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# Unicenter

## NetMaster Network Management for TCP/IP Getting Started

Version 6.2

MAN05101854E



**Computer Associates**  
The Software That Manages eBusiness



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## Chapter 1

# Welcome to Unicenter NetMaster Network Management for TCP/IP

## Meeting eBusiness and Network Objectives

**T**he Unicenter NetMaster Network Management for TCP/IP product provides the integrated diagnostics, performance reporting, and access control capabilities necessary to address the issues of mainframe networking in today's end-to-end eBusiness environments.

This product empowers an organization to proactively resolve problems with TCP/IP access to mainframe-hosted applications, ensuring that service-level goals are met, and eBusiness objectives are aligned with network objectives. It pinpoints file transfer slow-downs; bad TCP/IP connections to CICS or WebSphere applications; TN3270 response time issues; or problems with any other socket connections to the mainframe enterprise server.

The product's comprehensive features help an organization to share information, fulfill orders, and respond to customer inquiries quickly and reliably—key elements to eBusiness success.

## The Purpose of This Guide

This book introduces Unicenter NetMaster Network Management 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 Management for TCP/IP before you begin to use it.

## A Complete Solution for OS/390 and z/OS TCP/IP Network Management

End-to-end control of a TCP/IP network requires a broad set of functionality encompassing many different disciplines—monitoring and alerting, problem ticketing, diagnosis, trending, capacity planning, and even security. Unicenter NetMaster Network Management for TCP/IP combines the performance, diagnostics, and access control features that are necessary for managing z/OS and OS/390 TCP/IP.

### Monitor the Performance of Your Network

Intelligent performance management means being able to make informed decisions about the use and growth of your network infrastructure. Unicenter NetMaster Network Management for TCP/IP allows you to evaluate long-term patterns in response time, data rates, resource availability, and TN3270 activity. In addition, you can identify potential device path or session response problems that may be affecting connectivity and the availability of OS/390-based applications. This enables you to take immediate action to address current problems.

Using this product, you have visibility of the following critical IP nodes and resources:

- IP stacks
- Channel cards
- OSA devices
- Enterprise Extender resources
- Routers
- CSM
- Address spaces

You can measure IP network usage and performance from the enterprise. You can monitor the performance of resources and drill down to more detailed resource statistics. The product maintains and displays hourly and daily statistics on IP path response times. For example, for Cisco routers, additional information is provided such as CPU utilization and reliability statistics.

Network reliability and application availability are increased because potential resource problems, which might affect users and applications, can be detected early. Problem resolution time is decreased because technical staff has visibility of mission-critical resources and detailed information about the availability and performance of the network.

### 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.

## Meeting eBusiness and Network Objectives

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, raise a trouble 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 entries 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 path analyzer supports the diagnosis of network and system performance and because it 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

### Discover Network Resources Automatically

Network discovery makes the process of identifying and setting up your TCP/IP resources for monitoring very easy and quick. It provides a code-free, menu-driven method of defining the resources on your network—you do not have to build or write procedures to learn and discover your network.

Network discovery typically happens when you start a region for the very first time. It discovers resources based on user criteria, such as number of hops and the IP starting address. These resources are automatically added to the database, along with the details about how to manage and monitor them.

### 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.

### 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 through 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 resides entirely on the OS/390 platform. The Web server runs within the Unicenter NetMaster Network Management 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.

### 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.

The online help system at [esupport.ca.com](http://esupport.ca.com) offers procedural information and answers to any questions you may encounter.

## Meeting eBusiness and Network Objectives

The MasterSpy user group provides a forum for users of the Unicenter NetMaster and Unicenter NetSpy products. Find out more about MasterSpy at <http://www.causergroups.com/>.

