Reliable state-of-the-art network management solutions

IBM Nways Manager for AIX Version 1.2

Highlights

Reduces network ownership cost and improves network availability

Provides easy-to-use, graphical network management

Provides comprehensive device management through that same easy-to-use graphical user interface

Provides Web-based management using Java™ technology

Provides Java-based performance management using distributed intelligent agents for large networks

Provides remote monitoring of your network's performance, through RMON and RMON2 support

Enables you to view your network traffic from a protocol and application perspective

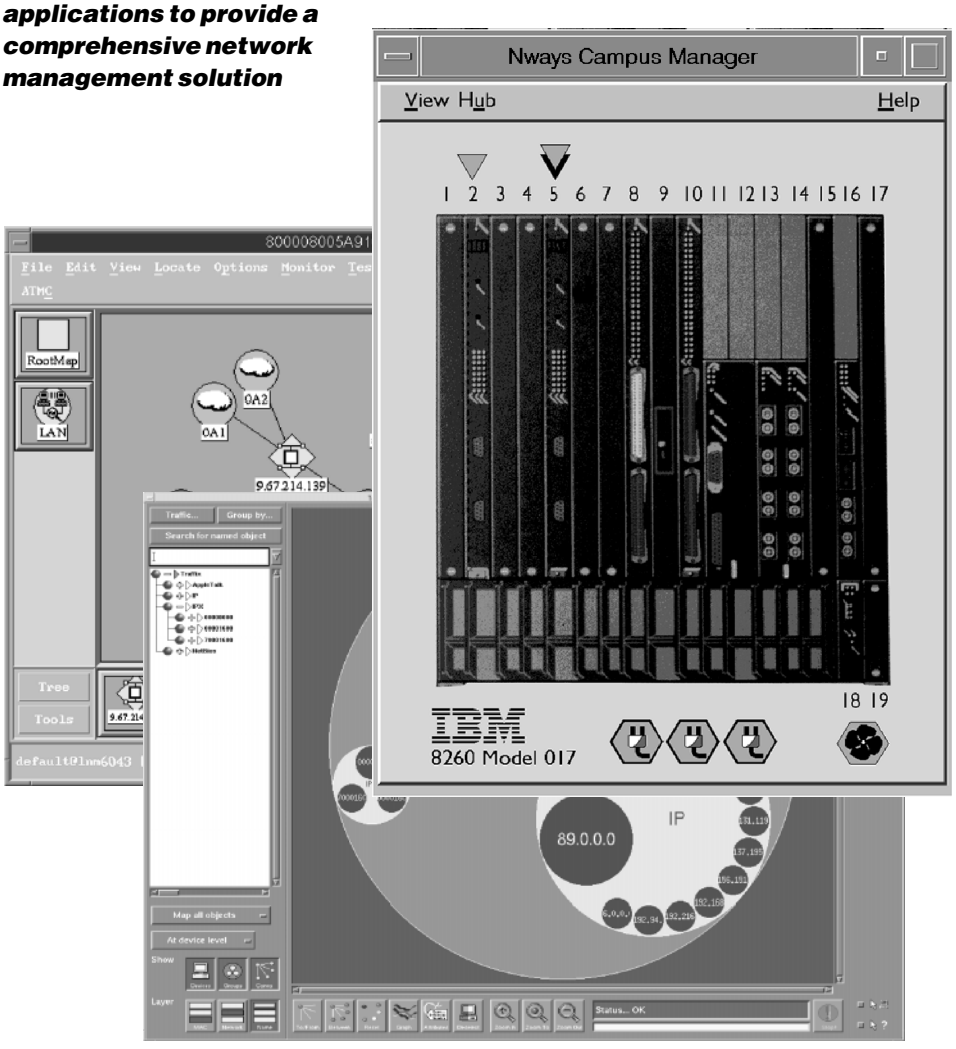
Provides comprehensive management for ATM networks, including support for non-IBM devices that use ATM Forum-compliant MIBs

Manages switched virtual networks, including ATM Forum-compliant emulated LANs (ELANs)

Offers seamless integration between the various Nways® Manager management applications to provide a comprehensive network management solution

Year 2000 ready

New packaging provides all components on one CD-ROM



Take a look at the Nways Manager for AIX®

The Nways Manager for AIX product consists of four components:

- Campus Manager-LAN
- Campus Manager-ATM
- Remote Monitor (ReMon)
- Traffic Monitor

The Campus Manager-LAN component provides an easy-to-use, cost-effective, comprehensive network management solution for customers with IBM networking devices in medium-to-large Ethernet, FDDI and Token-Ring networks, including virtual LANs (VLANs). It also supports APPN® networks and DLSw networks.

