

Installation Prerequisites

This document describes step-by-step how to install Predict under the following operating systems:

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

The steps to be taken depend on which installation method you choose: first-time installation or inplace conversion.

This document covers the following topics:

- General Information
 - Using Predict in Heterogeneous Environments
 - Installation Jobs/Procedures
 - Using System Maintenance Aid
 - Installation Tape
 - Copying the Tape Contents to Disk
 - Which Installation Method?
-

General Information

This information applies to both installation methods - first time installation and inplace conversion. It covers the following topics:

- Product Requirements
- Other Related Software AG Products
- Other Related Products
- Entire Net-Work
- Special Considerations For Predict Application Control
- Accessing the Dictionary Server with Natural for Windows

Product Requirements

The products listed below must be installed in order to use Predict 4.3.

Product Name (Product ID)	Requirements
Natural (NAT)	<p>Natural 3.1.6 or above. ZAP NA46043 and Service Pack NAT316I003 or above must be applied.</p> <p>The following parameter settings are recommended during the installation of Predict 4.3:</p> <ul style="list-style-type: none"> ● MADIO=0 ● MAXCL=0 ● MT=0 ● RI=OFF. <p>The Natural editor must be installed. The Software AG Editor is required for this version of Predict. You are recommended to set the size of the editor buffer pool to 1024k.</p> <p>If you are using SMA, the necessary modules are linked when the SMA parameter SAG-EDITOR is set. If you are installing without SMA, see the Natural Installation Guide for Mainframes.</p>
Adabas (ADA)	<p>Adabas 7.1.3 or higher</p> <p>The following Adabas parameter should be set during the installation of Predict 4.3:</p> <ul style="list-style-type: none"> ● NISNHQ = 200 or greater <p>AOSASM must be linked to the Batch Natural nucleus if AOS is installed.</p> <p>You are recommended to load the Predict system file and the Coordinator FDIC file with index compression.</p>

Other Related Software AG Products

These products are not necessary in order to use Predict 4.3, but if they are installed, the following prerequisites must be met.

Product Name (Product ID)	Requirements
Adabas Online Services (AOS)	Adabas Online Services Version 7.1.3 or above.
Adabas Native SQL (SQL)	Adabas Native SQL Version 2.2 or above.
Adabas SQL Server (ESQ)	Adabas SQL Server Version 1.4.2 or above On mainframes, Interactive Facilities of Adabas SQL Server must be installed within Natural.
Entire System Server (NPR)	(formerly NATURAL PROCESS) Entire System Server Version 3.2.1 or above.
Natural Security (NSC)	The Natural Security version that corresponds to your Natural version.
Natural ISPF (ISP)	Natural ISPF Version 2.5.1 or above.
Natural for Windows (NGU)	Natural for Windows 5.1.1 or above.
Predict Application Control (PAC)	Predict Application Control 2.3.2 with Service Pack 5 or above.
Predict Case (PCA)	Predict Case Version 2.5.2 or above.
Con-form (CMF)	Con-form Version 3.3.2 or above.
Con-nect (CNT)	Con-nect Version 3.3.2 or above. If Con-nect is installed at your site, copy the following modules from SYSCNT2 to SYSDIC to enable the transfer of texts to and from Con-nect: Z-ADD11A, Z-DIS11, Z-ERA11, Z-GET11B, Z-GET11C. See Application Programming Interface in the Con-nect Administration documentation for additional modules that must be copied.
Predict SYSHELP	If SYSHELP is used, you must copy the SYSH* routines from library SYSDICH to a steplib of your application because some routines have changed.
Super Natural (NSN)	Super Natural Version 3.2.1 or above.
Natural Construct (CST)	Natural Construct Version 4.4.1 or above.

Other Related Products

Product Name	Requirements
Natural DB2 Interface	If DB2 is installed, Version 6, Release 1 or above must be installed.
Natural SQL/DS Interface	If SQL/DS is installed, Version 2, Release 2 or above must be installed.
MS Word	Microsoft Word 6, 7 or 97.

