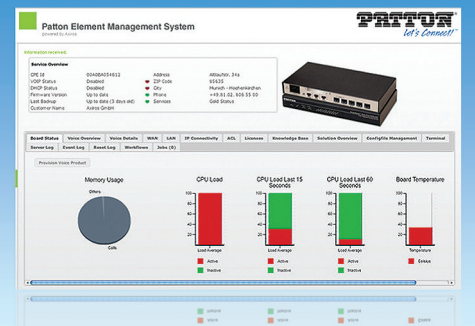


# Patton Element Management System (EMS)



The Patton EMS and TR069 proxy server for SmartNode VoIP and third-party CPE empowers service providers to manage VoIP networks efficiently and cost-effectively.

## Provisioning and Administration

- *Auto-provisioning capability reduces roll-out costs.*
- *Configuration backup & restore provides data security and failure recovery.*
- *Scheduled mass upgrades for software release and configuration management.*
- *Customizable configuration templates enable streamlined device deployment.*
- *Patton's Redirection Server and factory pre-config enable zero-touch turn-up.*

## Monitoring

- *View device status remotely from a centralized or from distributed locations.*
- *Graphical presentation of key indicators provides at-a-glance status of each CPE.*
- *Fault management enhances quality of customer experience.*

## Configuration

- *Modify CPE configurations remotely in real time*
- *Reduced complexity of device configuration*

## Graphical User Interface (GUI)

- *Convenient browser-based interface.*
- *Intuitive monitoring, provisioning and administration.*
- *Flexible and customizable GUI for each user.*

## Data Interfaces

- *Standard SQL interfaces provide north-bound access to third-party OSS/BSS.*
- *Northbound TR069 CWMP interface for ACS integration*
- *SSH/Telnet interface provides secure, stable southbound connection to CPE*

A fast-growing subscriber base is every service providers dream! However, a proliferating army of deployed customer-premise devices does present a management challenge. Now, with Patton's Element Management System (EMS), you can deliver remote, real-time support for all of your SmartNode and third-party CPE. Patton's scalable and highly-flexible EMS provides remote configuration, provisioning, troubleshooting, and fault clearing, as well as mass software upgrades.

Designed to integrate smoothly with existing network-management tools, processes, and workflows, the Patton EMS employs carrier-specified Automatic Configuration Server (ACS) functionality. Patton's EMS is a centralized fault, configuration, accounting, performance and security (FCAPS) management tool for telecom network operators that offers touch-less configuration and turn-up.

The resulting key benefits are:

- **Lower Operating Costs.** Remote management combined with SmartNode set-it-forget-it reliability eliminates costly truck rolls for turn-up, troubleshooting or replacement.
- **Touchless Provisioning.** Automatic Configuration Server (ACS) automatically configures and provisions each SmartNode on power-up.
- **Remote Management.** Use the intuitive Patton EMS web interface to turn-up, troubleshoot, reconfigure, and update software for all your SmartNode CPE from any location.
- **Manage Third-Party Devices.** Powered by the Axiros open system platform, provided by Axiros, the Patton EMS can manage any vendor's CPE.

# Patton Element Management System (EMS)

## Scaling

- Manage just a few dozen or up to 100,000 or more devices.
- Extensible to manage any third-party device.
- Use expandable end-to-end workflows to build a Service Management System.

## Patton TR069 Proxy Server

The Patton TR069 Proxy Server provides a flexible solution for integrating the highly-flexible configurations of SmartNode products into the limited and standardized TR069 management tree structure.

Transform CWMP remote procedure calls and parameters into Patton's CLI command flows, and run them on connected devices in a highly-scalable fashion.

Patton TR069 Proxy Server operates as a proxy that can be plugged into existing ACS infrastructures, delivering access to the features and states of non-TR069 devices.

The screenshot displays the Patton SmartNode Service Management Platform interface. The browser address bar shows the URL `http://10.0.0.119/live/AXSupportPortal/index_html?do_search=Search`. The page header includes the Patton logo and the tagline "Let's Connect!". The main content area is titled "Search Results" and contains a table with the following columns: Analyze, Image, Serial Number, Version, Last Contact, and IP Address. The table lists 15 devices with their respective details. A sidebar on the left contains a search input field and buttons for "Search", "Campaign Manager", "Provisioning", and "Logout". The version number "Version: 0.1" is visible in the bottom left corner.