# Installing and Implementing Your Product

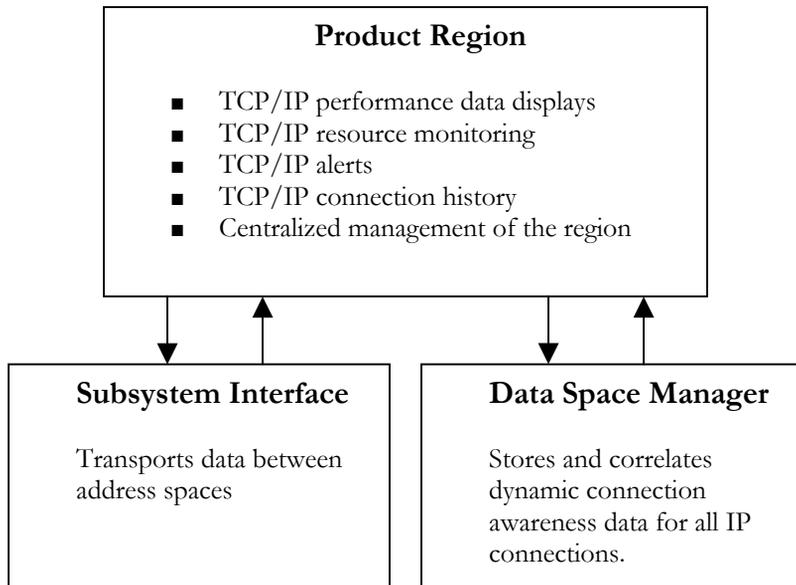
## Components and Installation

This chapter provides an overview of how to install and implement Unicenter NetMaster Network Management for TCP/IP. It refers to other guides that provide detailed information about these tasks.

### Components

The product comprises the following regions that work together to provide you with the complete solution to your OS/390 TCP/IP management needs:

- The product region is where users log on and access TCP/IP product functions.
- The Subsystem Interface provides in-memory communication between the product region and the Data Space Manager.
- The Data Space Manager stores connection awareness data for fast retrieval of TCP/IP connection information.



### Installation

The installation and implementation process comprises four broad tasks. These are outlined in the following sections. For information about how to complete each task, see the appropriate guide.

#### Task 1: Install and Set Up the Product

For detailed information, see the *Unicenter Mainframe Network Management Installation and Setup Instructions*.

- Unload the Install Utility from the product tape.
- Use the Install Utility to generate the jobs that you submit to install the product.
- Use the Install Utility to generate the jobs that you submit to set up the three regions of the product.
- After you set up the regions, you can start them and log on through the product region. During this initial session, **add a user ID for subsequent logon**.

#### Task 2: Implement the TCP/IP Interface

For detailed information, see the *Unicenter NetMaster Network Management for TCP/IP Implementation Guide*.

- Configure the TCP/IP interface for the product.
- Enable FTP, TCP/IP connection, and Telnet event flow for connection awareness (see also Task 4: Implement Other Functions in this chapter).

#### Task 3: Build the Environment to Manage Your TCP/IP Resources

For detailed information, see the *Unicenter NetMaster Network Management for TCP/IP Implementation Guide*.

- Log on to the product region, and customize the parameters for the region.
- Use the Express Setup Facility to discover and define the TCP/IP resources known to your system.
- Define a user ID as the administrator of the region and other user IDs as required. (For more information about security, see the *Unicenter NetMaster Network Management for TCP/IP Administrator Guide*.)

## Components and Installation

### Task 4: Implement Other Functions

For detailed information, see the *Unicenter NetMaster Network Management for TCP/IP Administrator Guide*.

- Set up connection awareness for TCP/IP connection events.
- Customize the TCP/IP resources defined by the Express Setup Facility or define additional TCP/IP resources, which you can monitor by using the IP resource monitor.
- Define IP nodes, which you can monitor by using the IP node monitor.
- Link multiple regions to enable central monitoring of resources on different systems.

### What's Next?

When you have successfully installed Unicenter NetMaster Network Management for TCP/IP, you will be ready to try it out! Go to the next chapter for a quick tour inside the product.

