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# Unicenter

## NetMaster Network Operations for TCP/IP Getting Started

Version 6.2

MAN05102249E



**Computer Associates**  
The Software That Manages eBusiness

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# Welcome to Unicenter NetMaster Network Operations for TCP/IP

## Enterprise-wide Mainframe Network Management

The Unicenter Mainframe Network Management product family provides a complete solution to address the challenges of z/OS and OS/390 network management. Proactive management and code-free automation techniques help to improve network services. Operational productivity is maximized through consolidated management and the use of a web-based graphical interface. The ability to perform integrated management of SNA and mainframe centric TCP/IP networks makes the solution set a powerful ally for those responsible for network management.

## The Purpose of This Guide

This book introduces Unicenter NetMaster Network Operations for TCP/IP to you in an efficient and visual manner. By the time you have finished reading this guide, you will have an overview of the wide scope of the product and its usability will be familiar to you. It is important to us that you feel comfortable with Unicenter NetMaster Network Operations for TCP/IP before you begin to use it.

## Unicenter NetMaster Network Operations for TCP/IP

Unicenter NetMaster Network Operations for TCP/IP, a companion product to Unicenter NetSpy Network Performance, provides extensive diagnosis and access control functionality for the management of mainframe-based TCP/IP networks. In addition to diagnosis and access control, this companion product provides a web browser interface and web-based reporting to make management of your network even easier. Together, these two products provide a comprehensive solution for managing TCP/IP connections to the mainframe.

### Fast and Efficient Problem Diagnosis

Highly efficient problem resolution is provided by a variety of tools that enable you to detect and resolve connection problems, automate responses to IP network events such as stack errors or router memory problems, and log IP-related events for diagnosis and accountability.

By using these tools, you can reduce the time to recover from a network problem, thus increasing network availability. The ability to highlight a problem and diagnose it from the same application and monitor can result in the cause of the problem being identified quicker, the resolution being implemented faster, and the impact on the network being reduced.

The IP node monitor provides visibility to critical IP nodes such as routers. It detects when routers are not available and you can develop automation routines (without coding) that can send notification, cut a problem ticket, execute a procedure, and send email. Status information is maintained and the router can be queried for IP address, first hop, routing protocol, and packet size.

You can query any MIB-II-compliant device and the information that is returned from the device is interpreted and displayed for technical staff. Without this display, staff would need to understand cryptic codes and hexadecimal formats. Device information such as maintenance levels and interfaces can be checked.

A packet trace formatter provides full screen views of TCP/IP packets collected by the CTRACE facility. Individual packets in a trace are displayed as an entry in the trace list. The packet trace facility saves time and increases productivity of operations staff and reduces problem resolution time.

Generic command support removes the need for operators to know the syntax of various commands. Responses to commands are formatted to assist in the comprehension of results. You can also issue commands such as ping and NETSTAT from the command console.

Printer problems can be monitored and diagnosed. You can query the print queue, delete jobs from the queue, and send a test print to a printer.

By providing a view of network and host response times, the transaction analyzer supports the diagnosis of network and system performance and because the transaction path analyzer evaluates the components that make up an IP connection, you can also diagnose throughput problems. The transaction path analyzer evaluates:

- Server response times
- IP network response times
- Data transfer rate

### Report on Network Usage and Trends

The NetMaster Reporter, a web-based reporting tool, brings you historical and trend reporting of collected data. It combines the familiarity and stability of the enterprise environment with the usability of the Web, providing integrated mainframe-to-browser presentation of your network performance data from multiple regions.

NetMaster Reporter comes with a variety of predefined reports. These reports use graphical charts to represent overall network performance information and provide views of network, device, and application usage and trends. Web-based presentation makes these reports accessible via any browser and to a wide range of users.

### View Your Network Any Time, Anywhere

Through an intuitive Web browser interface, technical staff can view consolidated alert information and perform diagnostics on enterprise-wide connections. Problem resolution time is decreased and ease of use increased. Accessibility to information is increased—anyone with a PC, network connection, and a Web browser can access the product. Training requirements are lessened because technical staff do not need to acquire mainframe knowledge to be able to monitor the network.

