



## Product Information

### Remote Network Management

Remote network management has traditionally been difficult and expensive. This is due primarily to the limited scalability of network management systems (NMSs), as well as their inability to manage through firewalls. In addition, slow, leased wide area network (WAN) lines make it cost-prohibitive to transmit the high volumes of NMS-generated information.

Yet, the ability to perform remote network management has become critical in today's internetworked economy. Enterprises and service providers have built large, complex, and fluid networks that span multiple remote locations around the world. And business success is more and more dependent on e-commerce and networked applications—which in turn depend upon remote network devices that operate outside the traditionally secured area.

### Tavve's ePROBE™

Introducing ePROBE, the first truly distributed solution for remote network management. ePROBE provides leading-edge fault management and performance reporting, including Layer 2 event correlation, for devices across remote networks and e-commerce sites, anywhere in the world. ePROBE solves the problem of how to manage remote networks and e-commerce sites, enabling decentralized, secure, and reliable network management across the Internet.

### How It Works

ePROBE is a distributed version of Tavve's eNMST™ software, preinstalled on a network device. Each ePROBE device is placed at a remote site, inside the site's firewall or secured area, and adjacent to the devices that need to be managed. ePROBE performs SNMP and RMON data collection, status polling, response time polling, event correlation, and trap filtering locally, at the remote site. It then transmits important fault and performance information, via a secure connection, back to the NMS. The NMS processes this information using Tavve's EventWatch and PRM (Performance Reporting Manager) software.

### Key Features

- Increased NMS scalability
- Remote management through firewalls with secure connection
- Processing of duplicate IP addresses
- Reduction in WAN traffic
- Lowered costs

### NMS Scalability

Network operations centers (NOCs) for enterprises and service providers typically have large central offices that house server farms and complicated network infrastructures. These NOCs usually have one or more NMSs to monitor remote offices or customer sites. There are significant limitations associated with this type of configuration. Each remote site must be limited to a few hundred nodes, and each NMS cannot realistically manage more than a few thousand total nodes. This requires the costly implementation of multiple NMSs, each of which is often underutilized because logical business groupings do not usually fit within the restrictions of this configuration.

ePROBE solves the problem of NMS scalability. Each ePROBE device contains a unique, registered IP address, and one or more ePROBE devices can be placed at each remote site. Each ePROBE device can manage up to 100 network nodes, while the NMS treats each ePROBE as a single node. The result is that a single NMS can now manage up to 40,000 nodes—providing a scalability that is unsurpassed in the market.

### Managing Through Firewalls

Network management systems traditionally cannot manage equipment outside the firewall, because corporate security does not allow SNMP and ICMP (ping) traffic through the firewall. Thus, critical e-commerce devices, as well as any devices within firewall-protected sites, cannot be monitored by a traditional NMS.

ePROBE enables NMSs to manage devices outside the central firewall, as well as devices located within firewall-protected sites. Each ePROBE device communicates with the NMS via a secure, encrypted, and reliable session. Multiple secured areas can be managed by multiple ePROBE devices. ePROBE can manage e-commerce servers on the Internet, for example, reporting fault and performance information back to the NMS. Moreover, with ePROBE, service providers can place a firewall between their NOC and their customers, keeping customer traffic out of their private network.

### Duplicate IP Addresses

In today's business environment of mergers, acquisitions, and outsourcing, duplicate IP addresses have become a major obstacle to effective network management. Traditional NMSs cannot process duplicate IP addresses; the result is degraded performance of both the NMS and the network itself. The classic—and costly—resolution of this problem is to add a separate NMS for each remote location or customer.

ePROBE solves the duplicate IP address problem with an innovative addressing scheme. By appending its own IP address to the addresses of all nodes behind it, ePROBE automatically creates a unique IP address for each node. This unique IP address is sent to the centralized fault management software (Tavve's EventWatch), which converts the appended address back to the original device address, and sends the location information, as part of a trap, to the NMS.

### Reduction in WAN Traffic

A trap is a message that something is wrong with a network device. Many, if not most, traps are either insignificant or superfluous. Even if the centralized NMS contains fault management software, traps are still generated and transmitted across the wide area network (WAN) back to the NMS. A remote site, possibly thousands of miles away, sends all its traps to the NMS over a slow and costly line, creating a huge amount of WAN traffic and monopolizing bandwidth.

ePROBE solves this problem by performing fault management, event correlation, root cause analysis, performance data collection, and trapwall functions locally, at the remote site. It then sends the data back to the NMS either on demand or at predefined intervals. ePROBE forwards only significant events and verified faults to the central NMS, and also compresses SNMP/RMON collect data before sending it out. The result is that ePROBE reduces WAN traffic by a factor of ten, conserves costly bandwidth, and lowers processing requirements on the central NMS.

### Low-Cost Solution to Remote Network Management

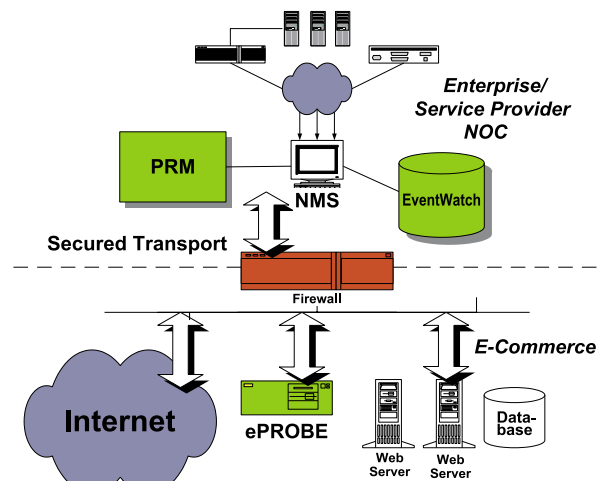
Today, a NOC outsourcing company typically dedicates an entire NMS (platform and server) to a single customer. The NMS equipment might be located at the customer site, or the service is provided over a dedicated link into the customer site. Either way, costs can be significantly lowered by installing ePROBE, instead of another NMS, on the customer premises. ePROBE devices are significantly less expensive than additional NMSs. Furthermore, with ePROBE on the customer premises, links between the NOC and customers can utilize slower (and less expensive) WAN lines because the bandwidth is only used when ePROBE needs to relay filtered alerts back to the NOC.

### NMS Platform Requirements

- Tivoli NetView running on IBM AIX or Sun Solaris
- Hewlett-Packard OpenView Network Node Manager running on HP-UX or Sun Solaris

### NMS Software Requirements

- EventWatch version 1.7 or later
- PRM version 1.7 or later




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