Entire Net-Work

- Entire Net-Work 5.8.1 or above for mainframes
- Entire Net-Work 2.1.1 or above for UNIX
- Entire Net-Work 2.6.1 or above for workstations

These products are required if you are using Predict in a heterogeneous environment.

When the Predict FDIC file is shared between Natural on mainframe and Natural on a Windows or UNIX platform, Entire Net-Work must be used. For details concerning each platform, see the corresponding **Installation documentation**.

Special Considerations For Predict Application Control

- PAC 2.3.2 with Service Pack 5 or above.

Prerequisites

- The PCF (Predict Control File) must be converted to Predict Version 4.3 format. See the section Conversion in the **Predict Administration documentation**.
- A Coordinator FDIC file must be allocated to the PCF. The Coordinator FDIC of the PCF can be the same as the Coordinator FDIC of the Predict file, but does not have to be.

If the Coordinator FDIC files are identical

If the Coordinator FDIC of the PCF is the same as the Coordinator FDIC of the Predict file, perform the following steps:

1. Start a Natural session and specify FDIC=(dbnr,fnr) of PCF.
2. Call the function Defaults > Coordinator Defaults to specify a Coordinator FDIC for the PCF. See the section Defaults in the **Predict Administration Documentation**.

There is a new function with Predict Application Control Version 2.3 which performs the same. See also the section **Define Coordinator file for PCF** in the **PAC/PAA Release Notes Version 2.3.1**

If the Coordinator FDIC files are different

If the Coordinator FDIC of the PCF is not the same as the Coordinator FDIC of the Predict file, perform the following steps:

1. Load the Coordinator FDIC contained in dataset PRD43n.SYSF using the ADALOD utility (Job I050, Step 0601).
 2. Start a Natural session and specify FDIC=(dbnr,fnr) of PCF.
 3. Call the function Defaults > Coordinator Defaults to specify a Coordinator FDIC for the PCF. See the section Defaults in the **Predict Administration Documentation**.
- The following parameter values must be set when migrating Predict objects from the Development FDIC into PAC. This is applicable to Predict migrations only.

Step 2: Unload PRD from Development
SSIZE=100

Step 3: Load to Control File
DATSIZE=85

Functional Scope

- You can migrate data from Predict 4.3 to PAC 2.3.
- From PAC 2.3, you can migrate data to Predict 4.2 or 4.3.

Note:

If you are migrating from PAC 2.3 to Predict 4.2, please ensure that the system files reference the Predict 4.2 environment in the PRDLOAD step (2nd step in the OS_Predict_MIGRATE_OUT JCL.) This includes not only the FDIC file where the Predict 4.2 data resides, but also the FNAT where the Predict 4.2 software is installed. It may also be necessary to override other system files, such as the FUSER and FSEC.

- With PAC 2.3, you can version Predict 4.2 or 4.3 data.

Accessing the Dictionary Server with Natural for Windows

With dictionary servers, you can access remote DDMs, free rules and automatic rules maintained in Predict once you have access to Predict on a mainframe or UNIX host. Predict rules can only be used by accessing Predict on a UNIX or mainframe server.

Additional Prerequisites

The following products must be installed in addition to the products listed above under Product Requirements:

Client Side
<ul style="list-style-type: none"> ● Natural for Windows 4.1.2 or above ● Entire Net-Work 2.6.1 for workstations or above
Server Side
<ul style="list-style-type: none"> ● Entire Net-Work 5.8.1 or above for mainframes ● Entire Net-Work 2.1.1 or above for UNIX ● Entire Net-Work 2.6.1 or above for workstations ● Entire Broker 2.1.1 or above

Starting the Server

Please read the **Natural RPC documentation** before starting the RPC server. The dictionary server name must be known in order to set up the remote dictionary access on the client side.

Accessing the Server

To access the server, you need a Net-Work connection to the server’s Net-Work. Please ask your data center for the appropriate settings.

