

VectaStar NMS

A GUIDE TO VECTASTAR NETWORK MANAGEMENT

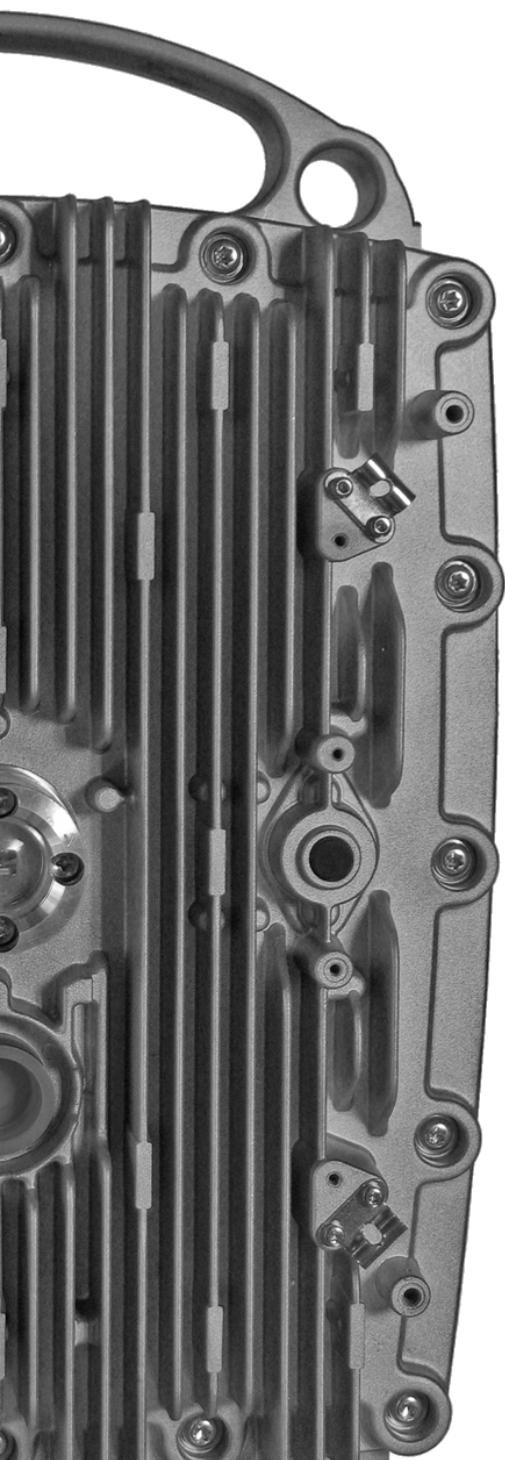
VectaStar networks are managed using the VectaStar Network Management System (VNMS), which provides a graphical based environment for operators and service providers to configure, manage and monitor their VectaStar network.

The VNMS is supplied as a complete solution whereby the VNMS software is shipped pre-installed on a Dell R300 PowerEdge server. The PowerEdge server can be installed in an industry standard IT equipment rack, and will normally be installed at the Network Operations Centre (NOC).

The VNMS communicates with the individual VectaStar Base Stations via SNMP / IP which can be transported in-band or out-of-band across the operator's network e.g. over Ethernet on a management LAN or over a VC-4 as an RFC1483 bridge.

The VNMS offers a range of key benefits for operators and service providers; specifically:

- Provides high level visibility of a VectaStar network from a centralised location; operators can monitor the whole network from a single location
- Offers a single interface to higher order management systems – industry standard SNMP-based northbound interface
- Enables comprehensive reporting, providing network status, performance monitoring and statistics
- Scalable solution: easy to incorporate, configure and monitor new network elements
- Simple to use; only basic IT knowledge is required to install and configure the system Introduction...



1 KEY FEATURES

Northbound Interface

The VNMS provides an SNMP Northbound interface into a higher order NMS platform. VectaStar Base Stations and CPEs already provide distributed SNMP northbound interfaces and the VNMS workstation consolidates this as well as implementing additional MIB objects to simplify discovery of VectaStar network elements by higher-order management systems.

Long Term Statistics

For each network element, key data such as the received power level, SNR and data rate is polled at 60 second intervals. This data is stored in a Round-Robin database and is accessible graphically via a web browser interface. Additionally, the data may be exported for use in third-party tools and applications.

