



Application Note:

Host Site RAS Server for Dial-UP Termination of ATMs & POS Terminals

The Gateway 1000 provides tremendous cost savings with the capability to convert Legacy ATMs and POS devices to IP for transport over any type of IP Network.

IP Connectivity Solution

If you're a financial institution with many POS terminals you might want to consider building your own dial-up network. Competition among the carriers is on the increase and the cost of dial-up PRI/T1 lines is decreasing rapidly. Carriers are now offering unlimited local and long distance services for a low fixed rate per month. This golden opportunity can drastically reduce your operating expenses quickly.

Traditionally, financial institutions use a transaction carrier in order to connect an ATM or POS device from a retail location to the host site. The dial-up circuits that the transaction company uses could cost as much as \$40-\$70 per line plus the transaction cost of \$0.03 to \$0.30 per transaction. These charges can add up quite fast, especially if the terminal is a high volume terminal. Usually when a terminal has very high volumes it will be moved to a leased line, which could cost \$150 or more.

JBM Electronics can now help financial institutions reduce their high carrier cost with our RAS server solution. The Gateway 1000 (G1000) was developed for banks, retailers, and EFTs who needed to build their own dial-up networks. With the JBM solution you can terminate up to 96 dial-up circuits over four T1s on one G1000.

The G1000 is extremely flexible with several different models to choose from. Also, the G1000 has many optional expansion cards that can be used depending on how many ports are needed and what type of interfaces are needed.

Today, manufacturers of host platforms and transaction switching systems are moving to IP based platforms. This presents a major problem for end-users whose terminals aren't compliant with TCP/IP standards. This is why the G1000's powerful Linux based platform also provides protocol conversion.

JBM Electronics is the industry leader in protocol conversion and we pride ourselves on our engineers' extensive knowledge of legacy protocols. Converting from Visa or other dial-up Async protocols to TCP/IP is made easy with the Gateway 1000. This capability allows our customers to migrate their entire network to TCP/IP without having to upgrade their terminals.

Also, the G1000 provides increased visibility into your dial-up network. Our network management and monitoring capabilities allow you to identify problem terminals immediately. The G1000 can also provide Terse Logging, which in addition to the standard call records, can generate new log files to provide a one-line summary of each call. This summary includes Caller ID, DNIS, Connect Speed, Call duration, and number of transactions. This data can be collected daily, weekly, or whenever appropriate and imported into an Excel spreadsheet for analysis.

Our advanced DNIS routing feature offers our customers the ability to route transactions to specific IP address based on the DNIS information or number dialed. In addition, the G1000 can optimize different numbers dialing in for faster connection times based on various modem modulation types. One number can be optimized for 56k while another for low speed modems. All these options can be dynamically updated with no interruption in service.

