Vanguard 7300 Series Routers
Software Release Notice

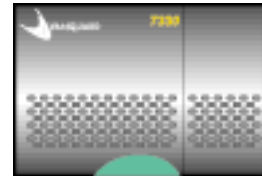## Vanguard Applications Ware 6.0 Point Release 01B

Overview

What is in this Notice?

This Software Release Notice provides information about Release 6.0 Point Release 01B of the operating software for the Vanguard 7300 Series platforms. This release applies only to the Vanguard 7300 Series.

Vanguard Model 7310   **Vanguard Model 7330**

Figure 1. Vanguard 7300 Series Platforms

T0249-01 A

In This Notice

Topic	See Page

Token Ring Card Support

Introduction

The new feature available for 6.0 Point Release 01B is briefly described below. This section also lists where to find user documentation that contains detailed explanations of this feature.

Documentation on the Web

You can find a detailed description of the new Release 6.0 Point Release 01B feature in the referenced document at the Vanguard Managed Solutions web site:

http://www.vanguardms.com/documentation

Release 6.0 Point Release 01B Feature

The Vanguard 7300 Series has been enhanced to include Token Ring Card Support. This card provides two 4/16Mbps token ring ports for the 7300 platform. This card conforms to the 802.5 standard for token ring. Each port is independently operated at either 4/16Mbps. Either a UTP or STP cable can be connected to the appropriate port. The cable type is automatically selected. A standard RJ45 connector is provided for UTP and a standard DB9 connector is provided for STP cables.

Warning

Attaching CTP cable to UTP port damages token ring card. Make sure you attach the CTP cable to the CTP port.

For more information, refer to the *7300 Installation Manual* (Part Number T0185).

6.0 Point Release 01B Software Capabilities

Introduction   This table lists the software capabilities of the Vanguard 7300 Series of products available with 6.0 Point Release 01B:

Area	*Key Features*
IP	• TCP/IP, UDP, PPP • IP, RIP1/RIP2, OSPF, BGP-4 • Classless Inter-domain Routing (CIDR) • Network Address Translation (NAT) • IP Multicast/Broadcast • IPX • Real-Time Transport Protocol (RTP) Header Compression • OnNet Proxy (Router Standby Protocol) • Multiple IP Addresses per Physical Interface
ATM	• Full User to Network Interface (UNI) • DS-3 (45 Mbps) and E3 (34 Mbps) • ATM Adaption Layer 5 (AAL5) • Constant Bit Rate (CBR) • Unspecified Bit Rate (UBR) • Variable Bit Rate (VBR - real time and non-real time) • Up to 4000 Virtual Channel Connections (VCC) • FRF.8 Transparent Mode • Annex G Termination • SNMP for ATM

Area	Key Features *(continued)*
QoS Optimizes Data/Voice/Video	• Packet Classification: source address, destination address, source port, destination port, applications protocol • Policy Based Routing • IP Packet Filtering • Fast Path for Voice • Differentiated Services • Accelerated IP Forwarding • Fairness Algorithm with Traffic Shaping • Time of Week • Frame Relay PVC and SVC • IP TOS (Type of Service) • IP QOS (Type of Service) • SNMP for IP QoS
Packet Voice	• Voice over IP, Voice over Frame Relay, Voice over IP over ATM (All interoperable within the same product) • Voice compression (minimizing bandwidth requirements) • Digital private branch exchange (PBX) and Public Switched Telephone Network (PSTN) connections • G.711, G723.1, G.729a, H.323v1 and H.323v2 VoIP signaling • Voice Broadcast • Up to 336/420 T1/E1 Voice Channels • Q.SIG Signaling • PRI Q.SIG Supplementary Services • Group III fax • Dynamic Modem • Gatekeeper Ready • Centralized Voice Switching Table
Digital Voice	• T1/E1 and ISDN
IBM Networking	• SNA/SDLC for serial connections • AS/400 5494 Communications Server • BSC 3270-to-SNA Conversion • BSC 2780/3780-to-LU0 Conversion
Added Services	• PPP, Multi-link PPP (synchronous only) • TBOP • SoTCP • Link Backup (via alternate serial ports and/or ISDN PRI)

7300 Series Software Configuration Limits

Introduction

This section describes the software configuration limits for the Vanguard 7300.

Configuration Limits

This table lists the software configuration limits for:

- Physical Ports (physical port counts are set by software, not the actual number of physical ports)
- Frame Relay
- Sessions
- Network Services
- LAN - (IP specific)
- Voice
- SNA/IBM Support

7300 Series Software Configuration	Maximum Limits 6.0
Physical Port	
Physical ports	88
Ethernet ports per node (performance limited at 100MB speed per port)	5
Total LAN ports (Ethernet) per node (not bridge port support count)	5
Devices supported per Ethernet segment (Relevant to Bridge operation)	255
High speed (V.35) serial links per node	56
PRI ports (data only) per node	84
T1/E1/PRI voice only ports per node	14
T3/E3 ATM ports per node	2
Voice circuits per voice server card	60
Number voice calls per node (Number shown is E1 max.)	420
Number voice calls per node (Number shown is T1 max.)	336
Frame Relay	
Number of DLCIs per FR Port	820
Number of PVCs per FR Annex-G station	128
Number of SVCs per FR Annex-G station	512
Number of voice SVC per Annex-G station	15
Number of DLCIs per node	8,000
Session	
Number of LCON	2,000
Number of Virtual Ports (FR, X25, PPP, Voice)	2,000

7300 Series Software Configuration (continued)	*Maximum Limits 6.0*
Number of multi-link PPP profiles	600
Number of UDP (soTCP) sessions terminating in the node	2,000
Number of TCP (soTCP) sessions terminating in the node	2,000
Number of simultaneous calls per node	8,000
Network Services	
Number of Network Services Tables Entries	1,000
Number of PVCs table entries	2,000
Number of mnemonic table entries	2,000
Number of Switch Service table entries	1,024
Number of X25 routing table entries	2,000
LAN IP (Specific)	
Routing table size	15,000
Routing Cache	512
Accelerated/ Aggregated Route cache	512
Number of LCONs	2,000
Number of Interfaces	1,000
Access Control List table size	255
Policy based routing table size	255
Static ARP table	255
Number of static routes	1,024
RIP route control table	255
NAT table size	255
IP Multicast Tables size	255
CIDR: RIP aggregate table	255
CIDR: Multihome table size	255
Voice	
Number of voice switching table entries	10,000
SNA/IBM Support	
Number of stations per LAN interface (SLAC) - *Note: Two LAN interfaces allowed per node, 1,000 stations per interface, 2,000 maximum stations per node.*	1,000
Additional Limits	
Max. number of bridge links	250

7300 Series Software Configuration (continued)	Maximum Limits 6.0
Max. queue size in ARP	50
Max. number of IPX interfaces	1,000
Number of OSPF routes	7,500
Max. SVCs per SoTCP session	64
Max. Total Data SVCs (SoTCP)	2,000
Max. Total Voice SVCs (SoTCP)	2,000
IP Forwarding Table Size	255
UDP Forwarding Table Size	255
ATM Stations	4,000
Transparent Bridge Forwarding Table Size	8,000
Max. number of OSPF interfaces	255
Max. number of PPP switched links	30
BGP Policy Table	2,048
BGP to OSPF Import Policy Table	1,024
BGP Maximum peers	128
Maximum FRST Entries	4,000
SAR Profile	500
X25 Profile	500

Installing Software Images and Bootprom Software Updates

Introduction

This section provides instructions for Coldloading the software images and Bootprom using Procomm Communication software.

⚠️ **Caution**

Procomm Procedure

Use the steps in this procedure to coldload the software images or Bootprom using Procomm Communication software:

■**Note**

Boot Prom revision 1.50 is current for release 6.0 Point Release 01B software on the Vanguard 7300 Series.

1) To determine the current version of Bootprom loaded on your Vanguard, perform these steps:

Step	*Action*
a)	Access the Console Terminal Program's (CTP) Main Menu.
b)	Select Option 5, **Status/statistics**.
c)	Select Option 1, **Node Stat**, from the Status/statistics menu. The Node Stats' displays the Bootprom Revision: 7300 Series Examples: Version 1.10, 1.11, 1.30, 1.40 or Version 1.50. ■**Note** Refer to the Bootprom Directory table in Step 9.

```
Node:          Address: 200              Date:  8-MAR-2001  Time: 11:48:08
Detailed Node Statistics                              Page:  1 of 11

Product Type:          VANGUARD 7310

Bootprom Revision:     V1.30        ◄────────────

Running Software Image:  V5.4tP08Y4_MS_7310 (6-Mar-2001 15:28:20)
               Size:    7313580 bytes
Current Software Image:  V5.4tP08Y1_MS_7310  Size: 5393280 bytes
Alternate Software Image: V5.4tP08Y4_MS_7310  Size: 5391288 bytes
The Software will reboot to alte_img.

Last power up or reset:      07-MAR-2001 17:33:56
Last node boot:              07-MAR-2001 17:42:29
Last watch-dog timeout event: <none>
Last configuration change:   07-MAR-2001 16:20:25

The Running Configuration uses CURRENT. A Reboot will use CURRENT.
Compressed Configuration:   1964800 bytes avail.   4556 bytes (0%) used
Uncompressed Configuration: 4063232 bytes avail.  13018 bytes (0%) used

Press any key to continue ( ESC to exit ) ...
```

Figure 2. Bootprom Revision Example

2) Use the Procomm application to update the software images or Bootprom. Open the Procomm application to get a Data Terminal Window. The settings should be 9.6k, N-8-1, and RAW-ASCII transfer mode. Use a regular Control Terminal Port (CTP) connection.

3) Activate a Force Cold-Load (16.12.y.y):

Flash Memory->Force-Cold-Load->yes

Cold Boot the node (7.5.y):

Boot->Node (cold)->yes

A Download Coldloader prompt from the (CTP) displays.

4) Choose an appropriate speed coldloader indicated in the current bank column of the table below. Typically the **c73cv115.xrc** file is used.

Current Bank	Kbps
c73cv115.xrc	115
c73cv192.xrc	19.2
c73cv288.xrc	28.8
c73cv384.xrc	38.4
c73cv576.xrc	57.6
c73cv96.xrc	9.6

5) Download from the CD-ROM the appropriate coldloader. Example:

   \Vanguard\SFW_IMGS\73*0\COLDLOAD\T10BP1**

■**Note**
   You must use the coldloader from the current bank column of the table
   in step 4.

6) When using the Procomm application:

   • Select Send File from the Procomm Data Menu
   • Select RAW ASCII transfer mode
   • Select 9600 for the Coldloader speed

   The following figures show the Procomm application.

