



PREDICT APPLICATION CONTROL

PAC / PAA

Installation

Version 2.3.2

 **SOFTWARE AG**



This document applies to Predict Application Control Version 2.3.2 and to all subsequent releases. Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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PAC/PAA Installation Manual

This documentation describes step-by-step how to install Predict Application Control (PAC) and Predict Application Audit (PAA) under the following operating systems:

- BS2000/OSD
- VM/CMS
- OS/390
- DOS/VSE

The steps to be taken depend on whether you are performing a first-time installation or an upgrade of a previous version.

This documentation is organized in a number of documents containing the following information:

- Introduction Gives a brief outline of the different types of installation possible with the current version of PAC/PAA.
- General Information Describes product prerequisites, use of System Maintenance Aid (SMA) and gives information about the installation jobs and procedures.
- General Installation Steps Lists the contents of the installation tape and describes how to copy its contents to disk (depending on your respective operating system).
- First-Time Installation Describes installation steps required to install PAC/PAA in an environment where they were not installed before.
- Conversion Installation Describes installation steps required to convert a previous version of PAC/PAA to the current version.
- Customizing PAC and PAA Describes the customization of PAC and PAA. Also described is how to install PAC utilities in an environment not under PAC or PAA control.
- Establishing a Separate PAA Environment Describes the actions necessary for the first-time installation of Predict Application Audit (PAA) and the steps required to establish a separate or additional PAA production environment to be served by a single PAC 2.3.1 system.
- Sample Jobs Lists sample jobs for customization purposes.

Introduction

This introduction gives a brief outline of the different types of installation possible with the current version of PAC/PAA, and provides information you should read before starting the actual installation.

- Installing PAC/PAA for the First Time
 - Converting from a Previous Version
 - Establishing a Separate PAA Production Environment
 - Using PAC Utilities without PAC/PAA
-

Installing PAC/PAA for the First Time

If you are installing PAC for the first time or in an environment where PAC is not yet installed, read the General Information, and then proceed with the installation method described in First-Time Installation.

Converting from a Previous Version

If you have already used a previous version of PAC / PAA and a PAC / PAA system file containing data in the format of that version, the data must be converted to PAC 2.3.1 format. You should read the General Information, then proceed with the installation method described in Conversion Installation.

Establishing a Separate PAA Production Environment

It is possible to establish a PAA production environment or many PAA production environments separate from where the main Natural system file where PAC/PAA is installed. There can be several PAA system files running concurrently at your site. While a single PAC system can serve several environments, a single PAA system serves a single production environment. The details of establishing a separate PAA production environment are given in the section Establishing a Separate PAA Environment.

Using PAC Utilities without PAC/PAA

Using the utility MIGRATE you can load Natural objects, error messages, DDMs and foreign objects migrated to the following locations:

- Natural
- Predict
- Foreign

The compare utility is useful for comparing objects in Natural libraries. Refer to Installing PAC Utilities Only for details.

General Information

The information in this section applies to *all* installation methods. The following topics are covered:

- Product Requirements
 - Installation Jobs and Procedures
 - Using System Maintenance Aid
-

Product Requirements

Required Products

The following products must be installed before you install PAC / PAA 2.3.1.

Natural

- Natural for Mainframes version 3.1.*n*.

Note:

If you are using Natural for Mainframes Version 3.1.3 of 3.1.4 please ensure that the following fixes are applied:

Zap Correction	NA44135
Zap Correction	NA44136
Natural IUPD	NA31429

Adabas

- Adabas version 7.

The following Adabas parameter should be set during the installation of PAC/PAA 2.3.1:

NISNHQ=200 (or greater)

Predict

- Predict version 4.1.

For Predict 4.1, fix PD412I8 must be applied. This fix is supplied on the installation tape in file PRD412.I0I8

- Predict version 4.2.

For Predict 4.2, fix PD421I1 must be applied. This fix is supplied on the installation tape in file PRD421.I0I1

Predict Compatibility:

Since PAC and PAA provide change management for both Predict and Natural objects, they must be compatible with new versions of Predict. Thus, the structure of the PAC PCF system file must match the version of the Predict installed.

The PAC PCF system files provided on the PAC / PAA 2.3 installation tape is compatible with Predict 4.1 and Predict 4.2. The PAC PCF system file must not be shared between different versions of Predict.

For this version of Predict use this dataset
Predict 4.1	PAC23nSYS2
Predict 4.2	PAC23nSYS3

Other Related Software AG Products

These products are not in any particular order, but if used with PAC/PAA 2.3.1, the following prerequisites must be met:

Natural Security

- Natural Security for Mainframes version 3.1.*n*.
- Natural Security is required to restrict users in the PAA system from performing administration functions and from initiating loads.
- Natural Security is required to access User Exit subprograms from libraries other than SYSPAC and SYSPAA.

Natural for DB2

- Natural for DB2 version 3.1.*n*.

Predict Case

- Predict Case version 2.5.

Entire System Server

- Entire System Server version 3.1.*n* is required to support foreign objects. Set the following ESY startup parameter:

IUBL=12000 (recommended)

You may wish to fine-tune this parameter with the parameters in module NATPNIPS, depending on the requirements of your installation.

Natural Construct

Natural Construct 4.3.1

Supported TP Monitors

- OS/390 environment - Complete, CICS, TSO, and IMS/DC TP-monitors.
- DOS/VSE environment - Complete and CICS TP-monitors
- BS2000/OSD environment - UTM and TIAM TP-monitors.
- VM/CMS environment - VM/CMS TP-monitor.

Installation Jobs and Procedures

The method used for installing PAC/PAA depends on your operating system environment.

BS2000/OSD, OS/390, DOS/VSE

For these operating systems, the installation of Software AG products is performed by installation jobs. These jobs are either adapted "manually" or generated by System Maintenance Aid (SMA).

For each step of the installation procedure described below, the job number of a job performing the respective task is indicated. This job number refers to an installation job generated by SMA. If you are not using SMA, a sample installation job of the same number is provided in the job library on the PAC/PAA installation tape; you must adapt this example job to your requirements. Please note that the job numbers on the tape are preceded by a product code (for example, PACI061 or PAAI050).

VM/CMS

The installation of Software AG products is performed by installation procedures. Sample procedures are provided on the installation tape.

Note:

These procedures are only examples and must be adapted to your environment as required.

Using System Maintenance Aid

Note:

System Maintenance Aid is not available for operating system VM/CMS.

If you are using Software AG's System Maintenance Aid (SMA) for the installation process, please note the following before generating jobs.

1. Load the SMA table data as described in the System Maintenance Aid documentation (if you have not already done so).
2. Set PAC 2.3.*n* in the list of available products for your environment to "TO BE INSTALLED".