Campus Manager-LAN also provides graphical device management applications for the various SNMP-enabled IBM networking devices, including applications for the IBM ATM devices that formerly were offered in the Campus Manager-ATM component.

Java-based management support in the Campus Manager-LAN component enables you to manage your devices from your intranet, the Internet and from your local AIX workstation. When the Nways Manager is installed and configured for Web-based management, you can use your JavaSoft JDK-1.1-enabled Web browser to access the Nways Manager functions from any platform anywhere in your enterprise.

The Campus Manager-ATM component provides easy-to-use, efficient management for ATM networks, including virtual networks formed from ELANs.

The Remote Monitor (ReMon) component enables you to configure your RMON and Enterprise Communications Analysis Module (ECAM) (RMON2) agents as well as collect, monitor, analyze and display network statistics from those same RMON and ECAM agents. ReMon supports all the RMON MIB groups (RFC 1757 and RFC 1513 extension for Token Ring) and IBM's ECAM.

ReMon's support of ECAM lets you go beyond the current RMON standards to full seven-layer data collection, including segment, host and conversation statistics for the major protocols and application types. With this information you can tune your network.

Because IBM imbeds RMON agents in its networking devices, if you also have ReMon running then the Campus Manager-LAN component has the ability to access the ReMon information (RMON coupling) for the 8225, 8230, 8237, 8238, 8250 and 8260 hub and concentrator devices and the 8270, 8271 and 8272 switches. RMON coupling allows the graphical management applications for these devices to seamlessly access and display the RMON and ECAM data provided for these devices by ReMon.

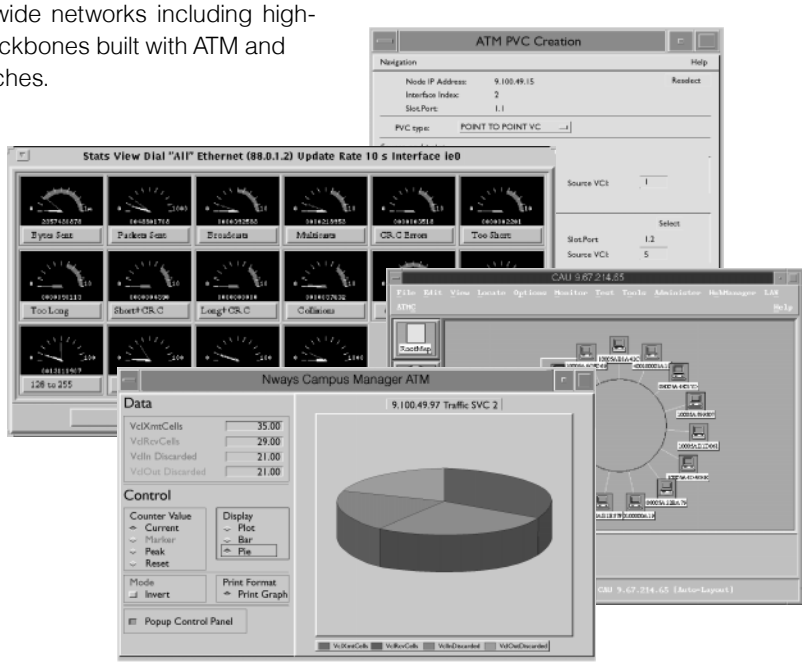
The Traffic Monitor component collects and correlates data from multiple RMON and ECAM probes to provide a complete picture of enterprise network traffic for performance management, trend analysis and troubleshooting. Traffic Monitor displays end-to-end communication patterns and clearly details how client/server applications are using the network. Traffic Monitor also seamlessly integrates with ReMon to provide complete management of your RMON and ECAM probes.

Nways Manager for AIX provides the management applications you need to configure and operate heterogeneous, campus-wide networks including high-speed backbones built with ATM and LAN switches.