   ■**Note**
   To be sure you are in RAW ASCII transfer mode, when in Procomm, check the
   setup file. **Options->Data Options**
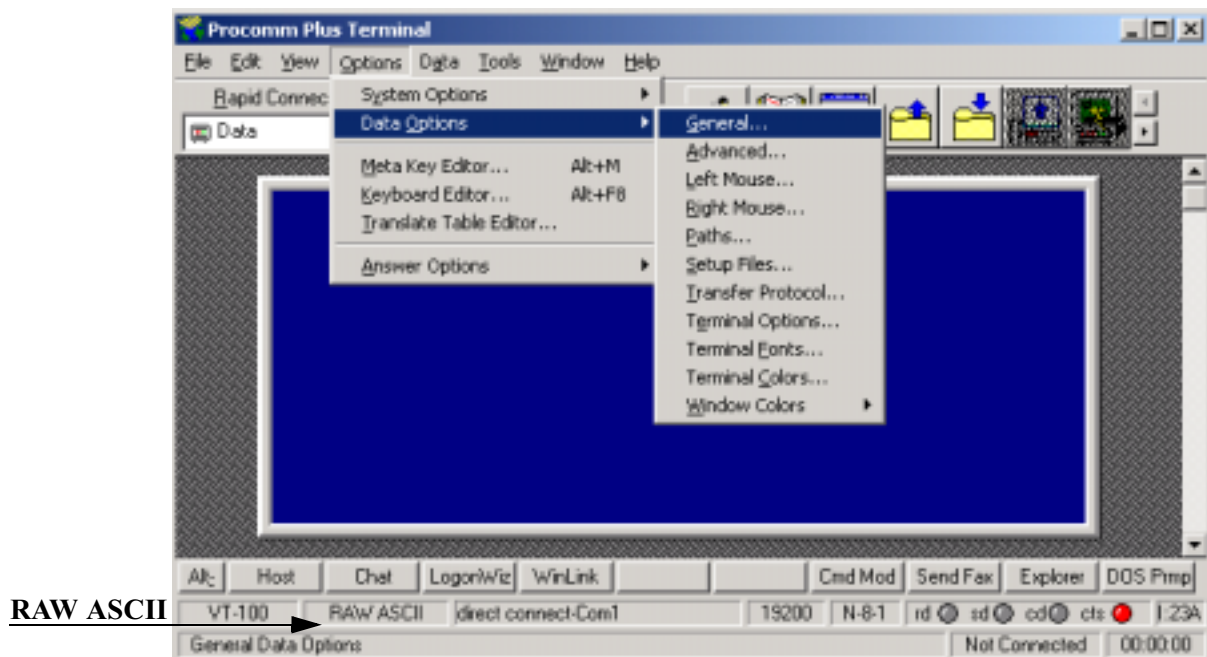
Figure 3. Procomm Plus Terminal

Procomm Setup   When **Options->Data Options->Transfer Protocol** is selected, a Setup menu displays.

> • Select RAW ASCII from the Current Transfer Protocol pull down menu
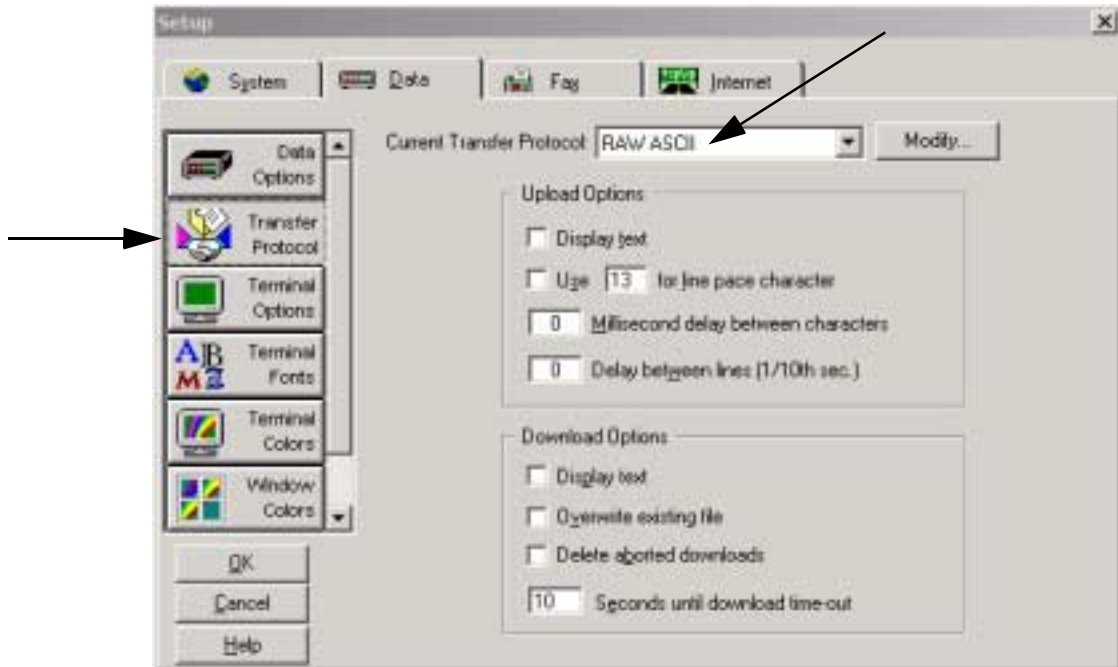> • Click the Transfer Protocols button

Figure 4. Procomm Setup Menu

Send File

To send a file, open the Procomm application. Under the **Data Menu** select **Send File**.

This button also Sends Files.
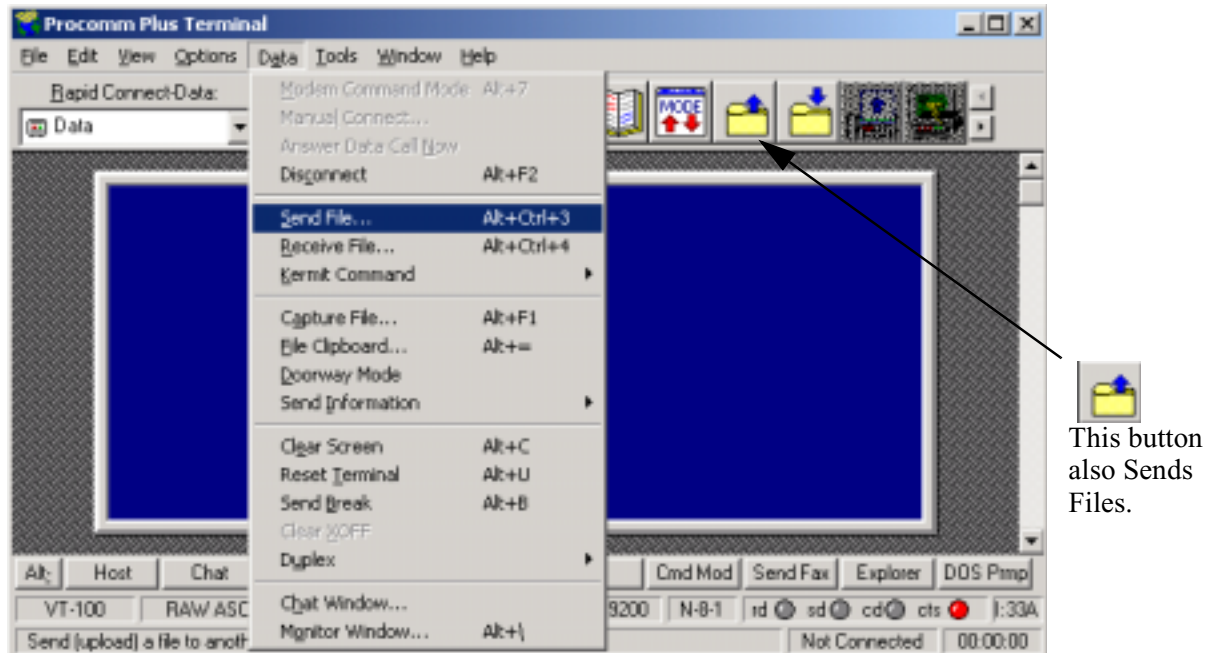
Figure 5. Procomm Plus Terminal Send File

Send the correct file using one of the enclosed "c73 loaders" below:

c73cv115.xrc for 115 Kbps	**c73cv288.xrc for 28.8 Kbps**
c73cv192.xrc for 19.2 Kbps	**c73cv384.xrc for 38.4 Kbps**
c73cv576.xrc for 57.6 Kpbs	**c73cv96.xrc for 9.6 Kbps**

■**Note**

To reduce the download time, Vanguard Managed Solutions recommends **c73cv115.xrc for 115 Kbps**.

7) Once the download is completed, **change the terminal speed to the appropriate coldloader speed chosen in step 4**. Download the software images or Bootprom.xrc files. The software images can be acquired from the directory: **\Vanguard\SFW_IMGS\73*0\R60P01***
The required Bootprom version (such as T10BP111.xrc) can be acquired from the directory containing the same name: **\Vanguard\SFW_IMGS\73*0\COLDLOAD\T10BP1***

8) Open the Procomm Plus Terminal Manual application:

- Select Send File, under the Procomm Data Menu
- Select the software images and skip step 9 or select the correct bootprom version

9) Choose the correct bootprom directory that includes the coldloaders. The example below shows the 7300 Series Bootprom Directories.
\T10BP1** refers to:

- T10BP110
- T10BP111
- T10BP130
- T10BP140
- T10BP150

Bootprom Directory	*ONS Image Compatibility*	*Bootprom Version*
T10BP110	5.4.P08A 5.4.P08B	1.10
T10BP111	5.4.P08# ■**Note** The pound sign "#" represents a letter from C to Z.	1.11
T10BP130	5.4.P0LA, 5.4P0KA, and 5.4.P0JA ■**Note** Bootprom version 1.30 is required to run the 5.4 Point Release L software. The 1.30 version of the bootprom does not work with any earlier 5.4P08* software. **If you have a new CPU card, use bootprom 1.40 or 1.50.** The asterisk "*" represents a letter from A to Z.	1.30 or greater
T10BP140	5.4.P0LB ⚠ **Warning** Bootprom version 1.40 or greater is required to run with the new CPU cards.	1.40 or greater
T10BP150	6.0.R00A and 6.0 Point Release 01B	1.50

■**Note**
The respective .xrc file is contained in the directory with the same name.
Example: T10BP140.xrc would be found in the T10BP140 directory. T10BP150.xrc would be found in the T10BP150 directory.

Directory Example   Figure 6 shows a 7300 Series Example, the Vanguard 7310 Directory has been selected.