Proceed with the steps described below, depending on the installation method you choose.

First-Time Installation

Make the following settings in parameter group OPTION depending on your operating system:

1. For operating systems OS/390, BS2000/OSD and DOS/VSE: Set the parameter PAC-FIRST-INSTALL to Y.
2. After successful installation, you are strongly recommended to set the above parameters to N and to commit the environment.

Conversion / Upgrade Installation

If a PAC version 2.2.1 or 2.2.2 is marked as "INSTALLED" in your SMA environment, you can convert / upgrade to version 2.3.1 with the following parameter settings in parameter group OPTION.

For operating systems OS/390, BS2000/OSD and DOS/VSE: Set the parameter PAC-FIRST-INSTALL to N.

See the System Maintenance Aid documentation for more information.

General Installation Steps

This section covers the following topics:

- Installation Tape
 - Which Installation Method?
 - Pre-Installation Steps
-

Installation Tape

The installation tape contains the datasets listed in the table below. The sequence of the datasets is shown in the Report of Tape Creation, which accompanies the installation tape. The notation n in the dataset name represents the SM level of the product, for example PAC Version 2.3.1.

- Tape Contents
- Copying to a BS2000/OSD Disk
- Copying to a VM/CMS Disk
- Copying to a OS/390 Disk
- Copying to a DOS/VSE Disk

Tape Contents

Datasets required for PAC and PAA:

Dataset Name	Contents
PAC23n.INPL	Natural modules in INPL format loaded into libraries SYSPAC, SYSPACA, SYSPACUS, SYSPAA, SYSPAAUS, SYSPAAA on the FNAT and into SYSTEM libraries on the FNAT and FUSER. DCB= (RECFM=VB , LRECL=4624 , BLKSIZE=4628)
PAC23n.ERRN	PAC long and short error messages for libraries SYSPAC and SYSPAA on the FNAT. DCB= (RECFM=VB , LRECL=4624 , BLKSIZE=4628)
PAC23n.SYS1	PAC system file (ACF) in Adabas ADAULD format and database description. Contains the data to be loaded into the ACF file. DCB= (RECFM=VB , LRECL=9996 , BLKSIZE=10000)
PAC23n.SYS2	PAC system file (PCF) in Adabas ADAULD format and database description. Contains the data to be loaded into the PCF file used in a Predict version 4.1 environment. DCB= (RECFM=VB , LRECL=9996 , BLKSIZE=10000)
PAC23n.SYS3	PAC system file (PCF) in Adabas ADAULD format and database description. Contains the data to be loaded into the PCF file used in a Predict version 4.2 environment. DCB= (RECFM=VB , LRECL=9996 , BLKSIZE=10000)
PAC23n.SRCE (OS/390 only)	Contains the batch procedure PACBATCH. DCB= (RECFM=FB , LRECL=80 , BLKSIZE=6320)
PAC23n.JOBS (OS/390 and BS2000/OSD)	Sample installation jobs. DCB= (RECFM=FB , LRECL=80 , BLKSIZE=6320)
PAC23n.DATA	JCL texts to be loaded into the ACF. DCB= (RECFM=FB , LRECL=80 , BLKSIZE=6320)
PAC23n.UTIL	Utilities PACN*, MIG*, MG*, COMPARE for migration PAC/PAA objects. DCB= (RECFM=VB , LRECL=4624 , BLKSIZE=4628)
PAA23n.SYSF	PAA system file in Adabas ADAULD format and database description. Contains the data to be loaded into the PAA system file. DCB= (RECFM=VB , LRECL=9996 , BLKSIZE=10000)
PAC23n.TAPE (VM/CMS)	Sample installation jobs. DCB= (RECFM=U , LRECL=0 , BLKSIZE=5000)
PAC23n.LIBR (DOS/VSE)	Sample installation jobs. DCB= (RECFM=U , LRECL=0 , BLKSIZE=16632)
PRD412.I0I8	INPL fix I8 for Predict 4.1.2. DCB= (RECFM=VB , LRECL=4624 , BLKSIZE=4628)
PRD421.I0I1	INPL fix I1 for Predict 4.2.1. DCB= (RECFM=VB , LRECL=4624 , BLKSIZE=4628)
PAC23n.ZAPS	Zaps are required for Natural for Mainframes 3.1.3 and 3.1.4.
NA314.I029	INPL fix 29 for Natural DCB= (RECFM=VB , LRECL=4624 , BLKSIZE=4628)

Note:

The PAA system modules are no longer delivered in a separate dataset as it was with PAA13n.INPL. The PAA system modules have been merged with the PAC system modules delivered in the PAC231.INPL dataset. The change is also for preparations for future features of shared functionality in future releases.

Copying to a BS2000/OSD Disk

The steps required to copy the contents of the installation tape to disk depend on your operating system environment.

If you are not using SMA, copy the datasets from tape to disk using the steps below. The following values must be supplied:

- In the dataset names, replace *n* with the current system maintenance number of the datasets.
 - Replace all *xxxxxx* with the volume serial number of the tape.
1. Copy the job dataset PAC23*n*.JOBS from tape to disk using the BS2000/OSD utility PERCON or EDT.

If using PERCON, issue the following commands:

```
/FILE PAC23n.JOBS ,VOL=xxxxxxx ,DEV=T9G
/      ,STATE=FOREIGN ,FSEQ=UNK ,LINK=PCIN
/FILE P.PAC23n ,LINK=PCOUT
/EXEC PERCON
END
```

If using EDT, issue the following commands:

```
/FILE PAC23n.JOBS ,VOL=xxxxxxx ,DEV=T9G
/      ,STATE=FOREIGN ,FSEQ=UNK ,LINK=EDTSAM
/EXEC EDT
@ READ ' /
@ SY ' /REL EDTSAM '
@ WRITE ' P.PAC23n
@ HALT
```

2. Call PAC using the following command:

```
/CALL PAC23n, PRODUCT=PAC23n
```

A sample job library LIB.PAC23*n* will be created from the procedure dataset.

Copying to a VM/CMS Disk

1. To position the tape for the TAPE LOAD command, calculate the number of tape marks as follows:

If the sequence number of PAC23*n*.TAPE - as shown by the Report of Tape Creation - is *n*, you must position over $3n-2$ tape marks (that is, FSF 1 for the first dataset, FSF 4 for the second, etc.).

2. Access the disk that is to contain the PAC/PAA installation files as minidisk.
3. Ask the system operator to attach a tape drive to your virtual machine at address X'181' and mount the PAC/PAA installation tape.
4. When the tape has been attached, enter the VM/CMS command: TAPE REW
5. Position the tape by entering the VM/CMS command: TAPE FSF *n* Where *n* is calculated as above ($3*n-2$).
6. Load the PAC/PAA VM/CMS installation material with the VM/CMS command: TAPE LOAD * * *minidisk*

You may wish to keep the tape drive attached to your virtual machine, because the tape is still required in the installation procedure.