Before starting Natural, define the dictionary server using the Natural for Windows NATPARM utility with the following two steps:

1. Define a logical dictionary server. For this you need to know
 - the server name of the dictionary server (DDM server) that has been defined to the Entire Broker on the server system.
 - the node name on which this server is running. This is the name of the broker.

Ask your data center for these names.

The logical dictionary server is defined in the menu Global CONFIG File > Dictionary Server Assignments.

2. Set the parameter USEDIC (remote dictionary access) to a logical dictionary server name that has been defined in the global CONFIG file.

When running Natural using this parameter module, you must have access to the server. To check whether you are connected to the server, use the command MENU from SYSRPC to ping the server. You therefore need to define the server using the SERVER MAINTENANCE option.

Please ensure that the Server Node Classification has been set to the appropriate values. You can then use the SERVER COMMAND EXECUTION option to ping the server. The server should reply "I'm still up!".

Note:

It is not necessary to generate a client stub to access the server.

Using Predict in Heterogeneous Environments

The following applies:

- If you are using Natural on the mainframe, the Predict system file FDIC must be located in the mainframe database.
- If you want to access FDIC only under Natural for Windows or UNIX platforms, FDIC can be located in an Adabas database on any of these platforms.
- If you share the FDIC file between Natural on the mainframe and a Natural for Windows or UNIX installation, your FDIC file must be located on the mainframe and you need to configure the translation definitions in Entire Net-Work. Add the following translation definitions to your Entire Net-Work on the mainframe:

```
Translate Define ADD ID=( <FDIC-DBnr> , <FDIC-Fnr> ) Field=LO, FORMAT=(A,33,X,2)
Translate Define ADD ID=( <FDIC-DBnr> , <FDIC-Fnr> ) Field=LK, FORMAT=(X,2,A,88)
Translate Define ADD ID=( <FDIC-DBnr> , <FDIC-Fnr> ) Field=LJ, FORMAT=(A,16,X,2)
Translate Define ADD ID=( <FDIC-DBnr> , <FDIC-Fnr> ) Field=L2, FORMAT=(X,2,A,32)
```

- For the Predict Coordinator FDIC file, the same translation definition as described above must be configured, but using the following syntax. Replace the ID parameter in the four above definitions with:

```
ID=( <Coordinator-DBnr> , <Coordinator-Fnr> )
```

- If you are using the Predict Coordinator, it must be installed on the same platform as the main FDIC.
- Set the Coordinator defaults parameter Clear with System Utility to N.

Installation Jobs/Procedures

The method used for installing Predict depends on your operating system environment.

BS2000/OSD, OS/390, VSE/ESA

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), see Using System Maintenance Aid.

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 Predict 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, PRDI061).

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 (SMA) is not available for the operating system VM/CMS.

If you are using Software AG's System Maintenance Aid (SMA) for the installation process, perform 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 PRD43n in the list of available products for your environment to 'TO BE INSTALLED'.

Then perform one of the following steps depending on the installation method you choose:

- If you are performing a First-Time Installation, adapt parameters FDIC Fnr and FDIC-DBID in the parameter group FILNUM to the required values.
Then make the appropriate settings in parameter group OPTION as shown in table below.
- If you are performing an Inplace Conversion (Predict Version 4.2 is marked as 'INSTALLED' in your SMA environment), you can convert the installed version to Version 4.3 with the following settings in parameter group OPTION:

SMA Switch	For First-Time Installation	For Migrate from Version 4.2
PRD-FIRST-INSTALL	Y	N
PRD-CONVERSION	N	Y

Note:

Leaving a field blank is the equivalent of entering N.

See the **System Maintenance Aid documentation** for more information.

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 dataset names represents the SM level of the product, for example 1 in Predict Version 4.3.1.

Datasets Required for Predict

The following datasets are required to install Predict. The datasets delivered (X) depend on the operating system on which you are installing.

