

Installing the Natural IMS TM Interface

This document describes how to install the Natural IMS TM Interface (product code NII).

The following topics are covered:

- Prerequisites
- Installation Tape for the Natural IMS TM Interface
- Installation Procedure for the Natural IMS TM Interface
- Common Installation Steps
- Installing the Batch Message Processing BMP Environment
- Installing the Message-Oriented NTRD Environment
- Installing the Dialog-Oriented MPP Environment
- Installing the Server Environment
- Customizing the IMS TM Environment
- Installing the Optional Multi-Session Feature
- Installation Verification

For detailed information on using the Natural IMS TM Interface, refer to *Natural under IMS TM* in the *Natural TP Monitor Interfaces* documentation.

Notation vrs or vr: If used in the following document, the notation *vrs* or *vr* stands for the relevant version, release, system maintenance level numbers. For further information on product versions, see Version in the *Glossary*.

Prerequisites

The following software must be installed and running before you install the Natural IMS TM Interface:

- Base Natural under z/OS.
- Natural global buffer pool if you are using the MPP environment (strongly recommended).
- Natural roll server if the ROLLSRV parameter of the Natural IMS TM Interface is set to YES.
- Natural Authorized Services Manager with the SIP Server function, if the Non-Conversational MPP Interface, the monitoring or broadcasting function of the Natural IMS TM Interface is used.
- Authorized Services Manager, if the Accounting to SMF function of the Natural IMS TM Interface is used.

- Adabas IMS TM Interface (product code AII), version as specified under *Natural and Other Software AG Products* in the current *Natural Release Notes for Mainframes*.

For details, see the relevant sections in the *Natural under IMS TM* or *Natural Operations* documentation.

Installation Tape for the Natural IMS TM Interface

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.

Dataset Name	Contents
NIIVRS.LOAD	Load modules of the Natural IMS TM Interface
NIIVRS.SRCE	Source programs and macros of the Natural IMS TM Interface

Copying the Tape Contents to a z/OS Disk

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

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

This section explains how to:

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

The JCL in this dataset is then used to copy all datasets 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 Dataset COPY.JOB from Tape to Disk
- Step 2 - Modify COPY.JOB on Your Disk
- Step 3 - Submit COPY.JOB

Step 1 - Copy Dataset COPY.JOB from Tape to Disk

The dataset COPY.JOB (Label 2) contains the JCL to unload all other existing datasets from tape to disk. To unload COPY.JOB, use the following sample JCL:

```
//SAGTAPE JOB SAG,CLASS=1,MSGCLASS=X
//* -----
//COPY EXEC PGM=IEBGGENER
//SYSUT1 DD DSN=COPY.JOB,
// DISP=(OLD,PASS),
// UNIT=(CASS,,DEFER),
// VOL=(,RETAIN,SER=tape-volume),
// LABEL=(2,SL)
//SYSUT2 DD DSN=hilev.COPY.JOB,
```

```
// DISP=(NEW,CATLG,DELETE),  
// UNIT=3390,VOL=SER=volume,  
// SPACE=(TRK,(1,1),RLSE),  
// DCB=*.SYSUT1  
//SYSPRINT DD SYSOUT=*  
//SYSIN DD DUMMY  
//
```

where:

hilev is a valid high level qualifier

tape-volume is the tape volume name, for example: T12345

volume is the disk volume name

Step 2 - Modify COPY.JOB on Your Disk

Modify the COPY.JOB on your disk to conform to your local naming conventions and set the disk space parameters before submitting 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 datasets from the tape to your disk.

Sample Jobs

The sample jobs are contained in the dataset NATVRS.JOBS and are prefixed with NII.