The Web interface is completely OS/390 hosted. The Web server runs within the Unicenter NetMaster Network Operations for TCP/IP address space and requires no third-party components. From the Web browser interface, you can access the performance, diagnostics, and reporting functions of the product.

### Maintain Strict Control of Mainframe Security

Access control permits mainframe personnel to maintain control of who can access host-based data and applications from a corporate intranet or the Internet.

You can control IP transactions into, or out of, the enterprise server domain, using a policy-based methodology. Access control allows you to:

- Integrate with your existing mainframe security product
- Define policy rules to allow or restrict access by using criteria such as time of day and IP addresses
- Use policy-based access to perform workload balancing
- Provide alerts to key monitors and log to security audit trails

Access control improves system reliability in two ways. Firstly, since organizations can enforce size and time restrictions, utilization of resources such as numbers of Telnet connections can be planned and controlled in order to support the business model. Secondly, security of the mainframe and the IP network can be maintained so that no malicious or accidental damage can affect critical applications and resources.

### CA Services: Enabling Solutions Through Experience

When it comes to providing comprehensive mainframe network management for your Enterprise, CA Services can recommend and install a full suite of network management tools to keep your business moving. Our experts will leave you with the technology to fully monitor and manage the performance and responsiveness of your mainframe SNA and TCP/IP networks.

### CA Education Services

Computer Associates Global Education Services (CA Education) offerings include instructor-led and computer-based training, product certification programs, third-party education programs, distance learning, and software simulation. These services help to expand the knowledge base so companies are better able to use CA's products more efficiently, contributing to their greater success. CA Education has been developed to assist today's technologists in everything from understanding product capabilities to implementation and quality performance. Because the vast community of education seekers is varied, so too are CA's methods of instruction. CA Education is committed to provide a variety of alternatives to traditional instructor-led training, including synchronous and asynchronous distance learning, as well as Unicenter simulation.

For training that must be extended to a wider audience—for a fraction of the cost and logistical hassle of sending everybody away to a class—CA Education offers excellent distance learning options.

### Computer Associates: The Software That Manages eBusiness

The next generation of eBusiness promises unlimited opportunities by leveraging existing business infrastructures and adopting new technologies. At the same time, extremely complicated management presents challenges—from managing the computing devices to integrating and managing the applications, data, and business processes within and across organizational boundaries. Look to CA for the answers. CA has the solutions available to help eBusinesses address these important issues. Through industry-leading eBusiness Process Management, eBusiness Information Management, and eBusiness Infrastructure Management offerings, CA delivers the only comprehensive, state-of-the-art solutions, serving all stakeholders in this extended global economy.

### For More Information

After walking through this *Getting Started*, you can refer to the numerous resources available to you for additional information. Your documentation CD contains useful instructional documents that showcase your software and provide detailed explanations about the product's comprehensive, feature-rich components. In addition, the online help system at [esupport.ca.com](http://esupport.ca.com) offers procedural information and answers to any questions you may encounter.

# Chapter 2

## Installation

### Implementing the Product

**Y**ou do not have to install Unicenter NetMaster Network Operations for TCP/IP separately into your region—it is simply implemented as part of the Unicenter NetSpy Network Performance product that you have already installed.

To implement Unicenter NetMaster Network Operations for TCP/IP:

1. Ensure that your regions have been set up for the Unicenter NetSpy Network Performance product.
2. Update the *dsnpref.rname*.TESTEXEC(RUNSYSIN) member of the NetMaster product region to include PPREF='PROD=NETOPER'.
3. Restart your region.

### Related Documentation

For more information about implementing, administering, and using the product, see the following manuals. (All of these guides incorporate information about Unicenter NetSpy Network Performance and Unicenter NetMaster Network Operations for TCP/IP.)

- *Unicenter NetMaster Network Management for TCP/IP Implementation Guide*
- *Unicenter NetMaster Network Management for TCP/IP Administrator Guide*
- *Unicenter NetMaster Network Management for TCP/IP User Guide*

### What's Next?

Now you have successfully implemented Unicenter NetMaster Network Operations for TCP/IP, you are ready to try it out! Go to the next chapter for a quick tour inside the product.

