# Cisco Prime Infrastructure 1.2

## Accelerate business and network transformation with unified lifecycle management and application visibility.

### Overview

Business and network transformation brings new challenges to traditional IT network management. The proliferation of mobile devices and pervasive voice and video collaboration, along with cloud and data center virtualization, is driving the need for higher levels of service and improved quality of experience across the network infrastructure. These new services and applications require network managers to have improved visibility to quickly and proactively troubleshoot and resolve problems before they affect services and end-user experience.

**About Cisco Prime**

Cisco Prime for IT is an innovative strategy and portfolio of management products that empower IT departments to more effectively manage their networks and the services they deliver.

The Cisco Prime for IT strategy is built on a network services management foundation and a set of common attributes. It delivers an intuitive workflow-oriented user experience across Cisco® architectures, technologies, and networks. The Cisco Prime for IT portfolio of products simplifies network management, improves operations efficiency, reduces errors, and makes the delivery of network services more predictable.

Cisco Prime™ Infrastructure addresses these challenges by providing a single integrated solution for comprehensive lifecycle management of the wired/wireless access, campus, and branch networks, and rich visibility into end-user connectivity and application performance assurance issues.

Cisco Prime Infrastructure accelerates the rollout of new services and provides secure access and management of mobile devices, making “Bring Your Own Device” (BYOD) a reality for corporate IT. Tightly coupling client awareness with application performance visibility and network control, Cisco Prime Infrastructure helps ensure uncompromised end-user quality of experience. Deep integration with the Cisco Identity Services Engine (ISE) further extends this visibility across security and policy-related problems, presenting a complete view of client access issues with a clear path to solving them.

### Converged Simplified Lifecycle Management

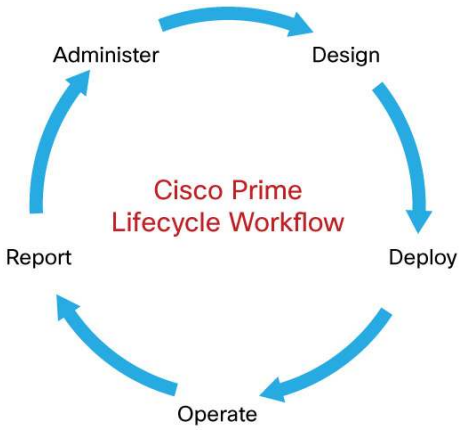
Combining the wireless functionality of Cisco Prime Network Control System (NCS) with the wired functionality of Cisco Prime LAN Management Solution (LMS),[1] Cisco Prime Infrastructure simplifies and automates many of the day-to-day tasks associated with maintaining and managing the end-to-end network infrastructure from a single pane of glass. The new converged solution delivers all of the existing wireless capabilities for RF management, user access visibility, reporting, and troubleshooting along with wired lifecycle functions such as discovery, inventory, configuration and image management, automated deployment, compliance reporting, integrated best practices, and reporting.

[1] A subset of LMS features is available in this release; for more information please refer to the LMS migration guide, *Transitioning from Cisco Prime LMS to Cisco Prime Infrastructure.*

A new operational model based on lifecycle processes (Figure 1) aligns the product functionality with the way network operators do their jobs:

- **Design** - Assess, plan, and create configurations required to roll out new network services and technologies. Create templates used for monitoring key network resources, devices, and attributes. Default templates and best practice designs are provided for quick out-of-the-box implementation automating the work required to use Cisco validated designs and best practices.
- **Deploy** - Schedule the rollout and implementation of network changes. Changes may include published templates created in the design phase, software image updates, and support for user-initiated ad hoc changes and compliance updates. This accelerates service rollout, minimizes chances for errors, and is highly scalable.
- **Operate** - Predefined dashboards provide up-to-date status monitoring on the overall health of the network. Simple one-click workflows and 360-degree device views enhance troubleshooting and reduce the time to resolve network issues. Unified alarm displays with detailed forensics provide actionable information and the ability to automatically open service requests with the Cisco Technical Assistance Center (TAC).
- **Report** - Provides a wide variety of predefined reports for up-to-date information on the network including detailed inventory, configuration, compliance, audit, capacity, end-of-sale, security vulnerabilities, and many more.
- **Administer** - Provides an easy-to-use set of workflows that help to maintain the health of the application and keep devices, users, and the software up to date, allowing the IT staff to focus on other important activities.

**Figure 1.** Operational Lifecycle Workflow




## Improve Application Delivery and End-User Experience

By converging lifecycle management and assurance, Cisco Prime Infrastructure empowers network managers to more effectively manage their network as well as the services their network delivers. Bringing device management capabilities into operational monitoring workflows provides a holistic, multidimensional view of the user, application, and network. This powerful combination of application awareness and network savvy helps network managers realize operational efficiencies that include improved responsiveness to business needs, faster problem identification and remediation, and lower incident and problem rates.