Installation Procedure for the Natural IMS TM Interface

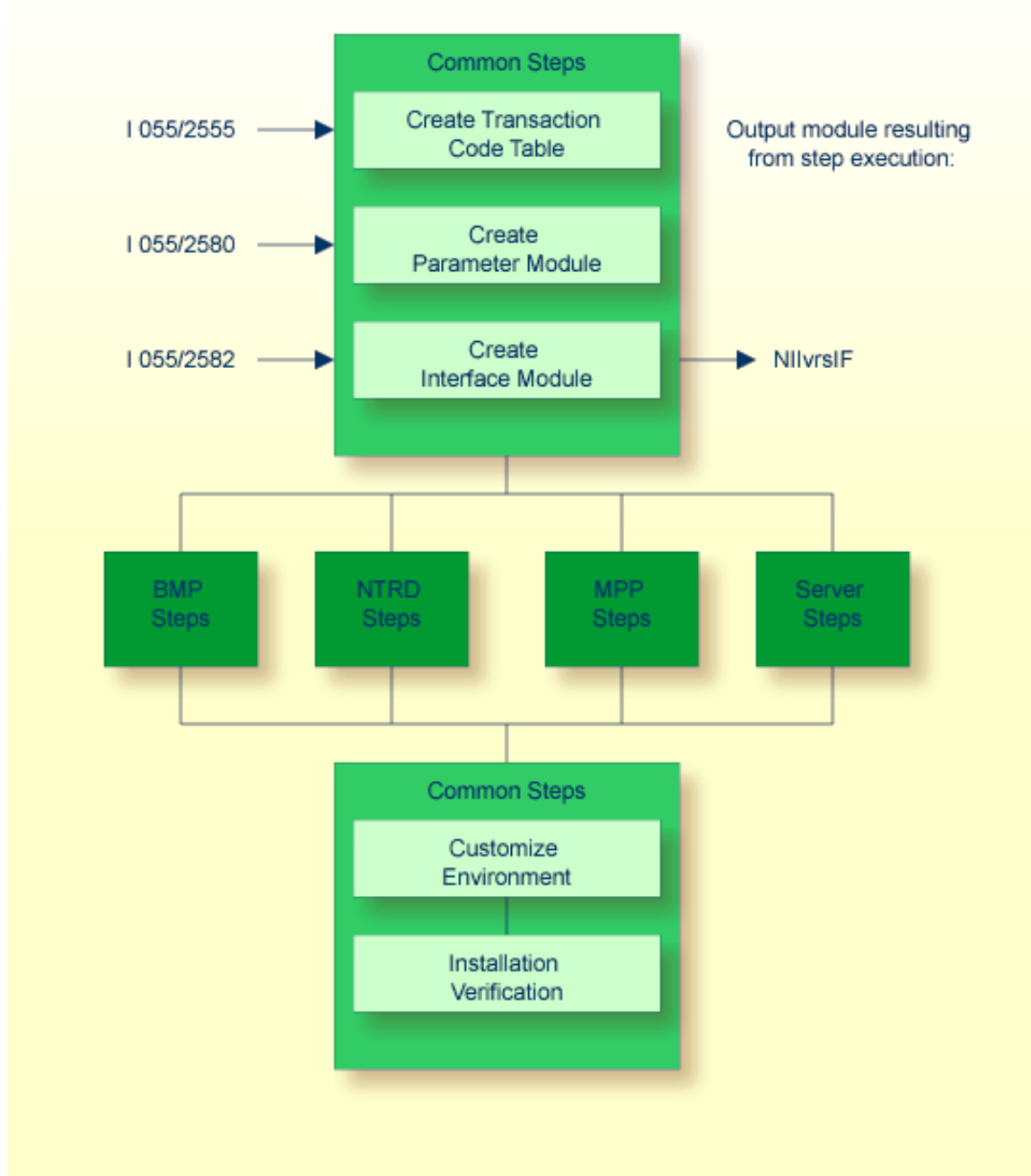
The installation procedure comprises the following:

1. Common Installation Steps
2. Installing the Batch Message Processing BMP Environment
3. Installing the Message-Oriented NTRD Environment
4. Installing the Dialog-Oriented MPP Environment
5. Installing the Server Environment
6. Customizing the IMS TM Environment

Perform the steps in the sequence indicated above.

Common Installation Steps

The following steps are required to install the Natural IMS TM Interface in a BMP, an NTRD an MPP and/or a server environment:



Step 1: Create and Assemble the Transaction Code Table

- (Job I055, Steps 2555 and 2556)
 1. Create the transaction code table by including a NIMTRNTG macro for each transaction code used for Natural transactions.

For further information on the parameters in the NIMTRNTG macro, refer to *NIMTRNTG Macro Parameters* in the *Natural TP Monitor Interfaces* documentation.

If you want to use Natural in non-message-driven BMP or a batch environment, add a NIMTRNTG macro for the PSB used with an arbitrary transaction code.

2. Assemble and link the transaction code table.

Step 2: Create and Assemble the Parameter Module

- (Job I055, Steps 2580 and 2581)
 1. Create the parameter module by including a NIMPARM macro for each environment needed.

For information on the parameters for the NIMPARM macro, refer to *NIMPARM Macro Parameters* in the *Natural TP Monitor Interfaces* documentation.

