

Cisco Prime Collaboration 10.0 - Standard and Advanced Offerings

Summary

A new packaging model for Cisco Prime™ Collaboration is offered beginning with Cisco® Unified Communications Manager Version 10.0. This new model consists of two offerings: Cisco Prime Collaboration Standard and Cisco Prime Collaboration Advanced.

Cisco Prime Collaboration Standard is included with Cisco Unified Workspace Licensing and Cisco User Connect Licensing for Cisco Unified Communications. It provides essential provisioning and assurance management to support deployments of Cisco Unified Communications Manager Version 10.0 and above.

For deployments that require more advanced management or support for Cisco Unified Communications Manager Version 8.0 and above, Cisco Prime Collaboration Advanced offers additional automation, deeper diagnostic capabilities, and long-term reporting. See Table 1.

Table 1. Support for Cisco Unified Communications Manager by Version

Cisco Prime Collaboration Version 10.0 Offering	Supported Cisco Unified Communications Manager Versions
Standard	10.0 and later
Advanced	8.0 and later

Cisco Prime Collaboration

Cisco Prime Collaboration provides simplified, unified management across voice and video collaboration networks. It offers automated provisioning, real-time monitoring, and proactive troubleshooting, plus long-term trending and analytics - in one integrated product.

Cisco Prime Collaboration Advanced includes three separate modules: Provisioning, Assurance, and Analytics. Cisco Prime Collaboration Standard includes a subset of the features available in the Provisioning and Assurance modules. The Analytics module is available as part of the Cisco Prime Collaboration Advanced offer only.

This white paper outlines the different features available for the Provisioning and Assurance options per offer and describes how to upgrade from the Standard offer to the Advanced offer.

What Is Cisco Prime Collaboration Assurance?

Cisco Prime Collaboration Assurance offers integrated monitoring and diagnostics for Cisco Unified Communications, Cisco TelePresence®, and the underlying network infrastructure. It expedites operator resolution of service quality issues before they affect end users and helps avoid system and service outages for a greater end-user quality of experience.

Table 2 summarizes key features offered in the Standard and Advanced offers. **Note:** all features available in the Standard offer are also available in the Advanced offer.

Table 2. Cisco Prime Collaboration Assurance: Standard and Advanced Features

Standard and Advanced Features	Standard	Advanced
Web-enabled single interface for fault and performance monitoring of core Cisco Unified Communications Manager Version 10.0 and Cisco TelePresence systems.	Yes	Yes
“At-a-glance” predefined and customizable performance dashboards to monitor short-term performance metric trends.	Yes	Yes
Real-time alarm browser to display faults and allow administrators to take action to troubleshoot or escalate the problem.	Yes	Yes
UC cluster components search and status capability: Quick search for UC cluster-associated inventory (phones, trunks, and more) and real-time status dashboard.	Yes	Yes
Customizable alerts based on performance thresholds allows administrator to add new threshold-based alerts for selective and focused monitoring.	Yes	Yes
Email notification enables on-demand and automated escalations for alerts.	Yes	Yes
Support for single cluster of Cisco Unified Communications Manager and core Cisco TelePresence components such as Video Communication Service (VCS), MCU, Cisco TelePresence Server, and Conductor.	Yes	Yes
Advanced-Only Features		
Scale: Multicenter support for Cisco Unified Communications and Cisco TelePresence deployments.	No	Yes
Autodiscovery of the entire Cisco Unified Communications and Cisco TelePresence environment, including endpoints, unified communication applications, Cisco Unified Border Elements, gateways, switches, and more. The solution automatically models the Cisco collaboration network and presents it using topology views for visualizing deployment and status.	No	Yes
At-a-glance health dashboards with built in root-cause identification best practices , including diagnostic views and troubleshooting drill down for issue isolation and troubleshooting.	No	Yes
Audio and video session trace, session quality monitoring, and reports: Monitors quality of each and every audio and video call and traces video and audio calls. Provides intuitive reports for call traffic categorization and analysis.	No	Yes
Audio call quality monitoring and reports: Analyzes each and every audio call and its quality to determine service degradation. Provides location-by-location service impact report.	No	Yes
Video session monitoring and troubleshooting: Autodetection of video sessions and session topology. Provides deep session service monitoring and troubleshooting powered by Medianet capabilities. On Cisco Medianet routers, jitter and packet loss statistics help pinpoint hotspots that affect session quality.	No	Yes
Infrastructure synthetic tests: Scheduled pretesting of key components and circuits using end-to-end site connectivity tests, unified communications application feature tests, and WAN link performance tests.	No	Yes
Video precall synthetic test: Helps enable administrators to make a video test call to ensure the quality of the session before the actual end user makes the call and to detect any issues before important executive sessions begin.	No	Yes
Event correlation streamlines dependent events into fewer alarms.	No	Yes
User 360 and Device 360 views provide complete information about an end user or an infrastructure device.	No	Yes
Group customization allows administrators to create new endpoints or device groups for focused monitoring needs.	No	Yes
OSS integration: Northbound alarms in Simple Network Management Protocol (SNMP) trap and syslog format allow easy integration with existing operational support systems.	No	Yes
Breadth of UC and Cisco TelePresence endpoints and applications support: Support for all key services in Cisco collaboration networks, including Cisco Unified Communications, Contact Center Enterprise and Cisco Unified Contact Center Express, Cisco video infrastructure components, as well as third-party devices. Refer to the compatibility Information at http://www.cisco.com/en/US/products/ps12363/products_device_support_tables_list.html .	No	Yes
Collaboration network infrastructure support: Helps enable monitoring of underlying network devices that can affect collaboration services such as Cisco Unified Border Elements, Cisco Integrated Services Routers (ISRs), voice gateways, gatekeepers, routers, and switches. Refer to the supported devices list at http://www.cisco.com/en/US/products/ps12363/products_device_support_tables_list.html .	No	Yes

Cisco Prime Collaboration Assurance Standard

The Standard offer provides essential fault and performance monitoring for core Cisco Unified Communications and Cisco TelePresence components.

The solution is web-enabled, providing remote accessibility and avoiding the need to download client software and maintain various versions.

