200AE1
Network Services Gateway

Hardware Installation Guide

Version 1.0

Export Notice

This product, software and related technology is subject to U.S. export control and may be subject to export or import regulations in other countries. Purchaser must strictly comply with all such laws and regulations. A license to export or re-export may be required by the U.S. Department of Commerce.

Regulatory Compliance

FCC Part 15, UL, CE, FCC Part 68 and Industry Canada.

INDUSTRY CANADA (IC) NOTICE

"**NOTICE:** This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment."

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WARRANTY AND REPAIR SERVICE CENTER:

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This Class (A) digital apparatus complies with Canadian ICES-003.

Licensing Use of this product is subject to Edgewater Networks Software License Agreement.

Portions of this product include software sponsored by the Free Software Foundation and are covered by the GNU GENERAL PUBLIC LICENSE.

See the *VOS for EdgeMarc User Manual* for more information regarding licenses.

Release Date: 15 February 2009

Contents

Preface

Thank you for purchasing the 200AE1 Network Services Gateway.

This Installation Guide describes the 200AE1 hardware and installation procedures. It is intended for network installers, network operators, and security officers.

About this Guide

The following table briefly describes each chapter and appendix in this guide.

Chapter or Appendix	Description
Chapter 1, Overview	Summarizes the 200AE1's functional features; describes front-panel LEDs and physical features of the back panel
Chapter 2, Getting Started	Provides instructions for installing the 200AE1 and accessing the VOS for EdgeMarc management software.
Appendix A, Specifications	Lists the 200AE1's technical specifications.
Appendix B, Warranty Information	Provides hardware warranty information for the 200AE1.
Appendix C, Certification	Provides information about certification and agency compliance.

Typographic Conventions

Task steps are presented in numbered lists. User inputs are displayed in boldface type and can represent either keyboard input or mouse selections in a browser window. Web GUI menus and input areas are represented in italic type.

Note
Denoted with a pencil icon, notes emphasize useful information.

Caution
Denoted with an exclamation point icon, cautions indicate situations in which proper procedures must be followed to avoid the risk of data loss or equipment damage.

Warning
Denoted with a lightening bolt symbol, warnings indicate situations in which proper procedures must be followed to avoid the risk of bodily injury.

Contact and Support Information

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Santa Clara, CA 95051

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Phone: +1 (408) 351-7200

General Email: info@edgewaternetworks.com
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Overview

The EdgeMarc 200AE1 Network Services Gateway combines multiple voice and data features into a single package offering a choice of ADSL or Ethernet WAN interfaces. It also includes a 4 port managed VLAN switch and integrated analog phone and line ports. Among other benefits, it provides cost savings through ease of deployment, management, and robust converged voice and data network security.

The EdgeMarc 200AE1 provides flexible and application ready low cost solutions. It is an ideal platform for managed services for the Small Office/Home Office (SOHO) environment. The 200AE1 can also be deployed in applications such as Enterprise voice over IP.

The 200AE1 provides the following important functions for converged networks:

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- **Security**
  - ❑ Uses a Stateful Packet Inspection (SPI) firewall in combination with a VoIP Application Layer Gateway (ALG) to provide comprehensive "media-aware" security.
  - ❑ Supports IPSec for secure site-to-site networking.

- **VoIP**
  - ❑ Resolves NAT/FW traversal problems for SIP traffic. It allows a single public IP address to be used for multiple VoIP clients.

- **Quality of Service**
  - ❑ Maximizes WAN link utilization while optimizing voice quality using prioritization and shaping.

- **Call Quality Monitoring**
  - ❑ Provides passive call quality monitoring statistics for each VoIP call to help enforce SLAs and resolve networking problems that negatively affect call quality.

- **Future-proof Scalability**
  - ❑ Provides a powerful, flexible platform that can be deployed initially as a low-cost WAN access router and then licensed through software for more advanced VoIP features and increased call performance. It is the ideal platform for service providers offering DIA, hosted VoIP and managed security services, or enterprises migrating to converged voice and data networks.

