FW-000010AV
Release 3.16.1

Software Release Notification

VMS 3.16.1 Software Release

Applicability
Vipersat Management System software release (FW-0000010AV) for networking IP modems. Includes all related software and client applications, ViperView.

Revision History		
Rev #	**Description**	**Date**
AA	Release Version - 3.11.2.3194	05/27/2013
AB	Release Version - 3.11.3.3264	08/26/2013
AC	Release Version - 3.12.0.3462	01/24/2014
AD	Release Version - 3.12.1.3493	04/04/2014
AE	Release Version - 3.12.2.3554	08/01/2014
AF	Release Version - 3.12.3.3588	08/29/2014
AG	Release Version - 3.12.4.3657	02/13/2015
AH	Release Version - 3.13.0.3886	04/08/2015
AJ	Release Version - 3.12.5.3735	08/17/2015
AK	Release Version - 3.13.1.4263	10/23/2015
AL	Release Version - 3.13.2.4534	08/15/2016
AM	Release Version - 3.14.0.4889	01/23/2017
AN	Release Version - 3.14.1.4907	07/28/2017
AP	Release Version - 3.15.0.5489	07/31/2017
AR	Release Version - 3.15.1.5555	12/11/2017
AT	Release Version - 3.15.1.5564	05/18/2018
AU	Release Version - 3.16.0.6366	07/03/2018
AV	Release Version - 3.16.1.6761	04/15/2019

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1.0 Introduction

VMS Generation 3 version 16.1 is the 31th revision of the optimized dynamic bandwidth manager software. Comtech EF Data has continued to enhance the VMS on customer feedback and experience gained from using this network software. The changes in the 3.16.1 release are the result of real world implementations and customer applications.

NOTE: VMS FW-0000010AV does not contain Management Encryption Module. Please contact CEFD customer support for details on how to get this option.

Feature Changes

2.0 Dynamic QoS

Normally the QoS configuration is managed statically by editing both the hub outbound and remote return path and in fixed network architectures works quite well. However, in a mobile/roaming environment the practice of manually editing QoS entries can be tedious and time consuming, not to mention that every outbound will require an entry for each roaming remote. This could quickly overrun the HTO QoS Group list in large networks.

The new dynamic feature provides control settings for both outbound and inbound modems to automatically facilitate propagation of QoS Group entries as the remote moves from one Service Area to another.

The inbound configuration settings can either be static or mixed depending on updates from the HTO. As remotes enter the network with dynamic QoS enabled they send QoS configuration data to the HTO updating the Capacity Group table information. On any change to the QoS configuration the HTO forwards updates to the VMS. These updates can add, remove or modify entries for the inbound groups. The VMS initially maintains static entries comparing differences and merging them into the current QoS list. This dynamic operation allows the remote to move its configuration from SA to SA clearing old entries on departure.

3.0 Hub Resiliency Modifications

3.1 HDNA Advanced Recovery (Attempt Recovery)

As part of the hub device redundancy, the auto rearming is a function that may not always be viable due to hardware mismatch restrictions. As an extra aid to prevent having to manually re-arm the redundancy group, a new feature was added. Advanced Recovery “attempt” works as an external watchdog utilizing the existent device Heartbeat to VMS and would trigger a hard reset to the failed device and wait for 4 minutes before moving on with the redundancy failover to the spare slot. With this, the failover to spare devices will only happen if the failed device or devices booted back after the power cycle with an alarm or if it didn’t respond after rebooting.

3.2 RF Matrix Switch Port Virtualization

In device redundancy added a list of virtual port connections that allow the user to push the desired configuration to the Quintech Matrix switch(s) without having to read the existent configuration first, and therefore the customer benefit would be to better utilize the amount of ports without the need to map the inputs to outputs connections with the matrix. In this case, when using virtual ports, we assume the input to output connection to the same port number.

3.3 QUINTECH QX1-XTREME 32 Device Driver

Added SNMP device driver support for QX1-XTREME 32. The redundancy manager supports both QRM and QX1 even in a mixed configuration.