\Vanguard\SFW_IMGS\7310\COLDLOAD

📁 **Vanguard**

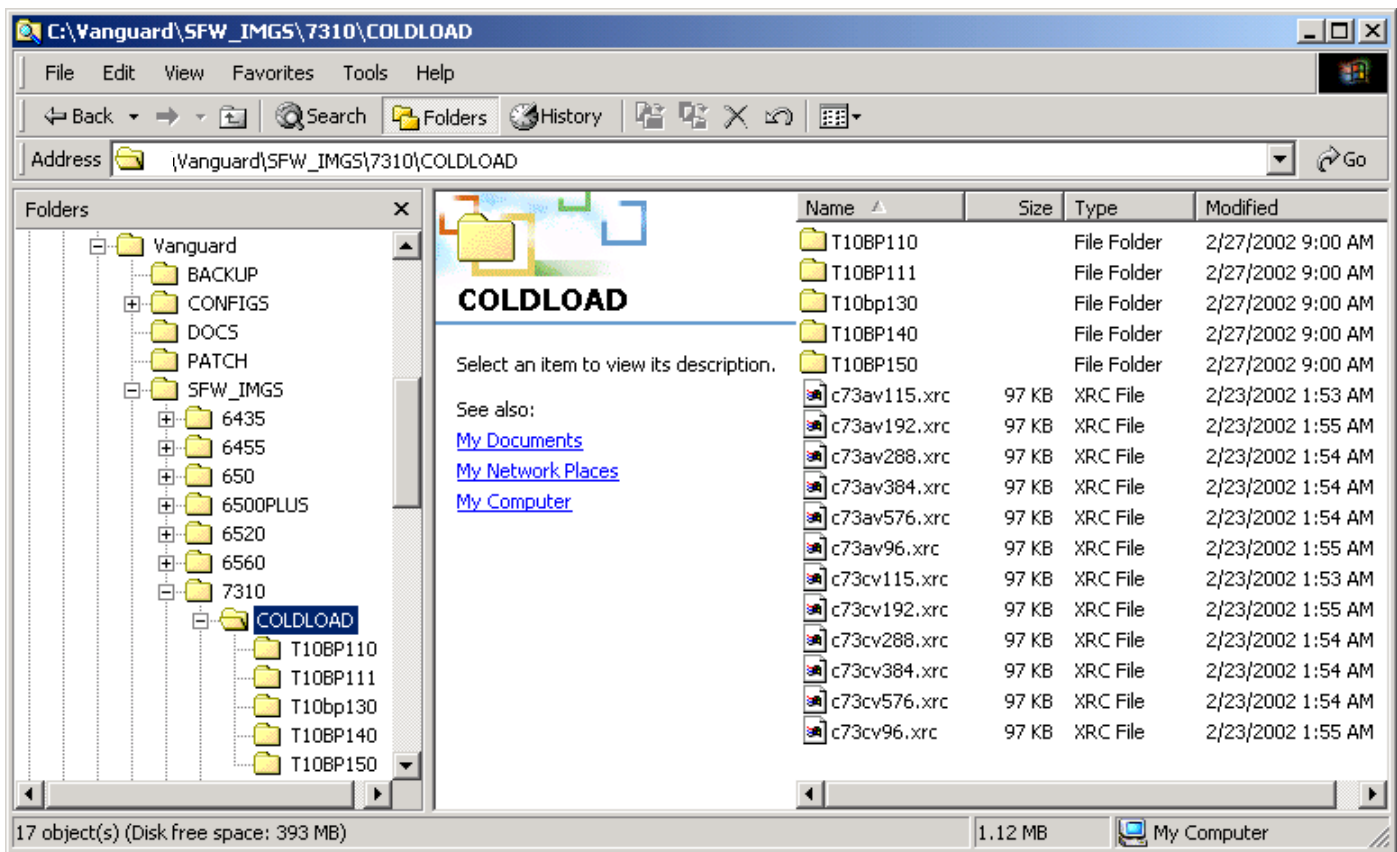   📁 **SFW_IMGS**

      📁 **7310**

         📁 **COLDLOAD**

Figure 6. COLDLOAD Directory

10) Once completed, the 7300 shows "Restarting". **Change your terminal speed immediately back to 9600**. The unit should automatically reboot and go to ONS, provided that the bootprom and ONS images are compatible.

■**Note**

If the software (ONS) images are not compatible, the node responds by removing the current image and prompts the user with a "download coldloader" message. If you received this message check the table in step 9. The table contains the correct compatibility information. To load a compatible ONS image, repeat these steps substituting the ONS image instead of the bootprom image instruction in step 8.

11) Upon completion of loading a compatible image, the node restarts.

Boot Prom Information for the new Controller Card

Any controller card numbered 75836G01 with revision D or greater **REQUIRES** the new boot prom code and must not be downgraded past 1.40. You must **NOT** load an earlier version of boot prom or attempt to load software with a Vanguide CD prior to release 5.4P0LB.

This new card is functionally equivalent to the original card, but does require new boot prom code and coldloaders to operate. This new boot prom code is release 1.40 or greater.

The new 1.40 or greater boot prom is fully compatible with the original controller card and all software versions that worked with boot prom revision 1.30. If you use an older Vanguide CD to load an older image, it attempts to downgrade the boot prom which renders the controller card inoperable and it will have to be replaced.

In order to prevent inadvertently loading boot prom revision 1.30 onto a new system controller card, please discard any CD's previous to the 5.4P0LB CD.

For more information, refer to the Vanguard 7300 Controller Card Hardware Advisory Notice (Part Number T0185-04) located on the web at:

http://www.vanguardms.com/documentation

Also refer to the "Installing Software Images and Bootprom Software Updates" section on page 9 of this Software Release Notice.

Installing Software Images and Bootprom Software Updates

**Controller Card
Board Assembly
Number Location**

Refer to Figure 7 to locate your board assembly number:

Label

Figure 7. Board Assembly Number Label

Hardware Installation for Vanguard 7300 Series Products

Hardware Description and Installation

For hardware component descriptions and procedures for rack-mounting and cabling a Vanguard 7300 Series router, see the *Vanguard 7300 Installation Manual,* (Part Number T0185).

User Documentation

For detailed descriptions of Vanguard 7300 features, visit the Vanguard Managed Solutions web site:

http://www.vanguardms.com/documentation

Instructions for obtaining on-line and hardcopy versions of the documents that contain detailed explanations of the software features appear in the section, "How to Obtain User Documentation."

Software Improvements

Introduction   This section describes specific improvements to the Applications Ware software. It includes:

- Corrected limitations
- Customer-initiated Change Requests

Corrected Limitations

Cache Clears on all Vanguard Products

A RIP version 2 update clears the routing cache. (INDaa01320)
This is fixed.

RIP Advertised Default Route Installed without Enable - All Vanguards

An Advertised RIP default route is installed in the IP route table and repeatedly ages out with default G/W override disabled on the receiving IP interface. (DRFaa15504)
This is fixed.

Unknown ERROR Message on ISDN 5Ess Voice Call

The message "ISDN VOICE ERROR: me_ccs_voice.c Line # 5018" warns that the A-Law/U-Law specification is missing in the SETUP message of Bearer Capability. The call is processed according to the configured user information layer protocol for the assigned virtual port. (DRCaa22153)
This is fixed.

Vanguard 7300, 6400 Series OSPF Routing Table Errors

When configuring entries in the OSPF Interface Configuration record, a limitation might exist when:

- Routes are configured as point-to-point interfaces with HOST point-to-point link representation.
- The routes appear as SPF routes in the OSPF Routing and IP Routing tables.
- When a point-to-point route is changed to NETWORK point-to-point link representation and the OSPF menu is booted, the route appears as a DIRECT route and can only be seen in the IP Routing Table.

After a period of time, the route becomes an SPF route and appears in the OSPF Routing IP Routing tables. This does not effect packet forwarding. (DRFaa11898)
This is fixed.

Vanguard 6520, 7300 Series H.323 - Coder Compatibility

A node crash might occur when a destination port is attempting to do a dynamic coder switch to the compression rate configured in an H.323 port. (DRCaa20901)
This is fixed.

H.323 DEBUG Option - REPT_H323 - All Vanguard Products

The report generated when the H.323 REPT_H323 DEBUG option is enabled, does not contain the port number. (DRCaa20819)
This is fixed.

Vanguard 6520, Vanguard 7300 Series Aggregation Table

An Aggregation Table entry overrides the RIP route when the table entry matches the Static route or the RIP route for the IP address and the mask. (INDaa01153)
This is fixed.

Internal IP Addresses are Deleted in the Routing Table - All Products

If there is an un-numbered Grouped LCON with a single member and if the LCON is disabled and then enabled again, the routing table entry for the Internal IP address of the node is removed. (INDaa01189)
This is fixed.

H.323 Call Not Cleared after Node Boot - All Products

When an H.323 call is established directly between two nodes and the originating node is booted, the H.323 call is not cleared. This does not occur if a gatekeeper is used. (DRCaa19949)
This is fixed.

Expiry of H.323 Time to Live Timer Causes Vanguard Gateway Unregistration - All Products

At Release 5.4, the Vanguard gateway currently supports H.323 standard Version one, which does not provide a time to live update message. The Netspeak Gatekeeper expects a time to live update messages from gateways connected in its zone. Because the Vanguard gateway does not send time to live update messages, the Netspeak Gatekeeper unregisters the Vanguard gateway each time the gatekeeper's time to live timer expires. The Vanguard gateway attempts to re-register with the gatekeepers. (DRCaa20703)
This is fixed.

Large SDLC-to-LLC2 (SLAC) Calling Addresses - All Products

For incoming X.25 calls over Frame Relay SVC, Vanguard network services updates the X.25 table with calling address and the station. It always interprets the calling address as XX...X**. That is, the last two digits are assumed to be sub-address and the rest as node address. For calls which use large subaddresses, such as those made by SDLC SLAC stations, this interpretation would lead to a wrong node address. For example, a calling address of 2000822, where 0822 is the subaddress, is interpreted as 20008**.

Therefore, to dynamically route outbound calls over existing FR SVC stations only calls to 20008 node address is allowed. In such cases, network services would look for a new FR SVC station to connect to the remote. (DRCaa20328)
This is fixed.

Route Selection Table - Syntax Error Message - All Products

After configuring and saving the Route Selection Table's Destination parameter with this entry, FRI-n (where n is the port number), this warning message appears:
The following Destination(s) have a SYNTAX ERROR or they do not match a known PORT TYPE or NODE RESOURCE. (DRFaa11989) (DRCaa20268)
The configured Destination parameter, however, is saved to CMEM.
This is fixed.

IP Routing Tables RIP Entries - All Products

RIP entries are not removed from the routing tables when RIP is disabled and IP parameters are booted. (INDaa01337)

This is fixed.

