

Vanguard Managed Solutions

**Vanguard Applications Ware
IP and LAN Feature Protocols Manual**

Notice

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To comment on this manual, please send e-mail to LGEN031@vanguardms.com

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IP and LAN Feature Protocols Manual**

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About The Vanguard Applications Ware IP and LAN Feature Protocols Manual

Overview

Introduction

The *IP and LAN Feature Protocols Manual* contains user manuals that describe the options and protocols found in the IP Applications Ware License.

Audience

This binder is intended for users of Vanguard products who are authorized to use the IP Applications Ware license.

Software Revision Level

This manual is current for Release 6.4 of the Vanguard Applications Ware.

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Telenet / Telenet Communications Corporation

Tymnet / British Telecommunication Public Limited Company

IBM / International Business Machines Corporation

In This Manual

Introduction	This manual contains detailed documentation covering all software features, options, and protocols that are supported in the Vanguard IP Applications Ware.
Vanguard Router Basics	This manual briefly describes the IP and LAN protocols supported by the Vanguard IP Applications Ware. In addition, this manual describes the Vanguard Routing Model. This manual provides key information to understand the operation and configuration of the Vanguard node for LAN operation.
Bridging	This manual describes features and capabilities of the bridging option.
Routing	This manual includes features, configuration, and statistics information for IP Routing. Documentation on ARP, RIP, IP Multicast, Network Address Translation CIDR, DHCP, VLAN, PIM-SM and RADIUS are included.
Open Shortest Path First (OSPF)	This manual describes OSPF, an Interior Gateway Protocol, and includes operation, routing information, and configuration.
Slim IP (SIP)	This manual describes how to configure and use Slim Internet Protocol (SIP) on Vanguard devices. SIP is a subset of the IP protocol that lets a device communicate with an SNMP manager.
SoTCP	This manual describes the operation, features, and configuration of the Serial Protocol over TCP protocol.
AppleTalk	This manual describes the implementation of the AppleTalk Phase 2 protocol for Ethernet.
Internetwork Packet Exchange Protocol (IPX)	This manual describes the Internetworking Packet Exchange protocol, and includes IPX overview, routing information protocol, service advertising protocol, configuration parameters, and statistics.
Protocol Priorities	This manual describes how to configure and use the Protocol Priority feature on Vanguard products.
Quality of Service	<p>This manual describes the Quality of Service feature offered in Vanguard Applications Ware. This manual describes how to</p> <ul style="list-style-type: none">• Configure a node to increase the quality of service provided across a network.• Set up and configure SVCs to operate with a high degree of Quality of Service. <p>Access and use statistics provided to identify how efficient the QoS feature is operating.</p>

Asynchronous Transfer Mode

Asynchronous Transfer Mode (ATM) is a cell-switching and multiplexing protocol. It combines the capacity and constant transmission delay aspects of circuit switching with the flexibility and efficiency of packet switching. It allows for scalability in bandwidth from megabits to gigabits per second.

T3/E3 ATM

T3/E3 ATM is a cell-switching and multiplexing protocol. It combines the capacity and constant transmission delay aspects of circuit switching with the flexibility and efficiency of packet switching. It allows for scalability in bandwidth up to megabits per second.

Ethernet Basics Guide

This manual provides information on:

- Vanguard Ethernet features
 - high-level application examples
 - software configuration examples
 - explanation of statistics and troubleshooting procedures.
-

Token Ring Basics Guide

The Token Ring Basics Guide provides detailed application, configuration, statistics and troubleshooting information for Token Ring.

Border Gateway Protocol - BGP-4

The Border Gateway Protocol version-4 (BGP-4) is an Inter-Autonomous System routing protocol which provides loop free inter domain routing between autonomous systems (AS's). AS's are used to provide loop free routing between multiple AS's comprising the internet. BGP-4 is an extension of BGP-3 which provides the support for routing information reduction and aggregation based on CIDR architecture. Community Attribute and Multipath support are available with the latest software release.

G.SHDSL

The G.SHDSL Daughtercard is available for the Vanguard 340 Enhanced, 342, 6435 and 6455 Series with Release 6.4 and greater software. G.SHDSL can send and receive high-speed symmetrical data streams over a single pair of copper wires at rates between 192 kbps and 2.31 Mbps. G.SHDSL was developed to incorporate the features of other DSL technologies, such as Asymmetric Digital Subscriber Line (ADSL) and Symmetric Digital Subscriber Line (SDSL) and transports ISDN, ATM, T1, E1, and IP signals.

