

# Ridgeline Network and Service Management Software



IT and network management are challenged more than ever to serve end users with a diverse set of applications and service requirements. This is being driven by prolific communications demands, departmental expansion and the needs of a mobile workforce. To compound the problem, today's networks are also subject to:

- Proliferation of new converged and mission-critical applications
- Constantly changing service offerings
- Unpredictable and rapidly growing network traffic
- Security issues that threaten network integrity
- Pressing requirements for simplicity and expediency in network deployment

The demands placed on network management systems are tremendous. An effective system must enhance overall availability by monitoring and dynamically responding to network failures and security threats. It has become equally important for a network management system to increase the extensibility of a network by adapting to the changing demands of new services and applications as this age of convergence becomes a reality.

Ridgeline Network and Service Management is a key component to achieving network and service management simplicity. Ridgeline is a powerful yet easy-to-use application that facilitates management of a network of Extreme Networks® products and solutions with the flexibility to manage select third-party devices as well. Ridgeline provides a comprehensive set of features to configure, provision, monitor, troubleshoot and manage a rapidly changing network infrastructure and its elements.

## Operational Simplicity

- Flexible and intuitive user interface
- Topology view with alarm integration
- Firmware and configuration management

## Carrier-Class Availability

- Intelligent alarm systems and real-time statistics
- Ethernet Automatic Protection Switching (EAPS) provisioning, monitoring and network configuration validation
- End-to-end network service provisioning, visualization and monitoring

## Secure Management and Communications

- Operator and administration control based on roles
- SNMPv3, SSH-2 and HTTPS protocol support
- Audit log
- Detailed event tracking of users in network, and reporting

## Service Extensibility

- Universal Port Manager for easier deployment of ExtremeXOS® Universal Port profiles
- Link Layer Discovery Protocol (LLDP)—protocol support

## Network Automation

- Job/task management and scheduling
- Flexible scripts and macros to automate provisioning and monitoring

## Extensible Network and Service Management

- Ridgeline InSite Software Development Kit (SDK)
- Secured North Bound Interface (NBI)



*Make Your Network Mobile*

## Ridgeline Features

### Operational Simplicity

Ridgeline provides a flexible and intuitive user interface that makes navigation and performing network operations easier. Its dockable Windows interface lets the user view critical status and configuration of different devices simultaneously. The topology view in Ridgeline displays every element of the network and how they are connected in Layer 2 and Layer 3. Configuration management further simplifies operations. Configuration management archives and reloads device configuration and performs configuration diffs or baselining for auditing purposes. Firmware management obtains firmware version and availability information, and performs multi-step upgrades at once or scheduled for single or multiple devices.

The flexible scripts and macros in Ridgeline help network managers to configure multiple devices concurrently with minimal administrator intervention. Users can create automatic standard configurations with scripts for repetitive execution as needed. In addition, Ridgeline manages and allows customization of ExtremeXOS CLI scripts—a very efficient way to roll out your network using configuration templates that can be applied to a switch via CLI scripts. This allows users to select CLI script templates that, for example, configure EAPS and ELSM resiliency, link monitoring protocols, Network Login and other best-practices network security settings on a switch on all edge ports, thereby reducing switch configuration time.

The client/server architecture of Ridgeline provides ease of use and flexibility. The Ridgeline client is automatically updated when there is a new version available on the server. For deployments with multiple Ridgeline servers, the user can designate one of the servers to be the primary, which will collect status from other servers and present them in a consolidated view.

### Carrier-Class Availability

One of the key requirements of availability is to provide notifications of the health and status of the network. Alarm Manager provides detailed

notification for all events in the network. Real-time statistics for multiple ports and devices helps you manage your network effectively and increase continuous availability of the network.

Extreme Networks high availability protocol, EAPS, provides rapid link failover. Ridgeline helps provision and manage EAPS rings in the network. The EAPS configuration verification and validation tools of Ridgeline help to avoid any misconfiguration.

### Secure Management & Communications

Ridgeline provides the tools and features to effectively manage operator access control and administration management rights. Operator profile-based access control helps define levels of access to Ridgeline features and functions. Operator roles allow the administrator to differentiate access levels for each group of users.

Ridgeline provides multiple features that control and monitor the security features on Extreme Networks products. VLAN Manager creates and manages VLANs easily throughout the network.

