

Lab Testing Summary Report

April 2007
Report 070425

Product Category:
**IP Telephony and
Converged
Applications**

Vendor Tested:
Cisco Systems

Product Tested:
**Cisco Unified
Communications
system Release 6.0**

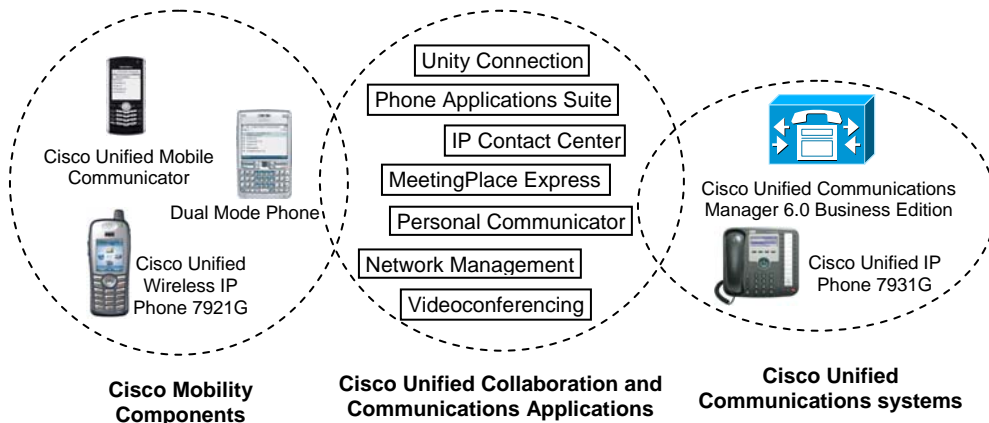


Key findings and conclusions:

- Cisco Unified Communications system Release 6.0 offers enhancements across the portfolio including a Cisco Unified Communications Manager Business Edition, for medium-sized businesses, which is economical and streamlined for easy administration and maintenance
- Cisco has enhanced the collaboration capabilities with additional features for Cisco Unified Personal Communicator and Cisco Unified MeetingPlace 6.0
- Cisco has extended IP telephony by integrating with IBM Sametime 7.5.1 and Microsoft Office Communicator 2007
- Cisco Unified Conferencing for TelePresence provides an extraordinarily realistic video conference in a multipoint screen-switched environment
- Numerous Mobility enhancements for system Release 6.0 include a new 802.11 phone, mobile phone capabilities, and dual-mode phones

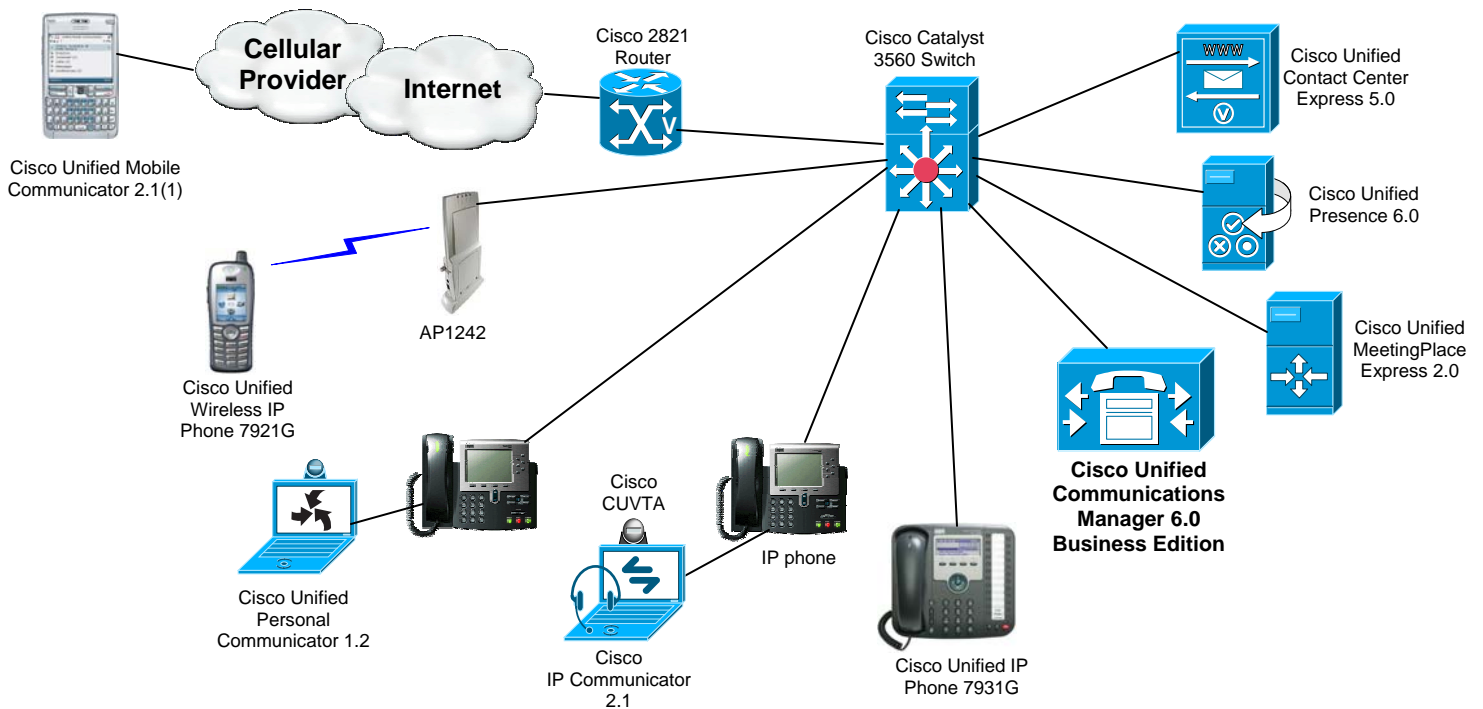
Cisco Systems engaged Miercom to independently verify many of the features and functionality of their Cisco Unified Communications, system Release 6.0. It contains upgrades for almost all of Cisco's communications products and a number of new products and capabilities.