## Chapter 3

# A Quick Tour of TCP/IP Monitoring

## Examining TCP/IP Details

**W**hen you have completed the tasks in this chapter you will have an understanding of how to navigate the product interface and how to use the product to list and monitor TCP/IP resources and connections. In this quick tour you will:

- View a list of menu shortcuts
- List the IP resources defined to your region
- List the commands you can use
- List the stacks defined to your system
- Obtain a list of IP connections
- Review your stack monitor settings
- Monitor a stack
- Produce a graph of the number of IP packets delivered by a stack

### Examining Your IP Details

The Express Setup detects the IP resources on your system. In this section you will review the list of IP resources defined by the Express Setup.

To list the IP resources on your system:

1. Access your Unicenter NetMaster : Primary Menu.

```
PROD----- Unicenter NetMaster : Primary Menu -----
Select Option ==>

M - Monitors                               Userid USER01
H - Historical Data                          LU      UNIT01
D - IP and SNA Network Diagnosis            Time    02.23.32
U - User Services                           TUE 09-APR-2002
O - Operator Console Services               OPSYS   05390
A - Administration and Definition           Window  1
SP - SNA Performance (Appl ID NETSPY)
X - Terminate Window/Exit
```

Tip of the day: For help about 2216 routers, put cursor here - press F1.

```
(C) 1981,2002 Computer Associates International, All Rights Reserved.
F1=Help      F2=Split      F3=Exit      F4=Return
              F9=Swap
```

## Examining TCP/IP Details

2. Enter a forward slash (/) at the ===> prompt. The CAS : Menu Shortcuts List panel is displayed. This panel lists and describes the panel shortcuts available. Shortcuts provide a fast way of navigating between panels.

**Tip:** You can enter a shortcut from the ===> prompt on any panel.

```
PROD----- CAS : Menu Shortcuts List -----
Command ==>                               Scroll ==> PAGE

        Select the required shortcut by placing an 'S' beside it

Shortcut  Description
/ACADMIN  SNA Access Services : Administration
/ADMIN    Administration : Primary Menu
/AFTMON   Active File Transfer Monitor
/ALADMIN  Alert Monitor : Administration Menu
/ALERTS   Alert Monitor
/ALHIST   Alert History
/ALLOC    List Allocated Files
/APING    APING a Control Point
/APPDIR   Display APPN Directory Information
/APPDLU   List Dependent LU Requestors
/APPNRTP  List RTP Pipes
/APPNTOP  Display APPN Subnetwork Topology Information
/APPNTRL  List Transport Resource List Entries
/ASADMIN  Automation Services : Administration Menu
/BCAST    Broadcast Services
/CAS      CAS : Maintenance Menu
/CASCMD   CAS : Command Definition Menu
F1=Help   F2=Split   F3=Exit    F4=Return   F5=Find   F6=Refresh
F7=Backward F8=Forward F9=Swap
```

## Examining TCP/IP Details

- Press F8 (Forward) until the /IPMON shortcut is displayed.

```

PROD----- CAS : Menu Shortcuts List -----
Command ==>                               Scroll ==> PAGE

        Select the required shortcut by placing an 'S' beside it
Shortcut  Description
/INMCDEF  List INMC Link Definitions
/INMCL    System Support : INMC Link Maintenance
/IPADMIN  TCP/IP : Administration Menu
/IPCON    TCP/IP : Connections
/IPDIAG   TCP/IP : Network Diagnosis
/IPHIST   TCP/IP : History Data
/IPMON    IP Resource Monitor
/IPMOND   Maintain IP Node Monitor Groups
/IPNODE   IP Node Monitor
/IPPKT    TCP/IP : Packet Tracing Menu
/IPTEST   Run TCP/IP Self Test
/LAN      IBM LAN Manager
/LEVELS   Product Component Software Levels
/LISTCON  List Connections for a Task
/LISTREG  List Linked Regions
/LISTTEL  List Telnet Connections
/LOADMIN  Activity Log Administration
F1=Help   F2=Split   F3=Exit    F4=Return   F5=Find   F6=Refresh
F7=Backward F8=Forward F9=Swap
    
```