To protect sensitive data from being intercepted or altered by unauthorized access, Secure Shell 2 (SSHv2) protocol and HTTPS protocols are provided.\* Operations performed using the scripts feature are recorded for audit trail purposes.

### Service Extensibility

Ridgeline scripts allow execution on multiple devices in one operation, and scripts can be executed repeatedly. Any device running a MIB-II compatible SNMP agent can be discovered by Ridgeline inventory management. Third-Party Integration Framework allows basic management of third-party appliances. For managing more advanced features of a device, Ridgeline provides a mechanism to launch proprietary management tools from within Ridgeline. Ridgeline supports LLDP for discovery of third-party devices.

### Intuitive Interface and Design

Simplicity begins with a detailed real-time view of the entire network. Ridgeline topology allows a user to view a network of Ridgeline managed devices and the links between devices as a set of maps. These maps can be organized into sets of submaps that allow a network to be represented as a hierarchical system of campuses, buildings, floors, closets or any logical groupings. Additional topology views can be created so that several different representations of a network are available for different purposes. The hierarchical views are fully customizable to effectively meet the business and network requirements of each organization.





## Network Automation Scripts

The Ridgeline Script feature is a powerful scripting capability that allows the user to automate provisioning of network devices and services. It provides a comprehensive set of programming control structures that allows the user to create complex provisioning workflows. The Ridgeline administrator can assign access levels to control who is allowed to run and modify a script. To use a script, the user simply selects the desired script from the menu, enters the required parameters, and selects the list of devices to which the script applies. Configuration changes are recorded in an audit log.

## Scheduler

The Job/Task Scheduler can execute Ridgeline functions on specified devices at specified times. Ridgeline scripts can now be configured as script tasks which can run automatically at designated times.

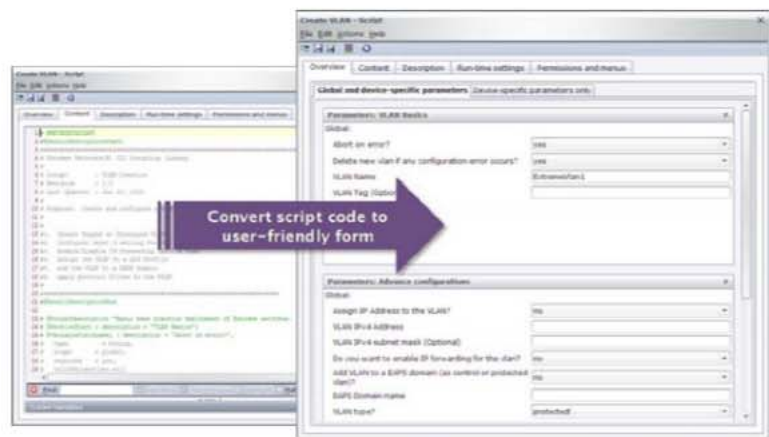


Figure 1: Scripting

## EAPS Monitoring and Configuration Checker

Ridgeline enables the deployment of highly available-ring based architecture using Ethernet Automatic Protection Switching (EAPS) to support complex and demanding applications. Ridgeline provides provisioning tools for designing carrier-class network resiliency and availability for service providers and enterprise networks. Ridgeline meets the goals of operational simplicity and reliability by providing a flexible, intuitive, and point-and-click provisioning interface for network operators to easily create VLANs and resiliency domains.

Ridgeline helps monitor EAPS rings graphically. The nodes in the rings, ring status and topology changes due to a ring failure are depicted graphically in Figure 2.