Miercom had an opportunity to take a closer look at system Release 6.0. Some of the key areas we examined included expanded collaboration features, new and enhanced mobility capabilities, and the new Cisco Unified Communications Manager Business Edition product.



The new Cisco Unified Communications system Release 6.0 contains product enhancements focusing on collaboration and mobility as well as a new "Business Edition".

Test bed for Cisco Unified Communications, system Release 6.0



Cisco Unified Communications system Release 6.0 was tested with two test beds. One test bed, shown above, was setup with the solutions/product for small to medium-sized businesses, Cisco Unified Communications Manager 6.0 Business Edition. The other test bed was configured for the full version of Cisco Unified Communications Manager 6.0, which is designed for large businesses, and supports up to 30,000 users in a cluster.

The test bed for Business Edition had both Cisco Unified Communications Manager 6.0 Business Edition and Cisco Unity Connection 2.0 installed on a single Cisco MCS 7828 server (an enhanced version of the MCS server 7825).

The large system contained a Publisher and a single Subscriber (a cluster for a larger system would be configured with additional Subscribers). The test bed used two Cisco MCS 7845 servers and contained a Cisco Unity system as well as a 3515 MCU.

New Collaboration Enhancements for system Release 6.0

Cisco Unified Communications Manager 6.0 includes a variety of new products, features, and enhancements to improve collaboration within the organization.

The monitoring and display of presence information has been enhanced for this release. We reviewed the new support for the "Do Not Disturb" (DND) presence indication on the Cisco Unified IP phones, Cisco IP Communicator (softphone) and Cisco Unified Personal Communicator.

Collaboration Enhancements for Cisco Unified Personal Communicator

Collaboration enhancements for Cisco Unified Personal Communicator now include Instant Messaging capabilities.

The Instant Messaging was easy to use, and was integrated with the other communications facilities in the application. In our tests, we started with an IM session, and then escalated the session to a phone call with a simple click on an icon. While on the phone call, we were able to escalate the call again to a collaboration conference with a connection to Cisco Unified MeetingPlace Express. The test participants were also able to join in a video conference.

Many of the new enhancements for Cisco Unified Personal Communicator were enabled by means of Cisco Unified Presence services. You can "fine tune" how other people will see your presence by setting your own privacy and presence rules. There is also support for privacy and the "Do not disturb" (DND) presence indication. Your presence also can include calendar information from Microsoft Exchange.