- Enter **S** next to the /IPMON shortcut. The Status Monitor : IP Resources panel is displayed. This panel lists the IP resources defined to your region.

```

PROD----- Status Monitor : IP Resources -----PROD-0001
Command ==>                               Scroll ==> PAGE

        D=Display H=History AL=Alerts L=Transient Log ?=List Cmds
Monitor Alert Max Last Next
Resource Class System Actual Status Count Sev Samp Samp
CD410DE1 ASMON QANM18 ACTIVE Ok 0 0 16:40 16:55
CSNM2 ASMON QANM18 ACTIVE Ok 0 0 16:40 16:55
CSNM3 ASMON QANM18 INACTIVE - - 16:40 16:55
CSNM14 ASMON QANM18 ACTIVE Ok 0 0 16:40 16:55
CSNM27 ASMON QANM18 ACTIVE Ok 0 0 16:40 16:55
CSNM28 ASMON QANM18 ACTIVE Ok 0 0 16:40 16:55
DENM1 ASMON QANM18 ACTIVE Ok 0 0 16:40 16:55
DENM2 ASMON QANM18 ACTIVE Ok 0 0 16:40 16:55
DENM4 ASMON QANM18 ACTIVE Ok 0 0 16:40 16:55
DENM13 ASMON QANM18 ACTIVE Ok 0 0 16:40 16:55
FTPSRV32 ASMON QANM18 ACTIVE Ok 0 0 16:40 16:55
OMPROUTE ASMON QANM18 ACTIVE Ok 0 0 16:40 16:55
OSNMPD ASMON QANM18 ACTIVE Ok 0 0 16:40 16:55
CIPSPPU CIP QANM18 ACTIVE Ok 0 0 16:40 16:55
CSM CSM QANM18 ACTIVE Ok 0 0 16:40 16:55
EE EE QANM18 ACTIVE Ok 0 0 16:40 16:55
OSA-B4 OSA QANM18 ACTIVE Ok 0 0 16:40 16:55
TCPICSD1 STACK QANM18 ACTIVE Ok 0 0 16:40 16:55
TCPICS52 STACK QANM18 ACTIVE Ok 0 0 16:40 16:55
TCPIP38 STACK QANM18 ACTIVE Ok 0 0 16:40 16:55
F1=Help   F2=Split   F3=Exit    F4=Add      F5=Find
F7=Backward F8=Forward F9=Swap
    
```

## Examining TCP/IP Details

5. Enter **?** next to the STACK resource class that you want to examine. The Automation Services : Command List panel is displayed. This panel lists all of the commands available for this resource. The commands that are specific to a resource are displayed in blue at the top of the list.

```
PROD----- Automation Services : Command List -----
Command ==>                                     Scroll ==> HALF

                                Use 'S' to select the required Command

Command      Description
AL           View Alerts for a Resource
AM           Activate Monitoring
CL           Check Telnet LUs
CMD          Issue Modify to Stack
D            Display Resource Status
DG           Display Graphical Device Links
DL           Display Device Links
DP           Display Profile Configuration Libraries
ERL         Browse TCP/IP Error Log
H            Show Performance History
IC           IP Connections
ICA         IP Connections for all Applications
IM           Inactivate Monitoring
IP           View Stack IP Performance History
IPM         View Stack IP Performance Metrics
LA           List Applications with IP Connections
O            Execute Obeyfile
F1=Help     F2=Split     F3=Exit     F4=Return   F5=Find    F6=Refresh
F7=Backward F8=Forward    F9=Swap
```

