a file
config/ccp-rm.xml	CCP-RM XML definition file
script/start_ccprm	CCP-RM start script
logs/CMP.log.ccpm	CCP-RM log file.

## 2.2 Brooktrout NS700

Directories	Description
/usr/local/TDAPI	Home of NS700 device driver and libraries
/usr/local/TDAPI/bin/linux	SS7 stack processes and firmware files
/usr/local/TDAPI/driver	NS700 driver
/usr/local/TDAPI/lib/linux	TDAPI runtime libraries
/usr/local/TDAPI/include	TDAPI header files
/usr/local/TDAPI/examples	Sample programs
/usr/local/TDAPI/userdoc	NS700 and API documentation



### 3 SS7 Support

#### 3.1 Supported SS7 Protocol Layers

VoiceGenie CCP/SS7 supports and implements the SS7 protocol. VoiceGenie acts as a Signaling Switching Point that can originate and terminate calls.

SS7 Layer	Description
Message Transfer Part (MTP)	Ensures reliable transfer and delivery of signaling information across the SS7 network. VoiceGenie enables delivery of information by acting as point Signaling Point Code and sends signaling information to other Point Codes.
ISDN User Part (ISUP)	Defines the protocol to set-up and tear-down voice circuits that are connected to the Media Platforms.

##### 3.1.1 SS7 Interface Implementation

VoiceGenie supports T1 and E1 network interface for SS7 interface.

The SS7 stack (MTP3 and ISUP) runs on the host; this allows VoiceGenie to share the stack with a redundant Call Control Platform to provide a hot standby host. Redundant stack support will be provided in the upcoming release.

MTP and ISUP interfaces are compliant with ITU-T Q.703, Q.704, Q.761-764.

##### 3.1.2 MTP Support

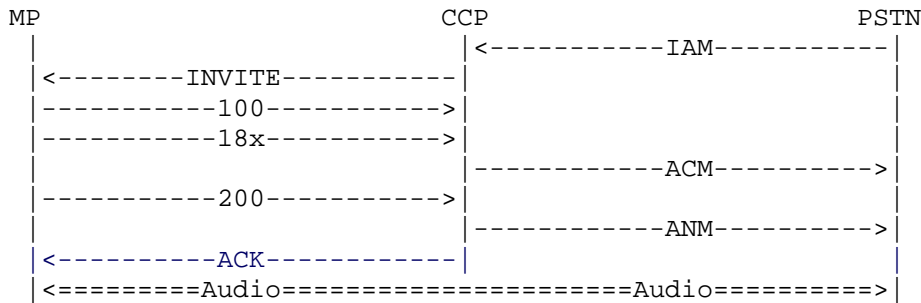
Category	Description
Signaling Link	Up to 16 signaling links are supported
Linkset	A collection of signaling links that are connected to the same adjacent node. Traffic load is shared across all available links in a link-set. Supports up to 4 link-sets
Route	A network signaling path that uses one or more link-sets. Supports up to 60 routes.
Destination	Point code address of a signaling end point and the route-set that is used to reach it. Supports up to 1000 remote destination and one local point code.
MTP Activation/Deactivation	Supported in Command Line Console
MTP Inhibit/Uninhibit Link	Supported in Command Line Console
Redundancy	Physical link and card redundancy only

#### 3.2 ISUP mode of operations

There are three modes of operations. The mode is selected depending on the Called Party Number. The lookup table can be provisioned through CMP.

### 3.2.1 Normal

VoiceGenie follows RFC3398 for normal inbound calls. Essentially CCP translates ISUP messages into SIP messages and sends to the Media Platform. The Media Platform will accept the call based on the ISUP circuit identifier (CIC) and executes the VoiceXML page on the voice circuit mapped to the CIC. The following is a typical call flow for accepting the inbound call:

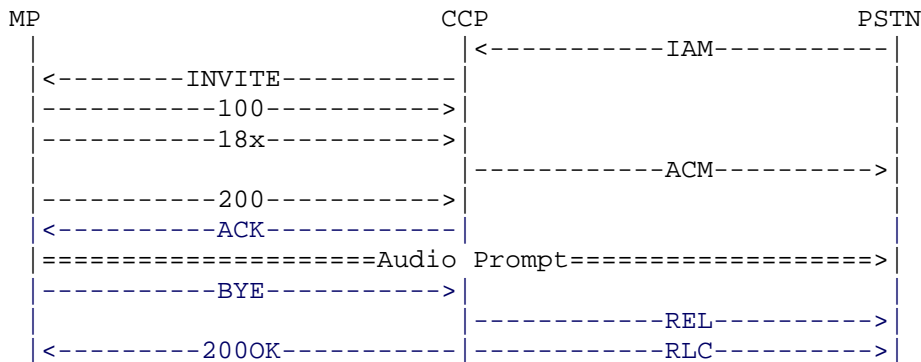


### 3.2.2 Early Media

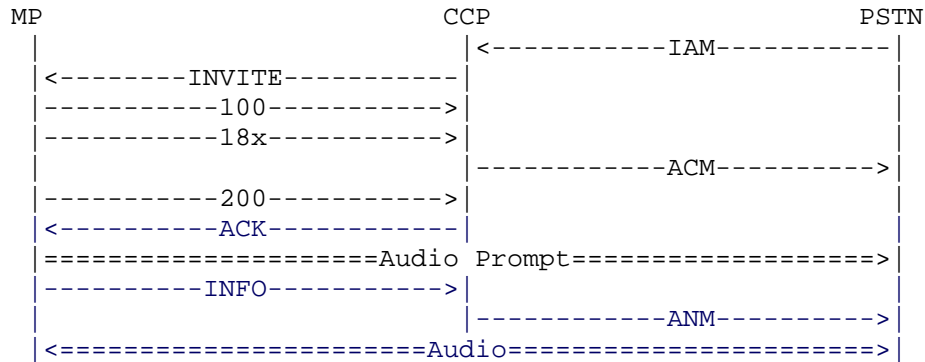
An Early Media call allows the Media Platform to start playing voice prompts before the call is connected on SS7. In terms of ISUP, audio can be played by Media Platform after ACM is sent but before ANM is sent.

There are two scenarios where Early Media can be used:

- Play audio before connect and release the call after audio is played

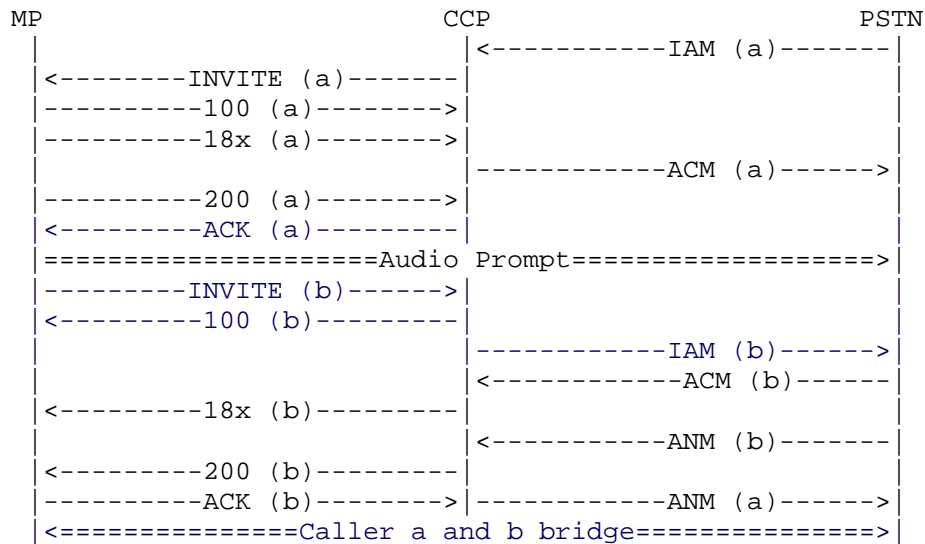


- Play audio before connect and answer call after prompt is completed



### 3.2.3 Answer Transfer

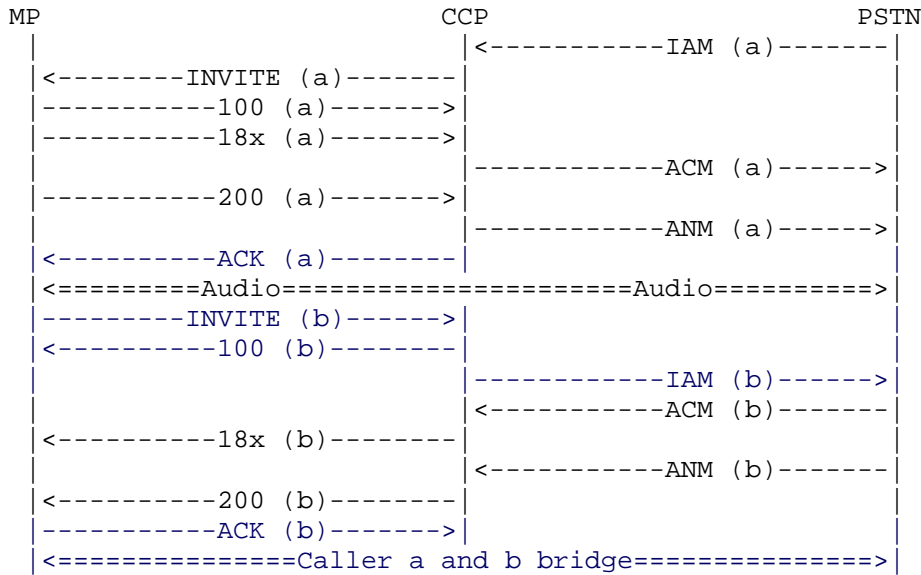
Answer Transfer is another special inbound call scenario to allow calling another party before the inbound call is accepted. Essentially this is an extension of the Early Media mode and will only connect the inbound call whenever the outbound call is accepted. If the outbound call rejected, the REL release cause will be transferred to the inbound call.