Operation

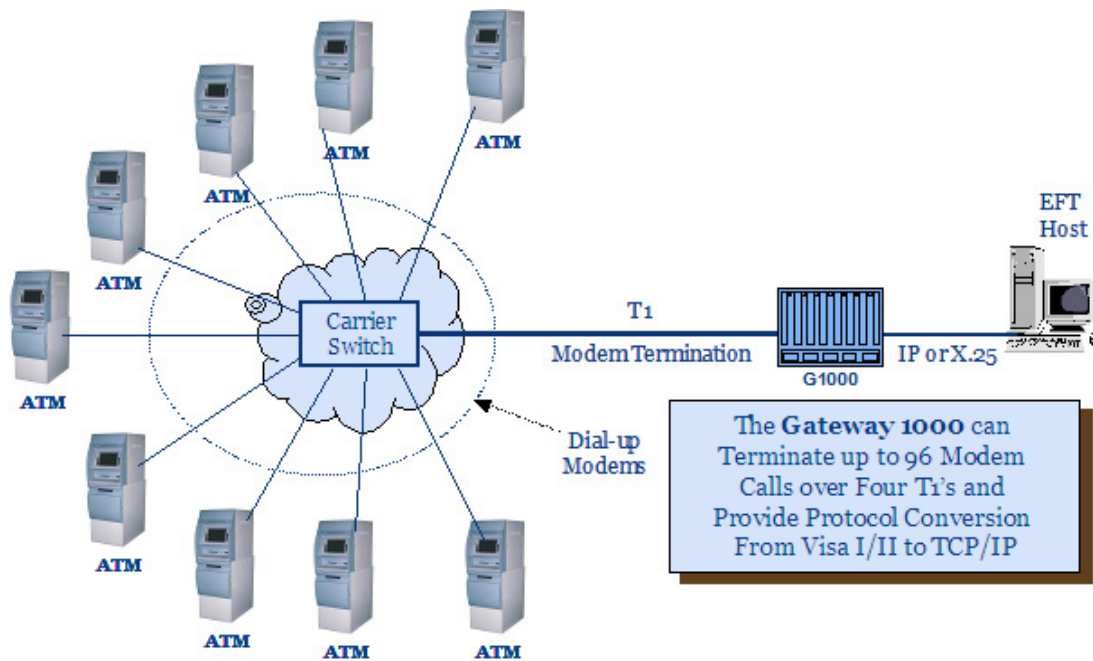
Installation of the JBM Gateway 1000 is a simple process.

Install the G1000 at your host site. Have your carrier provide you with T1 service for your dial-up lines. Assign one phone number as a hunt group for your T1 or across multiple T1's. Then program your ATM's or POS devices with that phone number. The ATM or POS device will then dial in to the carriers switch; the carrier switch will then route the calls to your T1. The call will then be terminated in the G1000. The G1000 will then convert the Visa or other Async protocol to TCP/IP. Then the G1000 routes the transaction to the host or transaction switching system over IP.

The transaction process is:

1. The ATM or POS device dials a specific phone number when it has a transaction to process.
2. The carrier switches the call to your host site over a T1 or E1 line.
3. The G1000 verifies the caller ID and negotiates the modem speed.
4. Once the call is terminated the G1000 will convert the Visa protocol to TCP/IP.
5. The transaction is then sent to the host or transaction switching system for processing.
6. Once the transaction is completed the ATM or POS device disconnects the line.
7. A call record is then generated by the G1000.

JBM's cost-effective solution helps to eliminate the need for a transaction carrier, decreases transaction times, offers increased visibility into the network, and gives IT managers the flexibility to interface into any type of network.



Terminating Dial-Up ATMs or POS Devices into an IP Based Host

When using a JBM Gateway you can be assured that your conversion will go smoothly since JBM Electronics is the Industry leader in protocol conversion. Converting any legacy protocol to IP is a straightforward process for JBM.

Key Benefits and Features of Using a JBM Gateway For Protocol Conversion

- Eliminate expensive processing cost
- Decrease transaction times
- Terminate up to 4 T1 or E1s with one Gateway
- Support multiple types of ATMs or POS devices with one Gateway
- Full Router functionality with Static, RIP, OSPF, and BGP routing
- No need to replace or upgrade existing ATM/POS device
- Compatible with all standard routers and VPN devices
- Seamless and non-intrusive installation
- Access to Wireless networks
- Full protocol conversion
- Fallback routing for multiple host
- Detailed call records
- Remote management and statistics
- Route based on DNIS

Gateway Products and Feature

Gateway 1000 – The G1000 is our flagship product used by major banks, EFTs, and ISOs. The G1000 is a flexible and scalable host site product used for converting and terminating a large number of circuits. The G1000 can be used as a host site concentrator to convert from Legacy to IP or from IP to Legacy. Also the G1000 can be used as a RAS server for dial-up termination and conversion to IP.

The G1000 comes in several different models depending on how many slots are needed. These models can be configured as a stand-alone unit or rack-mountable. All of the models provide protocol and interface conversion for dissimilar networks in remote locations or at the central site. The G1000 provides a wide range of Legacy protocol support for LAN and WAN networks and supports the protocol and text manipulation for each device or user.