# A Quick Tour of Diagnostics

## Fast Diagnosis and Resolution of Problems

**W**hen a problem occurs in the network, you need to be able to diagnose the problem and provide a resolution as quickly as possible. The diagnostics capability of this product, together with its Web browser interface, provides the tools to enable you to do just this.

Consider the scenario where you receive a phone call from a user complaining about response time.

You can do the following in your search for a resolution:

- Test connectivity to a specified host
- Issue diagnostics commands against an alert
- Diagnose the status of a line printer
- View end-to-end response time

## Testing Connectivity to a Specified Host

To test connectivity to a specified host:

1. From the Unicenter NetMaster Primary Menu, enter **D.N** (or the shortcut, **/IPDIAG**) at the Select Option prompt. The TCP/IP Network Diagnosis Functions panel is displayed.

## Fast Diagnosis and Resolution of Problems

2. Enter an IP address in the Host Name/Addr field and then enter **P** (Ping) at the Select Option ==> prompt. The TCP/IP Ping Result List is displayed. This shows the outcome of the Ping action. For information about the fields on this panel, press F1 (Help).

```
PROD----- TCP/IP : Network Diagnosis Functions -----/IPDIAG
Select Option ==> P

P - Ping                                PING
TR - Trace Route                        -
PT - Packet Tracing                     IPPKT
S - Show Host System Information         -
I - Show Local Interfaces                -
R - Show Routing Table                   -
TN - Start a Telnet Connection           -
SF - Perform SNMP Functions              -
X - Exit

Host Name/Addr 172.172.172.123           ( Req P TR S I R TN )
Net Address Mask                               ( Opt R )
Community Name                               ( Opt S I R )
Link Name .....+ DENM4                      ( Opt All )

F1=Help      F2=Split      F3=Exit
              F9=Swap
```

```
PROD----- TCP/IP : Ping Result List -----
Command ==>                                Scroll ==> PAGE

Target Host Name ... assygr11.ca.com
IP Address ... 130.200.110.129
Count ..... 3
Timeout (seconds) ... 5
Packet Size ..... 256
-----
Result ..... Successful
Min/Average/Max Time 7/8/10
Packets sent ..... 3
    received .... 3
    % lost ..... 0
Seq No. Trip Time (ms)
  1         7
  2        10
  3         7
**END**

F1=Help      F2=Split      F3=Exit      F6=Action
F7=Backward  F8=Forward   F9=Swap
```

3. Press F3 (Exit) to return to the TCP/IP : Network Diagnosis Functions panel from where you can enter other diagnostics commands.

### Issuing Diagnostics Commands Against an Event

You can issue diagnostics commands, such as ping, traceroute and so on, against an event on the Alert Monitor. To issue a diagnostics command:

1. From the NetMaster Primary Menu, enter **M.A** (or the shortcut, **/ALERTS**). From here you can analyze an event.
2. Type **A** (Analyze) next to a node alert and then press Enter. The TCP/IP : Network Diagnostics Functions panel is displayed.
3. Enter the diagnostics command that suits your purpose.

**Tip:** Press F1 (Help) to find out about the fields on any panel.

### Diagnosing a Line Printer

From any **==>** prompt, enter the shortcut **/LPD**. The TCP/IP : Line Printer (LPD) Diagnostics panel is displayed. From here you can query a print queue, delete a job from a print queue, or send a test print.

### Viewing end-to-end Response Times

The Transaction Path Analyzer provides real-time analysis of sessions and helps you to locate the source of a performance or response time problem. It enables you to evaluate the status of the components that make up an IP connection and provides the information that allows you to diagnose throughput problems. The components you can evaluate are:

- Server response time
- IP network response time
- Data transfer rate



## Fast Diagnosis and Resolution of Problems

On the TCP/IP : Telnet Transaction Path Analysis panel you can review information about the network elements that are supporting the user's application access, including application, Telnet server, IP, and SNA information. The example panel indicates that most of the activity is occurring in the IP network. Response time information is provided to find the point in the network path that is causing the problem and to zoom in on the area and resolve the problem.