Cisco Prime Infrastructure enables embedded Cisco instrumentation and industry-standard technologies, such as NetFlow, Network Based Application Recognition (NBAR), Medianet, Performance Agent, and Simple Network Management Protocol (SNMP), to deliver network wide application-aware visibility. It provides operations monitoring and quality of experience workflows that reduce instrumentation configuration and data collection complexity to quickly and easily gain insight into network and application performance. It also integrates with Cisco Prime Network Analysis Module (NAM) to permit the collection and correlation of granular flow- and packet-based data from one NAM or many, helping to enable deeper analysis and troubleshooting to rapidly solve challenging application and network problems.

## Reduce Operational Expenses

Cisco Prime Infrastructure's scalable single-pane-of-glass solution significantly reduces operational costs by reducing the number of required management solutions. Cisco Prime Infrastructure scales to manage thousands of routers and switches, and hundreds of Cisco wireless controllers, which in turn can manage up to 15,000 Cisco Aironet® access points. Through the Day 1 support program, new Cisco devices are supported the day they ship, thus eliminating gaps in your management operations, especially when it comes to service availability and troubleshooting.

Cisco Prime Infrastructure offers both physical appliance and virtual appliance options for deployment flexibility without sacrificing scalability, ease of installation and setup, or serviceability and sustainability.

## Features and Benefit Summary

Table 1 provides a summary of the features and benefits of Cisco Prime Infrastructure.

**Table 1.** Summary of Cisco Prime Infrastructure 1.2 Features and Benefits

| Feature | Benefits |
|---|---|
| **Global Platform** | |
| **Operational efficiency** | • Streamlined workflows facilitate design, deployment, and operational lifecycle tasks that align with user roles.<br>• Contextual dashboards and 360-degree views display only the most relevant information for fast and efficient troubleshooting.<br>• Flexible user experience accommodates novice and experienced IT administrators, reducing the investment in multiple tools.<br>• The Cisco Prime Infrastructure Toolbar client widget provides real-time at-a-glance updates of network status from your browser or Microsoft Outlook clients.<br>• Cisco Prime Infrastructure Mobile application for Apple iOS devices helps enable fingertip access to view, troubleshoot, and resolve network issues anywhere and anytime. |
| **Integrated Cisco best practices** | • Integration with Cisco knowledge base helps to ensure optimal service and support, product updates, best practices, and reports to improve network availability.<br>• Day 1 support of new Cisco devices and software releases helps ensure up-to-date coverage with no manageability gaps.<br>• Smart Interactions streamline service request creation, reducing the time required to fix problems. |
| **Improved operations** | • Flexible virtual machine and physical appliance solutions provide cost-effective, easy-to-install options for small to global enterprise-class networks.<br>• Built-in high availability maximizes uptime for services delivery and improves operational efficiency. |
| **Administration** | • Role-based access control provides flexibility to segment the network into one or more virtual domains controlled by a single Cisco Prime Infrastructure platform. Virtual domains help deploy both large, multisite networks and managed services.<br>• Flexible authentication, authorization, and accounting (AAA) allow for local, RADIUS, TACACS+, or single sign-on options |
| **Lifecycle** | |
| **Converged management** | • Single pane of glass solution for complete end-to-end infrastructure management, reducing the need for multiple tools, and lowering operating expenses and training costs. |