2. Assemble and link the parameter module.

Step 3: Link the Interface Module

- (Job I055, Step 2582)

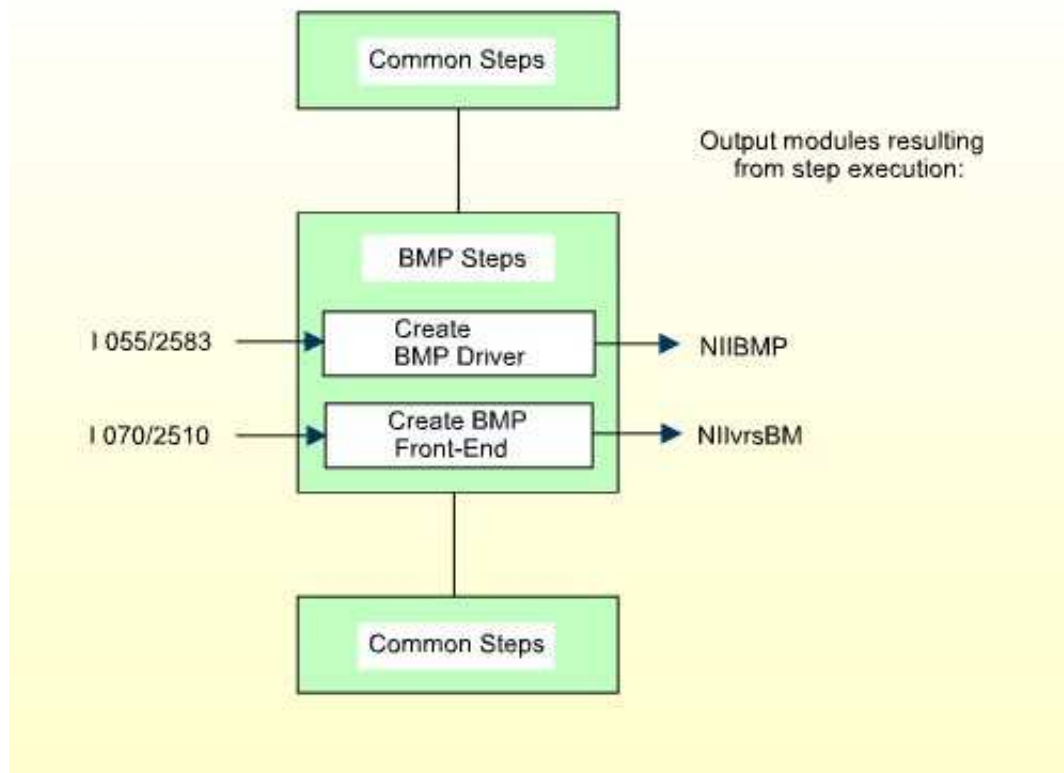
Link the interface module.

The same interface module can be used in a BMP, an NTRD, and MPP and/or a server environment.

The name of the interface module must be specified with the parameter NI INAME in the call to macro NIMDRIV for all environment interfaces described in the following sections.

Installing the Batch Message Processing BMP Environment

The following steps are required to install the Natural IMS TM Interface for the BMP environment:



Step 1: Create and Assemble the BMP Interface

- (Job I055, Steps 2583 and 2584)

1. Create the source NIIBMP which contains a call to macro NIMDRIV with the parameter TYPE set to BMP.

For further information on the macro NIMDRIV, refer to the *NIMDRIV Macro Parameters* in the *Natural TP Monitor Interfaces* documentation.

2. Assemble and link the BMP interface.

For CMPRMTB you receive the warning IEW0461. You can ignore this.

If the NIMDRIV parameter LE370 is not set to NO, you receive the warning IEW0461 for modules starting with CEE. You can ignore this.

Step 2: Link the BMP Front-End

- (Job I070, Step 2510)

The front-end consists of the BMP interface created in Step 1 and your batch Natural parameter module NATPARM.

1. Specify the name of the Natural batch parameter module with the INCLUDE instruction in the parameter module (Job I060, Steps 0010, 0015).

- Specify the name of the front-end module used for this link.