Reduces network ownership cost and improves network availability

Nways Manager for AIX provides integrated software applications that lower network operating costs. All the components of Nways Manager have a common look and feel, so your network operator training is reduced and your personnel can be more productive. These network management applications enable you to find and resolve problems quickly, reducing network outages. With Nways Manager, your operators configure and manage the network and network devices remotely from a single network management workstation, reducing the number of operators and the amount of travel. Performance information available from the Nways Manager facilitates performance refinements and network tuning, helping you to optimize your network.

Remote monitoring means that cost-savings and staff productivity go up as the number of RMON-managed LAN segments increases. Users are more productive as network operation and administration are reduced because potential problems are identified before they occur.



Provides easy-to-use, graphical network management

Nways Manager lets you take control of your networks (Ethernet, FDDI and Token-Ring LANs, DLSw networks, APPN networks, ATM networks, switched networks and VLANs). The graphical user interface gives you topology views of your network and realistic views of your network resources, with color-coded status of resources and overall status of each network. The easily recognizable, color-coded icons on the network views make navigating the network a snap.

The auto-discovery capability assists with the initial topology and identifies configuration changes. When a network changes, the discovery capability identifies the changes and updates your network map. You can allow discovery of particular SNMP agents, filter discovery based on criteria such as IP address, and set the discovery interval to optimize polling.

The Campus Manager-LAN component supports APPN and DLSw topologies. With the APPN topology feature you can view your APPN networks end to end. You can discover participating APPN resources, view them and view their status as color-coded icons. APPN protocol performance and error events (data and graph) are also provided. The DLSw technology provides the ability to transport SNA, NetBIOS and APPN traffic across an IP network. The DLSw topology displays connectivity, resources and color-coded status in your DLSw network. The topology is refreshed as new nodes are discovered.

In Campus Manager-LAN and Campus Manager-ATM you can set up VLANs remotely using a drag-and-drop interface. You can also manage the VLAN components remotely.

In Nways Manager you can set performance-thresholding capabilities, collect real-time and historical statistics and display the information your network operator needs to manage your networks and networking devices proactively.

Extensive support for problem management includes trap management, polling intervals, threshold notification and the graphical network monitoring already mentioned. By defining an element as a critical resource, you can have the Campus Manager-LAN component perform a specific fault-management task based on an alert from the resource. This function is especially helpful when monitoring large networks because you can concentrate your fault management on critical resources.

You can also download code updates to specific devices.

To provide security, you identify the level of access controls that you need. Nways Manager then uses the security features inherent in TME10 NetView® and SNMP to control access to networking devices. Management applications for specific devices such as the 8235 Dial-In Access to LANs (DIALs) Server supply additional security features, such as limiting access by user or IP address. Java technology also provides secure access through existing Web server security.

Provides comprehensive device management

Nways Manager offers management support for a wide range of IBM LAN and ATM networking hardware, and the same support for non-IBM devices that use ATM Forum-compliant MIBs. It enables you to configure, reset and monitor your network devices, set performance thresholding capabilities for them, collect real-time and historical statistics for them, and download microcode and Telnet to them. The graphical user interface gives you realistic views of your network devices, with color-coded status of components and overall status of the device. Nways Manager provides a complete set of messages, traps and event notifications for devices in the network.

The Campus Manager-LAN component provides support for the following devices:

- IBM 8210 Nways Multiprotocol Switched Services (MSS) Server
- IBM 8224 Ethernet Stackable Hub
- IBM 8225 Fast Ethernet Stackable Hub
- IBM 8229 Token-Ring Bridge
- IBM 8230 Token-Ring Controlled Access Unit
- IBM 8235 Dial-In Access to LANs (DIALs) Server, including IBM 8235 Dial-In Access to LANs (DIALs) Switch Model I40
- IBM 8237 Stackable Ethernet Hub 10BASE-T
- IBM 8238 Token-Ring Stackable Hub
- IBM 8244 FDDI Workgroup Concentrator
- IBM 8250 Multiprotocol Intelligent Hub
- IBM 8260 Nways Multiprotocol Switching Hub, including the 7-slot Model P07
- IBM 8265 Nways ATM Switch
- IBM 8270 Nways LAN Switch
- IBM 8271 EtherStreamer®/Nways Ethernet LAN Switch, including new Models 524, 612, 624, and 712
- IBM 8272 LANStreamer®/Nways Token-Ring LAN Switch
- IBM 8273 Nways Ethernet RouteSwitch
- IBM 8274 Nways LAN RouteSwitch (requires IBM Nways RouteSwitch Network Manager, sold separately)
- IBM 8276 Nways Ethernet RoutePort (requires IBM Nways RouteSwitch Network Manager, sold separately)
- IBM 8281 Nways ATM LAN Bridge
- IBM 8282 Nways ATM Workgroup Concentrator
- IBM 8285 Nways ATM Workgroup Switch
- IBM 2210 Nways Multiprotocol Router
- IBM 2216 Multiaccess Connector
- IBM 6611 Network Processor
- IBM Ethernet and Token-Ring adapters

