

Cisco Prime Home 5.1 Technical

The proliferation of Internet-connected devices and the explosion of video and data traffic are driving complexity in the home network. Increasing numbers of new devices need to be installed and provisioned, and multiple devices running multiple applications often create resource contention within the home. These factors trigger expensive support calls and truck rolls for the service provider, and automating and simplifying management of customer premises equipment (CPE) in home networks has become mission-critical.

Product Overview

Cisco Prime™ Home is a cloud-based network management platform based on the Broadband Forum's TR-069 protocol for provisioning and managing in-home devices. The solution discovers detailed information about all connected devices in the home and provides visibility for both service providers and subscribers through easy-to-use web portals. The platform also includes a flexible applications engine that offers a means for the service provider to deliver new, high-value consumer home network applications.

Features and Capabilities

Cisco Prime Home provides visibility into the home network, reduces operational costs, and improves the subscriber experience. Powerful customer support tools, an intuitive consumer portal, and extensive reporting combine to make the home network easier to set up and support.

- **Automated, remote multidevice management:** The TR-069-compliant autoconfiguration server provides deep operational visibility into a variety of devices in the home and the network behind them. Management capabilities are available on both a single- and multiple-device basis and include zero-touch provisioning, remote configuration and configuration updates, software (including firmware) upgrades, monitoring, real-time problem diagnosis, and troubleshooting of common home networking problems such as Wi-Fi, firewall, and basic broadband connectivity of devices in the home. Bulk operations help automate the mass management of home devices and help service providers lower the cost of deploying and maintaining large numbers of subscriber devices.
- **Actionable information:** Cisco Prime Home discovers detailed information about the devices in the home such as online/offline status, wireless signal strength, and device manufacturer. The solution abstracts this information into the cloud and provides it to both service providers and subscribers through easy-to-use web portals - rendering the information actionable. This, in turn, reduces support calls and truck rolls, lowering operating expenses.
- **Intuitive consumer portal for real-time problem diagnosis and troubleshooting:** Cisco Prime Home offers consumer visibility into the home network and access to a variety of configuration tools and data services. By providing the subscriber with the ability to more easily troubleshoot problems, a majority of support calls are eliminated, helping to drive customer satisfaction and lower churn.

- **High-value consumer services:** Cisco Prime Home helps enable the quick rollout of new services that drive both customer satisfaction and service provider revenues, such as managed Wi-Fi, managed firewall, and parental control applications, including dynamic content filtering and time blocking.
- **Reporting engine:** Cisco Prime Home Reports supports better business decisions by providing greater visibility into home network usage and activity, home network characteristics, and service utilization. The solution allows creation of professional reports and charts for a wide array of subscriber and device information. Service providers can use this intuitive application to proactively analyze and address support issues globally for new business model creation.

Table 1 lists additional detailed features and benefits of Cisco Prime Home.

