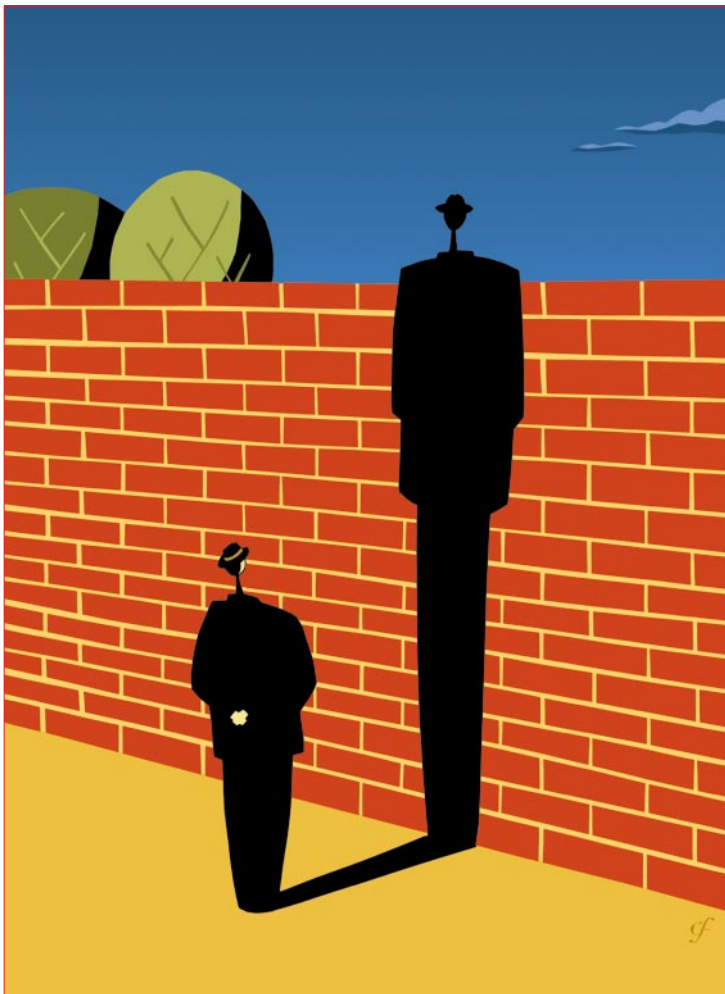


## **JobPak installation and update guide version 6.1**

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# **JobPak installation and update guide**

version 6.1  
November, 1998

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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™
- JobTime

Together these products offer information technology managers and staff the production-class system management capabilities needed to keep a single or networked HP3000 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 HP3000.

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 HP3000 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 HP3000 manuals published by the Hewlett-Packard Company.

## Related documents

- *ElectroPage Reference Guide*
- *JobRescue Reference Guide*
- *JobTime Reference Guide*
- Nobix web site [www.nobix.com](http://www.nobix.com)

## Technical support

The JobPak software uses the latest operating system technology and requires MPE/iX 5.0 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, Inc.**  
**6602 Owens Drive**  
**Suite One Hundred**  
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**925.227.5600**  
**800.538.3818**  
**FAX 925.225.1420**  
**E-mail Support@nobix.com**

If you fax your questions, include your name, return 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.

Most problems and questions relate to the NSD account. To address these, we require information about the NSD account structure and the files in the account. Please be signed on to the NSD account when you call us. This will expedite the solution.

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 our manuals, call us!

## Chapter 1

### What's new

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

- JobRescue
- JobTime
- ElectroPage

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

The 6.1 release key objective is to insure that all components of the JobPak software function smoothly and effectively when the year changes from 1999 to 2000. This release also contains several additional improvements that increase reliability and efficiency, while using less system resources and delivering higher performance.

### JobPak

All the JobPak products contain the following additions and modifications:

- Year 2000 Compliance
- New Company Name
- Message Files No Longer Used
- Saved Spoolfiles are Based on POSIX File System

- Displayed File Numbers in the STATUS Program
- Documentation on CD

For details, refer to the following sections.

### **Year 2000 compliance**

Version 6.1 is year 2000 (Y2K) compliant. Changes affect both the storage and display format for dates and times.

- **Storage Format:** The date storage format now uses a 32-bit field where all of the previous versions used a 64-bit field.

Previous versions used 32-bits for the date and 32-bits for the time. Version 6.1 uses 32-bits to represent the date in Coordinated Universal Time (commonly referred to as UTC—time in seconds elapsed since 12:00AM, January 01, 1970).

- **Display Format:** In previous versions, although the date has always been sorted by century, the display format only used one or two characters.

February 24, 1998 appeared as 98FEB24 or 24FEB8.

In 6.1, the display format uses four characters to show the century and year.

February 24, 1998 now appears as 1998/02/24 or 19980224

The display format for time remains the same and appears as HH:MM or HHMM, based on a 24-hour clock.

The change of century on December 1999 at midnight will not affect or interrupt schedules that are active at that time within JobTime.

### **New company name**

While the new company name, Nobix, appears in the 6.1 version, NSD remains the account name. This insures that data established in this account need not be reestablished.

### **Message files no longer used**

Version 6.1 no longer uses message files. The previous versions used 16-bit compatibility mode message files that slowed the system and consumed CPU time. Version 6.1 uses MPE/iX ports and TCP sockets that are more efficient and reliable.

### **Saved spool files are based on POSIX file system**

All of the version 6.1 products now require the MPE/iX 5.0 (or later) operating system. This operating system supports both the MPE and the POSIX file system. Saved spoolfiles from JobPak products are now saved in the POSIX file system, making the files easier to identify and quicker to locate.

Previous versions of the JobPak products saved the spoolfiles in the MPE file system. POSIX uses file naming that more clearly identifies file contents.

The following example illustrates the POSIX spoolfile naming convention:

/NSD/files1/A.593676.7384123

Syntax	Description
/NSD/files1/	The directory of the file.
A or R	The A or R at the beginning of each file specifies the file type as either A for \$STDLIST or R for report.
.593676	The first set of numbers is the spoolfile ID of the original spoolfile.
.738412348	The second set of numbers represents the time to the nearest second that the file was saved. This number is always different for every file even if the spoolfile ID is the same.