| Feature | Benefits |
|---|---|
| **Complete lifecycle management** | • Extensive discovery protocol support helps improve accuracy and completeness, including ping, Cisco Discovery Protocol, Link Layer Discovery Protocol (LLDP), Address Resolution Protocol (ARP), Border Gateway Protocol (BGP), Open Shortest Path First (OSPF), and route table lookups.<br>• Flexible grouping and site profiles help to manage large networks by associating network elements to user definable groups or to a hierarchical campus, building, and floor model.<br>• Device Work Center simplifies access to the tools and features necessary to easily manage the network inventory, including discovery, manual and bulk import, and software image management.<br>• Customizable predefined Cisco best practices and validated design configuration templates help enable quick and easy device and service deployment.<br>• Composite templates allow greater flexibility and packaging of individual templates into larger, reusable, purpose-built configurations for more consistent and quicker network designs.<br>• Automated Deployment workflows provide Plug-n-Play functionality to simplify the rollout of new devices and sites, accelerating service availability.<br>• Centralized monitoring of branch, campus, and WLAN access networks helps maintain robust performance and an optimal access connectivity experience.<br>• Integration with Cisco ISE and Cisco Secure Access Control Server (ACS) View provides a simple way to collect and analyze additional data relevant to endpoints.<br>• Integrated workflows and tools help IT administrators quickly assess service disruptions, receive notices about performance degradation, research resolutions, and take action to remedy non-optimal situations. |
| **Assurance** | |
| **Network-based end-user experience monitoring** | • Detailed analytics dashboards to monitor end-user experience of business critical applications and their key KPIs.<br>• Site-based tracking of user endpoints.<br>• Time-based filtering of data lets users narrow the issue down to a particular timeframe or to look at related network/application events given a timeframe in which the problem was observed. |
| **Flexible NetFlow Version 9 support and advanced troubleshooting** | • Flexible NetFlow templates and raw records collection.<br>• Standard NetFlow support with the ability to update/add new fields based on heuristics.<br>• Trigger packet captures on multiple NAMs based on common software filters.<br>• Access to packets, flows, and MIBs data for detailed real-time and off-line analysis. |
| **Configuration/monitoring templates** | • Predefined collection plans are provided to collect application response time, traffic analysis, and Real-time Transport Protocol (RTP) metrics, reducing the complexity in setting up data sources and KPI collection.<br>• Threshold templates are provided to monitor key indicators and alert the operator/engineer of any anomalies. |
| **Dedicated dashboard for voice, video monitoring, and analysis** | • Analysis of voice, video, and RTP traffic in general is available at branch or individual user level.<br>• Multiple data sources are provided for voice video analysis, including Network Analysis Module and Medianet<br>• Monitoring of RTP conversations is available at the branch and client levels. |
| **Wireless** | |
| **Support for Wireless LAN Controller (WLC Release 7.3** | • Support for new hardware and software features introduced in WLC Release 7.3 is provided. This includes WLC 8500 controller, virtual WLC platforms, AP 2600, AP 1550 with EPON interface, High Availability (HA) with subsecond failover, Proxy Mobile IPv6, and other features. |
| **Next-generation maps** | • New maps engine supports high-resolution images with much improved pan and zoom controls. Search within maps is also supported. The new maps combined with search offer a faster and smoother navigation experience with quicker access to information. |
| **Automatic hierarchy creation** | • Automatically create maps and assign access points to maps using regular expressions. This feature automates the tedious work of creating campus, building, and floor hierarchies and assigning access points to the floor. |
| **Automatic switch port tracing** | • Ability to automatically identify the Cisco switch and port information for a rogue access point connected to the Cisco switch, which allows quickly identifying and mitigating the threat posed by a rogue access point. |
| **Third-party support** | • Ability to discover and monitor third-party (non-Cisco) switches that support RFC 1213 and wireless controllers/access points from Aruba Networks. |
| **Branch and WAN** | |
| **Configuration management** | • Feature configuration templates are provided for dynamic multipoint VPN (DMVPN), Group Encrypted Transport VPN (GETVPN), access control lists (ACLs), and ScanSafe.<br>• Device-level support is provided for DMVPN, GETVPN, ACLs, Enhanced Interior Gateway Protocol (EIGRP), Routing Information Protocol (RIP), OSPF, static routes, Ethernet interfaces, Network Address Translation (NAT), and Zone-Based Firewall. |

## Product Specifications

Table 2 provides product specifications for Cisco Prime Infrastructure.

**Table 2.** Product Specifications for Cisco Prime Infrastructure 1.2

| Item | Specification |
|---|---|
| **VMware** | VMware ESX/ESXi Version 4.1 or 5.0 |
| **Virtual appliance resource requirements** | Small virtual appliance<br>• RAM minimum: 8 GB<br>• Hard disk minimum: 200 GB<br>• Processors: 4 virtual CPUs (vCPUs) |
| | Medium virtual appliance<br>• RAM minimum 12 GB<br>• Hard disk minimum: 300 GB<br>• Processors: 4 vCPUs |
| | Large virtual appliance (VMware ESX/ESXi 5.0 only)<br>• RAM minimum: 16 GB<br>• Hard disk minimum: 400 GB<br>• Processors: 16 vCPUs |
| | Extra large virtual appliance (VMware ESX/ESXi 5.0 only)<br>• RAM minimum: 24 GB<br>• Hard disk minimum: 1200 GB<br>• Processors: 16 vCPUs |
| **Minimum client requirements** | Client hardware: 1 GB RAM, 2 GHz or better processor<br>Browser: Internet Explorer 8.0 or 9.0 with Chrome plug-in, Mozilla Firefox 7.0-12.0, or Chrome 19.0 |
| **Management and security** | SNMPv1, v2c, v3, and Cisco TACACS+, PNG, JPEG, and AutoCAD (DXF and DWG) import file types supported |
| **Supported device types** | • Cisco Integrated Services Routers (ISRs)<br>• Cisco Aggregation Services Routers (ASRs)<br>• Cisco Catalyst® Switches<br>• Cisco Network Analysis Modules<br>• Cisco Wide Area Application Services (WAAS)<br>• Cisco Nexus® Switches<br>• Cisco MDS 9000 Series Multilayer Switches<br>• Cisco Mobility Service Engine (MSE)<br>• Cisco Wireless LAN Controllers<br>• Cisco Lightweight Access Points<br>• Cisco Autonomous Access Points |

