Cisco Unified SIP Proxy 9.0 on Virtual Machine Configuration

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Introduction

This page provides configuration information for Cisco Unified SIP Proxy (Unified SIP Proxy) 9.0 on a Virtual Machine in a Cisco Unified Contact Center Enterprise (Unified CCE) environment.

The intended audience should be familiar with Cisco Collaboration products and be able to perform system-level configuration of Cisco Collaboration components and deployments.

The configuration information is based primarily on system testing performed on Unified CCE during Cisco Collaboration Systems Release 11.0(1).

This topic does not contain detailed step-by-step procedures. For detailed information about installing, configuring, and administering Unified CCE, Cisco Unified Customer Voice Portal (Unified CVP), Cisco Unified Communications Manager (Unified Communications Manager), Cisco Unified Communications Manager Session Management Edition (Unified CM SME), or Unified SIP Proxy refer to the respective product documentation.

Design

For information on design considerations and guidelines for deploying Unified SIP Proxy on a Virtual Machine in a Unified CCE environment:

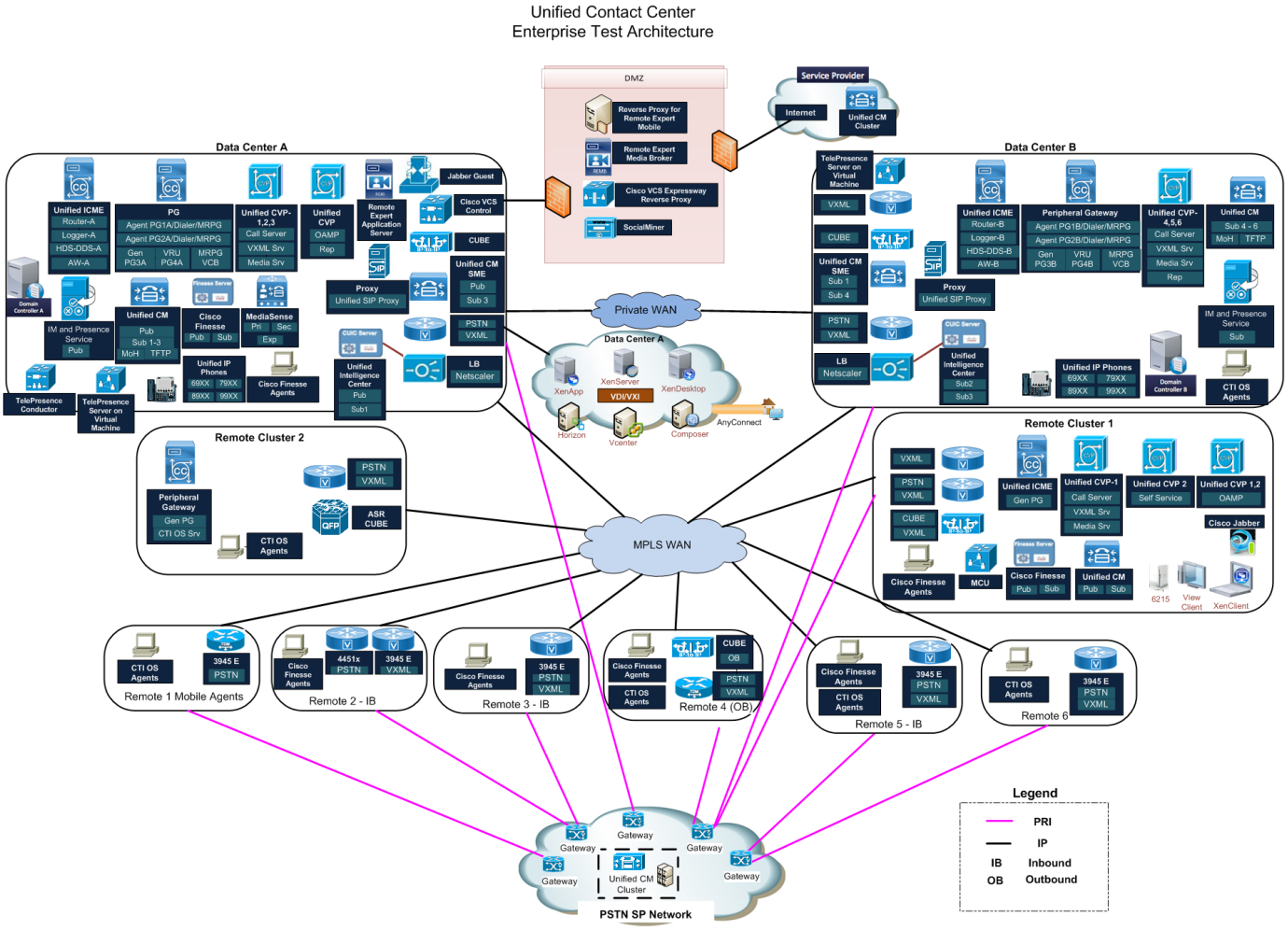
Release Notes for Cisco Unified SIP Proxy Release 9.0

