



Installation Guide

NETWORK USER INTERFACE

INSTALLATION OVERVIEW

INSTALLATION SETUP

INSTALLATION WITH WEBSPEED 2.1

INSTALLATION WITH WEBSPEED 3.1

NETUI CONFIGURATION



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MFG/PRO Version 9.0

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14.13.2 Routing Maintenance (Main Screen)

Routing Code:	10-15000	NONAD (75) COOLING
Operation:	20	
Standard Operation		
Work Center	1030	INSPECTION, ALL SITES
Machine		
Description	INSPEC PER PROX-005	
Machines per Op	1	Milestone
Overlap Units	1	
Queue Time	1.0	
Wait Time	0.0	
Setup Time	0.0	

Route by Production Build Control

What Is in This Guide?

Use this guide to install and configure QAD's Network User Interface (NetUI). This guide is divided into the following sections:

- Overview. This section contains background information on implementing the NetUI. Read this section before you begin any part of a NetUI implementation.
- WebSpeed 2.1. This section contains instructions for installing and configuring the NetUI with Progress WebSpeed Version 2.1.
- WebSpeed 3.1. This section contains instructions for installing and configuring the NetUI with Progress WebSpeed Version 3.1.
- Reference. This section contains instructions on performing optional user and system administration activities. The information in this section applies regardless of the version of WebSpeed you are using.

▶ See Table 1.1 on page 11.

You can also use this guide when upgrading components of existing NetUI installations. Chapter 1 includes details about which procedures to follow depending on the components being installed.

Audience

These instructions are intended for a system administrator with between three and five years of experience configuring and managing hardware and operating system software. Additionally, the administrator should have a good understanding of networking concepts and administration.

The NetUI requires third-party software components such as the Progress WebSpeed product and a Web server. As a result, these instructions require some installation and configuration experience to implement these components.

Installation Documentation Updates

Installation Errata

In addition to these instructions, you may receive a supplementary errata sheet with changes and additional instructions. Check your product package.

Even when an errata sheet is included with your product package, QAD recommends that you download the most up-to-date errata sheet from the QAD Web site. New information may have been added to the errata sheet since your product was shipped.

Installation Guides

To ensure a successful implementation, QAD installation guides are periodically updated. To determine whether your installation guide has been updated, refer to the QAD Web site. Compare the item number listed on your installation guide with the number listed on the QAD Web site. If your installation guide has been updated, download and use the most recent version.

QAD Web Site

QAD's Web site provides a wide variety of information about the company and its products. You can access the Web site at:

<http://www.qad.com>

For QAD customers with a Web account, MFG/PRO documentation is available for review or downloading at:

<http://support.qad.com/documentation/>

To obtain a QAD Web account, go to:

<http://support.qad.com/>

Most user documentation is available in two formats:

- Portable document format (PDF). PDF files can be downloaded from the QAD Web site to your computer. You can view them with the free Adobe Acrobat Reader. A link for downloading this program is also available on the QAD Web site.
- HTML. You can view user documentation through your Web browser. The documents include search tools for easily locating topics of interest.

Features also include an online solution database to help users answer questions about setting up and using QAD products. Additionally, the QAD Web site has information about training classes and other services.

Related Documentation

Progress Documentation

For information on installing and configuring WebSpeed, see the *WebSpeed Installation and Configuration Guide*.

MFG/PRO 9.0 Documentation

- For an overview of new features and software updates, see the *Release Bulletin*.
- For information on installing or converting to MFG/PRO 9.0, refer to the MFG/PRO installation guide for your system.
- For technical details, see the *File Relationships* and *Database Definitions*.
- For information on using MFG/PRO, see the *MFG/PRO User Guides*.
- For instructions on navigating the MFG/PRO 9.0 Windows and character environments, refer to the *User Interface Guide*. Navigation information for the Network User Interface (NetUI) is provided in the *Network User Interface Guide*.

- To review MFG/PRO program screens, refer to the *Screen Book, Volumes 1–3*.
- For information on using features that let MFG/PRO 9.0 work with external applications, see the *External Interface Guides*. For example, these guides describe the Warehousing application program interface (API) and Q/LinQ, the tool set for building and using tools that perform complex data exchange between MFG/PRO 9.0 and external systems.
- To view documents online in PDF format, see the *Documents on CD* or the *Supplemental Documents on CD*. The CD-ROM media includes complete instructions for loading the documents on a Windows network server and making them accessible to client computers.

Document Conventions

This guide uses the typographic conventions listed in the following table.

If you see:	It means:
monospaced text	A command or file name.
<i>italicized monospaced text</i>	A variable name for a value you enter as part of an operating system command; for example, <i>CDROMDir</i> .
indented command line	A long command that you enter as one line, although it appears in the text as two lines.
Note	Alerts the reader to exceptions or special conditions.
Important	Alerts the reader to critical information.
Warning	Used in situations where you can overwrite or corrupt data, unless you follow the instructions.

MFG/PRO is available in several interfaces: Windows, character, Web browser, and an interface for object-oriented programs. To standardize presentation in this guide, references to keyboard commands are generic. For example, choose Go refers to F2 in the Windows interface and to F1 in the character interface. Throughout MFG/PRO, the Progress status line at the bottom of the program window lists the main UI-specific keyboard commands used in that program.

For complete keyboard command summaries for each MFG/PRO 9.0 interface, refer to the appropriate chapters of the *User Interface Guide* and the *Network User Interface Guide*.

QAD's Global Support Services

QAD's NetUI has a wide variety of configuration possibilities, is highly scalable, and easily customized. While this guide provides basic installation and configuration information, it cannot consider all of the possible computing environments and variations into which the NetUI can be implemented.

To take full advantage of the NetUI's flexibility and potential in your specific environment, contact your QAD Support representative for information on the installation and customization offerings supplied by QAD's Global Support Services. These offerings include performance enhancements as well as technical and administration training.

SECTION 1

Installation Overview

This section contains background information on implementing QAD's Network User Interface (NetUI). Read this section before you begin any part of a NetUI implementation.

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Routing Maintenance (Main Screen)	
Routing Code:	10-15000
Operation:	20
Standard Operation:	10.00
Work Center:	INSPECTION, ALL SITE
Machine:	INSPEC PER PROQ-000
Description:	
Machines per Op:	1
Overlap Units:	1
Queue Time:	1.0
Wait Time:	0.0
Setup Time:	0.0

CHAPTER 1

System Overview

This chapter provides background information on the different components that make up QAD's Network User Interface (NetUI).

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Routing Code: 10-15000 OPERATION: 20 NONAD(75) CDR IN

Standard Operation: 10:30 INSPECTION, ALL SITE

Description: INSPEC PER PROX-005

Machines per Op: 1 Allocation: 1

Overlap Units: 1

Queue Time: 1.0

Wait Time: 0.0

Setup Time: 0.0

Route by Production Route

Implementation Overview

This guide provides instructions on performing the installation and configuration procedures required to implement the NetUI in an MFG/PRO 9.0 environment. It also provides information needed by existing MFG/PRO 9.0 NetUI installations when upgrading various components of the NetUI.

New Installation of NetUI

This installation guide provides information required for a new NetUI installation, using either WebSpeed Version 2.1 or WebSpeed Version 3.1. The overall implementation process can be broken down into the following major stages:

- **Planning.** During this stage, you plan the NetUI deployment and installation activities and obtain information about your environment. You must also determine the version of the Progress WebSpeed product on which you will implement the NetUI.
- **Setup.** During this stage, you set up your environment for the NetUI.
- **Installation.** During this stage, you install the QAD NetUI software.
- **Configuration.** During this stage, you configure the components in the NetUI system to work together.

Upgrading NetUI Components

This guide can also be referenced for specific procedures required by existing NetUI installations during various upgrade paths.

If you have received this installation guide as part of an upgrade, use Table 1.1 to determine the installation procedures required in your environment.

Important After you identify the installation you are performing, make sure you install the software components in the indicated order.

The information in this table assumes that WebSpeed 3.1 will be used with all service packs after Service Pack 3.

Table 1.1
NetUI Upgrade
Paths

If you are...	Then complete these steps...	Described in...
Using the NetUI with WebSpeed 2.1 and need to implement Service Pack 1 or 2	Install the service pack using the installation instructions included on the service pack media.	Installation Media
Using the NetUI with WebSpeed 2.1 and need to implement Service Pack 3	• Install the service pack using the installation instructions included on the service pack media. • Recompile the Web-enabled code.	Installation Media
Using the NetUI with WebSpeed 2.1 and upgrading to WebSpeed 3.1 without implementing a service pack	• Install and configure WebSpeed 3.1. • Install the Patch Bundle. • Compile the Web-enabled code.	• Chapter 8 • Chapter 11 • Chapter 12
Using the NetUI with WebSpeed 2.1 and need to upgrade to WebSpeed 3.1 and implement Service Pack 1 or 2	• Install the service pack using the installation instructions included on the service pack media. • Install and configure WebSpeed 3.1. • Install the Patch Bundle. • Compile the Web-enabled code.	• Installation Media • Chapter 8 • Chapter 11 • Chapter 12
Using the NetUI with WebSpeed 2.1 and need to upgrade to WebSpeed 3.1 and implement Service Pack 3 or higher	• Install the service pack using the installation instructions included on the service pack media. • Install and configure WebSpeed 3.1.	• Installation Media • Chapter 8
Using the NetUI with WebSpeed 3.1 and need to implement Service Pack 1 or 2	• Install the service pack using the installation instructions included on the service pack media. • Reinstall the Patch Bundle. • Recompile the Web-enabled code.	• Installation Media • Chapter 11 • Chapter 12
Using the NetUI with WebSpeed 3.1 and need to implement Service Pack 3 or higher	Install the service pack using the installation instructions included on the service pack media.	Installation Media

Note Only Service Packs 1, 2, and 3 are certified to work with WebSpeed 2.1. If you want to install later service packs and you are still on WebSpeed 2.1, you must upgrade your version of WebSpeed.

NetUI Service Packs and JDK Versions

The NetUI as it was initially released with MFG/PRO 9.0 has the following Java requirements for the client machines:

- Sun Microsystems Java Runtime Environment (JRE) 1.1.6
- Java Plug-In version 1.1.1

Beginning with NetUI Service Pack 5, these requirements have changed to take advantage of improvements offered by later versions of Java. With Service Pack 5, NetUI requires JRE 1.3.0_02 or higher, which includes the Java Plug-In, on each client

Note NetUI with Service Pack 5 has the same Java requirements as the optional eB Desktop product.

Changes in the version of Java also affect the security algorithm used on the client and the client install.

This installation guide can be used to install the NetUI as it was originally released or with various service pack levels. Notes about differences in the installation process after Service Pack 5 are included when necessary.

QAD eB Desktop

QAD provides an additional optional component that replaces the standard NetUI desktop. This product—eB Desktop—is purchased separately and shipped on its own CD with its own installation manual.

QAD eB Desktop adds an HTML-based front end to the NetUI using an expanded version of the NetUI's embedded mode. All MFG/PRO 9.0 programs can be accessed through an easy-to-use HTML navigation system. Full search capability is provided for menu numbers, menu descriptions, and program names.

If you plan to use eB Desktop, do not perform the NetUI client installation, but follow the instructions in *Installation Guide: eB Desktop* for client requirements and installation steps.

NetUI Components

The NetUI relies on the interaction of several different software components. There are three basic types of components:

- Prerequisite components. These components must exist in your environment before you begin implementing the NetUI. This guide assumes their existence and does not provide installation and configuration instructions for them.
- Third-party components. These components are supplied by software vendors other than QAD. Vendors can include Progress Software Inc., Netscape Communications Corporation, and Microsoft Corporation. This guide provides information about installing and configuring these components for use in a NetUI environment.
- QAD-supplied components. These components are supplied by QAD on the NetUI media. This guide provides installation and configuration information for these components.

The following sections provide brief descriptions of the NetUI components. These descriptions are intended to provide a framework for understanding the NetUI architecture before you begin your implementation. Specific details on the different aspects of the NetUI components can be found in the appropriate chapters of this guide.

Prerequisite Components

Before you begin implementing the NetUI, make sure you have the following prerequisite components. This guide assumes that these components are installed and configured.

- The required Progress software components for MFG/PRO
- MFG/PRO 9.0 database server
- MFG/PRO 9.0 character client code
- Internet access

▶ For more information, see the MFG/PRO installation guide for your system.

Third-Party Components

These components are supplied by vendors other than QAD. This guide includes instructions for installing and configuring these components for use in a NetUI environment.

Progress Server Components

◆ For details, see “WebSpeed Versions” on page 48.

In addition to the Progress software required for MFG/PRO, the NetUI uses the Progress WebSpeed product. The NetUI for MFG/PRO 9.0 supports two versions of WebSpeed: WebSpeed 2.1 and 3.1. The specific steps in the setup, installation, and configuration stages of the NetUI implementation depend on the version of WebSpeed you use.

Web Server Component

The NetUI uses a Web server to enable user access to the NetUI. You must obtain Web server software from the vendor of your choice. The NetUI can operate with any common gateway interface (CGI) compliant Web server. Examples include Netscape Enterprise Server and Microsoft Internet Information Server (IIS).

Web Browser Component

QAD’s NetUI is a browser-based interface to MFG/PRO. Each client machine must have a browser to access the NetUI. QAD supports the NetUI on Microsoft’s Internet Explorer and Netscape’s Communicator.

Important If you plan to use eB Desktop, you must use Internet Explorer 5.5 or above; Netscape Communicator is not supported.

◆ See “Client Software” on page 31.

You must use a supported browser and version. Otherwise, there are no special installation or configuration issues involving the Web browser. Therefore, this guide does not include instructions for installing and configuring the browser software. QAD suggests you follow the browser vendor’s instructions to install and test your Web browser.

Telnet Server Component

The NetUI uses a telnet server to enable the telnet interface for MFG/PRO maintenance and transaction programs. Depending on the operating system of the machine on which your telnet server will run, you may need to install additional software.

- If you plan to use a UNIX machine for the telnet server, you can use the default telnet service provided with the operating system.
- If you plan to use a Windows NT machine for the telnet server, you must install the Georgia SoftWorks telnet server software. This software is supplied by QAD.

▶ See “Windows NT Telnet Server Software” on page 17.

QAD-Supplied Components

The following components are supplied by QAD and are included on the NetUI media.

Web-Enabled MFG/PRO Code

Web-enabled MFG/PRO code includes Progress programs that WebSpeed agents launch to perform various tasks throughout the system. To ensure the integrity of the business logic, standard MFG/PRO software modules were enhanced to support communication between an agent and the NetUI (on the client Web browser).

Because this Web-enabled MFG/PRO code was compiled using the Progress WebSpeed product, it is also referred to as MFG/PRO WebSpeed code.

QAD Security Files

The NetUI Java code operates in conjunction with security files that authenticate the code. The specific files involved vary depending on the version of Java being used:

- Before Service Pack 5, a file called `identitydb.obj` is loaded on each client machine by the NetUI client setup process.
- Beginning with Service Pack 5, a `qadkeystore` file is copied to each client. In addition, the `java.policy` file is modified so that users can run `.jar` files signed by QAD.

▶ See “NetUI Service Packs and JDK Versions” on page 12.

Java Virtual Machine

The Java Virtual Machine (JVM) is responsible for executing the platform-independent Java bytecode on a specific operating system. Some JVMs contain just-in-time (JIT) compilers that increase Java performance.

The most widely used Web browsers include JVMs. However, the NetUI uses a more recent version of the JVM than the browser default. To enable this JVM, the NetUI client setup process installs a Sun-developed JVM called the Java Plug-In.

Note Beginning with Service Pack 5, the client setup process installs the Java Runtime Environment (JRE) 1.3.0_0.2, which includes the Java Plug-In. Before Service Pack 5, JRE 1.1.6 was supplied with the NetUI.

Using Sun's JVM has the following advantages:

- It is a known, stable JVM that follows all language standards.
- It works with most Web browsers.
- It can be installed automatically on Windows clients.
- It bypasses the Web browser's existing JVM only when explicitly required by the NetUI HTML files.
- It supports new versions of the Java language earlier than the browser JVMs.

The Java Plug-In requires less than 10 MB of disk space. The JRE requires a little more than 20 MB of disk space.

Extra NetUI Fonts

The NetUI user interface uses extra fonts that may not exist on your client machines. QAD supplies these fonts on the NetUI media for you to download and install on the client machine.

NetUI Java Code

The NetUI Java code is contained in Java archive files (extension .jar) on the NetUI media. During the NetUI media installation, these files are copied to the Web server's document directory.

Before Service Pack 5, you can choose to run the NetUI Java code from either the Web server or locally on each NetUI client. Instructions for copying the .jar files to clients are provided in Chapter 16.

When you install Service Pack 5, you must upgrade to JRE 1.3, which automatically manages .jar files by downloading to the client when the version on the client is older than the version on the server. The client setup does not download the files, since they are automatically downloaded the first time a client needs them. Archive files are located in the user's Windows profile directory in a subdirectory called `java_plugin_AppletStore`.

NetUI HTML Files

The NetUI HTML files provide the access point for client Web browsers when they first launch the NetUI. These files can be customized for different business purposes.

▶ See "NetUI HTML Files" on page 216.

Windows NT Telnet Server Software

The NetUI installation media contains Georgia SoftWorks Windows NT Telnet Server software. The Windows NT telnet server enables NetUI client access to MFG/PRO telnet maintenance and transaction programs on a Windows NT server. The Georgia SoftWorks server is fully integrated with MFG/PRO telnet session functionality and works seamlessly in the NetUI environment. The server lets you monitor client sessions as well as detect and eliminate abnormally terminated client sessions.

For more information, access the Georgia SoftWorks Web site for a copy of their *Windows NT Telnet Server User Guide*.

<http://www.georgiasoftware.com>

NetUI Architecture

Overview

The NetUI architecture diagram (Figure 1.1) illustrates the components that make up the NetUI and how they interact.

Fig. 1.1
NetUI Architecture

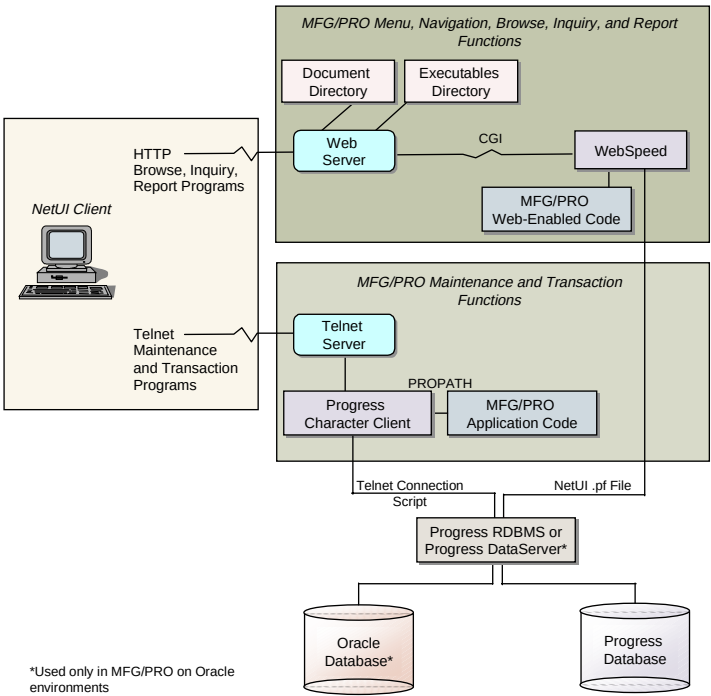


Figure 1.1 uses the acronyms and abbreviations in Table 1.2.

Table 1.2
NetUI Acronyms
and Abbreviations

Acronym or Abbreviation	Definition
CGI	Common Gateway Interface
HTTP	Hypertext Transfer Protocol
RDBMS	Relational Database Management System

The following sections describe how the NetUI components interact to perform different MFG/PRO functions. Using the NetUI architecture

diagram as a guide, the components in each of the logical areas are discussed.

Client Components

These components are located on the client machine and enable access to the NetUI system. Figure 1.2 illustrates the NetUI client components.



Fig. 1.2
NetUI Client
Components

Components

Java Plug-In. This component is installed on the Web server from the NetUI media. (JRE only, which includes the Java Plug-In, is installed starting with Service Pack 5.)

It is then downloaded to each client machine during the client setup process. The Java Plug-In runs the JVM that is responsible for executing the platform-independent Java bytecode on a specific operating system.

Java Runtime Environment (JRE). This component is installed on the Web server from the NetUI media. It is then downloaded to each client machine during the client setup process. The JRE provides the Java environment in which the NetUI application runs on the client machine.

QAD security files. This component is installed on the Web server from the NetUI media. It is downloaded to each client machine during the NetUI client setup. The QAD security files verify the authenticity of the client to run the NetUI Java files.

Web browser. This component is installed on each client machine using the browser vendor's installation instructions. It performs the following functions:

- Provides access to the NetUI HTML pages that launch a NetUI session
- Checks the security permissions and the QAD security files before executing the NetUI Java code
- Calls the Java Plug-In, which launches the JVM that executes the NetUI Java code
- Performs basic Web functions, such as displaying the NetUI program windows

Extra fonts. This component is installed on the Web server from the NetUI media. It is then downloaded to each client machine during the client setup process. These QAD-supplied fonts are used in the NetUI interface.

NetUI Java code. This component is installed on the Web server from the NetUI media. These files contain the Java classes that comprise the NetUI Java code. Before Service Pack 5, it can be run from the server or downloaded to each client machine. After Service Pack 5, the JRE automatically downloads it and runs it from the client.

Interactions

- 1 A user launches the Web browser on the NetUI client machine and accesses a NetUI HTML file on the Web server.
- 2 The NetUI HTML file specifies the Java Plug-In, which bypasses the browser's default JVM.
- 3 The Java Plug-In accesses the QAD security files and runs the NetUI Java code.

Maintenance and Transaction Components

These components can be located on one or more machines and enable MFG/PRO maintenance and transaction programs accessed by NetUI clients. Figure 1.3 illustrates the NetUI maintenance and transaction components.

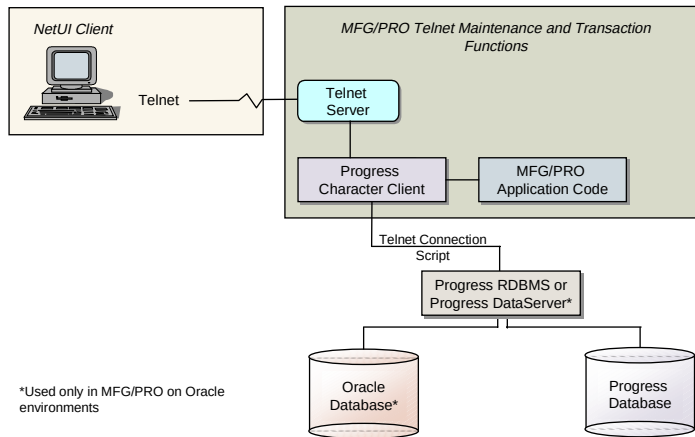


Fig. 1.3
Maintenance and Transaction Components

Components

Telnet server. Depending on the operating system you are using, this component is either already present or installed from the NetUI media.

- For UNIX servers, use the telnet server provided with your operating system.
- For Windows NT servers, use the Georgia SoftWorks telnet server included on the NetUI media.

Note Although QAD provides the Georgia SoftWorks Windows NT Telnet Server on the NetUI media, you should download the latest version of the software to obtain the most recent patches and functionality.

This component provides the telnet interface for MFG/PRO maintenance and transaction programs accessed through the NetUI.

Progress character client. This component was installed with the Progress software when you implemented MFG/PRO. It provides the

See “Download Updated Software” on page 178.

client executable for MFG/PRO maintenance and transaction programs accessed using the NetUI's telnet interface.

MFG/PRO application code. This component was installed during the MFG/PRO implementation. The application code for NetUI clients is part of the MFG/PRO character client code.

Progress RDBMS. This component was installed during the MFG/PRO implementation. It provides access to the MFG/PRO databases.

MFG/PRO Progress or Oracle databases. These components were created during the MFG/PRO implementation. The MFG/PRO databases contains the MFG/PRO system data.

Interactions

- 1 A NetUI user requests a maintenance or transaction program.
- 2 The telnet server launches a Progress character client session.
- 3 The client sessions access the MFG/PRO character client code to run the requested program.
- 4 The client session accesses the MFG/PRO databases using a connection script.

Menu, Navigation, Browse, Inquiry, and Report Components

These components can be located on one or more machines and enable the MFG/PRO menu and navigation functions for NetUI clients. Additionally, they enable MFG/PRO browse, inquiry, and report programs accessed by NetUI clients. Figure 1.4 illustrates the menu, navigation, report, browse, and inquiry components.

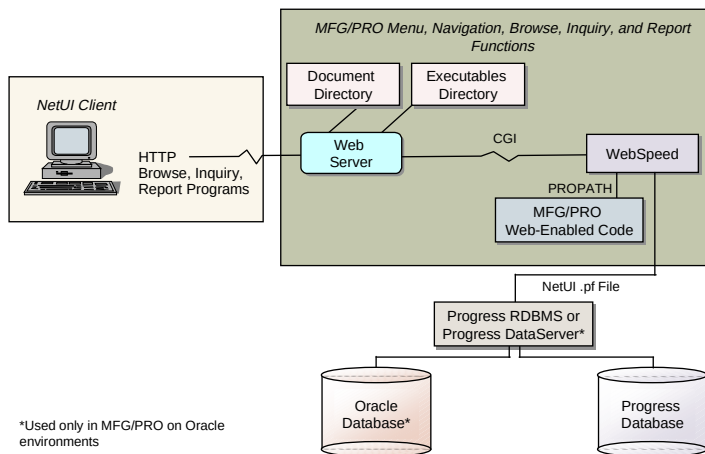


Fig. 1.4
Menu, Navigation,
Browse, Inquiry,
and Report
Components

Components

Web server. This component is installed using the Web server vendor's installation instructions. It provides access to the WebSpeed and HTML components of the NetUI.

Document directory. This component was created during the Web server installation. This directory contains the NetUI HTML files that provide the initial access point for the NetUI. It is also the directory into which the NetUI software is initially installed.

Executables directory. This component was created during the Web server installation. This directory contains the NetUI executables such as the WebSpeed messenger executable.

WebSpeed. This component is included with the Progress software. It provides the client executables for MFG/PRO browse, report, and inquiry programs accessed through the NetUI.

MFG/PRO Web-enabled code. This component is installed from the NetUI media. It provides the code for MFG/PRO report, browse, and inquiry programs accessed through the NetUI.

Progress RDBMS. This component was installed during the MFG/PRO implementation. It provides access to the MFG/PRO databases.

MFG/PRO Progress or Oracle databases. These components were created during the MFG/PRO implementation. The MFG/PRO databases contain the MFG/PRO system data.

Interaction

- 1 A NetUI user requests a browse, report, or inquiry program.
- 2 The WebSpeed messenger contacts the WebSpeed broker.
- 3 The WebSpeed broker assigns an agent process to the client request.
- 4 The agent process accesses the MFG/PRO Web-enabled code to run the requested browse, inquiry, or report program.
- 5 The agent process accesses the MFG/PRO databases using a parameter file.

WebSpeed Architecture

The NetUI uses Progress WebSpeed server instances to manage NetUI client requests for MFG/PRO programs and database records. Before you begin setting up your WebSpeed server instance, you should understand the components that make up the instance.

Additionally, all of the Progress server products—including the WebSpeed product—use the Progress administration framework to provide consistent administration and management functionality. A basic understanding of this framework makes setting up and managing the WebSpeed server instance easier.

These sections provide only the basic information you will need to set up your NetUI environment. For more detailed information about any of the following components, see the Progress documentation for your system.

Administrative Framework

The Progress administrative framework consists of the following components:

- The AdminServer (WebSpeed 3.1 only)
- The WebSpeed configuration file
- The NameServer (WebSpeed 3.1 only)
- Server management utilities
- The Progress Explorer (WebSpeed 3.1 only)

AdminServer

In WebSpeed 3.1 environments, the AdminServer provides administration functions for all of the Progress server products. The Progress Explorer and the server management utilities run as clients of the AdminServer.

WebSpeed Configuration File

The WebSpeed configuration file defines the server instances in your environment. These include the NameServer and WebSpeed server instances used by the NetUI. Depending on the version of WebSpeed you implement, this file has different names.

- For WebSpeed 3.1 environments, the WebSpeed configuration file is `ubroker.properties`.
- For WebSpeed 2.1 environments, the WebSpeed configuration file is `webspeed.cnf`.

Note For UNIX WebSpeed 2.1 environments, the UNIX NetUI installation script creates a WebSpeed configuration file. This file is used as the WebSpeed configuration file for NetUI transactions rather than the standard `webspeed.cnf` file.

▶ See Table 6.2 on page 69.

NameServer

In WebSpeed 3.1 only, the NameServer directs NetUI client requests to the appropriate WebSpeed instance. The instructions in this guide set up the WebSpeed instance to use the default NameServer (NS1) supplied by Progress.

Progress Explorer

The Windows NT version of WebSpeed 3.1 includes a graphical user interface tool for the `ubroker.properties` file, the Progress Explorer. Using this tool, you can create and configure the WebSpeed server instance for your NetUI environment.

The Progress Explorer offers an easier and less error-prone method of modifying the `ubroker.properties` file. You can also modify the properties file using a text editor if you cannot use the Progress Explorer in your environment. This guide contains configuration instructions for both situations.

Note This utility is not available with WebSpeed 2.1.

Server Management Utilities

▶ See the Progress documentation for details.

The server management utilities let you stop, start, and check the status of the Progress server instances in your environment.

WebSpeed Transaction Server

The WebSpeed server provides the Progress client executables for NetUI menu and navigation functions and for MFG/PRO report, browse, and inquiry programs accessed through the NetUI. The NetUI requires at least one WebSpeed server instance.

A WebSpeed server instance is comprised of:

- A pool of WebSpeed client executables called agents
- A broker that manages the agents

In addition to agents and brokers, WebSpeed server instances use a WebSpeed messenger executable. The messenger handles the transfer of data between the Web server and the WebSpeed agent during a single Web transaction. It is installed in the Web server's executables directory during the WebSpeed installation process.

Data Security

In this release of the NetUI, all traffic between the client and the server is initially insecure and, with the use of a network sniffer, security could be compromised.

Various additional system security options are available. See the following topics:

- For UNIX telnet servers, see “Configuring the Telnet Environment” on page 166.
- For information on securing client/server transactions using Secure Socket Layer (SSL) encryption, see “Securing Internet Communication” on page 225.

System Requirements

A NetUI implementation requires planning for adequate system resources. This chapter provides guidelines you can use to generate estimates of the hardware and software requirements.

Skills Required for Implementation **30**

Prerequisite Requirements **30**

Client Requirements **31**

Web Server Requirements **32**

WebSpeed Server Requirements **34**

MFG/PRO Web-Enabled Code **35**

Routing Code: 10-15000 OPERATION: 20 MFG/PRO CODE: 10-15000

Standard Operation	Work Center	Machine	Description	INSPEC PER PROG-000
10.30	INSPECTION, ALL SITE			
Machines per Op	1			
Overlap Units	1			
Queue Time	1.0			
Wait Time	0.0			
Setup Time	0.0			

Route by Production Route Code

Skills Required for Implementation

NetUI implementation and maintenance requires experience with the following:

- System administration, including:
 - Either UNIX or Windows NT server operating system
 - User management
 - Network administration, specifically TCP/IP network
 - Device administration
 - File system administration
 - Windows client administration
- Progress software experience, including basic WebSpeed installation and administration
- MFG/PRO administration
- Progress or Oracle database administration
- Web server installation and administration
- Basic HTML
- Basic telnet

Prerequisite Requirements

▶ For more information, see the MFG/PRO installation guide for your system.

- The required Progress software components for MFG/PRO 9.0
- MFG/PRO 9.0 database server
- MFG/PRO 9.0 character client code
- Internet access

Client Requirements

Operating Systems

The following operating systems are supported:

- Microsoft Windows 95 and 98
- Microsoft Windows 2000 using Progress 8.3c
- Microsoft Windows NT 4.0

Note Currently, the NetUI is not supported for UNIX clients.

Client Software

- QAD's NetUI client environment. These components are installed during the NetUI client setup process and include:
 - Sun's Java Plug-In 1.1.1 and Java Runtime Environment (JRE) 1.1.6 for NetUI installations prior to Service Pack 5 or JRE 1.3.0_0.2 or higher starting with Service Pack 5.
For non-English installations, the internationalized version of the Java Plug-In is required. This is supplied with the NetUI software.
 - QAD security files
 - Fonts for Windows 95 and Windows 98
- Web browser software. Supported browsers are:
 - Microsoft Internet Explorer 5.0 or later
 - Netscape Communicator 4.6 and 4.7

Important NetUI uses cookies to store information on the client. Make sure that the browser is set up to allow cookies.

Note If you plan to use the optional eB Desktop with the NetUI, different client requirements exist. You *must* use Microsoft Internet Explorer 5.5 or later and install JRE 1.3.0_0.2 or higher.

Tip
The NetUI does not support Netscape 6.

Minimum Client Hardware

- Depending on the client operating system, the following memory is required:
 - For Windows 95 and 98 clients, 64 MB of RAM
 - For Window NT clients, 128 MB of RAM
 - For Windows 2000 clients, 128 MB of RAM
- At least 15 to 25 MB of disk space, depending on the version of Java
- P166 or faster processor
- Ability to display 65,536 or more colors

Web Server Requirements

Operating Systems

NetUI clients communicate with the Web server using network protocols and do not require that the server use a specific operating system. Use the operating system that best suits your needs. You should choose the operating system based on criteria such as your experience or familiarity with the operating system, desired performance, and available support.

Software

- You can use any Web server software that supports a common gateway interface (CGI). Examples include:
 - Netscape Enterprise Server, Version 2.01 or higher
 - Microsoft Internet Information Server (IIS)
- The Progress WebSpeed messenger
- QAD's NetUI Web server environment. These components are installed on the Web server during the NetUI media load and include:
 - NetUI HTML files
 - NetUI Java code

▶ See “Running Java Code from a Client Machine” on page 212.

Note Optionally, the MFG/PRO Java code can be located on the client. After Service Pack 5, the JRE manages the download and storage of Java code on the client.

Hardware

Minimum hardware requirements differ depending on the Web server software and operating system you implement. The performance and scalability of the NetUI is directly related to proper server sizing. If you are unsure or inexperienced in performance and capacity planning, you should obtain professional assistance before purchasing any hardware.

Software and Hardware Sizing

The following components of the NetUI are most affected by Web server hardware resources:

- The Web server software. See the software vendor’s sizing guidelines for your Web server’s operating system.
- The Progress WebSpeed software. See the Progress WebSpeed sizing guidelines for your Web server’s operating system.

CPU Requirements

The required number of central processing units (CPUs) and their speed depends on the type of hardware and operating system you are implementing. See the hardware vendor’s product documentation and the operating system documentation for sizing guidelines.

Disk Space Requirements

The Web server must have enough disk space for the following NetUI components.

NetUI Component	Disk Space
Web server software	Required disk space depends on the server software you implement
WebSpeed software	100 MB
NetUI software	150 MB for the NetUI Java code and HTML files

Table 2.1.
Disk Space
Requirements

WebSpeed Server Requirements

Operating Systems

NetUI clients communicate with the WebSpeed server instance using network protocols and do not require that the machines on which these servers run use a specific operating system.

Progress has released versions of WebSpeed for the following platforms:

- Windows NT (Intel)
- Windows 2000
- Sun Solaris (SPARC)
- IBM AIX
- Compaq Tru64 UNIX (formerly Digital UNIX)
- HP-UX
- SCO UnixWare

For specific operating system release numbers supported, see the *Progress Product Availability Guide* on the Progress Web site.