Feature Summary

VoIP

- SIP ALG that allows a single public IP address to be used for multiple VoIP endpoints

QoS

- Class based queuing/prioritization
- Diffserv marking and policing
- Traffic shaping
- VoIP Call Admission Control (CAC) prevents oversubscription of priority queue

Security

- Stateful packet inspection firewall
- VoIP aware firewall dynamically provisioning and closing of UDP ports used for VoIP calls
- IPSec: 3DES, SHA-1
- NAT/PAT server that hides enterprise LAN topology

Passive Call Quality Monitoring

- Per call statistics that include Mean Opinion Score (MOS) (average and minimum), jitter, latency, and packet loss
- Alarms for poor MOS scores
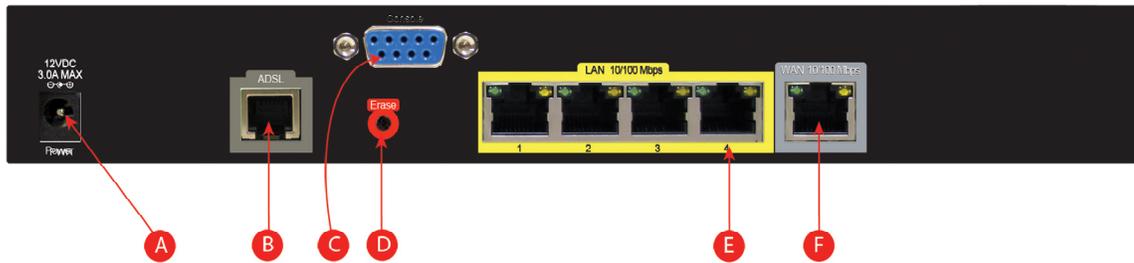- Active call count indicators

Back Panel

Figure 1: 200AE1 Back Panel

Table 1: 200AE1 Back Panel Port Description

	Name	Description
A	**Power Connector**	Accepts the plug from the supplied power cord to connect the unit to an AC power source
B	**ADSL WAN Port **	Connects the 200AE1 to a phone line supporting ADSL/ADSL 2/2+ standards.
C	**Management Console Port**	This port is used to establish a local console session with the 200AE1 using a VT100 terminal or emulation program. The cable required is a straight-through 8-wire cable. The serial port uses a baud rate of 9600, 8 data bits, 1 stop bit and no parity. This port is used for debug or local diagnostic purposes only. Primary configuration of the 200AE1 is performed from a web browser as covered in ***VOS User Manual***
D	**Erase Button**	If pressed twice in quick succession, only the CLI password will be changed back to its original password. If pressed three times in quick succession, the EdgeMarc will revert back to the factory default settings. This will reset all passwords and erase all prior configurations. The default LAN address will be set to 192.168.1.1. ***Caution*** ***Setting the system configuration to factory default will erase all configuration changes made since the last factory default settings. This will leave all IP phones behind the device non operational and Internet connectivity or network access for PCs will be down until the system is reconfigured.***
E	**10/100 Mbps LAN Ports**	4x Local Area Network (LAN) ports to connect the IP phones or an Ethernet switch. **NOTE:** Unit can also be configure through any of these ports using

	Name	Description	
		the web interface	
		Link Activity	**Solid Green -** Ethernet link is up.
			Blinking Green - Indicates activity on the link.
		100BaseT Indicator	**Solid Amber -** Indicates that the port is connected to a 100BaseT Ethernet switch or hub
			Off - If the link is up, it indicates that the port is connected to a 10BaseT Ethernet switch or hub
F	**Ethernet WAN Port ****	Connects the 200AE1 to a cable or xDSL modem.	

Front Panel LEDs

Figure 2: 200AE1 Front Panel LED

	LED Label	Activity	Description
J	Power	Off	Power switch is off (or no power from the AC outlet)
		Green	Power is supplied to the unit
K	Status	Off	Either the ALG is not licensed or the SIP server address under "VoIP ALG→SIP" is set to 0.0.0.0
		Green	ALG is licensed and the SIP server address under "VoIP ALG→SIP" is not set to 0.0.0.0
		Flashing Green	Configuration is being written to permanent storage or an upgrade is in progress
L	ADSL	Off	The ADSL link is down.
		Green	The ADSL link is up and operational.
		Flashing Green	Training indication

Table 2: 200AE1 Front Panel LED Description

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Getting Started

Physical Installation

The 200AE1 is designed for desktop, rack, or wall-mount installation. Observe the following guidelines when installing the system:

- Always verify that the AC cord is disconnected from a power source prior to installation.

- Ensure that the installation site has adequate air circulation and meets the minimum operating conditions for the system as specified in the **Specifications** section of this document

Required Tools and Materials

- If the unit is to be mounted on the wall then:
    - 1 Flat or Philips screw driver
    - 2 round or flat head Philips or slotted screws – 1 ½ inch long
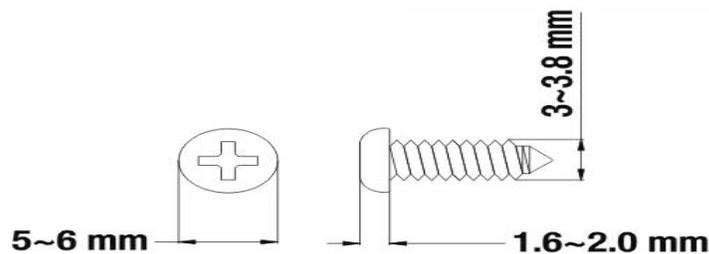
    - 2 hollow wall anchors
- If the unit will be mounted in a shelf:
    - 1 Flat or Philips screw driver

- Ethernet cables to connect the LAN ports to LAN switches or to individual IP phones. They can also be used to connect the Ethernet WAN port to a WAN router, a Cable Modem or a DSL Modem.