Remote Monitor and Traffic Monitor provide support for these RMON-enabled products:

- IBM 8225 Fast Ethernet Stackable Hub
- IBM 8230 Token-Ring Controlled Access Unit
- IBM 8237 Stackable Ethernet Hub 10BASE-T
- IBM 8238 Token-Ring Stackable Hub
- IBM 8250 Advanced Token-Ring Management Module
- IBM 8260 Token-Ring Media Access Daughter Card
- IBM 8260 Ethernet Media Access Daughter Card
- IBM 8260 Switching Module series
- IBM 8270 Nways LAN Switch
- IBM 8271 Nways Ethernet LAN Switch, including new Models 524, 612, 624 and 712
- IBM 8272 Nways Token-Ring LAN Switch
- IBM 8273 Nways Ethernet RouteSwitch
- IBM 8274 Nways LAN RouteSwitch
- Other RMON-compliant probes

Remote Monitor and Traffic Monitor provide support for these ECAM-enabled products:

- IBM 8250 Ethernet RMON Probe
- IBM 8260 High-End Token-Ring Media Access Daughter Card
- IBM 8260 High-End Ethernet Media Access Daughter Card
- Other RMON2 probes that implement the ECAM

Provides Web-based management using Java technology

Of the supported products, the Campus Manager-LAN component provides Web-based management using Java technology for the following devices:

- IBM 8210 Nways Multiprotocol Switched Services (MSS) Server
- IBM 8273 Nways Ethernet RouteSwitch
- IBM 2210 Nways Multiprotocol Router
- IBM 2216 Multiaccess Connector
- IBM Ethernet and Token-Ring adapters

It also provides generic Java-based management for any SNMP device in your network, including specific support for:

- IBM 6611 Network Processor
- IBM 8271 Ethernet LAN Switch Models 524, 612, 624 and 712

Web-based management using Java technology enables you to manage your network not only from the Nways Manager workstation, but also over your intranet or the Internet through a JDK-1.1-compliant Web browser. Java technology automatically updates your Web browser as the status of your network changes.

This management support includes real-time status of the device (complete with a graphical view of the supported IBM devices), the ability to configure the device through a user-friendly hierarchical navigation tree and the ability to do performance management of these devices.

Provides Java-based performance management using distributed intelligent agents for large networks

Performance management for devices managed by Java technology provides the ability to select and monitor specific MIB objects or collections of MIB objects. Creating collections of MIB objects allows you to create complex expressions that provide a better representation of performance information.
For example, to identify the percent utilization of a LAN interface, you can specify: *(ifInOctets.* + ifOutOctets.*) * 8 / ifSpeed.* * 100*

You can specify which objects or collections of objects to monitor, set thresholds for these objects, specify the action to occur when a threshold is exceeded, display the data graphically (for example, pie charts, line graphs, bar charts) and store the data for report generation.

Using this performance information allows you to base-line and tune your network, thus allowing you to proactively manage your network.

Java-based performance management requires a Java database connectivity (JDBC)-compliant database to store the performance information. IBM DB2® Universal Database Version 5.0, which is JDBC-compliant, is provided in the Campus Manager-LAN component.

To provide support for larger networks, the Java-based performance management uses Java-enabled distributed intelligent agents. These agents enable you to offload the polling of information from the manager workstation, freeing the processor on the manager, and to place the polling close to the devices being polled, freeing bandwidth across WAN links. You can configure these agents to notify the Nways Manager when exceptions (such as threshold exceeded) occur. The agents can be placed in any Java-enabled (Java virtual machine) workstations in the network.

