



Connecting Cisco Unified Customer Voice Portal with Acme Packet for SBC

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Overview

This note summarizes the interoperability support for Acme SBC when deployed in place of Cisco CUBE for call delivery through SIP trunks to CVP in CCE solution. The signaling for these services also changes when the Network Call Redirection (NCR) feature is turned on. Refer to the "Caveats" section for more details.

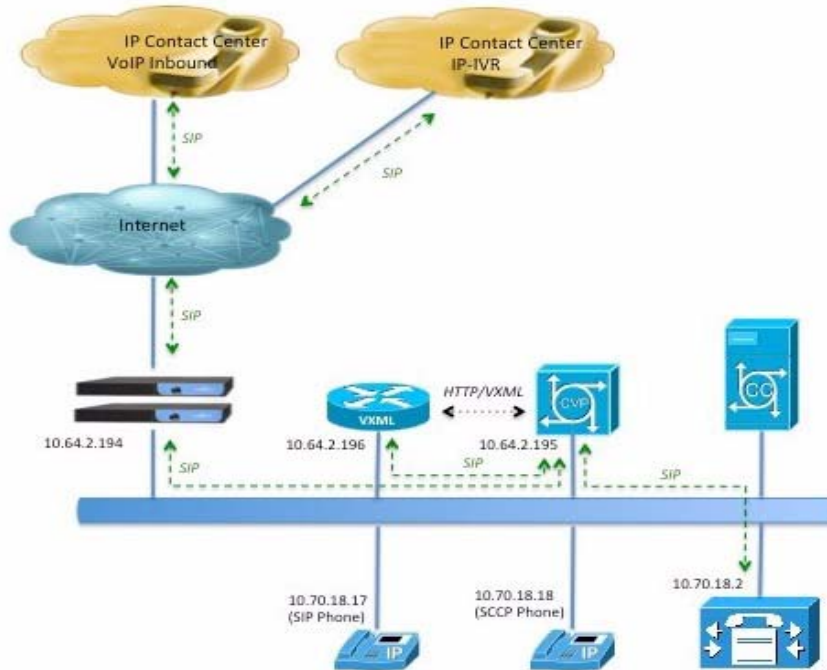
This document serves as guidance for integration. However, it does not guarantee interoperability for every use case. Under the same conditions, this document may also be leveraged with different component versions and different service providers. As in any third-party interoperability, Cisco provides support for its own components, but may not be able to fully assist in end-to-end troubleshooting or provide timely diagnostics and fixes.

Versions of products used in testing

- IOS 15.1.3T (VXML Browser)
- Unified Contact Center Enterprise 8.5(2) (UCCE)
- Unified Customer Voice Portal 8.5 (CVP)
- Unified Communications Manager 8.5 (CUCM)
- Phone firmware 41.9
- Acme Packet Net-Net software versions SCX6.2.0 MR-9 and SCX6.3.0 GA

Network topology

Basic Call Flow



Tested features

- G.711ulaw and G.729 (no Annex B) codecs
- DNIS and ANI presentation
- SIP/TCP on Acme Packet internal interface, and SIP/UDP on external interface
- CVP-based Queuing
- CVP applications with DTMF
- CVP-based intra-site transfers using reINVITE
- CUCM-based intra-site transfers and conferences
- Acme Packet midcall codec negotiation
- CUCM midcall codec negotiation (with transcoder insertion where needed)
- DTMF Transfers using the IP-IVR (Acme Packet converting SIP INFO messages from CVP to RFC2833 tones)
- REFER transfers with Acme Packet in REFER pass-through mode
- REFER transfers with Acme Packet in REFER consume mode
- CVP-based Redirect on No Answer
- Call hold



- IP-IVR
- Network Call Redirection
- Release Link Trunking (RLT) (see caveats)
- Proprietary Headers