Cisco Prime Collaboration Assurance Standard 10.0 supports Cisco Unified Communications Manager 10.0, Cisco Unity Connection 10.0, and core Cisco TelePresence components such as Cisco TelePresence Video Communication Server (VCS), Cisco TelePresence MCU, Cisco TelePresence Server, and Cisco TelePresence Conductor.

Cisco Prime Collaboration Standard supports a single Cisco Unified Communications Manager/Cisco VCS cluster.

Key Features of Cisco Prime Collaboration Assurance Standard

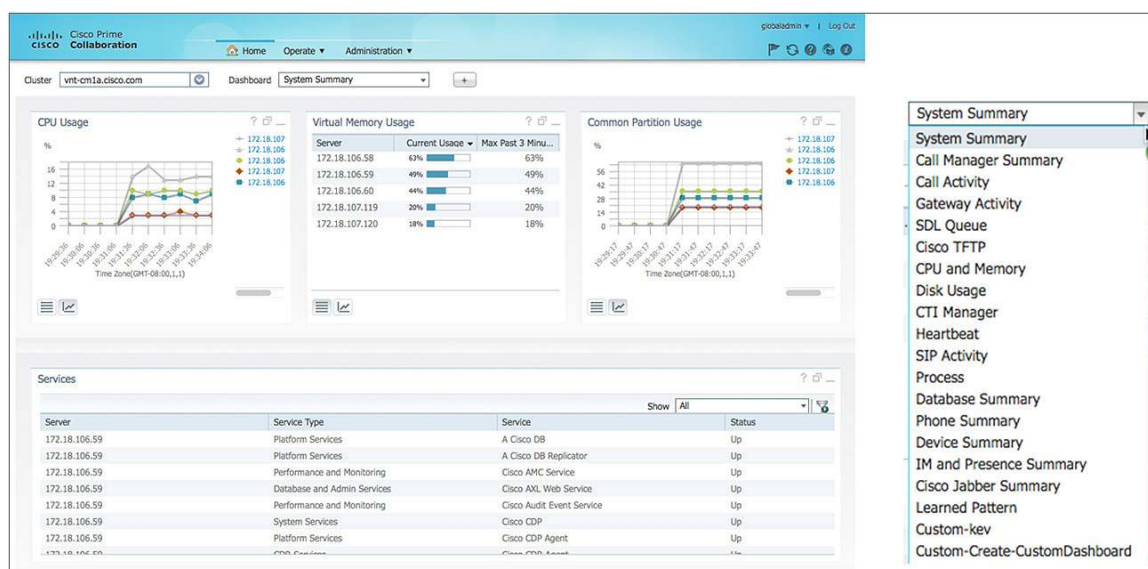
This section elaborates Standard Assurance features summarized in Table 2, “Cisco Prime Collaboration Assurance: Standard and Advanced Features.”

Cisco Prime Collaboration Assurance Standard offers the following key features:

- **“At-a-glance” predefined and customizable performance dashboards:**

More than 17 predefined dashboards provide relevant performance metrics and insight into corresponding short-term trends. Users can also select metrics to create custom dashboards to meet their unique business needs. Figure 1 shows a sample predefined performance dashboard.

Figure 1. A Sample Predefined Performance Dashboard



- **Alarm browser:** An easy to use alarm browser displays predefined as well as user-customized alerts and events in real time.

The faults shown in the alarm browser are sourced from the Cisco Unified Real-Time Monitoring Tool (RTMT) backend service for Cisco Unified Communications Manager, IM and Presence services, and Cisco Unity Connection deployments. Cisco TelePresence Management Suite, Cisco TelePresence VCS, and video endpoints for video deployment faults are reported from VCS endpoint tickets.

Using the alarm browser, users can acknowledge, annotate, and clear alerts as well as send emails autopopulated with alert information (Figure 2).

Figure 2. Alarm Browser

Status	Alarm Name	Device Name	Device IP	Component Name	Last Updated	Owner	Description	Category
<input checked="" type="checkbox"/>	RecordingCallSetupFail	vnt-cm1a.cisc...	172.18.106.58	vnt-cm1a.cisco.com	2013-Sep-17 22:48:02 EDT		RecordingCallSetupFail	Service Infrastructure
<input checked="" type="checkbox"/>	SyslogSeverityMatchFound	vnt-cm1a.cisc...	172.18.106.58	vnt-cm1a.cisco.com	2013-Sep-17 22:48:02 EDT		SyslogSeverityMatchFound	Service Infrastructure
<input checked="" type="checkbox"/>	AutoFailbackFailed	ecats-cu1a.d...	172.18.106.56	ecats-cu1a.cisco.com	2013-Sep-08 21:40:05 EDT		AutoFailbackFailed	UnityConnection
<input checked="" type="checkbox"/>	EvTERDisconnected	ecats-cu1a.d...	172.18.106.56	ecats-cu1a.cisco.com	2013-Sep-08 21:34:06 EDT		EvTERDisconnected	Service Infrastructure
<input checked="" type="checkbox"/>	SyslogSeverityMatchFound	ecats-cu1a.d...	172.18.106.56	ecats-cu1a.cisco.com	2013-Sep-09 09:45:33 EDT		SyslogSeverityMatchFound	Service Infrastructure
<input checked="" type="checkbox"/>	CDRFileDeliveryFailed	vnt-cm1a.cisc...	172.18.106.58	vnt-cm1a.cisco.com	2013-Sep-08 11:34:04 EDT		CDRFileDeliveryFailed	Service Infrastructure
<input checked="" type="checkbox"/>	\\172.18.106.59\Cisco CallManager\CallsActive	vnt-cm1a.cisc...	172.18.106.58	vnt-cm1a.cisco.com	2013-Sep-05 12:42:04 EDT		\\172.18.106.59\Cisco CallManager\CallsActive	User Defined
<input checked="" type="checkbox"/>	CDRAgentSendFileFailed	vnt-cm1a.cisc...	172.18.106.58	vnt-cm1a.cisco.com	2013-Sep-17 22:48:02 EDT		CDRAgentSendFileFailed	Service Infrastructure
<input checked="" type="checkbox"/>	CiscoDRFFailure	ecats-cu1b.d...	172.18.106.57	ecats-cu1b.cisco.com	2013-Aug-29 13:23:34 EDT		CiscoDRFFailure	Service Infrastructure
<input checked="" type="checkbox"/>	\\172.18.106.60\Cisco CallManager\CallsInProgress	vnt-cm1a.cisc...	172.18.106.58	vnt-cm1a.cisco.com	2013-Aug-28 16:40:02 EDT		\\172.18.106.60\Cisco CallManager\CallsInProgress	User Defined
<input checked="" type="checkbox"/>	\\172.18.106.59\Cisco CallManager\CallsActive	vnt-cm1a.cisc...	172.18.106.58	vnt-cm1a.cisco.com	2013-Aug-28 16:40:02 EDT		\\172.18.106.59\Cisco CallManager\CallsActive	User Defined
<input checked="" type="checkbox"/>	ICSACertificateCASignedTrustCertFound	vnt-cm1a.cisc...	172.18.106.58	vnt-cm1a.cisco.com	2013-Aug-29 13:13:33 EDT		ICSACertificateCASignedTrustCertFound	Cups

