nobix™

JobPak™ Installation and Update Guide

Version 6.1f

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Version 6.1f
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Preface

This document provides installation and update information for the JobPak software products from Nobix, Inc. JobPak includes the following products:

- ElectroPage™
- JobRescue™
- JobQue™

Together these products offer information technology managers and staff the production class system management capabilities needed to keep a single or networked e3000 system running at peak efficiency. The JobPak tools are used as a standard by Hewlett-Packard IT centers and by HP customers worldwide to provide productive and efficient operations on the HP e3000.

Although JobPak products can be licensed and used individually, they all run in the background under the JobPak batch job. Installation for all of the JobPak products is described in this document. Please review it before attempting to install or update any of the JobPak software tools.

Training classes are available to provide training for administering JobPak products. Please check with Nobix regarding training schedules and pricing.

Assumptions

This document assumes familiarity with e3000 computer systems and the MPE operating system. It is intended for system administrators, managers and any other users of the JobPak software utility.

Readers should also be familiar with the e3000 manuals published by the Hewlett-Packard Company.

Related Documents

- *ElectroPage Administrator's Reference Guide*
- *JobRescue Administrator's Reference Guide*
- *JobQue Administrator's Reference Guide*
- Nobix web site www.nobix.com

Technical support

The JobPak software uses the latest operating system technology and requires MPE/iX 5.5 or later.

Nobix strives for efficient and reliable software, however, if you encounter any problems that this manual does not address, or find an error, contact Nobix technical support. Nobix provides 24x7 technical support (including weekends and holidays) for customers with current maintenance agreements.

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If you fax your question, include your name, phone number, and fax number on the cover sheet. Usually, we call you as soon as we receive your fax.

If you report a limitation or problem, we will either fix it or provide a workaround as soon as possible.

If you will allow us dial-up access to your machine, please have the dial-up number and passwords available. We do not sign on to every machine; however, sometimes it is easier to solve a problem when we can see it happen.

If you cannot find an answer in this manual, contact us!

Chapter 1

What's New

This chapter describes the additions and modifications added to the following JobPak 6.1 products:

- JobRescue
- ElectroPage
- JobQue

Although any of the JobPak products can be licensed and used individually, they all run in the background under the JobPak batch job.

Caution: Nobix recommends backing up the current JobPak installation before updating to the 6.1 version software.

Overview

This release of the JobPak software contains several improvements and modifications that increase its reliability and efficiency, while using less system resources and delivering higher performance.

JobRescue and ElectroPage

JobRescue and ElectroPage products contain the following additions and modifications:

- The email program (MAILSMTP) now supports an explicit server name field.
- Reports and $STDLISTs sent as attachments
- Spoolfile's priority number and associated device logged
- Check performed for all "fclose()" errors on the output file being processed

- Files may be deleted based on STATUS file number
- Search for missing header (.hdr) files

Explicit server name field

When a report or $STDLIST is sent, the server name is no longer derived from the recipient's email address. Instead is taken from the server name value. This makes it easy for mail to be sent to any domain (not just internally as before). The server's hostname is configured with CONFIGIX.

Reports sent as attachments

When reports are sent via e-mail, they are sent as attachments (.txt files) instead of appearing in the body of the e-mail. This way the formatting of the report is retained and the report can be viewed using any compatible viewing program.

Spoolfile's priority number and associated device logged

JobRescue remembers and logs each spoolfile's original priority number and the device associated with it which makes it easy for spoolfiles to be set back to their original settings.

Check performed for all "fclose()" errors on the output file

A check is performed for all "fclose()" errors on the output file being processed. If an error occurs, the JP06SXL program exits and JP01SXL starts another instance. This ensures that all of the files JP06SXL has opened are closed and not left open.

Files may be deleted based on STATUS file number

Files may be deleted based on their status file number as well as their pathname.

Search for missing header (.hdr) files

At startup, JobRescue searches for missing header (.hdr) files and recreates them as needed.