**Note:** The POSIX file system is case sensitive, whereas the MPE file system is not.

### Displayed file numbers in the status program

The displayed file numbers in the STATUS program are now relative to the number of spoolfiles saved in JobPak. Previous versions displayed a unique file ID that was automatically incremented and could become quite large.

### Documentation on CD

The three manuals belonging to the JobPak products are now available to view, search, and print from PDF files on a CD enclosed in the JobPak installation package. These files use the Adobe® Acrobat® Reader. The PC version of the reader is included on the CD.

## JobRescue and ElectroPage

JobRescue and ElectroPage products contain the following additions and modifications:

- Outbound SMTP Message Capability
- LZ77 Data Compression
- Configuration Report Capability
- Persistent Examination Processes
- Configurable Examination Delay
- No Lockwords on Saved Files

For details, refer to the following sections.

### Outbound SMTP mail message capability

Version 6.1 uses outbound SMTP messaging to send Email for notification of job completion and errors, and to send reports.

These products still support HPDesk Manager.

### LZ77 data compression

JobRescue and ElectroPage versions 6.1 now use LZ77 compression on spoolfile data to compress data in blocks of 8192 bytes. This provides an average of approximately 65%

compression. Previous versions of the JobPak products did not support data compression. The CONFIGIX program has an option to turn compression on or off.

### **Configuration report capability**

Version 6.1 has a utility that takes a snapshot of the current configuration and copies it into an editable ASCII file. This file can then be modified in an editor and loaded back into the system to change the configuration while JobPak is running.

### **Persistent examination processes**

Version 6.1 supports persistent examination processes. The previous versions used a single process per spoolfile. The 6.1 version uses a default of five processes that start up and stay running to handle all spoolfiles. This uses system resources more efficiently by using less CPU time than the previous versions.

### **Configurable examination delay**

Version 6.1 now has a configurable time period before examination that allows users access to a spoolfile before it is examined.

### **No lockwords on saved files**

Version 6.1 does not use lockwords on saved files. Previous versions used lockwords on individual files to keep unauthorized users within an account from viewing the files. In version 6.1 the entire account is now secured and lockwords are no longer needed.

## **JobTime**

The JobTime product contains the following additions and modifications:

- Schedule Names Limited to 31 Characters
- Network Scheduling
- Dependencies on Remote Systems
- Schedule Aliases
- User Defined Job Exclusions
- Event Driven User Streamed Jobs

For details, refer to the following sections.

### **Schedule names limited to 31 characters**

Schedule names in version 6.1 are now limited to 31 characters. This is important because previously 32 characters could be used. Schedule names can no longer contain the ";" semicolon character or the "@" character. The "@" character is used as a delimiter between the schedule name and a remote hostname.

JobName@SystemName

### **Network scheduling**

Version 6.1 now features peer to peer network scheduling. Each JobTime system can request a remote system to initiate a schedule or a job, as well as locally execute requests from remote JobTime systems. All JobTime systems report job initiations and completions to any other JobTime system to satisfy remote dependencies. These features require that all peers use JobTime version 6.1.

## Dependencies on remote systems

As jobs finish, JobTime sends notification of completion to the other systems on the network. This notification initiates other jobs set up as dependencies, pending the completion of remote jobs.

## Schedule aliases

In version 6.1 the ability to give a schedule an alias allows users to have different schedules using a common name. This allows schedules that run on different days to satisfy the same dependency by referencing the alias name.

Example:

```
$DEFINE SCHEDULE ONCE_A_DAY
  $ALIAS NIGHTLY_PRERUN
  $RUNAT ENDOFDAY_TIMES
$STEP 100 STREAM JOB1.JOBS.SYS
$DEFINE END
$DEFINE SCHEDULE ONCE_A_WEEK
  $ALIAS NIGHTLY_PRERUN
  $RUNAT ENDOWEEK_TIMES
  $STEP 100 STREAM JOB3.JOBS.SYS
$DEFINE END
$DEFINE SCHEDULE NIGHTLY_JOBS
  $DEPENDSON NIGHTLY_PRERUN
  $STEP 100 STREAM JOB8.JOBS.SYS
$DEFINE END
```

## User defined job exclusions

JobTime allows the definition of a user defined job queue (concurrency). The jobs and the number that run concurrently can be specified either explicitly or with wildcards.

A new feature added to concurrent definitions allows specification of job logons that are not to be included in the concurrency. For example, there are 213 different jobs that could run in the account named BOGUS. Of those jobs, only 211 are to be managed by JobTime. Previously, all 211 jobs would have to be defined. Now, only the two that are not to be managed need to be defined.

Example:

```
$DEFINE CONCURRENT 1
  $ENTRY JOB @,@.BOGUS
  $ENTRY JOB -THISJOB,MGR.BOGUS
  $ENTRY JOB -THATJOB,MGR.BOGUS
$DEFINE END
```



Note: The minus sign on the entries for THISJOB and THATJOB indicate that those two jobs are to be excluded from the concurrency definition.

## Event driven user streamed jobs

Previously, JobTime periodically polled the job queue to determine what jobs were currently executing, waiting, scheduled, etc. This has been changed to use procedure exits, so that the MPE/iX operating system notifies JobTime that a job has been initiated or terminated. The polling cycle is eliminated along with its associated CPU overhead. This has made the JobTime software more responsive, eliminating up to five seconds that transpired before JobTime could have initiated the next job.

**System environment**

JobPak software requires an HP3000 system with MPE/iX version 5.0 or later.

The CD ROM that contains the JobPak documentation requires a PC with a CD ROM and the Adobe Acrobat Reader 3.0 or later. For convenience, the latest PC version of the reader is included in the JobPak installation package on the enclosed CD. To obtain other versions 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.
- Re-installation 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 as well as any required Appendix C, Conversion notes version 5.1/6.0 to version 6.1 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 HP3000 at this time, then perform an installation not an update. Go to Chapter 3, First time installation or re-installation and follow the instructions.

