

Network Computing

For IT By IT

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Sneak PREVIEWS

» Cisco Unified CallManager Express

Cisco Routers Do SIP

Express 4.0 runs on your branch office router and supports SIP trunking.

BY JOEL CONOVER

good

- Feature transparency for standalone and remote survivable telephony operation
- Leads the curve in the branch/SME market with early SIP trunking support
- Lets users navigate voicemail in nonlinear fashion

bad

- Requires dedicated VPN hardware when phones are used remotely
- Requires intricate CLI knowledge; advanced configuration still complex
- Purchasing a Cisco router as a phone system means you pay for the whole package. Piece by piece, standalone phone systems cost less

The transition to voice over IP is in full swing, and you should have a migration plan to phase out conventional PBX systems with their growing maintenance costs. By 2009, 90 percent of businesses are expected to use some form of IP telephony, according to Synergy Research. Branch offices and small businesses planning to be part of that migration should consider Cisco Unified CallManager Express 4.0, a router-based IP communications suite.

New features and functionality in Cisco's latest version put it in a much more competitive position. These features include softphone support, remote phones and-- coolest of all--SIP (Session Initiation Protocol) trunking, which lets you connect your router to a SIP provider and replace your digital T1s and analog FXO ports with an IP dialtone. Although industry support for SIP trunk service is still nascent, this technology will change the way we connect our PBXs to the rest of the world.

Companies have many alternatives for IP telephony. Appliance-like IP PBXs are available from at least a dozen vendors. Other options include large-scale centralized systems, managed service offerings, and even do-it-yourself systems based on open source. Cisco takes a different path--its offering runs right on your branch office router, as a primary or backup telephony system supporting up to 240 users. It scales down into the smaller branch or autonomous small office, remaining competitive as a standalone solution down to about 15 to 20 users.

Where To Find Cisco Unified CallManager Express

Unified Cisco CallManager Express, an integral part of Cisco's IOS router software version 12.4 (4), is supported on a broad range of Cisco routers. New routers can be purchased with a Cisco Unified CallManager Express license bundle, or Cisco Unified CallManager Express can be installed on existing routers through a software upgrade--but you'll need to purchase an appropriate license based on the number of users you're planning to support.

I tested Unified Cisco Unified CallManager Express 4.0, along with the Cisco Unity Express 2.3 voicemail services and Cisco Quick Configuration Tool 2.0, using IOS beta 12.4(4) XC, on a Cisco 3845 Integrated Services Router. If you want to test Cisco Unified CallManager Express in your own lab, you'll need to download this software and the Cisco Unified CallManager Express support files from Cisco. The total footprint for Cisco Unified CallManager Express is about 37 MB, so make sure your router is

equipped with at least 64 MB of flash and 256 MB of RAM.

Getting a Quick Start

The first step in deploying Cisco Unified CallManager Express is to configure the router, phones and interfaces to the PSTN. For a 24-line system, that's several hundred IOS commands. That's where Cisco's Quick Configuration Tool (QCT) saves the day. Cisco designed QCT for resellers that install and configure Cisco Unified CallManager Express systems, but any registered user can download it at no charge from Cisco Connection Online (CCO).

QCT, a JavaScript tool that communicates with the router over a serial cable, is intended only for first-time configuration, not as a replacement for centralized management, service desk, or provisioning software. QCT properly configured my router's T1 and FXO interfaces, setting up dial-peers for prefix-based dialing (dial 9) and 911 calling. It also configured my phones, user accounts and voicemail boxes on both Cisco Unified CallManager Express and Cisco Unity Express, going from bare router to fully configured in about 35 minutes.

QCT 2.0 supports reading usernames, MAC addresses and extension configuration information from a file, which cut down on repetitive--and error-prone--data input tasks. The tool, while adaptive to various hardware scenarios, lacked the flexibility for advanced configuration tasks--but will get your PBX up and running quickly.

Features Galore

Now for the good stuff. Cisco Unified CallManager Express 4.0 is chock-full of

new features. Big-ticket items I tested in Cisco CallManager Express 4.0 include softphone support, remote phones, video-conferencing, SIP trunking support and Cisco Unified CallManager Express-Unified SRST (Survivable Remote Site Telephony.)

Cisco's competitors have had softphone support for some time, so I was glad to see Cisco finally catch up. Softphones must be individually configured just like normal phones, meaning more CLI time for each new client.

With remote phone support, I was able to take a phone to another network and use it as if I were still in my office, but I had to have a VPN connection back to my office for it to work. It would be nice if Cisco's phones could make a secure remote connection without a separate device to create the VPN tunnel.

For SIP trunking, I tested Cisco Unified CallManager Express 4.0 using both CBeyond Communications and BroadVoice SIP service providers, and successfully placed calls on both networks. One major caveat with SIP dial-tone is E911 support--despite FCC mandate, not all providers deliver it yet. QoS may also be an issue. Cisco routers have rich and flexible voice QoS features, but

whether your provider honors QoS markings is another question. CBeyond provides a dedicated last-mile connection on its own network, and QoS is implemented and guaranteed. BroadVoice uses your existing broadband connection, and QoS is based on the best-effort capabilities of your broadband provider.

Cisco's Unified SRST delivers backup phone service for a centralized Cisco CallManager system in the case of a WAN failure, using a local trunk, PSTN connection, or SIP connection. In the past, Cisco offered only basic calling features and local call preservation with Unified SRST. With Cisco Unified CallManager Express 4.0, nearly all Cisco Unified CallManager Express features can operate in SRST mode. I tested this by configuring my Cisco Unified CallManager Express system as a backup to my Unified CallManager server. When I forced Unified CallManager to fail, Cisco Unified CallManager Express took over existing local calls, and left me with a fully functional PBX--not just emergency service.

Leave a Message
Among the most relevant new features

in Cisco Unity Express 2.3, which provides voicemail services on Cisco routers, are VoiceView Express, Integrated Messaging and message notification. Integrated Messaging provides an IMAP interface into your voicemail, which I found handy when traveling overseas. Message Notification lets users configure Cisco Unity Express to notify them of new and/or urgent voicemails, enabling Cisco Unity Express to call home, work, or cell, send an e-mail, page, or SMS, in any combination.

VoiceView Express, however, is a great example of how Cisco can leverage its IP handsets to do something unique. VoiceView Express lets you access all voicemail features using the graphical display and navigation buttons on the Cisco IP phone. I tested this feature, and it quickly became my preferred method of voicemail access. Not only can you get a voicemail count at a glance, you can scroll through and access messages in nonlinear fashion. Furthermore, features like setting an out-of-office message are no longer buried behind snaking voice-response trees.

I spent six weeks using Cisco Unified CallManager Express 4.0 as my primary telephony solution, which wouldn't have been possible if this version of Cisco Unified CallManager Express weren't ready for prime time. I found Cisco Unified CallManager Express had no impact on the performance of my LAN or WAN, and the integrated telephony features cut down on device administration. The Cisco 3845 is rated for up to T3 performance with voice, data and security features enabled, so it's no surprise that performance was not an issue.

Dial Up Your Options

Here's how some of the leading systems compare in their support for new IP telephony features

	Avaya IP Office	Cisco Unified CME	Nortel BCM
SIP line side (phone) support	None	Limited	None
SIP trunk support	None	Full	None
Softphone support	Windows	Windows	Windows and PocketPC
Integrated messaging	Y	Y	Y
CTI (computer telephony) integration	Full	Limited	Full

Y=Yes, N=No