Features not supported

- SIP over TLS and SRTP
- SIP 302 Redirect (Acme Packet may consume 302 Redirect messages)
- REFER with Replaces
- CVP using H.323
- Acme Packet performing protocol conversion (H.323 to SIP)
- The features listed above are not a result of limitations in the Acme Packet platform (they are also present when the Cisco Unified Border Element, *CUBE*, is used). However, some UCCE and CVP features rely on specific *CUBE* capabilities and are not available when Acme Packet is used.
Example:
 - Call survivability (survivability.tcl script)
 - Courtesy Callback
 - Network Trunk Group Utilization and Reporting
 - CVP controlled outbound calls (custom application)
 - Outbound Option with SIP Call Progress Analysis
 - Queue at the edge (using CVP SendToOriginator feature)
 - The list is subject to change.
- Acme Packet configured as a SIP proxy (example, instead of Cisco Unified SIP Proxy, or CUSP) for messages between Cisco components (supported configurations use Acme Packet as an ingress or egress border element).

Caveats

- Acme Packet uses SIP loose-routing by default, maintaining the original To and From header values received in an INVITE message from a network, and adding a Route header with CVP's information. The standard behavior of Cisco gateways is to use strict-routing, where the To header domain is replaced with the CVP information and no Route headers are used. Cisco recommends changing the Acme Packet default to strict routing in order to minimize the chances of eventual feature incompatibility.
- The Cisco-Guid header is only available with version C6.3 of the Acme Packet Net-Net, and requires an Acme Packet SPL package.
- When SIP over TCP is used between Acme Packet and CVP, a very limited number of calls may be dropped if Acme Packet switches over through its high-availability feature. For each CVP server used, exactly one call may be dropped after the switchover occurs (all other calls in progress at the

given CVP server stay active with stateful signaling and media). The dropped call is the first that sends a SIP message to Acme Packet after the switch over. This behavior is not experienced when SIP over UDP is used.

- When REFER messages are sent to the ACME SBC, the call session to CVP is not immediately disconnected. Rather, the CVP port stays in use until either the transferred call is terminated or 60 seconds elapse after the REFER is sent (whatever happens first). This longer utilization impacts the CVP capacity and license sizing. This behavior is not experienced when Cisco CUBE is used with VoIP Inbound, as CUBE disconnects the call as soon as REFER request is accepted on the incoming SIP trunk. There are no issues when Acme Packet is used in REFER consume mode.
- There may be some scenarios CVP should send busy and ring-no-answer notifications to Acme Packet. In such cases the Remote-Party-ID header must be used and manipulated to include "--CVP" at the end of the display name.
- CVP Standalone Model has not been tested.
- Interoperability with third party telephony systems (PBXs, contact center systems, voice portals, etc.) and Acme Packet has not been tested.
- Advanced features such as REFER and DTMF transfers require the releases tested as part of this application note or higher.
- **Support Caveats:**
 - Cisco's ability to diagnose interoperability issues and test fixes is restricted to "best effort" as Cisco's support engineers are not equipped with diagnostic tools for the third party equipment. Issues found to be solely related to third party components will not be supported by Cisco. Root cause analysis may not always be possible.
 - Cisco will support its products to the extent that their interfaces and capacity characteristics perform as designed. Instabilities and interoperability issues that arise from different product behavior expectations may not be addressed by Cisco. Upgrades to Cisco or third-party components may introduce different and undesired behaviors. In order to minimize production issues, call flows should be thoroughly tested in a lab environment with the desired product version combinations, including patches.



Acronyms

Acronym	Definitions
SIP	Session Initiation Protocol
SCCP	Skinny Client Control Protocol
CUCM	Cisco Unified Communications Manager
CUBE	Cisco Unified Border Element
CVP	Cisco Unified Customer Voice Portal
UCCE	Cisco Unified Contact Center Enterprise

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Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters

Cisco Systems International
BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: 31 0 20 357 1000
Fax: 31 0 20 357 1100

Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters

Cisco Systems, Inc.
Capital Tower
168 Robinson Road
#22-01 to #29-01
Singapore 068912
www.cisco.com
Tel: +65 317 7777
Fax: +65 317 7799

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