JobQue

The JobQue product contains the following additions and modifications:

- ONETIME runs in native mode
- New Windows client interface
- Eliminate list of dependencies for schedule printing
- Search for $STDLISTs with pri=0
- New $KEEPJOBNINFO command
- Network communications with JobQue encrypted
- New web interface
- New Reporting interface

ONETIME runs in native mode

The ONETIME program now runs in native mode. It previously ran in compatibility mode, however native mode is the normal processing mode of the MPE operating system.

Applications in native mode run faster and more efficiently than applications in compatibility mode.

New Windows client interface

An easy–to-use Windows client interface is available for quick and efficient job schedule control. Users can use the Scheduler Communications program to perform a wide range of job manipulation capabilities. It can be used to start, suspend, and even delete schedules and steps. It allows the completion status of a job to be changed and it provides complete on-line control over executing jobs. This program can be used to manage most of JobQue's functionality. It's offered as an alternative to the SCOMXL program. The Scheduler Communications program can be installed from the JobQue (for UNIX) installation CD that was shipped with JobPak 6.1f.

Eliminate list of dependencies for schedule printing

When using the Reporting program to print a Schedule Simulation report, the list of dependencies that usually appears at the end of the report will *not* appear. (The list of dependencies will still appear at the end of reports printed from the SCOMXL program).

Search for $STDLISTs with pri=0

When JobQue is updating the status of an entry in the Active Job Table, it looks only for $STDLISTs with a priority of 0 (zero). This way a matching $STDLIST in the spool system won't be mistaken for a job that hasn't been examined yet.

New $KEEPJOBINFO command

Once a job is completed, JobQue updates status records on the server. By default these records are deleted after 72 hours. This setting can be changed with the $KEEPJOBINFO hours command in the SCHEDULE file.

Deleted records remain in the three main scheduling tables (To Do List, Active Schedule Table, Active Job Table) based on the $KEEPJOBINFOHOURS value. However, entries that are in these tables beyond the $TABLEDELHOURS value cannot be used to satisfy dependencies. They may, however, be used for reporting.

Network communications with JobQue encrypted.

All network communications with JobQue are now encrypted.

New web interface

A web interface is available which allows user to access the Scheduler Communications program via a web browser. This program can be used to manage most of JobQue's functionality. This interface requires an Apache web server and the Perl programming language. The software for both of these are available at www.apache.org and www.perl.com respectively. The web interface can be installed from the JobQue (for UNIX) installation CD that was shipped with JobPak 6.1f.

New Reporting interface

The new Reporting program can be used to generate various types of reports. Schedule simulation reports show all the schedules JobQue plans to run during a set period of time, while calendar reports list all the days specific calendars are valid. A set of command buttons makes it easy to create the type of report users need.

System environment

JobPak software requires an e3000 system with MPE/iX version 6.5 or later.

The JobQue client software (Windows interface) requires Windows 2000, XP or 2003 running on a Pentium-class processor. Microsoft .NET Framework 1.1 or later must also be installed on the machine. (The .NET Framework is available on the JobQue Installation CD.) This windows machine must also have Windows 2000 Service Pack 2 (or later) installed or the JobQue Scheduler Communications program will not be accessible.

It is highly recommended that all web access to JobQue be provided by a secure server or a virtual private network (VPN), thus ensuring that any transferred data is encrypted. The web server must be configured and running on a UNIX server on the same network as the JobQue server software.

The CD ROM that contains the JobPak documentation requires a PC with a CD ROM and the Adobe Acrobat Reader 5.0 or later. To obtain the latest version of the reader, go to http://www.Adobe.com.

Chapter 2

Start Here

This chapter describes each of the different possible scenarios for installing the JobPak suite or any of the JobPak products. Read this chapter carefully and determine the appropriate scenario for installation or update. There are several variables and factors that determine which scenario is appropriate for your particular installation/update situation. Please do not assume that the installation/update process is the same as performed in the past; the process might have changed with this version.

This document covers three main installation/update scenarios:

- First time JobPak installation
- Reinstallation of the same JobPak version
- JobPak version upgrade

Caution: Regardless of which scenario is appropriate for your installation, be sure to read through the entire installation scenario before installing any software. And always perform the requested system or NSD account backup steps.