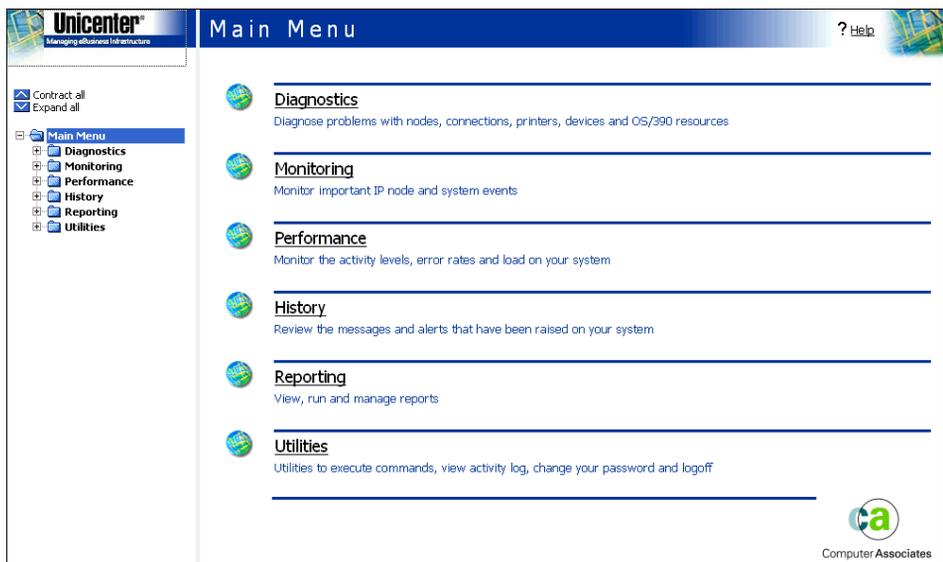
## Chapter 4

# A Quick Tour of Web Access and Reporting

## Web Access and Reporting

### Accessing the Mainframe Through the Web Browser Interface

By using the Web browser interface, you can perform most of the tasks that you can do from the mainframe. The following illustration of the Main Menu, shows the tasks you can do from the Web browser interface.



To review the connectivity of a specified host, select Diagnostics, IP Nodes. The IP node diagnostics window is displayed. From here you can enter the IP address or name of a remote node and then issue a ping or traceroute command or find out about:

- Telnets from the node
- Connections from the node
- Alerts from the node
- History for the node

### Reporting on Network Usage and Trends

The Reporting option available on the Unicenter Web browser Main Menu, lets you view a wide selection of predefined reports that represent overall network performance information and provide views of network device, and application usage and trends. To run reports against data accessed from the distributed sample database, select Reporting, Sample reports.

**Tip:** To perform these same tasks against your live database, select Reporting, NetMaster reports.

The screenshot shows the Unicenter web interface for Sample Reports. The left sidebar contains a navigation menu with options like Contract all, Expand all, Main Menu, Diagnostics, Monitoring, Performance, History, Reporting (selected), and Utilities. Under Reporting, there are sub-options for NetMaster reports, Sample reports (highlighted), and Report activity status. The main content area is titled 'Sample Reports' and features a 'Report Name' dropdown menu set to 'ApplicationAnalysis'. Below the dropdown are four tabs: 'List Report Runs', 'Run Report on Demand', 'List Schedules', and 'Add Schedule'. A text input field contains the text 'List sample runs for all report names'. The page instructs the user to 'Choose a report name and then click an action.' and provides an 'Information' section with the following details:

- Use this page to:
  - View the output of completed report runs.
  - Run reports, schedule reports, and administer the report schedules and output.
- List Report Runs** shows the results of all runs of your chosen report. From this list, you can examine the run details, delete the report output, or click on the links to view the report output.
- Run Report On Demand** lets you pick the custom criteria you want to apply to your chosen report, and add it to the report queue to be run as soon as possible. You will be returned a link to the page that will display your final report output.
- List Schedules** shows the schedules for your chosen report. From this list, you can examine the criteria, frequency and retention details for each schedule. You can also delete schedules.
- Add Schedules** lets you add schedules for your chosen report.
- List runs for all report names** shows runs results for all report names, not just a single report name. From this window, you can click on the links to view the report output.

These tasks access data from the distributed sample database. To perform these same tasks against your live database, use the NetMaster Reports option.