<http://www.progress.com/products/pavail.pdf>

Hardware

♦ See the System Requirements chapter in the MFG/PRO installation guide for your system.

WebSpeed is responsible for executing the MFG/PRO code for the NetUI clients. The server should be sized in a manner similar to a server running MFG/PRO for an equivalent number of character MFG/PRO clients.

Software

♦ See “WebSpeed Agent Sizing and Behavior” on page 221.

- Progress WebSpeed Transaction Server, Version 2.1 or 3.1B or higher.
- Sufficient WebSpeed agent licenses to support expected transaction volume

MFG/PRO Web-Enabled Code

The MFG/PRO Web-enabled code can be installed on any of the servers in your NetUI environment. For example, you can install the Web-enabled code on the MFG/PRO database server, on the NetUI Web server, or on a file server. The Web-enabled code requires 200 MB of space.

CHAPTER 3

Plan the Implementation

Use this chapter to plan your NetUI implementation.

Deployment 38

Installation Summary 42

WebSpeed Versions 48

Routing Maintenance (Main Screen)

Routing Code:	10-15000	NONAD (75) COOLING
Operation:	20	
Standard Operation		
Work Center	1030	INSPECTION, ALL SITES
Machine		
Description	INSPEC PER PROX-005	
Machines per Op	1	Milestone P
Overlap Units	1	
Queue Time	1.0	
Wait Time	0.0	
Setup Time	0.0	

Route by Production Route

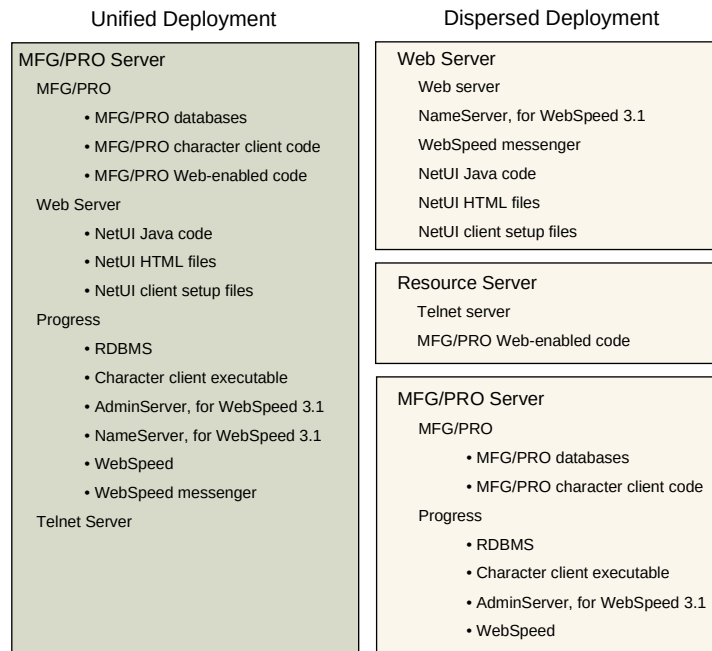
Deployment

Deployment Options

The various components of MFG/PRO and the NetUI can be deployed in several configurations. You can install all of the components on a single adequately sized server in a unified deployment or on multiple servers in a dispersed deployment. Both deployments offer advantages for different MFG/PRO environments.

Figure 3.1 illustrates examples of both unified and dispersed deployment methods.

Fig. 3.1
NetUI Deployment
Methods



Unified Deployment

In a unified deployment, all of the NetUI components are implemented on the same physical machine as the MFG/PRO components. With an adequately sized server, this option can provide the following benefits:

- Increased system performance because of reduced network traffic and the absence of network dependencies
- Simplified system administration because all of the components are on the same physical machine

Dispersed Deployment

In a dispersed deployment, the Web, resource, and MFG/PRO server components of the NetUI are implemented on two or more machines. With adequately sized servers and appropriate network bandwidth, this option can provide the following benefits:

- Increased system performance for remote users
- Division of NetUI computing requirements between server machines

A dispersed deployment may require you to implement NetUI components on more than one machine. This type of deployment also causes increased network overhead for NetUI component communication.

QAD recommends that you group the NetUI components as they appear in Figure 3.1. Although it is possible to separate the NetUI components further, the dispersed deployment in Figure 3.1 contains logical groupings that consider component interdependencies, overall system performance, and ease of administration.

Important You should not attempt a dispersed deployment without the help of a network engineer.

Deployment Issues

When planning the NetUI deployment, be sure to consider each of the following issues.

System Characteristics

Consider your expectations for system characteristics such as accessibility, reliability, scalability, performance, and maintenance. Different NetUI deployments may improve one characteristic while degrading another. You should implement the NetUI in the deployment that best achieves your expectations.

For example, a unified deployment may ease administration because all of the components are located on the same server. However, to provide better performance for remote users, you may want to deploy a dispersed configuration with components located on the remote user's local-area network (LAN).

Location of Prerequisite Components

The location of prerequisite components—such as the MFG/PRO databases, the MFG/PRO character client code, and their related Progress software—affects the deployment you implement. Keep in mind that spreading components across multiple machines increases network delays and may reduce overall system performance.

Existing Infrastructure

If you decide to deploy the NetUI in a dispersed configuration, overall system performance is directly affected by:

- Network topology, bandwidth, and throughput
- The processing power of the machines involved in the deployment

For example, you may find that while a component runs faster on a dedicated server—removing CPU contention with other components—the network delays that result from moving the item actually decrease system performance.

NetUI Architecture

Although NetUI components can be spread across multiple machines to suit your needs, certain components rely on each other and must be present on the same machine. When considering deployment options, keep NetUI dependencies in mind and be aware that copies of key components may need to exist on multiple machines.

▶ See Figure 3.1 on page 38.

Java Code Placement

Before Service Pack 5, you can run the NetUI Java code from either the Web server or the individual client machines.

- The advantage of running the code on the Web server is the simplicity of upgrading and maintaining the NetUI Java code. By default, the NetUI HTML files are set up to run the NetUI Java code from the Web server.
- The advantage of keeping the MFG/PRO Java code on the client is that it may speed the client start-up, depending upon the network bandwidth between the client and server. You must perform additional steps to run the NetUI Java code from NetUI client machines.

▶ See “Running Java Code from a Client Machine” on page 212.

When there are remote sites and users in your configuration, you may want to install several Web servers.

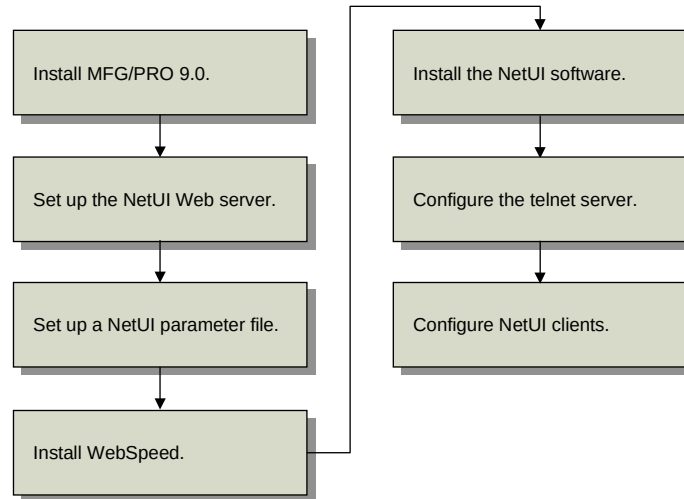
Example You have a remote office with multiple MFG/PRO users. To improve the NetUI’s start-up performance, place the NetUI Java code on the remote office’s Web server.

Beginning with Service Pack 5, NetUI requires JRE 1.3. QAD uses the plug-in’s native .jar management to store a local version of the .jar file for performance improvements. When the jar file on the server is updated, the client automatically updates its local version with the server version.

Installation Summary

Figure 3.2 provides a summary of the major tasks required to install the NetUI.

Fig. 3.2
NetUI Installation
Summary



The following sections break each of the major installation tasks into activities. Use this information as a guide to planning and performing each task.

Install MFG/PRO 9.0

Before you begin installing the NetUI, you must install and configure an MFG/PRO 9.0 environment. In general, this task involves completing the following activities. Instructions for completing these activities are not included in this guide.

▶ See the Progress installation and configuration documentation.

- Perform a complete installation of the Progress components required by MFG/PRO 9.0.

Important Do not use the typical or custom options when you install Progress. You must perform a complete installation.

▶ See the MFG/PRO installation guide for your system.

- Implement MFG/PRO 9.0 including MFG/PRO character clients. The MFG/PRO application has two sets of code: one for graphical user interface (GUI) clients and the other for character clients. NetUI

clients use the MFG/PRO character client code for maintenance and transaction programs.

Because NetUI clients use the character client code, you may want to install the MFG/PRO code on multiple servers. You can install the character client code from the MFG/PRO database server media at any time.

Figure 3.3 illustrates the MFG/PRO 9.0 installation activities and some of the effects these activities have on your NetUI environment.

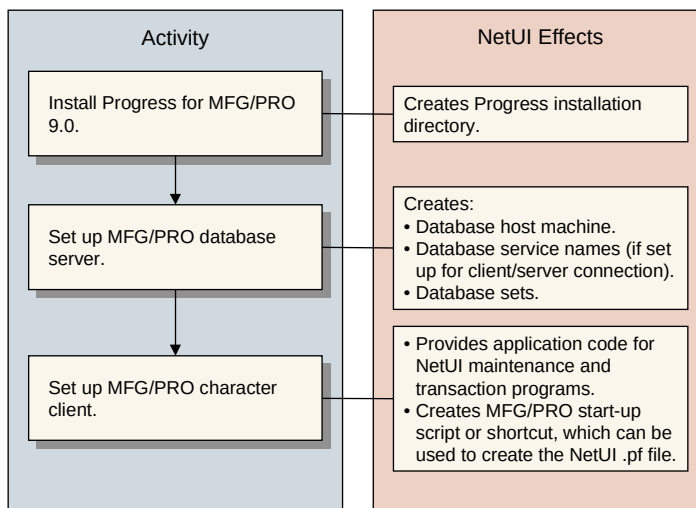


Fig. 3.3
Installing
MFG/PRO 9.0

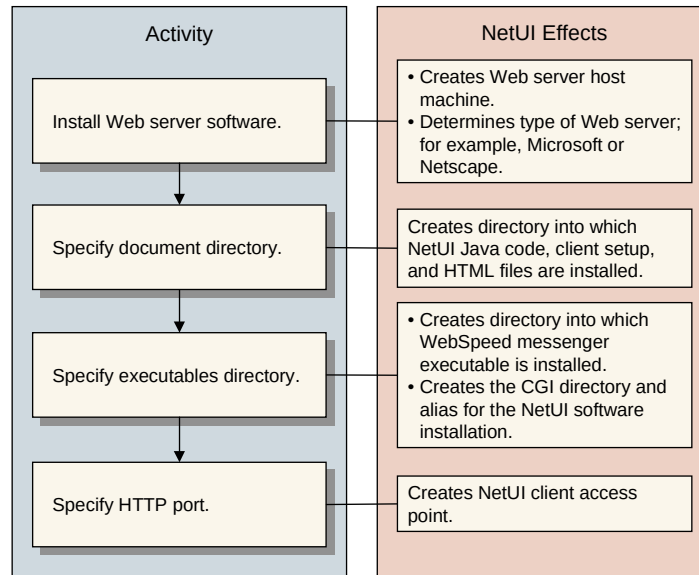
Important Before you begin implementing the NetUI, fill in the corresponding Existing NetUI Components table with the prerequisite component information for your particular installation.

- Use Table 6.1 on page 67 when installing the NetUI on Unix using WebSpeed 2.1.
- Use Table 7.1 on page 87 when installing the NetUI on Windows NT using WebSpeed 2.1.
- Use Table 9.1 on page 120 when installing the NetUI on Unix using WebSpeed 3.1.
- Use Table 10.1 on page 138 when installing the NetUI on Windows NT using WebSpeed 3.1.

Set Up the NetUI Web Server

Figure 3.4 illustrates the Web server setup activities and some of the effects these activities have on your NetUI environment. Specific instructions for these activities are included in Chapter 4, “Set Up the NetUI Web Server,” on page 53.

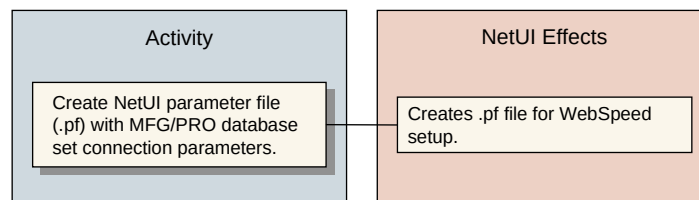
Fig. 3.4
Installing the Web
Server



Set Up a NetUI Parameter File

Figure 3.5 illustrates creating a NetUI parameter file and the effect this has on your NetUI environment. Specific instructions for this activity are included in Chapter 5, “Set Up a NetUI Parameter File,” on page 57.

Fig. 3.5
Creating a NetUI
Parameter File



Important Because the WebSpeed agent processes connect to the MFG/PRO databases using a client/server connection, the MFG/PRO database servers must be configured for client/server access and started in multi-user mode.

Install WebSpeed

Figure 3.6 illustrates the activities involved in installing WebSpeed and some of the effects these activities have on your NetUI environment. Specific instructions for these activities depend on the WebSpeed version you implement and the operating system of the server where you install the NetUI software. For more information, see “WebSpeed Versions” on page 48.

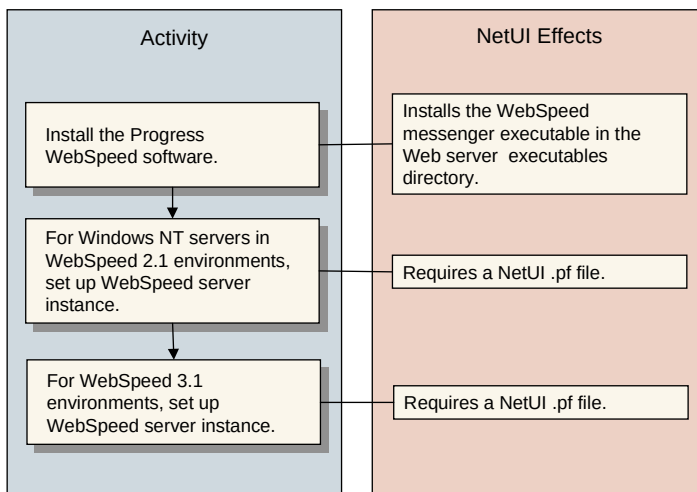


Fig. 3.6
Installing and
Setting Up
WebSpeed

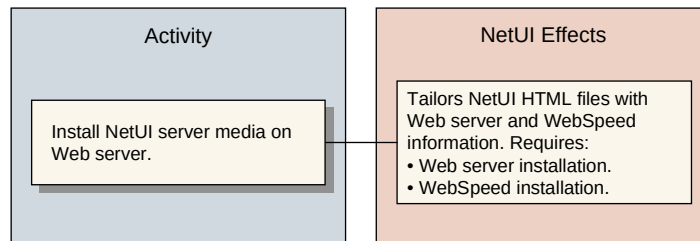
Important You must install the WebSpeed software based on how you decided to access the MFG/PRO databases.

- If you decided to use a client/server connection, you can install the WebSpeed software anywhere.
- If you decided to use a local host connection, you must install the WebSpeed software on the MFG/PRO database server.

Install NetUI Software

Figure 3.7 illustrates the NetUI software installation activities and some of the effects these activities have on your NetUI environment. Specific instructions for these activities depend on the WebSpeed version with which you implement the NetUI. For more information, see “WebSpeed Versions” on page 48.

Fig. 3.7
Installing the NetUI
Software



Configure the Telnet Server

Figure 3.8 illustrates the telnet server configuration activities and some of the effects these activities have on your NetUI environment. Specific instructions for these activities are included in the appropriate chapter for the telnet server’s operating system.

- For UNIX telnet servers, see Chapter 13, “Configure Telnet on UNIX,” on page 165.
- For Windows NT telnet servers, see Chapter 14, “Configure Telnet on Windows NT,” on page 177.

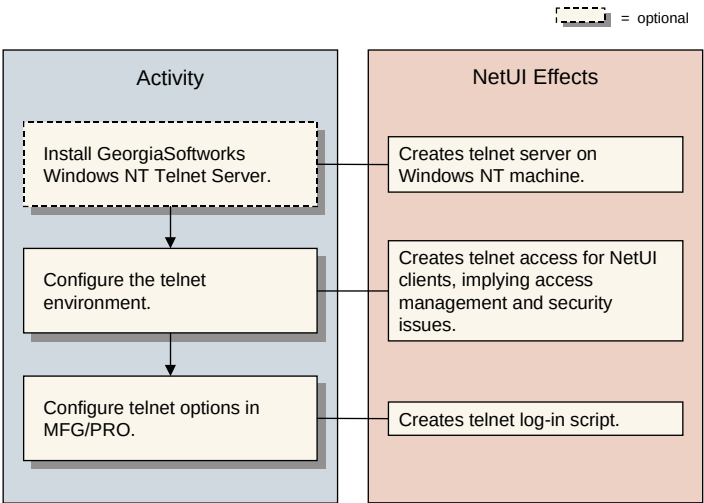


Fig. 3.8
Configuring the
Telnet Server

Configure the NetUI Clients

Figure 3.9 illustrates the NetUI client configuration activities and some of the effects these activities have on your NetUI environment. Specific instructions for these activities are included in Chapter 15, “Configure NetUI Clients,” on page 195.

Note A different client install script is used before and after you install Service Pack 5.

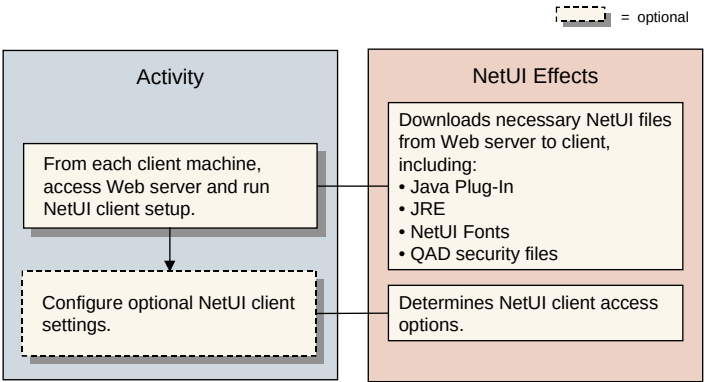


Fig. 3.9
Configuring the
NetUI Clients

Note If you plan to use the optional eB Desktop product, you do not need to complete the NetUI client installation. The eB Desktop installation replaces the NetUI client installation.

WebSpeed Versions

QAD developed the NetUI for MFG/PRO 9.0 for use with WebSpeed Version 2.1. However, in January 2001, Progress Software Corp. retired WebSpeed Version 2.1. In accordance with the Progress life cycle definition, only Limited Basic Service is provided for this release now that it is retired.

For more information on the Progress life cycle definition, download the *Progress Life Cycle Update* from the Progress Web site.

<http://www.progress.com/products/lifecycle.htm>

In response to Progress retiring WebSpeed 2.1, QAD supports the NetUI for MFG/PRO 9.0 on both WebSpeed 2.1 and 3.1. This guide contains instructions for implementing on WebSpeed 2.1 and 3.1.

Use the following guidelines to determine the WebSpeed version for your environment:

- New NetUI customers implement with WebSpeed 3.1 to ensure the highest level of support from both Progress Software Corp. and QAD Inc.
- Existing customers—those customers that have implemented the NetUI at other sites—may want to implement with the WebSpeed version they used previously to ensure compatibility between NetUI sites. However, upgrading to WebSpeed 3.1 is highly recommended.
- Customers with Oracle database environments implement with WebSpeed 3.1 to ensure that the NetUI operates properly.

▶ See Figure 3.2 on page 42.

In general, the implementation procedure for the NetUI is the same regardless of WebSpeed version. However, some steps in the installation and setup tasks vary depending on the WebSpeed version.

- If you are implementing with WebSpeed 2.1, use the instructions in Section 3, “Installation With WebSpeed 2.1,” on page 63 to complete these tasks.

- If you are implementing with WebSpeed 3.1, use the instructions in Section 4, “Installation With WebSpeed 3.1,” on page 99 to complete these tasks.

SECTION 2

Installation Setup

This section contains instructions for setting up the NetUI environment.

Set Up the NetUI Web Server **53**

Set Up a NetUI Parameter File **57**

param91.p 14.13.2 Routing Maintenance (Main Screen)

Routing Code:	10-15000	NONAD(75) COOLING
Operation:	20	
Standard Operation:	10:30	INSPECTION, ALL SITES
Work Center:		
Machine:		
Description:	INSPEC PER PROX-005	
Machines per Op:	1	Milestone:
Overlap Units:	1	
Queue Time:	1.0	
Wait Time:	0.0	
Setup Time:	0.0	

Route by Production Route

CHAPTER 4

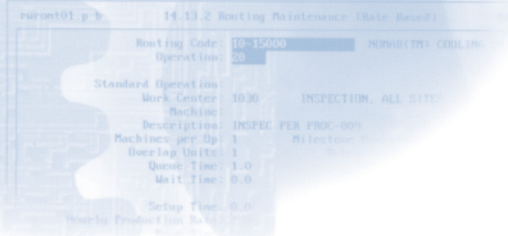
Set Up the NetUI Web Server

Use this chapter to set up the NetUI Web server.

Installing the Web Server 54

Setting Up the MIME-Type 54

Verifying the Web Server 55



Installing the Web Server

Tip

For required versions, refer to “Web Server Requirements” on page 32.

◆ For instructions, refer to your Web server’s documentation.

- 1 Use the installation instructions provided by the Web server software vendor to install your Web server.

For example, to install Netscape Enterprise Server, download it from the Netscape Web site:

<http://www.netscape.com/download/>

- 2 Locate your Web server’s document directory. If one does not exist, you must create one.
- 3 Locate your Web server’s executables directory and alias. Although there is no default executables directory, it is recommended that you use the default executables alias, `cgi-bin`. If an executables directory and alias do not exist, you must create them.

Setting Up the MIME-Type

◆ See Chapter 15, “Configure NetUI Clients,” on page 195.

Web servers insert Multi-Purpose Internet Mail Extension (MIME) types in a header at the beginning of any Web transmission. Clients use this header to select an appropriate application for the type of data transmitted.

During client setup, you use the Web browser on the client machine to download the NetUI client files. If you have a UNIX Web server, use the following instructions to enable clients to associate the proper application with the client setup files.

- 1 Remove `.exe` from `magnus-internal` and any other MIME-type.
`type=magnus-internal/cgi` `exts=cgi, bat`
- 2 Add `.exe` to the `application/octet-stream` MIME-type.
`type=application/octet-stream` `exts=bin, exe`

Verifying the Web Server

To verify that the Web server is functioning, start the Web browser on a client machine. Then, enter a URL referencing only the Web server name. For example, enter the following and verify that there is a response.

`http://www.MyWebServerURL.com`

If this test fails, follow the troubleshooting steps outlined in your Web server's documentation.

CHAPTER 5

Set Up a NetUI Parameter File

Use this chapter to set up a parameter file for the NetUI environment.

Setup Summary 58

Connection Parameters 58

Creating the Parameter File 59

The screenshot shows a window titled "Routing Maintenance (Main Screen)" with a tab labeled "param91.p". The window contains a table with the following data:

Routing Code:	10-15000	DESCRIPTION:	NONAUTOMATIC COOLING
Operation:	20		
Standard Operation:	10:30		INSPECTION, ALL SITES
Work Center:			
Description:	INSPEC PER PROC-005		
Machines per Op:	1		
Overlap Units:	1		
Queue Time:	1.0		
Wait Time:	0.0		
Setup Time:	0.0		

At the bottom, there is a checkbox labeled "Route by Production Batch" which is checked.

Setup Summary

See “WebSpeed Architecture” on page 24.

When you set up the WebSpeed server instance, you assign a NetUI parameter file to the instance broker. The WebSpeed agents that the broker controls use the parameter file to connect to the MFG/PRO databases in a database set. For details, see the Database Sets section of the Implementation Overview chapter in the MFG/PRO installation guide for your system.

This chapter provides instructions for creating a NetUI parameter file for the MFG/PRO Production database set. This parameter file is used to set up the WebSpeed server instance.

Depending on the implementation of other interfaces in your MFG/PRO environment, use one of the following files to create a NetUI parameter file.

- If you implemented Windows MFG/PRO clients—either graphical user interface (GUI) or Windows character clients—parameter files exist for the database sets for which you generated client start-up shortcuts. You can modify these files to create a NetUI parameter file.
- If you implemented UNIX character clients only, you can modify the MFG/PRO client start-up scripts to create a NetUI parameter file.

Connection Parameters

The WebSpeed agents connect to the MFG/PRO databases using a client/server connection. To enable a client/server connection, the NetUI parameter files must contain the connection parameters described in Table 5.1.

Table 5.1
Client/Server
Connection
Parameters

Parameter	Description
-db	The physical database parameter name. Follow this parameter with the physical name of the MFG/PRO database. You do not need to include the path to the database file.
-trig	The triggers parameter. Follow this parameter with the name of the directory containing the database triggers for the main MFG/PRO database. For MFG/PRO this is the <code>triggers</code> subdirectory. The parameter value is: <code>-trig triggers</code> . This parameter is used only with main databases.

Parameter	Description
-ld	The logical database name parameter. Follow this parameter with the logical name of an MFG/PRO database. This parameter is used only with support databases.
-S	The database service name parameter. Follow this parameter with an MFG/PRO database service name. You can use the Database Set Maintenance utility in MFG/UTIL to find the service name for a database.
-N	The network parameter. Follow this parameter with the network protocol used to connect to the MFG/PRO databases. For MFG/PRO, this is TCP/IP. The parameter value is: -N TCP.
-H	The host name parameter. Follow this parameter with the machine name or IP address of the MFG/PRO database server. This guide uses <i>DBServer</i> as an example in place of an actual machine name or IP address.

Creating the Parameter File

For UNIX character client environments, you create the NetUI parameter file by copying and editing the client start-up script for the Production database set.

For all other environments, create the NetUI parameter file by copying and editing the MFG/PRO parameter file for the Production database set.

Use the instructions appropriate for your environment to create the NetUI parameter file.

UNIX Character Client Environments

- 1 Locate the MFG/PRO client start-up script for the Production database set. In the default MFG/PRO configuration, the character client start-up scripts are located in the MFG/PRO database server administration directory.
- 2 Make a copy of the client start-up script and rename it something meaningful to your installation. Use the file extension `.pf`:

```
cp client.Production Production.pf
```
- 3 Open the parameter file in a text editor:

```
vi Production.pf
```

- 4 Use the following instructions to edit the parameter file:
 - a Remove all of the lines up to the first database in the set. Leave only the database connection parameters.
 - b Remove any back slashes that might appear at the end of a line:


```
-db /qad/mfgpro/90/db/mfgprod.db -trig triggers \
```
 - c Remove the `-p mf.p` parameter from the last line:


```
-d mdy -yy 1920 -Bt 350 -c 30 -D 100 -mmax 8192 -nb 200
-s 63 -p mf.p
```
 - d If necessary, add the client/server connection parameters in Table 5.1.

▶ See the Database Server Setup chapter in the MFG/PRO installation guide for your system.

Important If your other MFG/PRO clients connect to the MFG/PRO databases using local host, shared-memory connections, you need to modify the database start-up scripts or shortcuts to enable client/server connections. This includes adding the `-H`, `-S`, `-N` start-up parameters to the script or shortcut. You may also need to modify the `services` file on the database server to include the service names and port numbers of your MFG/PRO databases.

- 5 Save your changes and close the text editor.

The following example is the edited version of the `Production.pf` file for a Progress database environment.

Example Client/Server Connections: This example enables client/server connections and contains the `-H`, `-S`, and `-N` parameters:

```
-db mfgprod -H uxsvr1 -S mfgprod-srv -N tcp
-trig triggers

-db guiprod -ld qadgui -H uxsvr1 -S guiprod-srv
-N tcp

-db cfgprod -ld qadcf -H uxsvr1 -S cfgprod-srv
-N tcp

-db mfghelp -ld qadhelp -H uxsvr1 -S helpprod-srv
-N tcp

-d mdy -yy 1920 -Bt 350 -c 30 -D 100 -mmax 8192 -nb 200
-s 63
```

GUI Client or Windows NT Server Environments

- 1 Locate the MFG/PRO parameter file for the Production database set; for example, `product.i.pf`. This file was generated by MFG/UTIL when you configured the MFG/PRO client start-up shortcut and is located by default in the client working directory.
- 2 Make a copy of this file and rename it something meaningful to your NetUI installation; for example, `Production.pf`.
- 3 Open the parameter file in a text editor and modify it for your NetUI environment using the following instructions:
 - a Verify that the parameter file contains the connection parameters listed in Table 5.1.
 - b Remove the `-p mf.p` parameter from the last line of the file.
- 4 Save your changes and close the text editor.

SECTION 3

Installation With WebSpeed 2.1

This section contains instructions for installing and setting up WebSpeed 2.1 for a NetUI environment. It also contains instructions for installing the NetUI software on UNIX and Windows NT servers.

Install the NetUI on UNIX (WS 2.1) **65**

Install the NetUI on Windows NT (WS 2.1) **85**

Routing Maintenance (Main Screen)	
Routing Code:	10-15000
Operation:	20
Standard Operation:	10:30
Work Center:	INSPECTION, ALL SITE
Machine:	INSPEC PER PROX-000
Description:	
Machines per Op:	1
Overlap Units:	1
Queue Time:	1.0
Wait Time:	0.0
Setup Time:	0.0

CHAPTER 6

Install the NetUI on UNIX (WS 2.1)

Use this chapter to install the NetUI files on a UNIX server.

Installation Summary **66**

Installing WebSpeed 2.1 **66**

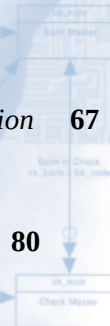
Determining Environment Information **67**

Installing the NetUI Software **70**

Installing the NetUI Service Pack **80**

Verifying the Media Load **81**

Items Installed **82**



14.13.2 Routing Maintenance (Main Screen)	
Routing Code:	10-15000
Operation:	20
Standard Operation:	10:30
Work Center:	INSPECTION, ALL SITE
Machines:	
Description:	INSPEC PER PROX-000
Machines per Op:	1
Overlap Units:	1
Queue Time:	1.0
Wait Time:	0.0
Setup Time:	0.0
Route by Production Route	

Installation Summary

The following major tasks are required to install the NetUI software on a UNIX server:

- Install WebSpeed 2.1.
- Determine NetUI environment information.
- Install the NetUI software.
- Verify the NetUI scripts.

Installing WebSpeed 2.1

In addition to the Progress software required by MFG/PRO, your environment must also include WebSpeed Transaction Server, version 2.1.

To install the WebSpeed 2.1 software, use the *Progress WebSpeed Installation and Configuration Guide*. You can choose to install this software with the rest of the Progress software in a single Progress installation directory or in its own directory. In either case, you should record the location of the WebSpeed software in Table 6.1 on page 67.

Important When installing Progress software, select the *complete* installation option. This ensures that all of the components and subcomponents of each product are installed.

Determining Environment Information

The NetUI installation process automatically builds a NetUI WebSpeed configuration file and a set of template HTML files. For the installation to configure and build these files correctly, information about existing NetUI components in your environment must be provided. Additionally, the installation process prompts for information about how you want your environment configured.

Complete the following tables to use as references during the NetUI installation process. Once the NetUI installation is complete, you can use these tables as documentation for your NetUI environment.

Existing NetUI Components

Before you begin installing the NetUI, fill in Table 6.1 with the configuration information for the existing NetUI components.

Required Information	Your Setting
MFG/PRO Progress software directory Notes Record the path to the directory containing the Progress software for MFG/PRO.	
Progress WebSpeed directory Notes In most cases, both the MFG/PRO and NetUI Progress software components are installed in the same directory. However, you can install the Progress components in different directories to facilitate a dispersed deployment.	
MFG/PRO database server administration directory Notes This is the directory into which you installed the MFG/PRO database server files and character client code. For more information, see the MFG/PRO installation guide for your system.	

Table 6.1
Existing NetUI
Components

Required Information	Your Setting
NetUI parameter file (.pf) location Notes Record the directory where the NetUI .pf file is located. See Chapter 5, “Set Up a NetUI Parameter File,” on page 57.	
Web server • Executables directory alias (for example, cgi-bin) • Executables directory (for example, /netscape/cgi-bin) • HTTP port number (for example, 80) • Document directory (for example, /netscape/docs) Notes Record each of the preceding Web server variables for use during the NetUI installation process. See Chapter 4, “Set Up the NetUI Web Server,” on page 53.	

Generated NetUI Components

Before you begin installing the NetUI, fill in Table 6.2 to plan the configuration for the NetUI components generated by the installation.

Required Information	Your Setting
WebSpeed server instance • Broker name • Broker port number • Minimum agent port number • Maximum agent port number Notes During the NetUI installation process, a WebSpeed server instance is configured using the information you specify during the installation prompts. The NetUI installation process uses this information to create a WebSpeed configuration file. This file uses the following name convention: <code>qma9_BrokerName.cnf</code> The NetUI uses this configuration file instead of the standard WebSpeed configuration file to define the NetUI WebSpeed server instance. For more information on WebSpeed and the parameters in a WebSpeed .cnf file, see the <i>Progress WebSpeed Installation and Configuration Guide</i>.	
Path to the NetUI UNIX scripts Notes Record the path to the directory you specify during the NetUI installation process for the NetUI UNIX scripts. After the installation, this directory will contain the NetUI WebSpeed server configuration, start-up, and shutdown scripts. It will also contain the NetUI telnet connection script.	
Path to the MFG/PRO Web-enabled code Notes Record the path to the directory you specify during the NetUI installation process for the MFG/PRO Web-enabled code.	

Table 6.2
Generated NetUI
Components

Installing the NetUI Software

Use the following instructions to install the NetUI software on a UNIX server.

Prerequisites

Before you install files from your CD-ROM, be sure the following software elements have been properly installed:

- Progress 8.3
- MFG/PRO 9.0
- To run MFG/PRO maintenance programs through the NetUI, MFG/PRO 9.0 character client
- Web server
- WebSpeed

Also, verify that Table 6.1 and Table 6.2 are completed.

Mount the CD-ROM

Follow these steps to mount the CD-ROM.

- 1 Log on as the root user ID.
- 2 Create a CD-ROM directory if one does not already exist. The installation process assumes the directory name is /cdrom.
- 3 Place the NetUI CD-ROM into the CD-ROM drive.
- 4 Mount the CD-ROM. The mount command differs from system to system. Listed below are sample commands for mounting the NetUI CD-ROM.

Hardware	Mount Command
Sun	volcheck cdrom
HP	mount /dev/dsk/ <i>YourCDDevice</i> /cdrom

Hardware	Mount Command
Digital	<code>mount -r -o noversion -t cdfs /dev/YourCDDevice /cdrom</code>
All others	Refer to your hardware system documentation or vendor for requirements to mount a CD-ROM. You may be able to type <code>man mount</code> to determine the correct command.

Running the Installation

To incorporate all the possible UNIX installation prompts, the following steps assume that all of the NetUI components are installed on a single machine during a single installation. Depending on your NetUI configuration, you may perform multiple installations on several machines.

- 1 Change to the `unix` subdirectory of your CD-ROM directory.
`cd /CD-ROMDir/unix`
- 2 Run the `install` program.
`./install`
- 3 Enter your terminal type or press Enter to accept the default value.