- **Customizable alerts based on performance thresholds:**
 - Users can easily set up custom alerts based on selected metrics and corresponding thresholds. Once a threshold is violated, an alert will be seen in the alarm browser.
- **Email notification:** Users can easily forward alerts to experts (Figure 3).

Figure 3. Email Notification

Email Notification

To: expert-cucm@abc.com

Comment: Please check this fault on UCM

Subject: Please check this fault on UCM

***** PLEASE DO NOT REPLY TO THIS AUTO GENERATED E-MAIL *****

Device Details

Device Name	vnt-cm1a.cisco.com
Device IP Address	172.18.106.58
Device Software	10.0.0.97023(5)
Device Category	CUCM

Alarm Details

Submit Cancel

- **UC cluster components search and status capability:**

The search and status feature offers focused and granular monitoring capabilities for key components of a unified communications cluster.

As with the RTMT's device search and status feature, the user will be able to define search criteria to select specific cluster components, such as phones, H.323 gateways, Computer Telephony Integration (CTI) devices, voice mail devices, media resources, SIP trunks, or hunt lists that are associated with a Cisco Unified Communications Manager cluster. The user can filter the criteria further, for example, to show all Cisco Unified IP Phone 9971 model phones registered with UCM-1 that have "failed firmware downloads." Once the search is defined and "named," the user can save it for future use and can display the results on screen to monitor status updates (Figure 4).

Figure 4. Cisco Prime Collaboration Search Results

Name	Status	Node	Dir Nu...	IP Add...	Description	IP v6...	Login...	Status...	Time Stamp	Protocol	Active Load ID	Inactiv...	Downl...	Downl...	Product ID	Regi...
1 SEP441875887F3A	Regist...	172.18.106.59	89940...	10.117...	joemar2-9971	N/A	joemar2	N/A	Tue Sep 17 19:36:23 ...	SIP	sig9971.9-3-2-10	sig997...	N/A	N/A	Cisco 9971	1
2 SEP000830306AC3	Regist...	172.18.106.59	89915...	10.116...	smael-9971	N/A	smael	N/A	Fri Sep 13 18:40:47 2...	SIP	sig9971.9-3-2-10	sig997...	N/A	N/A	Cisco 9971	N/A
3 SEP000830306C85	Regist...	172.18.106.59	89917...	10.80...	chahumph-9971	N/A	chahu...	N/A	Mon Sep 9 05:38:02 2...	SIP	sig9971.9-3-2-10	sig997...	N/A	N/A	Cisco 9971	N/A
4 SEP00083088C1C	Regist...	172.18.106.59	89940...	10.117...	ttesluk-9971	N/A	ttesluk	N/A	Fri Sep 13 18:47:27 2...	SIP	sig9971.9-3-2-10	sig997...	N/A	N/A	Cisco 9971	N/A
5 SEP000A1000000	Regist...	172.18.106.59	80041...	10.2.2...	pgnalt-cam001 phone...	N/A	N/A	N/A	Sat Sep 14 13:47:57 ...	SIP	N/A	N/A	N/A	N/A	Cisco 9971	N/A

What Is Cisco Prime Collaboration Assurance Advanced?

The Advanced offer is a full-featured real-time monitoring and diagnostics system for voice and video network assurance.

For more details on Cisco Prime Collaboration Assurance Advanced, please refer to the product data sheet at http://www.cisco.com/en/US/prod/collateral/netmgtsw/ps6491/ps12363/data_sheet_c78-729645.html.

Key Features of Cisco Prime Collaboration Assurance Advanced

This section elaborates on the key features summarized in Table 2, "Cisco Prime Collaboration Assurance: Standard and Advanced Features."

- **Scale:** A single instance or installation of Cisco Prime Collaboration Advanced Assurance scales to support multiple Cisco Unified Communications Manager and VCS clusters.
- **Autodiscovery:** The Advanced offer simplifies the administrator's task of inventory collection using automatic discovery. Based on publisher and device credential profile information input by an administrator, it discovers the entire Cisco Unified Communications environment, including endpoints, unified communication applications, and gateways. The autodiscovery mechanism also can discover video deployment components such as VCS and its associated endpoints. The Advanced offer also provides Cisco Discovery Protocol and Address Resolution Protocol (ARP)-based discovery mechanisms to discover network infrastructure that includes gateways, Cisco Unified Border Elements, and switches. The Advanced offer not only autodiscovers collaboration network inventory, but also automatically models the collaboration network. An operator can visualize the collaboration deployment and status of the components using the Topology View Dashboard.