Spatial Overview

The VNMS displays the location of the installed equipment positioned on an interactive map of the network. Right clicking on a base station element indicates the CPEs attached to the base station. Double clicking on a CPE will launch the configuration tool for that CPE where it is possible to amend and save configuration settings.

Automated Back-ups

The VNMS automatically backs-up the configuration of all VectaStar network elements that it is configured to manage.

Centralised Alarm Database

An alarm server runs on the VNMS and the addition of a base station will automatically configure that base station to send its alarms to the VNMS workstation. When querying alarms for a network element, the tools use the VNMS alarm server rather than talking to individual Base Stations directly. Other alarm features include:

- A comprehensive alarm browser which shows alarm date/time, source and severity
- Alarm suppression and filtering on a range of parameters

Reporting and Scripting

The environment offered by the VNMS means that it is easy to develop scripts that create reports, and run these scripts periodically e.g. scripts that perform functions such as service instantiation or modification, can reliably be incorporated into the NMS and will be driven by customer feedback.

Import and Export

A facility is provided to export the base station's service configuration to a CSV format file, and re-import the same. This enables fast and accurate provisioning of large sets of services / CPEs.

2 FCAPS REFERENCE

FCAPS is the ISO Telecommunications Management Network model and framework for network management. FCAPS is an acronym for Fault, Configuration, Accounting, Performance and Security which are the management categories into which the ISO model defines network management tasks.

Fault Management

Faults are indicated via SNMP traps which are captured in the centralized alarm database within VNMS and which can also be forwarded to any number of 3rd party Trap Servers. Comprehensive documentation is available describing each TRAP, possible causes and relevant required corrective action.

Configuration Management

The VNMS has a number of GUI applications which allow the user to configure the relevant VectaStar network node and retrieve current performance parameters e.g. create a service flow or monitor bandwidth or signal level etc.

Accounting Management

VectaStar does not have a billing interface, but usage statistics, e.g. Octet counts, are available for interfaces.

Performance Management

All relevant radio parameters are available via SNMP MIBs e.g. CNR, Power levels, bandwidth etc. The key parameters are monitored and recorded for long term analysis.

Security Management

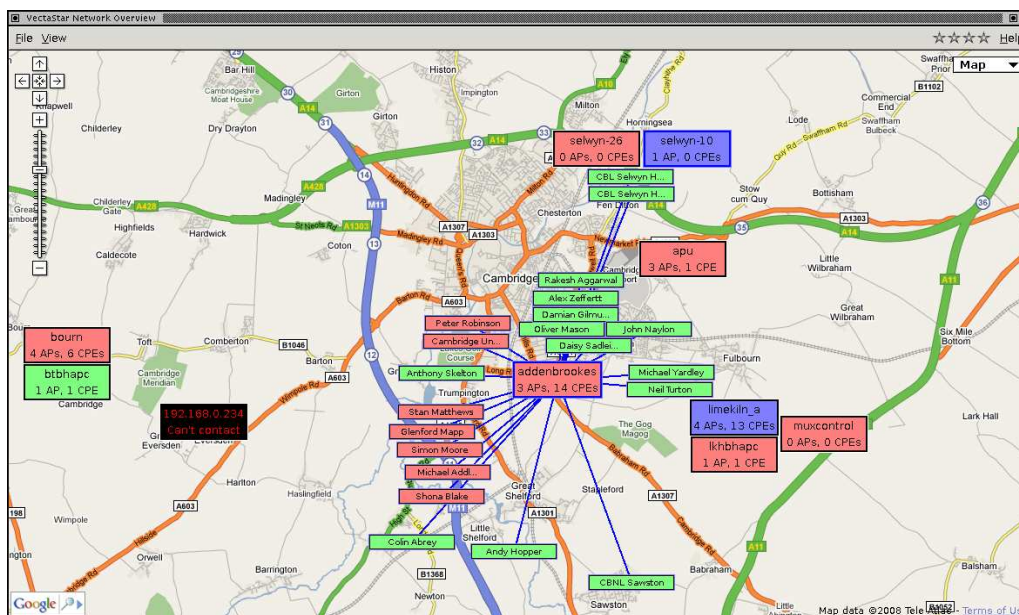
VectaStar uses SNMP and SSH for access. For security conscious operators, SNMP v3c can be used which supports encryption. The VNMS supports user classes, e.g. read-only and read-write access, as well as logging of user activity.