Copying to a OS/390 Disk

1. If you are not using SMA, copy the job dataset PAC23n.JOBS from tape to disk using the sample JCL below. The following values must be supplied in the JCL:
 - In the dataset names, replace "23n" with the current version number of the datasets.
 - With the SER parameter, replace xxxxxx with the volume serial number of the tape.
 - With the LABEL parameter, replace x with the sequential number of the dataset on the release tape (see Report of Tape Creation).
 - With VOL=SER parameter, replace yyyyyy with the volume serial number of the disk pack.
 - With the UNIT parameter, replace zzzzzz with the device type being used.
2. Modify the sample JCL to meet your site's requirements for job card, dataset names, SYSOUT class, UNIT, and disk-volume serial number. Replace the variables below with the required information:

```
//          JOB   CARD
//PACCOPY   EXEC  PGM=IEBCOPY
//SYSPRINT  DD   SYSOUT=A
//IN1      DD   DSN=PAC23n.JOBS,DISP=OLD,UNIT=TAPE,
//          VOL=( ,RETAIN,SER=XXXXXX),LABEL=(x,SL)
//OUT1     DD   DSN=SAGLIB.PAC23n.JOBS,DISP=(NEW,CATLG,DELETE),
//          UNIT=ZZZZZZ,VOL=SER=YYYYYY,SPACE=(CYL,(1,1,5))
//SYSIN    DD   *
C I=IN1,O=OUT1
/*
```

3. Then change and run job TAPE from the job dataset to copy the load library from tape to disk. The sample jobs directly use the sequential dataset from tape. The dataset type and the space each dataset requires on disk are shown in the Report of Tape Creation.

Copying to a DOS/VSE Disk

1. If you are not using SMA, copy the sub-library containing the sample installation jobs from tape using the sample JCL below. The following values must be supplied in the JCL:
 - The notation xxxxxx represents the tape volume serial number as shown in the Report of Tape Creation.
 - The notation cuu represents the physical unit address of the tape drive.
 - The notation xx represents the file sequence number given by (3 * file-no) -2, as shown in the Report of Tape Creation. If your library is the first dataset on the tape, leave out the "// MTC..." instructions.
 - The notation n represents the SM number of the product.
2. Now use job TAPE from this job library to restore the PAC/PAA sublibrary from tape and make PAC/PAA known to MSHP.

All further datasets will be used directly from tape by the installation jobs.

```
* $$ JOB JNM=PACJOBS,CLASS=0,DISP=D,LDEST=*,SYSID=1
* $$ LST CLASS=A,DISP=D
// JOB PACJOBS
// ASSGN SYS005,IGN
```

```

// ASSGN  SYS006 ,cuu ,VOL=xxxxxxx
// MTC REW ,cuu
// MTC FSF ,SYS006 ,xx
* *** Now processing PAC23n.LIBR - Sublibrary PAC23nJ ***
// EXEC  LIBR ,PARM='MSHP'
      RESTORE  SUBLIB=SAGLIB.PAC23nJ:SAGLIB.PAC23nJ -
            TAPE=SYS006 -
            LIST=YES -
            REPLACE =NO
/*
// MTC REW ,SYS006
/*
/&
* $$ EOJ

```

3. Then adapt and run job TAPE from the job dataset to copy the load library from tape to disk. The sample jobs directly use the sequential datasets from tape.

The dataset type and the space each dataset requires on disk are shown in the Report of Tape Creation.

Which Installation Method?

The installation method you choose depends on whether PAC/PAA is already installed at your site. There are two methods of installing PAC/PAA: first-time installation and conversion installation. In addition, it is possible to install PAA in a separate environment or install PAC Utilities at a remote site.

- First-Time Installation
- Conversion Installation from Previous Installed Versions

First-Time Installation

If you have not previously installed PAC / PAA, or if you currently have an earlier version of PAC / PAA, and want to install PAC / PAA version 2.3.1 as a separate system and will not be migrating or converting the current existing PAC and PAA data, go straight to First-Time Installation.

Conversion Installation from Previous Installed Versions

- PAC from 2.2.n

PAC conversion processes described in section Upgrading PAC may cause.

- The overwriting and deletion of Natural objects in libraries SYSPAC, SYSPACA, SYSPACUS, SYSPAA, SYSPAAA, and SYSPAAUS in the FNAT.
- The overwriting of modules SYSPAC, SYSPACA, SYSPAA, and SYSPAAA in the SYSTEM libraries in the FNAT and the FUSER.
- The deletion of modules with names beginning in 'MIG', 'MG', 'PAC', and 'PAA' from the SYSTEM libraries in the FNAT and the FUSER.
- The overwriting and deletion of error messages for libraries SYSPAC and SYSPAA in the FNAT.
- The overwriting of JCL texts in the ACF.

To keep the old PAC/PAA Natural objects (user exit subprograms included) and error messages you should back them up or use another (FNAT, FUSER) pair.

To keep the JCL texts currently in the ACF you can rename them using the PAC maintenance function.

The contents of the ACF and the PCF have to be modified to accommodate PAC 2.3.1. Back up the current contents of the ACF and the PCF before starting the conversion.

Having upgraded PAC you may need to modify user profiles, JCL texts, or application - production status links; use PAC administration and maintenance functions described in the PAC Administration documentation and the PAC User's Guide to do it.

Pre-Installation Steps

Caution:

Before you begin to install PAC/PAA 2.3.1, ensure that all pending PAC migration events (Started or Authorized state) are completed or backed out. Ensure that all PAC entities are resolved and unlocked. Otherwise, inconsistencies may arise during conversion from version 2.1.*n* and 2.2.1 to 2.3.1.

Before you begin installation of PAC/PAA version 2.3.1, do the following:

1. Back up PAC/PAA System Files

Back up your existing PAC ACF and PCF system files, and the PAA system file that contains your PAA data. You must also backup the FNAT file(s) where PAC/PAA version 2.1 was installed and the FUSER and FDIC files where Natural objects were placed under PAC/PAA control.

2. Back up your user exits

Back up your user exits, otherwise, these routines will be overwritten when PAC/PAA is installed. User-modifiable routines have the following prefixes: PACEX* PAAEX*.

Note:

Customized routines may need to be modified before using them in PAC/PAA version 2.3.1 For information on modifying these routines, refer to Customizing PAC/PAA.

3. Rename JCL Texts

To preserve the JCL texts currently in the ACF, rename them using the PAC maintenance function.