NAT and LCON Boot - All Products

When a Vanguard is running Network Address Translation (NAT), NAT does not learn the IP address after a NAT table boot if the LCON is already in the active state. (INDaa00803)

This is fixed.

Vanguard 7300, 6455 - IP Protocol Standards (China)

IP Protocol must meet certain standards. (DRFaa13830)

This is fixed.

OSPF Interface and Area Parameters Node Crash - All Products

A node crash occurs after deleting all the OSPF interface and area parameters and booting the OSPF menu. (INDaa00869)

This is fixed.

Vanguard 7300, 6400 Series - Over-Length Voice Switch Table-Pre-Post-Fix Digits Parameter Causes Node Crashes

The help text screen for the Voice Switch Table-Pre-Post-Fix Digits parameter indicates that you cannot configure more than 20 characters. However, during first time configuration you can save more than 20 digits although a notice appears informing you that "no more than 20 characters are allowed". This notice is disregarded and the character string is saved. On subsequent configurations of this parameter the notice does not appear and the 20+ character string is saved. This should not happen because the node crashes the first time a call is placed after the configuration is saved. (DRCaa21404)

This is fixed.

Vanguard 7300 Series - Call Not Transferred with ALT-Dest set in VST

When placing a call from either an FXS or FXO or E&M to H.323 and the destination doesn't answer the phone (ALT_DEST_NO_ANSER) or the phone is busy (ALT_DEST) and the alternate destination is either an FXS or FXO or E&M, there is no audio. (DRCaa21589)

This is fixed.

The TCP Module is not Forwarding a Message with the FIN Bit Set - All Products

When placing a call between an H.323 port configured for G.723 (5.3kb, 5.3kb, 6.3kb, or 6.3kb) and another H.323 port that is configured for G.729A (8gkb, 8gkb3, 8gkb4, 8gkb5) the call should be cleared because H.323 doesn't support dynamic coder. The call is not being cleared; it is established but there is no audio. (DRCaa22073)

This is fixed.

Vanguard 7300 Series Transparent Bridge Does Not Work Properly

When more than one ethernet port is attached to the same ethernet, the transparent bridging function might not work correctly. Other functionality such as IP routing and LLC Conversion are not affected. (DRFaa17275)

This is fixed.

Vanguard 7300 Adding CBR Stations Requires a Node Boot

When adding a new station to an AAM port where the new station is configured for Traffic Service Category is equal to CBR, a node boot is required for the configuration to take effect. A node boot is also required when a station is changed from UBR type to CBR type. (DRFaa16960)

This is fixed.

Vanguard 7300 Series - Alternate Gatekeeper

Due to network convergence times, if a node is configured with both a primary and alternate gatekeeper address, the node may register with the alternate gatekeeper after the boot up sequence. This is caused because the node attempts three times to register with the primary gatekeeper. If network connectivity cannot be established within the time frame of the first three attempts to the primary gatekeeper, the node switches and registers to the alternate gatekeeper. (DRFaa18121)

This is fixed.

Codex Encapsulation Problem

Lower performance when running the default of Codex encapsulation. New default is RFC1294. (DRFaa18369)

This is fixed.

Node Boot Command - All Products

During periods of high utilization the node boot process is not given a time slice to operate. (DRCaa22729)

This is fixed.

Vanguard 7300 Series - Repeating pages during a Telnet session

When scrolling through multiple screens over a Telnet session, the same page repeatedly is sent. (DRCaa22388)

This is fixed.

T1 Card LED Functionality

Configuration changes have been made to T1 ports. The T1 Card LED Functionality has changed. (DRCaa22489)

T1 Card LED	LED Description
On	Indicates that the associated port is **not** an alarm.
Off	Indicates that the associated port is **not** configured.
Flashing	Indicates that the associated port is in alarm.

■**Note**

When the 5.4.POL is booted not configured, the T1 ports start flashing. You must change the port to NULL to turn off the LED.

This is fixed.

Software Improvements

Customer Initiated Change Requests These Change Requests were reported to Customer Service and interim patch releases were released to fix the problems. These Change Requests are incorporated into 6.0 Point Release 01B, and where applicable, interim patch releases have been replaced by Release 6.0.P01B:

Change Request (CR#)	Limitation Number	Release Where Problem Was Reported	Interim Patch Release Replaced by Release 6.0.P01B	Problem Description
9834	DRFaa14098	5.4	N/A	Enhancements added to FERs to make them more usable.
9949	DRFaa14473	5.4	5.5.T2BA	Vanguard 7300, 6400 Series - FTP client locks up after bind timeout using NAT.
9894	DRFaa14245	5.4	N/A	Current RFC1490 FR feature does not support BNN in the primary host application.
9992	DRFaa14585	5.4.P02C	5.4.P02E	Vanguard 7300 Series voice ports randomly fail on the HDSM card.
10036	DRFaa14720	5.1.ME7	5.1.MG1	Vanguard 7300 Series - Unreadable messages on NMS.
10037	DRFaa14765	5.3.M44	5.3.ME3	
10077	DRFaa14809	5.2.M.06	5.5.P01A	The Vanguard 6560, 7300 node crashed with a bus error.
10132	DRFaa14989	5.4.T03C	5.5.P03A	Vanguard 7300 H.323 ports hang in "wait setup" and "wait_qsig" states.
10142	DRFaa15011	5.4.T56A	N/A	Node may crash if Delay Trace is initiated and it was not enabled on all WAN ports which the SVC transverses. Vanguard 7300 and 6400 Series.
10248	DRFaa15429	5.4.TP08	5.4.P0JB	Vanguard 7300 Node crashes with a "750 Exception Encountered".
10279	DRFaa15550	5.3M19	5.5.T43A	Vanguard 7300, 6400 Series NAT statistics do not display the bind entry count correctly. the NAT statistic bind table display hangs up if the table has more than 999 entries, also the entry count only shows two digits.

Change Request (CR#)	Limitation Number	Release Where Problem Was Reported	Interim Patch Release Replaced by Release 6.0.P01B	Problem Description
10294	DRFaa15726	5.4	5.6.T28A	Vanguard 7300, 6560 - SOTCP UDP packets are using the outgoing interface IP address for the UDP source address instead of using the defined internal IP.
10304	DRFaa15690	5.4.P01R	5.4.P01V	Vanguard 7300, 6400 Series Bay Routers are not learning our OSPF Routes.
10309	DRFaa15764	5.4.S400	5.4.T7BB	Vanguard 7300, 6520 - OSPF Classfull Subnets are incorrectly advertised.
10348	DRFaa16015	5.4.P08A	5.4.P08D	Vanguard 7300 Series - AT telnet function is not working properly.
10351	DRFaa16005	5.4.P08B	5.4.P08D	Vanguard 7300 Series - The timer mechanism causes a retransmit loop after receiving the RST from remote TCP session.
10386	DRFaa16068	5.5.R000	5.5.T05A	Vanguard 6455 does not support PPP over Channelized T1/E1.
10441 10601	DRFaa16167 DRFaa16716	5.4.P08B 5.4.P08B	N/A 5.4.P0JD	Vanguard 7300 Series - When the node lost its alternate image, it required a coldload and could not boot on its current image which still existed.
10446	DRFaa16192	5.4.P08B	N/A	QOS should support up to 400 LCONs on the Vanguard 7300. When configuring QOS the user can only use 264 LCONS.
10488	DRFaa17423	5.5.R000	N/A	FRI Station locks up. Unit not responding to a warm or cold boot. All Vanguards.
10498	DRFaa16413	5.4.P08A	5.4IP0KB	The TBOP of the Vanguard 7300 is unable to pass the HDLC frame.
10558	DRFaa16571	5.4.P08B	N/A	Vanguard 7330 was running out of data buffers, causing LCONs to become congested and drop packets.

Change Request (CR#)	*Limitation Number*	*Release Where Problem Was Reported*	*Interim Patch Release Replaced by Release 6.0.P01B*	*Problem Description*
10652	DRFaa16916	5.4.P0JA	N/A	Vanguard 7300 Series - Program crashed with a 750 exception error.
10705	DRFaa17120 DRFaa17287	5.5.R000 5.5.R000	N/A N/A	The Escape Key does not work when printing all encrypt channel statistics. Vanguard 6560, 6400 and 7300 Series.
10765	DRFaa17400	5.4.P0JA	5.4.P0KB	Vanguard 7300 Series: FRI Annex_D protocol failure after a physical port disruption.
10804	DRFaa17441	5.4.P0JD	N/A	Vanguard 7300 node crashed with a 750 exception error when Voice and Data were transmitted.
10815	DRFaa17466	5.4.P0JD	5.4.P0KB	Vanguard 7300 Series Voice DSP crash (HDSM-2000 HW BOARD FAILURE). Logic error in the DSP exception processing.
10874	DRFaa17936	5.4.P0JC	5.4.P0LC	Vanguard 7300 Series - Frames larger than 1003 bytes are lost when using frame relay ports configured on E1 time slots one through ten. Time slots above ten must be used.
10897	DRFaa17868	5.4.P0JD	N/A	Vanguard 7300 Series: The virtual port 2000 configured for PPP is downgraded to a null port after the node boot.
11027	DRFaa18321	N/A	N/A	Vanguard 7300 ATM Configuration: User cannot configure FTDN or FTUP on ATM PVC.
11044	DRFaa18365	5.4.P0LA	N/A	The Vanguard 7300 Series input indicator on an X.21 interface does not display the correct state when the line is actually active.
11061	DRFaa18595	5.4.P0KB	5.4.P0LH	Branch nodes could not access the Vanguard 7330 CVS table.

Change Request (CR#)	Limitation Number	Release Where Problem Was Reported	Interim Patch Release Replaced by Release 6.0.P01B	Problem Description
11084	DRFaa18521	5.6.P0LA	5.4.P0LD	Telnet from the Vanguard 7300 Series to a remote IP address does not work properly when the telnet session is being established on a link that has data compression enabled. The task priority of data compression was set lower than the telnet task. The data compression task priority has been increased.
11101	DRFaa18596	5.4.P0LB	5.4.P0LE	Vanguard 7300 node does not allow configuration of data compression on Frame Relay Access (DCE) when using an FRI port.
11295	DRFaa19357	5.4.P0LC	5.4.P0LG	Vanguard 7300 Series. When executing the MIB-2 IF Table, the number zero is returned. Devices cannot be managed properly.
11335	DRFaa19500	5.4.P0LF	5.4.P0LJ	Vanguard 7300 Series FR ports and stations intermittently lock up.

Known Software Limitations

Introduction

This section lists limitations known to exist in 6.0 Point Release 01B Applications Ware software.