Topologies

This section provides information about Unified SIP Proxy on a Virtual Machine in a Unified CCE environment.

For information on specific deployments and sites where Unified SIP Proxy testing was performed, see Cisco Unified Contact Center Enterprise Test Bed for Collaboration Systems Release 11.0(1).

Figure 1. Collaboration Systems Release 11.0(1): Unified CCE Test Architecture



Component Deployment

Data Center A (PST time zone) and Data Center (EST time zone) are separated over WAN.

- Unified CCE: Logger, Router, AW, and PG are installed in duplex mode on each of the data center across WAN
- Unified CVP: six call servers + OAMP are distributed over WAN
- Unified Communications Manager: 11 node cluster with dedicated nodes for MoH and TFTP, distributed across WAN
- Unified CM SME: 4-node cluster distributed across WAN
- Unified SIP Proxy: vCUSP 9.0 is deployed on UCS-B server on both the data centers.

Incoming calls are from IP (CUBE), PSTN customers, and enterprise callers. A service provider (SP) cloud provides a dedicated Unified Communications Manager cluster for SP endpoints. There is a separate Unified Communications Manager cluster with two nodes for enterprise caller scenarios.

Call Flow

Automated regression and manual testing was executed on the following call flows.

- Customer->CUBE->Unified SIP Proxy->Unified CVP->Unified SIP Proxy->SME->Leaf cluster->Agent
- Customer->PSTN GW->Unified SIP Proxy->Unified CVP->Unified SIP Proxy->Unified CM SME->Leaf Cluster->Agent
- Enterprise Unified CM cluster->Unified SIP Proxy->Unified CVP->Unified SIP Proxy-> Unified CM SME->Leaf Cluster->Agent
- Enterprise Unified CM cluster-> Unified CM SME->CUBE->Unified SIP Proxy->Unified CVP->Unified SIP Proxy->SME->Leaf Cluster->Agent
- Enterprise Unified CM cluster-> Unified CM SME->CUBE->Unified SIP Proxy->Unified CVP->Unified SIP Proxy->Unified CM->Agent

Testing included:

- Route point transfer and conference
- DN-based transfer and conference
- Hold-resume and check for tones
- Agent Greeting and Whisper Announcement
- Agents as Mobile Agents
- Default offer (early) in Unified CVP 10.5

Configuration

This section provides the high-level tasks and related information for configuring Unified SIP Proxy 9.0 on a Virtual Machine in a Unified CCE environment.

The following table provides this information:

- **Configuration Tasks**: List of high-level configuration tasks
- **System Test Specifics**: System test variations from procedures and settings documented in the product documentation.
- **More Information**: Links to product documentation for detailed configuration information related to the high-level tasks.

Note: Default and recommended values specified in the product documentation were used during system testing, unless otherwise noted in the System Test Specifics column.

Table 1. CUSP on Virtual Machine Configuration

Configuration Tasks	System Test Specifics	More Information
1. Configure Unified CM SME.	For Unified CM SME to process SIP Invite calls coming from Unified SIP Proxy, add a Fully Qualified Domain Name (FQDN) into the global enterprise parameters configuration under **Cluster wide Domain Configuration**.	Release Notes for Cisco Unified SIP Proxy Release 9.0 Cisco Unified Communications Manager Configuration Guides

Configuration Tasks	System Test Specifics	More Information
2. Configure Unified CVP.	Add Unified SIP Proxy server details as an Outbound proxy and configure under SIP tab in CVP OAMP.	Release Notes for Cisco Unified SIP Proxy Release 9.0 Cisco Unified Customer Voice Portal Configuration Guides