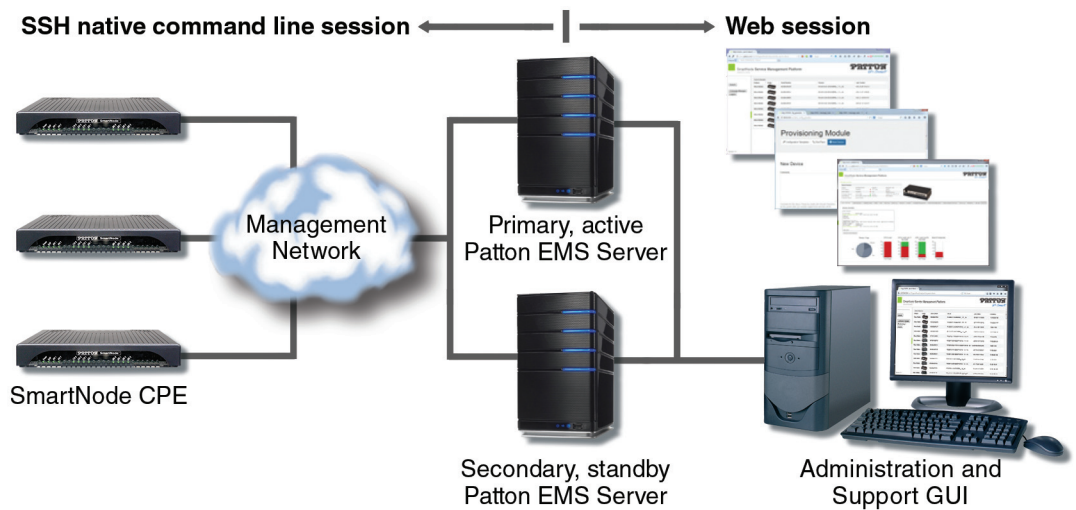
Analyze	Image	Serial Number	Version	Last Contact	IP Address
Show Details		00A0BA047386	R5.42009-11-18H323SIPBRI__1,11__NA	2015-01-15 14:39:23	10.128.208.132
Show Details		00A0BA052100	R5.42009-11-18H323SIPBRI__1,11__NA	2014-11-10 13:57:12	10.128.204.191
Show Details		00A0BA029A1F	R5.42009-11-18H323SIPFXSFXD__4,3__NA	2014-11-26 15:28:36	10.200.1.238
Show Details		00A0BA0920EB	R6.22012-07-13H323SIPBRI__1,11__NA	2014-12-16 16:58:13	10.128.204.216
Show Details		00A0BA0299EA	R6.22012-07-13H323SIPFXSFXD__4,3__NA	2015-01-15 12:07:36	10.128.20.62
Show Details		00A0BA02D0A9	R6.52014-03-05H323SIPFXSFXD__4,4__NA	2015-04-01 14:36:48	10.128.208.123
Show Details		00A0BA05E1A1	R5.T2010-06-29_RFE1314H323SIPFXSFXD__2,3__NA	2015-03-09 00:42:59	10.200.1.240
Show Details		00A0BA024F56	R6.22012-07-13H323SIPFXSFXD__4,3__NA	2014-12-12 10:35:37	10.128.20.26
Show Details		00A0BA029A14	R6.52014-03-05H323SIPFXSFXD__4,3__NA	2014-11-07 17:15:46	10.128.204.190
Show Details		00A0BA026728	R5.42009-11-18H323SIPBRI__1,4__NA	2015-03-24 15:33:48	10.128.20.35
Show Details		00A0BA024FAB	R6.52014-03-05H323SIPFXSFXD__4,3__NA	2014-11-20 11:22:36	10.128.190.69
Show Details		00A0BA02D056	R5.42009-11-18H323SIPBRI__1,4__NA	2014-12-16 16:58:35	10.128.190.182
Show Details		00A0BA051748	R6.22012-07-13H323SIPFXSFXD__4,4__NA	2015-03-24 15:33:12	10.128.190.187