## Re-installations

If an NSD account exists on your HP3000, and you want to re-install JobPak and not save any information stored in the NSD account, go to Chapter 3, First time installation or re-installation and follow the instructions.

## JobPak version upgrades

If an NSD account exists on your HP3000 with JobPak already installed, and you want to update JobPak with a newer version, determination must be made which JobPak software version currently is 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 4, Updating an existing JobPak 6.1 installation.
- If JobPak 6.0b/c/d/e/f/g or later with a build date is installed, go to Chapter 5, Updating to JobPak 6.1 from JobPak 6.0.
- If JobPak 6.0 or 6.0a without a build date is installed, go to Chapter 5, Updating to JobPak 6.1 from JobPak 6.0.
- If JobPak 5.1d or 5.1e is installed, go to Chapter 6, Updating to JobPak 6.1 from JobPak 5.1d/e.
- If a JobPak version earlier than 5.1d or 5.1e is installed, then JobPak 6.1 cannot be installed until JobPak 5.1d or 5.1e is installed first. If this is the situation, contact Nobix Technical Support.

## 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
```

- 3** The display should appear similar to the following:

```
:WHAT BUILD.JPAK
build.jpak.nsd:
JobPak 6.0d Tape Created (THU, DEC 12, 1996, 2:36 p.m.)
```

If what appears is similar to the above example, then JobPak 6.0b/c/d/e/f/g 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, proceed to Chapter 5, Updating to JobPak 6.1 from JobPak 6.0.

**4** If the display appears similar to the following:

```
:WHAT BUILD.JPAK
build.jpak.nsd: No such file
```

OR

```
:WHAT BUILD.JPAK
build.jpak.nsd: system call error
```

then JobPak 6.0 might or might not be installed. The BUILD.JPAK file was not distributed with JobPak 6.0A. In order to find the version, run the STATUS program. When the STATUS program is run, it displays the major build version of the software, as shown:

```
:STATUS.JPAK.NSD
JobPak Status 6.0 (c) 1995, NSD, Inc.
FRI, DEC 13, 1996, 12:20 PM
Log is 0, from FRI, DEC 13, 1996, 12:00 a.m. -> present.
```

There might or might not be a letter after the version number. If it displays 6.0 or 6.0a, you have 6.0a without a build date. If it is version 6.0 (or 6.0a), proceed to Chapter 5, Updating to JobPak 6.1 from JobPak 6.0.

**5** If the display appears similar to the following:

```
JobPak/Status 5.1e (C) 1992,1994 NSD, Inc.
Fri, Dec 13, 1996, 12:58 p.m.
>>
```

and the version displayed is 5.1d or 5.1e, then go to Chapter 6, Updating to JobPak 6.1 from JobPak 5.1d/e.

If the version displayed is 5.1c, 5.1b, 5.1a, 5.0, or anything earlier, or the STATUS program is in the JOBRSQ group (and not in the JPAK group), you must first upgrade to JobPak version 5.1d or 5.1e before updating to JobPak 6.1. Please call Nobix Technical Support or your Nobix account representative and request JobPak version 5.1e before proceeding. **Do not continue.**

## 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 HP3000. 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"
```

<b>Syntax</b>	<b>Description</b>
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 HP3000 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.

## Chapter 3

### First time installation or re-installation

This chapter describes the procedures for installing JobPak for the first time and for situations to re-install 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 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 re-installing over an existing JobPak (or JobRescue) software version, **backup the entire NSD account** before performing the re-installation.

#### Check the operating system

Before performing a JobPak 6.1 installation, make sure that the MPE/iX 5.0 operating system or a later version is being run on the HP3000. Type the following to find out what operating system is being run on the HP3000:

```
:SHOWVAR HPVERSION
```

#### Stop JobPak

Before re-installing 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 re-installation procedure

The following are the procedures for installing or re-installing 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
```



**Warning:** If 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 Card(s) handy, as the SETUP program will prompt for them.

If installing JobPak for the first time or re-installing 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 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 Card(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

### Updating to JobPak 6.1 from JobPak 6.0

This chapter describes the procedures for updating JobPak 6.0a/b/c/d/e/f/g or later, to JobPak 6.1.

#### 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 will need access to a terminal and a tape drive.

#### Check the operating system

Before performing a JobPak 6.1 installation, make sure that the MPE/iX 5.0 operating system or a later version is being run on the HP3000. Type the following to find out what operating system is being run on the HP3000:

```
:SHOWVAR HPVERSION
```

#### Preparation for conversion

The following are the procedures for preparing the system for updating to JobPak 6.1. Complete each step before proceeding to the next.

- 1** Sign on as MGR.NSD,PUB.  
:HELLO MGR.NSD,PUB
- 2** Stop the JobPak job (if it is running) using the JPAKCOM program, or terminate the job using the MPE :ABORTJOB command. Wait for the job to stop before proceeding.  
:JPAKCOM.JPAK STOP

- 3** Back up the entire NSD account to tape:

```
:STORE @.@.NSD; SHOW
```



**Caution:** Respond appropriately to any tape request. If any files fail to be backed up, **do not continue**. Determine why and repeat this step.

Label this tape as @.@.NSD Pre 6.1 Backup and retain it for an extended period of time.

Step 3 can be repeated if necessary; however, if you have progressed beyond this point, **do not re-use the original back-up tape**.

- 4** To ensure that no one is accessing files in the NSD account, purge the JOBDATA file (it gets rebuilt later):

```
:PURGE JOBDATA.PUB.NSD
```

Do not proceed to step 8 until the JOBDATA file is purged.

- 5** Restore files from the JobPak 6.1 distribution tape.

```
:RESTORE ;@.@.@;ACCT=NSD;CREATE
```

Make certain that all the files are restored. If any files are not restored, determine why and repeat this step until all files are restored. Keep restoring from the version 6.1 distribution tape until all the files are restored.

If you have progressed beyond step 5, **do not repeat** it.

You must enter the new Activation Keys supplied with the media in step 6. JobPak 6.1 uses a new style key compatible with the year 2000. Existing version 6.0 keys will not work with this new software.

- 6** Run the SETUP program to update the software. This step can be repeated, as long as the UPDATE option is selected.