4. Backup and Delete System Libraries and Modules

SMA Reference: Job I051, Step 1700 / 1701 / 1702 / 1703 / 1704 / 1705

Backup and delete the following:

- System libraries SYSPAC, SYSPACA, SYSPACUS, SYSPAA, SYSPAAA, and SYSPAAUS on the FNAT.
- Modules SYSPAC, SYSPACA, SYSPAA, SYSPAAA from library SYSTEM on the FNAT and FUSER.
- Module COMPARE and those modules whose names begin in MIG, MG, PAC and PAA from library SYSTEM on the FNAT and FUSER.

This step is required because numerous PAC/PAA modules from previous versions have been discontinued.

First-time Installation

When installing PAC/PAA for the first time or in an environment where PAC/PAA was not installed before, perform the following steps after copying the tape contents to disk.

- Installation Procedure
-

Installation Procedure

Step 1: Establish PAC System Files

SMA Reference: Job I050, Step 1700 and Step 1702 for Predict 4.1 or Step 1703 for Predict 4.2.

Note:

If you install PAC in more than one environment, load the ACF and the PCF into the additional environments directly from the installation tape. DO NOT use Adabas utilities to install the files from an existing system.

1. Load the PAC Application Control File (ACF) contained in dataset PAC23n.SYS1
2. Load the PAC Predict Control File (PCF) contained in dataset, PAC23n.SYS2 (if Predict version 4.1 is used).
3. Load the PAC Predict Control File (PCF) contained in dataset, PAC23n.SYS3 (if Predict version 4.2 is used).
4. PAC always has priority over Predict when using a shared Coordinator FDIC file. If a Predict load / import operation can run parallel to a PAC load operation at your site, you are strongly recommended to use different Coordinator FDIC files for Predict and PAC. Please see the Predict Installation Manual on how to load a Predict Coordinator file.

Step 2: Establish PAA System File

SMA Reference: Job I050, Step 1710

If installing PAA in a separate production environment from PAC, skip this step (see the section Establishing a Separate PAA Environment for more information).

- Load the Predict Application Audit (PAA) file contained in dataset PAA23n.SYSF.

Note:

If you install PAA in more than one environment, load the PAA file into the additional environments directly from the installation tape. DO NOT use Adabas utilities to install the files from an existing system.

Step 3: Modify, Reassemble and Link the NATPARM Module/s

SMA Reference:

Batch	Job I060, Steps 0010,0015
Com-plete	Job I080, Steps 2300,2310
CICS	Job I080, Steps 2210,2220
TSO	Job I080, Steps 0010,0015
IMS/DC	Job I080, Steps 2500,2510
TIAM	Job I080, Steps 0100,0120
UTM	Job I080, steps 0200,0210

1. Modify all NATPARM modules used for batch and online processing with PAC. Follow the procedure below for each module:

Note:

The size parameters are recommendations only. You may have to adapt these values to your particular environment.

The following Natural parameter settings are recommended during the installation of PAC/PAA 2.3.1:

```
CDYNAM=8 (or higher)
ESIZE=128
LC=ON (for use with the new COMPARE utility)
MADIO=0
MAXCL=0
MT=0
RJESIZE=8
```

Note:

The ESIZE required by PAC depends on the characteristics of your migration. It is used to store individual entries in the object list when you process PAC migration events or use the Expand function. The actual size needed may be larger or smaller than 128K. If error message NAT0886 occurs, the ESIZE has been set too low and has to be set higher.

2. For online and batch processing, set:
 PRINTER 1 in either the NTPRINT macro or dynamically using the printer parameter.
3. Set:
 WORK 1,2,3 in either the NETWORK macro or dynamically using the work parameter.
 OPEN=OBJ in the NETWORK macro.
4. Specify the following NTFILE parameters for the PAC ACF and PCF files and PAA file. For each file replace *m* with the appropriate database number and *n* with the appropriate file number.
 NTFILE ID=210,DBID=*m*, FNR=*n* (ACF)
 NTFILE ID=211,DBID=*m*, FNR=*n* (PCF)
 NTFILE ID=178,DBID=*m*, FNR=*n* (PAA)

5. Setting up NATRJE for the various TP-Monitors:

For information about setting up and installing this functionality of Natural, please refer to the Natural Installation and Operations documentation. (Natural under CICS and Natural under IMS / TM).

6. Assemble and link the NATPARM(s) modules.

Step 4: Link the Batch Natural Nucleus

SMA Reference: Job I060, Step 0020

1. Find the JCL used to link your current batch Natural nucleus.

This will ensure that all INCLUDE statements specified when you built your current batch Natural nucleus are included in this step.

2. In the INCLUDE statement for the NATPARM, specify the name of the batch NATPARM module that you reassembled in Step 3: Modify, Reassemble and Link the NATPARM Module(s).
3. Link the Natural nucleus.

Step 5: Load PAC/PAA System Programs

SMA Reference: Job I061, Step 1700

- The PAC/PAA system programs are contained in the dataset PAC23n.INPL and are loaded to your Natural FNAT and FUSER system files using the Natural utility INPL.

Step 6: Load PAC/PAA Error Message Texts

SMA Reference: Job I061, Step 1701

- The PAC/PAA error texts are contained in the dataset PAC23n.ERRN and are loaded to your Natural system file (FNAT) with the Natural utility ERRLODUS.

Step 7: Define the PAC Libraries - Natural Security

1. Define the libraries SYSPACUS, SYSPAC (make SYSDIC and SYSPACUS a steplib; SYSTEM must be specified last in the list), SYSPACA (people-protected=yes, make SYSPAC a steplib; SYSTEM must be specified last in the list) to Natural Security.
2. If you specify a start-up transaction MENU on the Natural Security Modify Library screen, then specify 'N' for batch execution.
3. Link all users requiring access to PAC Administrator Functions to the library SYSPACA.
4. Define online and batch user IDs to Natural Security as necessary.
5. Batch user IDs may be necessary to prevent NAT3048 and NAT8048 errors (duplicate user logon) when online users submit batch jobs under Natural Security.
6. You are recommended to use the following naming convention when both online and batch user IDs are assigned in Natural Security:

Online user ID: USER

Batch user ID: USERBAT

Step 8: Copy LOGON000 and PACSTEP - Non Natural Security

SMA Reference: Job I082 Step 1710

Note:

LOGON000 is delivered in source format. The contents of this module shows as an example of how the various PAC required settings are to be used. It is recommended that you make the correct adaptations to fit into your own environment.

- Copy modules LOGON000 and PACSTEP from SYSPACUS to SYSTEM on FNAT using the SYSMAIN Utility.

