

# **Adabas Transaction Manager**

## **Adabas Transaction Manager Installation**

Version 8.2.1

May 2011

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# Adabas Transaction Manager

This document applies to Adabas Transaction Manager Version 8.2.1.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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# 1 Adabas Transaction Manager Installation

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This document describes how to install Adabas Transaction Manager.

The Adabas Transaction Manager installation jobs can be created manually or generated by the Software AG System Maintenance Aid (SMA).

For each step of the installation procedure described later in this section, a job number may be used to represent a task. This job number refers to an installation job generated by SMA. If you are not using SMA, an example job with this same number which you must adapt to your site requirements is provided in the job library on the Adabas Transaction Manager installation tape.

For information about using System Maintenance Aid for the installation process, refer to the *System Maintenance Aid* documentation.

- *Installation Prerequisites*
- *Before You Install*
- *Installation Procedures*
- *Verifying the Installation*

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# 2 Installation Prerequisites

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## Operating Systems

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Adabas Transaction Manager is compatible with the following operating systems:

- z/OS
- z/VSE
- BS2000

## Software Prerequisites

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- Adabas
- Adabas System Coordinator
- Entire Net-Work
- Using Com-plete
- Using RRMS and CICS Syncpoint Manager
- Natural

### Adabas

Adabas Transaction Manager can be used with databases running under any supported level of Adabas Version 8.1 or above.

The following table shows the dataset definitions that are essential for correct execution of a single database or cluster that is to execute as a resource manager, under the transactional control of ATM. Other datasets, such as command log, may be specified. For details of these, refer to the Adabas documentation.

Dataset	Link Name	More Information
Load library		ADA81x library or ADA82x library COR82x library ATM82x library  <b>Note:</b> Check the <i>Release Notes</i> for details of any special dependencies.
Associator	DDASSORn	
Data Storage	DDDATARn	
Work	DDWORKR1	
Work part 4	DDWORKR4	Recoverable information about global transactions.



Dataset	Link Name	More Information
		<b>Note:</b> Check the <i>Release Notes</i> for details of any special dependencies.
ADARUN parameters	SYSDTA/ DDCARD	DTP=RM, and other operational parameters
ADARUN messages	SYSOUT/ DDPRINT	

## Adabas System Coordinator

Adabas Transaction Manager requires that you first install the Adabas System Coordinator. Refer to the Adabas System Coordinator documentation for more information.

The following table shows the dataset definitions that are essential for correct execution of the ATM transaction manager running as a service within the Adabas System Coordinator daemon.

Dataset	Link Name	More Information
Load library		ATM82x library  <b>Note:</b> Check the <i>Release Notes</i> for details of any special dependencies.
ADARUN parameters	SYSDTA/ DDCARD	PRODUCT=ATM, and other operational parameters
ADARUN messages	SYSOUT/ DDPRINT	
ATM Recovery File	TMRFI	Refer to the ATM Installation Procedures for details on how to prepare the recovery file.

## Entire Net-Work

A supported version of Entire Net-Work is required for communication between Adabas Transaction Manager instances in different system images. Refer to the Entire Net-Work documentation for more information.

## Using Com-plete

The Adabas Transaction Manager client proxy currently supports only one Adabas SVC per client session under Com-plete.

## **Using RRMS and CICS Syncpoint Manager**

For cross-vendor coordination of distributed transactions, Adabas Transaction Manager supports the following IBM asynchronous exit drivers: RRMS and CICS Syncpoint Manager.

### **Natural**

Natural is required by the Online Services application SYSATM.

Any supported level of Natural can be used.

# 3 Before You Install

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This section describes actions which must be taken prior to performing Adabas Transaction Manager installation.

## Adabas System Coordinator

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Before you start to install Adabas Transaction Manager, you must have already installed the Adabas System Coordinator. Adabas Transaction Manager uses the configuration file which is maintained by the Adabas System Coordinator.

## Use of Unmodified ADALNK

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As in previous releases, there is a requirement to use an unmodified ADALNK when running standalone Adabas utility jobs.

## Installation Under CICS

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If you are installing under CICS, the Adabas Transaction Manager modules can be loaded either from the DFHRPL or the STEPLIB libraries. Software AG recommends that you use DFHRPL. If you are not using the CICS program autoinstall feature, you will need to define the Adabas Transaction client modules (ATMKRN, ATMPXY) and the configuration module (CORCFG) to CICS. All of the modules should be defined with the following characteristics: Language: Assembler ; REload :No ; DAtalocation: Any ; EXECKey : User.