Extending Collaboration to IBM Sametime client and Microsoft Office Communicator Client

Cisco Unified Presence with Cisco Unified Personal Communicator offers companies a rich collaboration and presence tool. However, many companies have already gone a long way in enabling collaboration within their business. For those already using the IBM Sametime client, or planning to run the Microsoft Office Communicator client, Cisco is offering tight integration with both of these collaboration applications. Now, many Cisco Unified Communications capabilities including access to Cisco Unified MeetingPlace, can be accessed directly from these integrated desktop clients.

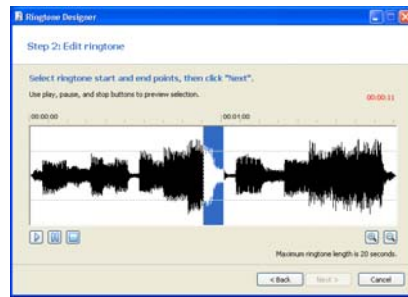
With the IBM Sametime client we used the “Click-to-Call” feature. It gave us two options “Start a call” – to call me back at my desk phone – or “Call me at ...” – which allowed us to enter any number. This last option is particularly useful for a mobile user that wants to call back on a mobile phone, a softphone, or other phone. Presence information was also displayed and we were able to launch a Cisco Unified MeetingPlace web conference from within the Sametime client.

With the Microsoft Office Communicator client we could click the “Start a New Conference a Cisco Unified MeetingPlace 6.0 conference (new for this release). You’re then presented with a set of conference controls to mute, drop participants individually, lock the conference, or end the conference.

Cisco Unified Communications Manager 6.0 also supports “Click-to-Dial” functionality from Microsoft Office Communicator. Phone monitoring presence is also supported with Microsoft Office Communicator.

Enhancements with Cisco Unified Phone Application Suite 6.0

As part of Cisco Unified Communications system Release 6.0, a new capability was introduced: Cisco Unified Phone Applications Suite 6.0. We reviewed five feature sets designed to enhance the personalization and productivity of Cisco Unified IP phones. These feature sets included Personalization, Click-to-Dial (for Microsoft Outlook), Click-to-dial with Microsoft SmartTags, Cisco Unified MeetingPlace Phone View, and Cisco Unity/Unity Connection Phone View.



Ringtone Designer in the Cisco Unified Phone Application Suite 6.0 allows users to select and edit ringtones from a wide variety of sources to use on Cisco Unity IP phone.

The Personalization and Click-to-Dial feature sets work with Cisco Unified IP phones to customize the appearance, and enable certain capabilities to work with the user’s hard phone. With the Ringtone Designer and Wallpaper Designer, a user can personalize their Cisco Unified IP phone much like mobile phone users do.

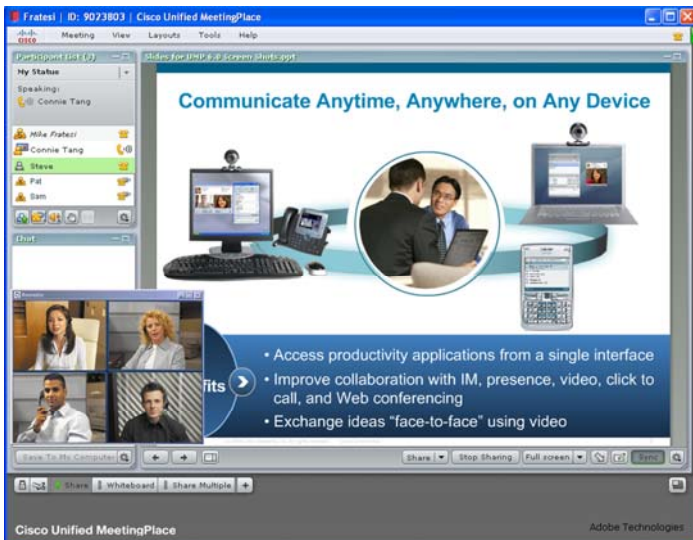
The “Click-to-Dial” features integrate with Microsoft Outlook and offer users the ability to place calls directly from within Outlook. Cisco also integrates with Microsoft Office Smart-tags enabling users to point to a name and simply Click-to-Dial from within any Microsoft Office document where Smart-tags recognize a phone number or contact.