The Campus Manager-LAN component also supports large networks by using the distributed polling capabilities provided by the TME 10 Mid-Level Manager (MLM). With TME 10 MLM, each MLM (usually in a remote node) performs the polling and sends information back to the management workstation only when thresholds are exceeded.

Provides remote monitoring of your network's performance, through RMON and RMON2 support

RMON and RMON2 are standards from the Internet Engineering Task Force (IETF) that advance the state of the art in open network performance management and fault diagnosis.

RMON defines a standard set of MAC-layer statistics and the ability to filter and capture data packets for analysis. RMON2 allows you to go beyond the previous RMON standard to full seven-layer data collection using ECAM support, including segment, host and conversations statistics for the major protocols and application types.

Remote Monitor (ReMon) provides not only the RMON functions but also takes advantage of the ECAM (RMON2) capabilities to provide address translation, protocol distribution and protocol-matrix analysis of Layer 3 or higher protocols within your network. Address translation translates MAC addresses to network-layer addresses. Protocol distribution allows you to view the protocols and applications being used on the network. A protocol matrix provides information about who is talking to whom in the network and what protocols they are using.

ReMon also includes the Traffic Transmission Monitor Module (TTMM), which provides a fast, effective means of transmitting captured packets to specific segments or rings for stress testing or network simulation. The captured data can also be loaded from other LAN analysis tools, such as IBM DatagLANce Network Analyzer.

Use ReMon to proactively manage your network performance. It enables you to perform key functions such as:

- Watching for emerging problems and short-term trends
- Checking network performance and utilization
- Setting network service objectives
- Planning short-term and long-range network capacity
- Determining the busiest stations in your network
- Troubleshooting network problems and outages
- Capturing and analyzing network traffic based on definable filter criteria
- Analyzing network-traffic trends, including protocol distribution
- Associating MAC-layer addresses to network-layer addresses
- Configuring RMON and ECAM agents

Enables you to view your network traffic from a protocol and application perspective

Traffic Monitor gathers the data you need to manage traffic flows in your network, using the data from RMON and ECAM probes. End-to-end matrix information is organized by connection. For any specific host, server or conversation, the breakdown of protocols and applications is clearly detailed. Traffic Monitor sees all the hosts transmitting onto monitored segments—no matter which protocols they use—providing a complete top-down view.

Traffic Monitor enables you to look at data by user and business-critical application. Instead of tuning the network to technology specifications such as Ethernet utilization or switch throughput, you can now tune the network to business specifications such as Lotus Notes utilization and order-entry application throughput. You can display the stations in your network organized by location, subnets, functional group, VLAN or other attributes.

Traffic Monitor automatically gathers and stores data for all protocols and applications all the time. When data from a single conversation is seen by multiple probes, duplicates are eliminated to create a single accurate view. Intelligent data collection and polling algorithms keep management traffic to a minimum. The data-collection procedures for probes can be configured in groups, supporting easy deployment in large systems.

Reports and graphs are easily requested from the view on the graphical user interface and can show current real-time data or historical data for the attributes selected.

Provides comprehensive management for ATM networks, including support for non-IBM devices that use ATM Forum-compliant MIBs

Campus Manager-ATM provides easy-to-use management for ATM networks, including virtual networks formed from ATM Forum-compliant ELANs. Within the ATM network it discovers ATM devices that use ATM Forum-compliant MIBs, including:

- IBM 8210 Nways Multiprotocol Switched Services (MSS) Server
- IBM 8260 Nways Multiprotocol Switching Hub ATM components
- IBM 8265 Nways ATM Switch
- IBM 8270 Nways LAN Switch with ATM Universal Feature Card (UFC)
- IBM 8271 EtherStreamer/Nways Ethernet LAN Switch with ATM UFC
- IBM 8272 LANStreamer/Nways Token-Ring LAN Switch with ATM UFC
- IBM 8281 Nways ATM LAN Bridge
- IBM 8282 Nways ATM Workgroup Concentrator
- IBM 8285 Nways ATM Workgroup Switch
- IBM 2210 Nways Multiprotocol Router
- IBM 2216 Multiaccess Connector
- Other ATM devices that implement the ATM or LAN Emulation (LANE) standard MIBs

Hardware/software requirements	The latest hardware and software requirements are available at: *www.networking.ibm.com/cma/cmaprod.html*

One of the premiere features of Campus Manager-ATM is its ability to fine-tune the auto-discovery capability for ATM. You can allow discovery of particular SNMP agents, such as non-IBM ATM devices, filter discovery based on criteria such as IP address or device type and set the discovery interval to optimize polling.