Dataset Name	BS2000/ OSD	VM/CMS	OS/390	VSE/ESA	Contents
PRD43n.JOBS	X		X		Sample installation jobs.
PRD43n.Tape		X			Sample installation jobs.
PRD43n.INPL	X	X	X	X	Natural modules of Predict in INPL format. This dataset also contains Predict error messages.
PRD43n.SYSF	X	X	X	X	Predict system file in Adabas 7 ADAULD format without database description.
PRD43n.DATA	X	X	X	X	Predict description of Predict 4.3 in Migrate 4.3 format.
PRD43n.DEMO	X	X	X	X	Predict Demo DB in Migrate 4.3 format. This includes sample files such as EMPLOYEES and VEHICLES and other sample data.
PRD43n.LIBJ				X	Sample installation jobs.
PRD43n.DE41	X	X	X	X	List of modules no longer used by Predict since version 4.1.
PRD43n.DE42	X	X	X	X	List of modules no longer used by Predict since version 4.2.
PRD43n.DE43	X	X	X	X	List of modules no longer used by Predict since version 4.3.
CST441.CP43	X	X	X	X	Interface for Natural Construct version 4.4.1. To load this dataset, use the INPL utility.
CST451.CP43	X	X	X	X	Interface for Natural Construct version 4.5.1. To load this dataset, use the INPL utility.

Copying the Tape Contents to Disk

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

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

Copying to a BS2000/OSD Disk

If you are using System Maintenance Aid (SMA), refer to the **SMA documentation** (included on the current edition of the Natural documentation CD).

If you are not using SMA, use the procedure described below. In this procedure, the values specified below must be supplied.

To copy the datasets from tape to disk, perform the following steps:

1. Copy the Library SRVnnn.LIB from Tape to Disk

This step is not necessary if you have already copied the library SRVnnn.LIB from another Software AG tape. For more information, refer to the element #READ-ME in this library.

The library SRVnnn.LIB is stored on the tape as the sequential file SRVnnn.LIBS containing LMS commands. The current version *nnn* can be obtained from the **Report of Tape Creation**. To convert this sequential file into an LMS-library, execute the following commands:

```
/IMPORT-FILE  SUPPORT=*TAPE(FILE-NAME=SRVnnn.LIBS, -
/  VOLUME=<volser>, DEV-TYPE=<tape-device>)
/ADD-FILE-LINK LINK-NAME=EDTSAM, FILE-NAME=SRVnnn.LIBS, -
/  SUPPORT=*TAPE(FILE-SEQ=3), ACC-METH=*BY-CAT, -
/  BUF-LEN=*BY-CAT, REC-FORM=*BY-CAT, REC-SIZE=*BY-CAT
/START-EDT
@READ  '/'
@SYSTEM 'REMOVE-FILE-LINK  EDTSAM'
@SYSTEM 'EXPORT-FILE  FILE-NAME=SRVnnn.LIBS'
@WRITE  'SRVnnn.LIBS'
@HALT
/ASS-SYSDTA  SRVnnn.LIBS
/MOD-JOB-SW  ON=1
/START-PROG  $LMS
/MOD-JOB-SW  OFF=1
/ASS-SYSDTA  *PRIMARY
```

Where:

<tape-device> is the device-type of the tape, e.g. TAPE-C4

<volser> is the VOLSER of the tape

2. Copy the Procedure COPY.PROC from Tape to Disk

To copy the procedure COPY.PROC to disk, call the procedure P.COPYTAPE in the library SRVnnn.LIB:

```
/CALL-PROCEDURE  (SRVnnn.LIB,P.COPYTAPE), -
/  (VSNT=<volser>, DEVT=<tape-device>)
```

If you use a TAPE-C4 device, you may omit the parameter DEVT.

3. Copy all Product Files from Tape to Disk

To copy all Software AG product files from tape to disk, enter the procedure COPY.PROC:

```
/ENTER-PROCEDURE  COPY.PROC, DEVT=<tape-device>
```

If you use a TAPE-C4 device, you may omit the parameter DEVT. The result of this procedure is written to the file 'L.REPORT.SRV'.