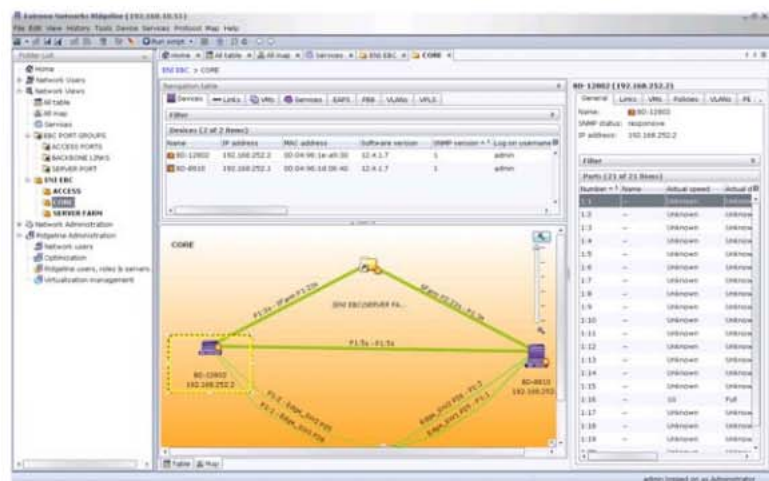


Figure 2: EAPS Monitoring



## Network Service Topology Visualization

As network configuration becomes more complex, the ability to visualize, monitor, and troubleshoot network services end-to-end is critical. Network services like VLAN, VLAN services, and vMAN can be viewed end-to-end via Ridgeline. For example, if a user selects a particular VLAN, the corresponding network devices and links are highlighted on the topology map. Alarm conditions like link failures can also be viewed at a network service level. Devices and links will dynamically change in color based on alarm condition. For network services like VLAN translation, Ridgeline provides the user an end-to-end view including the VLAN translations for the intermediary devices. Knowing how a VLAN is being translated, and the physical ports it's connected to, allows the user to trace and troubleshoot connectivity issues.

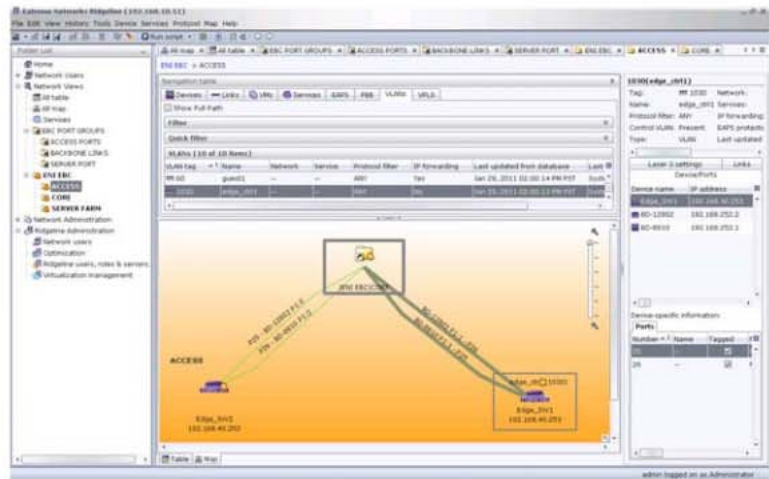


Figure 3: Network Service Topology

## Simplified Provisioning

Powerful visualization capabilities in Ridgeline provide detailed graphical representations of the network coupled with point-and-click provisioning that greatly reduces the likelihood of human error. A user-friendly interface allows the operator to select and provision network-wide VLANs with greater ease. Whether a new department or group needs to be integrated into the network, or existing networks need to be managed, Ridgeline allows VLANs to be created using the appropriate network elements and link segments.

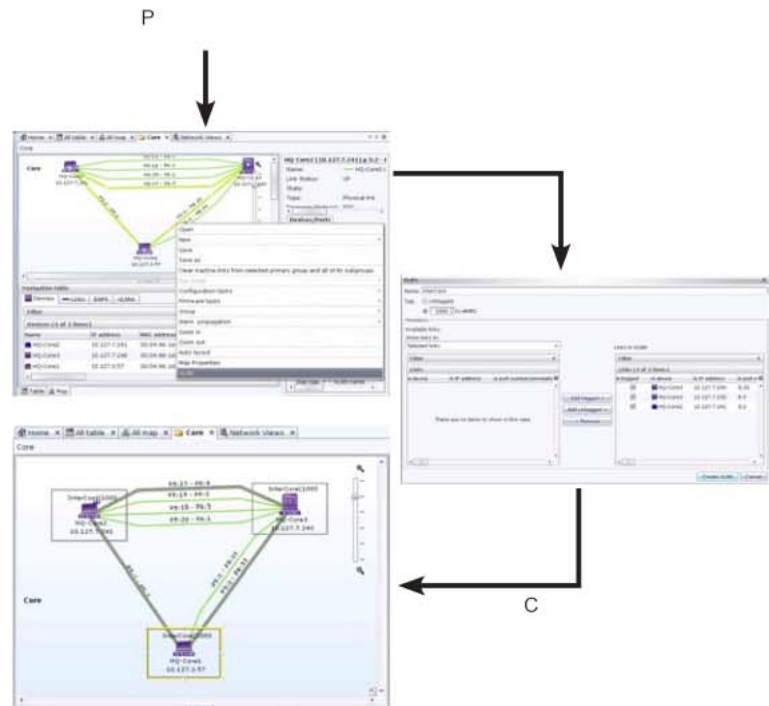


Figure 4: Simplified Provisioning



## Universal Port Manager

The Universal Port Manager feature for ExtremeXOS-based switches simplifies network deployment of VoIP and dynamic security policies.