Cisco Unity/Unity Connection Phone View, is an easy-to-use productivity enhancement that enables users to browse a list of their voicemail messages on their IP phone and select – in any order – the voicemail they want to playback. Phone View for Cisco Unified MeetingPlace 6.0 and Cisco Unified MeetingPlace Express 2.0 is a collaboration productivity application that allows the user to use the display of their Cisco Unified IP phone to select or setup a conference to join, see the list of participants, and display who is talking.

Cisco Unified MeetingPlace 6.0 Collaboration and Usability Enhancements

Cisco Unified MeetingPlace 6.0 has been enhanced to make it easier to use. The Web Conferencing User Interface has been completely replaced – the Web Conferencing solution now based on Adobe Flash technology. We found it much easier to switch between full-screen mode and window-mode with automatic resizing. All the participants can see the presentation in full-screen mode. We created user windows containing a PowerPoint presentation, a video clip and a whiteboard. Multiple users can put up different presentations within their own user window and then share it among the participants.

There are also new capabilities for the presenter. For instance, the presenter has a text-base search



Cisco Unified MeetingPlace 6.0 has a new **Web Conferencing User Interface** that is easier to use. The latest release adds more desktop controls and “automatic resizing” of user windows as you change from full screen mode to window-mode.

window that can be shared with the participants, as well as an index of the slides.

Enhancements to Cisco’s TelePresence Video Conferencing System

In reviewing the new features and enhancements for System Release 6.0, we had an opportunity to evaluate Cisco TelePresence and Cisco Unified Conferencing for TelePresence. The Cisco TelePresence system was very impressive. Significant engineering effort was designed into the system to make it a realistic environment for the participants.



Enhancements to Cisco’s Unified Conferencing for TelePresence allowed us to conference four locations and switch the video display for three screens at each location. The video conference is quite impressive and realistic.

Cisco said they have been deploying these systems internally since the end of 2006, and currently have more than 60 systems deployed worldwide.

Cisco TelePresence provides point-to-point video functionality. When integrated with Cisco Unified Conferencing, multiple Cisco TelePresence systems can be joined in a single conference. In our test environment we setup a videoconference between 4 sites using Cisco Unified Conferencing for TelePresence. Each of the four sites connected on our video conference used the Cisco TelePresence 3000 system. There are 2 versions, Cisco TelePresence 1000 (a single screen system), and Cisco TelePresence 3000 (a three screen version).

The video cameras, the HD displays and the audio microphones and speakers were carefully designed. Even the audio latency was optimized so we could not perceive the transmission delay from the site across the country. After participating in the video conference for only a short time, it was almost like being the same room as the participants at the other sites.

We used both switching techniques – site switching (which switches all 3 screens to the site talking), or individual screen switching which switches an individual screen to the person talking.

Cisco Unified Communications Manager Business Edition for Medium-Sized businesses

As part of our test bed we reviewed Cisco’s new addition to the Unified Communications product line. The new product – Cisco Unified Communications Manager Business Edition – is designed specifically for medium-sized businesses (with less than 500 users). In our test bed, the Business Edition was running on a Cisco MCS 7828 server. This is a new design in that, on the same server, we were running both Cisco Unified Communications Manager 6.0, and Cisco Unity Connection 2.0.

This design simplifies the IT maintenance of the telephony system. A single server and a single management application allow you to navigate to both Cisco Unified Communications Manager administration, and Unity Connection administration. From an equipment standpoint, this single server can handle the voice, video, mobility, and messaging needs of a medium-sized business.

Cisco Unified Communications Manager Business Edition, is in the middle of the product line. For small businesses – less than 50 users – Cisco introduced the Unified Communications 500 Series earlier this year (see Miercom’s [Summary Report on the Unified Communications 500 Series](#)). Cisco Integrated Services Router (ISR) systems use Cisco Unified Communications Manager Express that can support from 20 to 150 users. And finally, for the larger businesses, the full version of Cisco Unified Communications Manager 6.0 can handle up to 30,000 users.



The new Cisco Unified IP Phone 7931G is much more like a phone you might expect in a key system with more keys than other Cisco IP phones.

While the keys can be used for separate lines, we configured a couple of keys to access traditional Cisco Unified IP phone applications, like directories and voicemail messages.

We also tried out the new Cisco Unified IP Phone 7931G. This is a significant departure from other Cisco Unified IP phones – it has 24 keys, more keys than any other Cisco IP phone. While the keys can be used for separate lines, we configured a couple of keys to access traditional Cisco Unified IP phone

applications, like directories and voicemail messages.