3.4 Autonomous VMS Backup

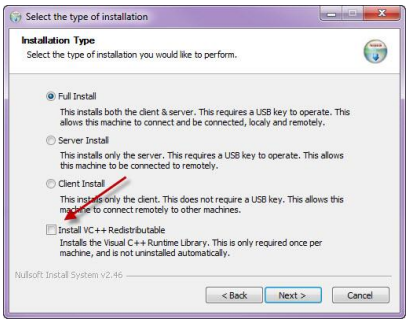
The system automatically generates a vms-backup file at the same time of the automatic redundancy synchronization. The filename will include the version when it was taken and the date. It will only keep one file per day, when any extra manual synchronizations are performed, the file gets updated and will only create a new one the following day.

4.0 Software Installation / Upgrade Instructions

Refer to VMS Users Guide
Vipersat Management System
User's Guide, Manual MN/22156_r16_VMS, Chapter 2 – Installing VMS

5.0 Installation Precaution

This release of 3.16.1 may require a onetime supporting library update if updating from 3.12.x or older. As part of the installation process there is an option to "Install VC ++ Redistributable" files. It is **very important** that this onetime machine (system) update is accomplished before running 3.13.2. After update, any subsequent releases will not require this selection. *Note during this update the installation process will take a longer time than normal*. ***Also, if it is unknown if this update was already applied, it will not harm the system if reapplied.***



If any previous versions of AdvVSAT or Heights device driver were installed, uninstall before upgrading to new installation. If there are new additional drivers, install after VMS. Note drivers must be installed with VOS service not running.

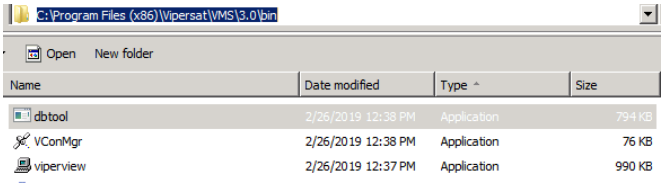
5.1 Hub Resiliency Database Update

VMS 3.16.1 introduces new checks and validations of the hub resiliency at the REST interface level, because of this it may be possible that previously acceptable 3.16.0 configurations for non-primary slots are no longer valid.

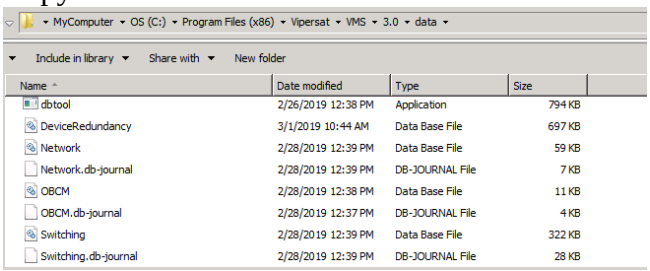
During the 3.16.0 (or 3.16.0-2) to 3.16.1 upgrade may be required to use the dbtool application to verify if there are any problems with the database integrity, and if so, it would be addressed at that time.

Procedure:

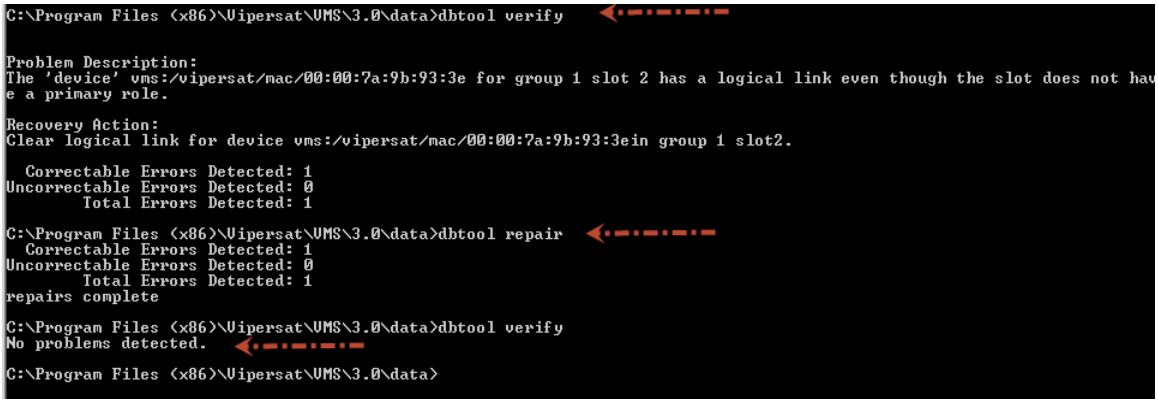
1. Take VMS backup
2. Disable Auto Activate under VMS Redundancy
3. Uninstall VMS 3.16.0
4. Install VMS 3.16.1
5. dbtool is updated to match the 3.16.1 database, it's included in the install under the *\bin* folder