Determine which installation scenario to use

Read this section carefully to determine which installation scenario is appropriate for the installation/upgrade situation in your environment.

First time installations

If an account named NSD does not exist on your e3000 at this time, then perform an installation not an update. Go to Chapter 3, “First Time Installation or Reinstallation,” and follow the instructions.

Reinstallations

If an NSD account exists on your e3000, and you want to reinstall JobPak and not save any information stored in the NSD account, go to Chapter 3, "First Time Installation or Reinstallation," and follow the instructions.

JobPak version upgrades

If an NSD account exists on your e3000 with JobPak already installed, and you want to update JobPak with a newer version, you must determine which JobPak software version is currently installed on the system before continuing. If the version currently installed is already known, follow the instructions below. If the version currently installed is not known, go to "Determining the current JobPak version" in this chapter, and follow the instructions for determining the currently installed version. Then return to this section and follow the instructions below.

- If JobPak 6.1 is already installed, go to Chapter 4, "Updating an Existing JobPak 6.1 Installation."
- If JobPak 6.1a/b/c/d/e/f with a build date is installed, go to Chapter 4, "Updating an Existing JobPak 6.1 Installation."
- If a version other than 6.1 is installed, **stop the installation** process and contact Nobix Technical Support at 1.800.538.3818 or 925.227.5600.

Determining the current JobPak version

To determine the current JobPak version:

1. Log on as MGR.NSD and into the PUB group:

   ```
   :HELLO MGR.NSD,PUB
   ```

2. The WHAT utility program, WHAT.PUB.NSD, is used to retrieve the version number. The program is run by entering WHAT followed by the specific program or filename.

   For JobPak 6.0b and higher, the version and build date of the JobPak software is contained in a file called BUILD.JPAK. The method of retrieving the version number for versions of JobPak previous to version 6.0b is described later in this section. The BUILD.JPAK file is updated every time the JobPak software is updated.

   Determine the build version of JobPak by running WHAT against the BUILD.JPAK file as shown:

   ```
   :WHAT BUILD.JPAK
   ```

The display should appear similar to the following:

```
:WHAT BUILD.JPAK
build.jpak.nsd:
JobPak 6.1d Tape Created (THU, DEC 12, 2001, 2:36 p.m.)
```

If what appears is similar to the above example, then JobPak 6.1a/b/c/d/e/f is currently installed.

Please note the JobPak build date here _____. This information might be needed later on during the installation process.

If the version is 6.1, proceed to Chapter 4, "Updating an Existing JobPak 6.1 Installation."

If the version is 6.0 or lower, please contact Nobix Technical Support or your Nobix Account Representative. **Do not continue**.

Daylight Savings Time Change

This section contains suggestions for working with time correction into and out of Daylight Savings Time. Because these sections contain suggestions that are specific to the Hewlett-Packard MPE/iX operating system and POSIX, and how Nobix products perform on those operating systems, Nobix cannot warrant that the above recommendations are error free and is not liable for any inaccuracy, error, or omission relative to these recommendations, regardless of cause. To ensure accuracy, refer to your HP documentation.

Background

MPE/iX references time in two ways:

- MPE/iX date functions that include date, time, and time zone as displayed by SHOWTIME or SHOWCLOCK. This accesses the traditional MPE/iX clock and displays the local time.
- POSIX date functions that reference the MPE/iX date functions, mentioned above, and also reference the MPE/iX and POSIX CI TZ variable to display the local time.

Many applications like JobPak™, TranSpooler™, and others use both time references. Therefore, you must ensure that both MPE/iX and POSIX dates and times are synchronized. Depending on when you change the MPE/iX time, it is possible for the two time references to become un-synchronized, causing the system to inaccurately record time.

MPE/iX date functions

MPE/iX date, time, and time zone functions do not automatically adjust for going into or out of Daylight Savings Time. You must manually set them. To do this, Nobix suggests you change the MPE/iX time zone value as well as the date and time.

The MPE/iX time zone value is stated in hours West or East of the Prime Meridian. You need to know which time zone you are in. For instance, California in the U.S.A. is in the Pacific time zone. For Standard Time, the MPE/iX time zone value is W8:00. For Daylight Savings Time it is W7:00. You change these values twice a year.