Optional Expansion Cards:

- T1 RAS Card
- Dual T1 RAS Card
- A 10/100 MB Ethernet card
- Token Ring card
- One Port Serial WAN Card
- Two Port Serial WAN Card
- 1 Port Sync/Async Card
- 4 Port Sync/Async Card
- 4 Port Async Card
- 8 Port Async Card
- 16 Port Async Card
- 16 Port Expansion Mod

JBM can provide custom modifications to the protocols supported by the Gateway. We can provide text manipulation, custom data translations, unique network address mapping or specialized host application messages. These custom modifications can eliminate the requirement for changes in host application programs or network topologies; therefore, allowing you quick installation and ability to run production applications immediately.

Protocol Support – All of the JBM Gateway products support protocol conversion, and when it comes to protocol conversion, JBM is the industry leader with over 50 different protocols in our software library. Protocol conversion is necessary when converting a host to IP or introducing a new Transaction Switching System. Our Gateway products provide our customers with a seamless and non-intrusive migration to IP. Below is a list of the most Common Protocols Converted to TCP/IP:

- Bisync 3270
- SNA/SDLC
- Poll Select TC500
- Uniscope
- Bisync 2780/3780
- Visa I & II

Backup Routing – Fallback IP routing can be used if a backup host is available. Also, if a dial backup line is provided then the dial backup feature can be implemented. If the primary path (IP Connection) becomes unavailable, an external modem can automatically be enabled. Once the primary path becomes available, the Gateway will switch the connection back to normal operation.

Security – ATMs and POS devices are open for attack by hackers and JBM realizes this, so we have added additional security by incorporating VPN capabilities with Firewall functionality into our products. We provide a Linux based hardware solution, which is a secure way of preventing hackers from retrieving critical transaction data. Our Gateway products are easy to install; and in most cases, no reconfiguration of the ATM or POS device is required. The Gateways include:

- Stateful Inspection Firewall
- SSL Client/Server
- VPN Client/Server
- 3DES Encryption
- Dynamic Keys
- DHCP Client/Server
- PAT for IPsec
- NAT
- PPP/PPPoE
- Transparent Bridging Capability

Product Specifications

Gateway Specifications			
T1 RAS	Async Card with up to 24 channels on one T1 or ISDN pri connection. Each channel supports speeds up to 56 KB		
E1 RAS	Async Card with up to 30 channels on one E1 or ISDN pri connection. Each channel supports speeds up to 56 KB		
Dual T1 RAS	Async Card with up to 48 channels on two T1 or ISDN pri connections. Each channel supports up to 56 KB		
Dual E1 RAS	Async Card with up to 60 channels on two E1 or ISDN pri connections. Each channel supports up to 56 KB		
T1 Interface	RJ48		
Ethernet Connector	RJ45		
Ethernet Interface	10 base T	100 Base T	
Token Ring	An auto-sensing Token Ring card which supports 4 MB or 16 MB networks		
Serial WAN	This WAN Card supports T1/E1 speeds for Frame Relay and X.25 protocol. DB25		
Serial Port Baud Rate	110-56,000 bps		
Data Protocols	Async PPP Visa I and II NCR Poll/Select	TC 500 Unisys Poll/Select Bisync 3270	SNA/SDLC 3270 SNA/SDLC LU0 Bisync 2780/3780
Network Protocols	Ethernet Frame Relay	X.25 ADSL	
Security Features	Firewall SSL Client VPN Client	SSH Server 3DES Encryption Dynamic Keys	
Routing Protocols	RIP OSPF	BGP Static	
Network Management	Console Port Telnet	SNMP	
Processor	Pentium-class		
Memory	128 MB RAM		
Power Supply	120-250 VAC, 50/60 Hz (Internal) An optional -48 V DC power supply is also available.		

For more information on this application or other JBM products, please contact us.