4 Choose the NetUI components you want to install on this machine.

```

      qqqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qq      qq      aaa      ddd      ddd
      qq      qq      aaa      ddd      ddd
      qq      qq      aaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qqqqqqqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqq      aaaa      dddddddd
      qq
    
```

NetUI Version 9 Installation Script

Which component(s) of NetUI will run on this Server?

1) WebServer - HTML, Java and Client Setup files only
 2) Webspeed - Webspeed compiled MFG/PRO r-code only
 3) Telnet - Progress character start-up script only
 4) All
 0) Exit

Enter Selection (0-4) [4]:

See Table 6.1 on page 67.

5 Enter the path to the Web server's document directory. The NetUI Java code, HTML files, and client setup files will be installed in this directory. The document directory should have been set up during the Web server installation process.

```

      qqqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qq      qq      aaa      ddd      ddd
      qq      qq      aaa      ddd      ddd
      qq      qq      aaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qqqqqqqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqq      aaaa      dddddddd
      qq
    
```

NetUI Version 9 Installation Script

Enter the Webserver Document directory where the Java, HTML and Client Setup files will be installed []: █

- 6 Enter the path to the directory where you want the Web-enabled MFG/PRO code installed.

See Table 6.2 on page 69.

```

      qqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaa      aaaa      dddddddddd
      qqqqqqqqqqqqq      aaaa      aaaa      dddddddd
      qq
NetUI Version 9 Installation Script ....

Enter the installation directory for the NetUI r-code []: █

```

- 7 Enter the path to the directory where you want the NetUI UNIX scripts installed.

See Table 6.2 on page 69.

If this directory does not already exist, a warning message displays. Choose Enter to continue and the directory will be created.

```

      qqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaa      aaaa      dddddddddd
      qqqqqqqqqqqqq      aaaa      aaaa      dddddddd
      qq
NetUI Version 9 Installation Script ....

Enter directory to install Unix scripts [/dr01/netuicode]: █

```

- 8 Enter the path to the MFG/PRO database server administration directory.

[illegible]

- 9 Enter your Web server's HTTP port number. This port should have been set up during the Web server installation process.

```

      qqqqqqqqqq      aaaa      ddddddddd
    qq qq qq qq qq  aaaaaaa  ddddddddddd
  qq q      qq      aa  aa  ddd      ddd
  qq q      qq      aaa  aa  ddd      ddd
  qq q      qq      aa  aa  ddd      ddd
  qq q      qq      aaaaaa  ddd      ddd
  qq q      qq      aaaaaa  ddd      ddd
  qq qq qq qq qq qq  aaaa      aaaa  ddddddddd
  qq qq qq qq qq qq  aaaa      aaaa  ddddddd
      qq

```

NetUI Version 9 Installation Script

- 10 Enter you Web server's CGI alias. This should have been set up during the Web server installation process.

See Table 6.1 on page 67.

```

      qqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qqqqqqqqqqqqqq      aaaa      aaaa      dddddddddd
      qqqqqqqqqqqq      aaaa      aaaa      dddddddd
      qq
    
```

NetUI Version 9 Installation Script

Enter the URL prefix (CGI Alias) [cgi-bin]: █

- 11 Enter your Web server's CGI directory. The CGI directory should have been set up during the Web server installation process.

See Table 6.1 on page 67.

```

      qqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qqqqqqqqqqqqqq      aaaa      aaaa      dddddddddd
      qqqqqqqqqqqq      aaaa      aaaa      dddddddd
      qq
    
```

NetUI Version 9 Installation Script

Enter the Webserver CGI Scripts Directory []: █



12

```

      qqqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqqqq  aaaaaaaa  dddddddddd
      qq      qq      aa      aa      ddd      ddd
      qq      qq      aa      aa      ddd      ddd
      qq      qq      aa      aa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa  ddd      ddd
      qq      qq      aaaaaaaaaaaaaaaa  ddd      ddd
      qqqqqqqqqqqqqqq  aaaa      aaaa  dddddddddd
      qqqqqqqqqqqq      aaaa      aaaa  dddddddd
      qq

```

NetUI Version 9 Installation Script

13

```

      qqqqqqqqqq      aaaa      dddddddddd
    qqqqqqqqqqqqqqqq  aaaaaaaa  dddddddddddd
  qqq      qqq      aaa   aaa   ddd      ddd
  qqq      qqq      aaa   aaa   ddd      ddd
  qqq      qqq      aaa   aaa   ddd      ddd
  qqq      qqq      aaaaaa aaaaaaaa ddd      ddd
  qqq      qqq      aaaaaa aaaaaaaa ddd      ddd
  qqqqqqqqqqqqqqqqqq  aaaa      aaaa  dddddddddd
    qqqqqqqqqqqqqq  aaaa      aaaa  dddddddd
      qqq

```

NetUI Version 9 Installation Script

▶ See Table 6.2 on page 69.

16 Enter the maximum port number you will allow for WebSpeed agents.

```

      qqqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqq    aaaaaaaa  dddddddddd
      qq      qq      aa  aa      ddd   ddd
      qq      qq      aa  aa      ddd   ddd
      qq      qq      aa      aa      ddd   ddd
      qq      qq      aaaaaaaaaaaaaa  ddd   ddd
      qq      qq      aaaaaaaaaaaaaaaa ddd   ddd
      qq      qq      aaaa      aaaa  dddddddddd
      qq      qq      aaaa      aaaa  dddddddd
      qq

```

NetUI Version 9 Installation Script

▶ See Table 6.1 on page 67.

- 17 Enter the path and file name of your NetUI start-up parameter file. You created this file in Chapter 5, “Set Up a NetUI Parameter File,” on page 57.

```

      qqqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qq      qq      aa      aa      ddd      ddd
      qq      qq      aa      aa      ddd      ddd
      qq      qq      aa      aa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaa      aaaa      dddddddddd
      qq      qq      aaaa      aaaa      dddddd
      qq

```

NetUI Version 9 Installation Script

- 18 Enter your Progress installation directory. This directory should have been created during the Progress installation process.

See Table 6.1 on page 67.

Note This may or may not be the same directory as the WebSpeed installation directory depending on where you installed the WebSpeed software. See “Installing WebSpeed 2.1” on page 66.

```

      qqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqq      aaaaaaa      dddddddddd
      qq      qq      aaa      ddd      ddd
      qq      qq      aaa      ddd      ddd
      qq      qq      aaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaa      aaaa      dddddddddd
      qqqqqqqqqqqqq      aaaa      aaaa      dddddddd
      qqqqqqqqqqqq      aaaa      aaaa      dddddddd
      qq
NetUI Version 9 Installation Script ....

Enter Progress installation directory [/dr01/dlc83]:

```

- 19 At the confirmation prompt, compare the installation information listed against Table 6.1 on page 67 and Table 6.2 on page 69.

```

CONFIRMATION
-----
Install Type      : All
Document Directory : /dr01/NetServ3.5/docs
HTTP Port Number  : 80
URL Prefix        : cgi-bin
CGI Directory     : /usr/scripts
NetUI r-code Directory : /dr01/netuicode
Webspeed Directory : /dr01/ws21rt
WebSpeed Version  : 2.1
Host Name         : localhost
Broker Port Number : 2001
Agent Port Range  : 2002-2202
DB Parameter File  : /dr01/mfg90/client.pf
Webspeed Broker    : netui
Progress Directory : /dr01/dlc83a02
Progress Version   : 8.302
Unix Script Directory : /usr/scripts

Is this information correct (y/n) [y]:

```

See step 4 on page 72.

If all of the installation parameters are correct, specify Yes and press Enter.

If any of the installation parameters are incorrect, specify No and press Enter. The “Choose which NetUI components to install” prompt displays. As you proceed through the prompts, your previous entries display as the defaults. Choose Enter to accept a default or change the entry if it is incorrect.

20 At the expand media prompt, specify Yes.

```

      qqqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqqq      aaaaaaa      dddddddddd
      qq      qq      aa      aa      ddd      ddd
      qq      qq      aa      aa      ddd      ddd
      qq      qq      aa      aa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaa      aaaa      dddddddddd
      qqqqqqqqqqqqqq      aaaa      aaaa      dddddddd
      qqqqqqqqqqqq      aaaa      aaaa      dddddddd
      qq
NetUI Version 9 Installation Script ....

Creating Unix scripts directory.

Creating Webserver document directory.
Creating NetUI r-code directory.

Ensuring required disk space exists.
Sufficient space exists for installation.

Expand the media (y/n) [y]?

```

Installing the NetUI Service Pack

If a service pack was included with your NetUI product package, use the instructions on the service pack CD-ROM to install the service pack in your NetUI environment. The service pack updates your NetUI Java code, HTML files, and client setup files as well as the Web-enabled MFG/PRO code with the latest patches.

Beginning with Service Pack 3, the complete r-code is provided for environments using the NetUI with WebSpeed 3.1. In these environments, compiling the newly installed code is not necessary. If you are installing Service Pack 3 in an environment where WebSpeed 2.1 is being used, you must recompile the code.

Note Only Service Packs 1, 2, and 3 are certified to work with WebSpeed 2.1. If you want to install later service packs and you are still using WebSpeed 2.1, you must upgrade your version of WebSpeed.

Verifying the Media Load

Use the following instructions to run the NetUI WebSpeed start-up script and verify that the WebSpeed broker and agents connect to MFG/PRO databases to which you want to provide NetUI client access.

- 1 Using the MFG/PRO database set start-up script, start the database servers for the database set that you specified in the NetUI parameter file. The following example is for the Production database set.

```
cd DBAdminDir
./start.Production
```

- 2 Access the NetUI UNIX scripts directory.

See step 7 on page 73.

- 3 Enter the following command:

```
qma9_BrokerName.start
```

The system displays the following message:

```
Starting Webspeed Transaction Broker (BrokerName)
```

- 4 Verify that the broker started properly by entering the following command:

```
qma9_BrokerName.status
```

The system displays the status of the WebSpeed agents, as shown in the following example.

```
/dr01/NetUI $ qma9_netui.status
Webspeed Transaction Broker netui Status:

WebSpeed Version 2.1 as of Wed Oct 15 19:00:16 EDT 1997
Status for WebSpeed Broker: netui
```

	Port	PID	State	Request Count	Time Started	Last Change
01	2011	17431	AVAILABLE	000000000	02/25/99-11:15	02/25/99-11:15
02	2006	17432	AVAILABLE	000000000	02/25/99-11:15	02/25/99-11:15
03	2003	17433	AVAILABLE	000000000	02/25/99-11:15	02/25/99-11:15
04	2009	17434	AVAILABLE	000000000	02/25/99-11:15	02/25/99-11:15
05	2008	17435	AVAILABLE	000000000	02/25/99-11:15	02/25/99-11:15
06	2010	17436	AVAILABLE	000000000	02/25/99-11:15	02/25/99-11:15
07	2007	17437	AVAILABLE	000000000	02/25/99-11:15	02/25/99-11:15
08	2002	17438	AVAILABLE	000000000	02/25/99-11:15	02/25/99-11:15
09	2005	17439	AVAILABLE	000000000	02/25/99-11:15	02/25/99-11:15
10	2004	17440	AVAILABLE	000000000	02/25/99-11:15	02/25/99-11:15

```
/dr01/NetUI $
```

Note In this example, the WebSpeed broker name is netui.

Use the following instructions to verify that the WebSpeed messenger and the Web server CGI alias are set up and functioning correctly.

- 1 From a NetUI client Web browser, enter the following URL:

```
http://HostName:BrokerPortNumber/CGIAlias/
qma9_cgi.ksh?WSMAdmin
```

- 2 Once you have connected to this Web page, enter the *BrokerName* variable in the Input field.

If you have successfully installed each of these pieces, a series of administrative pages is available.

Items Installed

NetUI Software Directory Structure

See step 5 on page 72.

The following is an outline of the multinet directory structure.

Your Web Server/Primary Document Directory/multinet

```
- java <dir>
  - images <dir> (user-defined images)
  - multinet.jar (NetUI Java code archive file)
  - gnu
  - Ssl.cab
  - Ssl.jar

- help <dir>
  - javauui <dir> (NetUI interface help)
    - index.html
    - ...

  - mfg <dir> (MFG/PRO help)
    - index.html
    - ...

- client_files <dir>
  - identitydb.exe
  - identitydb.zip
  - plugin-111-win32.exe
  - plugin-111-win32.zip
  - jre11.exe
  - jre11.zip
  - jre116.exe
  - jre116.zip
  - fonts.exe
  - fonts.zip
  - client_setup_exe.html
  - client_setup_zip.html
```

- embedded.html
- full.html
- multinet.html
- qadbg.jpg
- qadlogo.gif
- qadtext.gif
- trace.html

Web-Enabled MFG/PRO Programs Directory Structure

Your Web-Enabled Code Directory

- us <dir>
 - ad <dir>
 - wb <dir>
 - mg <dir>
 - ...
- triggers <dir>
 - add.r
 - adw.r
 - ...
- mflg01.r
- mfwb01.r (NetUI start-up program)
- mfwb02.r
- applhelp.r
- mfgp01.r
- scripts
- version.mfg

▶ See step 6 on page 73.

Scripts

Your UNIX Scripts Directory

- qma9_BrokerName.cnf (WebSpeed configuration file)
- qma9_BrokerName.start (Starts the WebSpeed broker)
- qma9_BrokerName.stop (Stops the WebSpeed broker)
- qma9_BrokerName.status (Provides WebSpeed agent status)
- qma9_telnet.ksh (NetUI UNIX telnet script)

▶ See step 7 on page 73.

CHAPTER 7

Install the NetUI on Windows NT (WS 2.1)

Use this chapter to install the NetUI files on a Windows NT server.

NetUI Installation Summary **86**

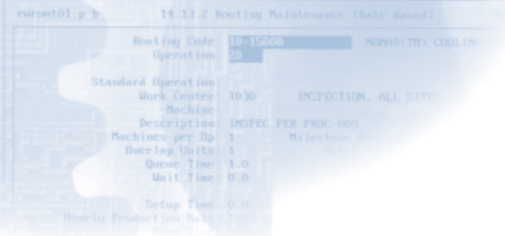
Installing WebSpeed 2.1 **86**

Determining Environment Information **86**

Installing the NetUI Software **89**

Installing the NetUI Service Pack **95**

Items Installed **96**



NetUI Installation Summary

The following major tasks are required to install the NetUI software on a Windows NT server:

- Install WebSpeed 2.1.
- Determine NetUI environment information.
- Install the NetUI software.

Installing WebSpeed 2.1

In addition to the Progress software required by MFG/PRO, your environment must also include WebSpeed Transaction Server, version 2.1.

To install the WebSpeed 2.1 software, use the *Progress WebSpeed Installation and Configuration Guide*.

Important When installing Progress software, select the *complete* installation option. This ensures that all of the components and subcomponents of each product are installed.

Determining Environment Information

The NetUI installation process places the MFG/PRO Web-enabled code in an installation directory and automatically builds a set of default NetUI HTML files. For the installation to configure and build the HTML files correctly, information about the existing NetUI components in your environment must be provided.

Before you begin installing the NetUI, fill in Table 7.1 with the configuration information for the existing NetUI components. Once the NetUI installation is complete, you can use this table as documentation for your NetUI environment.

Table 7.1
Existing NetUI
Components

Required Information	Your Setting
MFG/PRO Progress software directory Notes Record the path to the directory containing the Progress software for MFG/PRO.	
Progress WebSpeed directory Notes In most cases, both the MFG/PRO and NetUI Progress software components are installed in the same directory. However, you can install the Progress components in different directories to facilitate a dispersed deployment.	
NetUI parameter file (.pf) location Notes Record the directory where the NetUI .pf file is located. See Chapter 5, "Set Up a NetUI Parameter File," on page 57.	
Web server • Executables directory alias (for example, cgi-bin) • Executables directory (for example, \netscape\cgi-bin) • HTTP port number (for example, 80) • Document directory (for example, \netscape\docs) Notes Record each of the preceding Web server variables for use during the NetUI installation process. See Chapter 4, "Set Up the NetUI Web Server," on page 53.	

Required Information	Your Setting
WebSpeed server instance • WebSpeed messenger • Broker name • Broker port number • Minimum agent port number • Maximum agent port number Notes Record each of the preceding WebSpeed server instance variables for use during the NetUI installation process. The WebSpeed messenger was installed in the Web server's executables directory during the WebSpeed installation process. See the <i>Progress WebSpeed Installation and Configuration Guide</i>.	
Path to the MFG/PRO Web-enabled code Notes Record the path to the directory you specified in the PROPATH setting for the WebSpeed broker. You must specify this same directory during the NetUI installation process when prompted for the MFG/PRO Web-enabled code directory.	

Installing the NetUI Software

Use the following instructions to install the NetUI software on a Windows NT server.

Prerequisites

Before you install files from your CD-ROM, be sure you the following software elements have been properly installed:

- Progress 8.3
- MFG/PRO 9.0
- To run MFG/PRO maintenance programs through the NetUI, MFG/PRO 9.0 character client
- Web server
- WebSpeed

Also, verify that Table 7.1 is completed.

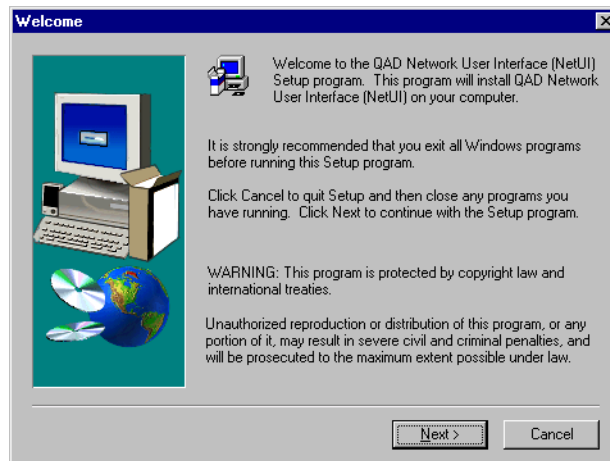
Running the Installation

Complete these steps to install the NetUI on your Windows NT server.

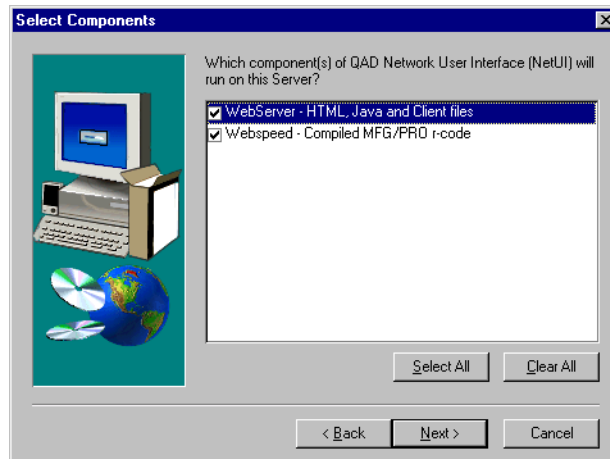
- 1 Run the set up program.

CD-ROMDriveName: \nt\setup

- 2 At the Welcome window, click Next.



- 3 Choose the NetUI components to install on this machine by highlighting individual items and pressing the Space bar, or by choosing the Select All button to select every component listed.



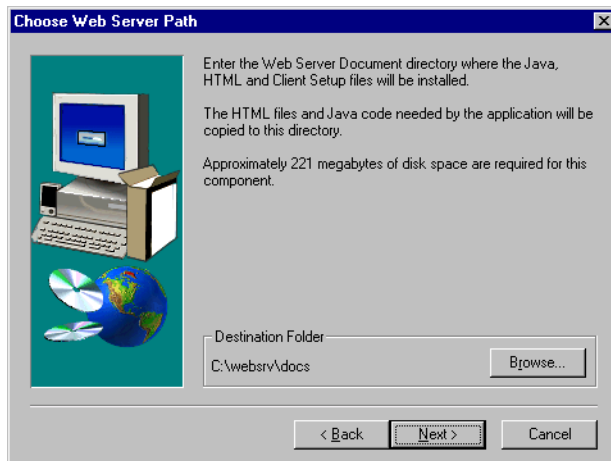
If you are installing on a Web server, select WebServer - HTML, Java and Client files. If your WebSpeed server instance is located on this machine, select Webspeed - Compiled MFG/PRO r-code. If this machine is your Web server and your WebSpeed components are installed here, select both items. Click Next.

Note The following steps assume that both the Web server and WebSpeed components are selected. If you are splitting your installation between machines, only those prompts associated with the components you are installing display.

- 4 Specify the Web server's primary document directory. The NetUI Java code, HTML files, and client setup files will be installed in this directory. Click Next to accept the default or click the Browse button to select an alternate directory.

See Table 7.1 on page 87.

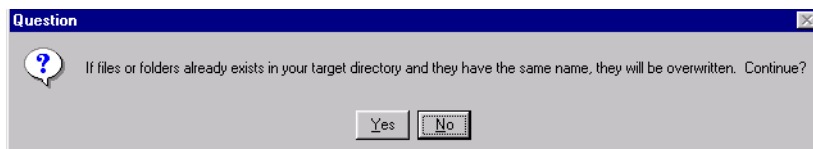
The document directory should have been set up during the Web server installation process.



Important You must specify the same directory you specified in the PROPATH for the WebSpeed server instance.

See Table 7.1 on page 87.

- 5 You may receive the following warning. Double check the files in the directory specified. Move any files you do not want to be overwritten before you continue this installation.



- 6 Enter your Web server's HTTP port number and the CGI alias assigned to your CGI directory. The port number and CGI alias should have been assigned during the Web server installation process.

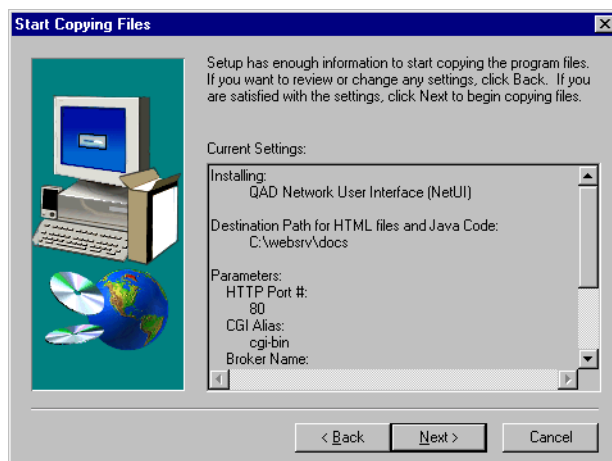
See Table 7.1 on page 87.

- 7 Enter the name of your WebSpeed broker. You created this broker when you configured the NetUI WebSpeed server instance. Enter the name of your WebSpeed messenger. The WebSpeed messenger was installed in the Web server's executables directory during the WebSpeed installation process.

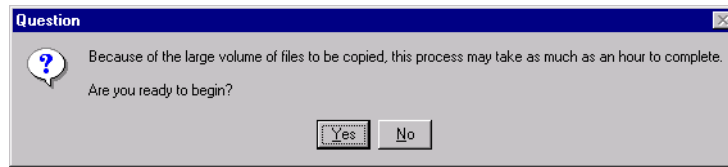
- 8 Enter the path for the MFG/PRO Web-enabled code. This is the directory you specified in the PROPATH setting for the WebSpeed broker.



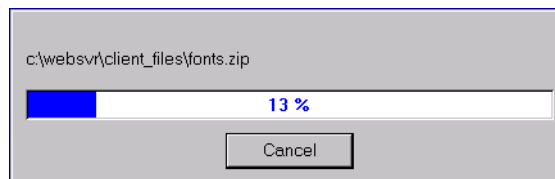
- 9 At the Start Copying Files window, compare the installation information listed in the window against Table 7.1 on page 87. If all of the information is correct, click Next. If you need to make corrections, click Back.



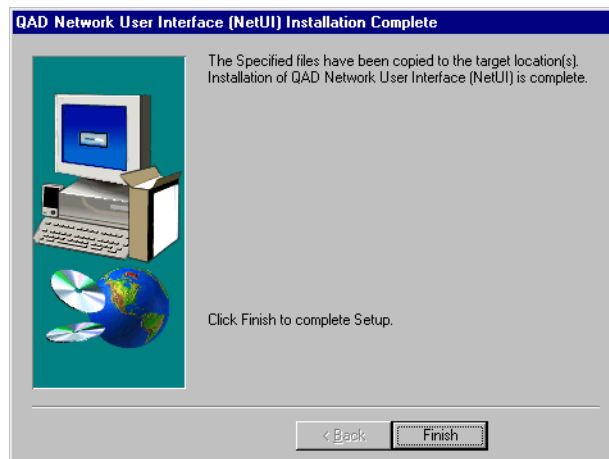
- 10 Click Yes at the following prompt when you are ready to begin the load process.



During the load, the following window displays.



- 11 After the files are copied, the following window displays; click Finish.



- 12** Using Table 7.1, along with the WebSpeed documentation, run the WebSpeed Configuration Utility and complete the following.
- a** Under the General tab, enter the WebSpeed service name. The service name is referred to in Table 7.1 and media load as the broker name.
 - b** Under the General tab, enter broker as the service type, then enter the broker's port number.
 - c** Under the Agents tab, specify the MFG/PRO parameter file in the agent's Startup Parameters field and enter the agent's minimum and maximum port numbers.
 - d** Under the Agent Options tab, configure the agent's PROPATH.

Installing the NetUI Service Pack

If a service pack was included with your NetUI product package, use the instructions on the service pack CD-ROM to install the service pack in your NetUI environment. The service pack updates your NetUI Java code, HTML files, and client setup files as well as the Web-enabled MFG/PRO code with the latest patches.

Beginning with Service Pack 3, the complete r-code is provided for environments using the NetUI with WebSpeed 3.1. In these environments, compiling the newly installed code is not necessary. If you are installing Service Pack 3 or higher in an environment where WebSpeed 2.1 is being used, you must recompile the code.

Note Only Service Packs 1, 2, and 3 are certified to work with WebSpeed 2.1. If you want to install later service packs and you are still using WebSpeed 2.1, you must upgrade your version of WebSpeed.

Items Installed

NetUI Software Directory Structure

The following is an outline of the multinet directory structure.

See step 4 on page 91.

Your Web Server\Primary Document Directory\multinet

- java <dir>
 - images <dir> (user-defined images)
 - multinet.jar (NetUI Java code archive file)
 - gnu
 - Ssl.cab
 - Ssl.jar
- help <dir>
 - javauui <dir> (NetUI interface help)
 - index.html
 - ...
 - mfg <dir> (MFG/PRO help)
 - index.html
 - ...
- client_files <dir>
 - identitydb.exe
 - identitydb.zip
 - plugin-111-win32.exe
 - plugin-111-win32.zip
 - jre11.exe
 - jre11.zip
 - jre116.exe
 - jre116.zip
 - fonts.exe
 - fonts.zip
 - client_setup_exe.html
 - client_setup_zip.html
- embedded.html
- full.html
- multinet.html
- qadbg.jpg
- qadlogo.gif
- qadtext.gif
- trace.html

Web-Enabled MFG/PRO Programs Directory Structure

Your Web-Enabled Code Directory

- us <dir>
 - ad <dir>
 - wb <dir>
 - mg <dir>
 - ...
- triggers <dir>
 - add.r
 - adw.r
 - ...
- mflg01.r
- mfwb01.r (NetUI start-up program)
- mfwb02.r
- applhelp.r
- mfgp01.r
- scripts
- version.mfg

▶ See step 8 on page 93.

SECTION 4

Installation With WebSpeed 3.1

This section contains instructions for installing and setting up the NetUI for use with WebSpeed 3.1.

Install and Set Up WebSpeed 3.1 **101**

Install the NetUI on UNIX (WS 3.1) **119**

Install the NetUI on Windows NT (WS 3.1) **137**

Install the Patch Bundle **149**

Compile the Web-Enabled Code **151**

The screenshot displays a window titled "Routing Maintenance (Data Based)". It contains a table with the following data:

Routing Code:	10-15000	NONROUTING CODES:
Operation:	20	
Standard Operation:	1030	INSPECTION, ALL SITES
Work Center:		
Machines:		
Description:	INSPEC PER PROX-000	
Machines per Op:	1	Attention: P...
Overlap Units:	1	
Queue Time:	1.0	
Wait Time:	0.0	
Setup Time:	0.0	
Ready for Production:	0.0	

CHAPTER 8

Install and Set Up WebSpeed 3.1

Use this chapter to install and set up WebSpeed 3.1 for the NetUI.

Installation Summary **102**

Setting Up WebSpeed **102**

Installing WebSpeed 3.1 **102**

Setting Up a WebSpeed Server **103**

The screenshot displays a software window titled "14.13.2 Routing Maintenance (Main Screen)". It contains a table of routing data with columns for Routing Code, Operation, Standard Operation, Work Center, Machine, Description, Machines per Op, Overlap Units, Queue Time, Wait Time, and Setup Time. The data is for a routing code of 10-15000, operation 20, standard operation 1030, work center 1030, and machine 1030. The description is "INSPEC PER PROX-005". The queue time is 1.0, wait time is 0.0, and setup time is 0.0. The window also shows a "Routing Code" field with the value "10-15000" and a "Work Center" field with the value "1030".

Routing Code	Operation	Standard Operation	Work Center	Machine	Description	Machines per Op	Overlap Units	Queue Time	Wait Time	Setup Time
10-15000	20	1030	1030	1030	INSPEC PER PROX-005	1	1	1.0	0.0	0.0

Installation Summary

The following major tasks are required to install the NetUI software on a Windows NT server:

- Set up WebSpeed 3.1.
- Determine NetUI environment information.
- Install the NetUI software.

Setting Up WebSpeed

Complete the following instructions to install and set up the WebSpeed software for use in a NetUI environment. This task consists of two major activities:

- Installing the WebSpeed software
- Configuring a WebSpeed server instance

Installing WebSpeed 3.1

In addition to the Progress software required by MFG/PRO, your environment must also contain:

- NameServer Enterprise Edition
- WebSpeed Enterprise Transaction Server

To install the WebSpeed 3.1 software, use the *Progress WebSpeed Installation and Configuration Guide*.

Important When installing Progress software, select the *complete* installation option. This ensures that all of the components and subcomponents of each product are installed.

Setting Up a WebSpeed Server

This section provides instructions for setting up a WebSpeed server instance.

Since the Progress software can be installed on either a Windows NT or UNIX server, this section contains instructions for both operating systems. Use the instructions appropriate to your environment.

- If you installed the Progress software on a Windows NT server, use the instructions in “Set Up on Windows NT” on page 103.

You can also use these instructions if you have a Windows machine network-connected to a UNIX server. The Windows machine must have the Progress Explorer installed and you must be able to log into the UNIX system as a valid user. QAD recommends this option, since the Progress Explorer—available only for Windows—provides an easy-to-use configuration interface.

- If you installed the Progress software on a UNIX server, use the instructions in “Set Up on UNIX” on page 112.

Set Up on Windows NT

This section provides instructions for setting up a WebSpeed server instance using the Progress Explorer, which runs on Windows machines only. You can use these instructions to set up:

- A Windows NT server
- A UNIX server using a network-connected Windows machine

In the following instructions, you use the Progress Explorer to modify the `ubroker.properties` configuration file. This file is located in the `properties` subdirectory below the WebSpeed installation directory.

Launch the Progress Explorer

Use these instructions to start the AdminServer and launch the Progress Explorer.

- 1 Verify that the AdminServer process is running. Use the instructions appropriate to the server where the Progress software is located.

- If the software is located on a Windows NT server, enter the following command from the system command line:

```
WSDir\bin\proadsv -query
```

WSDir refers to the directory where the WebSpeed software was installed.

If the AdminServer is not running, open Settings|Control Panel|Services from the Windows Start button. Then, select the AdminService for Progress and click Start.

- If the software is located on a UNIX server, run the following command on that server:

```
WSDir/bin/proadsv -query
```

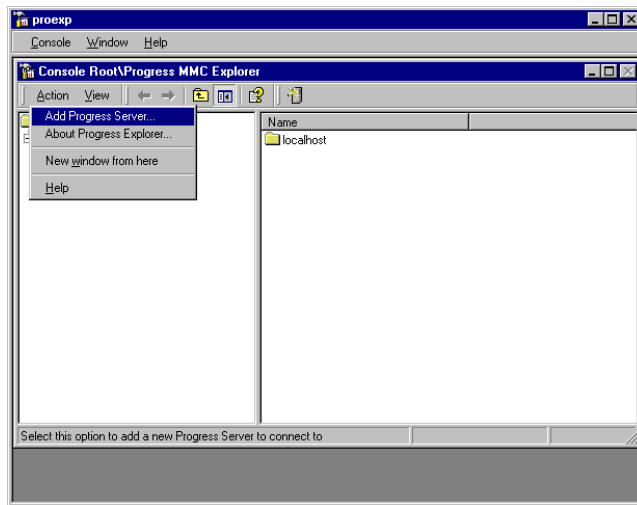
If the AdminServer is not running, start it using the following command:

```
WSDir/bin/proadsv -start
```

- 2 Once the AdminServer is started, launch Progress Explorer Tool from the Windows Start button. The Progress Explorer tool is found in the group specified when WebSpeed was installed, usually the WebSpeed or Progress group. The Progress Explorer window displays.

- 3 If you are configuring a remote machine, use the following instructions to add an icon for the remote machine to the Progress Explorer. If you are configuring the Progress servers for this machine, use the localhost icon.

- a Click on Progress Explorer.
- b Select Action|Add Progress Server.

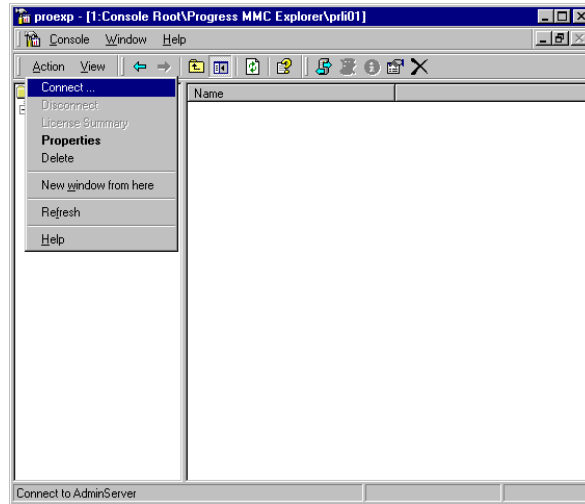


- c Complete the General tab in the Server Properties window using the following table as a guide.

Field	Description
Server	Enter the machine name of the server you want to configure.
User	Enter the user name under which you want to log in to the remote machine. If you are configuring a remote UNIX machine, you log in as a user with root-level permissions. If you are configuring a remote Windows NT machine, log in as a user with administrator permissions.
Password	Enter the password for the user which you are using to log in to the remote machine.

- d Click OK to continue.

- 4 In the Progress Explorer window, right-click the server icon for the machine on which you want to configure the WebSpeed server instance. Select Connect.



- 5 If you are configuring a remote machine, you are prompted for a user name and password. Use the same name and password that you specified in step 3.

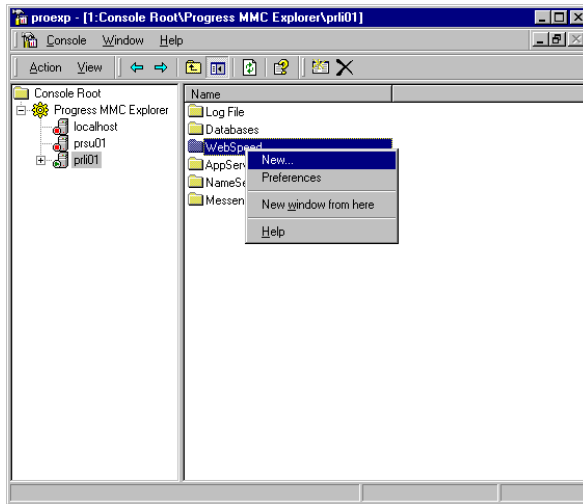
The Progress Explorer connects to the AdminServer process running on the machine where you are configuring the WebSpeed server instances. A connection is indicated by a green arrow in the machine icon.