Please also refer to the *Adabas System Coordinator Installation* documentation for similar CICS requirements for that software component.

# 4 Installation Procedure

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This section describes the procedure for Adabas Transaction Manager installation:

## **Installation for z/OS**

- **Installing Adabas Transaction Manager for z/OS**
- **Installing CICS Resource Manager Interface for z/OS**
- **Installing RRMS Interface for z/OS**

## **Installation for VSE/ESA**

- **Installing Adabas Transaction Manager for z/VSE**
- **Installing CICS Resource Manager Interface for z/VSE**

## **Installation for BS2000**

- **Installing Adabas Transaction Manager for BS2000**



# 5 Installing Adabas Transaction Manager for z/OS

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## The Installation Tape

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Review the *Report of Tape Creation* that accompanies the release package before restoring the release data to disk.

The installation tape contains the following data sets in the sequence indicated in the report:

Data Set	Contents
ATM $vrs$ .JOBS	Installation jobs, utility jobs
ATM $vrs$ .LOAD	Executable modules
ATM $vrs$ .INPL	Online Services application
ATM $vrs$ .ERRN	Online Services messages

where  $vrs$  is the version, revision, and system maintenance level of the product.

## Installation Checklist

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The Adabas System Coordinator must be installed prior to the installation of Adabas Transaction Manager. See the Adabas System Coordinator documentation for detailed information.

Once the required System Coordinator components have been installed, you can proceed to install Adabas Transaction Manager. The following checklist identifies the steps necessary to complete the installation:

Step	Description
1	Restore the Adabas Transaction Manager libraries from the installation tape
2	Prepare SYSATM
3	Enable the client process
4	Enable the database process for two-phase commit
5	Prepare the recovery file
6	Enable the Transaction Manager to run as a Service within Adabas System Coordinator daemons
7	Verify the installation



## Installation Procedure

Following is the general Adabas Transaction Manager installation procedure. The actual installation depends on your particular requirements and the specific contents of the release package provided by Software AG for your site. Information in the release package is intended for your system. If that information differs from the information in this section, use the release package information or contact Software AG technical support for assistance.

### Step1: Copying the Tape Contents to 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, perform steps 1a, 1b and 1c as described in this section:

- [Step 1a: Copy Data Set COPY.JOB from Tape to Disk](#)
- [Step 1b: Modify COPY.JOB](#)
- [Step 1c: Submit COPY.JOB](#)



**Note:** If the data sets for more than one product are delivered on the tape, the data set COPY.JOB contains the JCL to unload the data sets 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 1a: 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=<hilv>.COPY.JOB,
// DISP=(NEW,CATLG,DELETE),
// UNIT=3390,VOL=SER=<vvvvvv>,
// 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 1b: Modify COPY.JOB

Modify COPY.JOB to conform with 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 1c: Submit COPY.JOB

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

### Step 2: Prepare SYSATM

The Adabas Transaction Manager Online Services (SYSATM) objects are delivered on the Adabas Transaction Manager distribution tape.

#### ▶ To prepare SYSATM:

- 1 Use your everyday Natural INPL job to load the administration tool (Natural application SYSATM) and associated message texts into your Natural system. For reference a sample Natural INPL job called CORI061 can be found with the sibling System Coordinator product in the jobs distribution file. The INPL job's work file 1 must reference the distribution file *ATMvrs.INPL* and work file 2 must reference *ATMvrs.ERRN*.



**Note:** If you use Natural Security in this system, define the libraries *SYSATM* and *SYSMTvrs* (where *vrs* is the level you are installing, for example 821) and protect as you require. You may define *MENU* as the startup transaction for *SYSATM*. However, you must not define a startup transaction for *SYSMTvrs*.

- 2 Use the following parameter to define the Natural session where *SYSATM* is to be used:

```
LFFILE=(152,dbid,fnr<,passw><,cipb>)
```

where *dbid* and *fnr* define the location of the Adabas System Coordinator configuration file.

Alternatively, assemble the Natural parameter module with

```
NTFILE, ID=152, DBID=dbid, FNR=fnr
```

### Step 3: Enable the Client Process

#### ▶ To enable the Adabas Transaction Manager client process:

- 1 For the Adabas System Coordinator:
  - make the modified Adabas link module available (COMPLIB for Com-plete, DFHRPL for CICS, STEPLIB for all other client systems);
  - make the generated configuration module CORCFG available (COMPLIB for Com-plete, STEPLIB for all other client systems); and
  - make the Adabas System Coordinator load library available (COMPLIB for Com-plete, STEPLIB for all other client systems).
- 2 For Adabas Transaction Manager:
  - make the Adabas Transaction Manager load library available (COMPLIB for Com-plete, STEPLIB for all other client systems).
- 3 For each Client:
  - refer to the section Client Runtime Controls for details on how to define the necessary runtime controls to enable a client for transaction management.