## Examining TCP/IP Details

6. Select the IPM command. The TCP/IP : Stack IP Performance Metrics panel is displayed. This panel displays a current analysis of the stack.

```
PROD----- TCP/IP : Stack IP Performance Metrics -Columns 00001 00079
Command ===>                               Scroll ===> PAGE

Stack Address ..... 123.123.123.01

***** TOP OF DATA *****
Stack Name ..... CS for OS/390 V2R8
Stack Procedure Name ..... TCPIP38
Date Started ..... SUN 31-SEP-2001 18:37:58.8
Address Space ID ..... 82 (decimal)

TCP Statistics

  Buffer Size - Receive ..... 16384
               Send ..... 16384
  Connections - Maximum Supported ..... DYNAMIC
               Currently Established ... 70
               Resets ..... 521
               Active Opens ..... 1352
               Passive Opens ..... 4316
               Failures ..... 12268
  Segments - Sent ..... 909719
F1=Help      F2=Split    F3=Exit      F5=Find    F6=Refresh
F7=Backward  F8=Forward   F9=Swap
```

7. Enter == at the ===> prompt to return to the Primary Menu.

## Listing Telnet Connections

To view a list of Telnet Connections:

1. From the Primary Menu, enter the panel path, **D.C.T** at the ==> prompt. The TCP/IP : Telnet Connection List Criteria panel is displayed. This panel provides input fields that allow you to define which IP connections to list.

**Tip:** Panel paths provide an alternative to shortcuts for navigating panels. A panel path is constructed by linking the required menu options with periods.

```

PROD----- TCP/IP : Telnet Connection List Criteria -----
Command ==>                                                    Function=Search

Connection List Criteria
Remote Host ....._____
Telnet LU Name ....._____
Telnet Application ..._____
Link/Channel Card ...+_____

Store and Recall Criteria
Criteria Name .....+_____

F1=Help      F2=Split      F3=Exit      F5=Recall    F6=Action
              F9=Swap
  
```

## Examining TCP/IP Details

2. Press F6 (Action). The TCP/IP : Connection panel is displayed. This panel displays information about the current state of the active connections.

```
PROD----- TCP/IP : Telnet Connections -----
Command ==> Scroll ==> CSR
Line 1 of 9 Refresh Every ... _____ Seconds
SL=Session List D=VTAM Display P=Ping T=TraceRoute NL=Lookup S=View
Z=Drop
I=Information TPA=Transaction Path Analyzer L=Log ?=Actions
      Appl
Foreign Host LU Name Name Status Bytes RTT RTT ReXmit
              Var Count
172.172.172.23 SSTCP001 STNM1 Establish 711018 284 18 11
172.172.172.24 SSTCP019 STNM4 Establish 26174 114 94 0
172.172.172.25 SSTCP003 STNM1 Establish 444623 345 25 31
172.172.172.26 SSTCP034 STNM1 Establish 200409 400 80 28
172.172.172.27 SSTCP035 STNM1 Establish 134713 401 59 23
172.172.172.28 SSTCP037 STNM1 Establish 68479 407 77 23
172.172.172.29 SSTCP039 STNM1 Establish 403839 341 24 10
172.172.172.30 SSTCP047 STNM1 Establish 1849923 350 10 44
172.172.172.31 SSTCP002 STNM1 Establish 335290 282 12 1
**END**
```

3. Press F1 (Help). The online help for this panel is displayed. Use the help for information on the fields and actions available on this panel.
4. Enter == at the ==> prompt to return to the Primary Menu.

### Examining Stack Monitoring Setup

The IP resources defined to your system by the Express Setup are monitored at regular intervals.

To examine how the stack monitor was set up by the Express Setup:

1. Enter **/RADMIN** at the **===>** prompt. The Automation Services : Resource Administration panel is displayed. You can use the options on this panel to set up and maintain your system image.

```
PROD----- Automation Services : Resource Administration --/RADMIN
Select Option ===>

R   - Resources
P   - Processes
GP  - Global Processes
I   - System Images
T   - Template Definition Menu
AD  - Assisted Resource Definition Menu
X   - Exit

System Name ..+ PROD      ( Required R P  )
Version .....+ 0001      ( Required R P  )

F1=Help      F2=Split      F3=Exit      F4=Return
              F9=Swap
```

2. Enter **R** at the **===>** prompt. The ResourceView : Resource Definition panel is displayed. This panel lists the resources that you can define and maintain in the specified image.