Set Up the WebSpeed Server

Use these instructions to set up a WebSpeed server instance. At least one Webspeed server instance is required for the NetUI.

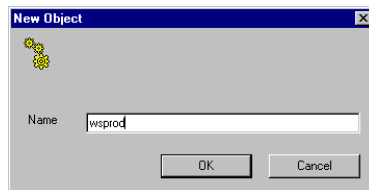
Setting Up

- 1 Once you have connected to the server machine, right-click the WebSpeed folder and select New.

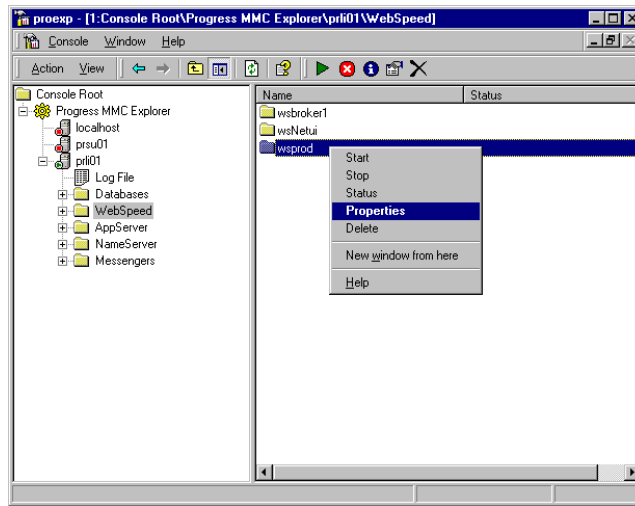


- 2 In the New Object window, enter the name you want to use for the WebSpeed broker. The following instructions use wsprod as an example.

When ready, click OK to continue.

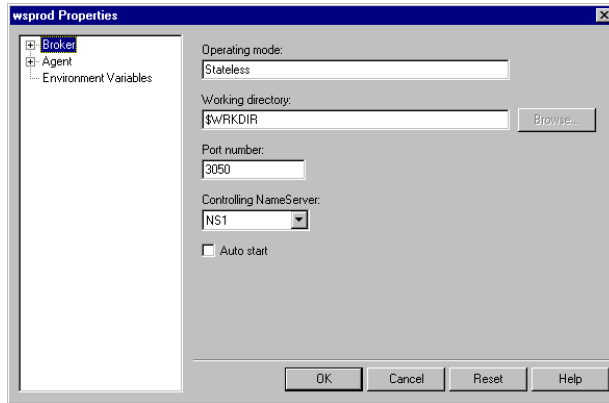


- 3 Right-click the new WebSpeed server instance and select Properties.



- 4 In the Properties window, select Broker and use the following table to complete the broker fields.

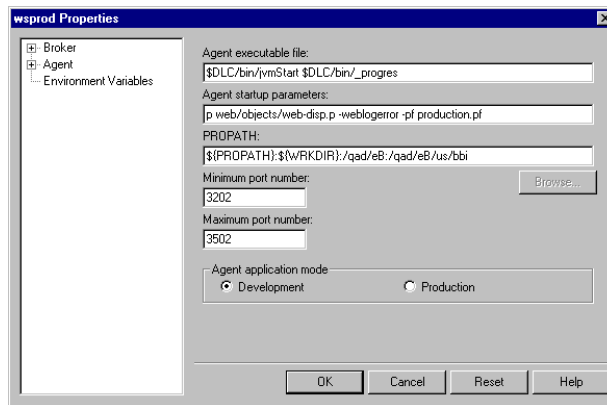
Field	Description
Operating mode	Accept the default in this field.
Working directory	The working directory this WebSpeed server instance will use. You can accept the default in this field or enter an alternate working directory.
Port number	An available network port for this broker.
Controlling NameServer	Accept the default in this field.
Auto start	Select this option if you want this broker and the agents it controls to start when the server on which they run is started.



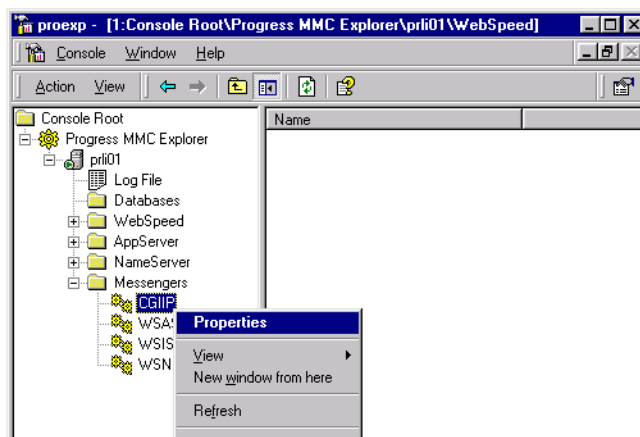
5 Select Agent and use the following table to complete the agent fields.

Field	Description
Agent executable file	Accept the default in this field.
Agent startup parameters	Enter the <code>-pf</code> parameter followed by the path and name of the NetUI parameter file. See Chapter 5, “Set Up a NetUI Parameter File,” on page 57.
PROPATH	Enter the Progress search path (PROPATH) you want the agents to use. You must include the following directories: • The current working directory (.). • The directory where you will install the MFG/PRO Web-enabled code. This code is installed from the QAD-supplied NetUI media. Important You must install the MFG/PRO Web-enabled code in the directory you specify in the PROPATH. If the code is not in the specified directory, the WebSpeed agent processes cannot locate the MFG/PRO programs. • The <code>bbi</code> subdirectory below the language-code subdirectory of the language you are implementing. The language-code subdirectory is located below the MFG/PRO Web-enabled code directory. • You can add directories for custom code. Example <pre>PROPATH= . : \qad\mfgpro\90\netui: \qad\mfgpro\90\netui\us\bbi</pre>
Minimum port number	Enter the lowest port this broker’s agents can use.

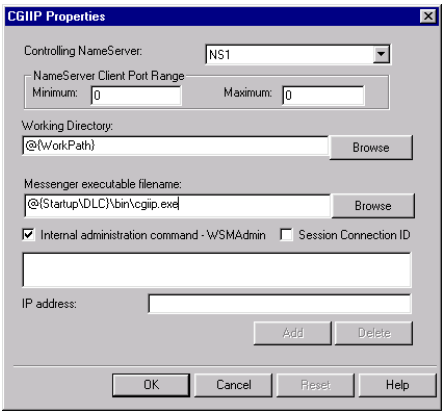
Field	Description
Maximum port number	Enter the highest port this broker's agents can use.
Agent application mode	Accept the default, Development. This mode provides enhanced troubleshooting capabilities, which you can use for initial installation and tuning. Once you have configured and tuned the NetUI environment to your satisfaction, select Production to reduce the number of agents each NetUI client session uses. For more information, see the <i>Progress WebSpeed Installation and Configuration Guide</i> .



- 6 Click OK in the Properties window to return to the Progress Explorer console.
- 7 Select the CGIIP Messenger Properties.



- 8
- Make sure the Internal administration command box is checked.
Click OK to complete the WebSpeed server setup.



Verifying the Instance

To verify that the WebSpeed server instance is set up correctly, you should start it and check its status. QAD recommends that you manage the WebSpeed server instance using the command line rather than the Progress Explorer. Use the commands in Table 8.1 to verify your WebSpeed instance.

In Table 8.1, *WSDir* refers to the WebSpeed installation directory and *BrokerName* refers to the name of your WebSpeed broker.

For additional commands, see the *Progress WebSpeed Installation and Configuration Guide*.

Action	Command
Start Broker	<i>WSDir</i> \bin\wtbman -name <i>BrokerName</i> -start
Stop Broker	<i>WSDir</i> \bin\wtbman -name <i>BrokerName</i> -stop
Check Broker Status	<i>WSDir</i> \bin\wtbman -name <i>BrokerName</i> -query

Table 8.1
Broker Start, Stop, and Status Commands

- 1
- Start the MFG/PRO database servers for the database set you specified in your NetUI parameter file (extension .pf).
Depending on the operating system of your MFG/PRO database server, you can use either of the following methods to start the MFG/PRO database servers:
 - For UNIX servers, use the database start-up script for the Production database set; for example, start.Production.

See Chapter 5, “Set Up a NetUI Parameter File,” on page 57.

- For Windows NT servers, use the start-up shortcut for the Production database set.

When you start the WebSpeed broker, the broker's agents attempt to connect to the databases specified in the NetUI .pf file. This connection fails if the servers for the databases are not running.

Important Always start the appropriate MFG/PRO database servers before starting the WebSpeed server. Additionally, if you need to stop the WebSpeed broker, you should stop the associated database servers.

- 2 Use the start-up command in Table 8.1 to start the WebSpeed server instance.
- 3 Use the query command in Table 8.1 to check the status of the WebSpeed instance.
- 4 After you check the status, leave the instance running.

Note In addition to the wt bman management utility, you may also need to refer to the log files for the WebSpeed server instance. To view the log files, expand the instance folder in the left-hand Progress Explorer pane and click the appropriate log file. The log displays in the right-hand Explorer pane.

Set Up on UNIX

This section provides instructions for setting up a WebSpeed server instance on a UNIX server.

In the following instructions, you modify the ubroker .properties configuration file. This file is located in the properties subdirectory of your WebSpeed installation directory. Review the comments sections of the ubroker .properties file for details on the entries in the file and how they affect your environment.

Set Up the WebSpeed Server

Use these instructions to set up a WebSpeed server instance. At least one WebSpeed server instance is required for the NetUI.

Setting Up

- 1 Change directories to the `properties` subdirectory of your WebSpeed installation directory. Throughout this document `WSDir` refers to the directory containing the WebSpeed software.

```
cd WSDir/properties
```

- 2 Make a backup copy of the `ubroker.properties` file and name it `ubroker.orig`.

```
cp ubroker.properties ubroker.orig
```

- 3 Open the `ubroker.properties` file in a text editor:

```
vi ubroker.properties
```

```
#####
##                                     ##
##      Copyright (c) 1998 by Progress Software Corporation      ##
##                                     ##
## All rights reserved. No part of this program or document may be ##
## reproduced in any form or by any means without permission in writing ##
## from Progress Software Corporation.                             ##
##                                     ##
#####
# WebSpeed/AppServer/DataServer properties definition file for UNIX
#
# ----- ubroker.properties -----
#
# Property File for the Unified Broker and NameServer
#
#
# This definition file includes the properties that you can define in
# a Unified Broker and NameServer configuration. It defines and configures
# four Brokers, one serving a WebSpeed Transaction Server, one serving
# an AppServer, one serving an Oracle DataServer, and one serving an
# ODBC DataServer, and a NameServer.
#
```

- 4 Locate the `Sample Definitions` section in the `ubrokers.properties` file.

```
#####
## Sample Definitions                                     ##
##                                     ##
## The following sections provide sample property settings that ##
## you can use as templates for your own definitions.          ##
##                                     ##
#####
```

- 5 Copy the sample WebSpeed broker definition and make it the first entry after the configuration comments section.

Figure 8.1 is the sample WebSpeed broker definition.

Fig. 8.1
Sample WebSpeed
Broker

```
# Sample WebSpeed Broker definition
#
[UBroker.WS.wsbroker1]
  srvrLogFile=$WRKDIR/wsbroker1.server.log
  brokerLogFile=$WRKDIR/wsbroker1.broker.log
  portNumber=3055
  userName=
  groupName=
  appserviceNameList=wsbroker1
  controllingNameServer=NS1
  environment=wsbroker1
  uuid=932.99.000.ZZZ:1ee77e:cf3bbe04fd:-8000
  description=A sample WebSpeed Transaction Server
```

Figure 8.2 is the beginning of the configuration comments section in the `ubroker.properties` file. You should review the comments to become familiar with the different WebSpeed entries.

Fig. 8.2
Configuration
Comments

```
#####
##
## The following comments document in detail how to use this configuration ##
## file and how to set the various properties for the NameServer, Unified ##
## Brokers, WebSpeed Transaction Servers, and AppServers. ##
## ##
## ##
#####
```

Figure 8.3 shows the copied sample broker definition as the first entry after the comments section.

Fig. 8.3
Copied Sample
Broker Definition

```
# Specifies whether the Admin Server automatically starts the
# NameServer when the Admin Server is started.
# Possible values: 0 - no auto start; 1 - auto start
#
# Default: 0
#
#####

# Sample WebSpeed Broker definition
#
[UBroker.WS.wsbroker1]
  srvrLogFile=$WRKDIR/wsbroker1.server.log
  brokerLogFile=$WRKDIR/wsbroker1.broker.log
  portNumber=3055
  userName=
  groupName=
  appserviceNameList=wsbroker1
  controllingNameServer=NS1
  environment=wsbroker1
  uuid=932.99.000.ZZZ:1ee77e:cf3bbe04fd:-8000
  description=A sample WebSpeed Transaction Server
```

- 6 Change the comment line to indicate that this definition is for a NetUI WebSpeed broker:

```
# NetUI WebSpeed Broker for Production
```

- 7 Change the value after the second period in the [UBroker.WS.wsbroker1] entry to give the broker a meaningful name:
- [UBroker.WS.wsprod]
- 8 Use the following table to configure the default entries in the sample broker definition.

Entry	Description
svrLogFile=	Enter the path and name of a log file for the broker's agents; for example: /qad/mfgpro/logs/wsprod.server.log
brokerLogFile=	Enter the path and name of a log file for the broker; for example: /qad/mfgpro/logs/wsprod.broker.log
portNumber=	Enter an available port with which the broker can communicate.
userName=	Leave this entry blank.
groupName=	Leave this entry blank.
appserviceNameList=	Enter the name you gave this broker; for example, wsprod.
controllingNameServer=	Accept the default for this entry.
environment=	Enter the name you gave this broker; for example, wsprod.
uuid=	Accept the default for this entry. In step 11, you will generate a new universal unique identifier (uuid) for the broker.
description=	Enter a description of the broker if you want.

- 9 Add an entry for `svrStartupParam=` to the broker definition. This entry defines the start-up parameters for the agents this broker controls. You must include the following elements in the start-up parameters entry. Table 8.2 contains definitions of each of the elements.

```
svrStartupParam= -p web/objects/web-disp.p
                 -pf /Path/Production.pf
```

Table 8.2
Agent Start-Up
Parameters

Element	Description
-p web/objects/web-disp.p	The WebSpeed broker program.
-pf /Path/Production.pf	Enter the path and name of the NetUI parameter file. For more information, see Chapter 5, “Set Up a NetUI Parameter File,” on page 57.

- 10** Add the entries described in the following table to your broker definition.

Entry	Description
svrMinPort=	Enter the lowest port number for the agents this broker controls.
svrMaxPort=	Enter the highest port number for the agents this broker controls.
PROPATH=	Enter the Progress search path (PROPATH) you want the agents to use. You must include the following directories: • The current working directory (.). • The directory where you will install the MFG/PRO Web-enabled code. This code is installed from the QAD-supplied NetUI media. Important You must install the MFG/PRO Web-enabled code in the directory you specify in the PROPATH. If the code is not in the specified directory, the WebSpeed agent processes cannot locate the MFG/PRO programs. • The <code>bbi</code> subdirectory below the language-code subdirectory of the language you are implementing. The language-code subdirectory is located below the MFG/PRO Web-enabled code directory. • You can add directories for custom code. Example <pre>PROPATH=.: /qad/mfgpro/90/netui: /qad/mfgpro/90/netui/us/bbi</pre>

- 11** Generate a new universal unique identifier (uuid) for the broker using the following command. In this command, `WSDir` refers to the directory containing the WebSpeed software.

```
WSDir/bin/genuuid
```

- 12** When the uuid is generated, paste it into the `uuid=` entry in your broker definition.

Verifying

To verify that the WebSpeed server instance is set up correctly, you should start it and check its status. Use the commands in Table 8.3 to verify your WebSpeed server instance. In Table 8.3, *WSDir* refers to the WebSpeed installation directory and *BrokerName* refers to the name of the broker for your WebSpeed server instance.

For additional commands, see the *Progress WebSpeed Installation and Configuration Guide*.

Table 8.3
Broker Start, Stop, and Status Commands

Action	Command
Start Broker	<i>WSDir</i> /bin/wtbman -name <i>BrokerName</i> -start
Stop Broker	<i>WSDir</i> /bin/wtbman -name <i>BrokerName</i> -stop
Check Broker Status	<i>WSDir</i> /bin/wtbman -name <i>BrokerName</i> -query

- 1 Check to see if the AdminServer is running using the following command:

```
WSDir/bin/proadsv -query
```

If the AdminServer is not already running, start it using the following command:

```
WSDir/bin/proadsv -start
```

- 2 Start the NameServer process for your broker. These instructions use the default NameServer, NS1:

```
nsman -name NS1 -start
```

You can check the status of the NameServer using the following command:

```
nsman -name NS1 -query
```

- 3 Start the MFG/PRO database servers for the database set you specified in the NetUI parameter file (extension .pf). To start the database servers, use the appropriate MFG/PRO database start-up script; for example, start .Production.

When you start a WebSpeed broker, the broker's agents attempt to connect to the databases specified in the NetUI .pf file. This connection fails if the servers for the databases are not running.

See Chapter 5, "Set Up a NetUI Parameter File," on page 57.

Important Always start the appropriate MFG/PRO database servers before starting the WebSpeed server. Additionally, if you need to stop the WebSpeed server, you should stop the associated database servers.

- 4 Use the start-up command in Table 8.3 to start the WebSpeed server instance.
- 5 Use the query command in Table 8.3 to check the status of the WebSpeed server instance.
- 6 After you check the status, leave the instance running.

Note In addition to the `wtbman` management utility, you may also need to refer to the log files for the WebSpeed server instance. These files are located in the directory you specified in the agent and broker log file entries (`srvrLogFile=` and `brokerLogFile=` respectively).

CHAPTER 9

Install the NetUI on UNIX (WS 3.1)

Use this chapter to install the NetUI software on UNIX servers.

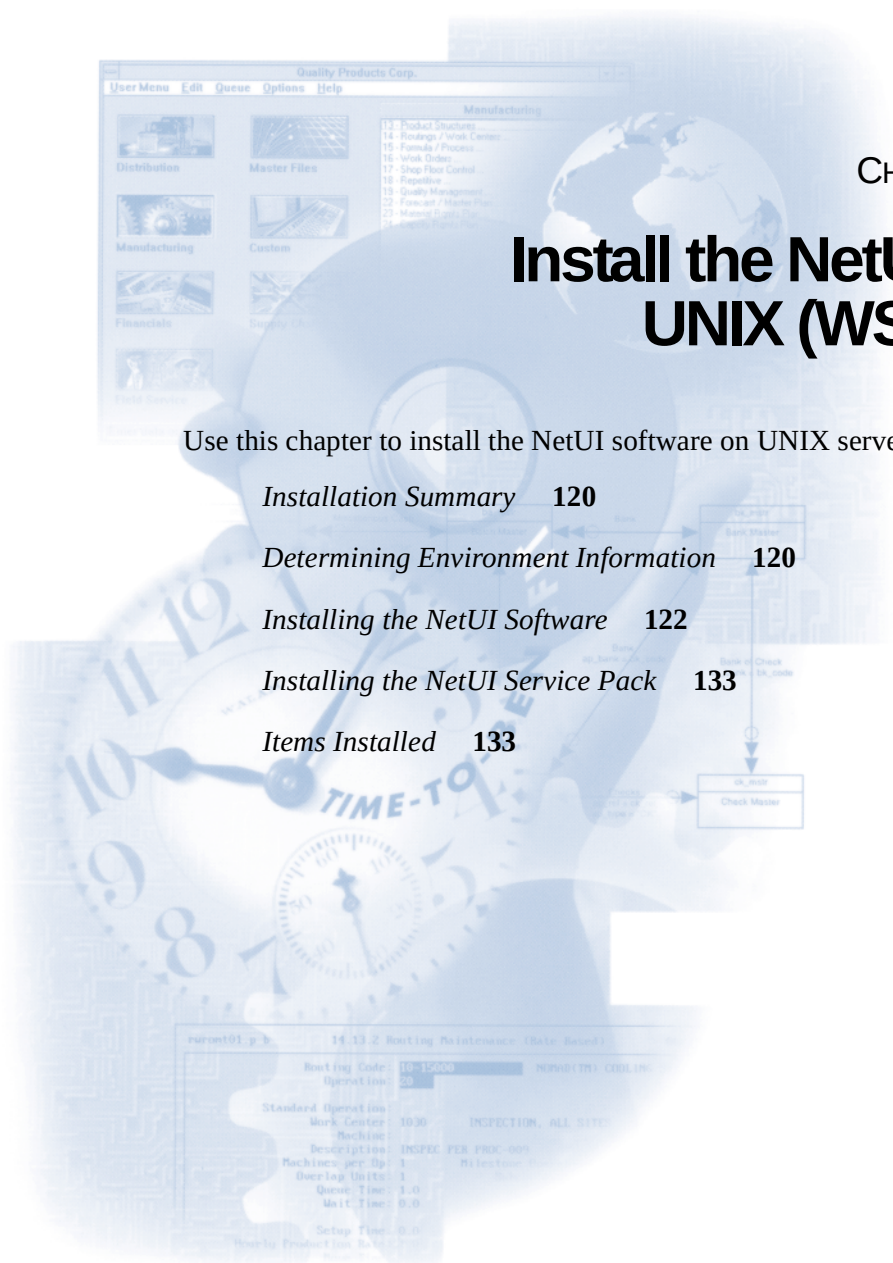
Installation Summary **120**

Determining Environment Information **120**

Installing the NetUI Software **122**

Installing the NetUI Service Pack **133**

Items Installed **133**



Routing Maintenance (Main Screen)	
Routing Code:	10-15000
Operation:	20
Standard Operation:	1030
Work Center:	INSPEC PER PROX-000
Description:	INSPEC PER PROX-000
Machines per Op:	1
Overlap Units:	1
Queue Time:	1.0
Wait Time:	0.0
Setup Time:	0.0

Installation Summary

The following major tasks are required to install the NetUI software on a UNIX server:

- Determine NetUI environment information.
- Install the NetUI software.

Determining Environment Information

The NetUI installation process places the MFG/PRO Web-enabled code in an installation directory and automatically builds a set of default NetUI HTML files. For the installation to configure and build the HTML files correctly, information about the existing NetUI components in your environment must be provided.

Before you begin installing the NetUI, fill in Table 9.1 with the configuration information for the existing NetUI components. Once the NetUI installation is complete, you can use this table as documentation for your NetUI environment.

Table 9.1
Existing NetUI
Components

Required Information	Your Setting
MFG/PRO Progress software directory Notes Record the path to the directory containing the Progress software for MFG/PRO.	
Progress WebSpeed directory Notes In most cases, both the MFG/PRO and NetUI Progress software components are installed in the same directory. However, you can install the Progress components in different directories to facilitate a dispersed deployment.	
NetUI parameter file (.pf) location Notes Record the directory where the NetUI .pf file is located. See Chapter 5, “Set Up a NetUI Parameter File,” on page 57.	

Required Information	Your Setting
Web server • Executables directory alias (for example, cgi-bin) • Executables directory (for example, /netscape/cgi-bin) • HTTP port number (for example, 80) • Document directory (for example, /netscape/docs) Notes Record each of the preceding Web server variables for use during the NetUI installation process. See Chapter 4, “Set Up the NetUI Web Server,” on page 53.	
WebSpeed server instance • Broker name • Broker port number • Minimum agent port number • Maximum agent port number Notes Record each of the preceding WebSpeed server instance variables for use during the NetUI installation process. See “Setting Up a WebSpeed Server” on page 103.	
Path to the MFG/PRO Web-enabled code Notes Record the path to the directory you specified in the PROPATH setting for the WebSpeed broker. You must specify this same directory during the NetUI installation process when prompted for the MFG/PRO Web-enabled code directory. Depending on whether you used the Progress Explorer to configure your NetUI WebSpeed server, see one of the following steps for more information: • If you used the Progress Explorer, see step 5 on page 109. • If you did not use the Progress Explorer, see step 10 on page 116.	

Installing the NetUI Software

Use the following instructions to install the NetUI software on a UNIX server.

Prerequisites

Before you install files from your CD-ROM, be sure the following software elements have been properly installed:

- Progress 8.3
- MFG/PRO 9.0
- To run MFG/PRO maintenance programs through the NetUI, MFG/PRO 9.0 character client
- Web server
- WebSpeed

Also, verify that Table 9.1 is completed.

Mount the CD-ROM

Follow these steps to mount the CD-ROM.

- 1 Log on as the root user ID.
- 2 Create a CD-ROM directory if one does not already exist. The installation process assumes the directory name is /cdrom.
- 3 Place the NetUI CD-ROM into the CD-ROM drive.

- 4 Mount the CD-ROM. The mount command differs from system to system. Listed below are sample commands for mounting the NetUI CD-ROM.

Hardware	Mount Command
Sun	<code>volcheck cdrom</code>
HP	<code>mount /dev/dsk/<i>YourCDDevice</i> /cdrom</code>
Digital	<code>mount -r -o noversion -t cdfs /dev/<i>YourCDDevice</i> /cdrom</code>
All others	Refer to your hardware system documentation or vendor for requirements to mount a CD-ROM. You may be able to type <code>man mount</code> to determine the correct command.

Running the Installation

To incorporate all the possible UNIX installation prompts, the following steps assume that all of the NetUI components are installed on a single machine during a single installation. Depending on your NetUI configuration, you may perform multiple installations on several machines.

- 1 Change to the `unix` subdirectory of your CD-ROM directory.
`cd /CD-ROMDir/unix`
- 2 Run the `install` program.
`./installws31`
- 3 Enter your terminal type or press Enter to accept the default value.

4 Choose the NetUI components you want to install on this machine.

```

      qqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qq      qq      aaa      ddd      ddd
      qq      qq      aaa      ddd      ddd
      qq      qq      aaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qqqqqqqqqqqqqq      aaaa      aaaa      dddddddddd
      qqqqqqqqqqqq      aaaa      aaaa      dddddddd
      qq
    
```

NetUI Version 9 Installation Script

Which component(s) of NetUI will run on this Server?

1) WebServer - HTML, Java and Client Setup files only
 2) Webspeed - Webspeed compiled MFG/PRO r-code only
 3) Telnet - Progress character start-up script only
 4) All
 0) Exit

Enter Selection (0-4) [4]:

See Table 9.1 on page 120.

5 Enter the path to the Web server's document directory. The NetUI Java code, HTML files, and client setup files will be installed in this directory. The document directory should have been set up during the Web server installation process.

```

      qqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qq      qq      aaa      ddd      ddd
      qq      qq      aaa      ddd      ddd
      qq      qq      aaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qqqqqqqqqqqqqq      aaaa      aaaa      dddddddddd
      qqqqqqqqqqqq      aaaa      aaaa      dddddddd
      qq
    
```

NetUI Version 9 Installation Script

Enter the Webserver Document directory where the Java, HTML and Client Setup files will be installed []: █

See Table 9.1 on page 120.

- 8 Enter the path to the MFG/PRO database server administration directory.

qqqqqqqqq	aaaa	ddddddddd
qqqqqqqqqqqqqq	aaaaaaaa	ddddddddddd
qqq	aaa	ddd
qqq	aaa	ddd
qqq	aaa	ddd
qqq	aaa	ddd
qqq	aaaaaaaaaaaa	ddd
qqq	aaaaaaaaaaaa	ddd
qqqqqqqqqqqqqq	aaaa	ddddddddd
qqqqqqqqqqqq	aaaa	aaaa
qqq		

NetUI Version 9 Installation Script

Enter the directory where the Server version of MFG/PRO is installed []:

See Table 9.1 on page 120.

- 9 Enter your Web server's HTTP port number. This port should have been set up during the Web server installation process.

qqqqqqqqq	aaaa	ddddddddd
qqqqqqqqqqqqqq	aaaaaaaa	ddddddddddd
qqq	aaa	ddd
qqq	aaa	ddd
qqq	aaa	ddd
qqq	aaa	ddd
qqq	aaaaaaaaaaaa	ddd
qqq	aaaaaaaaaaaa	ddd
qqqqqqqqqqqqqq	aaaa	ddddddddd
qqqqqqqqqqqq	aaaa	aaaa
qqq		

NetUI Version 9 Installation Script

Enter the Webserver HTTP port number [80]: █

- 10** Enter you Web server's CGI alias. This should have been set up during the Web server installation process.

See Table 9.1 on page 120.

```

      qqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qqqqqqqqqqqqq      aaaa      aaaa      dddddddddd
      qqqqqqqqqqq      aaaa      aaaa      dddddddd
      qq
NetUI Version 9 Installation Script ....

```

Enter the URL prefix (CGI Alias) [cgi-bin]: █

- 11** Enter your Web server's CGI directory. The CGI directory should have been set up during the Web server installation process.

See Table 9.1 on page 120.

```

      qqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qqqqqqqqqqqqq      aaaa      aaaa      dddddddddd
      qqqqqqqqqqq      aaaa      aaaa      dddddddd
      qq
NetUI Version 9 Installation Script ....

```

Enter the Webserver CGI Scripts Directory []: █

See Table 9.1 on page 120.

- 12** Enter your WebSpeed installation directory. This directory was created during the WebSpeed installation in “Installing WebSpeed 3.1” on page 102.

```

      qqqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaaaa      ddd      ddd
      qqqqqqqqqqqqqq      aaaa      aaaa      dddddddddd
      qqqqqqqqqqqq      aaaa      aaaa      dddddddd
      qq
    
```

NetUI Version 9 Installation Script

Enter WebSpeed installation directory [/dr01/ws21rt]:

See Table 9.1 on page 120.

- 13** Enter the name of your NetUI WebSpeed broker. You configured this broker during the WebSpeed set up in “Setting Up a WebSpeed Server” on page 103.

```

      qqqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaa      aaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaaaa      ddd      ddd
      qqqqqqqqqqqqqq      aaaa      aaaa      dddddddddd
      qqqqqqqqqqqq      aaaa      aaaa      dddddddd
      qq
    
```

NetUI Version 9 Installation Script

Enter the Webspeed broker name [netui]: █

14 Enter the port number you will use for the WebSpeed broker.

See Table 9.1 on page 120.

```

      qqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qqq      qqq      aaa      aaaa      ddd      ddd
      qqq      qqq      aaa      aaaa      ddd      ddd
      qqq      qqq      aaa      aaaa      ddd      ddd
      qqq      qqq      aaaaaaaaaaaa      ddd      ddd
      qqq      qqq      aaaaaaaaaaaa      ddd      ddd
      qqq      qqq      aaaaaaaaaaaa      ddd      ddd
      qqqqqqqqqqqqq      aaaa      aaaa      dddddddddd
      qqqqqqqqqqq      aaaa      aaaa      dddddddd
      qqq

```

NetUI Version 9 Installation Script

Enter the Port number for the Webspeed Broker (netui).
This Port must be available on the Host (localhost) [2001]:

15 Enter the minimum port number you will allow for WebSpeed agents.

See Table 9.1 on page 120.

```

      qqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qqq      qqq      aaa      aaaa      ddd      ddd
      qqq      qqq      aaa      aaaa      ddd      ddd
      qqq      qqq      aaa      aaaa      ddd      ddd
      qqq      qqq      aaaaaaaaaaaa      ddd      ddd
      qqq      qqq      aaaaaaaaaaaa      ddd      ddd
      qqqqqqqqqqqqq      aaaa      aaaa      dddddddddd
      qqqqqqqqqqq      aaaa      aaaa      dddddddd
      qqq

```

NetUI Version 9 Installation Script

Enter the lower limit of the Port number range that will be used by
the Webspeed Agent processes [2002]:

See step 4 on page 124.

If all installation parameters are correct, specify Yes and press Enter.

If any of the installation parameters are incorrect, specify No and press Enter. The “Choose which NetUI components to install” prompt displays. As you proceed through the prompts, your previous entries display as the defaults. Choose Enter to accept a default or change the entry if it is incorrect.

20 At the expand media prompt, specify Yes.

```

      qqqqqqqqqq      aaaa      dddddddddd
      qqqqqqqqqqqqqqq      aaaaaaaa      dddddddddd
      qq      qq      aa      aa      ddd      ddd
      qq      qq      aa      aa      ddd      ddd
      qq      qq      aa      aa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaaaaaaaaaaa      ddd      ddd
      qq      qq      aaaaa      aaaa      dddddddddd
      qq      qq      aaaa      aaaa      dddddddd
      qq      qq
      NetUI Version 9 Installation Script ....

Creating Unix scripts directory.
Creating Webserver document directory.
Creating NetUI r-code directory.

Ensuring required disk space exists.
Sufficient space exists for installation.

Expand the media (y/n) [y]?

```

Modify Generated Script

Modify the `qma9 CGI . ksh` script to reference the WebSpeed broker name used in your installation.

See Table 9.1 on page 120.

- 1 Change to the `CGI-bin` directory of your Web server.
- 2 Make a backup copy of the NetUI messenger script `qma9 CGI . ksh`.
`cp qma9 CGI . ksh qma9 CGI . ksh.orig`
- 3 Copy the Progress WebSpeed Messenger script to `qma9 CGI . ksh`.
`cp wspd CGI . ksh qma9 CGI . ksh`
- 4 Open the `qma9 CGI . ksh` script for editing. Find this line:
`$DLC/bin/cgiip -I wsbroker1`
- 5 Replace `wsbroker1` with the WebSpeed broker name used in your installation. Save your changes.

See Table 9.1 on page 120.

Installing the NetUI Service Pack

If a service pack was included with your NetUI product package, use the instructions on the service pack CD-ROM to install the service pack in your NetUI environment. The service pack updates your NetUI Java code, HTML files, and client setup files as well as the Web-enabled MFG/PRO code with the latest patches.

Beginning with Service Pack 3, the complete r-code is provided for environments using the NetUI with WebSpeed 3.1. In these environments, compiling the newly installed code is not necessary. If you are installing Service Pack 3 in an environment where WebSpeed 2.1 is being used, you must recompile the code.

Beginning with Service Pack 5, the requirement for the version of Java has changed. This change affects the client installation procedure.

Items Installed

NetUI Software Directory Structure

The following is an outline of the `multinet` directory structure. Files in bold are added with Service Pack 5.

Your Web Server/Primary Document Directory/multinet

```
- client_files <dir>
  - client13_setup.html
  - client_setup_exe.html
  - client_setup_zip.html
  - fonts.exe
  - fonts.zip
  - identitydb.exe
  - identitydb.zip
  - jre11.exe
  - jre11.zip
  - jre116.exe
  - jre116.zip
  - labels.js
  - netui13.js
  - plugin-111-win32.exe
  - plugin-111-win32.zip
  - win32 <dir>
    - QAD_90_SP5.exe
    - j2re-1_3_0_02-win-i.exe
```

♦ See step 5 on page 124.

```

- embedded.html
- embedded13.html
- full.html
- full13.html
- help <dir>
  - javauui <dir> (NetUI interface help)
    - index.html
    - ...
  - mfg <dir> (MFG/PRO help)
    - index.html
    - ...
- java <dir>
  - gnu <dir>
  - images <dir> (user-defined images)
  - multinet.jar (NetUI Java code archive file)
  - Ssl.cab
  - Ssl.jar
- multinet.html
- multinet13.html
- qadbg.jpg
- qadlogo.gif
- qadtext.gif
- title.html
- trace.html
- trace13.html

```

Web-Enabled MFG/PRO Programs Directory Structure

See step 6 on
page 125.