The Universal Port Manager feature in Ridgeline (Figure 5) helps define and distribute Universal Port profiles for ExtremeXOS-based switches. The auto discovery feature in Universal Port Manager helps in centralized monitoring and management of network-wide profiles. It allows network managers to audit currently deployed profiles on port(s) and see how the deployed versions differ from the ones maintained in Ridgeline. It makes it easier for users to configure a triggering mechanism for a profile, based on a timer or predefined events. It allows users to deploy the profile to more than one port at the same time, making it an effective time saver. Universal Port Manager in Ridgeline makes it easy for users to start rolling out this powerful Plug-and-Play capability with prepackaged template profiles.

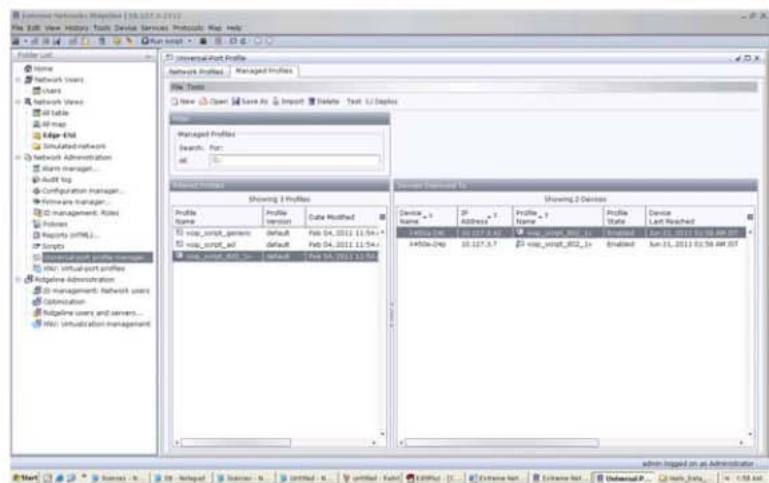


Figure 5: Universal Port Manager



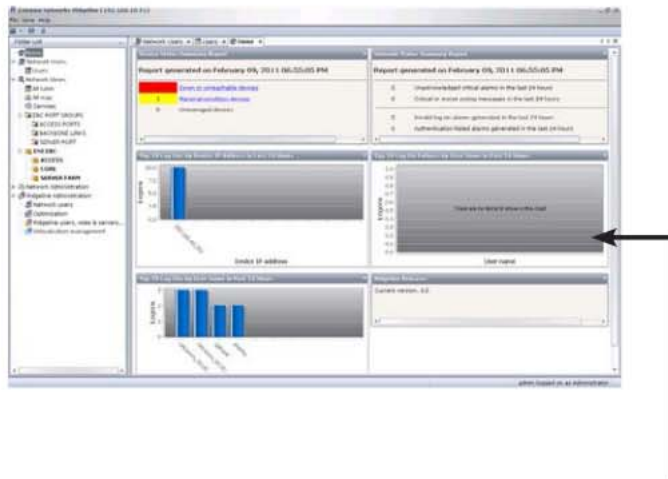
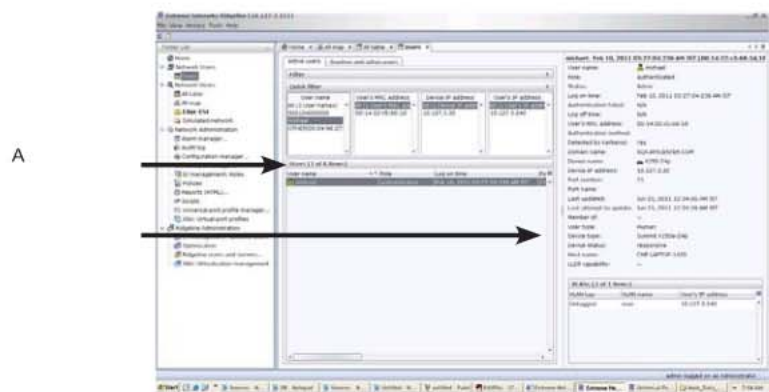
## Identity Awareness