- **At-a-glance health dashboards with built in root-cause identification best practices.** The Advanced offer provides at-a-glance dashboards under the Home menu item. The at-a-glance dashboards offer key metrics that users need to know to keep tabs on the entire collaboration network. For example the End User Impact dashboard provides information that helps the administrator identify top-N locations where endpoints in the network are experiencing the most outages, call failures, or service quality issues. Based on the information provided, the operator can focus troubleshooting on the most affected areas. Based on integrated best practices for troubleshooting, the system also allows intuitive drill down that helps the operator understand the frequency of the problem as well as identify the associated node (gateway or switch) that may be causing the problem.
- **Audio and video session trace:** The ability to trace calls and sessions in progress end to end to determine all the midpoints on a call path helps users to quickly identify the components that are affecting service degradation. The session troubleshooting feature offers call trace capabilities for both audio and video calls. Cisco Prime Collaboration uses Medianet capabilities to trace the call and present the identified midpoints (routers and switches). Cisco Medianet-enabled routers and switches provide detailed jitter and packet loss statistics that help pinpoint hotspots affecting session quality.
- **Audio call quality monitoring and reports:** The Advanced offer uses call detail record (CDR) and call management record (CMR) information from Cisco Unified Communications Manager to analyze the quality of each and every call. The system dashboards provide the most affected locations where quality degradation is observed. The solution categorizes affected calls into simple categories such as Poor, Acceptable, and Good. The solution also provides detailed reports that show information about every call and its detailed quality information.
- **Video session monitoring and troubleshooting:** Using video session diagnostics, an administrator can effectively identify sessions with degraded services and then troubleshoot those sessions to detect the root cause.

Cisco Prime Collaboration Advanced autodetects all the point-to-point or multipoint video sessions initiated by the monitored endpoints. The solution lists all the active and past sessions on the Session Diagnostics page and also presents the topology of the session where it shows all participating endpoints and conferencing devices such as MCUs. Users can obtain all the key information about the session such as session component faults, session service quality, endpoint faults, and more, using the session diagnostics feature. Deep session service monitoring and troubleshooting capabilities are powered by Medianet capabilities.

- **Infrastructure synthetic tests:** The Advanced offer provides synthetic tests to help detect key issues before they affect end users. Using synthetic tests, network users can test key features of the Cisco Unified Communications Manager and voicemail system. Endpoint reachability and end-to-end connectivity tests help determine phone availability and operational status. WAN performance tests (IP SLA) capabilities on routers to test the performance parameters for WAN connections.

The infrastructure tests can be scheduled around business needs. Any failed test will generate alerts on the dashboard, and the administrator will be able to take action to troubleshoot and fix the problem before end users experience service issues.

- **Video precall synthetic test:** This feature is useful in situations where users need visibility into any potential issues before the video calls happen, for example, a session for corporate executives. The video precall function helps enable users to make a video test call to ensure the quality of the session before an actual end user makes the call. The solution monitors the test call just like an actual call and provides deep session information in session diagnostics. The session information or fault information can help users detect any issues on the call path - in time to troubleshoot and address any problems before key end users experience issues in an actual call.
- **Event correlation:** The event correlation engine helps reduce the clutter of events and alerts on dashboards. Users can easily see key alerts and events on the alarm browser and can take action to fix them, improving mean time to repair (MTTR). Event correlation offers built-in rules to correlate data and generate aggregated alerts.

Cisco Prime Collaboration Assurance offers three kinds of correlation rules - time-based correlation, threshold-based correlation, and root-cause correlation.

Time-based correlation helps users to treat an event as a problem that needs troubleshooting, if and only if it occurs frequently within a particular time window. For example, an administrator may not want an alert on an occasional call admission control (CAC) location out of bandwidth. However, if a CAC location goes out of bandwidth three times within 20 minutes, the administrator may expect a critical alert, as this clearly indicates a bandwidth shortage for that location. Other examples of time-based correlation supported by Cisco Prime Collaboration include "Too many high CPU conditions within a user configurable time window," "Prolonged low memory condition," "Interface flapping," and more.

Threshold-based correlation rules help users to focus on an issue only when it violates a particular threshold level. For example, an administrator may not want an alert on per phone connectivity or a service quality issue. However, if a location/device pool is experiencing a bulk of phone connectivity or service quality issues, the administrator does expect a critical alert (as it would likely indicate broken infrastructure such as where the Cisco Unified Communications Manager or phones connect to switches).

Root-cause correlation rules help users to focus on addressing components or devices causing the issue as opposed to symptoms of events. For example, "UCM CodeYellow" is a symptom of the real CPU pegging alarm that is causing the call drop. Similarly, a large number of "device Unresponsive" events from devices at a remote location would likely be related to outage of a WAN link connecting to that remote location.

- **User 360 and Device 360 views:** Cisco Prime Collaboration Advanced offers a User 360 feature that displays user information (from Active Directory integration) and shows all the endpoints assigned to an end user. In the same view, User 360 shows service quality and call statistics for every endpoint owned by the end user. This helps the administrator get complete information about the end user and his or her experience with the collaboration services. Users also can cross-launch tools to troubleshoot service degradation issues. The Device 360 view provides complete information about a device or application along with device faults and performance metrics information for all components on the device or application. Users can cross-launch contextual troubleshooting tools from the Device 360 view.
- **Group customization:** Administrators can create custom groups for endpoints and devices. For example, an administrator can create a group called "New York Ex60 units" or "Dallas Data Center Devices." These custom groups show up in various dashboards; for example, using the alarm browser, the administrator can select the specific custom group to see a set of alerts corresponding to the group. This feature allows

administrators to organize monitoring to obtain information or alerts for a specific set of devices or endpoints.

- **OSS integration:** Cisco Prime Collaboration Assurance can be integrated with external OSS system or email system using the northbound notifications feature. Northbound alarms in SNMP trap and syslog format allow easy integration with existing operational support systems.

Cisco Prime Collaboration Assurance: How to Upgrade from Standard to Advanced

Cisco Prime Collaboration runs on Linux with VMware, and the software image in Open Virtualization Archive (OVA) format can be downloaded from Cisco.com. For information, go to <http://software.cisco.com/download/navigator.html>.

The Cisco Prime Collaboration Assurance OVA contains Standard as well as Advanced code along with the Linux OS. The Assurance OVA also includes Cisco Prime Collaboration Analytics code. The Advanced Assurance and Analytics OVA can be activated using purchased Advanced licenses.