Unified SIP Proxy Configuration Example

This configuration example is for Unified SIP Proxy 9.0.1 on UCS-B with local domain settings with Record-Route turned on.

```
server-group sip global-load-balance call-id
server-group sip retry-after 0
server-group sip element-retries udp 2
server-group sip element-retries tls 1
server-group sip element-retries tcp 1
sip alias 10.8.2.57
sip dns-srv
 no enable
 no naptr
 end dns
!
no sip header-compaction
no sip logging
!
sip max-forwards 70
sip network sidea standard
 no non-invite-provisional
 allow-connections
 retransmit-count invite-client-transaction 3
 retransmit-count invite-server-transaction 5
 retransmit-count non-invite-client-transaction 3
 retransmit-timer T1 500
 retransmit-timer T2 4000
 retransmit-timer T4 5000
 retransmit-timer TU1 5000
 retransmit-timer TU2 32000
 retransmit-timer clientTn 64000
 retransmit-timer serverTn 64000
 tcp connection-setup-timeout 1000
 udp max-datagram-size 1500
 end network
!
sip overload reject retry-after 0
!
no sip peg-counting
!
sip privacy service
sip queue message
 drop-policy head
 low-threshold 80
 size 2000
 thread-count 20
 end queue
!
sip queue radius
 drop-policy head
 low-threshold 80
 size 2000
 thread-count 20
```

```
 end queue
!
sip queue request
 drop-policy head
 low-threshold 80
 size 2000
 thread-count 20
 end queue
!
sip queue response
 drop-policy head
 low-threshold 80
 size 2000
 thread-count 20
 end queue
!
sip queue st-callback
 drop-policy head
 low-threshold 80
 size 2000
 thread-count 10
 end queue
!
sip queue timer
 drop-policy none
 low-threshold 80
 size 2500
 thread-count 8
 end queue
!
sip queue xcl
 drop-policy head
 low-threshold 80
 size 2000
 thread-count 2
 end queue
!
route recursion
!
sip tcp connection-timeout 30
sip tcp max-connections 256
!
no sip tls
!
sip tls connection-setup-timeout 1
!
trigger condition mid-dialog
 sequence 1
  mid-dialog
  end sequence
 end trigger condition
!
trigger condition sidea_trigger
 sequence 1
  in-network ^\Qsidea\E$
  end sequence
 end trigger condition
!
accounting
 no enable
 no client-side
 no server-side
 end accounting
!
server-group sip group ATLCUCM-sg.apl.com sidea
```

```
 element ip-address 10.10.2.4 5060 tcp q-value 1.0 weight 0
 element ip-address 10.10.2.5 5060 tcp q-value 1.0 weight 0
 failover-resp-codes 503
 lbtype global
 ping
 end server-group
!
server-group sip group PSTNGroup sidea
 element ip-address 10.8.2.11 5060 tcp q-value 1.0 weight 0
 failover-resp-codes 503
 lbtype global
 ping
 end server-group
!
server-group sip group cucm-sg.apl.com sidea
 element ip-address 10.8.2.4 5060 tcp q-value 1.0 weight 0
 element ip-address 10.8.2.3 5060 tcp q-value 1.0 weight 0
 element ip-address 10.8.2.5 5060 tcp q-value 1.0 weight 0
 failover-resp-codes 503
 lbtype global
 ping
 end server-group
!
server-group sip group cvp-sg.apl.com sidea
 element ip-address 10.8.2.15 5060 tcp q-value 1.0 weight 0
 failover-resp-codes 503
 lbtype global
 ping
 end server-group
!
server-group sip group hon-cvp.apl.com sidea
 element ip-address 10.4.2.15 5060 tcp q-value 1.0 weight 0
 failover-resp-codes 503
 lbtype global
 ping
 end server-group
!
server-group sip group honcucm-sg.apl.com sidea
 element ip-address 10.4.2.4 5060 tcp q-value 1.0 weight 0
 element ip-address 10.4.2.3 5060 tcp q-value 1.0 weight 0
 failover-resp-codes 503
 lbtype global
 ping
 end server-group
!
server-group sip group honpstngroup.apl.com sidea
 element ip-address 10.4.2.13 5060 tcp q-value 1.0 weight 0
 failover-resp-codes 503
 lbtype global
 ping
 end server-group
!
server-group sip group honvxmlgw.apl.com sidea