Ridgeline provides centralized reporting of network users and devices, or identities that are connected to the network. With Ridgeline, network managers can gather user and device information from ExtremeXOS-based switches with Identity Management enabled, then aggregate and analyze the data. For example, Ridgeline provides network-wide visualization and mapping of user identity, computer host name, IP address, MAC address, VLAN, and switch port location to help track and monitor users and end points. The identity monitoring feature provides the following:

- Ability to collect and monitor identities across the network
- Archival of identity information which can be retrieved easily at any time
- Detailed reports which can aid in preparing information required for compliance and internal audits

Network-wide identity information helps in addressing key business requirements such as:

- Reducing IT support costs in enterprises: Shortening the time required to troubleshoot and locate the users or devices in the network, determine the authentication method used and status of authentication, and determine authorizations (such as VLAN memberships) can reduce the time required for support personnel to troubleshoot problems reported by users.
- Reducing compliance and audit costs: Detailed reports which include user logon and logoff times, status of authentication, and authorizations provided to access network and IT resources can aid in internal audits, and help in data collection for compliance audits. Information collected from the network is archived so that it can be retrieved at any point in time.



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- Successful logon attempts by user name, switch IP address, MAC address
- Top logon failures in the network based on multiple criteria

Figure 6: Identity Awareness



## Extensible Network and Service Management

- Ridgeline InSite Software Development Kit (SDK)
- Secure North Bound Interface (NBI)
- Simple Object Access Protocol (SOAP)-based message envelope layer
- Web Services Definition Language (WSDL) based API layer and XML based data/information representation
- New and enhanced APIs with every software release

Ridgeline InSite is a software development kit (SDK) that extends the capabilities of Ridgeline through a set of comprehensive application programming interfaces (APIs). These interfaces are used by third-party, partner, and OSS/BSS applications to retrieve information network-wide.

The APIs enable reliable and secure external application-to-management communication. They provide a mechanism to communicate with Ridgeline using XML messages. The standards-based SOAP/XML architecture of Ridgeline InSite makes it easier to integrate the network infrastructure with

high-level application and business software. The network-wide information retrieved using the APIs lets network administrators create Service Oriented Architecture (SOA) solutions that bridge the gap between applications and business logic.

## On-Demand Features and Functionality

The flexible and modular software architecture of Ridgeline enables Extreme Networks to deliver new features and helps solve business problems with greater agility. In addition, specific solutions and feature sets are offered as optional feature packs which can be used to address key business challenges and requirements. The feature packs can be enabled by a flexible licensing scheme which caters to expansion and scalability requirements. The following feature packs are available with Ridgeline 3.1:

F	P	D	P	B
	Security Feature Pack 1	Security Feature Pack 1 includes Extreme Networks Identity Manager. Enhancements to Identity Manager include capabilities to manage network-wide role-based policies and to deploy them for both users and devices, consistently across the network. Security Feature Pack 1 also includes capabilities to integrate with McAfee Network Security Manager to gain visibility into threats associated with identities and effectively mitigate threats using policies that can be dynamically deployed in the network.  For more information, please refer to the Security Feature Pack 1 Data Sheet.		Ridgeline 3.1 or above
	Data Center Feature Pack	Data Center Feature Pack includes the XNV™ (ExtremeXOS Network Virtualization) feature. XNV helps bring insight, control and automation for highly virtualized data centers.  For more information, please refer to the Data Center Feature Pack Data Sheet.		Ridgeline 3.1 or above
	Service Advisor Feature Pack	Service Advisor Feature Pack enables carriers to stay committed to meeting subscriber needs while reducing their total cost of ownership by shifting from reactive circuit monitoring to proactive service management. The Service Advisor feature pack unifies service fulfillment, service assurance, and service engineering so carriers can effectively and efficiently manage next-generation Residential Triple Play, Business Ethernet, and Mobile Backhaul services.  For more information, please see the Service Advisor Feature Pack Data Sheet.		Ridgeline 3.1 or above