POSIX date functions

POSIX date functions automatically adjust for going into or out of Daylight Savings Time. You do not have to adjust them.

According to law, local time changes at 2:00 a.m. However, POSIX date functions do not follow this standard. With POSIX functions, the local time changes as follows:

- At 1:00 a.m. on the specified Sunday in the fall
- At 3:00 a.m. on the specified Sunday in the spring

POSIX date functions reference the MPE/iX date functions and adjust accordingly. However, because of the difference in time between the moment you manually adjust the MPE/iX date functions and the moment when the POSIX automatic date functions adjust, the date recorded by the system can be inaccurate for a period of time until the two times

synchronize. The following Fall and Spring Time Adjustment sections contain suggestions that can help minimize this affect.

The MPE/iX and POSIX CI TZ variable is used by the POSIX date functions and should be set in the MPE/iX CI environment as a system-wide Logon UDC. This allows the same value to be used for every user on the system. Once set, the TZ variable should not be changed.

Reference the TZTAB.LIB.SYS file to find the appropriate TZ value for your geographic location.

The TZTAB.LIB.SYS file, supplied with your operating system, contains a listing of geographical locations, dates to change the time for fall and spring, and valid time zone values. If your geographical location uses Daylight Savings Time, you can find the appropriate time zone value for your location in this easily viewable text file. Refer to your MPE/iX documentation for the format of each record in the list.

Enabling POSIX (T)ime (Z)one adjustments

The JobPak software is dependent upon POSIX date functions for the management of spoolfiles in the NSD account on the e3000. Before installing or updating JobPak, set the POSIX Time Zone variable for all users.

Set the TZ CI variable in the system-wide OPTION LOGON UDC.

```
SETVAR TZ "STDoffsetDST"
```

Syntax	Description
STD	The Standard Time Zone where the system is located
offset	The value that must be added to local time to arrive at Coordinated Universal Time (UTC or Greenwich Mean Time). If the offset is preceded by a – (minus), the time zone is east of the Prime Meridian. The default is west of the Prime Meridian and has no preceding – (minus); + is assumed.
DST	The Daylight Savings Time Zone. If Daylight Savings Time is not used, leave this field empty.

Example:

Pacific Time	SETVAR TZ "PST8PDT"
Mountain Time	SETVAR TZ "MST7MDT"
Central Time	SETVAR TZ "CST6CDT"
Eastern Time	SETVAR TZ "EST5EDT"

To check the values that have been set for this variable, read the TZTAB.LIB.SYS file on your e3000 system. This file contains a table that lists all the time zones and their associated variable values. **Do not modify this file.**

If JobPak version 6.1 is currently installed and running on your system and you change the TZ variable, you must stop JobPak and restart to enable the variable change.

If you need assistance, call Nobix Technical Support.

Fall time adjustment

To make the Fall adjustment, change the MPE/iX time zone, date, and time.

If you change the MPE/iX time backwards before 1:01 a.m., POSIX time becomes one hour later than MPE/iX time until the MPE/iX time becomes 1:00 a.m., when they synchronize. If you change the MPE/iX time backward at 1:00 a.m. or after, POSIX time and MPE/iX time stay synchronized.

When you change the MPE/iX time zone value to reflect Daylight Savings Time, you cause the MPE/iX time to move backwards. Once you change the MPE/iX time zone value, MPE/iX uses its automatic time correction and slows its clock until it reaches the appropriate time. This can cause the system time to be inaccurate for approximately 24 hours. For this reason, Nobix suggests canceling the automatic time correction and explicitly stating the MPE/iX time.

Example:

To change the MPE/iX date backward in time:

1. Select a time at or after 1:01 a.m.
2. Stop JobPak, TranSpooler, and any other applications that log the date and time.
3. Logon as MANAGER.SYS.
4. Change the MPE/iX time zone.