- FXS ports to analog phones or key system.

Desktop Installation

1. Remove the 200AE1 and accessories from the shipping container.

2. Place the 200AE1 on a flat, dry surface such as a desktop, shelf or tray.
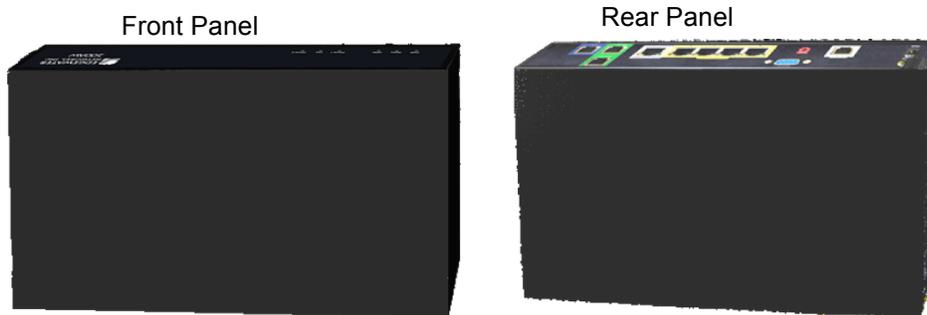
Wall-Mount Installation

You can mount the 200AE1 on a wall using the two mounting brackets on the bottom of the appliance. We recommend that you use two round or pan head screws.

1. Install two screws 5.9063" (150 mm) horizontally apart on a wall or other vertical surface. The screws should protrude from the wall so that you can fit the appliance between the head of the screw and the wall.

5 29/32"
(150mm)
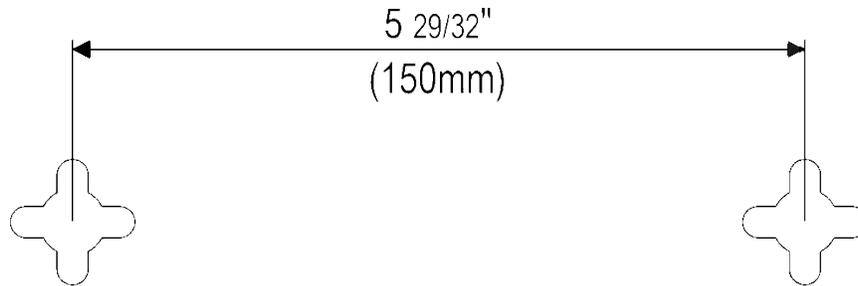
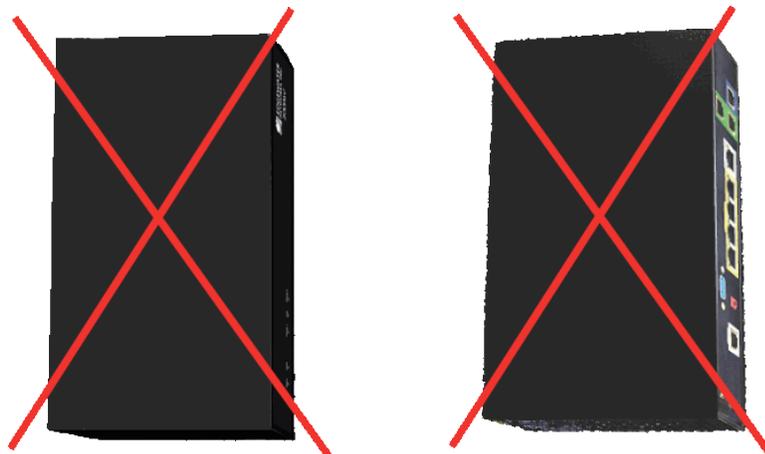If you install the screws in drywall, use hollow wall anchors to ensure that the unit does not pull away from the wall due to prolonged strain from the cable and power connectors.

2. Remove the 200AE1 and accessories from the shipping container.

3. Mount the 200AE1 on the wall as shown below.

Front Panel   Rear Panel

4. <u>Do not</u> mount the 200AE1 on the wall as shown below.

Rack-Mount Installation

You can mount the 200AE1 in a 19" rack by using the rack-mount kit supplied with the product.