```
:RUN SETUP.JPAK
```

Respond with the UPDATE option. Do not select another option. If JobTime is being used, then respond so that the schedule files are rebuilt. Have the Activation Key Card(s) handy, as the SETUP program will prompt for them.

This step can be repeated at any time from this point to the end of the conversion. As long as UPDATE is selected, no existing data will be destroyed.



**Note:** If the NSD account is on a User Volume Set, in step 7 you must purge the newly created /NSD/files1 directory and rebuild it on the user volume set of your choice. This must be done before converting any JobPak 6.0 saved files, as well as before you start the JobPak job.

If a user volume set for the G### groups is not used, step 7 can be skipped.

- 7** Execute the VOLSETUP command file to build the new POSIX directory /NSD/USERVOL/files1 on the user volume set.

```
:VOLSETUP <vol-set-name>
```

Where <vol-set-name> is the name of the user volume set currently being used. If the current G### groups are on a user volume set, the same user volume set name must be used when VOLSETUP is executed. The conversion programs rename files from the G### groups to a POSIX directory. Renaming cannot span volume sets.

When not using a user volume set, the converted files are simply renamed into /NSD/files1. However, when using user volume sets, the user volume set must be under an MPE group, not the account itself. VOLSETUP creates a new group named USERVOL.NSD and creates the files1 directory as /NSD/USERVOL/files1. A symbolic link is then named /NSD/files1 that points to the actual storage directory /NSD/USERVOL/files1.

## Conversion from JobPak 6.0 to JobPak 6.1

There is one conversion command used to convert from JobPak 6.0 to 6.1. This command can be repeated as many times as necessary. The conversion performs the following functions:

- Renames existing saved spoolfiles to a new POSIX-style directory and out of the G### groups.
- Converts the saved spoolfile's user label to year 2000 compatible format. A user label is used to store information about who created the file, when it was created, etc. This information is then copied into the new JOBDATA file.
- Rebuilds the log group information. This will cause one log to be built for each day of saved \$STDLIST information. All log cut-off times are set to the time specified, or midnight if no time is given.



**Note:** Before starting the conversion, make certain that you are logged on as MGR.NSD and are in the PUB group.

- 8 Execute the conversion command file:

```
:XEQ CON60S.JPAK <log-cutoff-time>
```

Where <log-cutoff-time> is the time that the logs switch each day. This time must be specified in the format HHMM where HH is the hour (00-23) and MM is minutes after the hour (00-59). For example, for a log cutoff time of 10:30 p.m., use 2230.

Let this command run to completion before proceeding.

- 9 JobPak can now be restarted:

```
:STREAM JOBPAK.JPAK
```

The conversion to JobPak 6.1 is now complete. Please refer to the enclosed documentation regarding the administration and use of JobPak products.

## Chapter 6

### Updating to JobPak 6.1 from JobPak 5.1d/e

This chapter describes the procedures for updating JobPak 5.1d/e to JobPak 6.1.

#### 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 will need access to a terminal and a tape drive.

#### Check the operating system

Before performing a JobPak 6.1 installation, make sure that the MPE/iX 5.0 operating system or a later version is being run on the HP3000. Type the following to find out what operating system is being run on the HP3000:

```
:SHOWVAR HPVERSION
```

#### Preparation for conversion

Before converting to JobPak 6.1, a MERGE process must be performed with the 5.1x version of JobRescue/ElectroPage.

The following are the procedures for preparing the system for updating to JobPak 6.1. Complete each step before proceeding to the next.

- 1 Sign on as MGR.NSD,PUB.

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

- 2** Stop the JobPak job (if it is running) using the JPAKCOM program, or terminate the job using the MPE :ABORTJOB command.

```
:JPAKCOM.JPAK
```

```
STOP <Return>
```

```
EXIT <Return>
```

- 3** Back up the entire NSD account to tape:

```
:STORE @.@.NSD; SHOW
```



**Caution:** Respond appropriately to the tape request. If any files fail to be backed up, **do not continue**. Determine why and repeat this step.

Label this tape as @.@.NSD Pre 6.1 Backup and retain it for an extended period of time.

Step 3 can be repeated if necessary; however, if you have progressed beyond this point, **do not re-use the original back-up tape**.

- 4** To ensure that no one is accessing files in the NSD account, purge the JOBDATA file:

```
:PURGE JOBDATA.PUB.NSD
```

Do not proceed to step 5 until the JOBDATA file is purged.

- 5** Restore files from the JobPak 6.1 distribution tape. Do not restore from the version 6.1 distribution tape until steps 1 through 4 have been completed.

```
:RESTORE ;@.@.@;ACCT=NSD;CREATE
```

Ensure that all the files are restored. If any files are not restored, determine why and repeat this step until all files are restored. Keep restoring from the version 6.1 distribution tape until all the files are restored.

If you have progressed beyond step 5, **do not repeat** it.

- 6 Run the SETUP program to update the software. This step can be repeated, as long as the UPDATE option is selected.

```
:RUN SETUP.JPAK
```

Respond with the UPDATE option. Do not select another option. If JobTime is being used, then respond so that the schedule files are rebuilt. Have the Activation Key Card (s) handy, as the SETUP program will prompt for them.

This step can be repeated at any time from this point to the end of the conversion. As long as UPDATE is selected, no existing data will be destroyed.

The new Activation Keys supplied with the media must be entered. JobPak 6.1 uses a new style key compatible with the year 2000. Existing version 5.1 keys will not work with this new software.



**Note:** If the NSD account uses a User Volume Set, in step 7 you must purge the newly created /NSD/files1 directory and rebuild it on the user volume set of your choice. This must be done before converting any JobPak 5.1 saved files, as well as before starting the JobPak job.

If you do not use a user volume set for the G### groups, step 7 can be skipped.

- 7 Execute the VOLSETUP command file to build the new POSIX directory /NSD/USERVOL/files1 on the user volume set.