3 PRODUCT OVERVIEW

A brief overview of some of the features of VNMS is shown below:

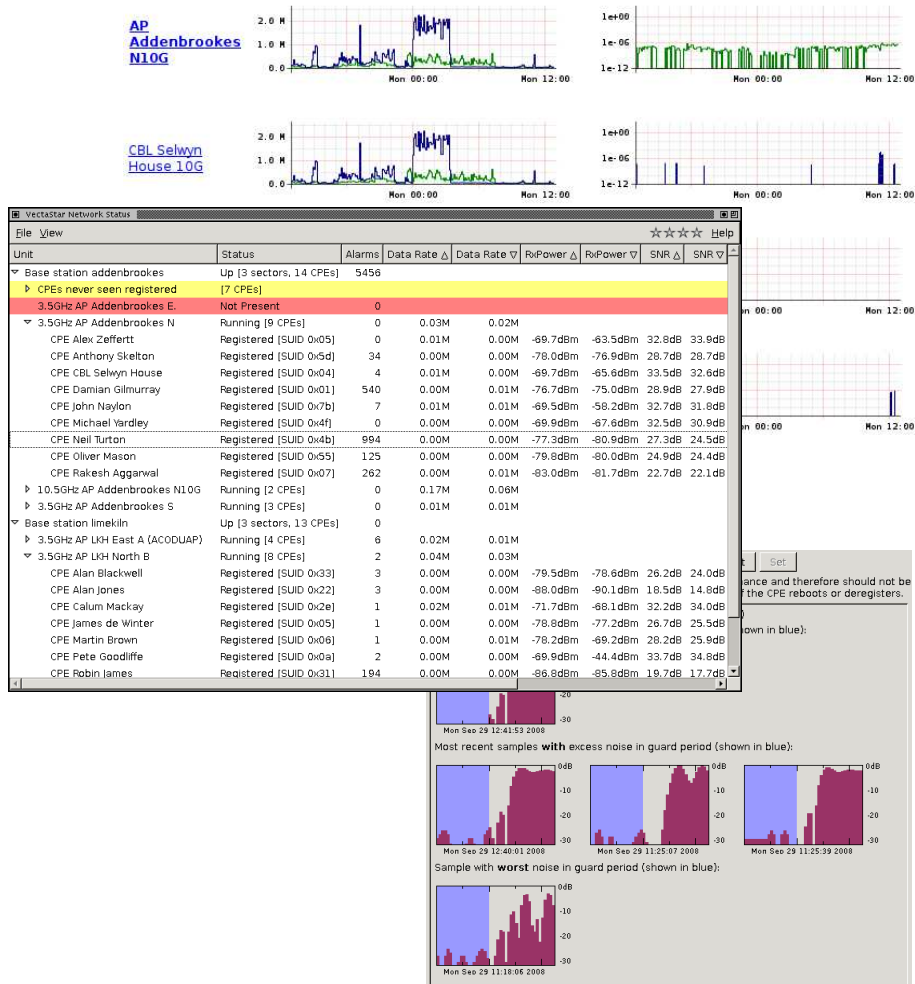
vsview

This application provides a comprehensive visual overview of the VectaStar network. The location of the installed equipment is presented against a map of the installed location. Right clicking on a base station element indicates the CPEs attached to the base station. Double clicking on a CPE will launch the configuration tool, from which it is possible to amend and save configuration settings.



vsnet

This application is used to configure, manage and monitor network performance. Once the application is launched, the user can select the buttons on the right hand side of the screen to perform the required task. Selected screenshots are shown below;



4 NMS REDUNDANCY

The VectaStar NMS can be deployed in a parallel configuration with two NMS servers running on the same network to provide resilience in the event one becomes inoperable or disconnected from the network.

The presence of the NMS is not required for services to operate, therefore the failure of an NMS server does not impact on network stability or availability, but whilst the NMS is unavailable, Network Management will be impaired i.e. addition of new services or monitoring of SLA metrics may be unavailable.

If the operator has more than one NoC or requires high resilience network monitoring, then it is recommended that two NMS servers are installed.

To confirm the latest product information and to find your nearest Cambridge Broadband Networks representative, please contact our head office on sales@cbnl.com or visit <http://www.cbnl.com>

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