## Examining TCP/IP Details

3. Enter **S** next to the resource class STACK. The ResourceView : TCP/IP Stack List panel is displayed. This panel lists the stacks defined to your system.
4. Enter **S** next to one of the stacks. The ResourceView : Panel Display List panel is displayed. This panel lists the panels that define your stack details.

```
PROD----- ResourceView : Panel Display List -----
Command ==>                                     Scroll ==> PAGE

                                Use 'S' to select panel(s) to be displayed
Panel Description
TCP/IP Stack General Description
STACK TEST Monitoring Definition
STACK TEST Stack Management Definition
STACK TEST Status Monitor Message Details
STACK TEST Automation Log Details
STACK TEST Owner Details
**END**

F1=Help      F2=Split      F3=Exit      F4=SAVESEQ   F5=Find   F6=Refresh
F7=Backward  F8=Forward      F9=Swap
```

## Examining TCP/IP Details

5. Select the STACK *name* Monitoring Definition panel.  
The ResourceView : STACK *name* Monitoring Definition panel is displayed.  
This panel defines what performance attributes of the stack are monitored and how often.

```
PROD----- ResourceView : STACK TEST Monitoring Definition -TEST-0001
Command ==>

Monitor Rate ..... 5           Minutes (5-60)
Reporting Level ..... TREND     (None, Trend, Summary or Detail)
TCP Port(s) .....
UDP Port(s) .....

Attribute          Alert Summary          Status
CPU%               ACTIVE
EXCP               ACTIVE
JobCount           ACTIVE
SRBCPU             ACTIVE
TaskCPU            ACTIVE
TotalCPU           ACTIVE
Connections        INACTIVE
PortStatus         INACTIVE

F1=Help      F2=Split  F3=Exit   F4=Edit
F7=Backward  F8=Forward F9=Swap   F10=ViewLst F11=Panels
```

6. Examine how the stack is being monitored.

**Tip:** Press F1 (Help) for a description of the monitored attributes.

7. Enter == at the ==> prompt to return to the Primary Menu.

## Viewing the Monitoring Results

**Important!** *The monitoring examined in Examining Stack Monitoring Setup must have been running for more than an hour before doing this task to allow time for summary data to be gathered.*

To view the results of stack monitoring:

1. Enter **/IPMON** at the ==> prompt. The Status Monitor : IP Resources panel is displayed. This panel lists the IP resources monitored by your region.
2. Enter **IP** next to the Stack resource that you want to view. The TCP/IP : Monitor Stack IP Performance History panel is displayed. This panel shows the results of the stack monitoring.

```

PROD----- TCP/IP : Monitor Stack IP Performance History -----
Command ==> Scroll ==>
PAGE

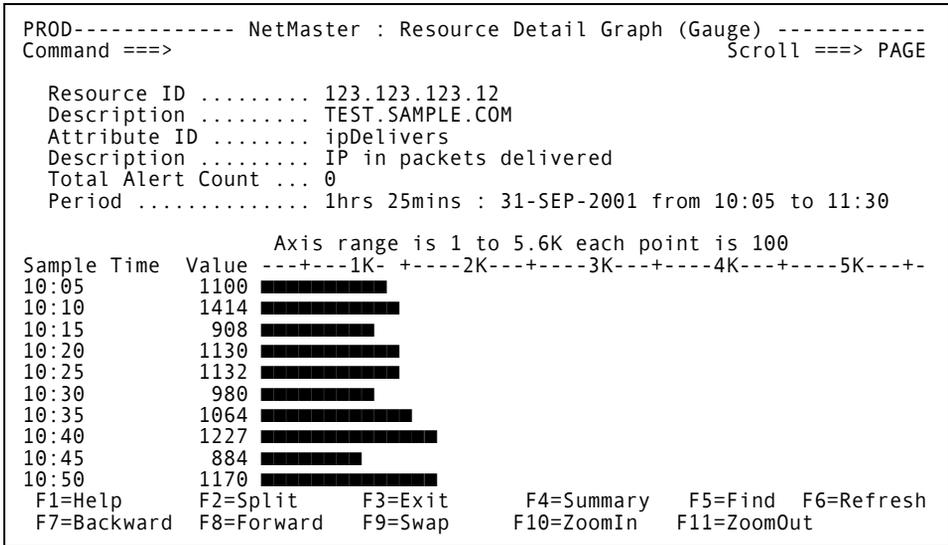
Resource ID ..... 172.172.0.1
Description ..... sample.test.com
Current Alert ..... 0

                E=Expand C=Contract S/=Summary D=Detail
                Alerts
Attribute/Qualifier      Open  Total  Samples  Last   Value Type
ipAddrErrors             0      14  10:10    102 GAUGE
ipDelivers                0      14  10:10    348 GAUGE
ipDgrmsForwarded         0      14  10:10     0 GAUGE
ipDgrmsUnknwnPro         0      14  10:10     0 GAUGE
ipDiscards                0      14  10:10     0 GAUGE
ipFragCreates            0      14  10:10     0 GAUGE
ipFragFailed              0      14  10:10     0 GAUGE
ipFragOk                  0      14  10:10     0 GAUGE
ipHeaderErrors           0      14  10:10     0 GAUGE
ipOutDiscards            0      14  10:10     0 GAUGE
ipOutNoRoutes            0      14  10:10     0 GAUGE
ipOutRequests            0      14  10:10    320 GAUGE
ipReasmFailed            0      14  10:10     0 GAUGE
F1=Help      F2=Split    F3=Exit      F4=Expand    F5=Find    F6=AutoRfsh
F7=Backward  F8=Forward  F9=Swap      F11=Right   F12=ByQual

```

## Examining TCP/IP Details

3. Enter **D** next to the ipDelivers Attribute. The NetMaster : Resource Detail Graph (Gauge) panel is displayed. This panel shows the number of IP packets delivered by this stack for each sampled interval since monitoring started.



4. Enter **==** at the **==>** prompt to return to the Primary Menu.

## What's Next

For more information about using this product, see the *Unicenter NetMaster Network Management for TCP/IP User Guide*.

# 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.

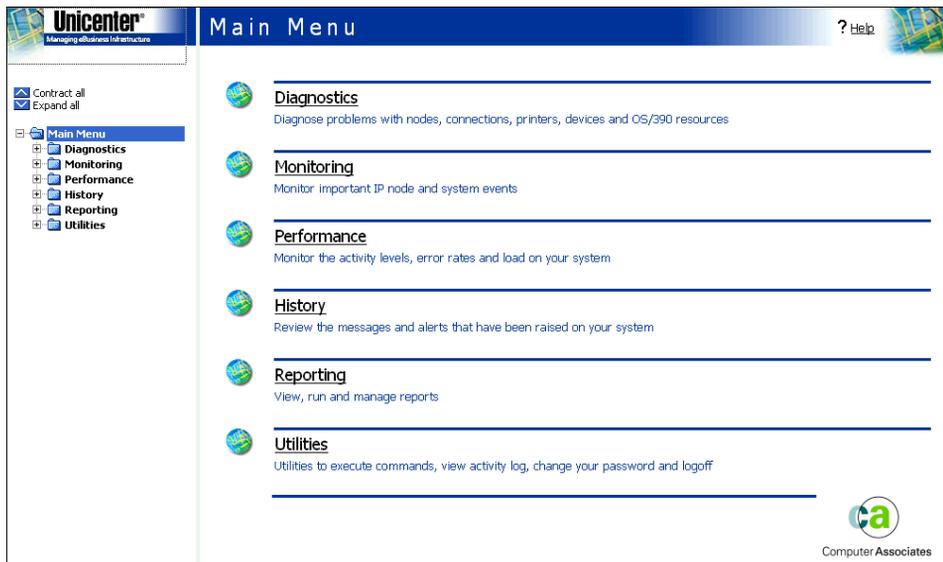
## Chapter 5

# 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. The Reporting sub-menu is expanded, showing 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 search box 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.