When viewing the topology map you can display an entire ATM network, or you can zoom in on the subnetwork or device of interest. You can choose monitored resources by selecting resource icons using drag-and-drop to place them on the monitor panel.

You can select key performance counters and track their variations over time. This data can be stored and displayed in various graphical forms across a selected time interval.

With the connection-tracking function you get true ATM end-to-end management capability. This function graphically displays any virtual connections between two endpoints on the ATM network. Connection-tracking shows all the actual hardware resources that support the entire path of the connection, such as adapters, concentrators, switches and bridges. This function launches other management functions on these devices, such as performance-monitoring.

Fault-management support provides a single entry point at the network level for fault isolation. It allows context-based fault analysis through task-oriented scenarios.

The ATM interface logical link support can now manage all the logical links available on an interface. This allows the configuration of any logical links, including the ones defined on WAN interfaces.

Management of the private network-to-network interface (PNNI), which is implemented by the IBM 8265 Nways ATM Switch, includes the ability to discover and maintain the PNNI topology: peer groups, peer-group leaders and inter-peer-group links. This enables the network operator to:

- Check the topology for each PNNI node of a peer group against the actual ATM topology of the peer group
- Display, for a given PNNI node, the Spanning Tree used to set up connections inside the peer group

The Campus Manager-ATM component also provides configuration of the Broadcast Manager (BCM) capabilities. The BCM provides protocol filtering in conjunction with the standard LANE Broadcast and Unknown Server (BUS) mechanism. The BCM allows broadcast frames to be directed only to stations that implement the same protocol as the station that initiated the broadcast.

Manages switched virtual networks, including ATM Forum-compliant ELANs

You can set up a VLAN remotely, using the drag-and-drop feature of the graphical interface to assign components to the VLAN. For networks that contain 8250s, 8260s, 8271s or 8272s, you can assign ports on those devices to VLANs. In an ATM network you can assign ATM devices to ELANs.

Comprehensive support for LANE includes automatic discovery of LAN Emulation Servers (LESs), LAN Emulation Clients (LECs), proxy clients (in LAN switches) and legacy LAN devices assigned to the VLANs. Discovered topologies are dynamically updated to show color-coded device status and devices assigned to VLANs. Templates help automate VLAN configuration by grouping a set of individual actions and executing them with a single command.

Discovery of the legacy LAN (Token-Ring, Ethernet) devices, which are participating in the Emulated LAN through the proxy clients, extends the VLAN management beyond the edge of the ATM fabric, providing end-to-end management of your switched virtual network.

Offers seamless integration
Nways Manager for AIX components work together seamlessly, helping you configure and manage your network and detect and resolve potential network problems before they occur.

The Nways Manager for AIX includes support for sorting, searching and retrieving key management information, such as network users' information, using object-oriented data storage. Object-oriented data storage provides client and server access to a common object model, with enhanced storage and retrieval, search, Nways import and Nways export functions. Managed-node information is maintained across restarts. For Campus Manager-ATM this object-oriented support allows automatic search of ATM devices based on a number of criteria, including IP address, ATM address, user name and ELAN name.

Year 2000 ready
When used in accordance with its associated documentation, Nways Manager for AIX is capable of correctly processing, providing and receiving data within and between the 20th and 21st centuries, provided all other products (software, hardware and firmware) used with it exchange data with it correctly.

New packaging provides all of the components on one CD-ROM
New packaging for the Nways Manager for AIX means a simpler ordering system. The new ordering system provides all the components of Nways Manager for AIX on one CD-ROM. "Try and Buy" license certificates are provided on the CD-ROM to allow you to try Nways Manager for AIX for 60 days. After this time you can order permanent license certificates for any or all of the four components. The order number for the CD-ROM is SK2T-0420.

For more information

To find out more about the IBM Nways Manager for AIX and other high-performance IBM communications and networking products, contact your IBM representative or call IBM Direct at 1 800 IBM-CALL (1 800 426-2255). You can also access the IBM Networking Web site at: *www.networking.ibm.com* You can access the IBM Network Management Web site at: *www.networking.ibm.com/netmgt*



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