Your Web-Enabled Code Directory

```

- us <dir>
  - ad <dir>
  - wb <dir>
  - mg <dir>
  - ...
- triggers <dir>
  - add.r
  - adw.r
  - ...
- mflg01.r
- mfwb01.r (NetUI start-up program)
- mfwb02.r
- applhelp.r
- mfgp01.r
- scripts
- version.mfg

```

Scripts

Your UNIX Scripts Directory

- qma9_BrokerName.cnf (WebSpeed configuration file)
- qma9_BrokerName.start (Starts the WebSpeed broker)
- qma9_BrokerName.stop (Stops the WebSpeed broker)
- qma9_BrokerName.status (Provides WebSpeed agent status)
- qma9_telnet.ksh (NetUI UNIX telnet script)

▶ See step 7 on page 125.

CHAPTER 10

Install the NetUI on Windows NT (WS 3.1)

Use this chapter to install the NetUI software on a Windows NT server.

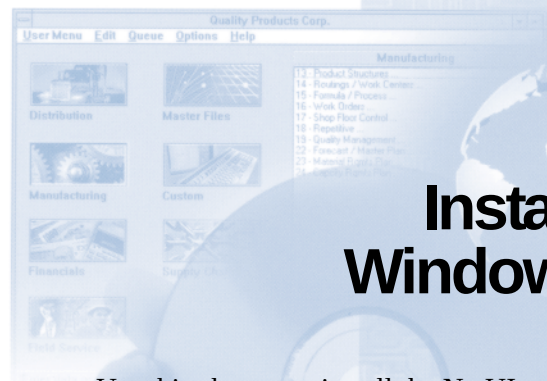
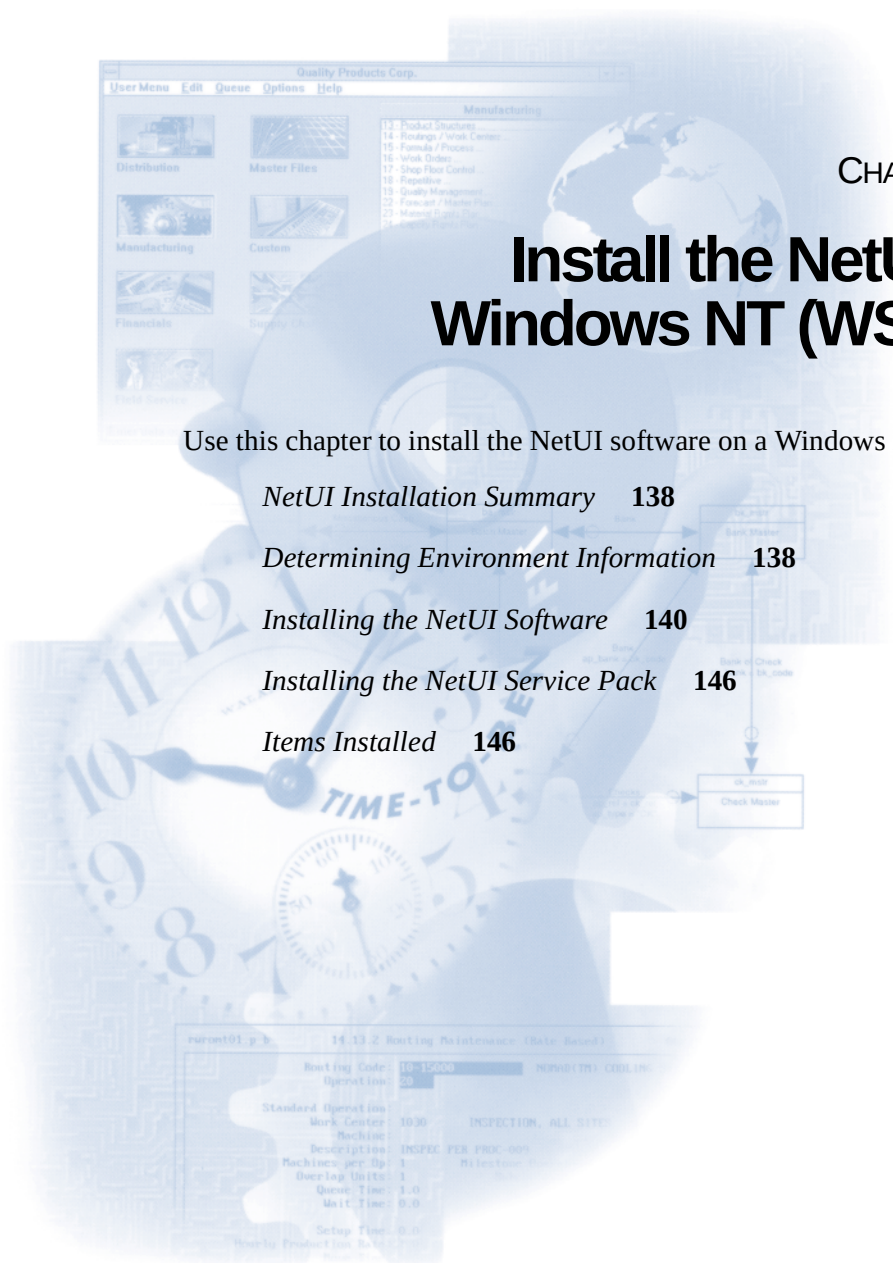
NetUI Installation Summary **138**

Determining Environment Information **138**

Installing the NetUI Software **140**

Installing the NetUI Service Pack **146**

Items Installed **146**



14.13.2 Routing Maintenance (Main Screen)	
Routing Code:	10-15000
Operation:	20
Standard Operation	
Work Center	1030
Machine	INSPEC PER PROX-005
Description:	INSPEC PER PROX-005
Machines per Op	1
Overlap Units	1
Queue Time	1.0
Wait Time	0.0
Setup Time	0.0
Queue Time	1.0
Wait Time	0.0
Setup Time	0.0

NetUI Installation Summary

The following major tasks are required to install the NetUI software on a Windows NT server:

- Determine NetUI environment information.
- Install the NetUI software.

Determining Environment Information

The NetUI installation process places the MFG/PRO Web-enabled code in an installation directory and automatically builds a set of default NetUI HTML files. For the installation to configure and build the HTML files correctly, information about the existing NetUI components in your environment must be provided.

Before you begin installing the NetUI, fill in Table 10.1 with the configuration information for the existing NetUI components. Once the NetUI installation is complete, you can use this table as documentation for your NetUI environment.

Table 10.1
Existing NetUI
Components

Required Information	Your Setting
MFG/PRO Progress software directory Notes Record the path to the directory containing the Progress software for MFG/PRO.	
Progress WebSpeed directory Notes In most cases, both the MFG/PRO and NetUI Progress software components are installed in the same directory. However, you can install the Progress components in different directories to facilitate a dispersed deployment.	
NetUI parameter file (.pf) location Notes Record the directory where the NetUI .pf file is located. See Chapter 5, “Set Up a NetUI Parameter File,” on page 57.	

Required Information	Your Setting
Web server • Executables directory alias (for example, cgi-bin) • Executables directory (for example, \netscape\cgi-bin) • HTTP port number (for example, 80) • Document directory (for example, \netscape\docs) Notes Record each of the preceding Web server variables for use during the NetUI installation process. See Chapter 4, “Set Up the NetUI Web Server,” on page 53.	
WebSpeed server instance • Broker name • Broker port number • Minimum agent port number • Maximum agent port number Notes Record each of the preceding WebSpeed server instance variables for use during the NetUI installation process. See “Setting Up a WebSpeed Server” on page 103.	
Path to the MFG/PRO Web-enabled code Notes Record the path to the directory you specified in the PROPATH setting for the WebSpeed broker. See step 5 on page 109. You must specify this same directory during the NetUI installation process when prompted for the MFG/PRO Web-enabled code directory.	

Installing the NetUI Software

Use the following instructions to install the NetUI software on a Windows NT server.

Prerequisites

Before you install files from your CD-ROM, be sure that the following software elements have been properly installed:

- Progress 8.3
- MFG/PRO 9.0
- To run MFG/PRO maintenance programs through the NetUI, MFG/PRO 9.0 character client
- Web server
- WebSpeed

Also, verify that Table 10.1 is completed.

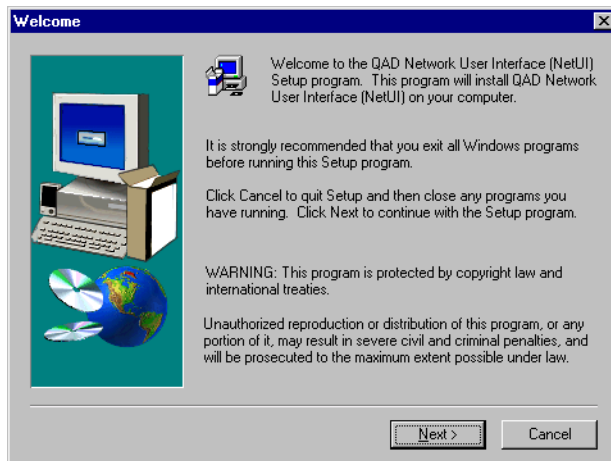
Running the Installation

Complete these steps to install the NetUI on your Windows NT server.

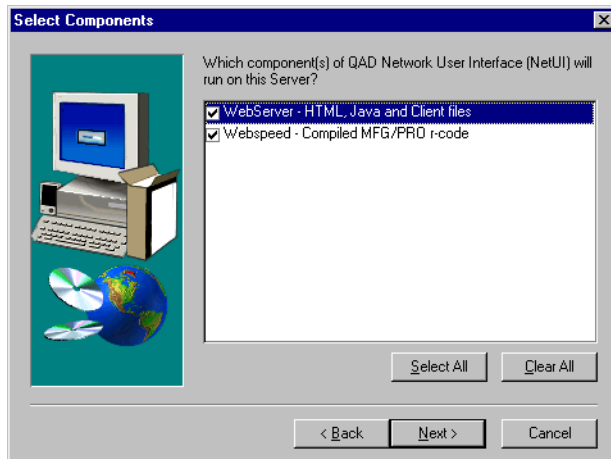
- 1 Run the setup program.

CD-ROMDriveName: \nt\setup.exe

- 2 At the Welcome window, click Next.



- 3 Choose the NetUI components to install on this machine by highlighting individual items and pressing the Space bar, or by choosing the Select All button to select every component listed.



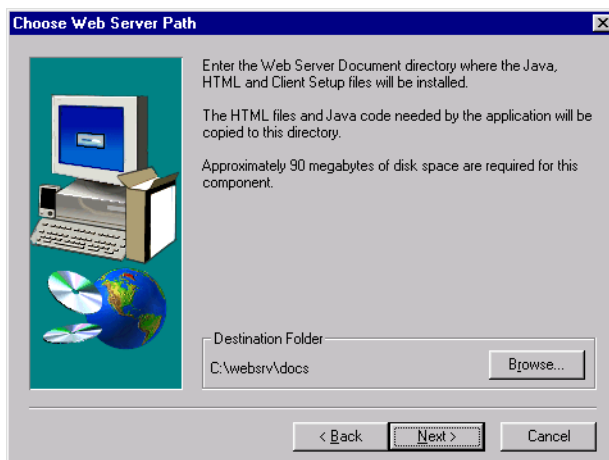
If you are installing on a Web server, select WebServer - HTML, Java and Client files. If your WebSpeed server instance is located on this machine, select Webspeed - Compiled MFG/PRO r-code. If this machine is your Web server and your WebSpeed components are installed here, select both items. Click Next.

Note The following steps assume that both the WebServer and Webspeed components are selected. If you are splitting your installation between machines, only those prompts associated with the components you are installing display.

See Table 10.1 on page 138.

- 4 Specify the Web server's primary document directory. The NetUI Java code, HTML files, and client setup files will be installed in this directory. Click Next to accept the default or click the Browse button to select an alternate directory.

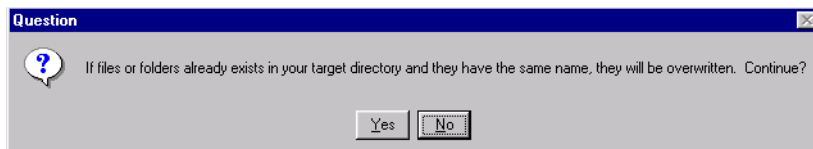
The document directory should have been set up during the Web server installation process.



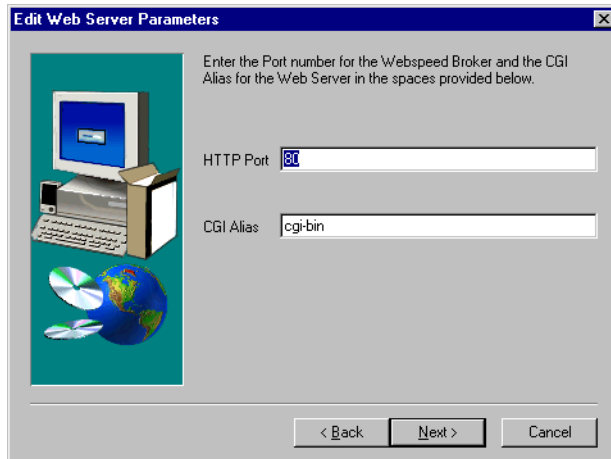
See Table 10.1 on page 138.

Important You must specify the same directory you specified in the PROPATH for the WebSpeed server instance. For details, see step 5 on page 109.

- 5 You may receive the following warning. Double check the files in the directory specified. Move any files you do not want to be overwritten before you continue this installation.

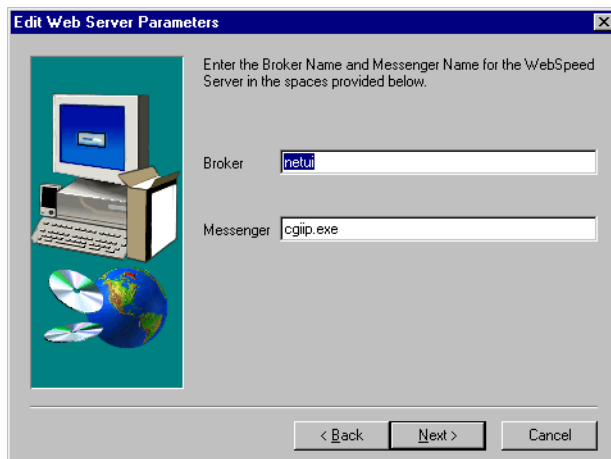


- 6 Enter your Web server's HTTP port number and the CGI alias assigned to your CGI directory. The port number and CGI alias should have been assigned during the Web server installation process.

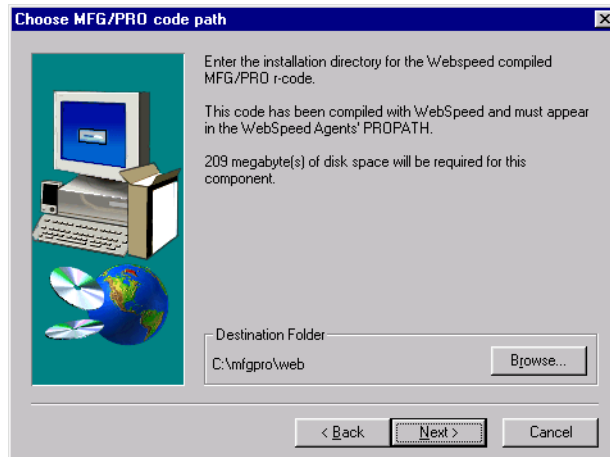


- 7 Enter the name of your WebSpeed broker. You created this broker when you configured the NetUI WebSpeed server instance. Enter the name of your WebSpeed messenger. The WebSpeed messenger was installed in the Web server's executables directory during the WebSpeed installation process.

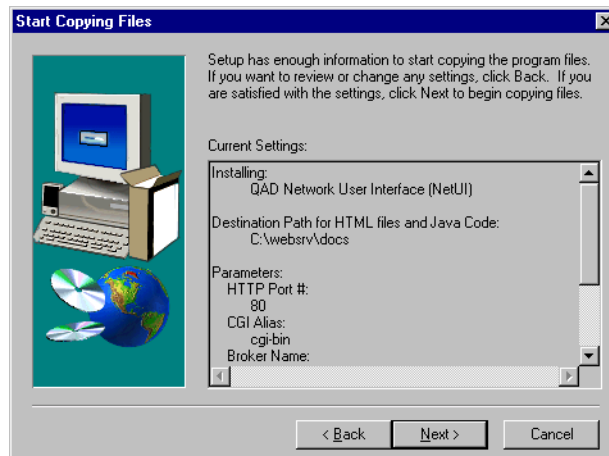
♦ See Table 10.1 on page 138.



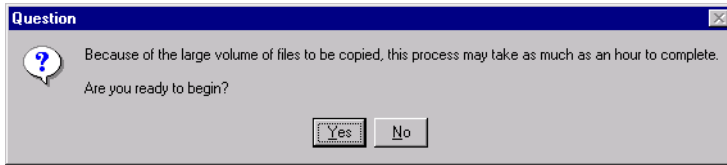
- 8 Enter the path for the MFG/PRO Web-enabled code. This is the directory you specified in the PROPATH setting for the WebSpeed broker.



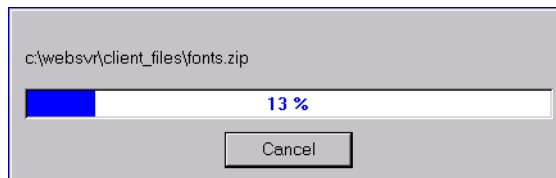
- 9 At the Start Copying Files window, compare the installation information listed in the window against Table 10.1 on page 138. If all of the information is correct, click Next. If you need to make corrections, click Back.



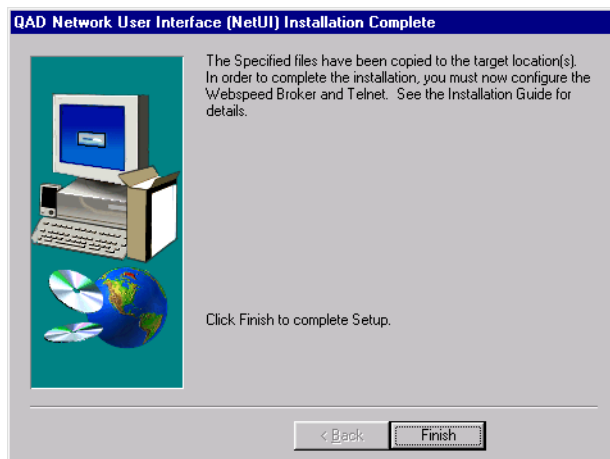
- 10 Click Yes at the following prompt when you are ready to begin the load process.



During the load, the following window displays.



- 11 After the files are copied, the following window displays; click Finish.



Installing the NetUI Service Pack

If a service pack was included with your NetUI product package, use the instructions on the service pack CD-ROM to install the service pack in your NetUI environment. The service pack updates your NetUI Java code, HTML files, and client setup files as well as the Web-enabled MFG/PRO code with the latest patches.

Beginning with Service Pack 3, the complete r-code is provided for environments using the NetUI with WebSpeed 3.1. In these environments, compiling the newly installed code is not necessary. If you are installing Service Pack 3 in an environment where WebSpeed 2.1 is being used, you must recompile the code.

Beginning with Service Pack 5, the requirement for the version of Java has changed. This change affects the client installation procedure.

Items Installed

NetUI Software Directory Structure

See step 4 on page 142.

The following is an outline of the `multinet` directory structure. Files in bold are added with Service Pack 5.

Your Web Server\Primary Document Directory\multinet

```
- client_files <dir>
  - client13_setup.html
  - client_setup_exe.html
  - client_setup_zip.html
  - fonts.exe
  - fonts.zip
  - identitydb.exe
  - identitydb.zip
  - jre11.exe
  - jre11.zip
  - jre116.exe
  - jre116.zip
  - labels.js
  - netui13.js
  - plugin-111-win32.exe
  - plugin-111-win32.zip
  - win32 <dir>
    - QAD_90_SP5.exe
    - j2re-1_3_0_02-win-i.exe
```

- embedded.html
- **embedded13.html**
- full.html
- **full13.html**
- help <dir>
 - javau1 <dir> (NetUI interface help)
 - index.html
 - ...
 - mfg <dir> (MFG/PRO help)
 - index.html
 - ...
- java <dir>
 - gnu <dir>
 - images <dir> (user-defined images)
 - multinet.jar (NetUI Java code archive file)
 - Ssl.cab
 - Ssl.jar
- multinet.html
- **multinet13.html**
- qadbg.jpg
- qadlogo.gif
- qadtext.gif
- **title.html**
- trace.html
- **trace13.html**

Web-Enabled MFG/PRO Programs Directory Structure

Your Web-Enabled Code Directory

- us <dir>
 - ad <dir>
 - wb <dir>
 - mg <dir>
 - ...
- triggers <dir>
 - add.r
 - adw.r
 - ...
- mflg01.r
- mfwb01.r (NetUI start-up program)
- mfwb02.r
- applhelp.r
- mfgp01.r
- scripts
- version.mfg

▶ See step 8 on page 144.

CHAPTER 11

Install the Patch Bundle

Use this chapter to install the NetUI on WebSpeed 3.1 Patch Bundle. This step is required only if you are upgrading to WebSpeed 3.1 and your service pack level is 1 or 2.

Installing on Windows NT **150**

Installing on UNIX **150**



Background collage featuring a clock, a globe, and a circuit board.

14.13.2 Routing Maintenance (Main Screen)	
Routing Code: 10-15000	NONAD (75) CDR IN:
Operation: 20	
Standard Operation	
Work Center	1030
Machine	INSPECTION, ALL SITE
Description	INSPEC PER PROX-005
Machines per Op	1
Overlap Units	1
Queue Time	1.0
Wait Time	0.0
Setup Time	0.0
Route by Production Route	

Important Do not install the Patch Bundle into a live production environment. The Patch Bundle should first be installed into a test database. Before installing into your live production database, you should back up all your database files and directories.

Installing on Windows NT

Complete these steps to install the NetUI on WebSpeed 3.1 Patch Bundle files on a Windows NT server.

- 1 Place the Patch Bundle CD-ROM into the CD-ROM drive of the machine where you installed the MFG/PRO Web-enabled code.
- 2 Using File Manager or Windows Explorer, select and copy all the files and directories on the CD root directory to the directory where you installed the NetUI program files.
- 3 If you are prompted to overwrite existing files in the destination directory, click Yes.

Installing on UNIX

Complete these steps to install the NetUI on WebSpeed 3.1 Patch Bundle files on a UNIX server:

▶ See page 70.

- 1 Mount the CD-ROM.
- 2 Copy the patch bundle directory on the CD-ROM to the directory where you installed the NetUI program files.

```
cp -r /CD-ROMDir/*  
    /NetUIDir/
```

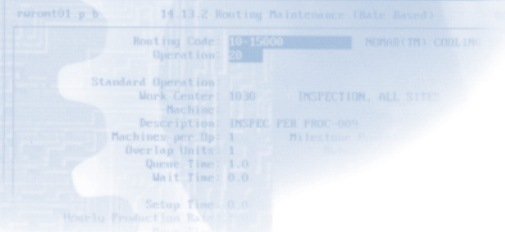
CHAPTER 12

Compile the Web-Enabled Code

Use this chapter to compile the MFG/PRO Web-enabled code for WebSpeed 3.1. This step is required only if you are upgrading to WebSpeed 3.1 and your service pack level is 1 or 2.

Compiling on Windows NT 152

Compiling on UNIX 157



Routing Code	Operation	Standard Operation	Work Center	Machine	Description	Machines per Op	Overlap Units	Queue Time	Wait Time	Setup Time
10-15000	20	10.00	INSPEC	INSPEC	INSPEC PER PROX-000	1	1	1.0	0.0	0.0

Compiling on Windows NT

Complete these steps to compile the MFG/PRO Web-enabled code on a Windows NT server.

♦ See the Database Server Setup chapter in the MFG/PRO installation guide for your system.

Important For the following steps, you must use a parameter file set up for client/server connections, not local host, shared-memory connections. You may need to modify the database start-up scripts or shortcuts to enable client/server connections. This includes adding the -H, -S, -N start-up parameters to the script or shortcut. You may also need to modify the services file on the database server to include the service names and port numbers of your MFG/PRO databases.

Create a New Parameter File

- 1 Find the `production.pf` file from the Production database. Depending on your installation, the file should be in this directory:

```
WindowsDir\Profiles\All Users\Start Menu\Programs\9.0 MFG_PRO
Character Client\
```

- 2 Copy the file to the `webcomp` directory in the NetUI root directory. The `webcomp` directory was created when the Patch Bundle files were installed.
- 3 In the `webcomp` directory, rename the file to `netuicompile.pf`.
- 4 Open the new file with a text editor such as Notepad. Make the following changes:

a Add `-ld qadddb` as the second argument of the first line.

b Add `-p ccompui.w` as the executable on the last line.

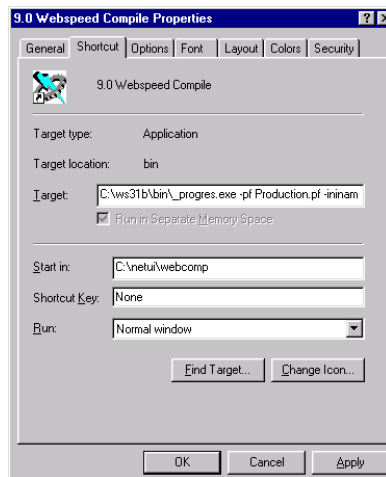
- 5 The parameter file (`netuicompile.pf`) should be similar to this sample file. Changes are in bold.

```
-db newprod -ld qadddb -H NTsvr -S pr73mfg11-server -N TCP -trig
TRIGGERS
-db mfghelp -ld qadhelp -H NTsvr -S pr74mfg0w-server -N TCP
-db gui -ld qadgui -H NTsvr -S pr72se53-server -N TCP
-db cfg -ld qadcf -H NTsvr -S pr74pst0z-server -N TCP
-d mdy -yy 1920 -Bt 350 -c 30 -D 100 -mmax 8192 -nb 200 -s 63 -p
ccompui.w
```

Create a Compile Icon

- 1 Find and copy to the desktop the 9.0 MFG/PRO Character Client icon.
- 2 Rename the icon you placed on the desktop to 9.0 WebSpeed Compile.
- 3 Right-click the 9.0 WebSpeed Compile icon and choose Properties.
- 4 In the Properties dialog, select the Shortcut tab. Make these changes to the following fields:

Field	Change
Target	- Change the target program location from the Progress directory to the WebSpeed directory; for example, from <code>c:\dlc\bin_progress.exe</code> to <code>c:\ws31b\bin_progress.exe</code>. - Change the <code>-pf</code> argument to the new parameter file name; <code>netuicompile.pf</code>.
Start in	Delete the directory and enter the directory where the NetUI program files were installed. This is the directory with the Web-enabled code.



- 5 Save the changes by clicking OK.

Using the Compiler

- 1 Launch the Compiler using the icon on the desktop.

MFG/PRO Compiler

Compile List File: _____
<Generate> < Browse >

Compile Propath: _____ < Browse >
C:\netui\us\xrc.C:\netui\us\src

Language Code: us [V]
Destination Directory: C:\netui _____ < Browse >

<Compile > < Close >

- 2 Use the following table to complete the Compiler fields.

Field	Description
Compile List File	Enter a name to use as the compile list file name.
Compile Propath	The compiler automatically generates the propath. Verify this value and update it if necessary.
Language Code	Enter a new language code if you are compiling for a language other than the default US language code.
Destination Directory	The system automatically finds and displays the destination directory. Verify this value and change it if necessary.

- 3 After entering a compile list name, select Generate to see the Generate Compile List screen.

Generate Compile List

Source Directory: C:\netui\us\xrc.C:\netui\us\src <Browse>

File: _____ To: _____

Compile List File: test <Browse>

<Generate > < Close >

4 The following table describes the fields on this screen.

Field	Description
Source Directory	The compiler automatically fills in the source and encrypted source code directories. Verify these directories and make changes as necessary. When you select Generate, the system looks in these directories for .p, .w, and .t files to add to the compile list. When the NetUI was installed, an SRC directory was created. Installing any service pack creates an additional XRC directory. Both directories must be included as source directories here.
File...To	Use these fields to selectively compile a specific file or a range of files.
Compile List	The compile list name you entered in the previous screen defaults here.

- 5 Select Generate to generate the compile list file from the directories indicated.
- 6 When the compile list is complete, select Close to return to the main compiler screen.
- 7 Select Compile to compile the NetUI code.
- 8 The following prompt may appear:

Compile Propath:	QUESTION Root Destination Directory_C:\netui Do You wish to Overwrite? <Yes> <No>	< Browse >
------------------	---	------------

Verify the destination directory. Select Yes to overwrite any existing files. Otherwise, perform any necessary file and directory maintenance before proceeding with the compile.

- 9 The verification screen appears. Verify that all the compile information is correct and select Continue to begin the compile.

Please Verify the Following Information:

MFG/PRO Home Directory: C:\netui
 Language Directory: C:\netui\us
 Compile List File: C:\netui\webcomp\utcompil.wrk

Compile Propath: C:\netui\us\xrc,C:\netui\us\src

Code Page Values

CPINTERNAL: ISO8859-1	CPCOLL: Basic
CPCODEOUT: ISO8859-1	CPSTREAM: ISO8859-1

<Continue>
< Back >

- 10 The compile status screen appears when the compiler begins. Depending on the number of files being compiled, the compile process can take up to an hour.

```

12/01/00 @ 12:51:15 - Compiling C:\netui\us\src\adbr008.p
12/01/00 @ 12:51:17 - Compiling C:\netui\us\src\adbr009.p
12/01/00 @ 12:51:18 - Compiling C:\netui\us\src\adbr010.p
12/01/00 @ 12:51:20 - Compiling C:\netui\us\src\adbr011.p
12/01/00 @ 12:51:21 - Compiling C:\netui\us\src\adbr013.p
12/01/00 @ 12:51:24 - Compiling C:\netui\us\src\adbr014.p
12/01/00 @ 12:51:26 - Compiling C:\netui\us\src\adbr015.p
    
```

< Cancel >

Program Compile Status

Files Processed: 14 of 2630	Now Compiling: adbr015.p
Errors Found: 0	Percentage Complete: 1%

- 11 When the compile is complete, the following screen appears. Exit the compiler or select Close to return to the main compiler screen.

```
12/01/00 @ 13:49:49 - Compile Contained 0 Warnings.
12/01/00 @ 13:49:49 - Resetting PROPATH.
12/01/00 @ 13:49:49 - End Compile.
Press CLOSE to exit.
```

< Close >

Program Compile Status	
Files Processed: 2630 of 2630	Now Compiling: wowsrp01.p
Errors Found: 0	Percentage Complete: 100%

Compiling on UNIX

Complete these steps to compile the MFG/PRO Web-enabled code on a UNIX server.

Important For the following steps, you must use a parameter file set up for client/server connections, not local host, shared-memory connections. You may need to modify the database start-up scripts or shortcuts to enable client/server connections. This includes adding the -H, -S, -N start-up parameters to the script or shortcut. You may also need to modify the services file on the database server to include the service names and port numbers of your MFG/PRO databases.

See the Database Server Setup chapter in the MFG/PRO installation guide for your system.

Create a New Parameter File

- 1 Begin in the MFG/PRO NetUI client directory.

```
cd /hp01/netui
```

- 2 Copy client.Production from the MFG/PRO character client directory to the MFG/PRO NetUI client directory, renaming the copy to client.webcomp.

```
cp /hp01/mfg90/client.Production ./client.webcomp
```

Note If you are using an Oracle database, copy and rename the Client.Compile script instead of Client.Production. If you need to create a Client.Compile script, refer to the *System Administration Reference Guide: Oracle Database on UNIX Server*.

- 3 Use the vi editor to modify the `client.webcomp` file.

```
vi client.webcomp
```

- 4 Replace the conditional Progress directory with the WebSpeed directory. For example, change the following line from:

```
DLC=${DLC:-/hp01/progress/dlc83b11};export DLC
```

To:

```
DLC=/hp01/ws31b;export DLC
```

- 5 Redefine the PROPATH to include the WebSpeed directory instead of the conditional Progress directory. For example, change the PROPATH from:

```
PROPATH=${PROPATH:././hp01/mfgpro/mfgpro90,/hp01/mfgpro/mfgpro90/us/bbi};export PROPATH
```

To:

```
PROPATH=./hp01/ws31b,/hp01/ws31b/us/bbi; export PROPATH
```

- 6 Define webcomp as the home directory.

```
cd webcomp      # change to home directory
```

- 7 Replace the `mf.p` executable with the `ccompui.w` executable by modifying the last line to:

```
D 100 -mmax 3000 -nb 200 -s 63 -p ccompui.w;
```

- 8 The modified `client.webcomp` should be similar to this example. Changes are marked in bold text:

```
#!/bin/sh
# Script to start multi-user session of MFG/PRO

# tokens:
# &DLC = Progress Directory
# &CLIENT-DB-CONNECT = command line to connect to each db in dbset

# SCCS: @(#)client.tpl @(#)client.tpl 1.1 04/18/96 15:09:20 >

stty intr '^c'
DLC=/hp01/ws31b;export DLC
PATH=$PATH:$DLC;export PATH
PROMSGS=$DLC/promsgs;export PROMSGS
PROTERMCAP=$DLC/protermcap;export PROTERMCAP
PS1='$$ ';export PS1
PROPATH=./hp01/ws31b,/hp01/ws31b/us/bbi;export PROPATH

#
# Set terminal type.
#
```

```

if [ ${TERM:-NULL} = NULL ]
then
    echo
    echo "Please enter your terminal type: \c"
    read TERM
    export TERM
fi

#
# Start MFG/PRO.
#
cd webcomp      # change to home directory

# exec $DLC/bin/_progres &DB etc
exec $DLC/bin/_progres \
    -db mfgpro.db -ld qadddb -H hp01 -S mfg90 -trig triggers \
    -db mfghelp -ld qadhelp -H hp01 -S hlp90 \
    -db gui -ld qadgui -H hp01 -S gui90 \
    -db cfg -ld qadcf -H hp01 -S cfg90 \
    -h 8 -cpstream iso8859-1 -cpinternal iso8859-1 -d mdy -yy 1920
-Bt 350 -c 30 -
D 100 -mmax 3000 -nb 200 -s 63 -p ccompui.w;

```

Using the Compiler

1 Begin the compiler (client.webcomp).

MFG/PRO Compiler	
Compile List File:	
<Generate>	< Browse >
Compile Propath: < Browse >	
hp01/netui/us/xrc.hp01/netui/us/src	
Language Code: <u>us</u> [V]	
Destination Directory: <u>hp01/netui</u> < Browse >	
<Compile >	< Close >

2 Use the following table to complete the Compiler fields.

Field	Description
Compile List File	Enter a name to use as the compile list file name.
Compile Propath	The compiler automatically generates the propath. Verify this value and update it if necessary.
Language Code	Enter a new language code if you are compiling for a language other than the default US language code.
Destination Directory	The system automatically finds and displays the destination directory. Verify this value and change it if necessary.

3 After entering a compile list name, select Generate to see the Generate Compile List screen.

Generate Compile List

Source Directory: hp01/netui/us/xrc.hp01/netui/us/src <Browse>

File: _____ To: _____

Compile List File: test _____ <Browse>

<Generate > < Close >

4 The following table describes the fields in this screen.

Field	Description
Source Directory	The compiler automatically fills in the source and encrypted source code directories. Verify these directories and make changes as necessary. When you select Generate, the system looks in these directories for .p, .w and .t files to add to the compile list. When the NetUI was installed, an SRC directory was created. Installing any service pack creates an additional XRC directory. Both directories must be included as source directories here.
File...To	Use these fields to selectively compile a specific file or a range of files.
Compile List	The compile list name you entered in the previous screen defaults here.