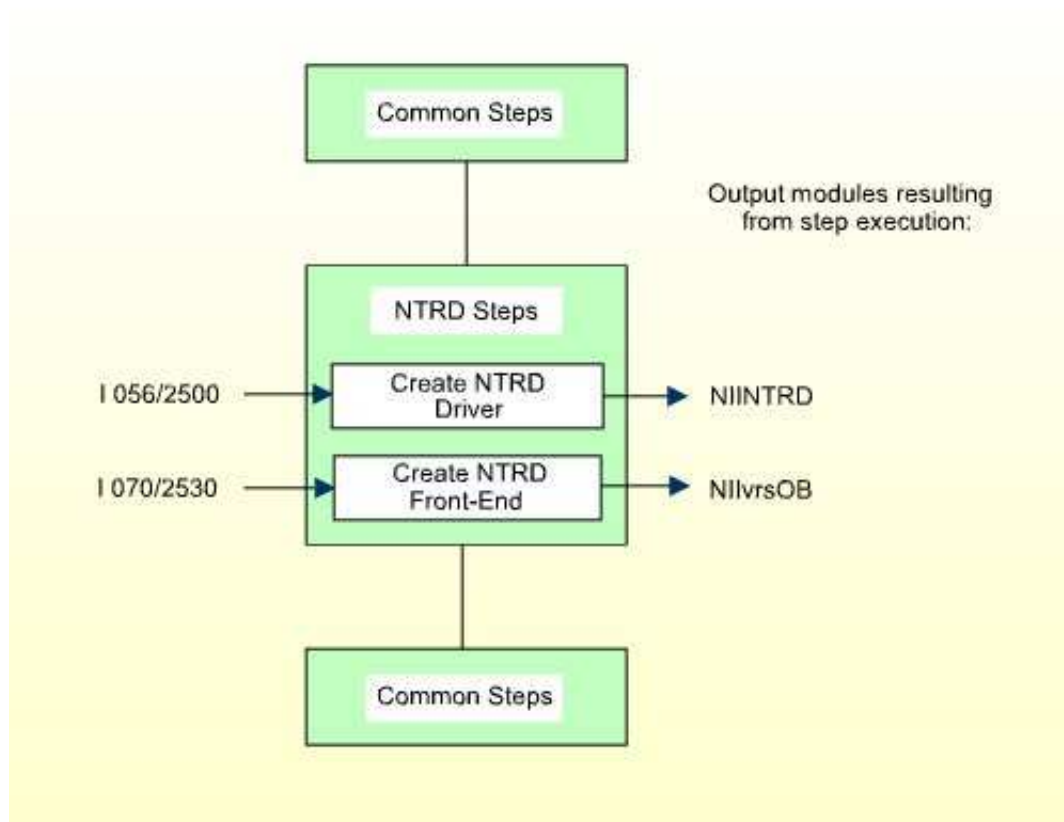
Warning:

This name must also be specified in your BMP region job as application program name (parameter MBR of the IMSBATCH procedure invocation).

- Link the front-end for the BMP environment.

Installing the Message-Oriented NTRD Environment

The following steps are required to install the Natural IMS TM Interface for the NTRD environment:



Step 1: Create and Assemble the NTRD Interface

- (Job I056, Steps 2500, 2501)

- Create the source NIINTRD which contains a call to macro NIMDRIV with the parameter TYPE set to NTRD.

For further information on the macro NIMDRIV, refer to the *NIMDRIV Macro Parameters* in the Natural *TP Monitor Interfaces* documentation.

2. Assemble and link the NTRD interface.

For CMPRMTB you receive the warning IEW0461. You can ignore this.

If the NIMDRIV parameter LE370 is not set to NO, you receive the warning IEW0461 for modules starting with CEE. You can ignore this.

Step 2: Link the NTRD Front-End

- (Job I070, Step 2530)

The front-end consists of the NTRD interface created in Step 1 and of your batch Natural parameter module NATPARM.

1. Specify the name of the Natural batch parameter module with the INCLUDE instruction in the parameter module (Job I060, Steps 0010, 0015).
2. Specify the name of the front-end module used for this link.