### 3.3 Transfers

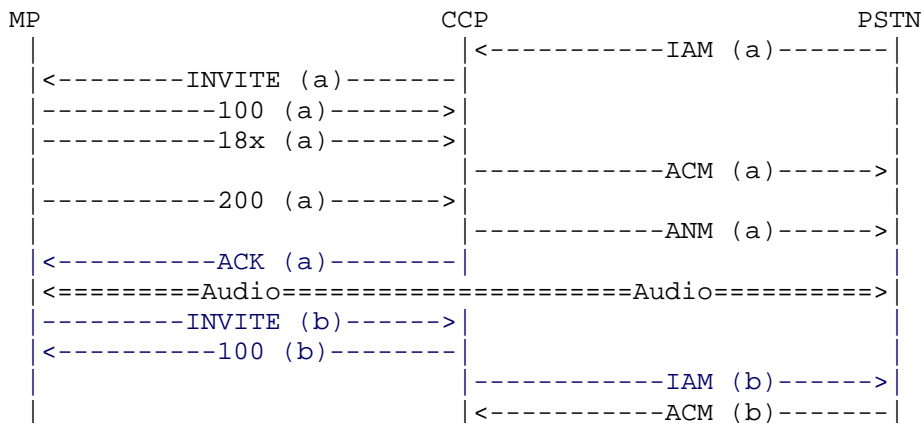
### 3.3.1 Bridge

Bridge transfer represents the voice paths of two individual call legs that are bridged together on the Media Platform. VoiceGenie supports the <transfer> tag on VoiceXML



### 3.3.2 Release Link Trunk (RLT) Transfer

RLT is proprietary messaging for Nortel's DMS MSC. This allows two call legs on the CCP to be bridged on the MSC and release both call legs from the CCP. This saves two ports on the VoiceGenie CCP when the calls are bridged on the switch. In a normal scenario, the inbound call is established before making the outbound call:



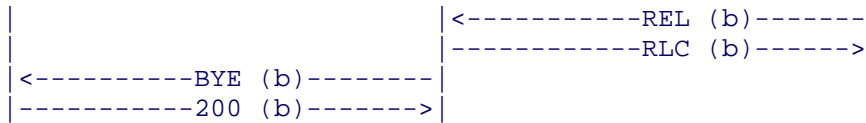
```

<-----18x (b)-----|
<-----200 (b)-----|
-----ACK (b)----->|
<=====Caller a and b are bridged at this point=====>|
-----REFER (a)----->|
<-----202 Accepted (a)-----|
|
|-----FAR (a)----->|
|-----FAA (a)----->|
|
|-----NOTIFY 200 OK(a)-----|
|-----200 (a)----->|
|
|-----REL (a)----->|
|-----RLC (a)----->|
|
|-----BYE (a)----->|
|-----200 (a)----->|
|
|-----REL (b)----->|
|-----RLC (b)----->|
|
|-----BYE (b)----->|
|-----200 (b)----->|

```

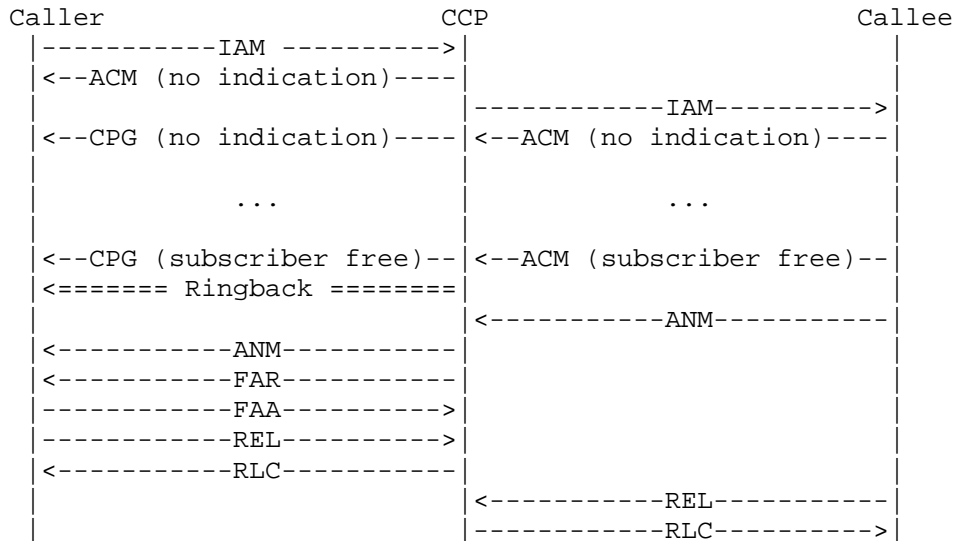
RLT can work in answer transfer mode as well, before the inbound call is connected:

MP	CCP	PSTN
		<-----IAM (a)----->
<-----INVITE (a)----->		
-----100 (a)----->		
-----18x (a)----->		
		-----ACM (a)----->
-----200 (a)----->		
<-----ACK (a)----->		
=====Audio Prompt=====>		
-----INVITE (b)----->		
<-----100 (b)----->		
		-----IAM (b)----->
		<-----ACM (b)----->
<-----18x (b)----->		
		<-----ANM (b)----->
<-----200 (b)----->		-----ANM (a)----->
-----ACK (b)----->		
<=====Caller a and b are bridged at this point=====>		
-----REFER (a)----->		
<-----202 Accepted (a)----->		
		-----FAR (a)----->
		<-----FAA (a)----->
<-----NOTIFY 200 OK(a)----->		
-----200 (a)----->		
		<-----REL (a)----->
		-----RLC (a)----->
<-----BYE (a)----->		
-----200 (a)----->		



### 3.3.3 Ringback Transfer Mode

Ringback Transfer is a special case of Answer Transfer, where VoiceGenie is acting as a media resource to play customizable ringback tone to a caller while dialing to a callee. The difference between Ringback transfer mode and answer transfer mode is the handling of ACM and CPG messages. Ringback transfer passes ACM and CPG message from the callee to the caller before the caller leg is established. The caller's backward call indicators is set to no indication until the indicator is set on the callee to ensure the audio path for the ringback tone is not played until the callee subscriber is free. If the callee rejects the call, the REL release cause will be transferred back to the caller.



## 4 SS7 Connector Configuration

Call Control Platform Configuration can be modified through the System Management Console (SMC). Find the CCP configuration under the Configuration tab and select "SS7 Call Control":

Click on "Update" button to update configuration changes. The CCP process must be restarted in order for changes to take effect.

Please see the following subsections to describe the configuration parameters in details.

### 4.1 SS7 Configuration

Before starting to modify the SS7 configuration file, find out the following information:

SS7 Layer	Information to Gather
Physical Links	<ul style="list-style-type: none"> <li>▪ How many trunks are connected to Brooktrout NS700 board</li> <li>▪ T1 or E1?</li> <li>▪ Resistance on the lines? 75, 100, or 120 ohms?</li> <li>▪ Framing types: HDB3, SF/ESF, B8ZS/AMI?</li> <li>▪ CRC mode: on or off?</li> <li>▪ Trunk ID – the port closet to the lights is port 0 and the furthest to the light is port 3.</li> </ul>
Signaling Links (MTP2)	<ul style="list-style-type: none"> <li>▪ Which trunk and timeslot carries signaling?</li> </ul>
MTP3	<ul style="list-style-type: none"> <li>▪ Local Point Code</li> <li>▪ Signaling links in a linkset</li> <li>▪ Adjacent point code for each linkset</li> <li>▪ Routes</li> <li>▪ Destination point codes and their routes</li> </ul>
ISUP Circuits	<ul style="list-style-type: none"> <li>▪ Circuit identifiers for each destination</li> </ul>

Changing SS7 configuration requires software restart to take effect.

# System Management Console

Monitoring Operations Configuration Administration

vienna.voicegenie.com | Connected to CMP Proxy

Concise Config View ▾

**OA&M Framework**

- CMP Server ▾
- CMP Proxy ▾
- Command Line Console ▾
- System Mgmt Console ▾
- VG SNMP ▾

**Media Platform**

- Call Manager ▾
- VoiceXML Interpreter ▾
- Web Proxy ▾

**DNIS - URL Mapping**

- Dialing Rules ▾
- Hunt Groups ▾
- Partition Definition ▾
- Speech Resources ▾

**CCP SS7**

- SS7 Call Control ▾
- SS7 DNIS Mapping ▾
- SS7 Circuits Mapping ▾

**CCP RM**

- Redundancy Manager ▾
- RM Cluster Mapping ▾

**Installation**

- Product Manager ▾
- Config Profile Manager ▾
- Deployment Manager ▾
- Deployment History ▾

Logout ▾

**Physical links**

This section of configuration defines the number of NS700 boards and number of trunks connected to the boards.