   ```
   SETCLOCK ;TIMEZONE=<your time zone value for Standard Time>
   ```

5. Stop all time correction taking place on the system.

   ```
   SETCLOCK ;CANCEL
   ```

6. Set the date and time.

   ```
   SETCLOCK DATE=MM/DD/YY; TIME=HH:SS;NOW
   ```

Spring time adjustment

To make the Spring adjustment, change the MPE/iX time zone, date, and time.

The POSIX time begins to change at 2:00 a.m., at which time it becomes one hour later than MPE/iX time. If you change the MPE/iX time forward before 2:00 a.m., the POSIX time becomes one hour later than MPE/iX time until 2:00 a.m., when it becomes one hour earlier than MPE/iX time. At 3:00 a.m., MPE/iX and POSIX times synchronize.

If you change the MPE/iX time forward after 2:00 a.m. but before 3:00 a.m., the POSIX time becomes one hour earlier than the MPE/iX time until 3:00 a.m. At 3:00 a.m., MPE/iX and POSIX times synchronize. If you change the MPE/iX time forward after 3:00 a.m., the POSIX time differs from the MPE/iX time beginning at 2:00 a.m. until the moment you change the MPE/iX time.

Due to these anomalies, Nobix suggests setting the time forward after 2:00 a.m. but before 3:00 a.m. This minimizes the period of time (exactly one hour) that the MPE/iX and the POSIX time references differ.

Example:

To change the MPE/iX date forward in time:

1. Select a time between 2:00 a.m. and 3:00 a.m.
2. Stop JobPak, TranSpooler, and any other applications that log the date and time.

3. Logon as MANAGER.SYS.
4. Change the MPE/iX time zone.

   SETCLOCK ;TIMEZONE=<your time zone value for Daylight Savings Time>

5. Stop all time correction taking place on the system.

   SETCLOCK ;CANCEL

6. Set the date and time.

   SETCLOCK DATE=MM/DD/YY; TIME=HH:SS;NOW

Chapter 3

First Time Installation or Reinstallation

This chapter describes the procedures for installing JobPak for the first time and for situations to reinstall JobPak without saving existing configuration and spoolfile data.

Before beginning

Read all of the instructions before installing any software.

- Make sure you have the DAT tape containing the software and the Software Activation Key(s) for the products being installed. You should have received new Activation Keys with your JobPak 6.1f media.
- You will need access to a terminal and a tape drive.
- You must be able to sign on as MANAGER.SYS to create a new account (for new installations) and then restore into that account.
- If you are reinstalling over an existing JobPak (or JobRescue) software version, **backup the entire NSD account** before performing the reinstallation.

Check the operating system

Before performing a JobPak 6.1 installation, make sure that the MPE/iX 5.5 operating system or a later version is being run on the e3000. Type the following to find out what operating system is being run on the e3000:

```
:SHOWVAR HPVERSION
```

Stop JobPak

Before reinstalling JobPak 6.1, make sure that any existing JobPak software is NOT running or being used. This includes users who might be running the STATUS program. Use the command:

```
:JPAKCOM.JPAK.NSD STOP
```

Installation or reinstallation procedure

The following are the procedures for installing or reinstalling JobPak 6.1. Complete each step before proceeding to the next.

1. Sign on as MANAGER.SYS:

   ```
   :HELLO MANAGER.SYS
   ```

2. Build the NSD account. If an NSD account already exists, skip this step and go to 3.

   ```
   :NEWACCT NSD,MGR;CAP=AM,SF,DS,CV,ND,IA,BA,OP,PH,PM;ACCESS=(R,X:ANY;W,L,A:AC)
   ```

3. Mount the JobPak tape and restore it:

   ```
   :RESTORE ; @.@.@; CREATE; ACCOUNT=NSD; SHOW
   ```

4. Sign on as MGR.NSD:

   ```
   :HELLO MGR.NSD
   ```

5. Alter the JPAK group capabilities:

   ```
   :ALTGROUP JPAK;CAP=IA,BA,PH,PM
   ```

Warning: If you are updating existing JobPak software and you want to retain the files and configurations, **do not continue**.