Enhanced Applications for Small to Medium-Sized Businesses

Cisco has also enhanced some key applications in their system Release 6.0.

For Small to Medium-Sized Businesses, Cisco Unified Communications Manager Business Edition was designed to work enhanced versions of Cisco Unified Contact Center Express 5.0, Cisco Unified MeetingPlace Express 2.0, and Cisco Unified Video Conferencing 5.1.

Cisco Unity Connection 2.0

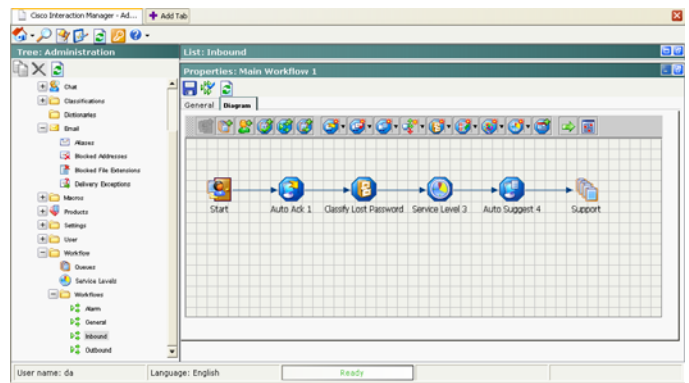
One of the most impressive enhancements in Cisco Unity Connection 2.0 is the new speech recognition capabilities. We tried out the “Voice-enabled Directory Handler.” The system prompted us with “who would you like to reach”, and after speaking the name of the user, the system informed us that the “transfer was in progress”, we then were connected to the user’s phone – no more extensions to dial.

We also reviewed the “Voice-user Interface”. Our system was integrated with Microsoft Outlook. We

were able to speak very common phrases to retrieve voicemail, and send messages. The system was also integrated with Cisco Unified MeetingPlace Express – we could check for scheduled meetings and transfer directly into a meeting. This function could be very useful for mobile users, driving a car, and need to operate in “hands-free” mode.

Cisco Unified Contact Center Express

Version 5 of Cisco Unified Contact Center Express now includes Cisco Interaction Manager which contains two new parts: Cisco Unified Email Interaction Manager, and Cisco Unified Web Interaction Manager. These facilities can handle the scanning, queuing, and routing of inbound email and web inquiries to agents. Auto-responses can be prepared, and processing is integrated with Cisco Agent Desktop.



Cisco Unified Contact Center Express 5.0 provides a workflow editor with a drag and drop user interface.

Cisco Unified MeetingPlace Express 2.0

Cisco Unified MeetingPlace Express 2.0 has been enhanced for system Release 6.0. Targeted for medium-sized businesses, Cisco Unified MeetingPlace Express 2.0 product was particularly well matched for the Cisco Unified Communications Manager Business Edition.

New in the latest release is the ability to join a meeting with video. We were using Cisco Unified Video Advantage software in our testing. If you run the meeting in “Active Speaker” mode, a video image of the loudest speaker is displayed.

Also new for this version was Microsoft Outlook integration. Directly from meeting notices within Outlook, user can join a conference using Cisco IP Communicator and Cisco Unified Video Advantage. You can use Cisco Unity Connection 2.0 voice

commands to access your list of meetings or join a meeting.

Also new for this version is “Segmented Meeting Access” which is a dual server version. It allows the customer to place one server in the DMZ, and the other on the customer’s enterprise network. With this configuration, you can allow external access for meetings while still providing network security for the enterprise.

Cisco Unified Videoconferencing 5.1

Cisco Unified Videoconferencing 5.1 has been enhanced to support High Definition video when integrated with Cisco Unified Communications Manager 6.0.

In our test bed, we were able to see it working in HD (High Definition) mode. We tested it with a Multipoint Conferencing environment (with three systems), and the display was switched to the video image of the person doing the talking. We used three Tandberg 1700 MXP HD displays (at 720p) in our test bed - each displayed a very crisp and clear image. We used the 3515 Video Multi-port Control Unit during our testing.

Cisco Unified Videoconferencing also includes support for traditional videoconferencing (Standard Definition), Rich Media Conferencing, and Multi-party Conferencing.