Parameter	Description
ss7.cards	Define the number of NS700 cards installed Default: 2

## SS7 Call Control Configuration - Edit

Configuration Name: CCPSS71

Version: 7.0.0

Configuration: (Click on the parameter name to view any historical values. Values will be sho

Enable	Parameter Name	Value
<b>CMP Proxy Connection Settings</b>		
<input checked="" type="checkbox"/>	<a href="#">cmp.proxy</a>	<input type="text" value="127.0.0.1"/>
<input checked="" type="checkbox"/>	<a href="#">cmp.proxy_port</a>	<input type="text" value="8700"/>
<input checked="" type="checkbox"/>	<a href="#">cmp.timeout</a>	<input type="text" value="30"/>
<input checked="" type="checkbox"/>	<a href="#">cmp.heartbeat</a>	<input type="text" value="20"/>
<input checked="" type="checkbox"/>	<a href="#">cmp.reconnect</a>	<input type="text" value="5"/>
<b>Logging Configuration Settings</b>		
<input checked="" type="checkbox"/>	<a href="#">cmp.log_file</a>	<input type="text" value="/usr/local/ccp-ss7/logs/CMP.log.ccpss7"/>
<input checked="" type="checkbox"/>	<a href="#">cmp.size_option</a>	<input type="radio"/> Rollover by Time <input checked="" type="radio"/> Rollover by Size
<input checked="" type="checkbox"/>	<a href="#">cmp.rollover_size</a>	<input type="text" value="10"/>
<input checked="" type="checkbox"/>	<a href="#">cmp.num_rollover_files</a>	<input type="text" value="5"/>
<input checked="" type="checkbox"/>	<a href="#">cmp.rollover_mins</a>	<input type="text" value="1440"/>
<input checked="" type="checkbox"/>	<a href="#">cmp.rollover_time</a>	<input type="text" value="4:00"/>
<b>Email parameters</b>		
<input type="checkbox"/>	<a href="#">cmp.email</a>	<input type="text" value="name@domain.com"/>



SS7 card 0 configuration

Card timing configuration defines system timing for each card.

cardroletype - defines the role of timing for the card. The first card is always A\_PRIMARY\_MASTER and extra cards will be A\_SLAVE

```
A_PRIMARY_MASTER    0
B_PRIMARY_MASTER    1
A_SECONDARY_MASTER  2
B_SECONDARY_MASTER  3
A_SLAVE             4
B_SLAVE             5
```

timesource - defines where to receive the clock from; use TIMING\_PORT\_0 for the master card and TIMING\_NONE for secondary boards.

ss7.card0

```
TIMING_PORT_0    0x40
TIMING_PORT_1    0x41
TIMING_PORT_2    0x42
TIMING_PORT_3    0x43
TIMING_PORT_4    0x44
TIMING_PORT_5    0x45
TIMING_PORT_6    0x46
TIMING_PORT_7    0x47
TIMING_INTERNAL  0x4e
TIMING_NONE      0x4f
```

netref1 - use TIMING\_NONE

*ss7.card# = cardroletype timesource netref1*

Default: 0 0x40 0x4f

A list of space separated trunk IDs. Trunk IDs are unique within a card. IDs starts from 0 and increments by 1 each time. For example, to specify 4 trunks for this card, the value would be "0 1 2 3"

ss7.card0.trunks

Default: 0

Trunk specification defines the physical aspects of the trunk and assigns ID for the trunks.

trunktype - defines the physical characteristics of the trunk

ss7.card0.trunk#

```
E1_75_HDB3
E1_120_HDB3
T1_100_SF_B8ZS
T1_100_SF_AMI
T1_100_ESF_B8ZS
```

*T1\_100\_ESF\_AMI*  
*E1\_75\_AMI*  
*E1\_120\_AMI*  
 portid - physical port number. There are 4 physical ports on NS700  
*0-3*  
 crccheck - CRC mode of the trunk  
*CRC\_ON*  
*CRC\_OFF*  
 appid - application ID that defines the MTP3 stack name (ETSI\_MTPL3\_0)  
*0-7*  
 logicaltrunkid - trunkid related to the appid  
 clearchannel - used for robbed-bit T1 trunks, this argument defines the channels that must have clear channel signaling. The value is supplied as a bit mask with a set bit indicating a clear channel.  
*Set to 0 for E1 trunks*  
*Byte 0 = Channels 1 - 8*  
*Byte 1 = Channels 9 - 16*  
*Byte 2 = Channels 17 - 24*  
*ss7.card#.trunk# = portid trunktype crccheck appid*  
*logicaltrunkid clearchannel*

Default: 0 E1\_120\_HDB3 CRC\_ON 0 0 0

#### 4.1.1 MTP2

MTP2 defines the signaling links and the timeslots on which they are located.

Parameter	Description
ss7.card0.signalings	<p>A list of space separated signaling IDs. Signaling IDs are unique within a card. IDs starts from 0 and increments by 1 each time. For example, to specify 4 signaling links for this card, the value would be "0 1 2 3"</p> <p>Default: 0</p>
ss7.card0.signaling#	<p>Signaling link specification defines MTP2 link.</p> <p>index - signaling link index (start from 0 and proceed)</p> <p>timeslot - timeslot for the signaling channel</p> <p>trunkid - trunk number where the signaling link is located timeslot of the trunk that carries the signaling link</p> <p>protocol - one of the following values:  <i>L2_ITUT_MTP</i>  <i>L2_ANSI_MTP (not supported)</i></p> <p>appid - MTP3 stack number; use 0 all the time  <i>0-7</i></p>

appchannelid - logical name for the signaling link  
*ss7.card#.signaling# = index timeslot trunkid protocol  
 appid appchannelid*

Default: 0 16 0 L2\_ITUT\_MTP 0 0

#### 4.1.2 MTP3 and ISUP

This section defines local point code, linksets, routes, and destinations. ISUP circuits are also defined in this section as part of destination.

Parameter	Description
mtp.stacks	Number MTP3 stacks; supports only one for current release  Default: 1
mtp.stack0	MTP3 originating point code and network indicator <i>origpointcode - originating point code (value in hexadecimal)            networkkind - network indicator            mtp.stack# = originatingpointcode networkindicator</i>  Default: 0x124 2
mtp.stack0.linksets	A list of space separated linkset IDs. IDs starts from 0 and increments by 1 each time. For example, to specify 4 linksets, the value would be "0 1 2 3"  Default: 0
mtp.stack0.linkset#	Defines linkset with links and route number. Optional parts are in parenthesis. <i>appchannelnumbers - number of links in this linkset            destinationpointcode - adjacent point code for this linkset            networkindicator - network indicator            combinedlinkset - index of linkset, if loadsharing with another linkset is enabled (-1 to disable)            primary - 1 if link is to be the primary route; 0 otherwise            appchanneid - MTP2 link name. (defined in ss7.card#.signaling# appchannelid) There can be more than one links in a linkset            mtp.stack0.linkset# = appchannelnumbers            destinatingpointcode networkindicator combinedlinkset            primary appchannelid (appchannelid2 ...)</i>
mtp.stack0.routes	Default: 2 0x123 2 -1 1 0 1 A list of space separated route IDs. IDs starts from 0 and increments by 1 each time. For example, to specify

	4 routes, the value would be "0 1 2 3"
	Default: 0
	Routes define paths that can reach a destination. When more than one destination is defined, unique logical routes must be used, even when the routes use the same linkset.
	Up to 16 routes can be defined (0-15)
mtp.stack0.route#	linksetnumber - Use mtp.stackx.linksety, where y is the linksetnumber primary - 1 if route is to be the primary route; 0 otherwise <u>mtp.stack0.route#</u> = linksetnumber primary
	Default: 0 1
	A list of space separated destination IDs. IDs starts from 0 and increments by 1 each time. For example, to specify 4 destinations, the value would be "0 1 2 3"
mtp.stack0.dests	
	Default: 0
	Defines the list of destinations based on the routes defined in the previous configuration parameter routenumbers - the number of routes in the routeset to this destination destinationpointcode - destination Point Code networkindicator - network indicator of destination logicalroute1 - list of route numbers that can reach this destination. Use mtp.stack0.routex, where x is route number <u>mtp.stack0.dest#</u> = routenumbers destinationpointcode networkindicator firstcircuitnumber totalcircuitnumbers logicalroute1 (logicalroute2 ...)
mtp.stack0.dest#	
	Default: 1 0x123 2 1 60 0

#### 4.1.3 ISUP Circuit Administrative States

This section defines the administrative state of each ISUP circuit, and other configurable ISUP parameters.