6. Run the SETUP program which provides guidance through the installation:

   ```
   :RUN SETUP.JPAK
   ```

   Follow the on-screen SETUP instructions. Have the Activation Key(s) handy, as the SETUP program will prompt for them. If installing JobPak for the first time or reinstalling JobPak, choose INSTALL. (If UPDATE is chosen, you will not have a proper configuration for starting up JobPak.)

   When SETUP is finished, JobPak is installed, however, it still needs to be configured.

7. Start the JobPak products by streaming the job control file, as follows:

   ```
   :STREAM JOBPAK.JPAK
   ```

   The first time JobPak is run on the system it initializes itself and builds some of its required data files. For this reason, there could be some features of the JobPak products that might not function until after JobPak has been started for the first time.

8. If using the ElectroPage report processing software, an execute reference to EPXEQ.PUB.NSD must be installed in the system-wide logon UDC:

```
XEQ EPXEQ.PUB.NSD
```

Find the system-wide option logon UDC file by doing a :SHOWCATALOG command. Edit the file and insert into it a line, similar to the one shown above. To disable the use of EPXEQ.PUB.NSD, insert an MPE RETURN command as the first line in the EPXEQ file.

The EPXEQ command file ensures that all reports, regardless of priority, get checked by ElectroPage before being processed or bypassed.

This step should not have to be repeated once it has been performed.

JobPak is now installed. Please refer to the enclosed documentation regarding the use of JobPak products.

Chapter 4

Updating an Existing JobPak 6.1 Installation

This chapter describes the procedures for updating JobPak 6.1 with the same or a more recent build of JobPak 6.1.

Before beginning

Read all of the instructions before installing any software.

Complete each step before proceeding to the next.

- Make sure you have the DAT tape containing the software and the Software Activation Key(s) for the products being installed. You should have received new Activation Keys with your JobPak 6.1f media.
- You will need access to a terminal and a tape drive.
- **Backup the entire NSD account** before performing any update steps. **Include all POSIX directories under /NSD**. Use the command:

```
:STORE /NSD/@;;SHOW
```

Stop JobPak

Before updating an existing JobPak 6.1 installation, make sure that any existing JobPak software is NOT running or being used. This includes users who might be running the STATUS program. Use the command:

```
:JPAKCOM.JPAK.NSD STOP
```

Updating an existing JobPak 6.1 installation

The following are the procedures for updating an existing JobPak 6.1 installation. Complete each step before proceeding to the next.

1. Sign on as MGR.NSD in the PUB group:

   ```
   :HELLO MGR.NSD,PUB
   ```

2. Mount the JobPak tape and restore it:

   ```
   :RESTORE ; @.@.@; CREATE; ACCOUNT=NSD; SHOW
   ```

   All files should be restored. **Do not continue** if there are files that have not been properly restored. Determine why the files were not restored and repeat step 2 until all files have been restored.

3. Run the SETUP program. It provides guidance through the update process.

   ```
   :RUN SETUP.JPAK
   ```

   Follow the SETUP instructions. Have the Activation Key(s) handy, as the SETUP program will prompt for them. Choose UPDATE, which is option number 1. **Do Not** choose INSTALL or the current configuration will be destroyed in favor of a default configuration.

4. JobPak can now be restarted:

   ```
   :STREAM JOBPAK.JPAK
   ```

The Update is now complete. Please refer to the enclosed documentation regarding the use of JobPak products.

Chapter 5

Installing JobQue Windows Client

The new Scheduling Communications program, Reporting program, and Scheduler Communications web interface are all available for install from the JobQue (for UNIX) installation CD that was shipped with JobPak 6.1f.

Note: To install the JobQue client programs on a system, access to a PC and a CD ROM drive are required, as well as the ability to log on as a local administrator to a Windows 2000, XP or 2003 machine.

Installation Procedure

First Time Client Installation

1. Log on to the Windows 2000/XP/2003 machine as a local administrator.
2. Insert the JobQue CD into your CD ROM drive.
3. If the setup program did not start automatically, run SETUP.EXE from the CD.

The JobQue client cannot be installed until the Microsoft .NET Framework application is installed. To install this application, follow the steps below. If already installed, skip to Step 10.