Traffic Monitor

In order for QoS tools to be useful (for example, classification, conditioning, queuing, and scheduling) you must understand the characteristics of traffic in the network and the needs of the users and applications that are generating the traffic. Traffic Monitors are used to identify network changes such as new users, application additions and enforcement of QoS policies.

Related Documentation

Introduction

It may become necessary to refer to other documents in order to obtain all of the technical information that you may require. This section identifies all of the related Vanguard products documentation including:

- “Vanguard Installation Manuals” on page xi
 - “Software License Feature Documentation” on page xii
 - “Software Coldloading/Installation and Alarms and Reports Manuals” on page xiv
-

Vanguard Installation Manuals

Introduction

Installation manuals describe the installation and set up of specific Vanguard equipment. Installation Manuals provide information that may assist you in locating ports, cabling, and modifying DTE/DCE settings.

Available Installation Manuals

This table identifies the installation manuals available:

Part Number	Title
T0126	Vanguard 6520/6560 Installation Manual
T0002	Vanguard 6500 ^{PLUS} Installation Manual
T0015	Vanguard 100 Installation Manual
T0016	Vanguard 100PC Installation Manual
T0017	Vanguard 200 Installation Manual
T0021	650 Operator's Guide
T0047	Vanguard 305 Installation Manual
T0019	Vanguard 310 Series Installation Manual
T0032	Vanguard 320 Installation Manual
T0178	Vanguard 340 and 340 Enhanced Installation Manual
T0257	Vanguard 342 Installation Manual
T0031	Vanguard 6400 Series Installation Manual
T0142	Vanguard 6425 Installation Manual
T0166	Vanguard 6435/6455 Installation Manual
T0185	Vanguard 7300 Series Installation Manual

Documentation Website

Documentation is located on our website:

<http://www.vanguardms.com/support/documentation>

Software License Feature Documentation

Introduction

Use of the Vanguard Applications Ware software is controlled via purchased software licenses. Each license is supported by a suite of protocol documentation to provide you with the information required to fully understand the ways in which you can use your Applications Ware license.

In addition to this IP and LAN Feature Protocols Manual, these additional documentation suites are available:

- SNA Feature Protocols
 - Serial Feature Protocols
 - Multi-Service Feature Protocols
 - Multimedia Feature Protocols
 - Basics Protocols
-

SNA Feature Protocols

The SNA Feature Protocols Manual (Part Number T0101) contains the following options and protocol documentation which describe the underlying SNA functionality of the Vanguard Applications Ware:

- BSC 2780/3780
 - BSC 3270
 - IBM 2260
 - SDLC
 - XDLC
 - BSC 3270-to-SNA Conversion
 - BSC 2780/3780-to-SNA/LU0 Conversion
 - AS/400 Communication Server
 - TN3270 Remote Server
-

Serial Feature Protocols

The Serial Feature Protocols Manual (Part Number T0102) contains the following options and protocol documentation which describe the underlying serial protocol functionality in the Vanguard Applications Ware:

- Burroughs Polled Select
- NCR BSC
- TBOP
- NCCP
- TCOP
- SHDLC
- T3POS
- 3201 ASYNC
- X.42
- TNPP
- TPDU
- SPP
- AC100
- ALC

**Multi-Service
Feature Protocols**

The Multi-Service Feature Protocols Manual (Part Number T0103) contains the following options and protocol documentation which describe the underlying multi-service functionality in the Vanguard Applications Ware:

- Internal DSD
- Multipoint X.25
- Frame Data Compressor
- DataScope
- SMDS
- Vanguard ISDN Protocol Guide
- Vanguard 6520/6560 ISDN Protocol Guide
- Data Encryption
- Virtual Private Network

**Multimedia Feature
Protocols**

The Multimedia Feature Protocols Manual (Part Number T0104) contains the following documentation for multimedia features of the Vanguard Applications Ware:

- Voice Technology
- Vanguard Voice

■ **Note**

The Multimedia Applications Ware license currently supports only the voice feature. The RemoteVU Operator's Manual (Part Number T0054) is now available on the web only. The RemoteVU Manual explains the support offered for the RemoteVU Host Video Workstation application.

**Vanguard
Applications Ware
Basic Protocols**

The Vanguard Applications Ware Basic Protocols Manual (Part Number T0106) contains the following options and protocol documentation which describe the underlying functionality of the Vanguard Applications Ware:

- Vanguard Basic Configuration
 - X.25 Basics
 - APAD/ATPAD
 - Bandwidth Management
 - Frame Relay
 - Trans Polled Async
 - SNMP
 - ASYNC BYPASS
 - SLIP
 - TELNET
 - PPP
 - CLI
-

Software Coldloading/Installation and Alarms and Reports Manuals

Introduction

These manuals offer direction on installing and coldloading software into Vanguard nodes, and explanations of the alarms and report messages that may be displayed on your terminal screen.

