

Unified Non Real-Time OpenRAN Controller

Uni-Manage with Advanced Reporting

Parallel Wireless Element Management System (EMS)

Key Features

- Enhanced Device Tracking and Management incorporating Network view, fault management and upgrade support.
- Performance Management with Flexible Dashboard and KPI reporting.
- User Management
- Fully functional EMS designed to run in a virtual environment or COTS based platform.

Key Benefits

- On-demand custom KPI generation
- Seamless integration with service providers' existing OSS
- EMS capabilities and value-added features easily administered through an intuitive, browser-based interface

Overview

Uni-Manage and Advanced Reporting are part of Unified Non Real-Time OpenRAN Controller. Uni-Manage is a web-based Element Management System (EMS) application for management and monitoring of all Parallel Wireless network elements. Uni-Manage is deployable on a standard Intel-based server as well as in a virtualized environment.

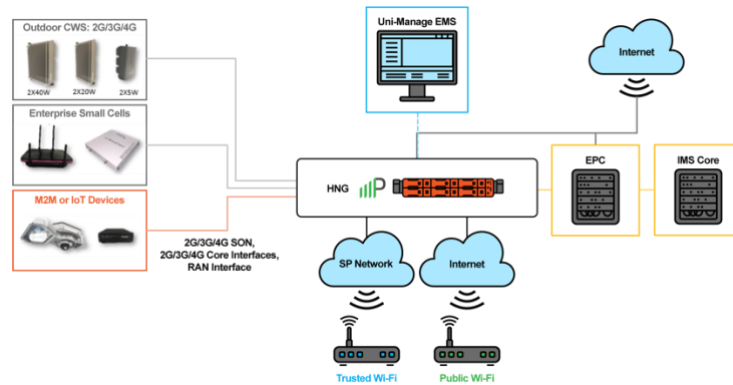


Figure 1: Uni-Manage in the Network

Uni-Manage consolidates and displays the alarms, statistics, inventory information, and health status of managed devices. Device deployment is simplified through auto-discovery of CWSs, once a HNG is configured.

The system allows for device grouping so that an operator can efficiently perform actions such as upgrades on a large number of devices.

Through the Advanced Reporting function, Uni-Manage provides a completely customizable dashboard with which an operator can analyze device statistics and create dashboards that will help immediately identify performance trends and potential issues within the network.

Key EMS Functions

Device Grouping

- Custom grouping capability to selectively manage small device groups within a large number of devices.
- Groups can be used to filter views across various functions such as Network Map, Alarm view and upgrade management.

Alarm Management

- Real-time reporting of alarms raised by all managed devices
- Support to trigger emails to specific personnel to reduce lead time to resolve an issue.

Device Upgrades

- Capability to schedule upgrades for groups of devices and track status in real-time.

User Management

- Security group capability so that multiple groups of user with varying security privileges can access and maintain the network.
- Support includes audit capability that tracks logs for each operation performed.

OSS / North-bound Interface Support

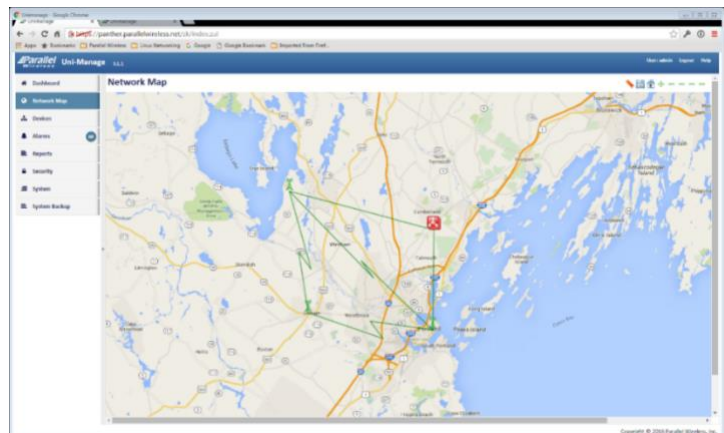
- Uni-Manage provides standardized interfaces to raise alarms (via SNMP) and provide statistics (via REST interface) for all managed devices.

Browser Support

- Latest version of Google Chrome, Mozilla Firefox, or Microsoft Internet Explorer

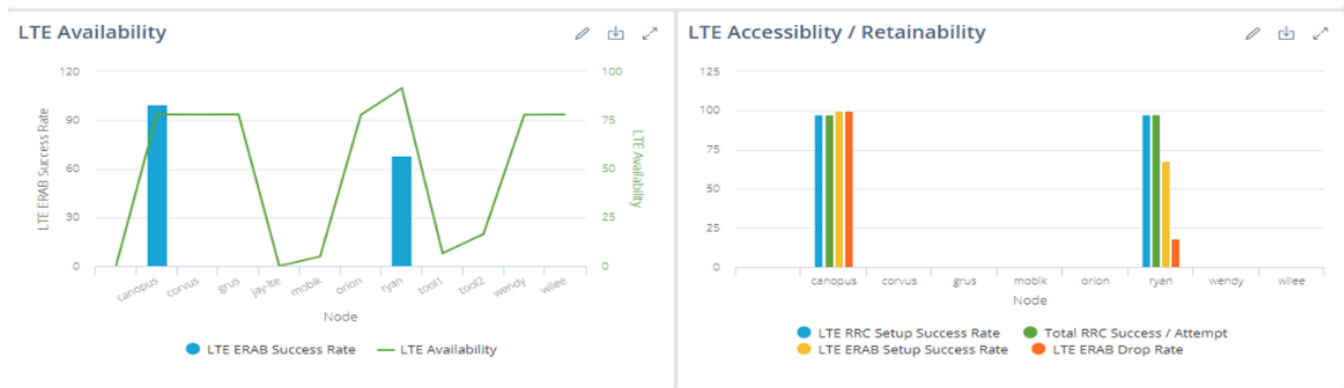
Graphical View for Enhanced Element/Device Tracking

With Map support, the operator will obtain a quick view into network elements details such as location, connectivity, alarm status and associated inventory details including device type, GPS location, serial number, installed radio modules.



Flexible Dashboard/KPI Reporting

Daily KPI Dashboard



A user can run real-time and historical reports using all of the statistics collected by Uni-Manage from the HNG and its CWS', including viewing trends on network capacity, usage, throughput, performance, and errors/issues. Uni-Manage with Advanced Reporting supports flexible dashboards where all aspects such as KPI formula, chart type and report structure are completely customizable. Dashboards can be modified, exported or imported to enable ease of maintenance and portability.

Deployment Options

The Parallel Wireless EMS can be deployed in a virtualized environment (Linux KVM or VMware ESXi) or on bare-metal (standard Intel-based Enterprise servers).

Recommended EMS Hardware Specifications

Example of recommended configuration for a mid-sized production network. Specific server requirements vary depending on a number of factors, including number of subscribers, number of radios/cells, Call Model, RAT combinations, etc.

- Intel x86-based Enterprise server (i.e.: HPE DL360 Gen10 or equivalent)
- "Broadwell" processor family or newer
- Processors: 2 x Intel Xeon (10 physical cores per processor), 2.2 GHz
- Hyper-threading (HT) enabled
- Memory: 128 GB RAM
- Storage: 1 TB, recommended in RAID configuration
- Networking: 4 x 1GbE NICs
- Out of band power management API (e.g. IPMI, ILO, etc.)

For more information, please e-mail orders@parallelwireless.com.