RTP Header Compression

RTP Header Compression Interoperability Between Cisco and Vanguard Managed Solutions Products over Frame Relay Limitations

Incompatible Cisco Features- There are a few Cisco proprietary features that must be disabled in order to ensure proper interoperability over Frame Relay links. The table below identifies the incompatible features.

Feature	*Comments*
tcp header-compression	Vanguard Managed Solutions products do not support tcp header compression over Frame Relay. TCP header compression must be disabled on Cisco Frame Relay interfaces.
Frame relay end-to-end keepalives	Encapsulation for keep alive packets is Cisco proprietary and as a result is not supported on links between Vanguard Managed Solutions and Cisco nodes.
Cisco discovery protocol	CDP must be disabled on links connected to non-Cisco devices.

Protocols Not Supported - Vanguard Frame Relay links configured for CENCAP encapsulation do not support Transparent Bridging traffic.

Configuration - The "Number of Session to be Compressed" parameter must not be configured to a value greater than 255 when the encapsulation is configured to "CENCAP". Cisco products are limited to 8-bit Context Identifiers (CIDs) over Frame Relay. Configuring a Vanguard node for more than 255 sessions will cause it to use 16-bit CIDs.

Vanguard Embedded Web Navigator Point Release Limitation

Vanguard Embedded Web Navigator (the web management tool that allows web management through an internet browser) is not available with release 6.0.P01B.

Descriptions

Node crashes when Bridge is configured on VPN over LAN

When you have TB Bridge traffic over the LAN Tunnel (Tunnel over LAN Link), the traffic from TB-1 is transported to TB-2 and from TB-2 to TB-1 over Tunnel. Refer to Figure 8 below:
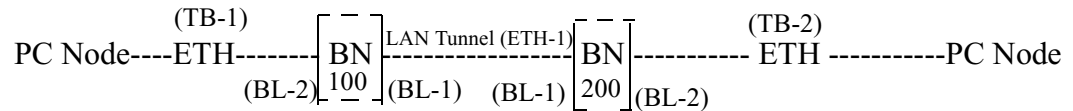
```
         (TB-1)                                                  (TB-2)
PC Node----ETH-------┌─ ─┐-----------------┌─ ─┐---------- ETH -----------PC Node
                     │BN │LAN Tunnel (ETH-1)│BN │
         (BL-2)└─100─┘(BL-1)   (BL-1)└─200─┘(BL-2)
```

Figure 8. TB Bridge Traffic over A LAN Tunnel

The tunnel carrier ETH-1 does not have Bridge enabled. If the user (by mistake) enables the Bridge Link (BL-1) corresponding to ETH-1 which is the tunnel physical link, the node starts to repeatedly crash until the Bridge Link (BL-1) is disabled. (INDaa01627)
Workaround: In the practical scenario, you do not have to enable the Bridge link corresponding to the ETH physical link of Tunnel. To avoid the node crashing, disable the Bridge Link (BL-1) corresponding to the ETH-1 (which is the Tunnel carrier). This workaround does not impact the other functionality's. All the functionality (including Bridge Traffic over LAN Tunnel) will work as usual.

Encrypted (SAM) Tunnel

Encrypted (SAM) Tunnel over WAN/LAN with (RTP+UDP/UDP)+IP Header compression is not working for certain size UPD-IP packets where IP packet length is greater than 46 (Version 5.5 and 5.6). Compression works for IP packets where the IP packet length is less than 46. (INDaa01629)
Workaround: At present, there is no workaround.

IPX WAN Node Boot - All Products

When you add an interface with IPX WAN enabled, you must boot the node. (INDaa00790)
Workaround: At present, there is no workaround.

DTR Connection Type and BSC3270 Port - All Products

DTR connection type does not work as configured in the BSC3270 port record. (DRFaa07855)
Workaround: At present, there is no workaround.

Backup Link and Alternate Destination - All Products

If the backup link is configured as an alternative destination in the Route Selection Table as well as configured in the Switched Service Table, the backup link is activated under CALL/EITHER activation mode, when a call arrives for this destination, even if the monitor port is active. In FAIL/FAIL_ALL modes, the backup link is not activated if the Monitored Port is active. (INDaa01138)
Workaround: The backup link should not be configured in the route selection entry.

Single DLCI Multiplexing SNA/IP/IPX Causes Node Crash - All Products

RFC1490 Single DLCI Multiplexing and De-Multiplexing SNA/IP/IPX will cause the node to crash. If you configure the string FRISNA-xSy as either a source or destination in the PVC Setup Table and then boot the node, the node will not come up. The node will repeatedly crash. Multiplexing IP and IPX in the same DLCI works fine. (DRFaa16306)

Workaround: At present, there is no workaround.

VPN Tunnels with RUIHC Limitation - All Products

Configuring the maximum number of Tunnels (255) with RUIHC on each tunnel., causes the node to not come up or reset continually. (DRFaa17913)

Workaround: To configure and use the maximum number of tunnels with RUIHC (255) use tunnel boot instead of node boot. In the RUIHC profile configuration of each tunnel have the parameter "Number of sessions to be compressed" configured to less than 100.

Four Digit Virtual Port Number (Destination Subaddress)
Vanguard 7300 Series

The four digit virtual port number cannot be used as the destination subaddress. Only three digit subaddresses are allowed. (DRCaa22259)

Workaround: The three digit Hunt Group must be used. If you need to target a virtual port, that virtual port should have a unique Hunt Group value.

Software Image Naming Convention is Different - Alternate and Current
Vanguard 7300 Series

The software image naming convention is different for the Vanguard 7300 platform. In the Vanguard 7300 platform, you are able to boot from the Alternate image and the system shows that it was booted from Alternate. The Alternate image ***does not*** become the Current image, as in the other Vanguard products. (DRCaa22270)

■Note

When using the other (non-73xx) Vanguard products, when you boot from Alternate, the Alternate image becomes the Current image.

Workaround: At present, there is no workaround.

Vanguard 7330 Power Supplies

When the Vanguard 7330 is configured with multiple power supplies, each power supply shares the load. If a power supply should enter a failure condition, the second power supply provides power for the entire system. Failure conditions can be determined by viewing the LED on each power supply. Power supply fail conditions are not reported as alarm conditions through the CTP menu or SNMP trap. The only failure indication is the LED associated with the failed power supply. If one of the power supplies fail, you will be operating in a non-redundant mode. (DRCaa22496)

Workaround: None. Periodically check the power supply LEDs.

Ethernet PMC Installed - Ethernet Port Null - Vanguard 7300 Series

The Ethernet port 101 does not work if you load a cmem that was created on a node that did not have an Ethernet PMC installed, into a node that does. If you attempt to look at the port's statistics the node states that it does not exist. Attempting a port boot indicates it is a NULL port (DRCaa22566)

Workaround: Configure ports 151 and 152 to different bridge link and router interface numbers than configured for port 101 and boot the router.

Central Voice Switching Table - All Products

Central Voice Switching Table lookups indicate the wrong entry if a blank entry exists. (DRCaa22754)
Workaround: Remove blank entries.

SNABSC HPAD and TPAD Entries - Vanguard 6455, 7300 Series

The Destination Control Unit Address and Destination Device Address parameters in the SNABSC entry in HPAD must match one of the following set of parameters of BSC3270 TPAD device table for the device it is connecting to. (DRCaa22909)
1) BSC Control Unit Address and BSC Device Address.
2) Destination Control Unit Address and Destination Device Address.
When placing the call from HPAD, the Destination Control Unit Address and Destination Device Address must match the BSC3270 device table parameters: BSC Control Unit Address and BSC Device Address. When placing the call from TPAD, the Destination Control Unit Address and Destination Device Address must also match the BSC3270 device table parameters: Destination Control Unit Address and Destination Device Address.

Vanguard 7300 Series H.323 Statistics

In certain configurations, once a call is established, the PSTN port stats that show TX and RX pps does not match the H.323 port stats. The H.323 port pps rate is 1 or 2 pps less than that of the PSTN port. It should be equal. (DRFaa18071)
Workaround: At present, there is no workaround.

Vanguard 7300 Series H.323 Webphone Interoperability Issue - G.711

One way audio occurs when a call is placed from a Vanguard to a NetSpeak WebPhone product. Incompatible bundle formats are the cause. (DRFaa18114)
Workaround: At present, there is no workaround.

Vanguard 7300 Series H.323 Interoperability

H.323 interoperability issues exists between the Vanguard 7300, Netmeeting and Webphone. (DRFaa18230)
Workaround: At present, there is no workaround.

Vanguard 7300 Series ATM CBR Station Configuration

Occasionally Constant Bit Rate ATM stations were deactivated. (The total aggregate PCR did not exceed the link speed.) This occurs because the CBR scheduling is very rigid and has to fit into the transmit scheduling table in a certain way. Even though it appears that bandwidth is available, if it does not fit in the scheduling table, the station is not created. To increase the chances of fitting into the scheduling table, the larger CBR entries (PCR rate) should be created first. (DRFaa18518)
Workaround: Use VBR stations instead.

Vanguard 7300 Series Embedded Web Group Configuration

When you configure the voice port interface type (FXS), the next parameter is Signaling Mode. When you change the port interface type to E&M, the next parameter should change to Signal Type. Currently the next menu displayed is Signaling Mode. (DRFaa18769)
Workaround: At present, there is no workaround.

Password Limitation BGP - All Products

The Vanguard Router supports limited passwords. Cisco supports MD5. Currently we do not have Authentication compatible with Cisco. MD5 should be supported in the Vanguard products in future releases. (DRFaa18829)
Workaround: At present, there is no workaround.

Building Older Images

Follow the instructions listed in the workaround to revert back to an older build image (if you have installed the Vanguide Application Release 6.0.R000 from the 6.0.R000 CD). (DRFaa18867)
Workaround: Start Vanguide Software Builder, insert the older Vanguide release CD (example 5.6.R000 CD) into CD driver. In Vanguide Software Builder, select the "Settings" menu, then change "CD ROM directory:" to say D:\Motorola (if D is the CD driver letter). Then you are able to build an image for a release before 6.0.R000.

Vanguard 7300 Port Speed

The "Port Speed:" field in the FRI, PPP, X25, SDLC, and TBOP statistics screen is the configured Port Speed for the Vanguard 7300 Serial Port. If the "Clock Source" parameter in the FRI, PPP, X25, SDLC, or TBOP serial port is set to EXT or EXTLP, the "Port Speed:" field in the FRI, PPP, X25, SDLC, and TBOP statistics screen may not match the speed of the actual clock on the serial line. (DRCaa21740)

Workaround: To determine the actual speed on the serial line, an external datascope or protocol analyzer needs to be attached. The "Clock Speed" parameter in the Port Record needs to be configured to the actual Clock Speed that the port is attached to.