# Patton Element Management System (EMS)

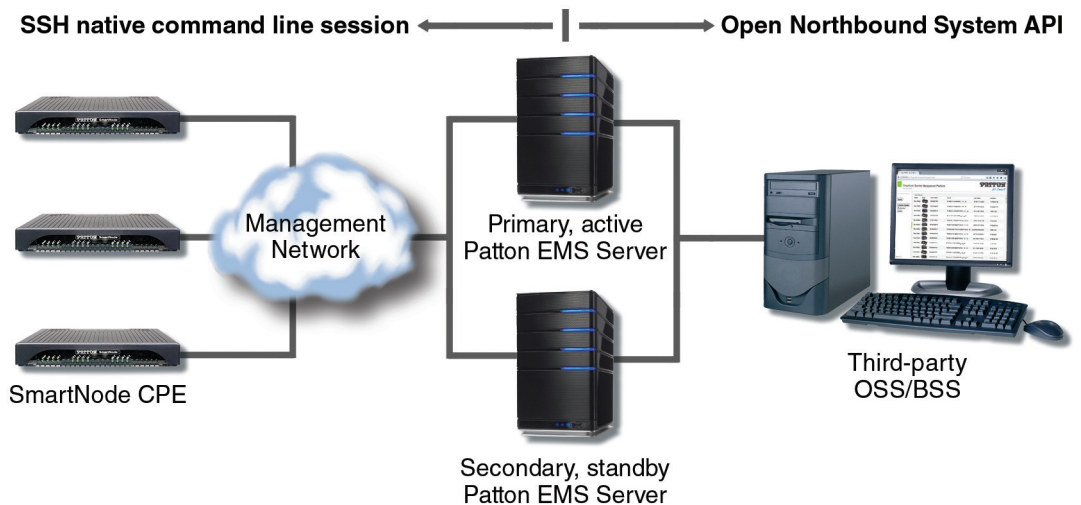
## Applications overview

The on-premise Patton EMS is available in the following options:

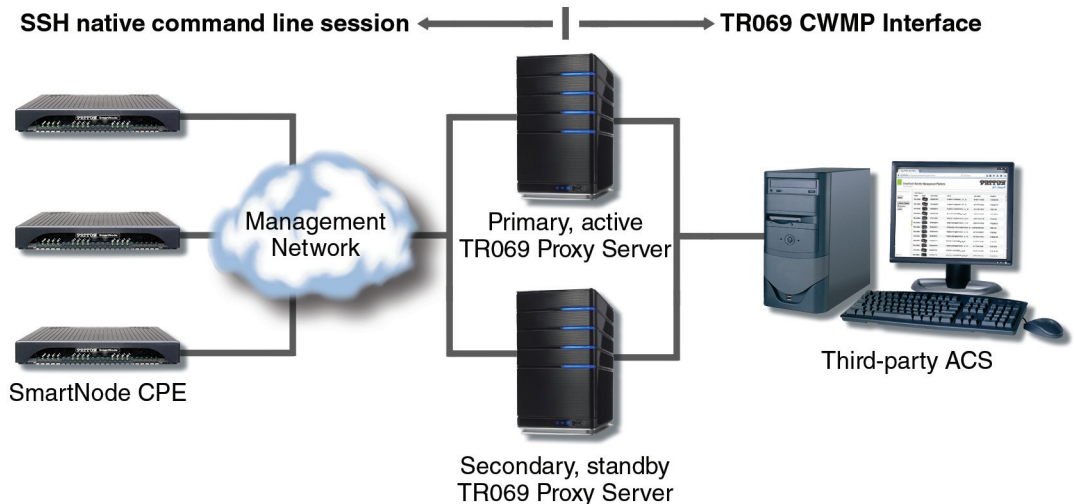
**Standalone**—The Patton EMS manages all installed SmartNode CPE devices. The management system provides a web GUI with a provisioning module, support portal and campaign manager.



**Integrated OSS/BSS**—The Patton EMS can be migrated into an available third-party operations support systems/business support systems (OSS/BSS).



**Patton TR069 Proxy Server Mode**—The Patton TR069 Proxy Server operates as a proxy that can be plugged into existing ACS infrastructures, delivering access to the features and states of non-TR069 devices.