Copying to a VM/CMS Disk

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

If the sequence number of PRD43n.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.).

Access the disk that is to contain the Predict installation files as minidisk.

Ask the system operator to attach a tape drive to your virtual machine at the address X'181' and mount the Predict installation tape.

When the tape has been attached, enter the VM/CMS command

```
TAPE REW
```

Position the tape by entering the VM/CMS command

```
TAPE FSF  $n$ 
```

where n is calculated as above ($3n-2$).

Load the Predict/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 needed in the installation procedure.

Copying to an OS/390 Disk

If you are using System Maintenance Aid (SMA), refer to the **SMA documentation** (included on the current edition of the Natural documentation CD).

If you are not using SMA, follow the instructions below.

This section explains how to:

- Copy data set COPY.JOB from tape to disk.
- Modify this data set to conform with your local naming conventions.

The JCL in this data set is then used to copy all data sets from tape to disk.

If the datasets for more than one product are delivered on the tape, the dataset COPY.JOB contains the JCL to unload the datasets for all delivered products from the tape to your disk.

After that, you will have to perform the individual install procedure for each component.

Step 1 - Copy data set COPY.JOB from tape to disk

The data set COPY.JOB (label 2) contains the JCL to unload all other existing data sets from tape to disk. To unload COPY.JOB, use the following sample JCL:

```

//SAGTAPE JOB SAG,CLASS=1,MSGCLASS=X
//* -----
//COPY EXEC PGM=IEBGENER
//SYSUT1 DD DSN=COPY.JOB,
// DISP=(OLD,PASS),
// UNIT=(CASS,,DEFER),
// VOL=(,RETAIN,SER=<Tnnnnn>),
// LABEL=(2,SL)
//SYSUT2 DD DSN=<hilev>.COPY.JOB,
// DISP=(NEW,CATLG,DELETE),
// UNIT=3390,VOL=SER=<vvvvvvv>,
// SPACE=(TRK,(1,1),RLSE),
// DCB=* .SYSUT1
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//

```

Where:

- <hilev> is a valid high level qualifier
- <Tnnnnn> is the tape number
- <vvvvvvv> is the desired volser

Step 2 - Modify COPY.JOB to conform with your local naming conventions

There are three parameters you have to set before you can submit this job:

- Set HILEV to a valid high level qualifier.
- Set LOCATION to a storage location.
- Set EXPDT to a valid expiration date.

Step 3 - Submit COPY.JOB

Submit COPY.JOB to unload all other data sets from the tape to your disk.

Copying to a VSE/ESA Disk

If you are using System Maintenance Aid (SMA), refer to the **SMA documentation** (included on the current edition of the Natural documentation CD).

If you are **not** using SMA, follow the instructions below.

This section explains how to:

- Copy data set COPYTAPE.JOB from tape to library.
- Modify this member to conform with your local naming conventions.

The JCL in this member is then used to copy all data sets from tape to disk.

If the datasets for more than one product are delivered on the tape, the member COPYTAPE.JOB contains the JCL to unload the datasets for all delivered products from the tape to your disk, except the datasets that you can directly install from tape, for example, Natural INPL objects.

After that, you will have to perform the individual install procedure for each component.

Step 1 - Copy data set COPYTAPE.JOB from tape to disk

The data set COPYTAPE.JOB (file 5) contains the JCL to unload all other existing data sets from tape to disk. To unload COPYTAPE.JOB, use the following sample JCL:

```

* $$ JOB JNM=LIBRCAT,CLASS=0,                                     +
* $$ DISP=D,LDEST=(*,UID),SYSID=1
* $$ LST CLASS=A,DISP=D
// JOB LIBRCAT
* *****
*       CATALOG COPYTAPE.JOB TO LIBRARY
* *****
// ASSGN SYS004,NNN                                             <----- tape address
// MTC REW,SYS004
// MTC FSF,SYS004,4
ASSGN SYSIPT,SYS004
// TLBL IJSYSIN,'COPYTAPE.JOB'
// EXEC LIBR,PARM='MSHP; ACC S=lib.sublib'                       <----- for catalog
/*
// MTC REW,SYS004
ASSGN SYSIPT,FEC
/*
/&
* $$ EOJ

```

Where:

NNN is the tape address

lib.sublib is the library and sublibrary of the catalog

Step 2 - Modify COPYTAPE.JOB

Modify COPYTAPE.JOB to conform with your local naming conventions and set the disk space parameters before submitting this job:

Step 3 - Submit COPYTAPE.JOB

Submit COPYTAPE.JOB to unload all other data sets from the tape to your disk.