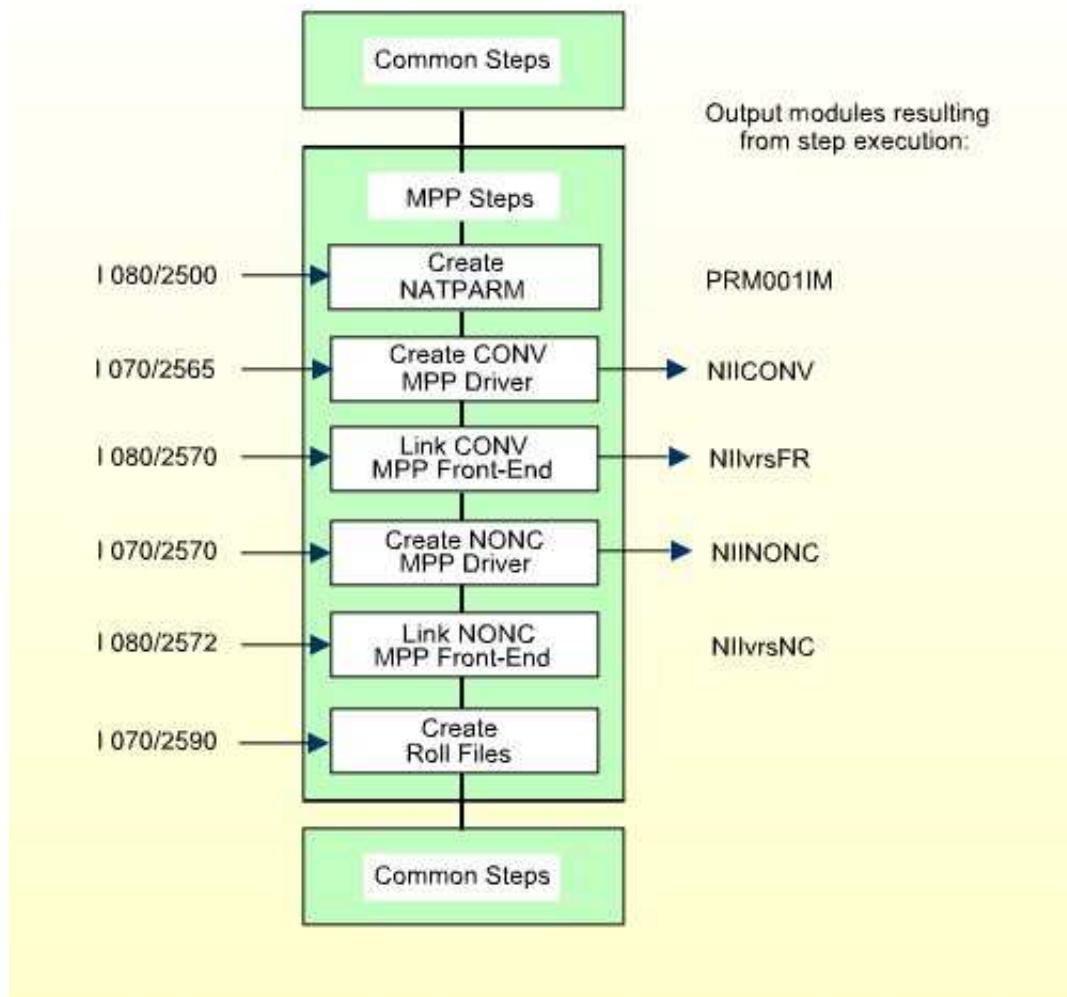
Warning:

This name must also be specified in the APPLCNT macro as application program name (parameter PSEB), if the NTRD front-end is invoked directly by transaction code and not by bootstrap module.

3. Link the front-end for the NTRD environment.

Installing the Dialog-Oriented MPP Environment

The following steps are required to install the Natural IMS TM Interface for the MPP environment:



Step 1: Create and Assemble the Online Natural Parameter Module

- (Job I080, Steps 2500, 2510)

1. Set the values of the following parameters in the parameter module:

```
FNAT=(dbid,fnat)
FUSER=(dbid,fuser)
```

where *dbid*, *fnat*, and *fuser* are the values you specified when loading the system files in your base Natural installation. For further information, see *Installing Natural Under z/OS*.

2. To use a *global* Natural buffer pool, specify the macro NTBPI in the parameter module with the name of the global Natural buffer pool and set the profile parameter SUBSID in the profile parameter module.

If you want to use any other buffer pool, specify the macro NTBPI in the parameter module for each required buffer pool type.

It is strongly recommended that you use a global buffer pool for each buffer pool type.

If an Editor buffer pool is required, you must use a global Editor buffer pool.

3. Modify any other parameters in the parameter module whose default values do not meet your requirements. For further information on the parameters contained in the parameter module, refer to *Using a Natural Parameter Module* in the *Natural Operations* documentation.
4. Assemble and link the Natural parameter module for the dialog-oriented environments.

Step 2: Create and Assemble the Conversational MPP Interface

- (Job I070, Steps 2565,2566)

1. Create the source NIICONV which contains a call to macro NIMDRIV with the parameter TYPE set to CONV.

For further information on the macro NIMDRIV, refer to the *NIMDRIV Macro Parameters* in the *Natural TP Monitor Interfaces* documentation.

2. Assemble and link the Conversational MPP interface.

For CMPRMTB you receive the warning IEW0461. You can ignore this.

If the NIMDRIV parameter LE370 is not set to NO, you receive the warning IEW0461 for modules starting with CEE. You can ignore this.