Parameter	Description
isup.circuits	A space-delimited list of ISUP circuit IDs that require administrative state or controlling end setting. for example, to specify CIC 1 to 4, the value would be "1 2 3 4"
isup.circuit.#.adminstate	Circuit administrative state. Default is duplex if not enabled.  Possible values: inbound, outbound, duplex, none

Default: duplex

Circuit states are maintained by CCP to ensure the operational state is up to date from external events and user administrative commands. There are three types of states maintained by each circuit:

**Administrative state** – The state is defined in configuration for each circuit shown above. The administrative state determines the action CCP will take whenever a signaling event happens.

**Inbound** – allows inbound calls only. CCP will not select this channel for outbound calls. CCP sends unblock when the destination becomes available.

**Outbound** – allows for outbound calls only. CCP will locally block the circuit to prevent incoming calls to be routed to this circuit. However, if an incoming call does arrive to this circuit, the call is accepted and logs an error message.

**Duplex** – allows both inbound and outbound calls. CCP sends unblock when the destination becomes available.

**None** – CCP blocks the circuit and does not select this circuit for outbound calls. However, if an incoming call does arrive to this circuit, the call is still accepted and logs an error message.

**Media Platform Voice Trunk State** – this is the physical state of the voice trunks connected to the media platform. CCP is required to block the circuits when the associated voice trunk loses layer 1 connection. Media platform reports the state of the channels with the following 5 states, and we categorize them as follows:

Inbound/Outbound/Duplex == in service; layer 1 is established

None/Error == out of service; voice trunk is not connected

**Operation State** is the actual circuit state known to the Brooktrout SS7 stack:

Unblocked – available for inbound and outbound calls

Local Block – available for outbound calls only

Remote Block – switch blocked the circuit; no calls will be received

Local Remote Block – both ends blocked the circuit; no calls will be received

#### How does circuit state affect calls?

Inbound calls will always be served by CCP no matter what circuit state it is currently in. In a case where our software thinks the circuit should not be receiving inbound calls (ie. Operation state is Local Block), CCP will log an error but continue to serve the call.

There are a few scenarios where circuit state will be modified. The following is the complete list:

Scenario	Action
Initialization	Block circuit
Destination Up	Unblock circuit if all of the following is true: Media Platform is online Admin state is inbound or duplex
Destination Down	Block Circuit
Media Platform online	Unblock circuit if all of the following are true: Destination is up Admin state is inbound or duplex
Media Platform offline	Block Circuit
User action through	Whichever command the user enters.

generic command	
-----------------	--

Changing the administrative states during runtime will cause the circuit state to be changed. The circuit state change will depend on the administrative state and on the scenario table as above.

#### 4.1.4 ISUP Timers

ISUP T-timers are configurable through `isup.timer.txx`, where `xx` is the timer number. The values can be changed during runtime without restarting the software.

Parameter	Description
<code>isup.timer.1</code>	Sets the value for ISUP timer T1. Default value is 15. Default: 15
<code>isup.timer.2</code>	Sets the value for ISUP timer T2. Default value is 180. Default: 180
<code>isup.timer.5</code>	Sets the value for ISUP timer T5. Default value is 300. Default: 300
<code>isup.timer.6</code>	Sets the value for ISUP timer T6. Default value is 120. Default: 120
<code>isup.timer.7</code>	Sets the value for ISUP timer T7. Default value is 25. Default: 25
<code>isup.timer.9</code>	Sets the value for ISUP timer T9. Default value is 180. Default: 180
<code>isup.timer.10</code>	Sets the value for ISUP timer T10. Default value is 5. Default: 5
<code>isup.timer.11</code>	Sets the value for ISUP timer T11. Default value is 18. Default: 18
<code>isup.timer.12</code>	Sets the value for ISUP timer T12. Default value is 40. Default: 40
<code>isup.timer.13</code>	Sets the value for ISUP timer T13. Default value is 300. Default: 300
<code>isup.timer.14</code>	Sets the value for ISUP timer T14. Default value is 40. Default: 40
<code>isup.timer.15</code>	Sets the value for ISUP timer T15. Default value is 300. Default: 300
<code>isup.timer.16</code>	Sets the value for ISUP timer T16. Default value is 40. Default: 300

isup.timer.17	Default: 40 Sets the value for ISUP timer T17. Default value is 300.
isup.timer.18	Default: 300 Sets the value for ISUP timer T18. Default value is 40.
isup.timer.19	Default: 40 Sets the value for ISUP timer T19. Default value is 300.
isup.timer.20	Default: 300 Sets the value for ISUP timer T20. Default value is 40.
isup.timer.21	Default: 40 Sets the value for ISUP timer T21. Default value is 300.
isup.timer.22	Default: 300 Sets the value for ISUP timer T22. Default value is 40.
isup.timer.23	Default: 40 Sets the value for ISUP timer T23. Default value is 300.
isup.timer.24	Default: 300 Sets the value for ISUP timer T24. Default value is 2.
isup.timer.25	Default: 2 Sets the value for ISUP timer T25. Default value is 15.
isup.timer.26	Default: 15 Sets the value for ISUP timer T26. Default value is 120.
isup.timer.27	Default: 120 Sets the value for ISUP timer T27. Default value is 240.
isup.timer.28	Default: 240 Sets the value for ISUP timer T28. Default value is 10.
isup.timer.29	Default: 10 Sets the value for ISUP timer T29. Default value is 60.
isup.timer.30	Default: 60 Sets the value for ISUP timer T30. Default value is 8.
isup.timer.31	Default: 8 Sets the value for ISUP timer T31. Default value is 361.
isup.timer.32	Default: 361 Sets the value for ISUP timer T32. Default value is 4.

isup.timer.33	Default: 4 Sets the value for ISUP timer T33. Default value is 14.
isup.timer.34	Default: 14 Sets the value for ISUP timer T34. Default value is 3.
isup.timer.35	Default: 3 Sets the value for ISUP timer T35. Default value is 15.
isup.timer.36	Default: 15 Sets the value for ISUP timer T36. Default value is 10.
isup.timer.37	Default: 10 Sets the value for ISUP timer T37. Default value is 2.
isup.timer.38	Default: 2 Sets the value for ISUP timer T38. Default value is 120.
isup.timer.39	Default: 120 Sets the value for ISUP timer T39. Default value is 8.
	Default: 8

#### 4.1.5 ISUP Circuit Control

The following parameters define whether the circuit is controlling end or non-controlling end when call collisions occur on the circuit. isup.cend sets the global value and there are optional override parameters for each individual circuit. Changing these values requires software restart to take effect.

Parameter	Description
isup.cend	ISUP controlling end setting. This set all circuits to controlling end or non-controlling end for glare. Individual circuit configuration can override this setting by using isup.circuit.#.cend  Possible values: CONTROLLING_END, NON_CONTROLLING_END  Default: NON_CONTROLLING_END ISUP controlling end. Overrides isup.cend for this circuit.
isup.circuit.#.cend	Possible values: CONTROLLING_END, NON_CONTROLLING_END  Default: NON_CONTROLLING_END



#### 4.1.6 ISUP Call Parameters

CCP sets a list of default values for mandatory call parameters in the ISUP messages; some of the values are configurable and the following list is the list of configurable parameters.

These configuration parameters can be modified during runtime and the changes will be reflected on the next call.

Parameter	Description
isup.params.natureofconnectionind	IAM Message Nature of Connection Indicator (1 octet) Default: 16 Forward Call Indicator Octet1 octet 1 Bits HGFEDCBA
isup.params.forwardcallind.octet1	bit A National/international call indicator: default = 0
	bits CB End-to-end method indicator: default = 0
	bit D Interworking indicator: default = 0
	bit E End-to-end information indicator: default = 0
	bit F ISDN user part indicator: default = 1
	bits HG ISDN user part preference indicator: default = 0
isup.params.forwardcallind.octet2	Default: 32 Forward Call Indicator Octet2 octet 2 Bits PONMLKJI
	bit I ISDN access indicator: default = 0
	bits KJ SCCP method indicator: default = 0
	bit L Spare
	bits PONM . reserved for national use
isup.params.tmr	Default: 1 Transmission Medium Requirements
isup.params.callingpartycategory	Default: 3 Calling Party Category
isup.params.cdn.nai	Default: 10 Called Party Number Nature of address indicator
isup.params.cdn.numberplan	Default: 4 Called Party Number Numbering Plan
	Default: 1