- 5 Select Generate to generate the compile list file from the directories indicated.
- 6 When the compile list is compiled, select Close to return to the main compiler screen.
- 7 Select Compile to compile the NetUI code.
- 8 The following prompt may appear:

Compile Propath:	—QUESTION— Root Destination Directory hp01/netui/ Do You wish to Overwrite? <Yes> <No>	< Browse >
------------------	--	------------

Verify the destination directory. Select Yes to overwrite any existing files. Otherwise, perform any necessary file and directory maintenance before proceeding with the compile.

- 9 The verification screen appear. Verify that all the compile information is correct and select Continue to begin the compile.

Please Verify the Following Information:	
MFG/PRO Home Directory: hp01/netui/ Language Directory: hp01/netui/us Compile List File: hp01/netui/webcomp/utcompil.wrk	
Compile Propath:	hp01/netui/us/xrc, hp01/netui/us/src
Code Page Values	
CPINTERNAL: ISO8859-1	CPCOLL: Basic
CPCODEOUT: ISO8859-1	CPSTREAM: ISO8859-1
<Continue>	< Back >

- 10** The compile status screen appears when the compiler begins. Depending on the number of files being compiled, the compile process can take up to an hour.

```
12/01/00 @ 12:51:15 - Compiling hp01/netui/us/src/addr008.p
12/01/00 @ 12:51:17 - Compiling hp01/netui/us/src/addr009.p
12/01/00 @ 12:51:18 - Compiling hp01/netui/us/src/addr010.p
12/01/00 @ 12:51:20 - Compiling hp01/netui/us/src/addr011.p
12/01/00 @ 12:51:21 - Compiling hp01/netui/us/src/addr013.p
12/01/00 @ 12:51:24 - Compiling hp01/netui/us/src/addr014.p
12/01/00 @ 12:51:26 - Compiling hp01/netui/us/src/addr015.p
```

< Cancel >

```

                                Program Compile Status
Files Processed: 14 of 2630          Now Compiling: addr015.p
Errors Found: 0                     Percentage Complete: 1%
```

- 11** When the compile is complete, the following screen appears. Exit the compiler or select Close to return to the main compiler screen.

```
12/01/00 @ 13:49:49 - Compile Contained 0 Warnings.
12/01/00 @ 13:49:49 - Resetting PROPATH.
12/01/00 @ 13:49:49 - End Compile.
Press CLOSE to exit.
```

< Close >

```

                                Program Compile Status
Files Processed: 2630 of 2630      Now Compiling: wowsrp01.p
Errors Found: 0                   Percentage Complete: 100%
```

SECTION 5

NetUI Configuration

This section contains instructions for configuring the NetUI.

Configure Telnet on UNIX **165**

Configure Telnet on Windows NT **177**

Configure NetUI Clients **195**

System Administration **211**

Routing Maintenance (Main Screen)

Routing Code:	10-15000	Operation:	20
Standard Operation:	1030	Work Center:	INSPEC PER PROX-000
Machines per Op:	1	Overlap Units:	1
Queue Time:	1.0	Wait Time:	0.0
Setup Time:	0.0		

CHAPTER 13

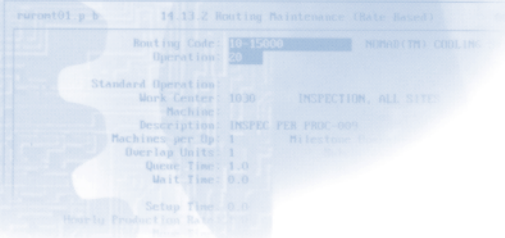
Configure Telnet on UNIX

This chapter provides instructions for configuring the NetUI environment to use a UNIX telnet server.

Configuration Overview **166**

Configuring the Telnet Environment **166**

Configuring Telnet Options in MFG/PRO **169**



Configuration Overview

NetUI access to maintenance and transaction programs is enabled through a telnet interface. This requires you to configure a telnet server for the NetUI environment. To configure a UNIX telnet server, you must perform the following major tasks:

- Configure the telnet environment.
- Configure the telnet settings in MFG/PRO.

Important These instructions assume that you are using the same machine for both the MFG/PRO database server and NetUI telnet server. This ensures that the MFG/PRO character client code required for telnet sessions is located on the telnet server.

Configuring the Telnet Environment

To access MFG/PRO maintenance programs, the NetUI uses telnet to log on to the server where MFG/PRO is installed. Because the NetUI communicates via HTTP, the account log-in ID and password are sent using unencrypted text. Since this may compromise system security, you should configure the telnet environment with special server-side security measures in mind.

A range of security options exists to solve the unencrypted log-in and password problem. This section outlines two sample security setups: one providing a maximum level of security and one providing less security but more flexibility for Progress client session and home directory access. In both setups, it is recommended that you use a restricted shell (rsh).

Restricted Shells

Restricted shells are restricted versions of the common UNIX Bourne shell or Korn shell. In the Bourne shell, the restricted shell is run as rsh (/usr/lib/rsh), while in the Korn Shell it is known as rksh (/usr/bin/rksh). The restricted versions of these shells allow users to log in with restricted access. They cannot:

- Use the cd command to change directories
- Specify a path or command using /
- Use redirection (>, >>)
- Set the value of \$PATH

Note A user's path should not include /usr/bin. This lets the user run another shell, thereby inheriting access to any commands that the child shell allows.

Tip
The default shell for a user is located in the /etc/passwd file.

Examples of Security Measures

Case 1: Maximum Security

One UNIX account with the following characteristics is used for all NetUI telnet sessions:

- No write permissions to home directory. Temporary files are written elsewhere.
- \$PATH, \$DLC, and \$PROPATH environment variables are set in .profile and inaccessible to the user.
- Start-up command and/or scripts run from .profile.
- Telnet disconnects immediately after the user exits the MFG/PRO session.

Use the following instructions to set up Case 1:

- 1 Create the unique NetUI account for log in to UNIX through telnet.
- 2 Make the default shell for this account the restricted shell.
- 3 Remove all write permissions for this user in their home directory. Use the -T option in the remote script to specify an alternate temporary directory.

- 4 Set up the `.profile` to set minimal environment variables.
- 5 Set up the `.profile` to run the script automatically.

Example `.profile` for Case 1:

```
/*Sample .profile for NetUI maintenance session, single NetUI login*/
#set default for error (STOP) condition handling
stty intr ^C

#set environment variables
PATH=/dlc91:/dlc91/bin
DLC=${DLC - /dlc91}
PROEXE=${PROEXE - $DLC/bin/_progres}
export PATH DLC PROEXE

#Autorun remote script for NetUI Access and automatically exit
exec remote.script
exit
```

Case 2: Less Security

Users have their own unique log in and password, but run the restricted shell by default:

- Write permission to directory is possible, but not necessary.
- `$PATH`, `$DLC`, and `$PROPATH` environment variables are set in `.profile` and inaccessible to the user.
- Users run a subset of UNIX commands, which you add to `/usr/rbin`.
- Users can run MFG/PRO manually from command line or script.

Use the following instructions to set up Case 2.

- 1 Create or modify accounts for NetUI users of MFG/PRO maintenance programs by changing their default shell in the `/etc/passwd` file to the restricted shell.
- 2 Create the directory `/usr/rbin` and copy the UNIX commands necessary for these users. Make the `/usr/bin` directory read-only so users cannot change path variables.
- 3 Set up a special `.profile` for the NetUI maintenance program users.
- 4 Set the minimal environment variables, remembering to include `/usr/rbin`.

- 5 Copy the NetUI telnet connection script to each user’s home directory with read-only access.
- 6 Put any other necessary read-only script files in the home directory.

Example .profile for Case 2:

```
*Sample .profile for NetUI maintenance session, for individual logins
remote.script should be in home directory; executable by NetUI*/

#set default for error (STOP) condition handling
stty intr ^C

#set environment variables
PATH=/dlc91:/dlc91/bin:/usr/rbin#don't forget /rbin directory
DLC=${DLC - /dlc91}
PROEXE=${PROEXE - $DLC/bin/_progres}
export PATH DLC PROEXE
```

Configuring Telnet Options in MFG/PRO

To use NetUI telnet programs, you must configure telnet settings in User Option Telnet Maintenance (36.20.10.3).

mgusrmt.p b+36.20.10.3 User Option Telnet Maintenance08/11/00

User ID:

Telnet Options

Host:
Host O/S: UNIX
Port:
Image:

Script Timeout:
Idle Timeout:

Script Lines

Sequence:

Script Pattern:
Script Value:
Script Status:

Telnet Connections

Maximum:

Min Telnet Connecti:

F1=Go 2=Help 3=Ins 4=End 6=Menu 7=Recall 8=Clear 9=Prev 10=Next

Fig. 13.1
User Option Telnet Maintenance (36.20.10.3)

This program lets you define unique settings for individual users or enter an asterisk (*) in the User ID field to create a generic record of settings. This generic record is automatically associated with every user in the system that does not have a user-specific record. These instructions use the generic record.

Configure Telnet Server Settings

Use the following instructions to configure the telnet server settings:

- 1 Start an MFG/PRO session and access User Option Telnet Maintenance (36.20.10.3).
- 2 In the User ID field, enter * to specify the generic record and press Go.
- 3 Use the following table to complete the Telnet Options fields in User Option Telnet Maintenance.

mgusrmt.p b+		36.20.10.3 User Option Telnet Maintenance		08/11/00	
User ID: *					
Telnet Options					
Host:		Script Timeout: 240			
Host O/S: <u>UNIX</u>		Idle Timeout: 240			
Port: <u>23</u>					
Image:					

Field	Description
Host	Enter the machine name or IP address of the telnet server. The NetUI Java applet uses this information to establish the telnet connection.
Host O/S	Enter UNIX. Important If you set this field to NT for a UNIX telnet server, the MFG/PRO maintenance program started by the NetUI user displays with the first field skipped as if the user had pressed Enter. If the maintenance program uses the first field to indicate an existing or new record, such as Sales Order Maintenance (7.1.1), new records can be created inadvertently each time the program is accessed using the NetUI.
Port	Enter the port number for the telnet server.
Image	Optionally, enter the name of a .gif image file to use as the menu icon for telnet programs. The image file must be in the graphics interchange format (extension .gif). When you enter the name of the file in this field, do not include the .gif extension. The image file must be located in the images subdirectory below the java subdirectory, which is in the multinet directory in the Web server's documents directory. The image size should be 24 by 24 pixels. If you leave this field blank, the standard QAD-supplied icon is used.

Field	Description
Script Timeout	Enter the number of seconds (1-999) the system will wait for the telnet log-in script to execute. If this value is exceeded, a time-out message displays and the session closes.
Idle Timeout	Enter the number of seconds (1-999) the system will wait after a telnet session was begun for an MFG/PRO program to execute.

4 When you are ready, press Go to access the Script Lines frame.

Configure Telnet Log-In Sequence

To log in to and begin a telnet session on the telnet server, you must provide the NetUI Java applet with the telnet server log-in prompts and responses to these prompts. Taken together the prompts and responses make up the telnet log-in sequence.

You define the telnet log-in sequence in the Script Lines frame in User Option Telnet Maintenance.

Sequence: 1	Script Lines
Script Pattern: login:	
Script Value: netui	
Script Status: logging in	

Overview

Each line in the log-in sequence is stored in the MFG/PRO administration schema as a single chui_det record containing three values: pattern, value, and status. Each of these values is represented by a field in the Script Lines frame.

Table 13.1 provides a general description of the fields in the Script Lines frame.

Table 13.1
Script Lines Fields

Field	Description
Sequence	A number for the script line that indicates the order that the line appears in the overall log-in sequence.
Script Pattern	Enter the prompt generated by the telnet server when a telnet log-in occurs. Important The values you enter in the Script Pattern field must be identical to the prompts the telnet server displays when users attempt to log in.
Script Value	Enter the response to the telnet log-in prompt defined in Script Pattern.
Script Status	Optionally enter a description of the activity that the prompt and response represent. For example, if the prompt is <code>Login:</code> and the response is a user ID, enter <code>Logging In</code> to describe the activity. If an error occurs during the execution of the prompt and response, the description in the Script Status field display in the Java Plug-In Console on the NetUI client. You can use these descriptions as an aid in troubleshooting telnet session issues. Note For more information on the Java Plug-In Console, see “trace.html” on page 218.

Telnet Connection Script

To identify the MFG/PRO database that you want the NetUI telnet session to run against, you need a telnet connection script. On UNIX servers, MFG/UTIL generates telnet connection scripts for each database set for which you are generating scripts.

The telnet connection scripts are located in your MFG/PRO database server administration directory. These scripts use the following naming format: `qma.DBSetName` where *DBSetName* is the name of the database to which the script connects. For example, the telnet connection script for the Production database set is `qma.Production`.

In general the connection script performs the following functions:

- Changes to the user’s home directory
- Provides connection parameters for the databases in the set

You can modify the telnet connection script to fit your environment.

You must specify a telnet connection script somewhere in your log-in sequence to connect the telnet session to the MFG/PRO databases.

Define the Log-In Sequence

The following instructions are for an example telnet log-in sequence. You must configure your log-in sequence specifically for your environment.

Review the following instructions to become familiar with the configuration process. Then create your log-in sequence based on your environment.

- 1 In the Sequence field, enter 1 and press Enter. Then use the following table to complete the Script Pattern, Script Value, and Script Status fields. When you are ready, press Go to save your entries.

Field	Description
Script Pattern	Enter the first prompt the server displays when you attempt to log in to a telnet session. Example login:
Script Value	Enter the response you want the NetUI Java applet to supply at this prompt; for example, a user ID.
Script Status	Enter a description of the activity this prompt and response represent. Example Logging In

- 2 In the Sequence field, enter 2 and press Enter. Then use the following table to complete the Script Pattern, Script Value, and Script Status fields. When you are ready, press Go to save your entries.

Field	Description
Script Pattern	Enter the second prompt the server displays when you attempt to log in to a telnet session. Example password:
Script Value	Enter the response you want the NetUI Java applet to supply at this prompt; for example, the password assigned to the user ID you specified in step 1.
Script Status	Enter a description of the activity this prompt and response represent. Example Supply Password

- 3 In the Sequence field, enter 3 and press Enter. Then use the following table to complete the Script Pattern, Script Value, and Script Status fields. When you are ready, press Go to save your entries.

Field	Description
Script Pattern	Enter the third prompt the server displays when you attempt to log in to a telnet session. Example \$
Script Value	Enter the response you want the NetUI Java applet to supply at this prompt; for example, change directories to the MFG/PRO database server administration directory. Example <code>cd /qad/90/</code> Note Depending on how you set up your telnet environment, the response you enter varies. For example, for maximum security you might enter a command to change to a restricted shell before changing to the directory containing the telnet script. See “Configuring the Telnet Environment” on page 166.
Script Status	Enter a description of the activity this prompt and response represent. Example Accessing DBServer Dir

- 4 In the Sequence field, enter 4 and press Enter. Then use the following table to complete the Script Pattern, Script Value, and Script Status fields. When you are ready, press Go to save your entries.

Field	Description
Script Pattern	Enter the fourth prompt the server displays when you attempt to log in to a telnet session. Example \$
Script Value	Enter the response you want the NetUI Java client to supply; for example, launch the telnet connection script. Example <code>./qma.Production</code>
Script Status	Enter a description of the activity this prompt and response represent. Example Launching Production telnet connect script

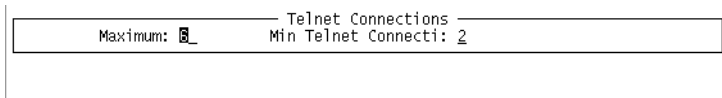
Verify the Log-In Sequence

To verify the log-in sequence, from a remote machine attempt to log into the telnet server using the log-in sequence you configured in MFG/PRO. You should receive a blank telnet screen after the telnet connection script is launched.

Configure Telnet Connection Settings

Use the following instructions to configure the telnet connection settings. These settings define the maximum and minimum number of telnet connections available to the associated user.

- 1 Once you configure and verify your telnet log-in sequence, access the Telnet Connections frame.



The screenshot shows a window titled "Telnet Connections". Inside the window, there are two labels: "Maximum:" followed by a text input field containing the number "8", and "Min Telnet Connecti:" followed by a text input field containing the number "2".

- 2 Use the following table to complete the Telnet Connections fields.

Field	Description
Maximum	Specify the maximum number of concurrent telnet connections this user can have open per session. This setting affects telnet maintenance programs only; it does not impact the number of browses and reports that can be run concurrently. Valid values are: • Unlimited: The associated user can have an unlimited number of concurrent telnet connections open. • Disabled: The associated user cannot have any telnet connections open and therefore cannot access any telnet maintenance programs in the NetUI. • Any numerical value between 1 and 99. Note Until you create a log-in script to initiate telnet sessions for this user, you cannot set this field to any value other than Disabled.
Minimum	Enter a value between one and nine to indicate the minimum number of telnet connections to be available to the associated user at all times. Set this value to the number of maintenance programs the user is likely to run simultaneously. Specifying a value here can dramatically reduce the wait time for these programs to display in the NetUI. However, setting this value too high depletes system resources.

Configure Telnet on Windows NT

This chapter provides instructions for loading the Georgia SoftWorks Windows NT Telnet Server (GSNTS) and configuring the NetUI environment to use a Windows NT telnet server.

Configuration Overview **178**

Installing the Telnet Server **179**

Configuring the Telnet Environment **181**

Configuring Telnet Options in MFG/PRO **187**

Configuration Overview

NetUI access to maintenance and transaction programs is enabled through a telnet interface. This requires you to configure a telnet server for the NetUI environment. Using the Georgia SoftWorks Windows NT Telnet Server, you can implement the NetUI telnet server on a Windows NT machine.

To configure a Windows NT telnet server, you must perform the following major tasks:

- Install the Georgia SoftWorks telnet server
- Configure the telnet environment
- Configure the telnet settings in MFG/PRO

Download Updated Software

Although QAD provides the Georgia SoftWorks Windows NT Telnet Server on the NetUI media, you should download the latest version of the software to obtain the most recent patches and functionality.

You can download the telnet server software from the Georgia SoftWorks Web site:

<http://www.georgiasoftworks.com/>

Prerequisite Components

Before you install the Georgia SoftWorks Windows NT Telnet Server (GSNTS) files from your NetUI media, be sure the following components are installed on the same machine that you want use as the Windows NT telnet server.

- An MFG/PRO character client. This ensures that the MFG/PRO character client code required for telnet sessions is located on the telnet server. The character client start-up shortcuts also provide the MFG/PRO parameter files used to start a telnet session. Although these files are not required and can be created manually, the following instructions assume that they exist.

- The following Progress client products:
 - Query
 - Network Client
- Optionally, QAD *highly recommends* that you obtain the Windows NT Resource Kit when implementing the NetUI telnet server on a Windows NT server. The kit provides utility programs, `Pulist.exe` and `Kill.exe`, that let you monitor and remove `_progress.exe` processes from the telnet server without shutting down the server.

Installing the Telnet Server

Use the following instructions to install and register the GSNTS on your Windows NT server.

Install the Software

- 1 Insert the NetUI CD-ROM in the CD-ROM drive.
- 2 Run the setup program:
`CD-ROMDriveName:\nt\GeorgiaSoftworks\setup.exe`
- 3 At the Welcome window, click Continue.
- 4 Select Full Install and click Continue.
- 5 Enter the GSNTS installation directory and choose Continue. Make sure to use the default `\gs_tnet` installation directory. You can place this directory on any local drive that can be accessed through the network.

Note If you do not install the GSNTS on the system drive—in most cases the C: drive—make sure that you have full access to the drive and to the GSNTS installation directory and subdirectories.
- 6 When GSNTS has been successfully installed, the Setup Succeeded window displays and GSNTS is automatically started.
- 7 Double-click on the Registration icon in the GSNTS program group.

Register the Software

To register the GSNTS, you must provide a product ID to Georgia SoftWorks so that a serial number can be generated for your product. This serial number is necessary to complete the GSNTS registration. Use the following instructions to register GSNTS.

Note Your serial number is based upon the product ID, which combines elements of the Windows NT server's hardware and software components. If these components are changed or upgraded, your GSNTS registration may no longer operate. If this occurs, contact Georgia SoftWorks about generating a new product ID and serial number.

- 1** In the Georgia SoftWorks Product Registration window, enter your customer information.

The information that displays in the Product Information section of the product registration window is automatically generated by the system.
- 2** Choose the Save to File button to save this information to a file, or choose print. Then, follow the appropriate step to supply the product ID to Georgia SoftWorks.
 - a** If you printed your registration information, FAX it to Georgia SoftWorks at 706-265-1020. When your information is received, a serial number is generated for your product and is sent to you by FAX.
 - b** If you saved your registration information to a file, e-mail the file to Georgia SoftWorks at the following address:
`registration@georgiasoftworks.com`
When your information is received, a serial number is generated for your product and is sent to you by e-mail.
- 3** When you receive your serial number, enter it in the appropriate field in the registration information section and click Register.

Configuring the Telnet Environment

Use the following instructions to set up the Windows NT telnet environment. To configure the telnet environment, you must perform the following activities:

- “Create a Telnet Directory” on page 181
- “Create a General Start-Up File” on page 182
- “Create User-Specific Start-Up Files” on page 184
- “Set Up Local User Accounts” on page 186

Important The following instructions assume you have installed an MFG/PRO character client on the Windows NT telnet server.

▶ See “Prerequisite Components” on page 178.

Create a Telnet Directory

Use the following instructions to create a `telnet` directory in which you can store user- and group-specific telnet start-up files:

- 1 Locate your MFG/PRO character client working directory. This directory was created when you set up the MFG/PRO character client on the Windows NT telnet server. For instructions, see the Character Client Setup chapter in the MFG/PRO 9.0 *Installation Guide* — *PROGRESS on Windows NT*.
- 2 Using File Manager or Windows NT Explorer, create a `telnet` subdirectory in your character client working directory.

In the following example, *CharClientWorkDir* refers to the character client working directory:

```
c:\CharClientWorkDir\telnet
```

Create a General Start-Up File

When a user connects to the telnet host by accessing a NetUI telnet program, the GSNTS general start-up file automatically executes. This file performs the following functions:

- Starts a GSNTS session
- Determines which items the user can access on the host computer—whether MFG/PRO maintenance programs only or any application or folder on the host

The two types of GSNTS general start-up files are described in Table 14.1.

Table 14.1
GSNTS Start-Up
Files

File	Description
k_start.bat	When this file is used to start the telnet session, the host machine's command prompt displays on the client terminal after a user exits the NetUI telnet program. From this prompt, the user can access directories and applications other than MFG/PRO on the host. They can also set environment variables, establish network connections, and perform a variety of other system administration tasks.
c_start.bat	When this file is used to start the telnet session, the NetUI client's telnet session automatically terminates when the user exits MFG/PRO. This means that users cannot access non-MFG/PRO programs or other directories on the telnet host from the NetUI.

In general, you should use the `c_start.bat` start-up file for most NetUI users. For those users who require administrative access to the telnet host use the `k_start.bat` start-up file.

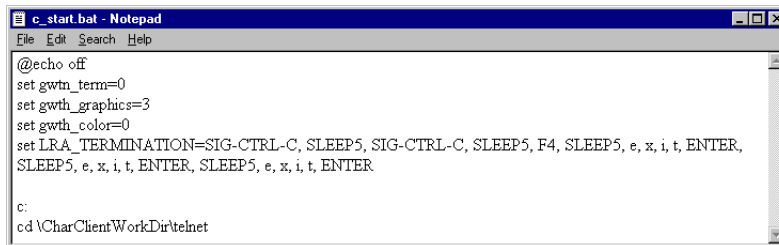
Use the following instructions to set up telnet accessing using `c_start.bat`:

- 1 Open a new document in a text editor such as Notepad.
 - 2 To create connection and termination parameter entries, enter the following:

```
@echo off
set gwtn_term=0
set gwtn_graphics=3
set gwtn_color=0
set LRA_TERMINATION=SIG-CTRL-C, SLEEP5, SIG-CTRL-C, SLEEP5,
F4, SLEEP5, e, x, i, t, ENTER, SLEEP5, e, x, i, t, ENTER, SLEEP5,
e, x, i, t, ENTER
```
 - 3 Create an entry designating the drive where your MFG/PRO Windows character client files are installed; for example, C:.
 - 4 Create an entry to change directories to your telnet subdirectory:

```
cd \CharClientWorkDir\telnet
```
 - 5 Save this file as `c_start.bat` in the `scripts` subdirectory below the GSNTS installation directory.
- The `c_start.bat` file shown in the following example was saved in `c:\gs_tnet\scripts`.

See step 2 on page 181.



```
c_start.bat - Notepad
File Edit Search Help
@echo off
set gwtn_term=0
set gwtn_graphics=3
set gwtn_color=0
set LRA_TERMINATION=SIG-CTRL-C, SLEEP5, SIG-CTRL-C, SLEEP5, F4, SLEEP5, e, x, i, t, ENTER,
SLEEP5, e, x, i, t, ENTER, SLEEP5, e, x, i, t, ENTER
c:
cd \CharClientWorkDir\telnet
```

Create User-Specific Start-Up Files

The following steps provide instructions for creating user- and group-specific start-up files. Each file specifies:

- The specific connection parameters for a user or group
- The databases to which that user or group can connect

▶ See “Configure the Telnet Log-In Sequence” on page 189.

When a user connects to the telnet host, the system determines which user- or group-specific start-up file to use based on parameters you set up in User Option Telnet Maintenance (36.20.10.3).

- 1 In the `telnet` directory, create subdirectories for each of the users or groups for which you want to create start-up files; for example, `telnet\user1`.

Note Multiple MFG/PRO user IDs can reference the same start-up file.

- 2 Open a new document in a text editor such as Notepad.

- 3 Add the following `set` lines to the file.

```
set DLC=
set MFGPRO=
set INI=
set PF=
set START_MFG=%DLC%\bin\_progres -pf %PF% -ini %INI%
-p %MFGPRO%\mfgwb01a.p
```

- 4 Using the following table, provide environment variables for each `set` line.

set Line	Description
set DLC=	Enter the path to the Progress directory; for example: C:\dlc83
set MFGPRO=	Enter the path to the directory containing the MFG/PRO character client files. This is the directory where you would find the <code>mfgwb01a.r</code> file; for example: C:\mfgntsrv\

set Line	Description
set INI=	Enter the path to the MFG/PRO character client initialization file. This file is located in the character client working directory; for example: <code>C:\uscharcli\progress.chr</code>
set PF=	Enter the path to the MFG/PRO start-up parameter file. This file is located in the character client working directory; for example: <code>C:\uscharcli\Producti.pf</code>

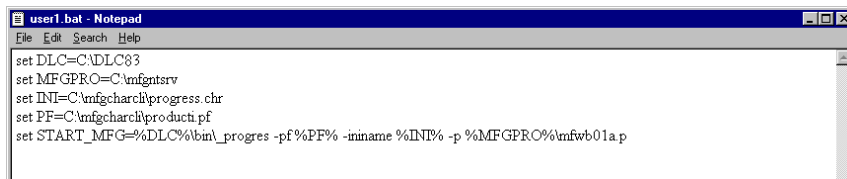
5 Save the file as the .bat file for the applicable user or group. For example, `user1.bat`.

6 Place this file in the appropriate user- or group-specific directory.

`\CharClientWorkDir\telnet\user1\user1.bat`

See step 1 on page 184.

The following figure shows the `user1.bat` file created in the previous steps. The key variables in the final command line are discussed below.



```

user1.bat - Notepad
File Edit Search Help
set DLC=C:\DLC83
set MFGPRO=C:\mfgntsrv
set INI=C:\mfgcharcli\progress.chr
set PF=C:\mfgcharcli\producti.pf
set START_MFG=%DLC%\bin\progres -pf %PF% -iname %INI% -p %MFGPRO%\mfwb01a.p

```

- The first variable is the full path to the Progress character client executable. This variable should not be modified unless you move the Progress software.
- The `-pf` variable is the full path to the .pf file that specifies the MFG/PRO databases to which the telnet session connects.
- The `-iname` variable is the full path to the MFG/PRO character client's initialization file.
- The `-p` variable indicates the MFG/PRO NetUI start-up program.

Set Up Local User Accounts

Before NetUI users can access the telnet server, they must have local accounts set up on the Windows NT server. Follow these steps to define local accounts for individual users and groups:

- 1 From the system Start menu, open Programs\Administrative Tools(Common)\UserManager.
- 2 From the User menu in the User Manager window, choose Select Domain.
- 3 In the Domain field, enter the name of the Windows NT telnet server and press OK. All existing local accounts on the server display.
- 4 From the User menu, select New User.
- 5 Use fields in the New User window to set up a local user account. Be sure to specify the following:

Field	Value
Username:	Enter a user or group ID.
Password:	Enter the password for this user or group.
Confirm Password:	Reenter the user or group password.

Note The user IDs and passwords you define here must be identical to the user IDs and passwords you enter in the Script Lines portion of User Option Telnet Maintenance (36.20.10.3).

- 6 Press Add to save the local account.

Use the following table to record the user IDs and passwords you set up. You can use this table as a reference when entering script lines in User Option Telnet Maintenance.

User ID	Password

See “Configuring Telnet Options in MFG/PRO” on page 187.

Table 14.2
Local Windows NT
Server Users

Configuring Telnet Options in MFG/PRO

To access MFG/PRO maintenance and transaction programs using the NetUI's telnet interface, you must configure telnet settings in User Option Telnet Maintenance (36.20.10.3).

This program lets you define unique settings for individual users or enter an asterisk (*) in the User ID field to create a generic record of settings. This generic record is automatically associated with every user in the system that does not have a user-specific record. These instructions use the generic record.

Configure Telnet Server Settings

Use the following instructions to configure the telnet server settings:

- 1 Start an MFG/PRO session and access User Option Telnet Maintenance (36.20.10.3).

User Option Telnet Maintenance

User Menu Edit Queue Options Help

DB Change Dump/Load Trans Mgr EMT Trk Rpt

User ID: *

Telnet Options

Host: crsu04 Script Timeout: 120
Host O/S: NT Idle Timeout: 240
Port: 23
Image:

Script Lines

Sequence: 1

Script Pattern: login
Script Value: netui
Script Status: logging in

Telnet Connections

Maximum: 3 Minimum: 1

- 2 In the User ID field, enter * to specify the generic record and press Go.

- 3 Use the following table to complete the Telnet Options fields in User Option Telnet Maintenance.

Field	Description
Host	Enter the machine name or IP address of the telnet server. The NetUI Java applet uses this information to establish the telnet connection.
Host O/S	Enter NT. Important If you set this field to UNIX for a Windows NT telnet server, a blank character displays in the initial frame of an MFG/PRO maintenance program. When the NetUI user presses Enter, the program displays with characters outlining the screen frames.
Port	Enter the port number for the telnet server.
Image	Optionally, enter the name of an image file to use as the menu icon for telnet programs. The image file must be in the graphics interchange format (extension .gif). When you enter the name of the file in this field, do not include the .gif extension. The image file must be located in the <code>images</code> subdirectory below the <code>java</code> subdirectory, which is in the <code>multinet</code> directory in the Web server's document directory. The image size should be 24 by 24 pixels. If you leave this field blank, the standard QAD-supplied icon is used.
Script Timeout	Enter the number of seconds (1-999) the system will wait for the telnet log-in script to execute. If this value is exceeded, a time-out message displays and the session closes.
Idle Timeout	Enter the number of seconds (1-999) the system will wait after a telnet session is begun for an MFG/PRO program to execute.

- 4 When you are ready, press Go to access the Script Lines frame.

Configure the Telnet Log-In Sequence

To log in to and begin a telnet session on the telnet server, you must provide the NetUI Java applet with the telnet server log-in prompts and responses to these prompts. Taken together the prompts and responses make up the telnet log-in sequence.

You define the telnet log-in sequence in the Script Lines frame in User Option Telnet Maintenance.

Script Lines

Sequence: 1

Script Pattern: login:

Script Value: netui

Script Status: logging in

Overview

Each line in the log-in sequence is stored in the MFG/PRO administration schema as a single chui_det record containing three values: pattern, value, and status. Each of these values is represented by a field in the Script Lines frame.

Table 14.3 provides a general description of the fields in the Script Lines frame.

Field	Description
Sequence	A number for the script line that indicates the order that the line appears in the overall log-in sequence.
Script Pattern	Enter the prompt generated by the telnet server when a telnet log-in occurs. Important The values you enter in the Script Pattern field must be identical to the prompts the telnet server displays when users attempt to log in.

Table 14.3
Script Lines Fields

Field	Description
Script Value	Enter the response to the telnet log-in prompt defined in Script Pattern.
Script Status	Optionally enter a description of the activity that the prompt and response represent. For example, if the prompt is Login: and the response is a user ID, enter Logging In to describe the activity. If an error occurs during the execution of the prompt and response, the description in the Script Status field display in the Java Plug-In Control Panel on the NetUI client. You can use these descriptions as an aid in troubleshooting telnet session issues. Note For more information on the Java Plug-In Console, see “trace.html” on page 218.

Define the Log-In Sequence

Use the following instructions to define the log-in sequence using the Script Lines fields in User Option Telnet Maintenance:

- 1 In the Sequence field, enter 1 and press Enter. Then use the following table to complete the Script Pattern, Script Value, and Script Status fields. When you are ready, press Go to save your entries.

Field	Description
Script Pattern	Enter: login:
Script Value	Enter a user ID; for example: user1. Note This ID must correspond to a local user account on the Windows NT server. Use Table 14.2 on page 186 as a reference.
Script Status	Enter a description of the activity this prompt and response represent; for example: Logging In.

- 2 In the Sequence field, enter 2 and press Enter. Then use the following table to complete the Script Pattern, Script Value, and Script Status fields. When you are ready, press Go to save your entries.

Field	Description
Script Pattern	Enter: password:
Script Value	Enter the password assigned to the user ID specified in step 1.
Script Status	Enter a description of the activity this prompt and response represent; for example: Supply Password.

- 3 In the Sequence field, enter 3 and press Enter. Then use the following table to complete the Script Pattern, Script Value, and Script Status fields. When you are ready, press Go to save your entries.

Field	Description
Script Pattern	Enter: domain:
Script Value	Enter your Windows NT telnet server's domain.
Script Status	Enter a description of the activity this prompt and response represent; for example: Supply Domain.

- 4 In the Sequence field, enter 4 and press Enter. Then use the following table to complete the Script Pattern, Script Value, and Script Status fields. When you are ready, press Go to save your entries.

Field	Description
Script Pattern	Enter the full directory path to the <code>telnet</code> subdirectory followed by a right angle bracket (>). Note See step 2 on page 181 for the location of the telnet subdirectory.
Script Value	Enter the user- or group-specific directory and start-up script for the system to use to start telnet sessions for this user ID. Note See "Create User-Specific Start-Up Files" on page 184 for reference.
Script Status	Enter a description of the activity this prompt and response represent; for example: Starting GTNTS as user1.

The information in the following figure is based on the examples provided in previous sections. Your information may be different.

- 5 In the Sequence field, enter 5 and press Enter. Then use the following table to complete the Script Pattern, Script Value, and Script Status fields. When you are ready, press Go to save your entries.

Field	Enter
Script Pattern	Enter the full directory path to the <code>telnet</code> subdirectory (see step 2 on page 181) followed by a right angle bracket (<code>></code>).
Script Value	Enter the start MFG/PRO system variable: %start_mfg%. Note You set up this variable in step 3 on page 184.
Script Status	Enter a description of activity this prompt and response represent; for example: Launching Progress character client exe.

Verify the Log-In Sequence

To verify the log-in sequence, from a remote machine attempt to log into the telnet server using the log-in sequence you configured in MFG/PRO. You should receive a blank telnet screen after the telnet connection script is launched.