Once the OVA is downloaded and installation is started, the operator can make a choice to install the Standard software (default) or install the Advanced Evaluation (60-day term) software.

If the Standard software is installed and the operator wants to activate the Advanced software 60-day evaluation, then a user with administrative privileges can:

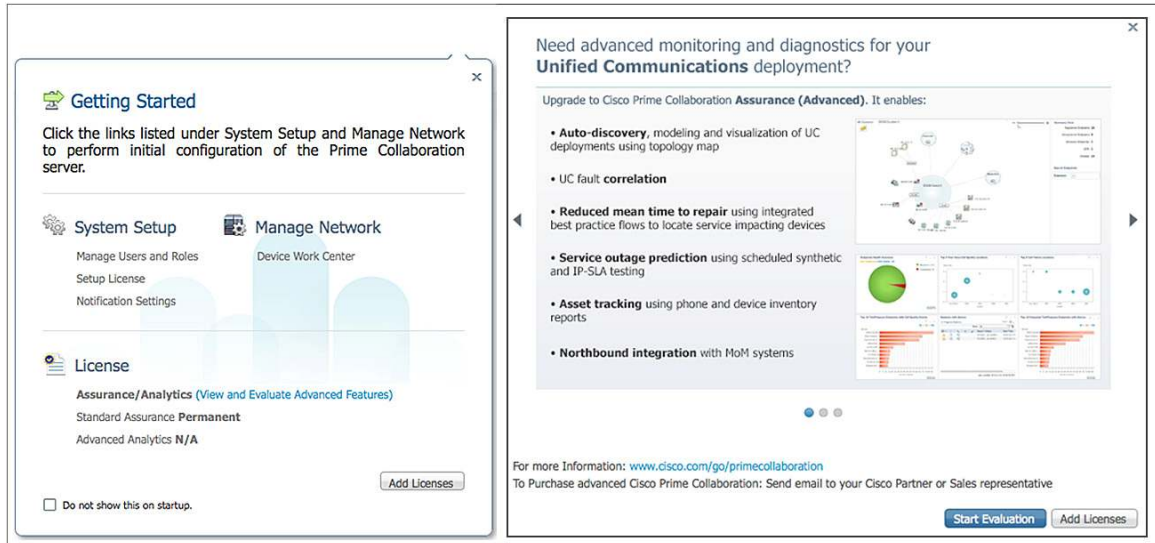
- Select the “upgrade” button at the top right corner of the screen.
or
- Select the “View and Evaluate Advanced Features” link in the “Getting Started” menu and follow the instructions to upgrade to the Evaluation (Advanced) mode.

Once in Advanced Evaluation mode, the user has 60 days to evaluate the software and upgrade it to permanent Advanced mode by installing the purchased Advanced license or the software will revert back to Standard mode. For more information on how to order a Cisco Prime Collaboration Advanced license, refer to the Cisco Prime Collaboration order guide or contact your Cisco sales partner.

If software in evaluation mode is not upgraded to permanent Advanced mode, the system will return to Standard mode after 60 days. At the end of 60th day, a message will pop up, telling the user that the 60-day evaluation has expired and that the user must select a single cluster out of the set of managed clusters (if multiple clusters were added during evaluation). Once the user selects a single cluster, the system will revert to the Standard software and will continue to manage the selected cluster.

To directly upgrade from Standard to permanent Advanced mode, the administrator can install an Advanced license on the Standard system by clicking the Add Licenses button (Figure 5).

Figure 5. Click the Add Licenses Button to Install an Advanced License



What Is Cisco Prime Collaboration Provisioning?

Cisco Prime Collaboration Provisioning is a provisioning and user service activation system for voice and video networks. It supports the Cisco Unified Communications system as well as Cisco TelePresence devices, applications, and endpoints that are registered to Cisco Unified Communications Manager.

Table 3 summarizes key features offered in the Standard and Advanced offers. Note: all features available in the Standard offer are also available in the Advanced offer.

Table 3. Cisco Prime Collaboration Provisioning: Standard and Advanced Features

Standard and Advanced Features	Standard	Advanced
Single interface for provisioning all services (voice, video, and Cisco TelePresence endpoints (registered to Cisco Unified Communications Manager), Presence, voicemail, mobility)	Yes	Yes
Administrator audit log and order tracking	Yes	Yes
Three levels of RBAC: System level, advanced ordering level, and basic ordering level; however, no per domain group granularity	Yes	Yes
Lightweight Directory Access Protocol (LDAP) integration, federated or nonfederated, per domain group	Yes	Yes
Batch provisioning, single cluster only	Yes	Yes
Policy enforcement for user services	Yes	Yes
Advanced-Only Features		
Multicenter, multi-version support for Cisco Unified Communications Manager and Cisco Unity® Connection	No	Yes
Single provisioning batch works across multiple Cisco Unified Communications Manager and Cisco Unity Connection clusters	No	Yes
Advanced RBAC under which order administrators can be assigned to different domain groups of users	No	Yes
Ordering workflow (optional stages between placing an order and the actual provisioning of the order: Approver, MAC Assigner, Shipper, and Receiver)	No	Yes
Cisco Unified Communications Manager and Cisco IOS® Software infrastructure templates with chaining, keywords, and scheduled template-based provisioning	No	Yes
Northbound workflow API for integrating with third-party applications	No	Yes

What Is Prime Collaboration Provisioning Standard?

Cisco Prime Collaboration Provisioning Standard offers single-cluster provisioning for core unified communications applications and user services through a web-enabled interface. It supports Cisco Unified Communications Manager 10.0, Cisco IM and Presence, and Cisco Unity Connection 10.0. Access to Cisco TelePresence Management Server, Cisco Expressway, Cisco Prime Collaboration Deployment, and Cisco Prime License Manager is provided through user interface integration.

Key Features of Cisco Prime Collaboration Provisioning Standard

Cisco Prime Collaboration Provisioning Standard offers following key features (note these features are also included in the Advanced offer):

- **Single interface for provisioning services:** Cisco Prime Collaboration Provisioning provides a single interface for provisioning end-user services for voice, video, and Cisco TelePresence endpoints, Presence, voicemail, and mobility. With Cisco Prime Collaboration Provisioning, service activation is easy. An administrator simply orders a service (like voicemail) for an end user rather than manually setting attributes and applying templates on individual UC servers - processes that are time-consuming and error prone.