Step 9: Modify the Batch Procedure PACBATCH - OS/390 only

The batch procedure PACBATCH is used when performing various PAC functions in batch mode. It is provided in the dataset PAC23n.SRCE.

1. Modify PACBATCH to conform to your site's requirements and JCL standards.
2. Specify the values appropriate for your environment in the substitution variables.
3. Copy the modified PACBATCH to your environment's user-procedure library.

Step 10: Initializing PAC

SMA Reference: Job I200 Step 1705

1. Execute module PACPIBEG from the library SYSPAC. This program expects a parameter (USER-ID). This will create a PAC User Profile for that (USER-ID).

Ensure that the NSC start-up transaction 'MENU' is not defined.

Note:

For Batch (without Natural Security): PAC expects as input a user ID. The default is DBA.

Note:

For Batch (with Natural Security): If user ID DBA is used for this function, ensure that it is linked to library SYSPAC, alternatively any user-ID known to Natural Security and linked to library SYSPAC can be used to perform this function.

Batch Example:

```
//CMSYNIN      DD      *
SYSPAC, DBA, DBA1
PACPIBEG
USER-ID
/*
```

2. For Predict version 4.1 or 4.2 define a coordinator FDIC file for the PCF system file. To do this start a PAC session and enter into the PAC ADMIN section. Enter into the General defaults / System defaults / Modify system defaults option. This screen now has an option / parameter to enable the user to set / re-set the initial values of the coordinator FDIC file.

Step 11: Load the PAC Jobs

SMA Reference: Job I200, Step 1707

Sample JCL texts necessary for various PAC batch activities are supplied in data set PAC23n.DATA. The prefix of the name of a text indicates the operating system in whose JCL the text is written. A list of the supplied JCL texts is supplied in Sample Jobs.

To load the relevant JCL texts from data set PAC23n.DATA to the ACF do the following:

1. Assign data set PAC23n.DATA to file CMWKF01.
2. Execute module PACJOBLO from library SYSPAC; specify the value of its one parameter: a range of JCL text names indicating which of the texts in PAC23n.DATA should be loaded to the ACF.

Example:

```
PACJOBLO OS*
```

This will load all jobs for operating system (OS/390).

Step 12: Start PAC

1. Log on to Natural.
2. Ensure that Natural NTFILE definitions for the PAC ACF and PCF system files are correct. If the NTFILE definitions are incorrect, you will receive a PAC initialization error and will be unable to enter the PAC system.

Note:

The LFILE parameter may be used temporarily as a dynamic override until the NATPARMs are updated.

3. If the PAC ACF or PCF system files have been renumbered, run the PACADJST utility to update the files. Refer to the PAC Administration documentation.
4. Invoke the PAC administration system by entering ADMIN at the NEXT prompt from library SYSPAC.

Step 13: Initialize PAA

Predict Application Audit (PAA) can be initialized only after ALL installation steps have been completed successfully. Perform the following sequence of activities.

1. Define the PAA Libraries (With Natural Security)

Define the libraries SYSPAAUS, SYSPAA (make SYSPAC, SYSPAAUS and SYSPACUS a steplib; SYSTEM must be specified last in the list) and SYSPAAA (people-protected=yes, make SYSPAA and SYSPAC a steplib; SYSTEM must be specified last in the list) to Natural Security.

2. Define the PAA-AUTH group (With Natural Security)

PAA-AUTH is a special group of PAA users who are authorized to add, modify, and delete applications, statuses, application status links, and migration paths.

1. Define the group PAA-AUTH to Natural Security.
2. Add to this group all users requiring the ability to run migration events (PAA jobs) that migrate objects into production statuses.
3. Link all users or groups requiring access to PAA Administrator Functions to the library SYSPAAA.

3. Customize Logon Exit (Without Natural Security)

SMA Reference: I082 Step 1710

1. If you have not already done so for PAC, customize the user exit LOGON000 in library SYSPACUS as required. Then catalog and copy it to library SYSTEM on the FNAT using the SYSMAIN utility.

2. Copy module PACSTEP from library SYSPACUS to library SYSTEM on the FNAT using the SYSMAIN utility.

4. Initialization

SMA Reference: Job I200, Step 1710

Ensure that the NSC start-up transaction 'MENU' is not defined.

1. Execute module PAAPIBEG from the library SYSPAA.
2. With Natural Security, define online start-up transaction MENU for libraries SYSPAA and SYSPAAA.

Step 14: Starting PAA

1. Log on to Natural.
2. Ensure that the Natural NTFILE definitions for the PAA system file is correct. If the NTFILE definitions are incorrect, you will receive a PAA initialization error and will be unable to enter the PAA system.

Note:

The LFILE parameter may be used temporarily as a dynamic override until the NATPARMs are updated.

3. Invoke the PAA administration system by entering ADMIN at the NEXT prompt from library SYSPAA.

Conversion Installation

The following outlines the conversion installation from a previously installed PAC installation. When converting from a previous version of PAC to version 2.3.1, perform the following steps after copying the tape contents to disk.

- Upgrading PAC
 - Converting the ACF and the PCF Data
 - Upgrading PAA
 - Converting the FPAA Data
-

Upgrading PAC

Step 1: Deleting old PAC/PAA System Programs

SMA Reference: Job I051, Step 1700 / 1701 / 1702 / 1703 / 1704 / 1705

- Backup and delete the following:
 - System libraries SYSPAC, SYSPACA, SYSPACUS, SYSPAA, SYSPAAA, and SYSPAAUS on the FNAT.
 - Modules SYSPAC, SYSPACA, SYSPAA, SYSPAAA from library SYSTEM on the FNAT and FUSER.
 - Module COMPARE and those modules whose names begin in MIG, MG, PAC and PAA from library SYSTEM on the FNAT and FUSER.

This step is required because numerous PAC/PAA modules from previous versions have been discontinued.

Step 2: Modify, Reassemble and Link the NATPARM Module/s

SMA Reference: Batch Job I060, Steps 0010,0015

Com-plete Job I080, Steps 2300,2310

CICS Job I080, Steps 2210,2220

TSO Job I080, Steps 0010,0015

IMS/DC Job I080, Steps 2500,2510

TIAM Job I080, Steps 0100,0120

UTM Job I080, steps 0200,0210

Note:

The size parameters are recommendations only. You may have to adapt these values to your particular environment.

1. The following Natural parameter settings are recommended during the installation of PAC/PAA 2.3.1:
 - CDYNAM=8 (or higher)
 - ESIZE=128
 - LC=ON (for use with the new COMPARE utility)
 - MADIO=0

MAXCL=0
 MT=0
 RJESIZE=8

Note:

The ESIZE required by PAC depends on the characteristics of your migration. It is used to store individual entries in the object list when you process PAC migration events or use the Expand function. The actual size needed may be larger or smaller than 128K. If error message NAT0886 occurs, the ESIZE has been set too low and has to be set higher.