Improper Default Bridge Link/Router Interface Numbers for LAN Ports Vanguard 7300 Series

All LAN ports receive the same default bridge link (1) and router interface number (1) when the node is defaulted. (DRCaa21838)
Workaround: Configure each LAN port with a unique bridge link and router interface number, then warm-boot the node.

Improper Configuration for LLC-SDLC-Stations - Vanguard 7300, Vanguard 6400 Series

LLC-SDLC-Station Records in the Second Ethernet Station Table become the Records of the First Ethernet Station Table if the First Ethernet port record is deleted. (DRCaa21097) (DRCaa22325)

Workaround: The first work around is not to delete the first Ethernet port. The second work around is to re-configure the LLC-SDLC-Station Records with the Ethernet port that has not been deleted.

There is no SET_UP ACK generated for ISDN PRI Voice Calls with Overlap Sending - Vanguard 6400 and 7300 Series

Overlap Sending/Receiving is not supported by North American switch types (DMS100, 5ESS, NI-2) (DRCaa22328) (DRCaa22105).

Workaround: When configured for these switches, the attached device or switch must use Enblock mode only.

Vanguard 7300 Series Call Not Transferred with ALT-Dest set in VST

When placing a call from either an FXS or FXO or E&M to H.323 and the destination doesn't answer the phone (ALT_DEST_NO_ANSER) or the phone is busy (ALT_DEST) and the alternate destination is either an FXS or FXO or E&M, there is no audio. (DRCaa22329)

Workaround: At present, there is no workaround.

Vanguard 7300 Series Large QoS Parameter Values May Disable QoS

Although the QoS Parameter fields can be configured to a maximum of 1000 or 10000 (in case of IP Flow Table Size), this is subject to the node's RAM availability. The software checks the node for sufficient RAM to accommodate a QoS parameter configuration. If the node's memory size is less than the requirement for the configuration, the software disables QoS. (DRCaa22432)

Workaround: Add more memory and configure the minimum required parameters for QoS.

Incorrect Configuration Can Disable QoS Scheduler Feature Vanguard 7300 Series

The sum of the %BW per custom PHB configured in the custom PHB menu must be the same as the %BW for custom PHB configured in the Queueing and Scheduling Profile Parameter. Failing to do so leads to the disabling of the QoS Scheduler feature. For example, if the %BW for custom PHB in the Queueing and Scheduling Profile parameter is set to zero, the %BW per custom PHB must all be zero to satisfy the above condition. (DRCaa22433)

Workaround: At present, there is no workaround.

Vanguard 7300 Series Using the Same TCP Session for Local and Remote Nodes

If the remote node initiates a call using SoTCP and the local node attempts to make a call in the reverse direction over the same TCP session, a new session might be required to make the call. (DRCaa22437)

Workaround: Include in the Mapping Table, all possible IP addresses that might be used by a remote destination node. For more information, refer to the *Serial Protocol over TCP Manual* (Part number T0100-06).

Vanguard 7300 Series CLI setscript with T1/VPMT does not Download

CLI setscript with T1/VPMT does not download after using the "getscript". CLI errors occur because the vpmt is configured before the voice port or the t1 port. (DRFaa16143)

Workaround: If the CLI set script file includes the "create vpmt" statement, move it behind the create virtual port statement. If the "set minimum-cpu" statement is in the script file, turn on the debug mode.

Large SDLC-to-LLC2 (SLAC) Calling Addresses - All Products

For incoming X.25 calls over Frame Relay SVC, Vanguard network services updates the X.25 table with calling address and station ID, interpreting the calling address as XX...X**. That is, the last two digits are assumed to be sub address and the rest as node address. For calls using large sub addresses, such as SDLC SLAC station calls, this leads to a wrong node address. For example, a calling address of 2000822, where 0822 is the sub address, is interpreted as 20008** with 22 as the sub address. (DRFaa16491)

Workaround: The sub address must be two digits long, or X.25 calls should be made in one direction only.

Vanguard 7330 Data Buffer Performance

When the number of Data Buffers used reaches a level above the configured WAN congestion start blocking threshold (default of 89 percent), the throughput of the node may drop to a very low level until the steady state buffer utilization drops below the configured stop blocking WAN congestion threshold (default of 86 percent). A number of factors effect the number of buffers used, including the number of SVCs used and the rate of data transfer through the node. (DRFaa16497)

Workaround: Reduce number of connections (SVCs) or traffic through node in order to reduce number of buffers used.

Vanguard 7300 Series T3 ATM PMC Card Only Supported in Slot 1 of the Carrier Expansion Card

Due to the design of the T3 ATM Rear Transition Module, only the top slot of the Carrier Expansion Card supports the T3 ATM PMC. (DRFaa16824)

Workaround: For information on installing the T3 ATM PMC, refer to the *7300 Installation Manual* (Part Number T0185).

V.34 Modem Calls not Connecting - Vanguard 6560, 6400 and 7300 Series

V.34 Modem calls do not consistently connect over Autocall and Transparent connection types. (DRCaa22907)

Workaround: At present, there is no workaround.

Virtual Links between two OSPF Area Border Routers Fail - Vanguard 7300 Series

Virtual links between two OSPF Area Border Routers do not work properly. (DRFaa17076)

Workaround: At present, there is no workaround.

Voice Server Card Removal - Vanguard 7300 Series

If the voice server card is removed from the T1 card and there is a voice configuration in the node, the node will not boot. (DRCaa22978)
Workaround: Delete the voice configuration or default the node before removing the voice server card.

Vanguard 7300 Series BGP Initial Configuration

The initial configuration of BGP requires a warm boot. (DRFaa19411)
Workaround: At present, there is no workaround.

Vanguard 340, 7300 Series Audio on the FXS port

Passing 6.3k audio on three of the four ports on the quad FXS card causes MIPS errors. MIPS errors are causing static on the output audio. (DRCaa23051)
Workaround: At present, there is no workaround.

Vanguard 7300 Series, DSP Configuration Crash

A DSP failure occurred when using a certain configuration. The failure occurred when using a certain T1/E1 card, DSPM daughtercard and voice calls were disconnected. (DRCaa23026)
Workaround: At present, there is no workaround.

Vanguard 7300 Series Token Ring Additional Time Added to Node Boot

If a Vanguard 7300 Token Ring Port is not connected, an additional forty seconds is added to the node boot time. (DRFaa19446)
Workaround: Change the port type to NULL for unused Token Ring Ports.

Documentation Supplements

Introduction

This section lists supplemental information to the current set of user documentation.

Documentation Supplements

Fax Over H.323 Backward Compatibility

Fax over H.323 is not backward compatible with pre-5.4 versions of software.

Optimum Operation of Voice over an LCON

For optimum operation of voice over an LCON the Voice SVC parameter within the LAN Connection Table Configuration Menu should be set to enable.

FRA TPA Support - All Products

Effective Release 6.0 and greater, FRA TPA is no longer supported as a TPDU Protocol. (DRCaa22860)

User Documentation

Introduction

The Vanguard Applications Ware Basic Protocols Manual (Part Number T0106) is a collection of manuals and covers all Applications Ware protocols. The following specific manuals are pertinent to the Vanguard 7300:

- Vanguard Configuration Basics (Part Number T0113)
- Frame Relay (Part Number T0106-02)
- SNMP (Part Number T0106-04)
- TELNET (Part Number T0106-07)
- Point to Point (Part Number T0106-08)
- Command Line Interface (Part Number T0106-09)
- X.25 Configuration Basics (Part Number T0107)
- Configuration for APAD/ATPAD (Part Number T0110)
- Bandwidth Management (Part Number T0108)

IP and LAN Feature Protocols

The IP and LAN Feature Protocols Manual (Part Number T0100) contains the following pertinent manuals for the Vanguard 7300:

- Vanguard Router Basics (Part Number T0100-01)
- Bridging (Part Number T0100-02)
- IP Routing (Part Number T0100-03)
- OSPF (Part Number T0100-04)
- SoTCP (Part Number T0100-06)
- IPX (Part Number T0100-07)
- Quality of Service (Part Number T0100-10)
- Ethernet Basics (Part Number T0109)
- Asynchronous Transfer Mode (ATM) (Part Number T0100-11)
- 7300 T3 ATM (Part Number T0100-12)
- Border Gateway Protocol (BGP-4) (Part Number T0100-13)

SNA Feature Protocols

The SNA Feature Protocols Manual (T0101) contains these pertinent manuals:

- SDLC (Part Number T0101-05)
- AS/400 Communication Server (Part Number T0101-07)
- BSC 3270-to-SNA Conversion (T0101-08)
- BSC 2780/3780-to-LU0 Conversion (T0101-09)

Serial Feature Protocols

The Serial Feature Protocols Manual (T0102) contains this pertinent manual:

- TBOP (Part Number T0102-04)

Multi-Service Feature Protocols

The Multi-Service Feature Protocols Manual (T0103) contains these pertinent manuals:

- Multipoint X.25 (Part Number T0103-03)
- Vanguard Integrated Services Digital Network: ISDN (Part Number T0103-06)

Multimedia Feature Protocols

The Multimedia Feature Protocols Manual (T0104) contains these pertinent manuals:

- Understanding Voice Technology - Vanguard Technical Reference (Part Number T0104-04)
- Vanguard Voice (Part Number T0104-05)

Alarms and Reports Manual

Vanguard 7300-specific alarms and reports are provided in the *Vanguard Applications Ware Alarms and Reports Manual* (Part Number T0005). This manual is updated through Release 6.0.

How to Obtain User Documentation

Introduction

There are two ways to obtain software documentation:

- Download the most current, up-to-date document files from the Vanguard Managed Solutions On-line Library on our World Wide Web page.
- Use the electronic navigation and search capability provided on the latest Vanguide CD-ROM.

World Wide Web Documentation

Introduction

The latest Vanguard user documentation, including detailed descriptions of new features and enhancements, are available from the World Wide Web.

Finding New Feature Documentation

For example, suppose feature enhancements are made to ISDN over the course of several software releases. Each release provided a separate document describing the details of those ISDN features. The details of the features are described in the *ISDN Manual* in context with the rest of the feature information. This makes finding information faster and easier and eliminates the need to flip through several updates.

Getting New Documentation From the Web

The full set of files is available for download from the Vanguard Managed Solutions Product Documentation web site:

http://www.vanguardms.com/documentation

To read the files, you need a copy of Adobe Acrobat Reader with Search. This application is free from many locations on the World Wide Web for Macintosh, Microsoft Windows, and UNIX platforms. You can define how you use Acrobat with your Web browser.

Keeping a Set of Manuals Current

If you have a current set of documentation for 6.0 Point Release 01B, it is easy to maintain a current printed set. You need:

- a connection to the Vanguard Managed Solutions Product Documentation web site:
  http://www.vanguardms.com/documentation
- a printer
- a copy of Adobe Acrobat for your platform

Download and print the required files, then replace any outdated pages in your existing document set.