```
:VOLSETUP <vol-set-name>
```

Where <vol-set-name> is the name of the user volume set to be used.

When not using a user volume set, the converted files are converted into /NSD/files1. However, when using user volume sets, the user volume set must be under an MPE group, not the account itself. VOLSETUP creates a new group named USERVOL.NSD and creates the files1 directory as /NSD/USERVOL/files1. A symbolic link is then named /NSD/files1 which points to the actual storage directory /NSD/USERVOL/files1.

## Conversion from JobPak 5.1 to JobPak 6.1

There are two spoolfile conversion programs used to convert from version 5.x to version 6.1. These programs can be repeated as many times as necessary, as long as they are run in the proper sequence. These spoolfile conversion programs are:

CONDATA converts all saved files (\$STDLISTS and reports) to version 6.1 format. This program is always run first. However, it can be run over and over, as the data it converts is deleted during the conversion and will not be duplicated. It might be necessary to run CONDATA more than once if there are data conversion errors that can be fixed without returning to step 1 in Preparation for conversion.

CONHDATA converts history information. If history-keeping is not used (\$HISTORY commands in the OPTIONS file), CONHDATA does not need to be run. However, if this program gets run, remember that this program is always run AFTER CONDATA. It can be run over and over, as the data it converts is deleted during the conversion and will not be duplicated.



**Note:** Before the conversion, make sure that you are logged on as MGR.NSD and are in the PUB group.

- 8 Run CONDATA first:  
:RUN CONDATA.JPAK
- 9 If using history-keeping, run CONHDATA:  
:RUN CONHDATA.JPAK
- 10 Convert the OPTIONS.JPAK file to the new format:  
:RUN CONOPT.JPAK

This new format resides in multiple files and is maintained using a configuration program named CONFIGIX.

CONOPT can be repeated as often as necessary. **Do not repeat** step 10 after altering the configuration using CONFIGIX, as it will destroy the altered configuration in favor of whatever was previously configured in the OPTIONS file. Again, if any errors are found during step 10, they must be fixed before proceeding to the next step.

- 11 Build the list of valid logs:  
:MERGEDIT.JPAK "-rebuild [<log-cutoff-time>]"

Where <log-cutoff-time> is the time that the logs switch each day. This time must be specified in the format HHMM where HH is the hour (00-23) and MM is minutes after the hour (00-59). For example, for a log cutoff time of 10:30 p.m., use 2230.

You might notice a message indicating the number of logs being built. This number might differ from the number of logs maintained in the previous version. This is normal.

Step 11 can be repeated. When -rebuild is entered, MERGEDIT uses the information in the new JOBDATA file to determine log cut-off dates. The log cut-off time is always midnight if a time is not specified. If this step is rerun after new data has been processed by version 6.1, the list of available logs will again be rebuilt, but could differ from the times that might have been configured in CONFIGIX under Retention Management. Using the -Edit mode with MERGEDIT will allow manual editing of the list of available logs.

- 12 Build the initial folder display records with the following syntax:

```
:CONFIGIX.JPAK -sort
```

This builds a basic folder matrix based on existing or default folder definitions.

Step 12 can be repeated at any time. After it is run the first time, it will have no visible effect in repeated use.

- 13 Perform system housekeeping by entering the following:

```
:XEQ PGROUPS.JPAK
```

This performs cleanup of old data, which is not deleted during the conversion.

Step 13 purges unused REPORT groups and all the D groups. Some files used in previous versions are deleted as well. This step might be repeated; however, it can produce errors (which can be ignored) on subsequent use.

- 14 Remove the reference to NMSDEFER.PUB.NSD from the system-wide logon UDC (you might want to combine this with step 15):

```
XEQ NMSDEFER.PUB.NSD
```

Find the system-wide logon UDC file by doing a `:SHOWCATALOG` command. Edit the file and remove the `NMSDEFER` line (as it appears above).

- 15** If ElectroPage is also being used, an execute reference to `EPXEQ.PUB.NSD` must be installed as a 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 it into a line like the one shown above. To disable the use of `EPXEQ.PUB.NSD`, insert an `MPE RETURN` command as the first line in the 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.

The conversion to JobPak 6.1 is now complete. Please refer to the enclosed documentation regarding the administration and use of JobPak.

## 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-`$STDLIST` reports are not closed by MPE the same way that `$STDLIST`s 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 JobTime



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

The new 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 JobTime 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 JobTime 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
```

## *Appendix C*

### **Conversion notes version 5.1/6.0 to version 6.1**

This chapter contains notes related to the conversion of JobPak 5.1 to JobPak 6.1. Most of the information in this appendix relates to version 5.1 to version 6.0 updates, however version 6.0 users who are updating to version 6.1 should read this section as well, as the locations for saving spoolfiles has been changed.

#### **System requirements**

JobPak 6.1 requires the HP3000 system to be using the MPE/iX operating system 5.0 or later. Do not attempt to use this version of JobPak if you are on an operating system prior to MPE/iX 5.0.

#### **6.1 update**

Many changes have been made to JobPak, both in operation and appearance. Versions 6.0 and 6.1 have undergone a complete redesign and coding. It is in fact a new product, similar to the other versions in name and basic functionality only.

The most significant changes are that the software now operates in MPE/iX native mode, and the configuration is no longer based on the OPTIONS file. These and additional changes are listed below and described in the text that follows:

- The software now operates in MPE/iX native mode.
- The configuration is no longer based on the OPTIONS file – a menu driven configuration program named CONFIGIX is used in its place.
- Log groups, the REPORT group and the HISTORY group do not exist; they are replaced by a single group for all files.
- There is no longer a MERGE process; it is replaced by configuring retention time periods.

- Standard MPE :XEQ command files are used in place of internal logic to execute user commands (\$EXECUTE).

## Documentation

The documentation for JobPak is now supplied on CDROM. Refer to the Readme.txt file on the CD for detailed information about viewing, searching, or printing the documents.

## Planning to update to version 6.1 from v5.x

There are certain differences in how this version operates that might affect your decision on when to install/update to version 6.1. Please read these notes thoroughly before updating your system.