2. For online and batch processing, set: PRINTER 1 in either the NTPRINT macro or dynamically using the printer parameter.

3. Set:

WORK 1,2,3 in either the NETWORK macro or dynamically using the work parameter.

OPEN=OBJ in the NETWORK macro.

4. Specify the following NTFILE parameters for the PAC ACF and PCF files and PAA file. For each file replace m with the appropriate database number and n with the appropriate file number.

NTFILE ID=210,DBID=m, FNR=n (ACF)

NTFILE ID=211,DBID=m, FNR=n (PCF)

NTFILE ID=178,DBID=m, FNR=n (PAA)

5. Setting up NATRJE for the various TP-Monitors:

For information about setting up and installing this functionality of Natural, please refer to the Natural Installation and Operations documentation. (Natural under CICS and Natural under IMS / TM).

6. Assemble and link the NATPARM(s) modules.

Step 3: Link the Batch Natural Nucleus

SMA Reference: Job I060, Step 0020

1. Find the JCL used to link your current batch Natural nucleus.

This will ensure that all INCLUDE statements specified when you built your current batch Natural nucleus are included in this step.

2. In the INCLUDE statement for the NATPARM, specify the name of the batch NATPARM module that you reassembled in Step 1: Modify, Reassemble and Link the NATPARM Module(s).

3. Link the Natural nucleus.

Step 4: Load PAC/PAA System Programs

SMA Reference: Job I061, Step 1700

1. Before loading the INPL dataset, make a note of the PAC administrator user ID of the existing PAC system, or ask the PAC administrator to define a temporary administrator user for installation purposes. You will need this user-ID later.
2. The PAC/PAA system programs are contained in the dataset PAC23n.INPL. Load these to your Natural FNAT and FUSER system files using the Natural utility INPL.

Step 5: Load PAC/PAA Error Message Text

SMA Reference: Job I061, Step 1701

- The PAC/PAA error texts are contained in the dataset PAC23n.ERRN. Load these to your Natural system file (FNAT) with the Natural utility ERRLODUS.

Step 6: Copy LOGON000 and PACSTEP - Non Natural Security

SMA Reference: Job I082 Step 1710

Note:

LOGON000 is delivered in source format. The contents of this module shows as an example of how the various PAC required settings are to be used. It is recommended that you make the correct adaptations to fit into your own environment.

- Copy modules LOGON000 and PACSTEP from SYSPACUS to SYSTEM on FNAT using the SYSMAIN Utility.

Step 7: Load the PAC Jobs

SMA Reference: Job I200, Step 1707

To load the relevant JCL texts from data set PAC23n.DATA to the ACF do the following:

1. Assign data set PAC23n.DATA to file CMWKF01
2. Execute module PACJOBLO from library SYSPAC; specify the value of its one parameter: a range of JCL text names indicating which of the texts in PAC23n.DATA should be loaded to the ACF.

Example:

```
PACJOBLO OS*
```

This will load all jobs for operating system OS/390.

Converting the ACF and the PCF Data

Step 1: Converting the ACF Data

SMA Reference: Job I200, Step 1720

This step converts your PAC ACF data from version 2.2.1. or 2.2.2 to 2.3.1 format.

1. Make sure that the logical file 210 points at your ACF and logical file 211 to your PCF. If not, restart Natural, specifying 'LFILE=(210,DBID,FNR)', 'LFILE=(211,DBID,FNR)'.
2. Execute module CONVERT from library SYSPACA, ensure that MENU is not defined as startup transaction for library SYSPACA.

Please now continue with Customizing PAC and PAA.

Step 2: Converting the PCF Data

SMA Reference: Job I200, Step 1701

If upgrading Predict 4.1 to Predict 4.2, the PAC PCF system file must conform to Predict 4.2 respectively. This step is carried out by Predict. As PAC PCF data needs to conform to Predict FDIC data, it is necessary to convert the data that exists on your PCF file.

In order to do this you should start a Natural session with your FDIC parameter pointing to your current PCF value.

- Logon to library SYSDICBE and execute the convert routine. An example is shown below.

Batch Example:

```
//CMSYNIN      DD      *
SYSDICCO, DBA, DBA1
MENU
CONVERT VERSION42
FIN
```

Upgrading PAA

Prerequisites

The two steps described in this section need be taken only if the PAA being upgraded is to run in an environment without an already upgraded PAC.

Step 1: Load PAA System Programs

SMA Reference: I061 Step 1700

- The PAA system programs are contained in the dataset PAC23n.INPL. Load these to your Natural FNAT and FUSER system files using the Natural utility INPL

Step 2: Load PAA Error Message Text

SMA Reference: I061 Step 1701

- The PAA error texts are contained in the dataset PAC23n.ERRN. Load these to your Natural system file (FNAT) with the Natural utility ERRLODUS.

Converting the FPAA Data

Step 1: Modify FDT

1. SMA Reference: Job I082, Step 1740 / 1741

Add the new fields to your PAA 2.2.n FPAA system file. This job extends the physical layout of an existing FPAA system file (FDT) to the layout of a PAA 2.3.1 FPAA system file.

```
ADADBS RELEASE FILE=<PAA NUMBER>, DESCRIPTOR='S3'
ADADBS RELEASE FILE=<PAA NUMBER>, DESCRIPTOR='SD'
ADAINV INVERT FILE =<PAA NUMBER>
ADAINV SUPDE='S3=AB(1,1), CC(1,32), RJ(1,5)'
ADAINV INVERT FILE =<PAA NUMBER>
ADAINV SUPDE='SD=AB(1,1), EA(1,11), EF(12,22), EF(1,11), RK(1,10)'
```

Step 2: Execute the CONVERT module**SMA Reference:** I200 Step 1715

This step converts your PAA data from version 2.2.*n* to 2.3.1 format.

1. Make sure that logical file 178 points at your FPAA. If not, restart Natural, specifying 'LFILE=(178,DBID,FNR)'.
2. Execute module CONVERT from library SYSPAAA, specifying no parameters.

This module does access your production FUSER / FUSERS in order to verify and or update PAA control records.

Please now continue with Customizing PAC and PAA.

Customizing PAC and PAA

This section describes the customization of PAC and PAA. Also described is how to install PAC utilities separately. This information is organized in the following sections:

- Customizing PAC
 - Customizing PAA
 - Installing PAC Utilities Only
-

Customizing PAC

The sample jobs are prefixed with an operating system identifier and are located in dataset PAC23n.DATA. For a list of sample jobs, see Sample Jobs.