### Step 4: Enable the Database Process for Two-Phase Commit

#### ▶ To enable the Adabas Transaction Manager database process for two-phase commit:

- 1 For the Adabas System Coordinator:
  - make the Adabas System Coordinator load library available.
- 2 For Adabas Transaction Manager:
  - set the Adabas parameter ADARUN DTP=RM.

- include a DD statement for DDWORKR4.

Ensure this identifies a suitable WORK dataset which is allocated and formatted in the same way as the main WORK data set. In the case of a Cluster Services or Parallel Services database, the WORK 4 dataset is shared by all members of the cluster.



**Important:** For details about the WORK4 dataset, including information about sizing, please refer to the Adabas documentation, under *Defining an Adabas Database*, which is part of *Database Maintenance Tasks* in the section *DBA Tasks*.

- make the Adabas Transaction Manager load library available.



**Note:** An unmodified ADALNK must be available to the database in preference to the ADALNK created during the installation of the Adabas System Coordinator.

### Step 5: Prepare the recovery file

All recovery information is maintained in a single direct access file defined to the Adabas System Coordinator daemon where the transaction manager service runs. The recovery file is shared by all transaction managers operating in the same Adabas System Coordinator group. For reference a sample formatting job called CORI040 can be found with the sibling System Coordinator product in the jobs distribution file. Change the parameters in this sample job with the following considerations:

```
"dsname" (file name)
```

Specify the file name, for example `SAG.ATM $\overline{v}$ rs.cor-group-name.TMRFI`

```
"nn" (file size in cylinders) and "@@@" (device type)
```

The minimum block size of the file must be 4096 bytes, and we recommend a minimum size of 13,500 blocks for each transaction manager sharing the file. With reference to the Adabas Device Types and Block sizes section of the DBA Reference Summary, calculate how many cylinders are required for this many blocks based on the device type(s) available at your site. For example, when formatting a file assigned as a WORK component (as defined in the sample job), 13,500 blocks equates to 100 cylinders ( $nn$ ) when using a 3390 device type ("@@@").



**Note:** It is very important that all transaction managers operating within the same Adabas System Coordinator group **share the same recovery file**.

## Step 6: Enable the Transaction Manager to run as a Service within Adabas System Coordinator Daemons

▶ To enable the Transaction Manager to run as a service within Adabas System Coordinator daemons:

- 1 set `PRODUCT=ATM` in the parameter input of each System Coordinator daemon within which you wish to run the Transaction Manager.



**Important:** See the section Parameters for a description of all runtime parameters which affect Transaction Manager operation. These runtime parameters must be prefixed with 'ATM' when defining them in the parameter input of the System Coordinator daemon within which the Transaction Manager is operating.

- 2 make the Adabas Transaction Manager load library available.
- 3 refer to the section [Prerequisites...Adabas System Coordinator](#) for information on the System Coordinator daemon dataset definitions necessary for the correct operation of the Transaction Manager.



**Note:** An Adabas Transaction Manager must be run in each operating system image that will participate in distributed transaction processing (DTP). If more than one Adabas SVC is used in the same system image, an Adabas Transaction Manager must be run under each Adabas SVC that will participate in DTP.

## Step 7: Verify the Installation

Use the procedure described in section [Verifying the Installation](#) to ensure that the installation has been successful.



# 6 Installing CICS Resource Manager Interface for z/OS

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- Installation Procedure ..... 20

If you intend to use Adabas Transaction Manager through the CICS Resource Manager Interface (RMI), use the following installation procedure in conjunction with the installation procedure for the Adabas task-related user exit (TRUE) described in the *Adabas Installation for z/OS* documentation.



**Note:** A supported level of IBM's CICS is needed, with RMI configured in it.

## Installation Overview

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The steps needed for a successful installation are as follows:

Step	Description
1	Perform the standard installation procedure for Adabas Transaction Manager, and verify the installation.
2	Follow the steps for the installation of the Adabas TRUE, with the changes described below.
3	Establish CICS definitions for Adabas Transaction Manager RMI programs.
4	Copy the Adabas Transaction Manager RMI modules into a CICS RPL library.
5	Define client runtime controls for the CICS system.
6	Activate the Adabas Transaction Manager CICS Resource Manager Interface (RMI).