**ExtremeWare®/ExtremeXOS versions supported by Ridgeline 3.1**

P	E N O
Summit 200 7.1e or later	(Note: Summit 200 stacking not supported in 7.1e. Please upgrade to 7.4 for stacking support.) ExtremeWare® 7.3e or later required for 802.1x and SNMPv3 support ExtremeWare 7.4 or later required for Summit 200s stacking support
Summit 300-24	ExtremeWare 7.3e or later
Summit 300-48	ExtremeWare 6.2a or later ExtremeWare 7.3e or later required for 802.1x and SNMPv3 support
Summit 400-24	ExtremeWare 7.4 or later
Summit 400-48	ExtremeWare 7.2e or later ExtremeWare 7.3e or later required for 802.1x and SNMPv3 support ExtremeWare 7.4 or later required for Summit 400 stacking support
All "i" Series Switches, Alpine, MSM64i	ExtremeWare 6.2a or later ExtremeWare 7.1 or later required for 802.1x and SNMPv3 support
Summit X150 series	ExtremeXOS 12.0 or later
Summit X250e series	ExtremeXOS 12.0 or later
Summit X350 series	ExtremeXOS 12.0 or later
Summit X450 series	ExtremeXOS 11.2 or later ExtremeXOS 11.5 or later for Summit X450e, Summit X450a
Summit X460 series	ExtremeXOS 12.5 or later
Summit X480 series	ExtremeXOS 12.4 or later
Summit X650 series	ExtremeXOS 12.2 or later
Summit X670 and Summit X670V series	ExtremeXOS 12.6 or later
Summit WM series	Version 5.0 or later
Alpine® 3800 series	ExtremeWare 6.2 or later
BlackDiamond 6800 series	ExtremeWare 6.2 or later
BlackDiamond 8900 series	ExtremeXOS 12.3 or later
BlackDiamond 8900-xi series	ExtremeXOS 12.4 or later
BlackDiamond 8800 series	ExtremeXOS 11.1 or later
BlackDiamond 8500 series	ExtremeXOS 12.3 or later
BlackDiamond 10808	ExtremeXOS 11.0 or later
BlackDiamond 12802	ExtremeXOS 12.0 or later
BlackDiamond 12804	ExtremeXOS 11.4 or later
BlackDiamond 20808	ExtremeXOS 12.2 or later
BlackDiamond 20804	ExtremeXOS 12.4 or later
Sentriant® AG200	Version 5.1 or later
Sentriant NG300	Version 2.5 or later
ReachNXT™ 100-8t	All





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Microsoft Windows Vista, Windows XP Professional with SP1 or later		Minimum 1 GB RAM (2 GB or higher recommended) Minimum 2 GB free disk space 1 GHz Pentium-compatible processor (2+ GHz recommended)		
Windows 2003 Server				
Solaris 10*				
Red Hat Enterprise Linux 5.0**				
Microsoft Windows 2008 Server				
Microsoft Windows 7***				
C	B	C	M	O
Internet Explorer 6.0 or higher; Mozilla Firefox 1.5 or higher		Minimum 512 MB RAM (1 GB or higher recommended)		

\* Only the 64-bit version of Solaris is supported

\*\* Only x86-based platforms are supported

\*\*\* Only Ridgeline 3.0 32-bit version for Microsoft Windows is supported



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Part Number	Name	Description
83015	Ridgeline 3.1 Base-50	Ridgeline 3.1 Base-50 is a comprehensive network and service management software for status monitoring, configuration and troubleshooting of up to 50 devices. Includes package plus license key. Software downloadable.
83016	Ridgeline 3.1 Add 50 Devices	Ridgeline 3.1 Add 50 Devices is a scalability upgrade to provide management capability to an additional 50 network devices. Requires Ridgeline 3.1 Base-50. Key only.
83017	Ridgeline 3.1 Add 250 Devices	Ridgeline 3.1 Add 250 Devices is a scalability upgrade to provide management capability to an additional 250 network devices. Requires Ridgeline 3.1 Base-50. Key only.
83018	Ridgeline 3.1 Up To 2000 Devices	Ridgeline 3.1 Up To 2000 Devices is a scalability upgrade to provide management capability to a maximum of 2000 network devices. Requires Ridgeline 3.1 Base-50. Key only.

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