For JobPak 5.x systems with large numbers of saved spoolfiles, it is important to set aside enough time for completing the conversion process. Each saved spoolfile must be converted in its format. The files are converted one at a time. This might take from a few minutes to multiple hours depending on the number of files being retained with JobRescue and/or ElectroPage.

The OPTIONS file is no longer used and might require some cleanup prior to its being converted into multiple data files (information provided later).

## Procedure exits

JobPak 6.1 requires the use of AIF:Procedure Exits. The use of procedure exits is transparent to all users and applications. Spool system polling and the overhead it consumed has been eliminated. The NMSDEFER command file is no longer used, because the requirement that spoolfiles be at or below the outfence has been removed.

In order for spoolfiles to be processed in an orderly fashion, the JobPak job must always be running on the system. If it is not running, the events notification generated when jobs log off and spoolfiles become READY cannot be processed, and the \$STDLISTs and other spoolfiles will sit and wait at a 0 priority in the spool system. Should this occur, there is a program named PROCESS.JPAK that will duplicate the event notification that originally occurred when the spoolfile was first created. PROCESS should only be used when JobPak is running. PROCESS can also be used to reprocess a spoolfile that was created before a configuration entry was made.

An operating system utility called PEUTIL.PUB.SYS allows the system manager to control the use of procedure exits on a system-wide basis. Procedure exits are a safe and effective way to perform the required functions of the JobPak job, and result in significantly less overhead.

Procedure exits are used differently in JobRescue and ElectroPage, as follows:

### JobRescue

Procedure exits are used by JobRescue to allow the MPE/iX operating system to notify JobRescue when a job logs off. In this way, it is no longer necessary to make all logons execute a UDC forcing the \$STDLIST priority to 1. When a job logs off, the job's \$STDLIST is set to a priority of zero. A message is sent to the JobRescue process running in the JobPak job, indicating that the job is logging off and what the original priority is. In this way, the priority information is not lost and if necessary, JobRescue can restore the \$STDLIST's original priority.

The action of arming a job to use procedure exits occurs when the JobPak job is first streamed. A system procedure is armed, that unfortunately cannot be disarmed without restarting the operating system. If the system is restarted, jobs are again armed at the moment the JobPak job is streamed.

The procedure that is used to notify JobRescue when a job logs off is attached to the main job process named JOB.PUB.SYS, which is a direct descendant of PROGEN, the first process started upon system boot. Due to its nature, once the JobRescue procedure is attached to JOB.PUB.SYS, the only way to detach the procedure is to reboot the system. If you wish to remove the attached procedure, you must reboot the system without starting the JobPak job.

### **ElectroPage**

ElectroPage uses procedure exits to allow the MPE/iX operating system to notify it when a non-\$STDLIST spoolfile goes from a CREATE state to a READY state. When this occurs, the report's priority is set to zero, and a message is sent to the ElectroPage process running in the JobPak job, indicating that the report has become ready and what the value of the original priority is. Using this method, it is no longer necessary to ensure that reports are at or below the outfence for their destination device (which would have kept them from printing before ElectroPage could capture them).

The action of arming a job or session to use procedure exits occurs when the job/session logs on via a new logon UDC. This logon UDC executes a MPE command file named EPXEQ.PUB.NSD, which arms the job/session for use with procedure exits. EPXEQ can be modified to prevent its arming function by placing a :RETURN command as its first line.

### **No OPTIONS file**

A menu-driven configuration utility for JobRescue and ElectroPage has replaced the OPTIONS file used in 5.x versions. The OPTIONS file is converted at installation time to a series of configuration files, kept in the JPAK group. These files are not directly modifiable and a utility must be used to maintain them. The utility used is named CONFIGIX.JPAK and it can be run by MGR.NSD or anyone with SM capability.

Configuration updating is immediate and no reload time is necessary. Full wildcarding is allowed for spoolfile matching, which now includes the device.

The utility that converts the OPTIONS file to the new configuration is named CONOPT.JPAK.

### **Folder access**

In version 6.1, users will not be able to see the presence of folders and reports that they do not have access to. This is different than the way JobPak 5.x operated, in that users could see the availability of all files, but only view those they had access to.

Saved files (\$STDLISTs and reports) that are not placed into folders will no longer appear in Report Mode in the STATUS program. In order for a file to appear as accessible in Report Mode, it must be included in a folder and the user must have access to both the folder and the report. Folders which a user does not have access to will no longer be displayed for that user.

### **Default folder security**

Folder security for version 6.0/6.1 has changed from v5.x. Folders have a different security facility than do saved files (see below). Previously, all users had the ability to see the

existence of most folders. The security mechanism used now prevents users from seeing the availability of folders that they do not have access to.

There is a SPECIFY ACCESS function in the folder configuration area of CONFIGIX. If a folder has access specifications attached to it via this function, all users are denied access to the folder—except for those listed in the access specifications. If there are no access specifications, the folder is accessible by all users. Report access is controlled by access specifications attached to the report, and by the overall security level configured for the system, as described in the chapter below.

In JobPak 5.x there was a passing on of security from the folder to the report level, allowing folder default security to be used by the reports included in the folders. This is no longer supported in version 6.0/6.1, and in reality is no longer necessary. Report security must be specified separately; however, note that if a user does not have access to a folder, there is no way to access the reports included in the folder.

## Security levels

The previous four levels of security are retained in version 6.1.

- No security
- Low security
- High security
- Check-access security

## Message history

Message history, as contained in MSGHIST.PUB.NSD, is erased during conversion. If you wish to retain this information in static format, perform the following before converting:

```
:FILE LP;DEV=LP
:RUN STATUS.JPAK.NSD;STDLIST=*LP
  MESSAGES
  EXIT
```

## Log groups (or Dnnnnnn groups)

The multiple Dnnnnnn groups, the REPORT group, and the HISTORY group that existed in version 5.x do not exist in version 6.1. Replacing them is a single POSIX directory for all files. Multiple directories are supported, if required. The new naming convention for the directory is filesn where n is a single-digit number. The first directory to be created is files1. Most systems will not require more than one directory. \$STDLISTs are no longer placed in the PUB group, and no file renaming occurs for the life of a saved spoolfile.