6. Copy the dbtool executable to the *\data* folder and open a command prompt from there



7. At the data folder command prompt, issue the command > "dbtool verify"
   If any problems are detected, then issue command > "dbtool repair"
8. Verify again to ensure that it was fixed.



```
C:\Program Files (x86)\Vipersat\VMS\3.0\data>dbtool verify


Problem Description:
The 'device' vms:/vipersat/mac/00:00:7a:9b:93:3e for group 1 slot 2 has a logical link even though the slot does not hav
e a primary role.

Recovery Action:
Clear logical link for device vms:/vipersat/mac/00:00:7a:9b:93:3ein group 1 slot2.

  Correctable Errors Detected: 1
Uncorrectable Errors Detected: 0
        Total Errors Detected: 1

C:\Program Files (x86)\Vipersat\VMS\3.0\data>dbtool repair
  Correctable Errors Detected: 1
Uncorrectable Errors Detected: 0
        Total Errors Detected: 1
repairs complete

C:\Program Files (x86)\Vipersat\VMS\3.0\data>dbtool verify
No problems detected.

C:\Program Files (x86)\Vipersat\VMS\3.0\data>
```

9. Start VMS service
10. Activate VMS

6.0 Package Updates

This installation package includes the following component updates:

- VMS Core/Client v3.16.1.6761 (Installed Service & Client Application)
- VMS v3.16.1.6761 MIB Files
- 570/564 Parameter Editor (.dll) support v1.5.4.77 - v1.6.22.161 (HDLC WAN Framing only)
- 570AL/564AL Parameter Editor (.dll) support v1.3.1.159 - v1.5.2.170
- 5650A/NP Parameter Editor (.dll) support v1.4.0.57 - v1.11.2.152
- AdvVSAT/Heights Series Configuration Editor (.dll's) support (v1.5.2 – v1.7.1.1), (v2.1.1 – v2.5.x, v3.1.x, 3.3.x, 3.4.x)

Note all older parameter editor versions are currently supported in this release. All above noted editors are integral to this version of VMS software, however as newer version become available they are supported as external driver install updates. Contact PSO service department for installs when available.

6.1 Supported Devices

VMS version 3.16.1 includes support the following devices:

Device	Management
CDM-570/570L	Inband/OOB
CDM-570AL	Inband/OOB
CDD-564/564L/562L	Inband
CDD-564AL/562AL	Inband
SLM-5650A w/NP	Inband/OOB
SLM-5650AD w/NP	Inband/OOB
CTOG-250/CDM-800	Managed
CDM-840	Inband
CDD-880	Inband
HTO-1/HTX-450	Managed
HRX-16/64/H-PRO	Inband
H8/16/32/64/H-PRO/H-PLUS, H-PICO	Inband
ROSS	Managed
CDM-600/600L	OOB
CDM-700	OOB
CDM-750	OOB
SLM-5650	OOB
CDM-625	OOB
CDM-625A	OOB
CDM-760	OOB
SENTRY3/SENTRY4 AC Power Management CDU	Managed
APC Power Management PDU	Managed
QUINTECH RF Matrix Switch, QRM & QX1-XTREME 32	Managed
Cisco Catalyst 3850	Managed

7.0 List of Fixed Problems and Modifications

The following lists problems that were corrected in this release:

These corrections within this release are based on previous build versions, 3.16.1 an older.

Ticket #1522 – Memory leak related to site link management.
Fixed internal memory leak caused by remote lock/unlock state changes. Correction merge from 3.16.0-2 patch build.

Ticket #1611 – Site with device which subnet has been removed may crash the service.
VOS would crash if a unit that was removed from its subnet while attempting a dSCPC switch.

Ticket #1616 – Setting an Exclusion Zone via NetVue crashes VOS.
Frequency pool exclusion zone posting from NetVue caused VMS to crash, however a workaround was to use ViperView client. The interface call between NetVue and VMS was corrected the handle the configuration structure resolving the crash.