 element ip-address 10.4.2.12 5060 tcp q-value 1.0 weight 0
 failover-resp-codes 503
 lbtype global
 ping
 end server-group
!
server-group sip group sme-sg.apl.com sidea
 element ip-address 10.8.2.55 5060 tcp q-value 1.0 weight 0
 element ip-address 10.8.2.56 5060 tcp q-value 1.0 weight 0
 failover-resp-codes 503
 lbtype global
```

```
 ping
 end server-group
!
route table sit_rt
 key 1111 target-destination honvxmlgw.apl.com::tcp sidea
 key 3021 target-destination hon-cvp.apl.com::tcp sidea
 key 30218 target-destination hon-cvp.apl.com::tcp sidea
 key 30219 target-destination hon-cvp.apl.com::tcp sidea
 key 3881 target-destination hon-cvp.apl.com::tcp sidea
 key 3991 target-destination hon-cvp.apl.com::tcp sidea
 key 4021 target-destination hon-cvp.apl.com::tcp sidea
 key 5021 target-destination hon-cvp.apl.com::tcp sidea
 key 51111 target-destination PSTNGroup::tcp sidea
 key 519191 target-destination PSTNGroup::tcp sidea
 key 529292 target-destination PSTNGroup::tcp sidea
 key 5512 target-destination sme-sg.apl.com::tcp sidea
 key 5522 target-destination sme-sg.apl.com::tcp sidea
 key 5552 target-destination sme-sg.apl.com::tcp sidea
 key 57111 target-destination honvxmlgw.apl.com::tcp sidea
 key 579191 target-destination honvxmlgw.apl.com::tcp sidea
 key 579292 target-destination honvxmlgw.apl.com::tcp sidea
 key 8114 target-destination sme-sg.apl.com::tcp sidea
 key 8888 target-destination hon-cvp.apl.com::tcp sidea
 key 9191 target-destination honvxmlgw.apl.com::tcp sidea
 key 9292 target-destination honvxmlgw.apl.com::tcp sidea
 end route table
!
policy lookup sit_rp
 sequence 100 sit_rt request-uri uri-component user
  rule prefix
  end sequence
 end policy
!
trigger routing sequence 1 by-pass condition mid-dialog
trigger routing sequence 2 policy sit_rp condition sidea_trigger
!
no server-group sip global-ping
!
sip cac session-timeout 720
sip cac sidea 10.10.2.4 5060 tcp limit -1
sip cac sidea 10.10.2.5 5060 tcp limit -1
sip cac sidea 10.4.2.12 5060 tcp limit -1
sip cac sidea 10.4.2.13 5060 tcp limit -1
sip cac sidea 10.4.2.15 5060 tcp limit -1
sip cac sidea 10.4.2.3 5060 tcp limit -1
sip cac sidea 10.4.2.4 5060 tcp limit -1
sip cac sidea 10.8.2.11 5060 tcp limit -1
sip cac sidea 10.8.2.15 5060 tcp limit -1
sip cac sidea 10.8.2.3 5060 tcp limit -1
sip cac sidea 10.8.2.4 5060 tcp limit -1
sip cac sidea 10.8.2.5 5060 tcp limit -1
sip cac sidea 10.8.2.55 5060 tcp limit -1
sip cac sidea 10.8.2.56 5060 tcp limit -1
!
no sip cac
!
sip record-route sidea tcp 10.8.2.57 5060
sip listen sidea tcp 10.8.2.57 5060
sip listen sidea udp 10.8.2.57 5060
!
call-rate-limit 200
!
end
```

Caveats

The following table lists known caveats, grouped by severity, related to Unified SIP Proxy 9.0 on virtual machine testing. Click the linked caveat number in the Identifier column to access more caveats details in the Bug Search Tool.

Table 2. Caveats Related to Unified SIP Proxy 9.0 on Virtual Machine Configuration

Identifier	Headline
Open Severity 3	
CSCus89270	Unified SIP Proxy 9.0 Installation on UCS-B - Timeout for Initial configuration

Related Documentation

- Release Notes for Cisco Unified SIP Proxy Release 9.0
- Cisco Unified SIP Proxy Software Configuration Guides
- System Release Notes for Contact Center: Cisco Collaboration Systems Release 11.0(1)
- For information on the IOS commands used to configure infrastructure components, see Configuration Command Files for Unified CCE.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation* at: http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html.

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