The product interfaces can be localized and rendered on the fly in different languages (Figure 6).

Figure 6. Localized Product Interfaces

The figure displays two screenshots of the Cisco Prime Collaboration Provisioning Standard web interface, demonstrating localization. The top screenshot is in English, and the bottom screenshot is in Japanese.

English Interface (Top):

- Header:** Cisco Prime Collaboration, globaladmin | Log Out, Upgrade, and navigation links (Home, Design, Deploy, Reports, Administration).
- User Profile:** Tony Gerbic (tgerbic) with links for New Service, View Service Details, Manage Passwords/PINs, Personal Settings, and User Notes.
- Provisioning History:** Found 1 Orders. Table with columns: Orders, Status, Date. Row 1: 9, COMPLETE, 06-11-2013 13:56:32.
- Service Details:** Found 3 Services. Table with columns: Service Name, Provisioned Service Area, Processor, Last Update. Rows include Endpoint (Cisco 7970: SEP9876CDE21309), Line (7005445000 Tony Gerbic), and User Services (Enable Service Settings).

Japanese Interface (Bottom):

- Header:** Cisco Prime Collaboration, globaladmin | ログアウト, Upgrade, and navigation links (ホーム, 設計, 展開, レポート, 管理).
- User Profile:** Tony Gerbic (tgerbic) with links for 新規サービス, サービスの詳細の表示, パスワード/暗証番号の管理, 個人設定, and ユーザーのメモ.
- プロビジョニング履歴:** 検出 1 オーダー. Table with columns: オー..., ステータス, 日付. Row 1: 9, 完了, 06-11-2013 13:56:32.
- サービスの詳細:** 検出 3 サービス. Table with columns: サービス名, Provisioned Service Area, プロセッサ, 最終更新日. Rows include エンドポイント (Cisco 7970: SEP9876CDE21309), 回線 (7005445000 Tony Gerbic), and ユーザーサービス (Enable Service Settings).

- **Administrator audit log and order tracking:** Cisco Prime Collaboration Provisioning uses an order paradigm to create and manage services for users. When an administrator orders a new service, like a phone and line service, information about the order, including who ordered it, when, what was ordered, and individual settings are put into the database for tracking purposes. Orders can also be searched and exported based on a number of different criteria such as date range, to whom, by whom, order success, and order state. The system also has an audit trail report that shows admin activity such as admin userID, login time, logout time, logged in duration, and reason for logout. The audit trail also shows security-related information such as changes in passwords and security lockouts (Figure 7).

Figure 7. Audit Trail Report

Audit Trail Report								
Produced by: Cisco Unified Provisioning Manager								
Date: Monday, 17-Jun-2013 22:33:50 UTC								
Print								
Action	Performer	Performer Domain	User	User Domain	Processor	Date	Description	Result
Timeout Logout	CUPM		agerbic	east-coast	10.21.67.146	17-Jun-2013 22:04:28 -0500	0:36:12	Success
Client Login	agerbic	east-coast	agerbic	east-coast	10.21.67.146	17-Jun-2013 21:28:16 -0500		Success
Client Logout	agerbic	east-coast	agerbic	east-coast	10.21.67.146	17-Jun-2013 21:28:06 -0500	0:0:13	Success
Client Login	agerbic	east-coast	agerbic	east-coast	10.21.67.146	17-Jun-2013 21:27:52 -0500		Success
Client Logout	agerbic	east-coast	agerbic	east-coast	10.21.67.146	17-Jun-2013 21:27:32 -0500	0:8:19	Success
Client Login	agerbic	east-coast	agerbic	east-coast	10.21.67.146	17-Jun-2013 21:19:13 -0500		Success
Client Logout	nblhsadmin		nblhsadmin		10.21.67.146	17-Jun-2013 21:10:02 -0500	0:1:10	Success

Search Orders

Search Provisioning History Results						
Search Criteria: Author : tgerbic						
Found 4 Orders.						
Order	User	Provision Date	Author	Status	Extended Status	
33	Bill Smith	13-Nov-2013 14:54:32 -0800	tgerbic	COMPLETE	-	
34	B7_openspace_phones	13-Nov-2013 16:38:33 -0800	tgerbic	COMPLETE	-	
35	Robert Smith	13-Nov-2013 16:53:24 -0800	tgerbic	COMPLETE	-	
36	TP_Room_7	13-Nov-2013 16:56:37 -0800	tgerbic	COMPLETE	-	

- **Three levels of RBAC:** System management level, advanced ordering level, and basic ordering level. The administration levels are global in scope, so an ordering administrator can order services for all users in the provisioning application (Figure 8).

Figure 8. Role-Based Access Control

Update Roles for User: **samad1**

Global Roles

☐ Administration
☐ Maintenance

Roles for Domain: CISCOUS

☐ Policy
☐ SelfCareUser creation is not allowed in this domain
☐ Infrastructure Configuration Management

Permission Profile :

Ordering Roles

☐ Ordering
☐ Advanced Ordering

- **LDAP integration:** Cisco Prime Collaboration Provisioning can both sync new users from LDAP and provide user/admin authentication. Additionally, multiple LDAP servers can be added and each assigned to one or more provisioning domains. This can provide support for multiple companies or nonfederated Active Directory environments to be managed in one instance of Cisco Prime Collaboration Provisioning. Federated LDAP servers, using Active Directory Application Mode (ADAM) or Lightweight Directory Services (LDS), can be supported along with nonfederated servers (Figure 9).

Figure 9. LDAP Setup for Provisioning

- **Single-cluster batch provisioning for Cisco Unified Communications Manager and end-user services**

Batches used with Cisco Prime Collaboration Provisioning differ in scope from BAT files. A BAT file only acts on the UC application it is built for. Cisco Prime Collaboration Provisioning batch files provision settings for Cisco Unified Communications Manager, Cisco Unity Connection, and IM and Presence servers in one file (Figure 10).