Configure Telnet Connection Settings

Use the following instructions to configure the telnet connection settings. These settings define the maximum and minimum number of telnet connections available to the associated user.

- 1 Once you configure and verify your telnet log-in sequence, access the Telnet Connections frame.

2 Use the following table to complete the Telnet Connections fields.

Field	Description
Maximum	Specify the maximum number of concurrent telnet connections this user can have open per session. This setting affects telnet maintenance programs only; it does not impact the number of browses and reports that can be run concurrently. Valid values are: • Unlimited: The associated user can have an unlimited number of concurrent telnet connections open. • Disabled: The associated user cannot have any telnet connections open and therefore cannot access any telnet maintenance programs in the NetUI. • Any numerical value between 1 and 99. Note Until you create a log-in script to initiate telnet sessions for this user, you cannot set this field to any value other than Disabled.
Minimum	Enter a value between one and nine to indicate the minimum number of telnet connections to be available to the associated user at all times. Set this value to the number of maintenance programs the user is likely to run simultaneously. Specifying a value here can dramatically reduce the wait time for these programs to display in the NetUI. However, setting this value too high depletes system resources.

CHAPTER 15

Configure NetUI Clients

Use this chapter to configure NetUI clients.

Configuration Summary **196**

Installing Files Before Service Pack 5 **196**

Installing Files After Service Pack 5 **198**

Configuring Optional User Settings **204**

NetUI Output Administration **210**

The screenshot shows a configuration window for a NetUI client. The title bar reads 'Routing Maintenance (Main Screen)'. The window contains a table with the following data:

Routing Code:	10-15000	NONAD (75) CDR IN:
Operation:	20	
Standard Operation		
Work Center	1030	INSPECTION, ALL SITE
Machine		
Description	INSPEC PER PROX-005	
Machines per Op	1	Milestone
Overlap Units	1	
Queue Time	1.0	
Wait Time	0.0	
Setup Time	0.0	
Ready for Production	0.0	

Configuration Summary

The following major tasks are required to configure NetUI clients:

- Install files on each client machine.
- Configure optional user parameters.

The exact steps in the client setup vary depending on your service pack level. To install the NetUI clients, complete the procedure appropriate for your service pack level on each client machine.

Important If you plan to use eB Desktop with Service Pack 5 or higher, you do not need to perform this step. The eB Desktop client install replaces this one.

For Windows NT and Windows 2000 clients, users must be logged in with administrator privileges to complete these installation steps.

Installing Files Before Service Pack 5

An HTML page created during the NetUI media load includes links to the files required to set up a client machine to use the NetUI. That page also includes detailed instructions for downloading and installing each file. The basic procedure is as follows.

Important Before beginning, make sure that your Web server is running.

▶ For UNIX Web servers, see “Setting Up the MIME-Type” on page 54.

- 1 Before you begin downloading the client files from the Web server, you must decide the type of file you want to download. The NetUI software includes client setup HTML files that contain links to both executable (extension .exe) and WinZip (extension .zip) files. Depending on your Web server’s operating system, you should choose the type of client setup files you want to download.

Note QAD recommends that you use the .zip files because they function properly on both UNIX and Windows NT Web servers without making special modifications to the server’s MIME-type settings.

- If you want to download .zip files, use the `client_setup_zip.html` file in the next step.

- If you want to download .exe files, use the `client_setup.exe.html` file in the next step.
- 2 From the client, launch the Web browser and access the appropriate URL for the type of client files you want to download.
 - For .zip files, access the following URL:
`http://hostname/multinet/client_files/client_setup_zip.html`
 - For .exe files, access the following URL:
`http://hostname/multinet/client_files/client_setup_exe.html`
 - 3 Using the instructions on the client setup page, download and install the following files:
 - Java Plug-In (`plugin-1101-win32.exe`)
 - QAD signature file (`identitydb.obj`)
 - Java Runtime Environment (`JRE11.exe`)
 - Windows 95/98 fonts (`fonts.exe`), if required
 - 4 Once you complete the client setup instructions, close the Web browser on the client machine.
 - 5 To run MFG/PRO reports, the Java Runtime Environment (JRE) requires access to sufficient memory on the client machine. The default memory setting for the JRE that you downloaded to the client machine is in many cases insufficient. Use the following steps to increase the amount of memory available to the JRE.
 - a From the Windows Start button on the NetUI client machine, open Programs|Java Plug-in Control Panel.
 - b Click the Basic tab and access the Java Run Time Parameters field.
 - c Increase the memory allocation for the JRE to either 32 or 64 MB by entering the memory allocation after the -mx prefix in the Java Run Time Parameters field. QAD recommends you increase the memory to 64 MB.

- 6 To start the NetUI for the first time, restart the Web browser and access the client setup page again. Click the NetUI access link at the bottom of the client setup page.
- 7 Create a bookmark for this URL so you can access it again after you close your browser.

Installing Files After Service Pack 5

Important Before beginning, make sure that your Web server is running.

To run the NetUI after Service Pack 5 is installed, clients must have the correct version of the JRE installed, and the JRE must be tailored for NetUI requirements.

The client installation occurs in two major steps:

- Complete the install of JRE 1.3.
- Complete the NetUI setup sequence.

Important You should uninstall earlier versions of the Java Plug-In on the client machines before proceeding with this installation.

If your client machines already have a version of JRE 1.3 installed, you do not need to replace it with the version on the NetUI CD. However, if you have a non-English environment, make sure you have installed the international version. This can be identified by the presence of the `i18n.jar` file in the `lib` subdirectory of the JRE installation directory.

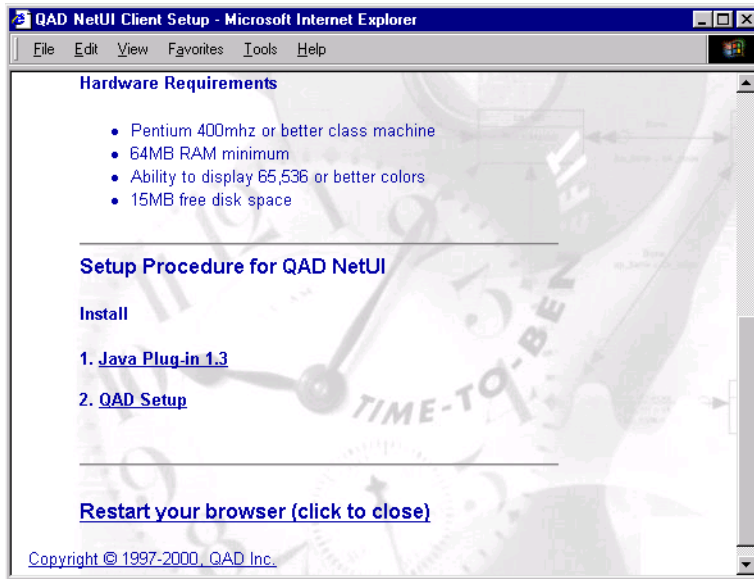
The client installation script does not copy the `NetUI.jar` files to the client. This is managed automatically by JRE 1.3. Whenever a newer `.jar` file exists on the Web server, it is downloaded before the Java applet runs. This ensures that the client is always running the most up-to-date code.

Install JRE 1.3

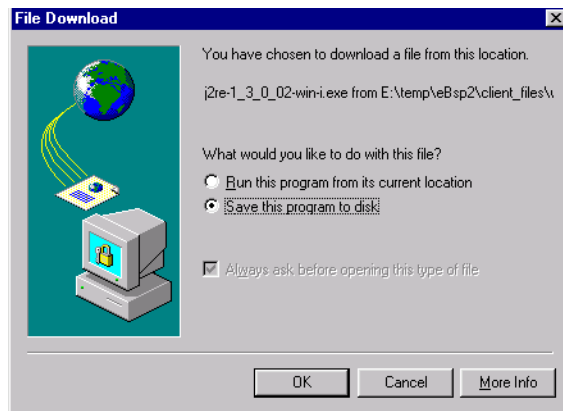
- 1 From the client, launch the Web browser, go to the NetUI Web server, and access the `client13_setup.html` file in the `client_files` subdirectory below the `multinet` directory in the Web server's document directory.

`http://HostName/multinet/client_files/client13_setup.html`

- 2 When the QAD NetUI Client Setup window displays, read the NetUI client requirements and verify that the client machine meets them.
- 3 Read the instructions in the Setup Procedure for QAD NetUI section. If you have not previously installed JRE 1.3, click step 1.



- 4 The following screen displays.



You can choose either option. However, if you choose to save the file to disk before running it, you must find it in the file system before continuing with the next step.

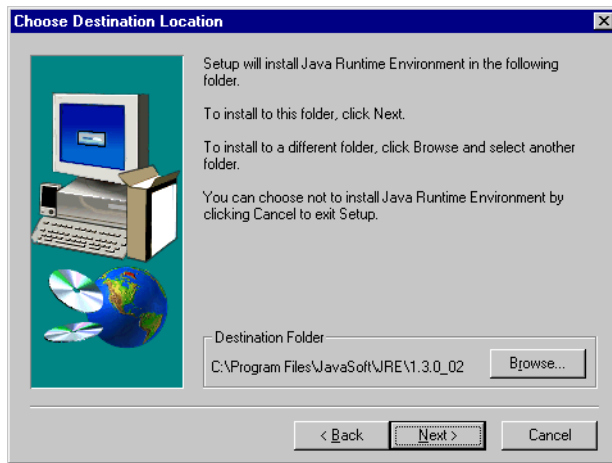
- 5 If you chose to run the install program in the previous step or after double-clicking it to run it from the file system, one or two security warning screens may display. These screens let you agree to accept installations from InstallShield and from Sun. The following figure illustrates the screen associated with Sun Microsystems, Inc.



Note If you have previously installed products from Sun and checked the option to always trust content from Sun Microsystems, Inc., this screen does not display.

Click Yes to install the JRE.

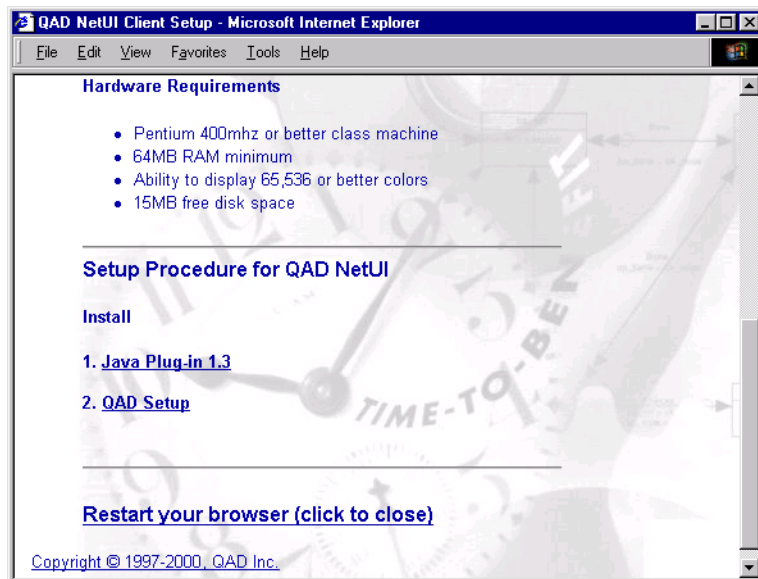
- 6 A number of messages display as the system prepares to install the JRE. When the InstallShield program displays, click Yes to accept the Software License Agreement.
- 7 The Choose Destination Location screen displays. Click Next to install to the default location (recommended). Click Browse to find an alternate location for the installation; then click Next.



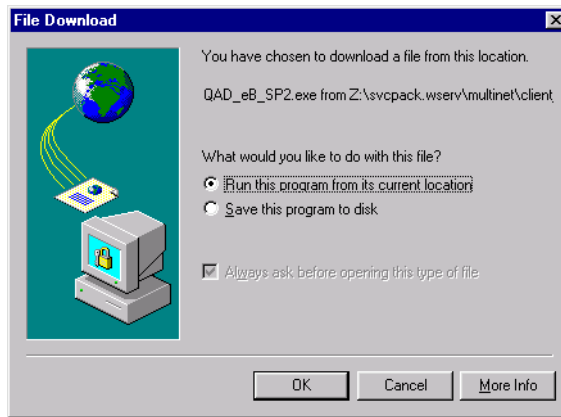
- 8 A number of messages display indicating the progress of the install.
- 9 When the install is complete, your Web browser redispays.

Complete NetUI Setup

- 1 Click the second step in the Setup Procedure for QAD NetUI section of the `client_setup13.html` page.



- 2 The File Download screen displays. Click Run this program from its current location; then click OK.



Note If you receive a security warning, simply click Yes to continue.

- 3 A window displays the progress of the setup program. When it completes, close the browser on the client machine and restart it. You can now access the NetUI.

The first time the client successfully logs in to the NetUI, the required .jar files are downloaded. A message displays indicating that the download is in process.

Client Updates

The following list provides brief descriptions of the updates the client setup process performs and of the files that it installs on the client machine:

- Installs the Java Runtime Environment 1.3.0_02, which includes the Java Plug-In.
- Configures Java security files by copying the qadkeystore file and updating the java.policy file so that users can run .jar files signed by QAD. These files are located in:

C:\Program Files\JavaSoft\JRE\1.3.0_02\lib\security

The previous version of java.policy is saved as:

java.policy.orig

Important If you modified policies previously, you should combine the changes in the two policy files.

- Installs a `font.properties` file with settings needed by the NetUI into:

`C:\Program Files\JavaSoft\JRE\1.3.0_02\lib`

- Installs required fonts into:

`C:\Program Files\JavaSoft\JRE\1.3.0_02\lib\fonts`

- Sets the Java Run Time Parameters field in the Java Plug-in Control Panel to `-mx64m`.

Note If you have problems with this setting, you may need to change it to `-Xmx64m`.

- Creates a cookie that indicates setup is complete.

Updating Fonts for Non-English Languages

The `font.properties` file may need to be updated to access locale-specific fonts, such as the Japanese font, on an English environment platform. A number of alternate `font.properties` files are provided with the JRE, located by default in:

`C:\Program Files\JavaSoft\JRE\1.3.0_02\lib`

These files are identified by locale-specific extensions such as `ko` for Korean, `ja` for Japanese, and `zh` for Chinese.

The simplest way to make these fonts available on a client machine is to back up the original `font.properties` file and rename the locale-specific file to `font.properties`. For example, to access Chinese fonts, rename:

`font.properties.zh`

To:

`font.properties`

For more information about the `font.properties` file and how to modify it in an international environment, review the following document on the Sun Microsystems Java Web site:

<http://java.sun.com/j2se/1.3.0/docs/guide/intl/fontprop.html>

Configuring Optional User Settings

This section discusses optional NetUI settings you can configure after the initial implementation. These settings let you tailor the NetUI for specific users and groups.

◆ URL programs are described in the *Network User Interface Guide*.

The programs used to configure user settings and establish URL links are located on the NetUI Menu (36.20.10). Table 15.1 lists the functions available on this menu.

Table 15.1
NetUI Menu
(36.20.10)

Number	Program	Menu Label	Notes
36.20.10.1	mgusromt.p	User Option Maintenance	Lets you tailor the NetUI for specific users and groups.
36.20.10.2	mgbr062.p	User Option Browse	Lets you browse user option settings.
36.20.10.3	mgusrtmt.p	User Option Telnet Maintenance	This program is discussed in Chapter 13 and Chapter 14.
36.20.10.4	mgusrrp.p	User Option Report	Lets you generate a report of user option settings.
36.20.10.8	mgurlmt.p	Menu URL Maintenance	Lets you define the URLs that display in the User URLs folder in the NetUI Program menu. <i>See the Network User Interface Guide.</i>
36.20.10.9	mgbr220.p	Menu URL Browse	Lets you browse the URLs in the User URLs folder. <i>See the Network User Interface Guide.</i>
36.20.10.11	mgburlmt.p	Browse URL Maintenance	Lets you define the URLs that display in NetUI browses. <i>See the Network User Interface Guide.</i>
36.20.10.12	mgbr221.p	Browse URL Browse	Lets you browse the URLs in the NetUI browses. <i>See the Network User Interface Guide.</i>

Number	Program	Menu Label	Notes
36.20.10.13	mgurlmt.p	Help URL Maintenance	Lets you verify that the URLs are correctly configured for MFG/PRO and NetUI online help. See the <i>Network User Interface Guide</i> .
36.20.10.15	mgssmt.p	Session Master Maintenance	Lets you monitor current NetUI sessions.

Important User IDs must be defined in User Maintenance (36.3.18) before they can be referenced in these programs.

▶ See *MFG/PRO User Guide Volume 11: Manager Functions*.

Defining User Settings

Use User Option Maintenance (36.20.10.1) to define settings that control NetUI features and determine which interface options users can configure in browses, inquiries, and reports.

You can use this program to define unique settings for individual users or enter an asterisk (*) in the User ID field to create a generic record of settings. This generic record is automatically associated with every user in the system that does not have a user-specific record.

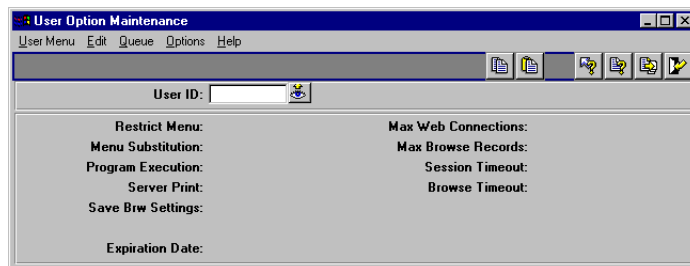
Note The system is installed with a default record that applies to all users. You can change it to accommodate your own requirements.

You should create separate records for individual users only when appropriate settings vary from user to user or User Restriction is Yes in the NetUI Security Control File (36.3.21.24). When User Restriction is Yes, you must use this program to create a record of settings for each user in the system; you cannot create a generic record and apply it to multiple users.

▶ See the *Network User Interface Guide*.

Individual user IDs must be defined in User Maintenance (36.3.18) before you can reference them in User Option Maintenance.

Fig. 15.1
User Option
Maintenance
(36.20.10.1)



Use the following field descriptions to configure the User Option Maintenance settings for your environment.

For more information on the following fields, see the *Network User Interface Guide*.

Restrict Menu. This field determines whether programs to which a user does not have access display on NetUI menus when that user logs in to the NetUI.

You can restrict user access to programs as needed using Menu Password Maintenance (36.3.1) or NetUI security features.

No: All programs, including those to which the user does not have access, display in NetUI menus.

Restricted programs display as disabled—that is, light gray—icons and do not execute when selected. Individual users can turn on the Menu Hiding feature to automatically remove all disabled items from the menu.

Yes: Only programs to which the user has access display in interface menus.

Menu Substitution. Enter No to indicate that the associated user cannot enable menu substitution. Enter Yes to indicate that they can.

Program Execution. Enter No to indicate that the associated user cannot execute programs that are not included on the NetUI menu. Enter Yes to indicate that they can.

Server Print. Enter No to indicate that the associated user cannot print to a server-based (remote) printer. Enter Yes to indicate that they can. If this is No, the remote print option is disabled for the user.

Save Brw Settings. Enter Yes to allow the associated user to save custom browse settings or configurations—for example, column order or column hiding settings.

When you save custom browse features, the associated browse displays the same way the next time you execute it.

Expiration Date. Enter a date in this field to indicate that the associated user cannot access the system after this date. Leave this field blank to indicate that an expiration date does not apply to this user.

Max Web Connections. Specify the maximum number of WebSpeed agent connections that the associated user can use simultaneously. 0 (zero) indicates that no limit applies to this user.

Max Web Connections applies to browse, inquiry, and report programs. It does not apply to telnet maintenance and transaction programs.

Web connections are calculated in the following way:

- One connection is used when the NetUI is initially launched. This connection is also used for the first report, browse, or inquiry program accessed.
- Each additional report, browse, or inquiry accessed while the first program is active counts as an additional connection.

When a program is closed, the associated connection is released.

In an environment with a limited number of available WebSpeed agents, setting Max Web Connections to a high value may result in decreased performance for other users. However, if enough WebSpeed agents have been configured system-wide, you should set this value to the maximum number of applicable NetUI programs the associated user is expected to execute simultaneously.

▶ See “WebSpeed Agent Sizing and Behavior” on page 221.

You can use the following guidelines to specify the initial value in this field. As the access patterns of different NetUI users become clear, you can modify this value to fit your environment.

- For users who typically run short reports or inquiries, assign a lower Max Web Connections value than for users who must simultaneously generate multiple reports or inquiries containing large amounts of data.

▶ See “Agent Usage for Reports and Inquiries” on page 222.

♦ See “Agent Usage for Browsers and Look-Ups” on page 223.

- Since it is difficult to predict in advance whether browses will require WebSpeed agents for short or long time periods, you should plan to have one WebSpeed agent available per open browse for high-priority users.

Max Browse Records. Enter the maximum number of records to display in a browse for this user before notifying the server to retrieve more records. The default value is 0 (zero), which corresponds to a 10,000-record maximum.

This value determines the limit users can set in for the Download Size field in the NetUI client Preferences window. Download size defaults to 50 unless you set this value to less than 50. Individual users can decrease or increase the value. However, increasing the download size to a number greater than the Max Browse Records value has no effect.

Example If you set Max Browse Records to 25 for a user and the user sets the Download Size value in the Preferences window to 100, browse data windows still display only 25 records at a time.

Session Timeout. Specify an amount of time in minutes after which the system automatically logs the associated user out of an inactive NetUI session.

Browse Timeout. Enter the maximum amount of time in minutes during which the associated user can view a state-aware browse without requesting the server to retrieve additional records. When this time period is exceeded, the browse displays a time-out message when the user scrolls to the bottom of the window and does not retrieve any more records. The user must restart the browse if they need to view additional records.

When a user accesses a browse containing more records than the specified download size, the system retrieves the first set of records and then waits for the user to scroll down to the bottom of the browse window before retrieving the next set of records. If the browse is state-aware during this time, other users cannot use the WebSpeed Agent that is waiting to execute this user’s request. Setting a Browse Timeout value prevents WebSpeed Agents from being inaccessible to other users for extended time periods.

This field cannot be left blank.

Note Do not confuse this parameter with the Timeout Minutes parameter in the standard Security Control File (36.3.24). Timeout Minutes specifies when to log users with inactive sessions out of MFG/PRO.

Defining NetUI URLs

Uniform resource locators (URLs) are text strings that indicate the location of an intranet or Internet resource. In NetUI, you can use URLs to access the resources associated with them.

- Links defined in Menu URL Maintenance (36.20.10.8) are accessible from the User URLs folder in the NetUI Program Menu.
- Links defined in Browse URL Maintenance (36.20.10.11) are accessible in the NetUI browse windows.
- Links defined in Help URL Maintenance (36.20.10.13) are accessible from the NetUI Help drop-down menu.

▶ See the *Network User Interface Guide* for information on these programs.

Monitoring User Sessions

Use Session Master Maintenance (36.20.10.15) to view information about users who are currently logged in to MFG/PRO through the NetUI. This information displays in the form of session records, each identified by a unique session ID that is generated by the system. Session records are automatically created when a user successfully logs in to MFG/PRO from the NetUI and are deleted when they log out.

The information displayed in each session record includes user settings established in User Option Maintenance, User Telnet Option Maintenance, and NetUI security programs. Additional information about the session context also displays, including the logical database name, the current entity, GL entity, and base currency.

Fig. 15.2
Session Master
Maintenance
(36.20.10.15)

The screenshot shows a window titled "Session Master Maintenance" with a menu bar (User Menu, Edit, Queue, Options, Help) and a toolbar. The main content area is divided into three sections:

- Session ID:** 963896573205
- User ID:**
- User Name:**

Session Master

Client IP Address: 167.3.8.199	Security Profile:
Session Timeout: 0 Min	Idle Time: ?
Active Web: 0	Active Telnet: 0
Number of Records: 100	Menu Substitution: no

Session Context Detail

Context ID: 1	Logical Database:
GI Entity: 1000	Current Entity: 1000
Sub Length: 0	Base Currency: usd

NetUI Output Administration

When NetUI clients output MFG/PRO reports to the screen, the number of pages sent to the client is determined by the Max Pages setting for the JavaUI printer in Printer Setup Maintenance (36.13.2).

By default, the Max Pages field for the JavaUI printer is set to zero, unlimited. This may cause the NetUI client to run out of memory if too many pages are output at once. You should set the Max Pages field to a reasonable number of pages for your NetUI client machines.

CHAPTER 16

System Administration

This chapter contains NetUI system administration information.

Running Java Code from a Client Machine **212**

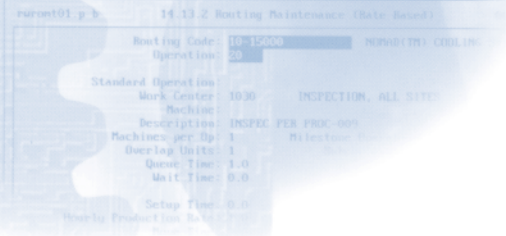
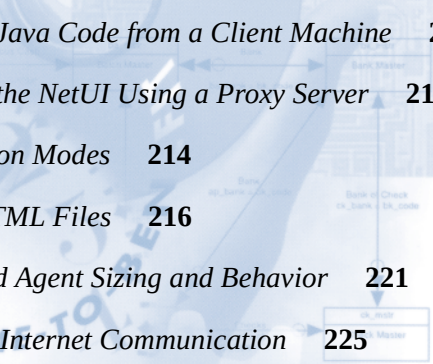
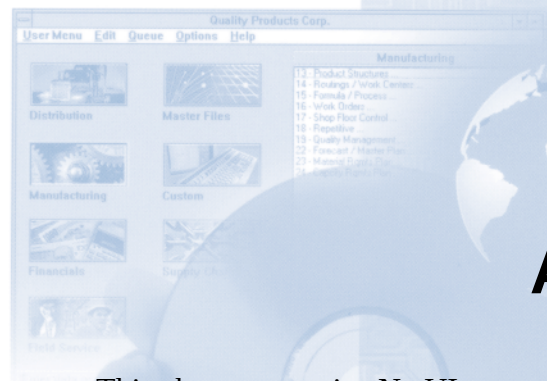
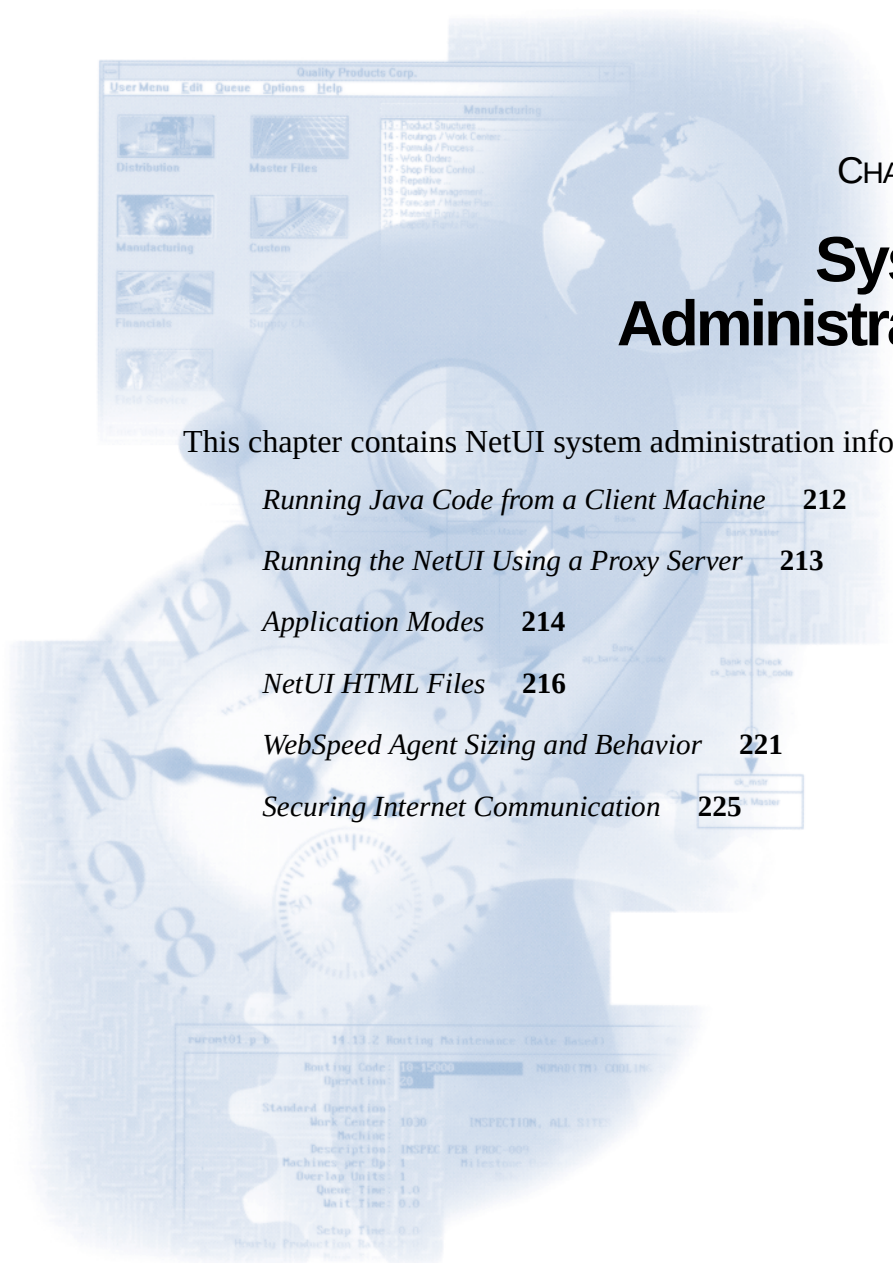
Running the NetUI Using a Proxy Server **213**

Application Modes **214**

NetUI HTML Files **216**

WebSpeed Agent Sizing and Behavior **221**

Securing Internet Communication **225**



14.13.2 Routing Maintenance (Main Screen)	
Routing Code:	10-15000
Operation:	20
Standard Operation	
Work Center	1030
Machines	INSPEC PER PROX-000
Description	INSPEC PER PROX-000
Machines per Op	1
Overlap Units	1
Queue Time	1.0
Wait Time	0.0
Setup Time	0.0
Ready for Production	0.0

Running Java Code from a Client Machine

Note This section only to NetUI users that have not installed Service Pack 5 or higher. Beginning with Service Pack 5, JRE 1.3 is required, which automatically downloads and manages .jar files.

To reduce client start-up time for the NetUI, you can place the NetUI Java code on the client machine or a local network drive. To do this, use the following instructions:

- 1 Copy the NetUI HTML files from the Web server's document directory to the client machine.
- 2 Create a java subdirectory below the directory where you copied the NetUI HTML files.
- 3 Copy the contents of the java subdirectory below the multinet directory in the Web server's primary document directory to the java subdirectory you created on the client.
- 4 Use the following table and example to add the HostName and PortNumber parameters to the multinet.html file.

For more information on the structure of the NetUI HTML files, see "NetUI HTML Files" on page 216.

Parameter	Description
HostName	Enter the NetUI Web server's host name or IP address.
PortNumber	Enter the NetUI Web server's HTTP port number; by default, 80.

Example In the following example, note that you must enter the HostName and PortNumber parameters in two locations.

```
<OBJECT classid="clsid:8AD9C840-044E-11D1-B3E9-00805F499D93"
  WIDTH = 400 HEIGHT = 200>
<PARAM NAME = CODE VALUE = "QadApplet.class" >
<PARAM NAME = CODEBASE VALUE = "java" >
<PARAM NAME = ARCHIVE VALUE = "multinet.jar" >
<PARAM NAME = HostName VALUE = "server.qad.com">
<PARAM NAME = PortNumber VALUE = "80">
<PARAM NAME = FileName VALUE
="/%CGIAlias%/WSMessenger%/WService=%WSbroker%/mfwb01.p">
<COMMENT>
  <EMBED type="application/x-java-applet;version=1.1"
    java_CODE = "QadApplet.class"
    java_CODEBASE = "java"
    java_ARCHIVE = "multinet.jar"
    WIDTH = 400
    HEIGHT = 200
    HostName = "server.qad.com"
    PortNumber = "80"
    FileName =
```

```
"/%CGIAlias%/WSMessenger%/WService=%WSbroker%  
/mfwb01.p">  
</EMBED>  
</COMMENT>  
</OBJECT>
```

- 5 Copy any .gif or .jpeg files referenced by the HTML files from the Web server to the client machine. Place these files in the same directory as the HTML files.
- 6 Copy any custom .gif files that you have created to replace the default icons for programs, user hot-buttons, or user URLs from the Web server to the client machine. Place these files in an images subdirectory below the java directory.

Running the NetUI Using a Proxy Server

To run the NetUI using a proxy server to access the applicable Web site, you must configure proxy settings in the Java Plug-in Control Panel on each client. In addition, you must add proxy server information to the NetUI HTML files and Web browser preferences.

- 1 Open the Java Plug-in Control Panel using the method appropriate for your version of Java:
 - a For Java Plug-In 1.1.3, click the Windows Start button and access Programs|Java Plug-in Control Panel.
 - b For Java Plug-In 1.3, click the Windows Start button and choose Settings|Control Panel. Then double-click on the Java icon in the Control Panel.
- 2 In the Java Plug-in Control Panel, choose the Proxies tab and uncheck the Use Browser Settings check box.
- 3 Complete the Proxy Address and Port fields for HTTP.
- 4 Click Apply and close the control panel.
- 5 Add the proxy IP address and port number to the appropriate NetUI HTML files.
- 6 Edit your Web browser preferences to connect to the Internet via the proxy server's IP address and port number.

For example, `http://192.199.200.31/netui/full.html`

Note The NetUI connects to the proxy server using the settings in the Java Plug-in Control Panel. Your Web browser connects to the proxy server using its own Preferences (Netscape) or Internet Options (Internet Explorer) settings.

- 7 For these changes to take effect, you must restart *all* browser sessions.

Application Modes

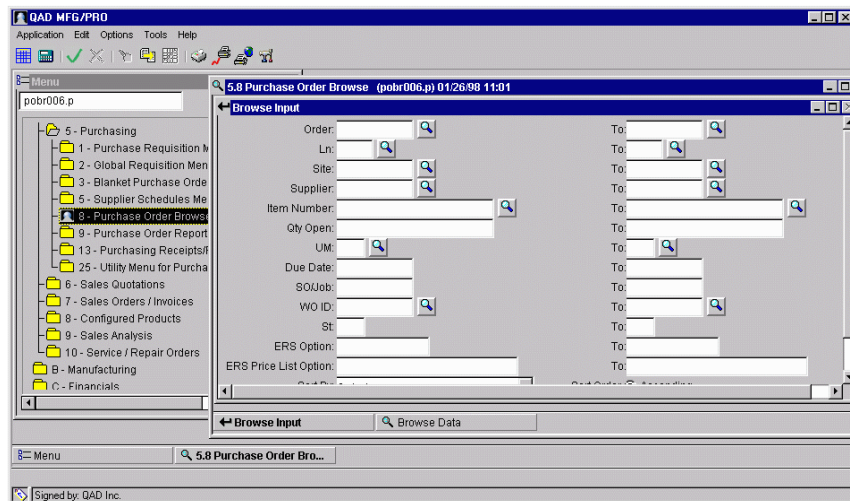
The NetUI can be used in two basic ways: directly with the full application mode or indirectly with the embedded application mode. The NetUI application mode is determined by the HTML file the user specifies when connecting to the NetUI Web server.

Full Application Mode

► For more information, see the *Network User Interface Guide*.

The full application contains features such as a tool bar, multiple windows, and an expanding tree menu structure. Figure 16.1 is an example of the NetUI in full application mode.