isup.params.cgn.nai	<p>Calling Party Number Nature of Address Indicator. This is used only for remote dial. The Calling Party number will be replaced by an inbound call if a transfer is requested</p> <p>Default: 4</p>								
isup.params.cgn.pri	<p>Calling Party Number PRI This is used only for remote dial. The Calling Party number will be replaced by an inbound call if a transfer is requested</p> <p>Default: 0</p>								
isup.params.cgn.numberplan	<p>Calling Party Number Numbering Plan This is used only for remote dial. The Calling Party number will be replaced by an inbound call if a transfer is requested</p> <p>Default: 1</p>								
isup.params.cgn.si	<p>Calling Party Number SI This is used only for remote dial. The Calling Party number will be replaced by an inbound call if a transfer is requested</p> <p>Default: 1</p>								
isup.params.userserviceinfo	<p>User Service Info. This parameter could have up to 11 octets Only the highest bit (8) for the last octet should be set to indicate the last octet. This is an optional parameter; if this parameter is disabled then the parameter is not included.</p> <p>Default: 12 24 254</p>								
isup.params.backwardcallind.octet1	<p>ACM message . Backward Call Indicator Octet1 octet 1 Bits HGFEDCBA</p> <table border="0"> <tr> <td>bits BA</td> <td>charge indicator: default = 0</td> </tr> <tr> <td>bits DC</td> <td>Called party.s status indicator: default = 1</td> </tr> <tr> <td>bits FE</td> <td>Called party.s category indicator: default = 0</td> </tr> <tr> <td>bits HG</td> <td>End-to-end method indicator: default = 0</td> </tr> </table>	bits BA	charge indicator: default = 0	bits DC	Called party.s status indicator: default = 1	bits FE	Called party.s category indicator: default = 0	bits HG	End-to-end method indicator: default = 0
bits BA	charge indicator: default = 0								
bits DC	Called party.s status indicator: default = 1								
bits FE	Called party.s category indicator: default = 0								
bits HG	End-to-end method indicator: default = 0								
isup.params.backwardcallind.octet2	<p>Default: 4</p> <p>ACM message . Backward Call Indicator Octet2 octet 2 Bits PONMLKJI</p> <table border="0"> <tr> <td>bit I</td> <td>Interworking indicator: default = 0</td> </tr> <tr> <td>bit J</td> <td>End-to-end information indicator: default = 0</td> </tr> <tr> <td>bit K</td> <td>ISDN user part indicator: default = 1</td> </tr> <tr> <td>bit L</td> <td>Holding indicator: default = 0</td> </tr> </table>	bit I	Interworking indicator: default = 0	bit J	End-to-end information indicator: default = 0	bit K	ISDN user part indicator: default = 1	bit L	Holding indicator: default = 0
bit I	Interworking indicator: default = 0								
bit J	End-to-end information indicator: default = 0								
bit K	ISDN user part indicator: default = 1								
bit L	Holding indicator: default = 0								

bit M ISDN access indicator: default = 1  
bit N Echo device indicator: default = 1  
bits PO SCCP method indicator: default = 0

Default: 52

ss7.copyinboundparams.maximum

Maximum number of copyinboundparams rules. If an outbound call is referencing an inbound call (ie. bridged call or RLT transfer), the outbound call will copy call parameters from the inbound call as defined in this set of configuration parameters. The Calling Party Number (the number itself) is always copied. Rules are specified for ss7.copyinboundparams.x configuration parameters

Default: 26

copyinboundparams rule as described in ss7.copyinboundparams.maximum

ss7.copyinboundparams.#  
(where # = 0 – 25)

Possible values: CalledPartyNumber.NAI, CalledPartyNumber.numberplan, CallingPartyNumber.NAI, CallingPartyNumber.numberplan, CallingPartyNumber.SI, CallingPartyNumber.PRI, CallingPartyCategory, NatureOfConnection.SI, NatureOfConnection.CCI, NatureOfConnection.EC, OriginalCalledNumber.num, OriginalCalledNumber.NAI, OriginalCalledNumber.numberplan, OriginalCalledNumber.PRI, RedirectingNumber.num, RedirectingNumber.NAI, RedirectingNumber.numberplan, RedirectingNumber.PRI, RedirectionInfo.RI, RedirectionInfo.ORR, RedirectionInfo.RC, RedirectionInfo.RR, Session.Telephone.ANI, Session.Telephone.DNIS, Session.Telephone.UUIDATA, TMR

Default: CalledPartyNumber.NAI

#### 4.1.7 Switching

This section defines switching interface. Since NS700 handles SS7 signaling only, it needs to switch any voice timeslots to another external network interface (T1 or E1) to a media board (Brooktrout TR1000) for voice circuits.

Parameter	Description
ss7.card0.switchings	A list of space seperated switching rule IDs. Switching rule IDs are unique within a card. IDs starts from 0 and increments by 1 each time. For example, to specify 4 switching rules for this card, the value would be "0 1 2

3"

Default: 0

Timeslot switching  
type - switching type  
1=E1/T1 simplex  
2=E1/T1 duplex  
3=H100/110 simplex (note: H100/110 can only be simplex)

srcstream - source trunk number E1/T1 0-7 or CTBus 0-31

srcchannel - source timeslot

deststream - destination trunk number E1/T1 0-7 or CTBus 0-31

destchannel - destination timeslot

ss7.card#.switching# = type srcstream srcchannel deststream destchannel

Default: 2 0 1 1 1

## 4.2 General Configuration

The following parameters should not be modified without VoiceGenie's recommendation.

Parameter	Description
brkt.mpac	Brooktrout MPAC firmware. Do not modify this parameter.  Default: indepdl000007008r.dld
brkt.ipac	Brooktrout IPAC firmware. Do not modify this parameter.  Default: vxwpcdl002089055.s
brkt.fpga	Brooktrout FPGA firmware. Do not modify this parameter.  Default: indepdl001134102.mcs
mpac.maint.port	mpac maintenance port number  Default: 9001

## 5 Redundancy Manager Configuration

The following SS7 Connector parameters configure the use of CCP-RM in a paired configuration.

Parameter	Description
ccure.host	CCure host IP address  Default: 127.0.0.1
ccure.port	CCure port number  Default: 9100
ss7.rmserviceagent.port	defines the remote port number of the CCP-RM service manager. This port number is referred to as RMsServiceMgrBase.ServerPort on the CCP-RM configuration. The port numbers must match. Default value is 6001.  Default: 6001

## 5.1 CCP-RM Configuration

A new configuration menu will appear under the Configuration tab of SMC called Redundancy Manager. Each CCP-RM will target to this configuration. The following table contains the parameters. The values in CCP-RM configuration should not be changed without consultation with VoiceGenie support.

Parameter	Description
ccure.client0	This parameter defines a CCure client component  Possible values: MPAC Server, etsi_mtpl3_0, isup_0, security_0  Default: MPAC Server
ccure.client0.heartbeatinterval	CCure client heart beat interval in milliseconds  Default: 10000
ccure.client0.validateexpiry	Configure the expiry value for client validation requests. CCP-RM periodically sends validation requests and expects a reply within this expiry timer. If the CCure client fails to respond within this timer, CCP-RM re-sends the validation requests. Please see ccure.expirytimes for the number of retries before CCP-RM deems a CCure client to be out of service. Unit is milliseconds.  Default: 10000
ccure.client1	This parameter defines a CCure client component  Possible values: MPAC Server, etsi_mtpl3_0, isup_0, security_0

ccure.client1.heartbeatinterval	<p>Default: etsi_mtpl3_0 CCure client heart beat interval in milliseconds</p>
ccure.client1.validateexpiry	<p>Default: 10000 Configure the expiry value for client validation requests. CCP-RM periodically sends validation requests and expects a reply within this expiry timer. If the CCure client fails to respond within this timer, CCP-RM re-sends the validation requests. Please see ccure.expirytimes for the number of retries before CCP-RM deems a CCure client to be out of service. Unit is milliseconds.</p>
ccure.client2	<p>Default: 10000 This parameter defines a CCure client component</p> <p>Possible values: MPAC Server, etsi_mtpl3_0, isup_0, security_0</p>
ccure.client2.heartbeatinterval	<p>Default: isup_0 CCure client heart beat interval in milliseconds</p>
ccure.client2.validateexpiry	<p>Default: 10000 Configure the expiry value for client validation requests. CCP-RM periodically sends validation requests and expects a reply within this expiry timer. If the CCure client fails to respond within this timer, CCP-RM re-sends the validation requests. Please see ccure.expirytimes for the number of retries before CCP-RM deems a CCure client to be out of service. Unit is milliseconds.</p>
ccure.client3	<p>Default: 10000 This parameter defines a CCure client component</p> <p>Possible values: MPAC Server, etsi_mtpl3_0, isup_0, security_0</p>
ccure.client3.heartbeatinterval	<p>Default: security_0 CCure client heart beat interval in milliseconds</p>
ccure.client3.validateexpiry	<p>Default: 10000 Configure the expiry value for client validation requests. CCP-RM periodically sends validation requests and expects a reply within this expiry timer. If the CCure client fails to respond within this timer, CCP-RM re-sends the validation requests. Please see ccure.expirytimes for the number of retries before CCP-RM deems a CCure client to be out of service. Unit is milliseconds.</p>

ccure.port0	Default: 10000 CCure accept port address
ccure.heartbeatinterval	Default: 9100 CCure heart beat interval in milliseconds
ccure.validateexpiry	Default: 10000 Configure the expiry value for validation requests. CCP-RM periodically sends validation requests and expects a reply within this expiry timer. If the CCure client fails to respond within this timer, CCP-RM re-sends the validation requests. Please see ccure.expirytimes for the number of retries before CCP-RM deems a CCure client to be out of service. Unit is milliseconds.
ccure.expirytimes	Default: 10000 Number of retries allowed for failed validation requests before considering a CCure client is out of service.
RMComm.TCPBondingLocalPort	Default: 3 TCP port number for CCP-RM cluster communication
RMComm.HeartBeatTimer	Default: 9801 CCP-RM communication heart beat timer in milliseconds
RMClusterMgr.ElectionTimer	Default: 2000 CCP-RM cluster manager election timer in milliseconds
RMCCPSS7ServiceMgr.StartupTimer	Default: 3000 CCP-RM SS7 Connector service manager startup timer
RMCCPSS7ServiceMgr.HandshakeDeferTimer	Default: 2000 CCP-RM SS7 Connector service manager handshake defer timer in milliseconds
RMCCPSS7ServiceMgr.SubServiceStateChangeTimer	Default: 5000 CCP-RM SS7 Connector service manager sub-service state change timer. If a sub-service failed to change state before this timer expire, SS7 Connector service state will become unavailable
RMServiceMgrBase.ServerPort	Default: 5000 TCP port number for accepting CCP-RM clients, such as SS7 Connector.
Ethernet Link Detection Parameters	Default: 6001
vg.nic.eth0	Ethernet link detection input path Default: /proc/net/bonding/bond0

vg.nic.linkattribute	Ethernet link detection attribute
	Default: MII Status:
vg.nic.upvalue	Ethernet link detection up value
	Default: up