Figure 10. Sample Batch File

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	OrderType	UserID	FirstName	LastName	Domain	ProductName	Phone Type	ServiceArea	MAC Address	Phone Button	Line Type	Processor	Name	Director N
2	add	ksmith	Kathy	Smith	CISCOUS	Enhanced Phone Serv	Cisco 7961	Atlanta	123456789100	Standard 7961	Auto-Assigned Line			
3	add	ssmith	Susan	Smith	CISCOUS	Enhanced Phone Serv	Cisco 7970	Atlanta	123456789104	Standard 7970	Auto-Assigned Line			
4	add	djames	Don	James	CISCOUS	Phone Service	Cisco 9971	Atlanta	123456789108	Standard 9971	Auto-Assigned Line			
5	add	icadmin	IC	Administ	CISCOUS	Call Pickup Group		Atlanta					CUCM-Cis	CPG1 3500/ Ber
6	deleteuser	rsmith		Smith	CISCOUS									
7	deleteuser	bclark		Clark	CISCOUS									

- **Policy enforcement for user services:** Companies typically have policies around what endpoints and services different job roles can get. Additionally open space phones and conference/Cisco TelePresence rooms typically have a restricted set of phone types and services. The concept of user roles in Cisco Prime Collaboration Provisioning provides a way for the provisioning system engineers to define and restrict which endpoints and services a person or conference room can get. This set of restrictions also filters out the choices an ordering admin would see during the ordering process, reducing the time needed to make a selection and increasing the accuracy of orders (Figure 11).

Figure 11. Endpoint and Service Association to User Role

User Role Configuration

*Name:

Domain: **LATAM**

Endpoints:

Lines: ☒ Auto-Assigned Line ☒ Chosen Line

Services:

- ☒ Client User Settings
- ☐ Extension Mobility Access
- ☐ Extension Mobility Line
- ☐ Email
- ☐ Enable Presence Client
- ☐ Enable Presence
- ☒ Line
- ☒ Line on a Shared Endpoint
- ☒ Enable Mobility Support
- ☒ Endpoint
- ☐ Remote Destination Profile Line
- ☐ Remote Destination Profile
- ☐ Enable SoftPhone Support
- ☐ Unified Messaging
- ☒ User Services
- ☐ Voicemail

Service Bundles:

- ☐ Extension Mobility Access with Line
Adds an Extension Mobility device profile and line.
- ☒ Enhanced Endpoint Service
Adds an endpoint, line, voicemail, and enable a standard set of voice services.
- ☐ Presence Client Service
- ☒ Presence Service
Enables Presence for a user. Includes a Presence Client configures Presence Client User Settings.
- ☐ Remote Destination Profile Service
Adds a Remote Destination Profile and line.
- ☐ Single Number Reach Service

What Is Cisco Prime Collaboration Provisioning Advanced?

The Advanced offer is a full-featured user service activation solution with delegated administrator features. It also covers multiple versions and clusters of UC applications.

For more details on Cisco Prime Collaboration Provisioning Advanced, please refer to the product data sheet at http://www.cisco.com/en/US/prod/collateral/netmgtsw/ps6491/ps12363/data_sheet_c78-729645.html.

Key Features of Cisco Prime Collaboration Provisioning Advanced

This section elaborates upon the key advanced features summarized in Table 3 “Cisco Prime Collaboration Provisioning: Standard and Advanced Features.”

- Multicenter and multi-version support:** The solution can concurrently support multiple clusters and mixed versions of UC applications. When services are ordered for a user, the solution knows which cluster or combinations of clusters must be provisioned. It also knows, for example, which Cisco Unity Connection clusters are integrated with a given Cisco Unified Communications Manager cluster. The solution is also aware of different versions of the UC applications and will adjust the options seen by the administrator or used during provisioning depending on what features are supported on the target UC applications (Figure 12).

Figure 12. Device Management Screen

Name	Application Type	Sync Status	IP Address	Version
CCM10.0	Unified CM	Successfully completed synchronization.	172.20.5.176	10.0(1)
CCM1096000324	Unified CM	Successfully completed synchronization.	10.89.58.168	10.0(1)
CMEQUE	Unified CME	Successfully completed synchronization.	172.20.102.202	8.5
thiscme	Unified CME		10.0.1.1	8.5
CUC10.0	Unity Connection	Successfully completed synchronization.	10.77.153.251	10.0.1
CUE	Unity Express		172.20.102.202	8.5
thiscue	Unity Express		10.0.1.1	8.5
UC10_DEV	Unity Connection	Successfully completed synchronization.	10.77.153.245	10.0.1

- **Single-cluster batch provisioning for Cisco Unified Communications Manager and end-user services**

Cisco Prime Collaboration Provisioning Advanced is multicluster. Batches differ in scope from the Standard offer. A single batch can act on multiple clusters and multiple UC applications (Figure 13).

Figure 13. Sample Batch File for Multicluster Configuration

A	B	C	D	E	F	G	H	I	J	K	L	M	N
OrderType	UserID	ServiceArea	Product Name	Processor Name	Name	Description	Voice Mail Route Partitions	Calling Search Space	Voice Mail Profile	N:Voicemail Bc	Audio kbit	Video kbit	
add	icadmir	SA_US_NYC	Route Partition	CUCM 101	Test-RP_1	Testing PCP10.0							
add	icadmir	SA_US_NJ_U	Route Partition	CUCM 102	Test-RP_2	Testing PCP10.0							
add	icadmir	SA_US_NYC	Route Partition	CUCM 102	Test-RP_3	Testing PCP10.0							
add	icadmir	SA_US_NJ_U	Route Partition	CUCM 103	Test-RP_4	Testing PCP10.0							
add	icadmir	SA_US_NYC	Calling Search Space	CUCM 101	CSS_Test_1	CSS thru batch	Test-RP_1:Test-RP_2:Test-RP_3						
add	icadmir	SA_US_NJ_U	Calling Search Space	CUCM 103	CSS_Test_2	CSS thru batch	Test-RP_4:Test-RP_5:Test-RP_3						
add	icadmir	SA_US_NYC	Calling Search Space	CUCM 102	CSS_Test_3	CSS thru batch	Test-RP_7:Test-RP_8:Test-RP_3						
add	icadmir	SA_US_NJ_U	Calling Search Space	CUCM 103	CSS_Test_4	CSS thru batch	Test-RP_10:Test-RP_11:Test-RP_3						
add	icadmir	SA_US_NYC	Voicemail Pilot	CUCM 102		Testing PCP10.0	77791222	NVC_CSS_inter national					
add	icadmir	SA_US_NJ_U	Voicemail Pilot	CUCM 103		Testing PCP10.0	77791223	NVC_CSS_inter national					
add	icadmir	SA_US_NYC	Voicemail Profile	CUCM 102				77791222:CSS_Test_1:510x000000x					
add	icadmir	SA_US_NJ_U	Voicemail Profile	CUCM 103				77791223:CSS_Test_1:510x000000x					
add	icadmir	SA_US_NYC	Location	CUCM 102	Location1						256	384	
add	icadmir	SA_US_NJ_U	Location	CUCM 103	Location2						256	384	