Table 1. Features and Benefits

Feature	Description and Benefit										
Management Protocol and Device Support											
TR-069 for multidevice, multiprotocol management	<p>Until recently, service providers have had limited visibility into the home network behind the typical gateway or modem. Cisco Prime Home provides deep operational visibility into a wide variety of devices in the home and the network behind them using TR-069.</p> <p>All devices managed with TR-069 have a well-defined data model associated with them. The data model is the set of common management objects for a given CPE device type that are remotely accessible by Cisco Prime Home for provisioning, device management, and service delivery. These include:</p> <table border="0"> <tr> <td>Residential Gateways</td> <td>TR-098</td> </tr> <tr> <td>IP Phones</td> <td>TR-104</td> </tr> <tr> <td>Set-top Boxes</td> <td>TR-135</td> </tr> <tr> <td>Network Attached Storage</td> <td>TR-140</td> </tr> <tr> <td>Femtocells</td> <td>TR-196</td> </tr> </table> <p>Cisco Prime Home also supports important management frameworks such as those defined in TR-111 and TR-157.</p>	Residential Gateways	TR-098	IP Phones	TR-104	Set-top Boxes	TR-135	Network Attached Storage	TR-140	Femtocells	TR-196
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Integration with other management protocols	Through flexible management endpoints and an API, Cisco Prime Home can provide additional management protocol interfaces such as Simple Network Management Protocol (SNMP) and Open Mobile Alliance Device Management (OMA-DM) for mobile and legacy device support.										
Support for legacy devices	Cisco Prime Home supports HTTP and configuration file-based management for legacy non-TR-069 devices.										
IPv6 support	The solution supports IPv6-compliant devices.										
Remote Management and Platform Tools											
Zero-touch provisioning	Cisco Prime Home provides remote automated provisioning of complex CPE, reducing the rate of costly truck rolls and support calls.										
Consumer device discovery	Cisco Prime Home discovers detailed information about the devices in the home such as online/offline status, wireless signal strength, and device manufacturer.										
Real-time problem diagnosis and troubleshooting of common home networking problems	Cisco Prime Home helps simplify diagnosis and resolution of common home networking problems such as Wi-Fi, firewall, and basic broadband connectivity of devices in the home.										
Restoration of device configuration	CPE configuration is stored in the cloud, allowing for automatic restoration of home network settings if the device is factory defaulted or is replaced.										
CPE software upgrades	Cisco Prime Home allows easy updating of software, including firmware upgrades and downgrades.										
Bandwidth monitoring	<p>Cisco Prime Home measures bandwidth used for the whole home as well as for each individual device inside the home, which is useful to:</p> <ul style="list-style-type: none"> • Diagnose speed contention (for example, personal computer versus Xbox versus webcam) • Inform subscribers of usage against monthly caps and how to optimize 										
Captive portal	Automatic browser redirection for LAN devices is useful for troubleshooting, service alerts for late bill payers, marketing messaging, and more.										
Workflow engine	Cisco Prime Home allows the service provider to build event-driven management policies, resulting in customized device interactions for a variety of scenarios such as initial contact, reboot, or as a standard maintenance procedure.										

Feature	Description and Benefit
Multidevice management with bulk operations	Cisco Prime Home manages both at the individual device and multidevice level, greatly saving administrative overhead time and expense. For bulk operations, labeling provides easy grouping of devices and subscribers, a scheduling mechanism simplifies user activities, and status reports allow easy progress tracking. Integration with Cisco Prime Home Reports allows for intelligent selection of devices for bulk operations.
Auditing	Audit tools help enable the administrator or customer service representative (CSR) to view a history of changes related to a device or subscriber, including who initiated the changes and specifically what was changed. This is useful for accountability tracking and for identification of problems caused by user error.
Domain separation	Domain separation allows the service provider to segment out devices, subscribers, and CSRs into groups based on region, market, or other characteristics for operational efficiency.
Cisco Prime Home Software Development Kit (SDK)	The Cisco Prime Home SDK allows service providers and application developers to create custom actions and services using the Cisco Prime Home interoperability library, custom scripts, and standard user interface libraries. The SDK shortens time to market for managing new devices and offering new consumer services.
Managed Wi-Fi Features	
Activation	Cisco Prime Home can help enable Wi-Fi service globally and on an individual subscriber basis. Default security can be configured to match client setup instructions.
Configuration	Wi-Fi settings can be configured remotely in the CSR and consumer portals once enabled in Cisco Prime Home. Users can customize the channel, service set identifier (SSID), and security type and can set up a multiple SSID or dual-band network. The consumer portal replaces the complex local user interface with simple configuration tools and is remotely accessible so changes can be made from anywhere.
Wi-Fi signal monitoring	Wi-Fi signal monitoring is viewable in both the CSR and consumer portals and shows signal strength for each Wi-Fi device in the home network (based on received signal strength from the access point), which is useful for diagnosing "slow connect" issues in the home.
Mobile offload and guest Wi-Fi support	Cisco Prime Home addresses the growing trend of mobile offload to Wi-Fi through improved Wi-Fi performance diagnostics and troubleshooting tools for tablets and smartphones. The solution can also help enable and manage multiple secure networks over a single Wi-Fi gateway, making it easier for service providers to offer "guest Wi-Fi" applications in a scalable, managed way.
Multiband Wi-Fi	Cisco Prime Home supports multiband Wi-Fi devices and allows configuration of multiple SSIDs across different radios.
Managed Firewall	
Port forwarding configuration	Cisco Prime Home helps enables popular multiplayer games, media devices, remote access, and messaging applications to work seamlessly through pull-down menus. Custom-defined port forwarding configurations for advanced users are also available.
Parental Control Services	
Dynamic content filtering	Dynamic content filtering provides consumers the ability to create a specific list of websites that are allowed or blocked for each individual device in the home and includes profile-based dynamic content filtering services.
Time blocking	Time blocking allows consumers to specify periods of times of day and amounts of time for Internet access (whole home and per device).
Cisco Prime Home Reports	
Intuitive report generation tool	Cisco Prime Home Reports provides a way for service providers to aggregate, view, and export subscriber and device data. The application collects data from any TR-069 device and uses the Cisco Prime Home platform to add more visibility into the broadband subscriber base. Cisco Prime Home Reports includes built-in predefined reports and allows custom report creation. The application also includes drag-and-drop report fields and output columns for ease of use.
Essential use cases	With greater visibility into the broadband subscriber base, service providers can use the information to: <ul style="list-style-type: none"> • Drive additional services penetration through direct marketing of new offerings • Facilitate operational activities such as migrations and upgrades • Create targeted sales programs that auto enable trials for top customers and drive customer awareness
Consumer and CSR Portals	
Consumer portal	The Cisco Prime Home web-based consumer portal provides a complete view of the home network - with both historic and live data - along with access to a variety of configuration tools and data services. No software is required on any consumer device, and the portal is accessible anywhere in the world through a browser or mobile application. By providing the subscriber with actionable information and the ability to more easily troubleshoot problems, a majority of support calls are eliminated, helping to drive customer satisfaction.