4. Using Windows Explorer, locate the JobQue 1.00 directory and open to the DotNetFramework1.1 folder.
5. Run **dotnetfx.exe** by double-clicking on it.
6. Click "**Yes**" when the system prompts you to install Microsoft .NET Framework 1.1.

The installation files are extracted and the Microsoft .NET Framework 1.1 Setup assistant appears.

7 Read the License Agreement. Select the "**I agree**" option if you agree and click **Install**. If you do not agree to the terms of the agreement, select the "**I do not agree**" option and click **Cancel**.

The installation starts as the .NET Framework files begin loading.

8 Click **OK** when setup confirms a successful installation.

9 Return to Windows Explorer, locate the **JobQue 1.00** directory, and run **setup.exe** by double-clicking on it.

The JobQue Admin Client Setup Wizard appears. It will guide you through the required installation steps.

10 Read the Setup Wizard instructions and click **Next**.

11 Read the License Agreement. Select the "**I Agree**" option if you agree and click **Next**. If you do not agree to the terms of the agreement, select the "**I Do Not Agree**" option and click **Cancel**.

12 Select the folder where the installer will install JobQue by using the default folder or browsing to a different one. You can click **Disk Cost…** to view the available drives along with each drive's available and required disk space. Near the bottom of the screen, you may choose to install JobQue just for your use or for anyone who uses this computer. Nobix recommends choosing the "**Everyone**" option. Click **Next** to continue.

13 Click **Next** to confirm and start the installation.

The JobQue client files begin loading.

14 Once the installation is complete, click **Close** to exit the Setup Wizard.

Uninstalling JobQue

If at any time it is necessary to uninstall the JobQue software from the machine, use the Add/Remove Programs tool on the Control Panel.

Appendix A

Procedure Exits

This version of JobPak requires the use of the AIF:Procedure Exits facility of MPE/iX.

When a job logs off, MPE calls a system procedure named ReleaseResources that deallocates resources necessary for the job to run. ReleaseResources is instrumented by a JobPak procedure named NSDREL1 through a process known as arming. NSDREL1 is what is known as an invocation handler, and is called immediately prior to ReleaseResources. The Procedure Exits facility provides the capability for instrumenting procedures to allow for other procedures to be called before, after, or in-place of normal procedures.

NSDREL1 sends a message to the background JobPak job asking JobPak to process it. If JobPak is not running, the $STDLIST's DFID and original output priority are recorded in global memory, so that JobPak can process it when JobPak is next streamed. In any event, until the $STDLIST is processed by JobPak, its output priority is set to 0 to make sure that it cannot be printed, and therefore lost.

Non-$STDLIST reports are not closed by MPE the same way that $STDLISTs are. Typically, most reports are eventually closed by the native-mode procedure FCLOSE (actually fclose_nm). Reports not closed by FCLOSE are closed by TERMINATE when the creating process ends. Procedure Exits are used here to instrument the FCLOSE procedure with a JobPak procedure named NSDFCL1. TERMINATE is instrumented with the JobPak procedure NSDTRM1. NSDFCL1/NSDTRM1 behave much the same way that NSDREL1 does in that they send a message to the background JobPak job asking it to process a particular spoolfile as it is being closed. Report priorities are set to 0 until the report has been processed by JobPak.

Again, if the JobPak job is not running, the DFID and its original output priority are recorded in global memory so that JobPak remembers to process it the next time it is started.

ReleaseResources is instrumented by NSDREL1 through an enabling program named JPENABLE. When JPENABLE is run with the -j parameter, it arms the system process JOB.PUB.SYS. JPENABLE in this case is run as one of the first commands in the JCL file JOBPAK.JPAK. ReleaseResources becomes instrumented by the invocation handler NSDREL1. NSDREL1 is loaded from the library PEXL.XL.NSD. JOB.PUB.SYS is the father of all background jobs that run on the system. Once armed, JOB.PUB.SYS cannot be disarmed without a system restart. Likewise, PEXL does not become unlocked until the system is restarted. For this reason, PEXL cannot be replaced with an updated version without a system restart.