Ticket #1639 – Improper SHOD distribution takedown multi-command structure
VMS was incorrectly sending a generic parameter group of settings to a list of all remotes involved in the mesh, but overwriting the demod index of the last remote only instead of keeping the multicast message separated and maintaining the index for the remote for each destination IP.

Tuning commands were always being sent correctly, only the recovery process utilized a simplified version of the summarized list of remotes in one same command. The switching engine has always kept good track of the allocatable devices, but the part of the code packetizing the multicast command had a problem in the function to group the remotes list. ***See "Application note VMS R16.0-1.docx"***

Ticket #1641 – Issue in device redundancy with "inactive" device bindings crashing the server.
VOS would crash while attempting to take a backup configuration of an inactive device. The system will mark a device inactive if the primary slot that had less device hardware than the spare slot.

Ticket #1643 – QRM SNMP port polling contention between NetVue and VMS. There is a possibility that matrix switch command poll responses could be out sync with polling managers, NetVue/VMS potentially sending the wrong data to Redundancy manager causing switchover failures. Modified the redundancy QRM driver to use TCP connections instead of SNMP removing any possible contention with NetVue SNMP polls.

Ticket #1646 – Issue in device redundancy that would prevent a slot with "inactive" device bindings from failing over to a spare. It is possible to failover to a space slot, even if the slot had no PDU power strip bindings associated to the slot.

Ticket #1652 – Device redundancy database corrupted during internal exception.

Protected part of the code that would abort in the middle of the process of writing a file update leaving the data truncated.

8.0 Version Compatibility

The following is the list of all fully compatible release versions:

MODEL	BASE MODEM VERSION	IP INTERFACE VERSION	TRANSEC	NOTES
NetVue		3.3.0		Interface v6.0
CDM-570/570L	1.6.19	(Ver-1) 1.6.23 (Ver-2) 2.6.23		Inband Unit Support
CDD-56x/56xL		1.6.23		Inband Unit Support
SLM-5650A, B	1.4.3	1.11.2	1.2.0	Inband Unit Support
CDM-570AL	1.5.2	1.5.2		Inband Unit Support
CDD-56xAL		1.5.2		Inband Unit Support
SLM-5650AD	1.4.3	1.11.2	1.2.0	Inband Unit Support
AdvVSAT Series		1.4.x – 1.7.1.1		Inband Unit Support
Heights Series		1.6.1 – 2.5.x		Inband Unit Support, HTO/HTX, HRX, H
Heights Series – HDNA		3.1.x – 3.4.x		Inband Unit Support, HTO/HTX, HRX, H
ROSS		1.5.1.1113		Managed, CDM-570
CDM-600	2.3.1	CiM-25, 1.0.8		OOB Unit Support
CDM-600L	1.5.7	CiM-25, 1.0.5		OOB Unit Support
CDM-625	2.2.4	1.3.6		OOB Unit Support
CDM-625A	1.4.1	1.4.9		OOB Unit Support
CDM-760		1.2.11		OOB Unit Support
Server Tech – PDU Sentry 3		7.1b		SNMP Managed Device, Redundancy Manager
Server Tech – PDU Sentry 4		8.0n		SNMP Managed Device, Redundancy Manager
QUINTECH QRM		4.53		SNMP Managed Device, Redundancy Manager
QUINTECH QX1-XTREME		2.02		SNMP Managed Device, Redundancy Manager
Cisco Catalyst – 3850		16.3.x		SNMP Managed Device, Redundancy Manager

Note all older versions not listed are still supported but may not operate correctly with newer features. For additional compatibility questions of versions not listed, contact your local support representative.

9.0 Known Issue(s)

Functional

Accepted Functional Known Issues –

Ticket #1587 – Multiple reverts commands sent to remote when shutting down HS ECM
Description:
If the configuration supports two or more Entry channels and each channel is on a separate HRX unit. Disabling (power-down) the remotes HS ECM unit and reverting the remote causes the switching engine to issue multiple reverts.

With the HS ECM down, the switching engine issues revert switch command and expects to get a response. Each response failure issues another revert, up to three retries.
Workaround:
None

Note for more detailed information on issues listed above please contact your Comtech EF Data representative.