Cisco Unified Mobility is now imbedded into Cisco Unified Communications Manager 6.0

New with Cisco Unified Communications Manager 6.0, Cisco Unified Mobility (formerly Cisco Unified MobilityManager) functions have been imbedded into Cisco Unified Communications Manager. An additional server is not required.

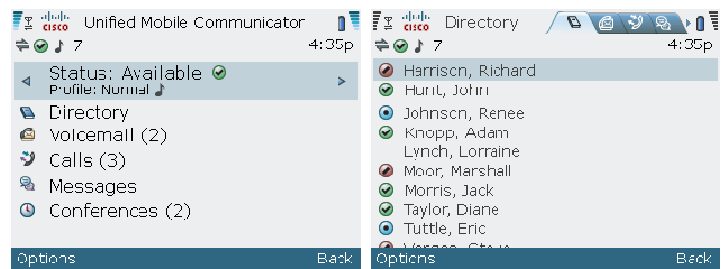
Cisco Unified Mobility management is integrated with Cisco Unified Communications Manager Administration tool. For those users who will be enabled for Mobility, there are 2 checkboxes – you can click “Enable Mobility” and “Enable Mobile Voice Access”.

Cisco Unified Mobile Communicator

Cisco Unified Mobile Communicator is also a new product for Cisco Unified Communications system Release 6.0. It is a software client that runs on a

hand-held device and communicates through the service provider over an SSL encrypted IP link back to Cisco Unified Mobility Advantage server (version 3). The current version is available on the Blackberry 8700 and Nokia E61. The system also integrates with Cisco Unified MeetingPlace – it can automatically dial the pilot number for the meeting, you just enter the ID and click to join.

In our tests, we were impressed with the presence status displayed for the people in our directory of contacts. We could add people into our contacts from the company LDAP directory (AD) or from the Microsoft Exchange Outlook contact list.



Two screens from Cisco Unified Mobility Communicator showing the “home” screen to access directory, voicemail, etc. and the “directory” display showing the presence indication for your contacts.

The number of voicemails are displayed on the main screen and when you click on “Voicemails” a list is presented. The system retrieves the name of the caller by searching the LDAP directory, and includes it in the list of voicemails. You scan your list of voicemails and then click on the voicemail you want to retrieve.

One of the most impressive characteristics of this system is the way it handles the user’s mobility. Cisco Unified Mobile Communicator displays the presence of the contacts list in their most current state. And if you travel out of the reception area (which can happen frequently for mobile users), it shows you the last known presence of that contact, but it’s displayed “grayed out”. And when you return back to the reception area the presence is updated.

Similarly, all the text and Instant Messages (both inbound and outbound) are queued, so if you are temporarily out-of-range, anything you send is saved until you get back in range, and then the sending and receiving of messages will resynchronize.

Dual Mode phones from Nokia

The Dual Mode phone in our test bed had a Cisco client running on Nokia E61 phone. The client is called the “Intellisync Call Connect for Cisco”.

We set our phone to use “WLAN Preferred” (but we could have used “GSM Preferred”). We setup a contact in our directory with their external 10 digit number (in our test bed it was an internal IP phone).

Then we stepped out of WLAN range, the phone used GSM/PSTN, dialed the 10 digit number, and connected to our contact’s phone. When we returned to WLAN range, we dialed the 10 digit number again and Communications Manager routed it to the internal phone. We still had both calls active and could swap between the calls.

Cisco Unified Wireless IP Phone 7921G

Another new product shipping with Cisco Unified Communications system Release 6.0 is the Cisco Unified Wireless IP Phone 7921G. It supports Dual-band 802.11 a/b/g networks.

We evaluated the Cisco Unified Wireless IP Phone 7921G in our test bed and thought it had a much better look and feel than the predecessor (7920), and was laid out well. We also liked the color display which was crisp with good contrast and resolution.

The Cisco Unified Wireless IP Phone 7921G has a 6-line user interface, where each line can make 4 calls. It has feature keys for “press to talk”, or to launch a URL. It has dedicated volume and mute buttons, and a built-in speakerphone.



Cisco Unified Wireless IP Phone 7921G

Cisco says they have made design changes in this model to make more efficient use of the battery, giving the user a longer use time on a single batter charge.