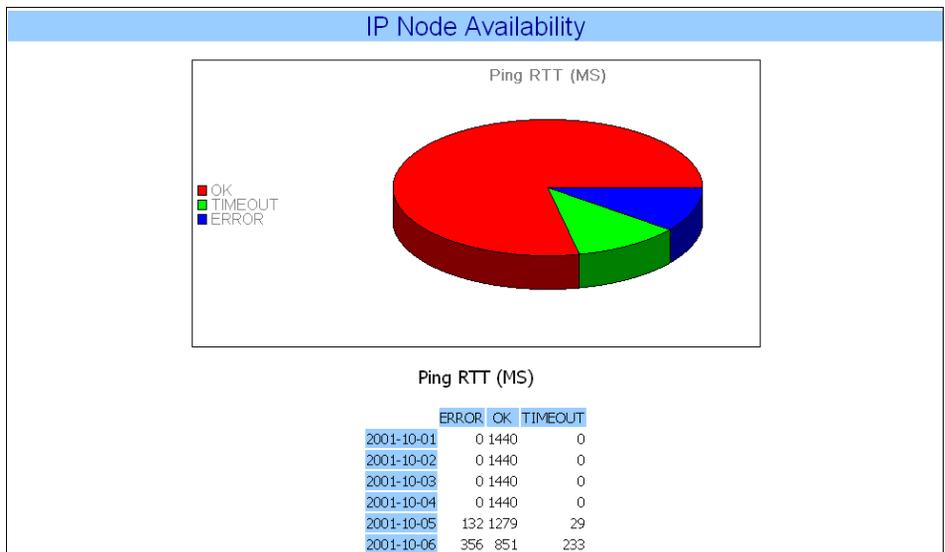
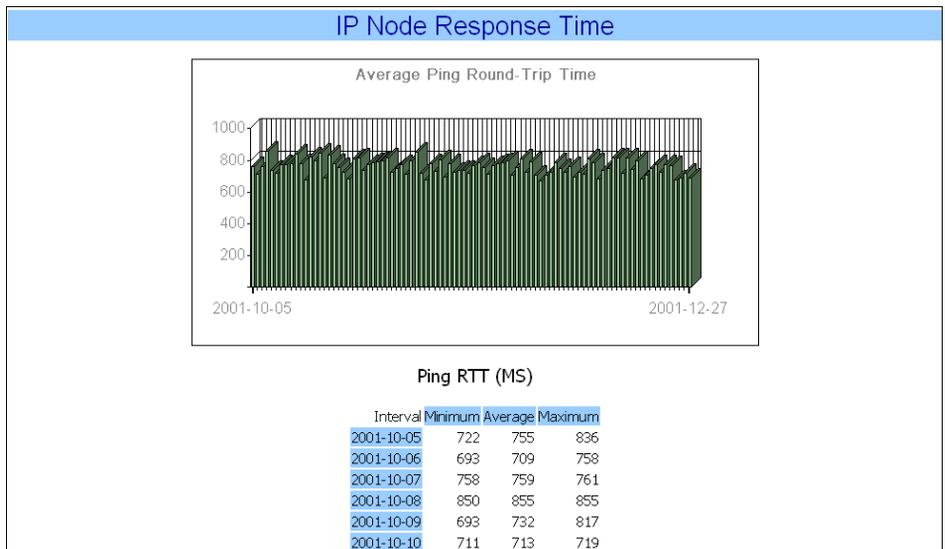
You can schedule reports to be run at specified times (for example, every seven days) or you can run them on demand to provide a snapshot of the activity on your system.

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.