Step 3: Link the Conversational MPP Front-End

- (Job I080, Step 2570)

The front-end consists of the Conversational MPP interface created in Step 2 and the online Natural parameter module NATPARM created in Step 1.

1. Specify the name of the online Natural parameter module in the INCLUDE instruction for the parameter module.
2. Specify the name of the front-end module used for this link.



Warning:

This name must also be specified in the APPLCNT macro as application program name (parameter PSB).

3. Link the front-end for the Conversational MPP environment.

Step 4: Create and Assemble the Non-Conversational MPP Interface

- (Job I070, Steps 2570, 2571)

1. Create the source NIINONC which contains a call to macro NIMDRIV with the parameter TYPE set to NONC.

For further information on the macro NIMDRIV, refer to *NIMDRIV Macro Parameters* in the *Natural TP Monitor Interfaces* documentation.

2. Assemble and link the Non-Conversational MPP interface.

For CMPRMTB you receive the warning IEW0461. You can ignore this.
If the NIMDRIV parameter LE370 is not set to NO, you receive the warning IEW0461 for modules starting with CEE. You can ignore this.

Step 5: Link the Non-Conversational MPP Front-End

- (Job I080, Step 2572)

The front-end consists of the Non-Conversational MPP interface created in Step 4 and the online Natural parameter module NATPARM created in Step 1.

1. Specify the name of the online Natural parameter module in the INCLUDE instruction for the parameter module.
2. Specify the name of the front-end module used for this link.



Warning:

This name must also be specified in the APPLCNT macro as application program name (parameter PSB).

3. Link the front-end for the Non-Conversational MPP environment.

Step 6: Allocate and Format the Roll Files

- (Job I070, Step 2590)

This step is only required if you do not use the Natural roll server.

If you do not want to use the Natural roll server, you have to allocate and format the roll files to be used by the Natural IMS TM Interface.

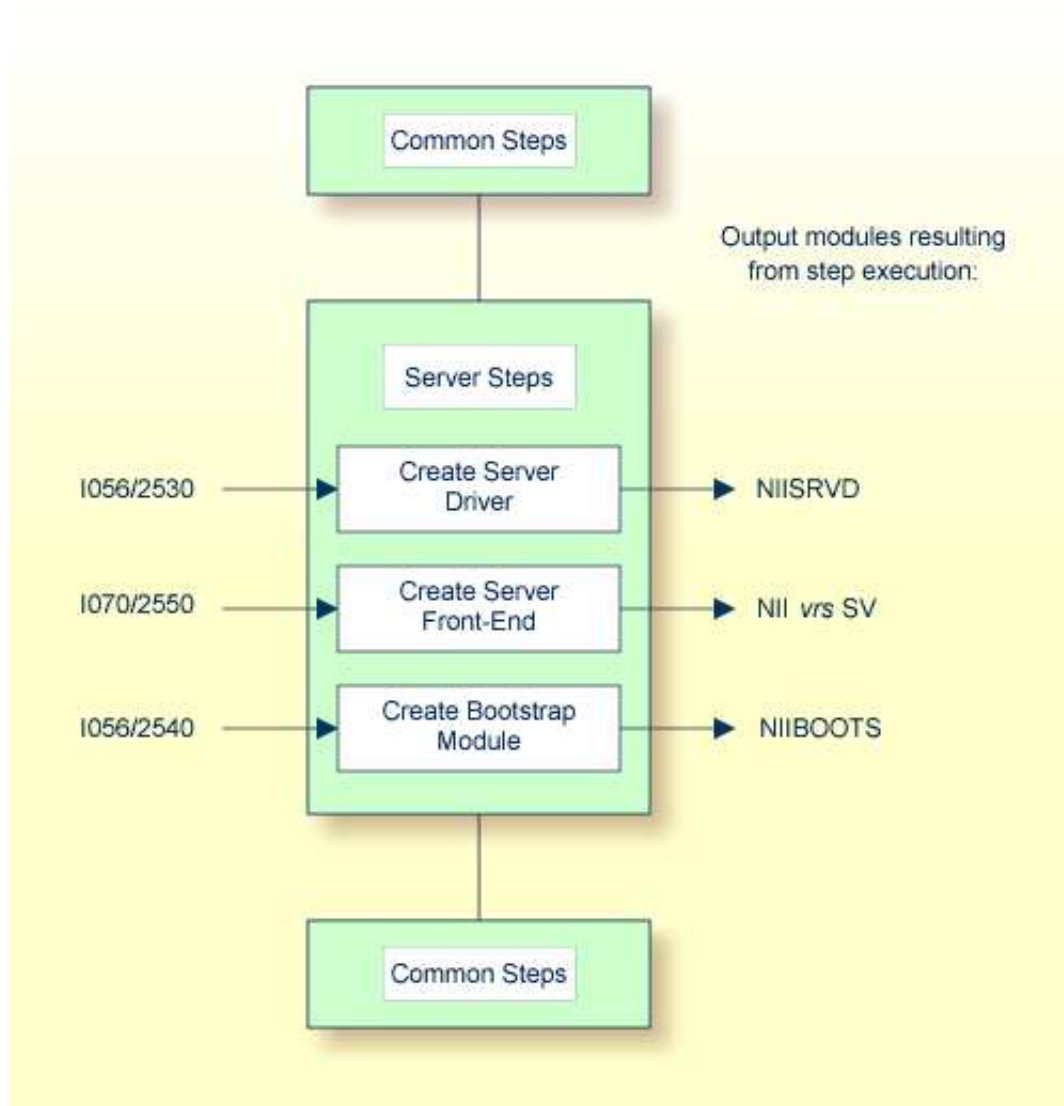
You can allocate up to 5 sequential datasets with a fixed-record format for use as roll files.