# Patton Element Management System (EMS)

## Specifications\*

### System

- Remote device management
- Workflow engine, supporting inter-device management tasks
- Embedded permissions for Add, View, Change, Delete
- Administrative front ends, optionally fully customizable including language adaption with support of >100 languages
- Application Server including Object Database and optimized primary SQL storage
- Secondary SQL for consolidated custom data: Oracle 10/11, MySQL, PostgreSQL
- Optional XML-RPC, XML and SOAP back end interfaces, server and client, synchronous and asynchronous
- Optional embedded email, syslog, XML-RPC, SOAP, JMS clients
- Redundant system architecture for system reliability and system backup

### Supported devices

- All SmartNode 1k series models running SmartWare release SWR5.X and higher.
- Optional integration of further Patton and third party devices

### Protocols

- SSH, Telnet, HTTP, TR069 compliant northbound interface.
- Optional multiple NBI protocols.

### Provisioning

- Zero-touch provisioning
- Add new device form
- Configuration file delivery with http

### Administration

- Intelligent firmware management
- Campaign manager for mass software and configuration upgrade
- Device search engine with serial number, account information, software and hardware version,

- Configuration backup and restore, single box software upgrade, license administration

### Monitoring

- Short-time monitoring—troubleshooting device monitoring
- Account information, gateway type and status
- Ethernet, analogue telephony and ISDN port configuration and status
- IP LAN and WAN interface configuration and status
- IP routing configuration
- PPP and PPPoE configuration and status
- DHCP server, ACL, NAPT and Service Policy configuration and status
- SIP gateway configuration and registration status

### Configuration

- Account information
- Ethernet, analogue telephony and ISDN port
- IP LAN and WAN interface configuration
- IP routing table

- PPP subscriber settings
- ACL Layer 3 and 4 rules
- DHCP server settings
- SIP account data

### Performance

- Small size Patton EMS up to 1000 devices.
- Medium size Patton EMS from 1000 to 5000 devices
- Large size Patton EMS from 5000 devices

### Hardware and Operating System requirements

#### Hardware:

- Intel Core i7-920 Quad-Core Haswell 32 GB DDR3 RAM 2 x 2 TB SATA 6 Gb/s 7200 rpm HDD (Software-RAID 1)
- Operating system: Linux Debian

#### Virtual Machine:

- Operating system: Linux Debian stable version.
- Hard disk: 500GB
- RAM: 24GB RAM
- **Network:** 200 Mbps, minimum

## Ordering Info

**PEMS-100L:** Additional 100 device licenses for Element Management System, including installation

**PEMS-100LMF:** Annual Maintenance Fee for additional 100 device licenses for Element Management System, including installation, Software updates, Level 1–3 business hour support

**PEMS-L:** Patton Element Management System software large size, standard feature set, including: 1000 device licenses, 5 days installation, training and customization, no server HW included.

**PEMS-M:** Patton Element Management System software medium size, standard feature set, including: 1000 device licenses, 5 days installation, training and customization, no server HW included.

**PEMS-MMF:** Annual Maintenance Fee for medium size Element Management System (1000–5000 licenses) including: Software updates, Level 1–3 business hour support

**PEMS-S:** Patton Element Management System software small size, standard feature set, including: 100 device licenses, 5 days installation, training and customization, no server HW included.

**PEMS-SMF:** Annual Maintenance Fee for medium size Element Management System (100–1000 licenses) including: Software updates, Level 1–3 business hour support

**SVC-NETENG-HOUR:** Network and solution engineering hour rate



**Patton Electronics Co.**  
7622 Rickenbacker Drive  
Gaithersburg, Maryland 20879, USA  
Phone +1 301 975 1000  
Fax +1 301 869 9293  
E-mail [sales@patton.com](mailto:sales@patton.com)  
Web [www.patton.com](http://www.patton.com)

**Patton-Inalp Networks AG**  
Meriedweg 7  
CH-3172 Niederwangen, Switzerland  
Phone +41 (31) 985 25 25  
Fax +41 (31) 985 25 26  
E-mail [we@patton.com](mailto:we@patton.com)  
Web [www.patton.com](http://www.patton.com)

**Patton Hungary Zrt**  
Gábor Dénes utca 4., Infopark Building C  
Budapest H-1117, Hungary  
Phone +36 1 439 4840  
Fax +36 1 439 4844  
E-mail [ce@patton.com](mailto:ce@patton.com)  
Web [www.patton.com](http://www.patton.com)

07MEMS-DS2

Patton is a registered trademark, and is a trademark of Patton Electronics Company in the United States and other countries.

\* Specifications subject to change without notice.