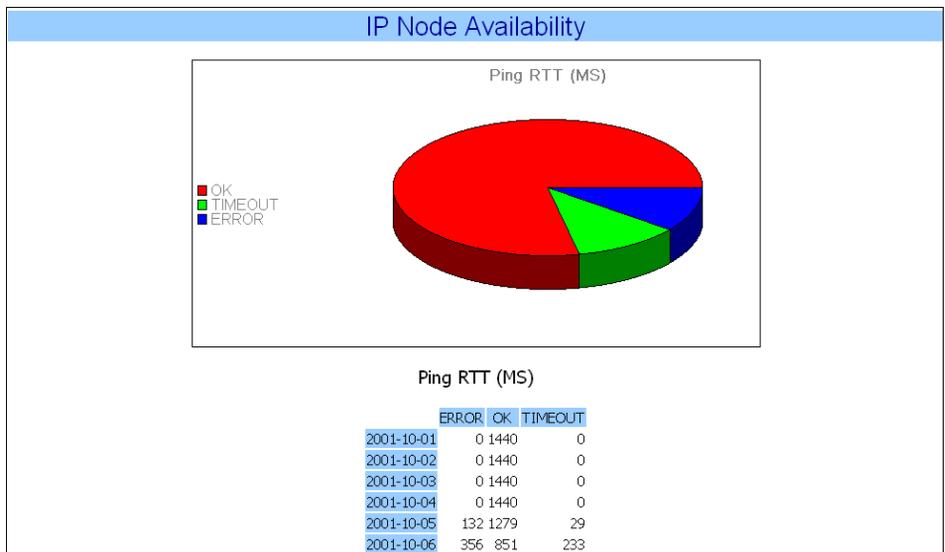
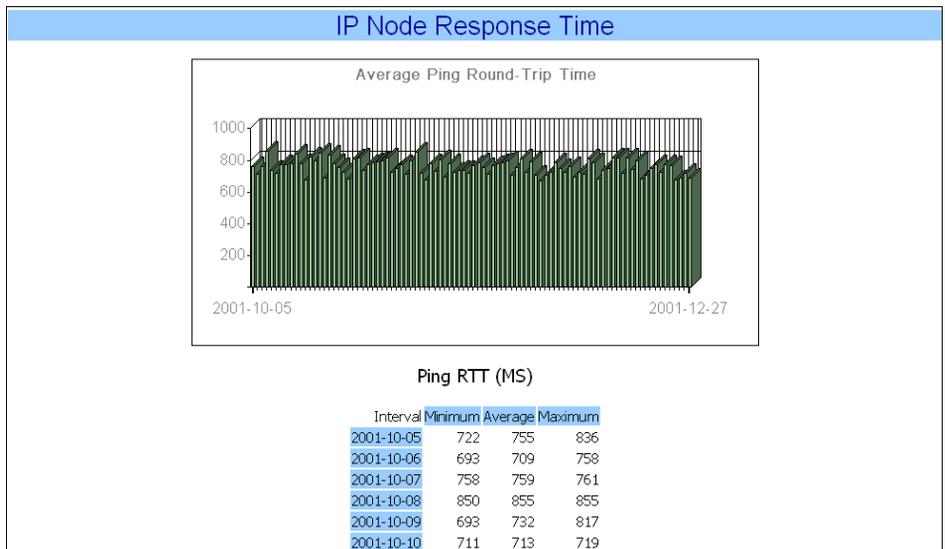
You can schedule reports to be run at specified times (for example, every seven days) or you can run them on demand to provide a snapshot of the activity on your system.

To get a snapshot of the IP node activity on your sample system:

1. From the Sample reports page, click the Run Report on Demand tab.
2. From the drop-down list, select IPNodeAnalysis.
3. Make your selections from the Criteria drop-down lists.
4. Click OK/Redo.

## Web Access and Reporting

The IPNodeAnalysis report is displayed for your review. The IP Node Response Time and IP Node Availability statistics from this report are shown in the following sample screens.



## What's Next?

This chapter has provided you with a brief overview of how you can use Unicenter NetMaster Network Operations for TCP/IP Web browser interface to make it easier to identify and resolve problems on your network. You should now refer to the product documentation and continue to experiment with the mainframe and Web browser interfaces to discover other ways that this product can help you manage your network.