1. Log on to library SYSPAC and enter MENU at the NEXT prompt.
2. Select Jobs from the PAC Maintenance Menu to access the Jobs Maintenance Menu.
3. Modify all jobs that begin with your operating environment prefix (for example, "OS_" for OS/390) to comply with your site's requirements and job standards.



Warning:
Do not modify the parameters assigned to @ variables.

These jobs use the PACBATCH procedure installed from the dataset PAC23n.SRCE.

For more information about modifying, copying, and renaming the sample jobs, refer to the section describing editing jobs in the PAC User's Guide.

- Converting from PAC 2.2
- Copying and Customizing Applymods and User Exits

Converting from PAC 2.2

PAC 2.2 jobs have been superseded by PAC 2.3.1 jobs. Jobs created using PAC 2.2 sample jobs may not run correctly under PAC 2.3.1. To convert to PAC 2.3.1 as quickly as possible, there are two options:

- Using old job names and jobs, or
- Using the new PAC 2.3.1 jobs

To use old job names and jobs

1. Ensure that your existing PAC 2.2. jobs conform to the job steps, work-file assignments, and CMSYNIN control statements in the PAC 2.3.1 jobs.
2. Review all PAC 2.3.1 jobs to see what you have to change in your existing jobs.

To use the new PAC 2.3.1 jobs

1. Rename your existing jobs.
2. Rename the PAC 2.3.1 jobs and tailor them to your site.
3. Use the SCANPATH utility to change the names of jobs referenced in your migration paths to the names of the customized PAC 2.3.1 jobs that supersede them.

For information about the SCANPATH utility, refer to Scan Utilities, in the PAC User’s Guide.

Copying and Customizing Applmods and User Exits

▶ To review Applmods:

1. Review the PAC Applmods settings and change them as necessary.
2. Refer to the description of the Applmods in the PAC Administration documentation and the current Release Notes.

▶ To modify the user exits you intend to use

- Back up and modify user exits to meet your site’s requirements before you copy them to the libraries listed below. Otherwise, unpredictable results may occur. User exits have may have changed with PAC 2.3.1. Refer also to the Release Notes delivered with PAC 2.2.1. and PAC 2.2.2.

Note:

If you do not use the PAC 2.3.1 user exits or if you modify your existing user exits to conform to the PAC 2.3.1 user exits, expect to receive NAT0935 errors. Before PAC 2.3.1 will call a cataloged user exit, a PAC administrator must use the User Exit Maintenance facility in PAC Administration to activate the user exit.

All uses of DBID and FNR will need to be changed from N3 to N5 in user customized exits.

▶ To copy the user exits:

- Use the Natural SYSMAIN utility to copy the user exits (if necessary) to the libraries listed in the table below.

Prefix	Contents	From Library	To Library
MIGEX*	User Exits, MIGRATE	SYSPACUS	SYSTEM (FNAT)
PACEX*	PAC User Exits	SYSPACUS	SYSPAC

Customizing PAA

You can customize PAA user exits.

Modify user exits to meet your site’s requirements before you copy them to the destination libraries.

Use the Natural SYSMAIN utility to copy the user exits to the libraries listed in the following table.

Important:

Do not copy the user exits you do not intend to use.

Prefix	Contents	From Library	To Library
MIGEX*	User Exits, MIGRATE	SYSPACUS	SYSTEM (FNAT)
PAAEX*	PAA User Exits	SYSPAAUS	SYSPAA

Installing PAC Utilities Only

The PAC utility MIGRATE is provided for loading objects to and retiring objects from locations on remote sites where neither PAC / PAA is installed.

The PAC utility COMPARE will compare both Natural and Foreign objects.

The INPL dataset PAC23n.UTIL contains the Natural modules required to run the utilities MIGRATE and COMPARE. To install and initialize these utilities, perform the following steps:

Step 1: To load the PAC Utilities

1. Point to the correct FNAT and FUSER files for the Natural environment in which PAA will run.
2. The PAC utilities are contained in the dataset PAC23n.UTIL.
3. Assign dataset PAC23n.UTIL to work file CMWKF01.
4. Load PAC utilities from dataset PAC23n.UTIL to your Natural system file (FNAT) using the Natural INPL utility.

Step 2: To ensure PAC/PAA System Programs are on all FNATs

- If multiple FUSER files or separate FNAT and FUSER files will be used, ensure that Step 5: Load PAC/PAA System Programs of a first-time installation is performed on every Natural system file (FNAT) used.

Step 3: To verify Consistent Prefixes

- Verify that the modules with the following prefixes are consistent between the Natural system files (FNATs):

PACN*, MIG*, MG*, CF*,COMPARE

You can use the PAC COMPARE utility to verify the modules.

Step 4: To correct Inconsistencies

- If inconsistencies are detected in a Natural system file (FNAT), INPL the PAC23n.UTIL dataset into that Natural system file (FNAT) to correct the inconsistencies (See To Load the PAC Utilities).

Establishing a Separate PAA Environment

This section describes the actions necessary for the first time installation of Predict Application Audit (PAA) and the steps required to establish a separate or additional PAA production environment to be served by a single PAC 2.3.1 system.

- Installation Procedure
-

Installation Procedure

Step 1: Load PAA System File

SMA Reference: Job I050, Step 1710

- Load the Predict Application Audit (PAA) file contained in dataset PAA23n.SYSF.

Note:

If you install PAA in more than one environment, load the PAA into the additional environments directly from the installation tape. DO NOT use Adabas utilities to install the files from an existing system.

Step 2: Modify, Reassemble, and Link the NATPARM Module/s

SMA Reference:

Batch	Job I060, Steps 0010,0015
Com-plete	Job I080, Steps 2300,2310
CICS	Job I080, Steps 2210,2220
TSO	Job I080, Steps 0010,0015
IMS/DC	Job I080, Steps 2500,2510
TIAM	Job I080, Steps 0100,0120
UTM	Job I080, steps 0200,0210

1. Modify all NATPARM modules used for batch and online processing with PAC. Follow the procedure below for each module:

Note:

The size parameters are recommendations only. You may have to adapt these values to your particular environment.

The following Natural parameter settings are recommended during the installation of PAC/PAA 2.3.1:

CDYNAM=8 (or higher)
 ESIZE=128
 LC=ON (for use with the new COMPARE utility)
 MADIO=0
 MAXCL=0
 MT=0
 RJESIZE=8

Note:

The ESIZE required by PAC depends on the characteristics of your migration. It is used to store individual entries in the object list when you process PAC migration events or use the Expand function. The actual size needed may be larger or smaller than 128K. If error message NAT0886 occurs, the ESIZE has been set too low and has to be set higher.