6.0 Point Release 01B Additional Documentation

Refer to the Vanguide 6.0 CD-ROM or our product documentation web site for additional documentation.

Applications Ware for the Vanguard 7300 Series Products

Introduction

This section provides detailed information about the Applications Ware available for Vanguard 7300.

Vanguard 7300 Applications Ware

The Vanguard 7300 Series 6.0 Point Release 01B makes available the following Applications Ware. Each Applications Ware package supports a suite of default features.

Information about the Applications Ware is divided into these two tables:

Vanguard 7310 Applications Ware

Applications Ware Name	Source Filename	Version String	Description Filename
IP+	60P01Bt11.xrc	6.0.P01B_@IP+_V7310	60P01Bt11.des
SNA+	60P01Bt12.xrc	6.0.P01B_@SNA+_V7310	60P01Bt12.des
Multi-Service	60P01Bt15.xrc	6.0.P01B_@MS_V7310	60P01Bt15.des

Vanguard 7330 Applications Ware

Applications Ware Name	Source Filename	Version String	Description Filename
IP+	60P01Bu11.xrc	6.0.P01B_@IP+_V7330	60P01Bu11.des
SNA+	60P01Bu12.xrc	6.0.P01B_@SNA+_V7330	60P01Bu12.des
Multi-Service	60P01Bu15.xrc	6.0.P01B_@MS_V7330	60P01Bu15.des

Applications Ware Features

Introduction   This table lists each Applications Ware license and the features it offers:

Vanguard 7300 Features	*IP+*	*SNA+*	*Multi-Service*	*AS/400*	*Special*
Network Management					
SNMP	D	D	D		
TELNET	D	D	D		
TFTP	D	D	D		
CLI	D	D	D		
Embedded Web (HTTPD)	D	D	D		
Async					
ATPAD	D	D	D		
ISDN					
T1/E1/PRI Data (North American in Default)	D	D	D		
T1/E1/PRI Data (European)	L	L	L		
T1/E1/PRI Data (Asia)	L	L	L		
T1/E1/PRI Voice (includes all voice signaling, NA in Default)	D	D	D		
T1/E1/PRI Voice (includes all voice signaling, Europe)	L	L	L		
Digital Voice					
Voice Relay with G.723.1 and G.729a	D	D	D		
Voice Relay Encapsulated in IP (SoTCP)	D	D	D		
H.323 v.2 Standards Based Voice	D	D	D		
Voice Options (All Products)					
Centralized Voice Switch	D	D	D		
VOICE-IP-ENCAPSULATION	D	D	D		
LAN					
Router IP	D	D	D		
Router IPX	D	D	D		
LAN Option Protocols					
LLC-Eth		D	D		

Vanguard 7300 Features *(continued)*	IP+	SNA+	Multi-Service	AS/400	Special
IPXWAN	D	D	D		
OSPF	D	D	D		
BGP4	D	D	D		
Bandwidth on Demand (LD-Bal)	D	D	D		
IP-Multicast	D	D	D		
Router Proxy	D	D	D		
Router Discovery	D	D	D		
Network Address Translation	D	D	D		
Policy-Based Routing	D	D	D		
RTP Header Compression	D	D	D		
Token Ring	D	D	D		
Eth-Bridge	D	D	D		
Network Protocols					
FRF.12	D	D	D		
FRI *(includes FRA)*	D	D	D		
FR SVC					
X25	D	D	D		
PPP	D	D	D		
SoTCP *(Voice Relay Encl. in IP)*	D	D	D		
T1/E1 Interface	D	D	D		
T3/E3 ATM			D		
Serial Synchronous Protocols					
SDLC		D	D		
TBOP		D	D		
LLC-FR		D	D		
X32					
Node Features					
ATCIF (AT Dial/Telnet)	D	D	D		
LBU	D	D	D		
DCP		D	D		
QOS Features					
TOW	D	D	D		

Vanguard 7300 Features *(continued)*	IP+	SNA+	Multi-Service	AS/400	Special
QoS - Diff Serv	D	D	D		
Data Compression	D	D	D		
SNA Features					
BSC 3270-to-SNA Conversion		D	D		
BSC 2780/3780-to-SNA LU0 Conversion		D	D		
AS/400 5494 Comm. Server					A
D = in default image for particular license A = add-on feature (part of upgrade license) L = in license					

AS/400 License Upgrade

The AS/400 allows you to add the AS/400 Communication Server feature to the IP and SNA, and Multiservice Applications Ware.

■**Note**

AS/400 5494 Comm Server features require the AS/400 Software Upgrade License.

MIB Downloading Instructions for Non-Vanguard Managed Solutions SNMP Managers

Introduction

This section lists Vanguard MIB files needed for SNMP management of Vanguard devices when using a non-Vanguard Managed Solutions SNMP Network Management System (NMS).

Obtaining MIB Files

Vanguard MIB files for your non-Vanguard Managed Solutions NMS can be downloaded from the internet. The address for the server is:

http://www.vanguardms.com/customersupport/drivers.html

On the internet, there is one ZIP file for the PC and one ZIP file for UNIX. You must unzip the ZIP file to get the MIB files. The contents of these two ZIP files are identical. However, the formats of the files in these two ZIP files are slightly different due to the way PCs and UNIX systems handle text files.Depending on the protocols and options provided by the Applications Ware image installed in your node, you might not need all the MIB files. See the section below for details on the files you should have to support SNMP management for Vanguard products.

Required Files and Loading

The following MIB files are required by your NMS to perform SNMP management of Vanguard products:

- rfc1213.mib
- cdx_6500.mib

These files must be loaded first and in the order shown.
After you load these required files onto your NMS, you can load the MIB files for the options and protocols installed on your Vanguard hardware. See the section below.

MIB Files for Options/Protocols

This table lists the contents of options and protocol MIB files for Vanguard products. Use this table to determine which MIB files you need to download.

Download This MIB File	If you want this option, protocol, or base MIB software
alc.mib	ALC protocol
bcst.mib	Broadcast
bri.mib	ISDN BRI protocol
bridge.mib	Bridging option
bsc2780.mib	BSC2780 protocol
bsc3270.mib	BSC3270 protocol
bstd.mib	Burroughs Poll/Select protocol

Download This MIB File	If you want this option, protocol, or base MIB software
cdx_6500.mib	Required base MIB for Vanguard Products MIBs
de.mib	Data Encryption option
dc.mib	Data Compression option
dcp.mib	Data Connection Protection option
dsd.mib	Digital Sharing Device Option
e1.mib	Physical E1 port
eia.mib	EIA protocol (required file for serial protocol support)
eth.mib	Ethernet option
frdce.mib	Frame Relay DCE option
frdte.mib	Frame Relay DTE option
fri.mib	Frame Relay option
gcs.mib	GSC protocol
hub.mib	Ethernet Hub option
ibm2260.mib	IBM2260 protocol
isdn.mib	ISDN protocol
iso3201.mib	3201 protocol
mx25.mib	MX.25 protocol
ncrbsc.mib	NCR Binary Synchronous protocol
ns.mib	Network Service (required file)
pad.mib	PAD protocol
qos.mib	Quality of Service option - QoS-Kit- includes: QoS_CORE, QoS_CLSSIFIER and QoS_SCHEDULER
qos_pp.mib	Quality of Service option - QoS-PP (Protocol Priority) includes: QoS_CCM, PACKET_CLASSIFIER and PACKET SCHEDULER
rfc.1155.smi	Structure and identification of management information
rfc1212.smi	Concise MIB definitions
rfc1213.mib	MIB-II for managing TCP/IP -based internets
rfc1231.mib	IEEE 802.5 Token Ring MIB
rfc1286.mib	Definitions of managed objects for bridges
rfc1315.mib	Management Information Base for Frame Relay DTEs
rfc1398.mib	Managed objects for Ethernet-type interfaces
rfc1657a.mib	BGP4 MIB (Converted to SNMP version 1 from the original rfc1657 mib).

Download This MIB File	If you want this option, protocol, or base MIB software
rfc1850.mib	OSPF MIB (Requires rfc1903.mib and is converted from rfc1850.mi2 to version 1 of SNMP).
rfc1903.mib	Textual conventions for version 2 of SNMP (Converted from rfc1903.mi2 to version 1 of SNMP).
rfc2496a.mib	DS3/E3 Interface Type MIB (Converted to SNMP version 1 from the original rfc2496 mib).
rfc1850a.mi2	OSPF Version 2 MIB
rfc1850b.mi2	OSPF Version 2 MIB (Trap definitions)
rfc1903.mi2	Textual conventions for version 2 of SNMP
router.mib	Routing option (required file)
rs366.mib	EIA RS366 support
sdlc.mib	SDLC protocol
slac.mib	LLC Ethernet/Frame Relay/Token Ring Conversion option
spp.mib	SPP protocol
ss.mib	Switched Services (required file)
t1e1vg.mib	Fractional T1E1 Interface option
t1.mib	Physical T1 port
t1e1.mib	Virtual T1/E1 port mapping table
tbop.mib	TBOP protocol
tcop.mib	TCOP protocol
tdlc.mib	TDLC protocol
tftp.mib	TFTP option
tdmclk.mib	TDM Network Clock option
tnpp.mib	Telocator Network Paging Protocol (TNPP)
tow.mib	TOW option
tr.mib	Token Ring option
v.mib	Voice Relay option
vpmt.mib	Virtual Port Mapping Table option
wan.mib	WAN support (required file)
x25.mib	X.25 option
xdlc.mib	XDLC protocol

Applications Ware RFC Compliance

Listing

This table identifies the RFCs (Request for Comments) with which Vanguard Applications Ware software is compliant.

RFC	*Description*
768	User Datagram Protocol. J. Postel. Aug-28-1980.
791	Internet Protocol. J. Postel. Sep-01-1981.
792	Internet Control Message Protocol. J. Postel. Sep-01-1981. Not all messages covered by RFC 792 are supported by Vanguard Applications Ware.
793	Transmission Control Protocol. J. Postel. Sep-01-1981.
826	An Ethernet Address Resolution Protocol-or-Converting network protocol addresses to 48.bit Ethernet Address for Transmission on Ethernet hardware. D.C. Plummer. Nov-01-1982.
854	Telnet Protocol Specification. J. Postel, J.k. Reynolds. May-01-1983.
858	Telnet Suppress Go Ahead Option. J. Postel, J.K. Reynolds. May-01-1983.
877	Standard For The Transmission Of IP Datagrams Over Public Data Networks. J.T. Korb. Sep-01-1983.
894	Standard for the Transmission of IP data grams over Ethernet networks. C. Hornig. Apr-01-1984.
919	Broadcasting Internet Datagrams. J.C. Mogul. Oct-01-1984.
922	Broadcasting Internet datagrams in the presence of subnets. J.C. Mogul. Oct-01-1984.
950	Internet Standard Subnetting Procedure. J.C. Mogul, J. Postel. Aug-01-1985.
951	Proposed Bootstrap protocol (BOOTP) for ARPA-Internet W. Croft, J. Gilmore. Sept-01-1985.