FCLOSE and TERMINATE are instrumented by NSDFCL1 and NSDTRM1 respectively also through the use of JPENABLE, but not from the JobPak job. Instead a system-wide UDC is setup to execute the command file EPXEQ.PUB.NSD. This command file runs JPENABLE with the -s parameter that arms the job/session's CI process. For this reason, when the job/session logs off, its CI process terminates and unloads its reference to NSDFCL1 and NSDTRM1. So, to completely un-instrument FCLOSE with NSDFCL1, and TERMINATE with NSDTRM1, jobs and sessions that executed EPXEQ only need to be logged off and the system does not need to be restarted. However, if JobRescue is being used for $STDLISTs, NSDREL1 also needs to be un-instrumented and a restart is still required.

Global memory is a feature of MPE/iX that can be used to store data apart from any particular process. Global memory has to be acquired before it can be used and the first thing the JobPak job does when it starts is to determine if global memory has been acquired, and if not, it then acquires it. JobPak acquires about 8K bytes of memory that is used to store DFIDs and output priorities when JobPak is not running. Global memory is erased when the operating system is re-started and must then be re-acquired. Until it is re-acquired by the JobPak job, $STDLISTs and reports that are generated are not known to JobPak because their DFIDs are not stored in global memory. This is one reason why JobPak 6.0x–6.1 should be immediately started up after a system restart.

JobPak 6.0c and later incorporated a feature to check the spool system for unvisited spoolfiles (spoolfiles that didn't go through the normal FCLOSE, as well as files that were closed after a system restart but before JobPak was started). However, this feature has a built-in delay so that it will not interfere with the much faster Procedure Exits method of capturing spoolfiles. When JobPak is run after a system restart, spoolfiles not recorded in global memory would previously be ignored. With version 6.0c and later, these files are visited and processed, although not in the order that they originally became READY.

Appendix B

STREAMX and JobQue

Note: **For JobQue Users** If JobQue is currently patched to use the STREAMX product from Vesoft, installing JobPak (or JobQue) version 6.0c or later will undo the patch. **Do not reinstall the patch**. The procedures for doing so have changed.

The XSTRM08.JPAK file is an MPE command file now, and is no longer a compatibility mode program file.

The contents of XSTRM08.JPAK are shown on the following page.

If STREAMX is currently available to all users on the system via the MPE :STREAM command, then no changes need to be made to XSTRM08.JPAK because the XSTRM08 command file has access to generally available command files and UDCs. If the MPE :STREAM command is being intercepted and routed through STREAMX for other users, then JobQue will also have this functionality.

If STREAMX is available only through the use of a non-MPE command such as :STREAMX or something else, then modification to XSTRM08.JPAK is necessary if you want to have JobQue stream through STREAMX. For example, to modify XSTRM08.JPAK to use the non-MPE command :STREAMX, change the line

```
STREAM JOBCTL08
```

to

```
STREAMX JOBCTL08
```

or, if the command used to stream, for example, is the UDC :MYSTREAM, change the line to

```
MYSTREAM JOBCTL08
```

Do not change any other lines in the XSTRM08.JPAK file.

Contents of XSTRM08

Following is the contents of the XSTRM08.JPAK file.

```
ANYPARM passedParms=" "

comment note: no parms are expected by this command file.

comment this file is used by jt08sxl to stream job control files.
comment the job control to be streamed is always in a file named
comment JOBCTL08, which is an existing temp file.

comment it returns the success/failure of the stream operation thru
comment a JCW named XSTRM08STATUS. USE "SETJCW" - DO NOT USE "SETVAR"!

comment the output of this script is redirected to an existing temp file
comment named JOBNUM08, which is read by jt08sxl to determine the job
comment number that was streamed.

comment to modify the program used to stream jobs, change the STREAM
comment command below. DO NOT MODIFY ANY OTHER LINES. if STREAMX is
comment already used in place of stream via a UDC or command file, no
comment modifications to this file are necessary.

SETJCW XSTRM08STATUS 0
SETVAR HPCIERR 0

CONTINUE
STREAM JOBCTL08

IF HPCIERR > 0 then
  SETJCW XSTRM08STATUS !HPCIERR
ENDIF

RETURN
```