Fig. 16.1
Full Application
Mode



Embedded Application Mode

The embedded application mode enables you to build Web pages with links to specific MFG/PRO programs. It has no menu capabilities, and the linked programs are embedded in the Web page. Figures 16.2 and 16.3 are examples of the NetUI in embedded application mode.

For more information, see the *Network User Interface Guide*.

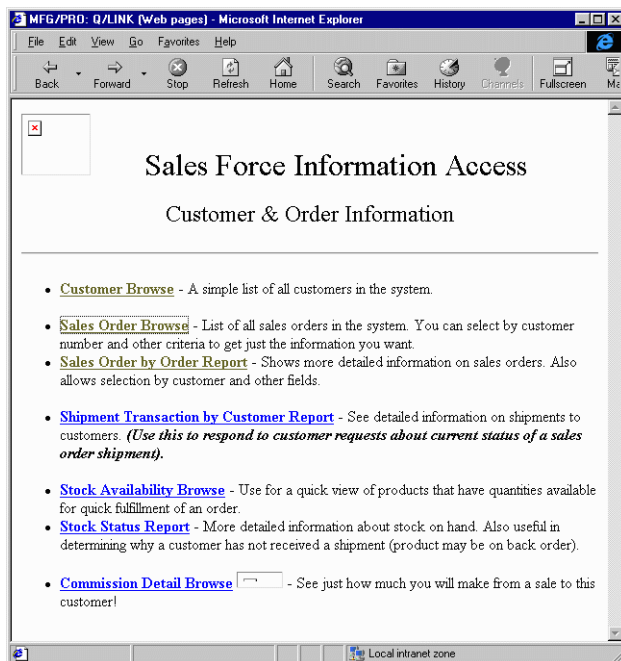
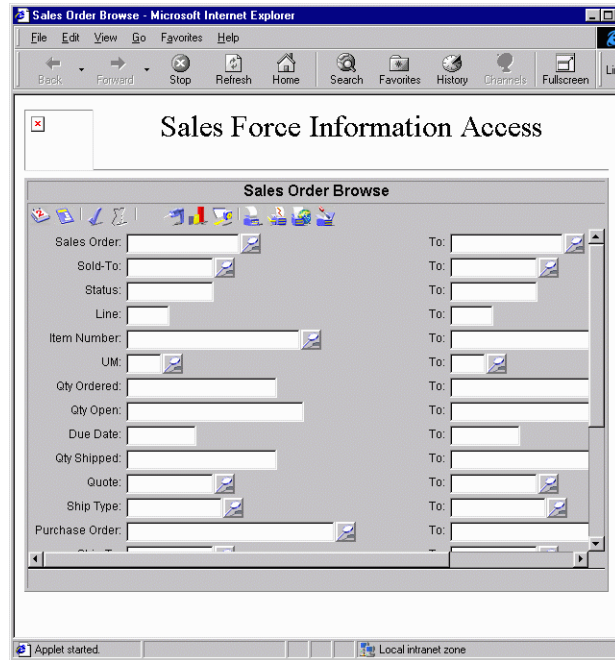


Fig. 16.2
Sample Web Page
with Links to
Embedded
MFG/PRO
Programs

Fig. 16.3
Embedded Browse



NetUI HTML Files

The NetUI HTML files are the starting point for NetUI sessions. The HTML file a user specifies when they launch the NetUI defines many aspects of the session. These include:

- Application mode
- Session trace information
- Internet security
- Proxy access

Default HTML Files

The NetUI software includes a set of default HTML files. You can copy and modify these files to customize the NetUI to meet your requirements. The NetUI HTML files are located in the `multinet` subdirectory below the Web server's primary document directory.

Note The files with 13 appended to the name are added beginning with Service Pack 5, which requires Java 1.3. You must use these files after installing Service Pack 5 or higher. The other files are not overwritten by the service pack so that you can preserve any customizations you have made.

- `full.html` or `full13.html`
- `embedded.html` or `embedded13.html`
- `multinet.html` or `multinet13.html`
- `trace.html` or `trace13.html`

The following sections provide descriptions of each of the default NetUI HTML files and their functions.

full.html

Use this file to launch the NetUI in full application mode. When this file is accessed, it performs the following functions:

- Launches a new browser window in which the QAD Java applet loads
- Launches `multinet.html` to begin the NetUI session

▶ See “Full Application Mode” on page 214.

By default, this is the NetUI HTML file that users access to begin NetUI sessions.

embedded.html

Use this file to launch the NetUI in embedded application mode. This file launches the NetUI Java code (`multinet.jar`) in the embedded application mode as a single program in the Web browser.

▶ See “Embedded Application Mode” on page 215.

multinet.html

This file launches the NetUI Java code (`multinet.jar`) in the full application mode.

trace.html

Use this file to launch the NetUI in full application mode with the session trace feature enabled. When this file is accessed, it performs the following functions:

- Launches a new browser window in which the QAD Java applet loads
- Launches `multinet.html` to begin the NetUI session
- Enables more verbose messaging between the NetUI session and the Java Plug-In Console

Because the session trace messages are sent to the Java Plug-In Console, you must enable the console before accessing `trace.html`. The Java Plug-In Console can be helpful for troubleshooting. It displays pertinent information such as:

- User's home directory
- Version of Java in use
- Proxy settings, if any
- Data and messages being transferred between the NetUI client and the WebSpeed instance
- Error messages

To enable the console, complete the following steps:

- 1 Open the Java Plug-in Control Panel using the method appropriate for your version of Java:
 - a For Java Plug-In 1.1.3, click the Windows Start button and access Programs|Java Plug-in Control Panel.
 - b For Java Plug-In 1.3, click the Windows Start button and choose Settings|Control Panel. Then double-click on the Java icon in the Control Panel.
- 2 When the Java Plug-in Control Panel displays, click the Basic tab and select the Show Java Console option.
- 3 Click Apply and close the control panel.

Note For these changes to take effect, you must restart the browser.

- 4 Using the client browser, access `trace.html` (or `trace13.html`) file. A Java console window displays. The session trace messages display in this window as actions are performed in the NetUI.

Note You can use the Java console with other NetUI HTML files; however, the messaging is not as complete.

- 5 To turn off the Java console, deselect the Show Java Console option in the Java Plug-in Control Panel.

HTML File Parameters

Before looking at examples of HTML for specific uses, you should understand some important points about the NetUI HTML code.

In general, an HTML file has the following format.

```
<html>
<head> . . . </head>
<body>
  (Company-specific information)
  <OBJECT>
    (Parameters for NetUI specific to Internet Explorer)
    <COMMENT>
      <EMBED>
        (Parameters for NetUI specific to Netscape)
      </EMBED>
    </COMMENT>
  </OBJECT>
</body>
</HTML>
```

Only lines between `<OBJECT>` and `</OBJECT>` are specific to the NetUI. This section is divided into two parts—one specific to Internet Explorer and the other specific to Netscape. The same parameters apply to Internet Explorer and Netscape; only the syntax is different.

The parameters in HTML files used to access the NetUI differ from file to file depending on whether:

- The NetUI is run in the full or embedded application mode.
- The NetUI Java code is accessed from the Web server or from a local machine.
- The session trace feature is enabled.

Required Parameters

The HTML parameters *always* required by the NetUI are listed in Table 16.1.

Table 16.1
Required HTML
Parameters

Parameter	Description
WIDTH	The width in pixels of an applet as it appears on an HTML page.
HEIGHT	The height in pixels of an applet as it appears on an HTML page.
code	The name of the main Java program. This is always <code>QadApplet.class</code> (case-sensitive).
codebase	The directory location for the Java code archive file (extension <code>.jar</code>). By default, this directory is in the <code>java</code> subdirectory, which is in the primary document directory on your Web server.
archive	The name of the <code>.jar</code> file that contains the Java code.
FileName	The name of the file containing the Progress code that starts MFG/PRO for the NetUI. The format is: <i>CGIAlias/CGIExecutable/Broker/Program</i> The format components are: <i>CGIAlias</i> – The path to the MFG/PRO Java code or a CGI directory alias as defined on the Web server. <i>Broker</i> – Service name for the WebSpeed broker. <i>Program</i> – Web-enabled MFG/PRO program. Example <code>"/cgi-bin/wsis.dll/wService=ws1/mfwb01.p"</code>

Optional Parameters

The parameters in Table 16.2 are used to enable optional NetUI features.

Parameter	Description
Program	Determines whether the NetUI runs in full or embedded interface mode. When the Program parameter is present, embedded interface mode is used. This parameter is then followed by the name of the program the interface will run. If the Program parameter is not present in the .html file, the NetUI runs in full interface mode.
HostName	The host name or IP address of the Web server. Used only when Java code is placed locally on clients. See “Running Java Code from a Client Machine” on page 212.
PortNumber	The port number of the Web server. Used only when Java code is placed locally on clients. See “Running Java Code from a Client Machine” on page 212.
Trace	Sets the session trace option.

Table 16.2
Optional HTML
Parameters

WebSpeed Agent Sizing and Behavior

WebSpeed agents are used to extract information from the database for Web-enabled browses, inquiries, and reports. Each WebSpeed agent services one user request at a time.

When calculating the number of WebSpeed agent licenses required for your site, you should consider the following:

- The number of reports and large browses being run simultaneously
- The number of seconds of inactivity before an agent is automatically released
- The number of simultaneous activities each end user is allowed
- The mix of full application mode and embedded application mode users

An approximate rule is to allow one agent for every eight possible embedded application mode users and one agent for every two full application mode users.

For most activities, agents are used only briefly to retrieve the information required to present or update the user interface.

Table 16.3 shows the approximate amount of time during which WebSpeed agents are held for various combinations of NetUI activities and agent states.

Table 16.3
Summary of Agent Usage

Activity	Agent State	Time Agent Held
Building log-in screen	Stateless	Less than one second
Building menu or desktop	Stateless	Less than one second
Navigating down menu	Stateless	Less than one second
Starting browse	Stateless	Less than one second
Starting report	Stateless	Less than one second
Running report	Stateless	While report is generating data
Running a browse for which the number of records is less than the Download Size	Stateless	Less than one second
Running a browse for which the number of records exceeds the Download Size	Stateless	Less than one second
Running a browse for which the number of records exceeds the Download Size	State-aware	While browse is incomplete or until timeout is reached

Agent Usage for Reports and Inquiries

For reports and inquiries, a WebSpeed agent is in use—that is, it is servicing a user request—when it is extracting report or inquiry data from the database. After delivering this data to the Web server, the WebSpeed agent is free to service another request, even if the NetUI has not yet displayed all the data to the user.

Agent Usage for Browsers and Look-Ups

For browses and look-ups, a WebSpeed agent is in use when it is delivering the number of records specified as the Download Size parameter in the NetUI client Preferences window.

▶ See the *Network User Interface Guide*.

- If the browse request generates fewer records than the Download Size parameter, then the records display in the browse and the agent is released immediately.

Example If Download Size is 100 and a browse query returns 80 records, MFG/PRO displays the 80 records and releases the agent.

When download size is small, this might require only a few seconds per request. This means that a WebSpeed agent might be busy only a fraction of the time a user has a browse data window open in the NetUI.

- If the browse request generates more records than the Download Size parameter, the agent is sometimes held the entire time the browse data window is open—that is, from the time the user requests the data to the time the browse times out or is manually closed. A browse in this condition is known as *state-aware*. This occurs when:
 - The user sorts browse data by a field that is not indexed in the database. Indexed fields are indicated by an asterisk (*) in the Sort By field.
 - The WebSpeed agent returns a group of data that ends with a non-unique key.
 - The browse takes an unusually long time to begin returning data to the Web server.

When a browse is state-aware, it displays a time-out message in the title bar—for example, *Browse times out in 2 minutes*.

Example The Download Size parameter is 100 and the query returns 200 records. The browse data window displays approximately the first 100 records. It may actually display slightly more than 100 records, depending on where an appropriate break in the active index is found. When the user scrolls down to the bottom of the data window, the browse requests the next 100 records for display.

When any of the conditions above are met, the agent becomes state-aware and is held until the browse is closed or times out. In this case, the browse data window displays the following message to indicate that the agent is being held:

Times Out in X Minutes (Port #).

Mechanisms to Optimize Agent Usage

Several settings in the NetUI can be used to assist in optimizing WebSpeed agent usage. Define these settings in User Option Maintenance (36.20.10.1) for individual MFG/PRO user IDs.

▶ See “Max Web Connections” on page 207.

Max Web Connections. Use this setting to indicate the maximum number of agents that can be simultaneously locked by the associated user. When this amount is exceeded, an error message displays and the user cannot run a report or a browse until they have released Agents.

▶ See “Browse Timeout” on page 208.

Browse Timeout. Use this setting to indicate the maximum amount of time an agent remains locked for the associated user before it is automatically released and is available to other users.

▶ See “Session Timeout” on page 208.

Session Timeout. Use this setting to indicate the maximum amount of time in minutes that a NetUI session can be inactive for the associated user before the system automatically logs them out.

Securing Internet Communication

The NetUI lets clients view MFG/PRO report and browse programs over the Internet. The Internet traffic between the NetUI client and the Web server is not secure and, with the use of a network sniffer, security could be compromised.

The Secure Sockets Layer (SSL) protocol provides encryption for NetUI transmissions between the client and the Web server. Use the following instructions to enable the SSL applet provided with the NetUI.

The use of SSL security has the following limitations:

- SSL security does not secure NetUI telnet communications. All MFG/PRO maintenance programs in the NetUI use telnet communications, and are, therefore, nonsecure.
- SSL does not secure communications between the NetUI Web server and the MFG/PRO database server. If these servers are different machines that communicate over a network, their communications may also be compromised.
- The NetUI SSL applet supports only Netscape Web servers.

Secure Sockets Layer

SSL is a program layer that secures message transmissions between the NetUI client and the Web server. The SSL security programming is contained in the SSL applet, which is included with the NetUI software.

The SSL applet functions between the QAD applet and the NetUI Web server. The sockets method is used to pass data back and forth between the SSL applet, the NetUI client, and a low-level component of the Secure Hypertext Transfer Protocol (HTTPS) on the NetUI Web server.

SSL uses the public-and-private key RSA (Rivest-Shamir-Adleman) encryption system, which requires the use of a digital certificate.

The client components of SSL are included as part of the Netscape and Internet Explorer Web browsers. If you are using a Netscape Web server, SSL can be enabled and specific Web pages can be identified as requiring SSL access.

SSL Security in the NetUI

During a NetUI session, the QAD applet is accessed either locally or from the NetUI Web server using a NetUI HTML file. The QAD applet executes on the NetUI client regardless of its location. When an SSL applet tag is included in the NetUI HTML, the SSL applet on the Web server is accessed and run locally on the client.

Functioning between the QAD applet and the NetUI Web server, the SSL applet receives and transmits messages to and from the QAD applet using a network port on the client machine. Then, the SSL applet uses a secure Web service and port to transmit and receive messages to and from the NetUI Web server. This ensures security for all transmissions from the Web server to the client.

The NetUI installation process places the QAD applet in the `multinet.jar` file, which is located in the `multinet\java` subdirectory of the Web server's primary document directory. The SSL applet is placed in the same subdirectory and has two file formats:

- `Ssl.jar` is used with Netscape's Navigator or Communicator browsers.
- `Ssl.cab` is used with Microsoft's Internet Explorer.

If both of the SSL applet file formats are in the appropriate location and the standard NetUI HTML file is used, the browser automatically selects the correct format.

If you copied the NetUI Java and HTML files onto each NetUI client to improve performance, make sure that the `multinet.jar`, the `Ssl.jar` and `Ssl.cab`, and the NetUI HTML files are all in the same directory.

SSL Setup Overview

Summary

The following major steps are required to enable SSL security for the NetUI. Each of these steps is described in detail in the following sections.

- Obtain an RSA authentication certificate.
- Set up a secure Web service for the SSL applet on the Web server.

- Identify a port on the NetUI client for communications between the QAD and SSL applets.
- Identify the HTML file or files NetUI clients use for NetUI sessions.
- Create an SSL applet tag block in the NetUI client HTML file or files.

Prerequisites

- 1 Obtain an RSA authentication certificate using the instructions on the VeriSign Web site:

<http://www.verisign.com/>

- 2 Use your Web server's documentation to set up a secure Web service. NetUI SSL security requires both secure and unsecured Web services and ports.

The QAD applet and the NetUI Java Plug-In's Java Virtual Machine (JVM) access the Web server using an unsecured port, and do not accept secure Web services. The SSL applet and the Web browser's default JVM access the Web server through a secure port to send and receive encrypted transmissions from the Web server.

- 3 Identify a port on the NetUI client for communications between the SSL and QAD applets.

Identify a port on the NetUI client for communications between the SSL and QAD applets. If you launch the NetUI Java and HTML files on the local hard drive of each NetUI client, you can choose a different port for each client. If you launch shared NetUI Java and HTML files on the Web server, identify a standard port to use for all of the NetUI clients. QAD has tested and recommends port 3333.

Set Up SSL

- 1 Identify the NetUI HTML file or files being used by the NetUI clients; for example, `full.html` for clients using the NetUI in full application mode. The HTML files are located either in the multinet subdirectory below the Web server's document directory or locally on your NetUI clients, depending on your NetUI configuration.

Because the specific HTML file used by each NetUI client may vary, these instructions refer to this file generically as `client.html`.

Note If some clients use multiple NetUI HTML files—for example, `trace.html` or `embedded.html`—be sure to complete these instructions and add the SSL applet tag block to each HTML file for which you want to provide security.

- 2 Open the `client.html` file in a text editor.
- 3 Copy the following template into your `client.html` file to create an SSL applet tag block. This template contains parameters that require information unique to your NetUI environment. These parameters are identified with bold-print placeholders. Use the directions in the next step to enter the required values for each placeholder:

```
<!-- SSLApplet -->
<APPLET CodeBase="java" Archive="Ssl.jar" Code="SSLApplet.class"
  WIDTH=400 HEIGHT=1>
  <PARAM NAME = CabBase VALUE = "Ssl.cab">
  <PARAM NAME = HostName VALUE = "WebServer.Domain.com">
  <PARAM NAME = SecurePort VALUE = "Client Port Number">
  <PARAM NAME = PortNumber VALUE = "Secure Web Service Port Number">
  <PARAM NAME = Trace VALUE = "Off">
  <PARAM NAME = FileName VALUE = "/CGI Directory/WebSpeed CGI Script
    Name/WService=WebSpeed Compiled Code">
</APPLET>
<!-- END SSLApplet -->
```

- 4 Use the following descriptions of the SSL applet parameters to replace each placeholder in the tag block with the required environment-specific information.

- a **HostName** (**WebServer.Domain.com**): Enter the full domain name of the NetUI Web server.

If you do not enter a value, the SSL applet uses the URL of the machine from which it was launched. This is not a problem when the SSL applet is accessed from the NetUI Web server. However, if the SSL applet is local to the NetUI client, you must enter the full domain name of the Web server. Otherwise, the **HostName** parameter value defaults to the URL of the client machine.

Note If you do not enter a full domain name in this parameter, clients using Microsoft's Internet Explorer browser will receive fatal errors.

- b **SecurePort** (**Client Port Number**): Specify the NetUI client port reserved for communication between the QAD and SSL applets.

▶ See step 3 on page 227.

- c **PortNumber (Secure Web Service Port Number):** Enter the port number of the secure Web service on the NetUI Web server.

See step 2 on page 227.

If you do not enter a value, the SSL applet uses port number 443. This causes errors unless the secure Web service has been set up on this port.

- d **FileName (/CGI Directory/WebSpeed...):** Copy the FileName parameter value from the QAD applet tag block and replace the FileName placeholder in the SSL applet tag block with this value. Use the example in step 6 to locate the QAD applet tag block.

- 5 If the `multinet.jar`, `Ssl.jar`, `Ssl.cab`, and NetUI HTML files are in the same directory on the NetUI client's hard drive, remove the `CodeBase="java"` parameter from the SSL applet tag block.

This parameter provides a relative path from the HTML file directory to the SSL applet. When these files are located in a common directory, the parameter is unnecessary.

- 6 In the `client.html`, locate the QAD applet tag block. Use the following example to identify this tag block in the HTML file. The QAD applet tag block contains parameters that require information specific to your NetUI environment. These parameters are identified with bold-print placeholders. Use the directions in the next step to enter the required values for each placeholder:

```
<!-- QADApplet -->
<OBJECT classid="clsid:8AD9C840-044E-11D1-B3E9-00805F499D93"
    WIDTH = 400 HEIGHT = 200>
<PARAM NAME = Code VALUE = "QadApplet.class">
<PARAM NAME = CodeBase VALUE = "java">
<PARAM NAME = Archive VALUE = "multinet.jar">
<PARAM NAME = HostName VALUE = "WebServer.Domain.com">
<PARAM NAME = PortNumber VALUE = "Secure Web Service Port Number">
<PARAM NAME = SecurePort VALUE = "Client Port Number">
<PARAM NAME = FileName VALUE = "/CGI Directory/WebSpeed CGI Script
Name/WService=WebSpeed Compiled Code">
```

```

<COMMENT>
  <EMBED type="application/x-java-applet;version=1.1"
    java_Code = "QadApplet.class"
    java_CodeBase = "java"
    java_Archive = "multinet.jar"
    WIDTH = 400
    HEIGHT = 200
    HostName = "WebServer.Domain.com"
    PortNumber = "Secure Web Service Port Number"
    SecurePort = "Client Port Number"
    FileName = "/CGI Directory/WebSpeed CGI Script
    Name/ WService=WebSpeed Compiled Code">
  <NOEMBED></NOEMBED></EMBED>
</COMMENT>
</OBJECT>
<!-- END QADApplet -->

```

- 7 Use the following descriptions of the QAD applet parameters to replace each placeholder in the tag block with the required environment-specific information. Because the QAD applet was written to function with both Internet Explorer and Netscape browsers, the environment-specific variables must be entered in two locations of the tag block:

- The <OBJECT> section
- The <EMBED> section

▶ See step 3 on page 227.

- a** **SecurePort (Client Port Number):** Specify the NetUI client port reserved for communication between the QAD and SSL applets.

▶ See step 2 on page 227.

- b** **PortNumber (Secure Web Service Port Number):** Enter the port number of the secure Web service on the NetUI Web server.

If you do not enter a value, the QAD applet uses port number 443. This causes errors unless the secure Web service has been set up on this port.

Verify SSL Security

Follow these instructions to verify that the SSL applet is functioning:

- 1 In the `client.html`, set the Trace parameter value in the SSL applet tag block to On.

```
<!-- SSLApplet -->
<APPLET CodeBase="java" Archive="Ssl.jar" Code="SSLApplet.class"
  WIDTH=400 HEIGHT=1>
<PARAM NAME = CabBase VALUE = "Ssl.cab">
<PARAM NAME = HostName VALUE = "WebServer.Domain.com">
<PARAM NAME = SecurePort VALUE = "Client Port Number">
<PARAM NAME = PortNumber VALUE = "Secure Web Service Port Number">
<PARAM NAME = Trace VALUE = "On">
<PARAM NAME = FileName VALUE = "/CGI Directory/WebSpeed CGI Script
  Name/WService=WebSpeed Compiled Code">
</APPLET>
<!-- END SSLApplet -->
```

- 2 From a NetUI client, use the browser's Java console to verify that the SSL applet is functioning. Use the instructions appropriate for your NetUI client's browser:
 - For Netscape browsers, select the Communicator menu and choose the Java Console.
 - For Internet Explorer, select the View menu and choose the Java Console.

As NetUI transactions are performed, SSL applet functions display in the Java console.

- 3 When you have verified that the SSL applet is functioning, open the `client.html` file and set the Trace parameter value to Off. This eliminates the extra processing associated with session traces and improves performance.

Glossary

Accelerator Keys. Keystroke equivalents to mouse actions. For example, you can exit the NetUI by selecting Exit from the Application menu or by pressing Alt+X. Accelerator key commands have initial default settings; however, in NetUI, you can change most of these defaults as needed.

Applet. See *Java Applet*.

Array. A field or variable with multiple elements, each element having the same data type.

Browse. An inquiry program that displays records in a tabular format. Browse types in NetUI include look-up and drill-down browses. Drill-down browses can be specified on the menu or associated with a field. Look-up browses are always associated with individual fields for use in selecting entry values. See also *Drill-Down Browse* and *Look-Up Browse*.

Browser. An application used to view and navigate the World Wide Web and other Internet resources. Common browsers include Microsoft Internet Explorer and Netscape Navigator.

Bytecode. Compiled Java code containing instructions to the Java virtual machine. The virtual machine, in turn, interprets these instructions so they can be performed by the system. See also *Java Virtual Machine (JVM)*.

CGI. See *Common Gateway Interface (CGI)*.

Character Interface. Sometimes abbreviated as CUI or CHUI, an interface to MFG/PRO 9.0 that displays only keyboard characters on the screen rather than icons and buttons. In NetUI, telnet maintenance programs display in the character interface, while browses, reports, inquiries display in a full graphical user interface. Compare with *Graphical User Interface (GUI)*.

Comma-Separated Values (CSV). Sometimes referred to as *flat files*, CSV files organize values as a series of ASCII text lines where each column value is separated by a comma from the next column's value and each row starts a new line. Data in CSV files can be conveyed as input to other table-oriented applications such as Microsoft Excel.

Common Gateway Interface (CGI). A standard way for a Web server to pass a Web user's request to an application program and to receive data in response, which it then forwards to the user. CGI is part of the Web's hypertext transfer protocol (HTTP). See also *HTTP (Hypertext Transfer Protocol)*.

Constant. In NetUI security, a generic variable identifying a category of data affected by a rule. Constant values are used with rules to determine which database records users can access in Web-enabled browses, reports, and inquiries. See also *Rule*.

CSV. See *Comma-Separated Values (CSV)*.

Data Encryption. See *Encryption*.

Download Size. In NetUI browses, this is the number of records the browse window displays before the client notifies the server to retrieve more records.

Drill-Down Browse. A type of browse that is available from a menu or associated with individual fields for use in selecting entry values. You can filter, graph, and print from drill-down browses. In NetUI, drill-down browses apply to fields in other browses, inquiries, and reports. Programs displayed in a telnet session use look-up browses only. Compare with *Look-Up Browse*.

Embedded User Interface. In NetUI, an interface designed to allow users to access MFG/PRO programs from a Web page. You can access only one program at a time in the embedded interface. Compare with *Full User Interface*.

Emulation. See *Terminal Emulation*.

Encryption. Conversion of data into a form that cannot be easily intercepted by unauthorized people.

Extranet. A private network designed to securely share portions of business information or operations with suppliers, partners, customers, or other businesses. An extranet can be viewed as part of a company's intranet that is extended to users outside the company. See also *Internet Server Application Programming Interface (ISAPI)*.

Field Tips. Context-specific references to fields consisting of the Progress field name and its associated table name for browses, Progress field name only for reports and inquiries.

Full User Interface. In NetUI, an interface characterized by a hierarchical tree menu and ability to access multiple programs simultaneously. Compare with *Embedded User Interface*.

Georgia SoftWorks Windows NT Telnet Server (GSNTS). The third-party telnet server software supplied with the NetUI for Windows NT servers.

Graphical User Interface (GUI). A user interface that presents computer actions and options as pictures, buttons, and icons. The most common example of a graphical user interface is Microsoft Windows. Compare with *Character Interface*.

Graphics Interchange Format (GIF). A graphics file format that is the industry standard for Web and Internet use.

Grid. A screen design element that organizes related data fields in a format similar to a spreadsheet or table.

Group. See *Security Group*.

GUI. See *Graphical User Interface (GUI)*.

HTML (Hypertext Markup Language). A tag-based ASCII language used to create pages on the World Wide Web. HTML uses codes surrounding a block of text to indicate how it should display. In HTML, you can also specify that a block of text, or a word, is linked to another file on the Internet.

HTTP (Hypertext Transfer Protocol). The set of rules for exchanging text, graphic images, sound, video, and other multimedia files on the World Wide Web. See also *Common Gateway Interface (CGI)*.

Interface. See *User Interface (UI)*.

International Organization for Standardization. See *ISO*.

Internet. A system of linked computer networks—international in scope—that facilitates data communication services such as remote log-in, file transfer, electronic mail, and newsgroups. The Internet is a way of connecting existing computer networks.

Internet Information Server (IIS). Web server software from Microsoft Corporation that supports a common gateway interface.

Internet Server Application Programming Interface (ISAPI). A program-level means of communicating with the Microsoft Internet Explorer Web server.

Intranet. A private network inside a company or organization that uses the same kinds of software found on the public Internet.

ISO. ISO (International Organization for Standardization), founded in 1946, is a worldwide federation of national standards bodies from some 100 countries. ISO is not an abbreviation. It is a word, derived from the Greek *isos*, meaning equal. The name ISO is used around the world to denote the organization.

ISS. See *Internet Information Server (IIS)*.

JAR File. See *Java Archive File (JAR)*.

Java. An object-oriented programming language created by Sun Microsystems. Java is a device-independent language. Programs compiled in Java can be run on any computer. Java programs can be run as free-standing applications or as applets placed on a Web page.

Java Applet. A small application program that can be sent along with a Web page to a user. Applets written in Java are served from a Web site but executed on the client computer.

Java Archive File (JAR). A file that contains the class, image, and sound components of a Java applet gathered into a single file and compressed for faster downloading to a Web browser.

Java Bean. A reusable program building block developed with a Beans Development Kit (BDK) from Sun Microsystems.

Java Class. In object-oriented programming, a class is a template definition of the methods and variables in a particular kind of object.

Java Development Kit (JDK). A software development environment from Sun Microsystems for writing applets and applications in the Java programming language.

Java Plug-In. Software provided by Sun Microsystems that replaces the default virtual machine associated with a Web browser. Using the Java plug-in allows developers to deploy Java applets that depend on the latest features of the Java platform and be assured that their applets will run reliably and consistently in both Microsoft Internet Explorer and Netscape Navigator.

Java Runtime Environment (JRE). A subset of the Java Development Kit for end users and developers who want to redistribute the Java runtime environment. The Java runtime environment consists of the Java virtual machine (JVM), the Java core classes, and supporting files.

Java Virtual Machine (JVM). The part of the Java runtime environment responsible for interpreting bytecode. See also *Bytecode*.

JDK. See *Java Development Kit (JDK)*.

JRE. See *Java Runtime Environment (JRE)*.

JVM. See *Java Virtual Machine (JVM)*.

Leaf Nodes. The lowest-level elements in a hierarchical navigation tree. Leaf nodes cannot be expanded or collapsed.

Look-Up Browse. A type of browse that is only associated with individual program fields for use in selecting entry values. Look-up browses contain less detail than drill-down browses and cannot be used to filter, graph, or print data. Compare with *Drill-Down Browse*.

Maintenance Programs. Programs used to add, modify, and delete records and codes in the MFG/PRO 9.0 database. In NetUI, all maintenance programs display in a character-based telnet window.

Menu Substitution. Replacing one program with another on the MFG/PRO 9.0 menu; for example, replacing a standard program with a customized version.

MIME (Multipurpose Internet Mail Extension). A protocol for exchanging different kinds of information on the Internet. The MIME header is inserted at the beginning of a Web transmission so that client programs can select the appropriate associated application.

Netscape Server Application Programming Interface (NSAPI). A program-level means of communicating with the Netscape Web server.

Network. A series of points or nodes interconnected by communication paths. The Internet is a common example of a network. See also *Internet*, *Extranet*, *Internet Server Application Programming Interface (ISAPI)*, and *Wide Area Network (WAN)*.

Operator. A symbol or mnemonic used to perform calculations or data comparisons—for example, =, <, AND, OR, and XOR.

Platform. An underlying computer system on which application programs run. Historically, most application programs had to be written to run on a particular platform. Products written in Java, however, are *cross-platform*, meaning they can be run anywhere the Java runtime environment is installed.

Profile. In NetUI security, a set of MFG/PRO 9.0 programs grouped together to simplify security setup. Profiles are assigned to security groups. For example, a group consisting of salespeople might be assigned a profile consisting of only sales programs. See also *Security Group*.

Relation Database Management System (RDBMS). The Progress software that manages and provides access to the MFG/PRO databases.

RSA (Rivest-Shamir-Adleman). An Internet encryption and authentication system that uses an algorithm developed in 1977 by Ron Rivest, Adi Shamir, and Leonard Adleman. The RSA algorithm is included with Netscape Navigator and Microsoft Explorer.

Rule. In NetUI security, rules define conditions under which specific database records can be accessed by browses, reports, and inquiries programs. Types of rules include field rules, logical rules, and dual rules. Rules are associated with individual programs as part of NetUI security setup.

Script. A program or sequence of instructions that is interpreted or carried out by another program.

Secure Sockets Layer (SSL). A program layer for managing the security of message transmissions in a network. The program layer exists between an application (such as a Web browser or HTTP) and the Internet's TCP/IP

layers. Sockets refers to the sockets method of passing data back and forth between a client and a server program in a network or between program layers in the same computer.

Security Group. A category of users who typically access the same programs in NetUI. Using NetUI security features, you can apply standard security settings to groups of users, then define exceptions for particular individuals within these groups as needed. See also *Profile*.

Security Profile. See *Profile*.

Socket. A convention for connecting with and exchanging data between two program processes within the same computer or across a network. A socket represents the end point in a network connection. Sockets are created and used with a set of programming requests or function calls sometimes referred to as the sockets application program interface (API). The most common sockets API is the Berkeley UNIX C language interface.

SSL. See *Secure Sockets Layer (SSL)*.

State-Aware. Describes the condition of a browse when a WebSpeed agent is in use during the entire time it is open. This can happen when the user sorts browse data by a non-indexed field, the WebSpeed agent returns a group of data that ends with a non-unique key, or the browse takes an unusually long time to begin returning data to the Web server.

TCP/IP. See *Transmission Control Protocol/Internet Protocol (TCP/IP)*.

Telnet. A user command and underlying TCP/IP protocol that lets you access applications and data on remote, or *host*, computers. See also *Transmission Control Protocol/Internet Protocol (TCP/IP)*.

Terminal Emulation. Use of a personal computer to interact with a computer with a different operating system. The terminal emulation program runs as a separate task with its own window. The application interface presented in this window is character based or text only.

Thin-Client. In a thin-client model, the client machine takes on only the user interface role. No business logic processing is accomplished on the client.

Tool Tips. Context-specific descriptions that display whenever your cursor is positioned over a tool button in NetUI.

Transmission Control Protocol/Internet Protocol (TCP/IP). The basic communication language or protocol of the Internet. It can also be used as a communications protocol for intranets and extranets.

UI. See *User Interface (UI)*.

Uniform Resource Locator (URL). A text string that indicates the location of an intranet or Internet resource.

Universal Unique Identifier (UUID). A hexadecimal number including a time stamp and a host identifier. Applications use uuids to identify many kinds of entities.

User Interface (UI). The portion of an application that is visible to the user and the mechanism by which the end user interacts with the application, enters information into the application, and sees the results of the interaction.

WAN. See *Wide Area Network (WAN)*.

Web Browser. See *Browser*.

Web-Enabled. Refers to a program that has code added to it so that it can be accessed from the NetUI. User interface actions in the Progress code are bypassed and rerouted to the Java client.

Web Site. A related collection of Web files that includes an introductory file called a home page. From the home page, you can get to all the other pages at that site.

WebSpeed. A product from Progress Software consisting of two parts: a set of Web-centric development tools and a transaction Web server. The server manages high-volume database transactions across multiple servers.

Wide Area Network (WAN). Generally a corporate private network that connects computers between remote company sites.

Widget. In Java screen-design terms, identifies a unique screen element. Widgets display information or provide specific ways for users to interact with application programs.

Wildcards. Characters or symbols used in search or command functions in place of one or more letters or numbers.