Note that JobPak 6.0 systems used a single group, usually named G001, to store the saved spoolfiles. When updating from version 6.0 to version 6.1, existing files stored in any G### groups are renamed into the new POSIX directory.

Inside the files1 directory there are two files kept for each spoolfile saved: the original spoolfile, in OUTSP format, and a header file. The naming convention is A.bbbb.cccccc. Where A is either an uppercase A or R, for \$STDLIST or report, respectively. bbbb is the spoolfile's original Spool ID, and cccccc is the time the spoolfile was saved in UTC. The header file uses the same name as the spoolfile but adds the extension .hdr.

If file compression is turned on, then the header file is incorporated into the compressed spoolfile and only one file is present. During conversion, compression is not used. Compression can be applied to existing files after conversion to version 6.1. Compressed files use an extension of .cmp.

Lockwords are no longer used on any saved spoolfiles. To facilitate proper security, it is necessary to ensure that the /NSD/files1 directory has only NSD account access. All access to saved spoolfiles while outside the account is internally controlled by the STATUS program.

Since the format of the saved spoolfiles has changed from proprietary to a standard OUTSP format, existing data must be converted before it can be used by the new software.

There are two utilities used to convert the existing spoolfile data:

- CONDATA.JPAK to convert \$STDLISTs and reports.
- CONHDATA.JPAK to convert \$STDLIST data contained in the HISTORY group. For more information refer to Chapter 5, Updating to JobPak 6.1 from JobPak 6.0.

Because log groups and history information (as kept in JobRescue 5.x) are no longer supported, a different retention mechanism must be used. In place of the \$ONLINE command and D groups, individual jobs or sets of jobs can be configured with differing retention periods. A retention period (or retaining time) can be set to a number of days, or generations, or a combination of both. For undefined jobs (those with no job-specific definition), a default number of days to retain them can be defined. The overall number of logs in the system is determined by the oldest \$STDLIST currently being retained. The new Retention Manager program is detailed below.

### **MERGE process**

Because log groups are no longer supported, there is no longer a MERGE process. In place of this, a process called the Retention Manager is run automatically once a day. The Retention Manager is responsible for deleting files that have come to the end of their respective lifespans.

At the same time the Retention Manager runs, the MERGEDIT process runs, which updates the MERGLIST file. The MERGLIST file contains the information necessary to determine in which log a particular \$STDLIST currently resides. Customizing the merge process must now be performed in the command file MERGE.PUB.NSD, which is executed at the end of each retention management cycle.

### **Execute labels and files**

JobPak 6.x no longer uses its own internal logic to execute commands on your behalf; it now uses standard MPE :XEQ command files. The way in which the version 5.x \$EXECUTE command has been implemented in 6.x requires manual conversion of the syntax previously used to execute labels and files. This is particularly true in dealing with the issue of \$STDIN and how it is accepted by commands being executed.

The version 5.x logic provided syntax that allowed \$STDIN text to be coded in-line with MPE commands. XEQ files do not provide that same level of inclusion. Also, execute labels and files were capable of name substitution for a pre-defined list of variables; in version 6.1 the pre-defined list is passed as arguments to the command line.

The level of control over what can be executed has certainly increased in utilizing XEQ command files, in place of the internal logic in version 5.x; however, be aware that there is

no automated conversion from the previous format to the version 6.1 format. When the conversion program that converts the OPTIONS file successfully completes, all the old \$DEFINE LABEL definitions are placed in individual files in a newly created group named XXEEQQ. This name was chosen to be self-describing, and yet not conflict with any existing groups of the same name. The first six characters of the label name are used to form the filename, with two characters at the end to make the name unique.

To provide some idea of how the new logic functions, consider the typical CALL-BEEPER label that is used with the AUTODIAL program.

The version 5.x method used the following logic:

```
$EXECUTE ONERROR LABEL CALL-BEEPER
$DEFINE LABEL CALL-BEEPER
:FILE PORT;DEV=21
:RUN AUTODIAL.JOBRSQ
$DEFINE END
```

In this case, the version 6.x method would list the AUTODIAL.XEQ file as one of the XEQ files to be executed when an exception is detected. The contents of AUTODIAL.XEQ is as follows:

```
PARM Dfid ExCnt MissingCnt JobPreFix JobNo FileDes="" JobName="" &
      UserName="" AcctName="" ElapMin CpuSec DateLogon="" &
      TimeLogon="" DateLogoff="" TimeLogoff="" JobPakFname=""
COMMENT This is the execute file used for running the AUTODIAL
COMMENT program. Modify the command line "setvar PORTLDN 21"
COMMENT to the port you will use for your modem.
if !ExCnt = 0 and !MissingCnt = 0 then
    return
endif
echo AUTODIAL.XEQ !JobPreFix!JobNo BEG !HPDATEF !HPTIMEF
setvar cnt!Dfid 0
setvar stayinloop!Dfid true
while stayinloop!Dfid
    setjcw cierror 0
    continue
    build autolock>$null
    if cierror = 0 then
        setvar stayinloop!Dfid false
    else
        pause 20
        setvar cnt!Dfid cnt!Dfid + 1
        if cnt!Dfid > 15 then
            setvar Atime finfo("autolock",20)
            setvar Adate finfo("autolock",21)
            echo !HPTIMEF In AutoDial loop > 5 Mins.
            setvar stayinloop!Dfid false
        endif
    endif
endwhile
setvar PORTLDN 21
file port;dev=!PORTLDN
continue
abortio !PORTLDN > $null
continue
autodial.jpak;info="!JobName !UserName !AcctName"
continue
```

```

abortio !PORTLDN > $null
purge autolock
deletevar stayinloop!Dfid
deletevar cnt!Dfid
echo AUTODIAL.XEQ !JobPreFix!JobNo END !HPDATEF !HPTIMEF
setjcw cierror 0

```

Each \$DEFINE LABEL command in the OPTIONS file is required to be converted to an individual file and re-evaluated in its syntax, to determine the required changes. Multiple XEQ files can be executed simultaneously; therefore, non-sharable constructs such as non-unique variable names should be avoided when building these scripts.