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CSR portal	The CSR portal provides a complete diagnostic view of the devices inside the home, helping to enable CSRs to access device information in real time and to discover and diagnose major problems as soon as they occur. Dashboard data is available at all levels - for one specific device or a population of millions of units. User roles, permissions, and views are fully customizable by the administrator.
View Local Interfaces for LAN Devices	
Consumer device click-through	Provides one-click remote setup and access to view local interfaces for LAN devices (in both the CSR and consumer web portals). Devices include web cameras, printers, storage devices, and more. Consumer device click-through does not interfere with LAN device security, and the port and URL path are customized.
Integration with Service Provider Systems and Broad Technology Support	
Broad support across network technologies	Cisco Prime Home may be deployed in a variety of service provider networks, including DSL, cable, FTTH, Ethernet, WiMax, and satellite.
Flexible northbound interface for system integrations	Cisco Prime Home can be easily and securely integrated into a service provider's existing operations support systems and business support systems (OSS/BSS) through its northbound interface (NBI) using flexible and lightweight web-based APIs (RESTful Services). This allows service providers to use existing investments and seamlessly connect Cisco Prime Home to the network infrastructure.
Applications SDK	The Cisco Prime Home applications SDK helps enable third-party devices and services.
Hosted Deployment and Usage-Based Billing	
Hosted solution	Cisco Prime Home service is hosted by Cisco whereby no server hardware is required from the service provider.
Usage-based billing model	Cisco Prime Home is priced per managed device under an annual contract. Invoicing is based upon actual usage, precluding true-ups, renewals, prorating and set-up fees.

Ordering Information

To place an order, visit the [Cisco Ordering Homepage](#). To download software, visit the [Cisco Software Center](#).

About Cisco Prime

The Cisco Prime portfolio of IT and service provider management offerings empowers organizations to more effectively manage their networks and the services they deliver. Built on a service-centered foundation, Cisco Prime supports integrated lifecycle management through an intuitive workflow-oriented user experience, providing A-to-Z management for evolved programmable networks, mobility, video, cloud and managed services.

Service and Support

Using the Cisco® lifecycle services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment. This approach defines the minimum set of activities needed, by technology and by network complexity, to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

For More Information

For more information about Cisco Prime Home, visit <http://www.cisco.com/go/prime-home>, contact your local account representative, or send an email to ask-prime-home@cisco.com.




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