## 6 SIP Configuration

Parameter	Description
sip.localuser	<p>SIP user presented in outbound calls and at registration. This configuration parameter controls the address that will be used in SIP registrations with a registrar/proxy server, and presented in requests that are initiated by the local system. The specified text will be presented in the "From:" field, and must be of the form "sip:user@host[:port]". The default value is "VoiceGenie@(local IP):(default port)".</p> <p>Default: VoiceGenie</p>
sip.localhostname	<p>Similar to sip.localuser, this parameter controls the hostname that will be presented in SIP requests sent by the local system. Note that the local hostname must not include a port number. If this parameter is not specified, then the IP address of the local system will be used. If it is desired to use a hostname or other name instead, then this parameter can be specified. This parameter can also be used to provide the fully qualified domain name in SIP requests. With CCP redundancy configuration, the value must be a multicast address. e.g. 227.0.0.1</p> <p>Default: 227.0.0.1</p>
sip.transport.0	<p>defines transport layer for SIP stack and the network interfaces that are used to process SIP requests</p> <p>transport_name - string</p> <p>type - udp</p> <p>ip - the IP address of the network interface that accepts incoming SIP messages. any (all network interfaces) is the default value.</p> <p>port - the port number where SIP stack accepts incoming SIP messages. 5060 is default value.</p> <p>[parameters] defines any extra SIP transport parameters.</p> <p>mcast - the multicast address which stack will accept multicast SIP messages. This value must be equal to sip.multicast.</p> <p>mcast if is the network interface which will accept multicast messages.</p> <p><i>sip.transport.x = transport_name type:ip:port [parameters]</i></p> <p>Default: transport0 udp:227.0.0.1:5060</p>
sip.threadpoolsize	<p>The size of the thread pool for handling DNS queries</p> <p>Default: 4</p>

sip.mtusize	<p>Defines the Maximum Transmission Unit (MTU) of the network interfaces. if a SIP request size is within 200 bytes of this value, the request will be sent on a congestion controlled transport protocol, such as TCP.</p> <p>Default: 65535</p>
sip.maxtcpconnections	<p>Defines the maximum number of TCP connections established concurrently. if the maximum number of TCP connections has been reached, new SIP requests to establish TCP connections will be rejected.</p> <p>Default: 100</p>
sip.multicast	<p>SIP Multicast address - Identifies an UDP multicast address that ^M this process subscribes to when operating in a redundant configuration. ^M The user application on the Media Platform sends SIP messages to ^M this multicast group.</p> <p>Default: 227.0.0.1</p>

## 7 Appendix A – Health SNMP Gets

Using SNMP Get, a number of health parameters about the VoiceGenie software are retrievable. This section outlines what health information can be retrieved for SS7 Connector and CCP-RM.

### 7.1 SS7 Connector

The name prefix is

".iso.org.dod.internet.private.enterprises.vg.voiceXMLGateway.vgData.sippScalarTable.ss7cScalarTableEntry."

Name	OID	Type	Description
CCPSS7-HEALTHDATA-STARTED	.1.3.6.1.4.1.7469.3.9.20.1.1	Scalar	SS7 Connector Start Time
CCPSS7-HEALTHDATA-CCPSS7STATE	.1.3.6.1.4.1.7469.3.9.20.1.2	Scalar	SS7 Connector Status
CCPSS7-HEALTHDATA-SIPSTATE	.1.3.6.1.4.1.7469.3.9.20.1.3	Scalar	SIP Status
CCPSS7-HEALTHDATA-INBOUNDCALLS	.1.3.6.1.4.1.7469.3.9.20.1.4	Scalar	Current Inbound Calls
CCPSS7-HEALTHDATA-OUTBOUNDCALLS	.1.3.6.1.4.1.7469.3.9.20.1.5	Scalar	Current Outbound Calls
CCPSS7-HEALTHDATA-INBOUNDPEAK	.1.3.6.1.4.1.7469.3.9.20.1.6	Scalar	Peak of Inbound Calls
CCPSS7-HEALTHDATA-OUTBOUNDPEAK	.1.3.6.1.4.1.7469.3.9.20.1.7	Scalar	Peak of Outbound Calls
CCPSS7-HEALTHDATA-INBOUNDTOTAL	.1.3.6.1.4.1.7469.3.9.20.1.8	Scalar	Total Inbound Calls
CCPSS7-HEALTHDATA-OUTBOUNDTOTAL	.1.3.6.1.4.1.7469.3.9.20.1.9	Scalar	Total Outbound Calls
CCPSS7-HEALTHDATA-LOCALPC	.1.3.6.1.4.1.7469.3.9.20.1.10	Scalar	Local Point Code
CCPSS7-HEALTHDATA-SIPPORT	.1.3.6.1.4.1.7469.3.9.20.1.22	Scalar	SIP Port
CCPSS7-HEALTHDATA-DESTPC	.1.3.6.1.4.1.7469.3.9.21.1.11	Tabular	Destination Point Code
CCPSS7-HEALTHDATA-DESTPC-STATUS	.1.3.6.1.4.1.7469.3.9.21.1.12	Tabular	Destination Status
CCPSS7-HEALTHDATA-ROUTEPC	.1.3.6.1.4.1.7469.3.9.21.1.13	Tabular	Route Point Code
CCPSS7-HEALTHDATA-ROUTE-STATUS	.1.3.6.1.4.1.7469.3.9.21.1.14	Tabular	Route Status
CCPSS7-HEALTHDATA-CARD	.1.3.6.1.4.1.7469.3.9.21.1.15	Tabular	Card Number
CCPSS7-HEALTHDATA-CARD-STATUS	.1.3.6.1.4.1.7469.3.9.21.1.16	Tabular	Card Status
CCPSS7-HEALTHDATA-TRUNK	.1.3.6.1.4.1.7469.3.9.21.1.17	Tabular	Trunk Number
CCPSS7-HEALTHDATA-TRUNK-STATUS	.1.3.6.1.4.1.7469.3.9.21.1.18	Tabular	Trunk Status
CCPSS7-HEALTHDATA-LINK	.1.3.6.1.4.1.7469.3.9.21.1.19	Tabular	Link Number
CCPSS7-HEALTHDATA-LINK-STATUS	.1.3.6.1.4.1.7469.3.9.21.1.20	Tabular	Link Status
CCPSS7-HEALTHDATA-LINK-INHIBIT-STATE	.1.3.6.1.4.1.7469.3.9.21.1.21	Tabular	Inhibit Link Status

### 7.2 Call Control Platform Redundancy Manager

The name prefix is

".iso.org.dod.internet.private.enterprises.vg.voiceXMLGateway.vgData.sippScalarTable.rmgrScalarTableEntry."

Name	OID	Type	Description
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Name	OID	Type	Description
CCPRM-HEALTHDATA-STARTED	.1.3.6.1.4.1.7469.3.9.18.1.22	Scalar	CCPRM Start Time
CCPRM-HEALTHDATA-MASTER-SERVER-ID	.1.3.6.1.4.1.7469.3.9.18.1.25	Scalar	Master Server ID
CCPRM-HEALTHDATA-MYSERVER-ID	.1.3.6.1.4.1.7469.3.9.18.1.26	Scalar	My server ID
CCPRM-HEALTHDATA-NETWORK-STATUS	.1.3.6.1.4.1.7469.3.9.18.1.27	Scalar	Network Status
CCPRM-HEALTHDATA-SERVICE-MANAGER-STATUS	.1.3.6.1.4.1.7469.3.9.19.1.23	Tabular	Service Manager Status
CCPRM-HEALTHDATA-SLAVES-SERVER-ID	.1.3.6.1.4.1.7469.3.9.19.1.24	Tabular	Slave Server ID

## 8 Appendix B – Logging Traps for CCP-RM

The OID prefix is “.1.3.6.1.4.1.7469.251.1.312”. To get the OID of a trap, just append the prefix with the suffix column. For example, VGLOG-CCPRM-UNRECOVERABLEERR has an OID of .1.3.6.1.4.1.7469.251.1.312.156238081