Table 3 presents the scalability limits for Cisco Prime Infrastructure based on the virtual appliance size: small, medium, large, or extra large. The Cisco Prime Appliance corresponds to a large virtual appliance. The scalability limits and applicability also depend on the feature sets enabled: Lifecycle only, Assurance only, or Lifecycle and Assurance. Use of the Assurance feature set requires either a large or extra large virtual appliance.

**Table 3.** Cisco Prime Infrastructure 1.2 Scalability

| Parameter | Virtual Appliance Size (Lifecycle \| Assurance \| Lifecycle & Assurance) | | | |
|---|---|---|---|---|
| | Small | Medium | Large/Cisco Prime Appliance | Extra Large |
| Devices* | 2,500 \| - \| - | 6,000 \| - \| - | 11,000 \| 5,000 \| 5,000 | 18,000 \| 18,000 \| 18,000 |
| Lightweight access points | 3,000 \| - \| - | 7,500 \| - \| - | 15,000 \| - \| 5,000 | 15,000 \| - \| 15,000 |
| Events per second** | 100 | 300 | 300 | 1,000 |
| Flows per second | - | - | - \| 16,000 \| 16,000 | - \| 80,000 \| 80,000 |
| Wired clients | 10,000 \| - \| - | 20,000 \| - \| - | 50,000 \| - \| 25,000 | 50,000 \| - \| 50,000 |
| Wireless clients | 33,000 \| - \| - | 75,000 \| - \| - | 200,000 \| - \| 75,000 | 200,000 \| - \| 200,000 |

* A device constitutes a supported device type. NAM management requires the Assurance feature set and a maximum of 40 NAMs can be supported.

** Events are either syslogs or SNMP traps received from managed network devices.

## An Integrated Solution

Cisco Prime Infrastructure is now a single installable software package[2] with tiered licensing options to expand and grow functionality and coverage as needed. Simply install the base software license and one or more of the following feature set options:

- Lifecycle management - Simplifies the day-to-day operational tasks associated with managing the network infrastructure for all Cisco devices including; routers, switches, access points and more.
- Assurance management - Delivers application-level visibility through the normalization and correlation of rich performance instrumentation data to help ensure application delivery and an optimal end-user experience.
- Automated Deployment Gateway - This optional feature complements the built-in automated deployment functionality available through lifecycle management. It enables remote automated deployment for large-scale environments and DMZ implementations.

## Ordering and Licensing Information

Cisco Prime Infrastructure 1.2 is available for new customers and upgrade options are available for existing Cisco Prime Infrastructure, Cisco Network Control System, Cisco Wireless Control System (WCS), and LMS customers. For details refer to the Cisco Prime Infrastructure 1.2 Ordering and Licensing Guide. Information is also provided in the guide regarding obtaining an evaluation copy of Cisco Prime Infrastructure 1.2.

[2] For existing Cisco Prime LMS 4.x customers, an optional LMS 4.2 image will be available; see the Cisco Prime Migration table for details on function and device support considerations.

## Technical Service Options

Cisco Prime Infrastructure software products come with the Cisco 90-day software warranty. Purchasing a Cisco Software Application Support plus Upgrades (SASU) service provides benefits not available with the warranty, including access to maintenance releases, minor and major upgrades, online resources, and Technical Assistance Center support services.

The Cisco Prime Appliance option comes with a Cisco 90-day hardware warranty. Adding a contract for a technical service offering, such as Cisco SMARTnet® Service, to your device coverage provides access to the Cisco Technical Assistance Center and can provide a variety of hardware replacement options to meet critical business needs, updates for licensed operating system software, and registered access to the extensive Cisco.com knowledge base and support tools.

For more information about Cisco warranties, visit http://www.cisco.com/go/warranty.

For information about Cisco Technical Services, visit http://www.cisco.com/go/ts.

## For More Information

For more information about Cisco Prime Infrastructure, visit http://www.cisco.com/go/primeinfrastructure, or send an email to ask-prime-infrastructure@cisco.com.

For more information about Cisco Identity Services Engine (ISE), visit http://www.cisco.com/go/ise.

For more information about the Cisco Unified Wireless Network, visit http://www.cisco.com/go/wireless.

For more information about the Cisco Network Analysis Module (NAM), visit http://www.cisco.com/go/nam.

For more information about the Cisco NetFlow Generation Appliance (NGA), visit http://www.cisco.com/go/nga.

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Printed in USA C78-715144-01 11/12