1. Attach the ear mounts to both sides of 200AE1 with the screws.

2. Attach the 200AE1 with the ear mounts to the shelf by screwing the ear mounts to the shelf with screws.

Connecting the Power and Cables

The 200AE1 comes with an AC power cord and power adapter for connecting the unit to the AC outlet.

Warning

Always connect the AC power cord to an AC outlet suitable for the power supply that came with the unit in order to reduce the risk of damage to it.

- Connect one end of the AC power cord to the power adapter and the other one to the AC outlet.

- Connect plug from the power adapter to the Power Connector on the 200AE1. A little force may be necessary to get the plug properly positioned

Caution

Secure the power adapter using a fastener or tie wrap to nearby shelf so that it does not hang from the power connector.

- If connecting to a WAN router, cable modem or DSL modem, connect the Ethernet cable to the Ethernet WAN port or ADSL port on the 200AE1 and the other end to the WAN device.

Administration

You can configure the 200AE1 using a web browser such as Internet Explorer or Netscape Navigator. The 200AE1 is shipped with the pre-configured IP address 192.168.1.1 for the LAN port.

To connect to the 200AE1, follow these steps:

1. Assign static IP address 192.168.1.2 with subnet 255.255.255.0 to a PC.

2. Connect the PC to LAN port 4 of the 200AE1.

3. Launch a web browser on the PC and enter the URL string: **192.168.1.1**. Press **Return.** The following login window should appear:

4. Enter the username "**root**" and the password "**default**" to log into the system. The following initial 200AE1 main configuration menu should appear:

System

Help

System

Software Version:
Version 9.2.0AlphaApr-13-2009 -- Mon Apr 13 01:18:18 PDT
2009

Hostname:
200AE1

Model:
EdgeMarc 200AE1

Vendor:
Edgewater

LAN Interface MAC Address:
00:03:6D:F6:8A:5B

Registration Status:
The ALG feature is registered. View license key.

System Date:
04/14/2009 23:57:35 UTC

Change Administrative Password:
The password of the read-write administrative user can be
changed.

Change Read-Only Password:
The password of the read-only user can be changed.

5. Click on "**Network"** under the "Configuration Menu" and start configuring the 200AE1.

📝 **Note**

For better network management security change the default user name and password by
following the procedure described in the VOS for EdgeMarc User Manual.

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Specifications

WAN Ports	ADSL/ADSL 2/2+ or 10/100 Ethernet
LAN Ports	4x10/100 Ethernet (Managed VLAN Switch)
Serial Ports	1xRS-232
Dimensions	Height 1 $\frac{11}{16}$ " (42.863 mm), Width 10 $\frac{7}{16}$ " (265.113 mm), Depth 6 $\frac{10}{16}$ " (168.275 mm)
Weight	2 lb (0.91 kg)
Power	12V @ 1.5A, external plug pack
Warranty	1 Year
Environmental	Operating Temperature: 5° to 40°C Humidity: 20% to 80%, non-condensing

For the latest information, please visit the following URL: http://www.edgewaternetworks.com and look for EdgeMarc Product Family Specifications under Products→EdgeMarc

B

Warranty Information

Hardware Warranty

For a period of one (1) year after shipment of the product, Edgewater warrants that such Hardware will substantially conform to Edgewater's published specifications for such Hardware on the date of order if properly used in accordance with procedures described in the documentation supplied by Edgewater. End-user shall notify Edgewater of any nonconformance during the warranty period, obtain a return authorization for the nonconforming Hardware from Edgewater, and return the nonconforming Hardware to Edgewater's designated repair facility, freight prepaid, with a statement describing the nonconformity. Edgewater's exclusive obligations with respect to nonconforming Hardware shall be, at Edgewater's option, to advance replace such Hardware, if it is determined to be defective, or to refund to End-user the purchase price paid for the Product. Advance replacement units are shipped same business day for next-day delivery (within the US) when hardware failure is determined by 1pm PST. Failed components must be returned to Edgewater within 14 days or End-user will be charged for new product purchase.

C

Certification and Compliance

FCC PART 68 NOTICE

This equipment complies with Part 68 of the FCC Rules and the requirements adopted by ACTA. On the bottom surface of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

This equipment uses RJ48C and R11 jacks.

A Plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by ACTA. See installation instructions for details.

If this equipment, Model 200 causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment, Model 200 for repair or warranty information, please contact Edgewater Networks Technical Assistance Center at 408.351.7255 If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

Caution
This equipment contains no user-serviceable parts.

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of Model 200 equipment does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

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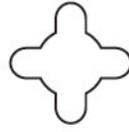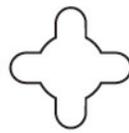
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Faceplate

Wall Mount Stencil

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Converged Networking. Simplified.