### 8.1 Severity – Critical (LOG\_0)

Name	OID suffix	Response Code	Impacts	Causes	Recommended Actions	Message
VGLOG-CCPRM-UNRECOVERABLEERR	156238081	CKCFG SWRS REVG	Cannot start ccp-rm	Bad configuration	Check configuration and restart software. Report to VoiceGenie if problem is unresolved	Uncoverable Error

### 8.2 Severity – Error (LOG\_1)

Name	OID suffix	Response Code	Impacts	Causes	Recommended Actions	Message
VGLOG-CCPRM-CONFIGERR	156238337	CKCFG	Software may not start	Incorrect configuration parameters	Check configuration with IP addresses and ports	Configuration error
VGLOG-CCPRM-CCPSS7ERR	156238338	NOTE	Failed to become active or standby SS7 Server	network problem	Check network; report to VoiceGenie	SS7 Connector Error with auto recovery
VGLOG-CCPRM-SOCKETERR	156238339	SWRS	Failed to create TCP accept socket	Conflicting ports	Check configuration and restart software	Socket Error
VGLOG-CCPCMP-RESPONSE-TO-QUERY	157286912	CKNW CKOP	Server is not synchronized with CMP server	Network disconnection; CMP server/proxy is not running	Check network and operation state of CMP server	CMP failed to respond to query/snapshot
VGLOG-CCPCMP-SUBSCRIPTION-FAILURE	157286913	REVG	Servers will get out of sync with others	Message corruption	Report to VoiceGenie	Failed to subscribe/unsubscribe to component

### 8.3 Severity – Warning (LOG\_2)

Name	OID suffix	Response Code	Impacts	Causes	Recommended Actions	Message
VGLOG-CCPRM-CCPSS7SUBSERFAIL	156238595	NOTE	SS7 server is out of service	Software is stopping or caused by process death	Check operational state	SS7 Connector sub-service failure
VGLOG-CCPRM-INVALIDMSG	156238593	REVG	Affects checkpoint synchronization	message corruption	Report to VoiceGenie	INVALID CCP-RM Message
VGLOG-CCPRM-INVALIDCONFIG	156238594	CKCFG	Cluster is not working	Incorrect cluster configuration	Stop entire cluster and fix CCP-RM cluster configuration	INVALID cluster Configuration
VGLOG-CCPRM-NETWORKPROBLEM	156238596	CKNW	Service is out of service	LAN has been disconnected	Check LAN connection	LAN problem

## 9 Appendix C – Logging Traps for SS7 Connector

The OID prefix is “.1.3.6.1.4.1.7469.251.1.310”. To get the OID of a trap, just append the prefix with the suffix column. For example, VGLOG-CCPSS7-ERROR-UNACCEPTABLE\_VALUE has an OID of .1.3.6.1.4.1.7469.251.1.310.152044032.

### 9.1 Severity – Critical (LOG\_0)

No critical traps for SS7 Connector.

### 9.2 Severity – Error (LOG\_1)

Name	OID suffix	Response Code	Impacts	Causes	Recommended Actions	Message
VGLOG-CCPSS7-ERROR-UNACCEPTABLE-VALUE	152044032	CKCFG	Uses the default ISUP parameter instead	ISUP configuration parameter is unacceptable	Check the ISUP configuration	Default value unacceptable, value:
VGLOG-CCPSS7-ERROR-CONFIG	152044034	CKCFG	SS7 server will not start	Bad configuration parameters	Correct SS7 configuration	Failed to set SS7 configuration
VGLOG-CCPSS7-ERROR-INIT-FAILURE	152044033	CKCFG CKHW HWRS	SS7 server is not operational	Server respawned too many times	Reboot server	Card not started Card#
VGLOG-CCPSS7-TDAPI-FAILURE	152044036	CHCFG REVG	Fail to start SS7 server	SS7 API failure	Check configuration; report to VoiceGenie	Failed TDAPI function call
VGLOG-CCPSS7-ERROR-RMSERVICEAGENTSIP	152044035	CKCFG	sip.multicast is not a multicast address	Wrong configuration parameter	Fix sip.multicast	Failed to change RMService SIP status
VGLOG-CCPCMP-RESPONSE-TO-QUERY	157286912	CKNW CKOP	Server is not synchronized with CMP server	Network disconnection; CMP server/proxy is not running	Check network and operation state of CMP server	CMP failed to respond to query/snapshot
VGLOG-CCPCMP-SUBSCRIPTION-FAILURE	157286913	REVG	Servers will get out of sync with others	Message corruption	Report to VoiceGenie	Failed to subscribe/unsubscribe to component

### 9.3 Severity – Warning (LOG\_2)

Name	OID suffix	Response Code	Impacts	Causes	Recommended Actions	Message
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Name	OID suffix	Response Code	Impacts	Causes	Recommended Actions	Message
VGLOG-CCPSS7-WARNING-DOWNLOAD	152044288	CKCFG HWRS	SS7 card won't start	Failed to load firmware	Check configuration; reboot server	Failed to download firmware
VGLOG-CCPSS7-MPSTATUS	152044293	NOTE CKOP	Media Platform status changed	starting/stopping of Media Platform	Check operational status of Media Platform	Media Platform status change
VGLOG-CCPSS7-RECYCLE-TWICE	152044295	REVG	Losing a call	Unknown	Report to VoiceGenie	Call object has been recycled twice
VGLOG-CCPSS7-LAYER1	152044289	NOTE CKCFG CKHW	Layer 1 status change	network issues	check network and configuration	Layer 1 status change
VGLOG-CCPSS7-LINK	152044290	NOTE CKCFG CKHW	Link status change	network issues	Check network and configuration	Link status change
VGLOG-CCPSS7-DESTINATION	152044292	NOTE CKCFG CKHW	Destination status change	network issues	Check network and configuration	destination status change
VGLOG-CCPSS7-ROUTE	152044291	NOTE CKCFG CKHW	Route status change	network issues	Check network and configuration	Route status change
VGLOG-CCPSS7-SIP-SENDFAIL	152044297	CKNW	Fails to send SIP message to Media Platform	LAN issues	Check network configuration	SIP stack fails to forward message
VGLOG-CCPSS7-UNASSIGNED-CIRCUIT	152044296	CKCFG	Drops call	Circuit is not mapped to a Media Platform	Check configuration	Failed to map circuit to Media Platform; dropping call
VGLOG-CCPSS7-RMSERVICEAGENT-BADMSG	152044294	REVG	Affects checkpoint synchronization	message corruption	Report to VoiceGenie	RMSERVICEAGENT received bad message



## 10 Appendix D - Alarms

Name	OID suffix	Severity	Response Code	Impacts	Causes	Recommended Actions	Message
VGLOG-CCPSS7-EROR-UNACCEPTABLE-VALUE	152044032	ERROR	CKCFG	Uses the default ISUP parameter instead	ISUP configuration parameter is unacceptable	Check the ISUP configuration	Default value unacceptable, value:
VGLOG-CCPSS7-EROR-CONFIG	152044034	ERROR	CKCFG	SS7 server will not start	Bad configuration parameters	Correct SS7 configuration	Failed to set SS7 configuration
VGLOG-CCPSS7-WARN-DOWNLOAD	152044288	WARN	CKCFG HWRS	SS7 card won't start	Failed to load firmware	Check configuration; reboot server	Failed to download firmware
VGLOG-CCPSS7-MPSTATUS	152044293	WARN	NOTE CKOP	Media Platform status changed	starting/stopping of Media Platform	Check operational status of Media Platform	Media Platform status change
VGLOG-CCPSS7-RECYCLE-TWICE	152044295	WARN	REVG	Losing a call	Unknown	Report to VoiceGenie	Call object has been recycled twice
VGLOG-CCPSS7-EROR-INIT-FAILURE	152044033	ERROR	CKCFG CKHW HWRS	SS7 server is not operational	Server respawned too many times	Reboot server	Card not started Card#
VGLOG-CCPSS7-TDAPI-FAILURE	152044036	ERROR	CHCFG REVG	Fail to start SS7 server	SS7 API failure	Check configuration; report to VoiceGenie	Failed TDAPI function call
VGLOG-CCPSS7-LAYER1	152044289	WARN	NOTE CKCFG CKHW	Layer 1 status change	network issues	check network and configuration	Layer 1 status change
VGLOG-CCPSS7-LINK	152044290	WARN	NOTE CKCFG CKHW	Link status change	network issues	Check network and configuration	Link status change
VGLOG-CCPSS7-DESTINATI	152044292	WARN	NOTE CKCFG CKHW	Destination status change	network issues	Check network and configuration	destination status change