- **Advanced RBAC:** In addition to the three levels of RBAC available in the Standard offer, the Advanced offer allows delegation of administrator access. The delegation feature allows an administrator with an ordering role to be assigned to manage one or more specific groups of users (domain groups). Other groups of users not assigned will not be visible to this admin. Other assignable roles for managing infrastructure provisioning and workflow steps are available in the Advanced offer (Figure 14).

Figure 14. Role-Based Access Control Screen

Update Roles for User: samad1

Global Roles
☐ Administration
☐ Maintenance

Roles for Domain: CISCOUS
☐ Policy
☐ SelfCareUser creation is not allowed in this domain
☐ Infrastructure Configuration Management
Permission Profile :

Ordering Roles
☐ Ordering
☐ Advanced Ordering
☐ Advanced Assignment

Activity Roles
☐ Approval
☐ Assignment
☐ Shipping
☐ Receiving

- **Optional ordering workflow steps:** In some applications additional ordering workflow is required. There are four steps that can be individually enabled: Approver stage, Assigner stage, Shipper stage, and Receiver stage. Once a service order is created for a user, one or more of these stages can be added to the process workflow before the actual provisioning takes place. The ordering workflow feature works in conjunction with the group-based email notification system to alert administrators of outstanding ordering tasks. See the administration guide for details for each workflow step (Figure 15).

Figure 15. MAC Address Assignment Screen

- **Infrastructure templates:** These are schedulable, keyword-based templates used by admins for repetitive Cisco Unified Communications Manager infrastructure provisioning tasks. The infrastructure templates function also allows prebuilt Cisco IOS Software templates to be imported for provisioning devices that use Cisco IOS commands. These Cisco IOS templates can be scheduled and use keywords for repetitive tasks (Figure 16).

Figure 16. Configuration Template

- **Northbound API:** This interface allows Cisco Prime Collaboration Provisioning to be integrated with a third-party application or OSS. The interface allows access to Cisco Unified Communications Manager infrastructure settings and user-related settings. The interface can use the provisioning automation found in the administration interface, so a service bundle, for example, a phone, line, and voicemail, can be ordered in one step (Figure 17). An SDK is available at http://www.cisco.com/en/US/products/ps12363/tsd_products_support_configure.html.

Figure 17. Northbound API

```
<?xml version="1.0"?>
<!-- Copyright (c) 2011 Cisco Systems, Inc. -->
<!-- All rights reserved. -->
<!-- submitOrderRequest xmlns:wsa="http://www.w3.org/2005/08/addressing" xmlns:co-v1-3="http://ossj.org/xml/Common/v1-3" ;
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <order>
    <serviceDetail>
      <item>
        <product>
          <item>
            <productID>Phone</productID>
            <productAttribute>
              <item>
                <attributeID>protocol</attributeID>
                <attributeValue>
                  <co-v1-3:item>SCCP</co-v1-3:item>
                </attributeValue>
              </item>
            <item>
              <attributeID>devicepool</attributeID>
              <attributeValue>
                <co-v1-3:item>Default</co-v1-3:item>
              </attributeValue>
            </item>
          </item>
        </product>
      </item>
    </serviceDetail>
  </order>
</submitOrderRequest>
```

Cisco Prime Collaboration Provisioning: How to Upgrade from Standard to Advanced

Cisco Prime Collaboration supports virtualization, and the software image in OVA format can be downloaded from Cisco.com. For information, go to <http://software.cisco.com/download/navigator.html>.

The Provisioning OVA contains Standard as well as Advanced code along with Linux OS. The Advanced Provisioning features can be enabled using corresponding Advanced feature licenses.

Once the OVA is downloaded and installation is started, the operator can make a choice to install the Standard software (default) or install the Advanced Evaluation (60-day term) software. Advanced Evaluation mode is expected to be used in a lab environment unless the customer is expecting to go to an Advanced mode.

If the Standard software is installed and the operator wants to upgrade to the Advanced software, then a user with administrative privileges can easily upgrade in one of two ways:

- Select the “upgrade” button at the top right corner of the screen
- Select the “View and Evaluate Advanced Features” link in the “Getting Started” menu and follow the instructions to upgrade to the Evaluation (Advanced) mode

If installed in the Advanced Evaluation mode, the user has 60 days to evaluate the software and upgrade it to permanent Advanced mode by uploading the Advanced licenses. For more information on how to order Cisco Prime Collaboration Advanced license, please refer to the order guide or contact your Cisco sales partner.

If software in evaluation mode is not upgraded to permanent Advanced mode, the system prompt for an advanced license after 60 days. At the end of 60th day, a message will pop up, telling the user that the 60-day evaluation has expired. The customer will need to add an Advanced license to continue.

To directly upgrade Standard mode system to permanent Advanced mode, the administrator can upload an Advanced license to the Standard system through the add licenses feature of the system.

For more details on Cisco Prime Collaboration Provisioning, please refer to the data sheet at http://cisco.com/en/US/products/ps12363/products_data_sheets_list.html.



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