1. Allocate the roll files.
2. Format the roll files using the module NATRSRFI.

The roll file initialization program produces a WTO message indicating the number of concurrent users which can be serviced by the roll file. For information on the roll file facility, refer to *Natural Roll Server Functionality* in the *Natural Operations* documentation.

Installing the Server Environment

The following steps are required to install the Natural IMS TM Interface for the sever environment:



Step 1: Create and Assemble the Server Interface

- (Job I056, Steps 2530, 2531)

1. Create the source NIISRVD which contains a call to macro NIMDRIV with the parameter TYPE set to SRVD.

For further information on the macro NIMDRIV, refer to *NIMDRIV Macro Parameters* in the *Natural TP Monitor Interfaces* documentation.

2. Assemble and link the server interface.

For CMPRMTB you receive the warning IEW0461. You can ignore this.

If the NIMDRIV parameter LE370 is not set to NO, you receive the warning IEW0461 for modules starting with CEE. You can ignore this.

Step 2: Link the Server Front-End

- (Job I070, Step 2550)

The front-end consists of the server interface created in Step 1 and of your batch Natural parameter module NATPARM.

1. Specify the name of the Natural batch parameter module with the `INCLUDE` instruction in the parameter module (Job I060, Steps 0010, 0015).
2. Specify the name of the front-end module used for this link.



Warning:

This name must also be specified in the NIMBOOT macro as driver name (parameter DRIVERN).

3. Link the front-end for the server environment.

Step 3: Create and Assemble the Bootstrap Module NIIBOOTS

- (Job I056, Steps 2540, 2541)

1. Create the source NIIBOOTS which contains a call to macro NIMBOOT with the parameter `SERVER` set to `YES`. For the `DRIVERN` parameter, specify the name of the front-end module created in Step 2.
2. Assemble and link the bootstrap module.

Customizing the IMS TM Environment

The following steps require system modifications to your IMS TM environment.

Step 1: Create the APPLCTN Table Definitions for MPP, BMP and NTRD

- **MPP Define Sample:**

```
APPLCTN PSB=NIIVrsFR,PGMTYPE=TP
        TRANSPORT CODE=NATvrs,MODE=SNGL,SPA=512,
        MSGTYPE=(SNLGSEG,RESPONSE,9)
```



Warning:

The size of the SPA must be set to at least 157 bytes plus the NRASRT value.

BMP Define Sample (Message-Driven or NAF-specific BMP):

```
APPLCTN PSB=NIIVrsBM,PGMTYPE=BATCH
        TRANSPORT CODE=NATvrsBM,MODE=SNGL,
        MSGTYPE=(SNLGSEG,RESPONSE,9)
```

This APPLCTN definition is required if you use the CMGETMSG feature.

BMP Define Sample (without Message Queue Processing):

```
APPLCTN PSB=NIIVrsBM,PGMTYPE=BATCH
```

NTRD Define Sample:

```
APPLCTN PSP=NIIVrsOB,PGMTYPE=TP
TRANSACT CODE=NATVrsOB,MODE=SNGL,
MSGTYPE=(MULTSEG,NONRESPONSE,10)
```

Step 2: Create the PSB/ACB for both the MPP and BMP

- **Example for MPP:**

PSB for conversational Natural:

```
PCB TYPE=TP,MODIFY=YES
PCB TYPE=TP,MODIFY=YES
PCB TYPE=TP,MODIFY=YES
PCB TYPE=DB,DBNAME=dliddm,PROCOPT=A,KEYLEN=16 sample for ND
SENSEG NAME=EMPLOY,PROCOPT=A sample for ND
SENSEG NAME=VEHICL,PROCOPT=A,PARENT=EMPLOY sample for ND

PSBGEN PSBNAME=NIIVrsFR,LANG=ASSEM,MAXQ=3,IOASIZE=132
```

At least one modifiable TP-PCB must be defined for default use of hardcopy, sending messages and transaction switching. To avoid a Natural initialization error, the value of the WRKPCBS parameter in the current environment table must be less than or equal to the number of PCBs minus 1.