2. For online and batch processing, set: PRINTER 1 in either the NTPRINT macro or dynamically using the printer parameter.
3. Set: WORK 1,2,3 in either the NETWORK macro or dynamically using the work parameter.

OPEN=OBJ in the NETWORK macro.

4. Specify the following NTFILE parameters for the PAC ACF and PCF files and PAA file. For each file replace *m* with the appropriate database number and *n* with the appropriate file number.

NTFILE ID=178,DBID=*m*, FNR=*n* (PAA)

5. Setting up NATRJE for the various TP-Monitors:

For information about setting up and installing this functionality of Natural, please refer to the Natural Installation and Operations documentation. (Natural under CICS and Natural under IMS / TM).

6. Assemble and link the NATPARM(s) modules.

Step 3: Link the Batch / Online Natural Nucleus

SMA Reference: Job I060, Step 0020 (batch and online)

1. Find the JCL used to link your current batch / online Natural nucleus. This will ensure that all INCLUDE statements specified when you built your current batch Natural nucleus are included in this step.
2. In the INCLUDE statement for the NATPARM, specify the name of the batch NATPARM module that you reassembled in Step 2: Modify, Reassemble and Link the NATPARM Module(s)
3. Link the Natural nucleus.

Step 4: Load PAC/PAA System Programs

SMA Reference: Job I061, Step 1700

- The PAC/PAA system programs are contained in the dataset PAC23n.INPL and are loaded to your Natural FNAT and FUSER system files using the Natural utility INPL.

Step 5: Load PAC/PAA Error Message Texts

SMA Reference: Job I061, Step 1701

- The PAC/PAA error texts are contained in the dataset PAC23n.ERRN and are loaded to your Natural system file (FNAT) with the Natural utility ERRLODUS.

Step 6: Initialize PAA

Predict Application Audit (PAA) can be initialized only after ALL installation steps have been completed successfully. Perform the following sequence of activities.

1. **Define the PAA Libraries (With Natural Security)**

Define the libraries SYSPAAUS, SYSPAA (make SYSPAC, SYSPAAUS and SYSPACUS a steplib; SYSTEM must be specified last in the list) and SYSPAAA (people-protected=yes, make SYSPAA and SYSPAC a steplib; SYSTEM must be specified last in the list) to Natural Security.

2. Define the PAA-AUTH group (With Natural Security)

PAA-AUTH is a special group of PAA users who are authorized to add, modify, and delete applications, statuses, application status links, and migration paths.

1. Define the group PAA-AUTH to Natural Security.
2. Add to this group all users requiring the ability to run migration events (PAA jobs) that migrate objects into production statuses.
3. Link all users or groups requiring access to PAA Administrator Functions to the library SYSPAAA.

3. Customize Logon Exit (Without Natural Security)

SMA Reference: I082 Step 1710

1. If you have not already done so for PAC, customize the user exit LOGON000 in library SYSPACUS as required. Then catalog and copy it to library SYSTEM on the FNAT using the SYSMAIN utility.
2. Copy module PACSTEP from library SYSPACUS to library SYSTEM on the FNAT using the SYSMAIN utility.

4. Initialization

SMA Reference: Job I200, Step 1710

Ensure that the NSC start-up transaction 'MENU' is not defined.

1. Execute module PAAPIBEG from the library SYSPAA.
2. With Natural Security, define online start-up transaction MENU for libraries SYSPAA and SYSPAAA.

Step 7: Starting PAA

1. Log on to Natural
2. Ensure that the Natural NTFILE definitions for the PAA system file is correct. If the NTFILE definitions are incorrect, you will receive a PAA initialization error and will be unable to enter the PAA system.

Note:

The LFILE parameter may be used temporarily as a dynamic override until the NATPARMs are updated.

3. Invoke the PAA administration system by entering ADMIN at the NEXT prompt from library SYSPAA.

Sample Jobs

This appendix lists the sample jobs provided for customization purposes in dataset PAC23n.DATA on the installation tape. Each job is prefixed with the operating system for which it is intended.

Prefixes are:

BS2	for BS2000/OSD (supports SYSIPT)
BS3	for BS2000/OSD (for use with Natural 2.3 and Natural 3.1)
CMS	for VM/CMS
OS	for OS/390
VSE	for DOS/VSE

The following is a list of the sample JCL texts supplied in data set PAC23n.DATA; a brief description of each text is given; more information can be found in PAC User's Guide.

Sample Job	Description
<prefix>_ARCHIVE-RELOAD	For restoration events, restores archived Natural objects from a work file to CONTROL.
<prefix>_ARCHIVE-UNLOAD	For archiving events, copies Natural objects from CONTROL to a work file when the event is run.
<prefix>_BATCH-JCL	For execution of PAC requests, e.g., finalizes a completed archiving event.
<prefix>_COMPARE	For comparing Natural objects.
<prefix>_EXPORT-JCL	Copies a JCL text from the ACF to a work file.
<prefix>_IMPORT_JCL	Copies a JCL text from a work file to the ACF (and makes it into a PAC entity).
<prefix>_INCORPORATE	For migration events which use work files at the migration in stage, but do not use work files at the migration out stage (if they have one); can be used for handling Natural objects, error messages, and DDMs (for DDMs only immigration). The data set assigned to the work file would normally be produced by the NATUNLD utility.
<prefix>_INCORPORATE_WORKFILE	For migration events which use work files at both the migration in and at the migration out stages; can be used for handling Natural objects and error messages. The data set assigned to the migration work file would normally be produced by the NATUNLD utility.
<prefix>_MIGRATE	For migration events and retirements which do not use work files; can be used for handling Natural objects, error messages, DDMs, rules, and foreign objects; cannot be used for handling Predict objects.
<prefix>_MIGRATE_WORKFILE	For migration events and retirements which use work files; can be used for handling Natural objects, error messages, DDMs, rules, and foreign objects; cannot be used for handling Predict objects.
<prefix>_PREDICT_MIGRATE_IN	For Predict migration in events other than those of DDM or rule incorporation; DDMs may be generated in the course of such events.
<prefix>_PREDICT_MIGRATE_OUT	For Predict migration out events; cannot be used for DDM handling.
<prefix>_SYSTRANS_MIGRATE_IN	For migrating Natural Open System objects into PAC.
<prefix>_SYSTRANS_MIGRATE_OUT	For migrating Natural Open System objects out of PAC.
<prefix>_UNLOCK	For unlocking PAC Application locks.

The sample JCL texts have not been significantly changed since PAC Release 2.2.1, however some additional JCL texts have been added.

If after an upgrade you have to change the JCL text names in many migration path records, you may find the SCANPATH utility helpful; it is described in PAC Reference documentation.