Name	OID suffix	Severity	Response Code	Impacts	Causes	Recommended Actions	Message
ON		N					
VGLOG-CCPSS7-ROUTE	152044291	WARN	NOTE CKCFG CKHW	Route status change	network issues	Check network and configuration	Route status change
VGLOG-CCPSS7-SIP-SENDFAIL	152044297	WARN	CKNW	Fails to send SIP message to Media Platform	LAN issues	Check network configuration	SIP stack fails to forward message
VGLOG-CCPSS7-UNASSIGNED-CIRCUIT	152044296	WARN	CKCFG	Drops call	Circuit is not mapped to a Media Platform	Check configuration	Failed to map circuit to Media Platform; dropping call
VGLOG-CCPSS7-RMSERVIC EAGENT-BADMSG	152044294	WARN	REVG	Affects checkpoint synchronization	message corruption	Report to VoiceGenie	RMServicAgent received bad message
VGLOG-CCPSS7-EROR-RMSERVIC EAGENTSIP	152044035	ERROR	CKCFG	sip.multicast is not a multicast address	Wrong configuration parameter	Fix sip.multicast	Failed to change RMServic SIP status
VGLOG-CCPRM-CONFIGER R	156238337	ERROR	CKCFG	Software may not start	Incorrect configuration parameters	Check configuration with IP addresses and ports	Configuration EROR
VGLOG-CCPRM-CCPSS7SUBSERFAIL	156238595	WARN	NOTE	SS7 server is out of service	Software is stopping or caused by process death	Check operational state	SS7 Connector sub-service failure
VGLOG-CCPRM-INVALIDMSG	156238593	WARN	REVG	Affects checkpoint synchronization	message corruption	Report to VoiceGenie	INVALID CCP-RM Message
VGLOG-CCPRM-INVALIDCONFIG	156238594	WARN	CKCFG	Cluster is not working	Incorrect cluster configuration	Stop entire cluster and fix CCP-RM cluster configuration	INVALID cluster Configuration
VGLOG-CCPRM-CCPSS7ERR	156238338	ERROR	NOTE	Failed to become active or standby SS7 Server	network problem	Check network; report to VoiceGenie	SS7 Connector EROR with auto recovery
VGLOG-CCPRM-	156238596	WARN	CKNW	Service is out of service	LAN has been disconnected	Check LAN connection	LAN problem

Name	OID suffix	Severity	Response Code	Impacts	Causes	Recommended Actions	Message
NETWORKPROBLEM		R N					
VGLOG-CCPRM-UNRECOVERABLEERR	156238081	C R I T	CKCFG SWRS REVG	Cannot start cprm	Bad configuration	Check configuration and restart software. Report to VoiceGenie if problem is unresolved	Uncoverable EROR
VGLOG-CCPRM-SOCKETERR	156238339	E R O R	SWRS	Failed to create TCP accept socket	Conflicting ports	Check configuration and restart software	Socket EROR
VGLOG-CCPPROXY-EROR-NO-CONF-CREATED	155189764	E R O R	CKCFG	Cannot find active server to forward request to; request is rejected (480 Temporarily Unavailable)	No conference defined in the cluster or not running	Check operational state of conference server; check SIP Resources and Resource Type Tables	Cannot find a server to start a conference
VGLOG-CCPPROXY-EROR-NO-CONF-RESRC	155189765	E R O R	CKOP	Conference resources are full; rejecting request with 480 Temporarily Unavailable	Conference resources are used up	Check the operational states of conference servers or check configuration	Failed to create conference due to lack of resources
VGLOG-CCPPROXY-WARN-LICENSE	155190023	W A R N	CKOP	Exceeding 90% license limit; will reject requests when reaching 100%	Too many requests or too little resources	Check operational state of the servers; add more resources if necessary	Exceeded 90% license limit on concurrent sessions
VGLOG-CCPPROXY-NOTICE-LICENSE	155190278	W A R N	CKOP	Exceeding 80% license limit; will reject requests when reaching 100%	Too many requests or too little resources	Check operational state of the servers; add more resources if necessary	Exceeded 80% license limit on concurrent sessions
VGLOG-CCPPROXY-EROR-NO-SERVER-FOUND	155189766	E R O R	CKCFG	No active server to forward message to; rejecting request (480 Temporarily Unavailable)	Servers are not running or not configured	Check the operational states of servers or check configuration	Cannot find a server to forward message
VGLOG-CCPPROXY-EROR-NO-SERVER-RESRC	155189767	E R O R	CKOP	Server resources are full; rejecting request with 480 Temporarily Unavailable	Server resources are used up	Check the operational states of servers or check configuration	Failed to forward message due to lack of resources
VGLOG-CCCPMP-	157286912	E R	CKNW CKOP	Server is not synchronized	Network disconnection;	Check network and operation state of	CMP failed to respond to query/snapshot

Name	OID suffix	Severity	Response Code	Impacts	Causes	Recommended Actions	Message
RESPONSE-TO-QUERY		OR		with CMP server	CMP server/proxy is not running	CMP server	
VGLOG-CCPCMP-SUBSCRIPTION-FAILURE	157286913	ERROR	REVG	Servers will get out of sync with others	Message corruption	Report to VoiceGenie	Failed to subscribe/unsubscribe to component
VGLOG-CCPPROXY-EROR-BAD-CONFIG	155189768	ERROR	CKCFG	Fail to forward message; reject with 485 Ambiguous	Ambiguous configuration in SIP Service Mapping Table	Check SIP Service Mapping Table	Invalid regular expression; No conference parameters defined in message for conference; Neither host/IP nor SIP Service defined for conference; No confmaxsize parameter defined for conference; No confreserve parameter defined for conference; Confreserve parameter greater than confmaxsize parameter for conference; Host/IP %s does support sip service %s but confmaxsize is greater than confresourcetypepemaxsize ; Unrecognized host/IP
VGLOG-CCPPROXY-WARN-BAD-CONFIG	155190024	WARN	CKCFG	SIP Service Mapping points to a specific IP address but the server does not support the server that is mapped. This will cause the service to be miscounted.	Bad service mapping or bad host translation	Check SIP Service Mapping Table or examine request URI	Host/IP %s does not support sip service
VGLOG-CCPPROXY-EROR-	155159769	ERROR	CKCFG	Fail to start ccp-proxy	Incorrect configuration	Check CCP-Proxy configuration	Fail to initialize

Name	OID suffix	Severity	Response Code	Impacts	Causes	Recommended Actions	Message
INITIALIZATION		R					
VGLOG-CCPICM-CCI-UNEXPECTED-STATE	153092614	ERROR	CKAPP CKCFG CKHW	Connection with Media Platform may not be working	Incorrect protocol state between ccp-icm and Media Platform	Restart ccp-icm and check configuration	Unexpected CCI State
VGLOG-CCPICM-DIALOG-DELETED	153092868	WARNING	NOTE	Discard message against the dialog	Call has already been disconnected	N/A	Receiving message on deleted dialog; message discarded
VGLOG-CCPICM-ERROR-TRANSFER-DATA	153092615	ERROR	NOTE CKAPP CKCFG CKHW	Fail to send messages to ICM server	Network issues	Check network connections	Transfer data
VGLOG-CCPICM-ICM-INITIALIZATION-FAILED	150995200	CRITICAL	CKCFG CKHW	Fail to start ccp-icm	Incorrect configuration	Check CCP-ICM configuration and provisioning	Initialization failure
VGLOG-CCPICM-ICMScript- NOTFOUND	153092616	ERROR	CKAPP CKCFG	Cannot start script; drops the call	Fail to find script given script ID	Check provisioning and make sure there is script mapping for the given script ID	Script not found
VGLOG-CCPICM-ICM-UNEXPECTED	153092617	ERROR	CKAPP REVG	Unexpected event but no impact on calls	Incorrect timer events	Restart ccp-icm	Unexpected timeout
VGLOG-CCPICM-INVALID-CONFIG	153092609	ERROR	CKCFG	Invalid configuration parameters or provisioning entries are not used	Invalid values entered	Check ccp-icm configuration and provisioning	Invalid configuration or provision
VGLOG-CCPICM-INVALID-MSG	153092610	ERROR	CKAPP CKCFG	Incorrect application behaviour; may lose call	Received unexpected message	Check ICM application and make sure ICM configuration is correct	Message invalid or contains unexpected parameter
VGLOG-CCPICM-MP-UNEXPECTED	153092613	ERROR	CKAPP CKCFG CKHW	Inconsistent state between ccp-icm and media platform	Incorrect configuration	Check operation state of Media Platform and configuration	Unexpected Media Platform State

Name	OID suffix	Severity	Response Code	Impacts	Causes	Recommended Actions	Message
ED-STATE							
VGLOG-CCPICM-UNEXPECT ED-RESULT	153092611	ERROR	CKCFG	Inconsistent trunk view between ccp-icm and media platform	Incorrect ccp-icm trunk provisioning	Check ccp-icm provisioning	Unexpected response for sent messages
VGLOG-CCPICM-UNEXPECT ED-STATE	153092612	ERROR	CKAPP CKCFG	Inconsistent state between ccp-icm and media platform	Incorrect application or configuration	Check voicexml application and media platform configuration	Unexpected ICM, Dialog or Call State
VGLOG-CCPICM-WARN-CCI	153092865	WARN	NOTE	Disconnect from media platform; will reconnect	Media Platform may not be responding	Check Media Platform operation state	CCI connection failure
VGLOG-CCPICM-WARN-DIALOG-FAILURE	153092866	WARN	NOTE	Drops call	ICM server sent the request to drop the dialog	N/A	ICM Dialog failure
VGLOG-CCPICM-WARN-ICMAPP	153092867	WARN	CKAPP CKCFG	Application EROR; may lose call	Application is sending incorrect events to ccp-icm	Check application	Application failure