Example for BMP:

```
PCB TYPE=TP,MODIFY=YES
PCB TYPE=TP,MODIFY=YES
PCB TYPE=DB,DBNAME=dliddm,PROCOPT=A,KEYLEN=16 sample for ND
SENSEG NAME=EMPLOY,PROCOPT=A sample for ND
SENSEG NAME=VEHICL,PROCOPT=A,PARENT=EMPLOY sample for ND

PSBGEN PSBNAME=NIIVrsBM,LANG=ASSEM,MAXQ=3,IOASIZE=132
```

At least one modifiable TP-PCB must be defined for default use of hardcopy and sending messages. To avoid a Natural initialization error, the value of the WRKPCBS parameter in the current environment table must be less than or equal to the number of PCBs minus 1.

After creating the required APPLCTNs for the BMP and MPP environments, you must generate the PSB, DBD and ACB.

After the ACB generation, the following commands activate the new definitions:

```
/MODIFY PREP ACBLIB
/MODIFY COMMIT
```

Step 3: Create the BMP and MPP Regions

- Use the sample members as guidelines when creating the specific regions for your installation.

```
BMPJOB
MPPJOB
```

Step 4: Create the PRELOAD List

- Update the PRELOAD list using a PRELOAD member DFSMPL xx with the following module names:
 - the Natural nucleus name,
 - the interface module name,
 - the front-end name,
 - the Adabas link module name

Example for MPP:

```
NATvrSSH,NIIVrsIF,NIIVrsFR,ADALNI
```

Example for BMP:

```
NATvrSSH,NIIVrsIF,NIIVrsBM,ADALNK
```

If alias names are used for any members in the PRELOAD list, these names should be added to the PRELOAD list as well. Failure to do so leads to performance degradation.

Special Considerations

- Set the REGION parameter to at least 2MB.
- Include the load libraries used by the Natural IMS TM Interface.
- Include the DD statement for the roll file created in Job I070, Step 2590:

```
//ROLLFn DD DSN=...DISP=SHR
```

where *n* is a value from 1 - 5.

- Include the DD statement for NATRJE:

```
//NIIRJEDD DD SYSOUT=(X,INTRDR)
```

Installing the Optional Multi-Session Feature

The multi-session feature is an optional feature of the Natural IMS TM Interface. For details, see the relevant section in the Natural *TP Monitor Interfaces* documentation.

Step 1: Create the Multi-Session Database

- The following steps have no corresponding example jobs in NATvrs . JOBS.
 1. Create the DBD using the member NIIMSDBD in NI Ivrs . SRCE.
 2. Create the PSB for the initial load.
 3. Add the DBD to all PSBs intended for use with the multi-session feature.
 4. Define and load the database using the JCL INITDM in NATvrs . JOBS.

Step 2: Adapt the Parameter Module of the Natural IMS TM Interface

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Parameter	Description
MSACTV=YES	Activates the session manager
MSDBD= <i>dbdname</i>	Where <i>dbdname</i> is the name used in MSDBD.
MSCRKEY	The key to create a new session
MSRSKEY	The key to switch to a resumed session
MSMAX= <i>nn</i>	Where <i>nn</i> is the number of active sessions (max. 8)

For further information, see the sections *Installing the Batch Message Processing BMP Environment* and *Installing the Dialog-Oriented MPP Environment*.

Step 3: Adapt the Transaction Code Table

- Set the following parameter:

Parameter	Description
MSPCB	Number of the multi-session PCB

Installation Verification

1. From an IMS TM session, start a BMP with the following IMS TM command:

```
/STA REG BMPJOB
```

2. Check the output. The output results from the Natural system command TECH. Verify the output with your environment.

3. From an IMS TM session, issue the following IMS TM commands:

```
/STA REG MPPJOB
/STA TRAN NATvrs
/STA PROG NI IvrsFR
```


4. Type in transaction name NATvrs.
5. Proceed with the steps described in the section *Installation Verification for the TP Monitor Interface*.