RFC	*Description* (continued)
1009	Requirements for Internet Gateways R.Braden, J. Postel. Jun-01-1987.
1042	Standard For The Transmission Of IP Datagrams Over IEEE 802 Networks. J. Postel, J.k. Reynolds. Feb-01-1988.
1055	Nonstandard For Transmission Of IP Datagrams Over Serial Lines: SLIP. J.l. Romkey. Jun-01-1988.
1058	RIP Version 2 Carrying Additional Information. G. Malkin. January 1993.
1060	Assigned values used in network protocol implementations. J. Reynolds, J. Postel. Mar-01-1990.
1075	Distance Vector Multicast Routing Protocol. D. Waitzman, C Partridge, S. Deering. Nov-010-1988.
1091	Telnet Terminal-type Option. J. Vanbokkelen. Feb-01-1989.
1112	Host Extensions for IP Multicasting S. Deering. Aug-01-1989.
1122	Requirements for Internet hosts - communication layers. R.T. Braden. Oct-01-1989.
1123	Requirements for Internet hosts - application and support. R.T. Braden. Oct-01-1989.
1144	Compressing TCP/IP headers for low-speed serial links. V.Jacobson. Feb-01-1990.
1155	Structure And Identification Of Management Information For TCP/IP-based Internets. M.t. Rose, K. Mccloghrie. May-01-1990.
1157	Simple Network Management Protocol (SNMP). J.D. Case, M. Fedor, M.L. Schoffstall, C. Davin. May-01-1990.
1209	Transmission Of IP Datagrams Over The SMDS Service. D.m. Piscitello, J. Lawrence. Mar-01-1991.
1212	Concise MIB Definitions. M.t. Rose, K. Mccloghrie. Mar-01-1991.
1213	Management Information Base For Network Management Of TCP/IP-based Internets:MIB-II. K. Mccloghrie, M.t. Rose. Mar-01-1991.

RFC	*Description* (continued)
1231	IEEE 802.5 Token Ring MIB.
	K. Mccloghrie, R. Fox, E. Decker. May-01-1991.
1250	IAB Official Protocol Standards.
	J. Postel. Aug-01-1991.
1256	ICMP Router Discovery Messages.
	S. Deering. September 1991.
1286	Definitions Of Managed Objects For Bridges.
	E. Decker, P. Langille, A. Rijsinghani, K. Mccloghrie. December, 1991.
1293	Inverse Address Resolution Protocol.
	T. Bradley, C. Brown. Jan-01-1992.
1294	Multiprotocol Interconnect Over Frame Relay.
	T. Bradley, C. Brown, A. Malis. January 1992.
1315	Management Information Base for Frame Relay DTEs.
	C. Brown, F. Baker, C. Carvalho. April 9, 1992.
1332	PPP Internet Protocol Control Protocol (IPCP).
	G. McGregor. May 1992.
1334	PPPAuthentication Protocols
	B. Lloyd, W. Simpson. Oct-01-1992.
1340	Status of Assigned Numbers
	J. Reynolds, J. Postel. July-01-1992.
1349	Type of Service in the Internet Protocol Suite
	P. Almquist. Jul-01-1992.
1356	Multiprotocol Interconnect On X.25 And ISDN In The Packet Mode.
	A. Malis, D. Robinson, R. Ullmann. August 1992.
1362	Novell IPX over Various WAN Media (IPXWAN).
	M. Allen. Sept-01-1992.
1398	Definitions Of Managed Objects For The Ethernet-like Interface Types.
	F. Kastenholz. January 1993.
1483	Multiprotocol Encapsulation over ATM Adaptation Layer 5
	Juha Heinanen, July 1993.
1490	Multiprotocol Interconnect Over Frame Relay.
	T. Bradley, C. Brown, & A. Malis. July 1993.
1517	Applicability Statement For The Implementation Of Classless Inter-Domain Routing (CIDR).
	Internet Engineering Steering Group, R. Hinden. September 1993.

RFC	Description *(continued)*
1518	An Architecture For IP Address Allocation With CIDR. Y. Rekhter & T. Li. September 1993.
1519	Classless Inter-Domain Routing (CIDR): an Address Assignment and Aggregation Strategy. V. Fuller, T. Li, J. Yu, & K. Varadhan. September 1993.
1520	Exchanging Routing Information Across Provider Boundaries in the CIDR Environment. Y. Rekhter & C. Topolcic. September 1993.
1534	Interoperation between DHCP and BOOTP. R. Droms. Oct-01-1993.
1542	Clarifications and Extensions for the Bootstrap Protocol. W. Wimer. Oct-01-1993.
1577	Classical IP and ARP over ATM M. Laubach, January 1994.
1583	OSPF Version 2. J. Moy. Mar-01-1994.
1631	The Network Address Translator (NAT). K. Egevang, P. Francis. May 1994.
1634	The text/enriched MIME Content-type. N. Borenstein. Jan-01-1994.
1661	The Point-to-Point Protocol (PPP). W. Simpson, Editor. July 1994.
1694	Definitions of Managed Objects for SMDS Interfaces Using SMIv2. T. Brown & K. Tesink, Editors. August 1994.
1700	Assigned Numbers. J. Reynolds, J. Postel. October, 1994.
1812	Requirements for IP Version 4 Routers. F. Baker. June 1995.
1903	Textual Conventions for Version 2 of the Simple Network Management Protocol (SNMPv2). J. Case, K. McCloghrie, M. Rose, S. Walbusser. January 1996.
1918	Address Allocation for Private Internets. Y. Rekhter, B. Moskowitz, D. Karrenberg, G. J. de Groot & E. Lear. February 1996.
2131	Dynamic Host Configuration Protocol. R. Broms. March, 1997.

RFC	Description *(continued)*
2474	Definition: Differentiated Services Field (DS Field) in IPv4/IPv6 Headers.
	K. Nichols, S. Blake, F. Baker, D. Black. December, 1998.
2475	An Architecture for Differentiated Services.
	S. Blake, D. Black, M. Carlson, E. Davies, Z. Wang, W. Weiss. Dec. 1998.
2508	Compressing IP/UDP/RTP Headers for Low-Speed Serial Links.
	S. Casner, V. Jacobson. Cisco Systems February 1999.
2597	Assured Forwarding PHB Group.
	J. Heinanen, F. Baker, W. Weiss, J. Wroclawski. June, 1999.
2598	An Expedited Forwarding PHB.
	V. Jacobson, K. Nichols, K. Poduri. June, 1999.

Product Declarations and Regulatory Information

The following sections provide information about standards compliance, safety statements, and Type Approvals.

Warnings And Cautions

The following special notices apply to all equipment handling procedures in this installation guide.

Warning

Ports capable of connecting to ports on other apparatus are defined as Safety Extra Low Voltage (SELV). To conform with EN60950, ensure that these ports are only connected to ports of the same type on other apparatus.

Avertissement

Les ports qui sont susceptibles d'être connectés à des équipements sont désignés comme TBTS. Pour garantir la conformité à la norme EN 60950, n'interconnecte ces ports qu'avec des ports du même type sur des autres matériels.

Warnung

Anschlusse, die mit anderen Geraten verbindet werden konnen, sind als SELV beschrieben. Um Konformitat mit EN 60950 zu versichern, sichern Sie es, daß diese Anschlusse nur mit den des selben Type auf anderen Geraten verbindet werden.

CE Marking

The mark in the following diagram appears on each Vanguard Series product, and the statement that follows explains its significance.

This product is CE marked to indicate compliance with the following European Directives:

- 1999/5/EC Radio & Telecom Terminal Equipment (R&TTE)
- 73/23/EEC Low Voltage Directive (Safety)
- 89/336/EEC EMC Directive

Declarations of Conformity

English

Declaration of Conformity:

Hereby, Vanguard Managed Solutions declares that this Vanguard Router is in compliance with the requirement and other relevant provisions of Directive 1999/5/EC.

Danish

Konformitetserklæring:
Hermed erklærer Vanguard Managed Solutions, at indestående Vanguard Router er i overensstemmelse med de grundlæggende krav og de relevante punkter i direktiv 1999/5/EF.

Dutch

Verklaring van overeenstemming:

Hierbij verklaart Vanguard Managed Solutions dat diens Vanguard Router voldoet aan de basisvereisten en andere relevante voorwaarden van EG-richtlijn 1999/5/EG.

Finnish

Vaatimustenmukaisuusvakuutus:

Vanguard Managed Solutions vakuuttaa täten, että Vanguard Router on direktiivin 1999/5/EC keskeisten vaatimusten ja sen muiden tätä koskevien säännösten mukainen

French

Déclaration de conformité :

Par la présente, Vanguard Managed Solutions déclare que ce routeur Vanguard est conforme aux conditions essentielles et à toute autre modalité pertinente de la Directive 1999/5/CE.

German

Konformitätserklärung:

Hiermit erklärt Vanguard Managed Solutions dass der Vanguard Router die grundlegenden Anforderungen und sonstige maßgebliche Bestimmungen der Richtlinie 1999/5/EG erfüllt.

Greek

Δήλωση Συμμόρφωσης:
Διά του παρόντος, η εταιρεία Vanguard Managed Solutions δηλώνει ότι η παρούσα συσκευή (δρομολογητής) Vanguard Router πληροί τις βασικές απαιτήσεις και άλλες βασικές προϋποθέσεις της Οδηγίας 1999/5/ΕΚ.

Italian

Dichiarazione di conformità:

Con la presente Vanguard Managed Solutions dichiara che il router Vanguard soddisfa i requisiti essenziali e le altre disposizioni pertinenti della direttiva 1999/5/CE.

Portugese

Declaração de Conformidade:

Através da presente, a Vanguard Managed Solutions declara que este encaminhador Vanguard se encontra em conformidade com os requisitos essenciais e outras disposições relevantes da Directiva 1999/5/CE.

Spanish

Declaración de conformidad:

Por la presente declaración, Vanguard Managed Solutions declara que este encaminador Vanguard cumple los requisitos esenciales y otras cláusulas importantes de la directiva 1999/5/CE.

Swedish

Överensstämmelseförklaring:

Vanguard Managed Solutions förklarar härmed att denna Vanguardrouter överensstämmer med de väsentliga kraven och övriga relevanta stadganden i direktiv 1999/5/EG.