Software Coldloading and Installation Manual

This manual describes the different methods of installing software in Vanguard products. It describes software installation by:

- the Vanguide Software Loader
 - downloading software from a Macintosh or PC using Communication Software such as Procomm Plus
 - Ping software from a LAN
-

Alarms and Reports Manual

This manual lists the Vanguard products operating software alarms and reports. Descriptions, corrective actions, trap numbers, and clearing events are also included.

The alarms and traps database is also available on the web:

- 1) Access the web site: **<http://www.vanguardms.com/support/>**
 - 2) Select Alarm Search.
-

Special Notices and Translations

Special Notices

The following notices emphasize certain information in the guide. Each serves a special purpose and is displayed in the format shown:

■Note

Note is used to emphasize any significant information.



Caution

Caution provides you with information that, if not followed, can result in damage to software, hardware, or data.



Warning

Warning is the most serious notice, indicating that you can be physically hurt.

Simplified Chinese

特别通告

以下通告强调指南中的某些信息。
每条信息均有一个特殊的目的并以如下格式显示:

■注解

注解用于强调任何重要的信息。



切记

切记提供您这类信息，如果不遵照信息的要求，可能导致软件、硬件或数据的损坏。



警告

警告是最严重的通告，表明您的身体可能被伤害。

Danish

Særlige overskrifter

Følgende overskrifter fremhæver nogle af oplysningerne i vejledningen. De tjener hvert et specifikt formål og vises i følgende format:

■Bemærk

Bemærk anvendes til at fremhæve vigtig information.



Forsigtig

Forsigtig understreger oplysninger, som, hvis de ikke bliver fulgt, kan føre til beskadigelse af software, hardware eller data.



Advarsel

Advarsel er den mest alvorlige overskrift, og tilkendegiver mulig personskaade.

Dutch

Bijzondere vermeldingen

De volgende vermeldingen besteden extra aandacht aan bepaalde informatie in de handleiding. Elke vermelding heeft een eigen nut en wordt in de volgende opmaak weergegeven:

■Opmerking

Een opmerking wordt gebruikt om belangrijke informatie te benadrukken.



Let op

Dit kopje geeft aan dat u de beschreven instructies moet volgen om schade aan de software, hardware of gegevens te vermijden.



Waarschuwing

Een waarschuwing is de belangrijkste vermelding. Indien u deze niet volgt, kan dit tot lichamelijke verwondingen leiden.

Finnish

Eritysilmoitukset

Seuraavat ilmoitukset korostavat tiettyjä oppaan tietoja. Kullakin on oma erikoistarkoituksensa ja ne esitetään seuraavassa muodossa:

■Huomaa

Huomautusta käytetään korostamaan tärkeitä tietoja.



Vaara

Vaarailmoitus antaa tietoa, jonka huomiotta jättäminen voi johtaa ohjelmiston, laitteiston tai tietojen vahingoittumiseen.



Varoitus

Varoitus on kaikkein vakavin ilmoitus ja se kertoo mahdollisesta loukkaantumisriskistä.

French

Messages spéciaux

Les messages suivants mettent en valeur certaines informations dans le guide. Chacun d'eux remplit une fonction spéciale et est affiché dans le format indiqué :

■Important

Important est utilisé pour souligner des informations critiques au sujet d'une procédure.



Mise en Garde

Une mise en garde vous fournit des informations qui, si elles ne sont pas observées, peuvent se traduire par des dommages pour le logiciel, le matériel ou les données.



Avertissement

Un avertissement constitue le message le plus sérieux, indiquant que vous pouvez subir des blessures corporelles.

German

Besondere Hinweise

Durch die folgenden Hinweise werden bestimmte Informationen in diesem Handbuch hervorgehoben. Jeder Hinweis dient einem bestimmten Zweck und wird im dargestellten Format angezeigt:

■Wichtig

WICHTIG wird zur Betonung signifikanter Angaben zu Vorgehensweisen verwendet.



Vorsicht

Ein Vorsichtshinweis macht Sie darauf aufmerksam, daß Nichtbefolgung zu Software-, Hardware- oder Datenschäden führen kann.



Warnung

Eine Warnung weist Sie darauf hin, daß ernsthafte Körperverletzungsgefahr besteht.