Which Installation Method?

The installation method you choose depends on whether Predict is already installed at your site. There are two methods available: first-time installation and inplace conversion.

First-Time Installation

If you are installing Predict for the first time or in an environment where Predict is not yet installed, go straight to the section First-Time Installation.

Upgrading to a new Version of Predict with Inplace Conversion

When upgrading from Version 4.2 of Predict, data in the format of the previous version must be converted to Predict 4.3 format.

The Predict data is converted directly on your Predict system file to Predict 4.3 format.

See the section Inplace Conversion for the steps required.

Upgrading from Version 3.4 of Predict

Note:

If the last Predict version installed in your environment was Version 3.4 or below, delete all modules no longer used by Predict since Version 4.1 with dataset PRD43n.DE41 using the Natural utility INPL (Job I051, Step 0614).

Then perform a first-time installation and then transfer the data using Predict Coordinator.

It is strongly recommended to unload the data in the source environment using Internal-ID=Y.

Upgrading from Version 4.1 of Predict

Note:

If the last Predict version installed in your environment was Version 4.1 or below, delete all modules no longer used by Predict since Version 4.2 with dataset PRD43n.DE42 using the Natural utility INPL (Job I051, Step 0614).

Then perform a first-time installation and then transfer the data using Predict Coordinator.

It is strongly recommended to unload the data in the source environment using Internal-ID=Y.

Considerations Prior to Upgrading to Version 4.3

Superfluous Fields

A Predict system file converted with Inplace conversion will still contain a number of Adabas fields no longer used in Predict 4.3. These can be ignored.

User Exit Routines

Predict provides a number of user exits which can be used to customize many Predict functions to meet special needs. Sample user exit routines illustrating the use of user exits and explaining the parameters are delivered with Predict.

All user exit routines from previous Predict versions with the prefix U- together with their parameter data areas will be replaced by new sample routines during the installation.

Other Programs Delivered in Source Form

In addition to user exits, a number of other Predict programs are delivered in source form. During installation, these source programs replace those delivered with the previous Predict version.

The following source programs in the library SYSDIC are replaced:

EXIT	MAIN	MAINM1	PUNCH01
------	------	--------	---------

The following type-dependent user exits are also replaced:

ACM**EX	CAT**EX	PUR**EX
---------	---------	---------

Note:

The asterisks above represent an object type code, for example FI or SY.

If you adapted any of these programs to meet special needs at your site, save them to a different library before starting the installation.

User Programs which access the Predict System File

All fields in the Predict system file (FDIC) that have been modified since the last version are assigned the keyword SAG-PRD-V43-MOD.

All new fields in Predict 4.3 are assigned the keyword SAG-PRD-V43.

All fields that are no longer used in Predict 4.3 are assigned the keyword SAG-PRD-V43-DEL.

If you have written your own programs which access these fields in the Predict system file, check that these programs are still compatible with these modified fields.

To access Predict data, either use the user exit USR1051N or the new API USR3005N.

Help Texts

Predict supplies a large number of online help texts as Natural text members with the prefix H- in the library SYSDIC. These texts can be customized and extended with the special function Maintain Predict Help Texts.

All help texts with the prefix H- are replaced during installation. To prevent user-modified help texts being replaced with new SAG-supplied texts, rename the prefix H- of modified help texts to T-.

If a help text with the prefix T- exists, this is always used by the Predict help system instead of the standard help text with the prefix H-.