For businesses that might use a high number of wireless phones in a shared environment such as a warehouse application, we liked the 6 phone charging base station unit.

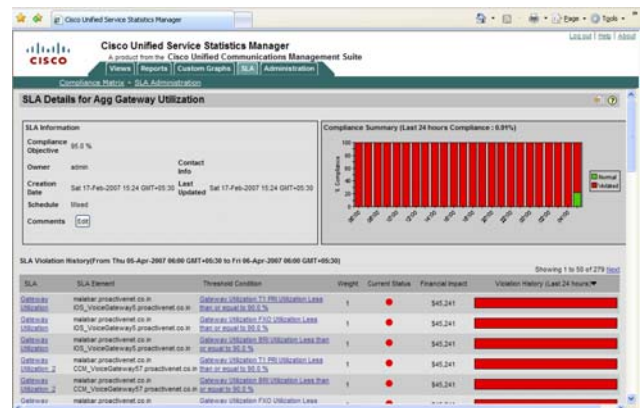
New Network Management Applications

As part of System Release 6.0, Cisco Unified Communication Management Suite is enhanced with new version of Cisco Unified Provisioning Manager (ver. 1.1), and a brand new application – Cisco Unified Service Statistics Manager 1.0.

Cisco Unified Provisioning Manager was newly introduced earlier this year, but has been enhanced. We walked through the “add process” for a new subscriber. We liked how the whole process is driven by one of the “workflows” defined in the Provisioning Manager. For instance, we added a new subscriber with a new phone in a single step. The workflow then routed the work order for “approval processing” to the defined individual. Once “approved” the workflow continued notifying the appropriate departments and individuals for everything from physically ordering the specified handset to triggering a help desk application to generate a ticket for someone to install the phone. You can define templates in the Provisioning Manager for people with different job titles or roles and for each specify their phone type, features, button mappings, etc.

Cisco Unified Service Statistics Manager 1.0 is also new. Service Statistics Manager works with Cisco Unified Operations Manager and Cisco Unified Service Monitor to retrieve data from the Communications Manager, Voicemail server and gateways. We connected to a remote location, and could partition the data by site, building, extension groups, etc.

We thought the Service Statistics Manger had strong support for SLAs (Service Level Agreements). We could create SLAs and use the tool to monitor compliance. SLAs could be defined in hierarchies, and rolled up to a master SLA. The elements of the SLA could each have a weighting and even be assigned a projected financial impact.



The Cisco Unified Service Statistics Manager 1.0 Collects data from the Cisco Unified Operations Manager and many other sources (servers, gateways, etc.). The user can analyze the data looking for trends, and compliance to SLA criteria. This screen shot shows an SLA analysis of an overloaded gateway.

Miercom Performance Verified

Based on Miercom's thorough workout of this system – and examination of its configuration, operation and features, as described herein – Miercom attests to this system's performance, in particular:

- **Cisco Unified Communications system Release 6.0 offers enhancements across the portfolio including a Cisco Unified Communications Manager Business Edition, for medium-sized businesses, which is economical and streamlined for easy administration and maintenance**
- **Cisco has enhanced the collaboration capabilities with additional features for Cisco Unified Personal Communicator and Cisco Unified MeetingPlace 6.0**
- **Cisco has extended IP telephony by integrating with IBM Sametime 7.5.1 and Microsoft Office Communicator 2007**
- **Cisco Unified Conferencing for TelePresence provides an extraordinarily realistic video conference in a multipoint screen-switched environment**
- **Numerous Mobility enhancements for system Release 6.0 include a new 802.11 phone, mobile phone capabilities, and dual-mode phones**



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About Miercom's Product Testing Services...

With hundreds of its product-comparison analyses published over the years in such leading network trade periodicals as *Business Communications Review* and *Network World*, Miercom's reputation as the leading, independent product test center is unquestioned. Founded in 1988, the company has pioneered the comparative assessment of networking hardware and software, having developed methodologies for testing products from SAN switches to VoIP gateways and IP PBX's. Miercom's private test services include competitive product analyses, as well as individual product evaluations. Products submitted for review are typically evaluated under the "NetWORKS As Advertised™" program, in which networking-related products must endure a comprehensive, independent assessment of the products' usability and performance. Products that meet the appropriate criteria and performance levels receive the "NetWORKS As Advertised™" award and Miercom Labs' testimonial endorsement.



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