Italian

Simboli speciali

I seguenti simboli, ciascuno con una speciale funzione, evidenziano determinate informazioni all'interno del manuale. Il formato è quello riportato qui di seguito.

■Nota

Questo tipo di avvertimento viene utilizzato per evidenziare tutte le informazioni significative relative ad una procedura.



Attenzione

Questo tipo di avvertimento fornisce informazioni che, se non vengono seguite, possono provocare danni al software, all'hardware o ai dati.



Avvertenza

Questo tipo di avvertimento indica la presenza di condizioni di rischio che possono causare lesioni fisiche. Si tratta del simbolo più importante al quale prestare attenzione.

Japanese

特別表記

ガイド内では、以下の表記を使って特に注意する必要がある情報が提供されます。各表記にはそれぞれ目的があり、次の形式で表示されます。

■重要

重要な情報が記述されています。



注意

記述されている内容に従わない場合、ソフトウェア、ハードウェア、またはデータが壊れる可能性があります。

警告

最も重要な情報が記述されています。身体的な障害を被る可能性があります。

Korean

일러두기

이 설명서에는 사용자에게 특정한 내용을 강조하기 위해서 다음 내용이 포함되어 있습니다.

■참고

중요한 정보를 강조하는데 사용합니다.



주의

소프트웨어나 하드웨어, 또는 데이터를 손상시킬 수 있으므로 주의가 필요한 상황을 알립니다.



경고

사용자의 안전에 위험을 알리는 가장 심각한 수준의 경고입니다.

Norwegian

Spesielle merknader

Merknadstypene nedenfor representerer en bestemt type informasjon i håndboken. Hver merknadstype har en spesiell hensikt og vises på følgende format:

■Merk

Merk brukes for å fremheve viktig informasjon.



Forsiktig

Forsiktig gir deg informasjon om situasjoner som kan føre til skade på programvare, datamaskin eller data dersom den blir fulgt.



Advarsel

Advarsel er den mest alvorlige merknaden og indikerer at du kan bli fysisk skadet.

Portuguese/ Portugal

Avisos Especiais Os avisos que se seguem realçam certas informações neste guia. Cada um deles serve um objectivo especial e é visualizado no formato apresentado:

■ **Nota**

Nota é utilizado para realçar qualquer informação importante.



Atenção

Atenção facultalhe informações que, se não forem cumpridas, poderão provocar danos no software, hardware ou nos dados.



Cuidado

Cuidado constitui o aviso mais grave, o qual indica que poderá ficar fisicamente ferido.

Spanish/Spain

Notificaciones especiales Las siguientes notificaciones ponen énfasis sobre determinada información de la guía. Todas tienen un propósito especial y se muestran con el formato siguiente:

■ **Nota**

Las notas se utilizan para destacar determinada información de importancia.



Advertencia

Las advertencias le proporcionan información que debe seguirse, si no desea que el software, el hardware o los datos puedan verse dañados.



Aviso

Los avisos son las notificaciones de carácter más importante e indican la posibilidad de daños físicos para el usuario.

Swedish

Speciella beteckningar Följande beteckningar betonar viss information i handboken. Var och en har ett speciellt syfte och visas i formatet nedan:

■ **OBS!**

OBS! används för att betona viktig information.



Viktigt

Viktigt ger dig information som, om den inte följs, kan resultera i skada i programvara, maskinvara eller data.



Varning

Varning är den mest allvarliga beteckningen och den indikerar att du kan skadas fysiskt.

Customer Information

Customer Questions

Customers who have questions about Vanguard Managed Solutions products or services should contact your VanguardMS representative or visit this website for product, sales, support, documentation, or training information:

<http://www.vanguardms.com>

Comments About This Manual

To help us improve our product documentation, please complete the comment card included with this manual and return it by fax to (508) 339-9592. If you prefer, provide your name, company, and telephone number, and someone in the documentation group will contact you to discuss your comments.

Customer Response Card

Vanguard Managed Solutions would like your help in improving its product documentation. Please complete and return this card by fax to (508) 339-9592; Attention: Product Documentaton, to provide your feedback.

To discuss comments with a member of the documentation group, provide telephone information at the bottom of this page. **Thank you** for your help.

Name _____

Company Name _____

Address _____

Document Title: Vanguard Applications Ware IP and LAN Feature Protocols Manual

Part Number: T0100, Revision K

Please rate this document for usability:

Excellent Good Average Below Average Poor

What did you like about the document? _____

What information, if any, is missing from the document? _____

Please identify any sections/concepts that are unclear or explained inadequately.

Additional comments/suggestions. _____

Telephone _____ Ext. _____ Best time to call _____

Cut Here