## OPTIONS file cleanup

The OPTIONS file might need to be modified before the CONOPT conversion program is run.

### \$COPY, \$BYPASS, \$NOSAVE and \$KILL

Remove (or modify as shown below) all *global* \$COPY, \$BYPASS, \$NOSAVE and \$KILL commands. Only the global ones that are not in \$DEFINE JOB definitions. They look like the following:

```

$BYPASS JOBPAK,MGR.NSD
$COPY PAYROLL,MGR.ACCT
$KILL THISJOB,USER.ACCT
$NOSAVE URJOB,MGR.MYACCT

```

....and so on.

If these commands are to be retained, they **must** be placed into their own \$DEFINE JOB definitions, if ones for matching jobs do not already exist.

In the above example, simply create a \$DEFINE JOB for the JOBPAK job:

```

$DEFINE JOB JOBPAK,MGR.NSD
  $BYPASS
$DEFINE END

```

Do the same for all jobs defined using \$COPY, \$BYPASS, \$NOSAVE and \$KILL command lines.

### \$REPORTMODE (WAIT, VERIFY, SAVE)

If this command is used within a \$DEFINE JOB definition in the OPTIONS file, it must be removed from that definition and placed in a \$DEFINE REPORT definition for the specific report created by the job definition. This is necessary because the structure for this function is now defined at the report definition level at version 6.0 and later.

### \$NOERROR commands that reference an error number

\$NOERROR commands that reference an error number, must be changed to the text style, otherwise they will be ignored by the conversion program. In this example:

```

$error(5) PROGRAM TERMINATED IN AN ERROR STATE
$DEFINE JOB MYJOB,MYUSER.MYACCT
  $NOERROR 5
$DEFINE END

```

must be changed to the following:

```
$ERROR PROGRAM TERMINATED IN AN ERROR STATE
$DEFINE JOB MYJOB,MYUSER.MYACCT
  $NOERROR PROGRAM TERMINATED IN AN ERROR STATE
$DEFINE END
```

All \$NOERROR commands that use this style must be modified.

### **\$EXECUTE commands that reference a file**

\$EXECUTE commands that *reference* a file, rather than a label, must be commented out or removed before running the conversion program. The equivalent of these \$EXECUTE commands can be added back in after the conversion using the CONFIGIX configuration program.

### **AutoDial**

AutoDial is now native mode and is initiated differently. There is no entry point named TEST. In place of this special entry point, the syntax INFO=parameter is passed to start AutoDial in test mode; the parameter (or argument) is -test and causes the same prompting for the job name and user as in previous versions.

There is an XEQ file named AUTODIAL.XEQ.NSD that should be used to incorporate AutoDial into the configuration. If you used the LABEL named CALL-BEEPER, you should discontinue its use (the use of CALL-BEEPER will be converted for you, however the contents of the resulting XEQ file should be discarded or changed to the contents of AUTODIAL.XEQ). Please print, read and become familiar with the AUTODIAL.XEQ file before attempting to use the AutoDial version 6.1 program or AUTODIAL.XEQ.

### **Multi-tasking of spoolfile processing**

Multiple spoolfiles can be processed simultaneously with version 6.1. It is important to understand that the design of user exit features (XEQ files that JobPak runs for you) must incorporate strategies for simultaneous use. Please keep in mind the following considerations:

- Do not use hard-coded temporary or permanent filenames for any output. Do use uniquely named temporary and permanent files, with a part of each filename consisting of the current DFID or system time.
- Do not use hard-coded CI variables. Do use CI variables that in part consist of the current DFID or system time, etc.
- Do not use exclusive access on any files. Be aware that any write-type access will default to exclusive, unless a :FILE command specifying shared access is used (or unless the program was written to use shared access).
- Note that in version 5.x, JobPak was suspended from operation during the execution of a label; however, with version 6.1 processing of other spoolfiles will continue.
- To turn off multi-tasking of spoolfile processing, and revert to single task mode, after the conversion, run CONFIGIX.JPAK, go to the Global Misc Screen and set the maximum number of processes to 1.

## Data compression

Data compression is incorporated into version 6.1 and is enabled/disabled via the CONFIGIX program. Review the CONFIGIX documentation for information on how to enable this feature.

When data compression is enabled, new files that are saved are automatically compressed after they have become available to STATUS program users. This ensures that the overhead of compressing a file does not delay access to the file. Existing files that are not currently compressed are compressed in the background during idle periods, when there is no examination activity.

Compressing files is a high CPU-overhead process and is only performed a single file at a time.

The STATUS program automatically decompresses segments of the file a user is viewing to ensure optimal CPU usage.

The compression program, COMPSPFL, can be run in reverse to decompress a file manually. This then results in the original OUTSP file being made available.

## User volume sets

User volume sets can be used in the NSD account. JobPak 6.1 does not build and delete groups the way version 5.x did. There is no Dnnnnnn group assigned to each Log. When the version 6.1 software is installed and the SETUP program is run, a new POSIX directory named /NSD/files1 is created and this is where all \$STDLISTs and reports reside. When converting an existing version 5.x to version 6.1, any existing \$STDLISTs and reports are converted in format and saved into the /NSD/files1 directory.

It is important to note that the files1 directory is built on the system volume set. If you wish to have the files1 directory on a user volume set, then the directory must be deleted and rebuilt on the volume set that you desire before any files are converted. A command file named VOLSETUP has been provided to perform this function. Execute VOLSETUP after the Setup program is run, but before running any of the conversion programs, such as CONDATA or CONHDATA (discussed in Chapter 5, Updating to JobPak 6.1 from JobPak 6.0).

The instructions for executing VOLSETUP can be found in in Chapter 6, Updating to JobPak 6.1 from JobPak 5.1d/e), step 7 and in Chapter 5, Updating to JobPak 6.1 from JobPak 6.0, step 7.