## Installation Procedure

---

The following is the general RMI installation procedure. All steps are required for a successful installation.

### Step 1: Install Adabas Transaction Manager

Install and verify the execution of the transaction manager and client proxy without activating the RMI.

### Step 2: Install the Adabas TRUE

This process is fully described in the *Adabas Installation for z/OS* documentation. However, the installation process for the RMI differs in a few points from that described. Follow the instructions below as you go through the Adabas TRUE installation process.

#### ▶ To activate the RMI:

- 1 Set the following value in the LGBLSET macro:



RMI=YES	activate the CICS Resource Manager Interface (RMI)
---------	--

Optionally, if the CICS high performance stub routine is to be generated, set the following values in the ADAGSET macro:

RMI=YES	activate the CICS Resource Manager Interface (RMI)
TRUE=YES	run as a task-related user exit (TRUE)

- When linking the Adabas command-level link component, you must link in the Adabas System Coordinator stub module.

### Step 3: Establish CICS Definitions for the RMI Programs

#### ► To establish CICS definitions for the RMI programs:

- Use DFHCSDUP or the CEDA RDO entry panels to add the definitions delivered in member DFHDUP in the supplied JOBS library.



**Note:** If storage protection is active in your CICS system, EXECKEY(CICS) should be specified for the PROGRAM definitions.

### Step 4: Copy RMI Modules into a CICS RPL library

The following programs, supplied in the Adabas Transaction Manager load library, must be made available in the DFHRPL DD concatenation of your CICS JCL procedure:

ATMRMIRS  
ATMORID

### Step 5: Define Client Runtime Controls for CICS

Use Adabas Transaction Manager Online Services to define the required client runtime controls for the CICS job.

The required controls are described in section Parameters. Some special considerations are necessary when running with the RMI active. Define a set of client runtime controls for the CICS job. Pay particular attention to the Client-side TransactionManager, TransactionModel and TransactionControl, as well as the GenerateExternalSyncpoint client controls.

## **Step 6: Activate CICS Resource Manager Interface**

### **▶ To activate the CICS Resource Manager Interface:**

- 1 Ensure that the Adabas System Coordinator daemon, within which the Adabas Transaction Manager is running, is active.
- 2 Start CICS.

# 7 Installing RRMS Interface Under z/OS

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If you intend to use Adabas Transaction Manager in conjunction with the Recoverable Resource Management Services (RRMS), use the following installation procedure.

## Installation Checklist

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The steps needed for a successful installation are as follows:

Step	Description
1	Perform standard installation procedure for Adabas Transaction Manager, and verify the installation.
2	Copy the Adabas Transaction Manager RRMS exits into an LPA library.
3	Link the RRMS interface modules to the Adabas Transaction Manager kernel (job ATMI070).
4	Define client runtime controls for the jobs, Complete systems, and IMS systems whose transactions will be controlled by RRS.
5	Verify the system logger and RRS operation.
6	Activate the Adabas Transaction Manager RRMS interface.

## Installation Procedure

---

The following is the general procedure for installing the Adabas Transaction Manager RRMS interface. All steps are required for a successful installation.

The actual installation depends on your particular requirements and the specific contents of the release package provided by Software AG for your site. Information in the release package is intended for your system. If that information differs from the information in this section, use the release package information or contact Software AG technical support for assistance.

### Step 1: Install Adabas Transaction Manager

It is strongly recommended that you first install and verify the execution of the ATM transaction manager and client proxy without activating the RRMS interface.

## Step 2: Copy RRMS Exits into an LPA Library

The Adabas Transaction Manager RRMS exits are contained in the single module ATMRRSEX, which is supplied in the Adabas Transaction Manager load library.

This module must be made available in the LPA of your z/OS system. You can use various third-party tools to place ATMRRSEX in the LPA temporarily. For permanent installation, you should copy the module into a library that appears in the system LPALST concatenation, then IPL the system specifying the CLPA option.

If ATMRRSEX is not available in the LPA when Adabas Transaction Manager attempts to initialize its RRMS interface, system ABEND 052 occurs.

## Step 3: Link the RRMS Interface Modules to the ATM Kernel (Job ATMI070) (SMA Job I070, Step 4190)

In order for an application's transactions to be coordinated by RRMS, some additional interface modules from IBM must be linked into the Adabas Transaction Manager kernel.

Job ATMI070 can be adapted for this purpose. Unresolved external references can be ignored, provided that the named RRMS modules are included successfully.

## Step 4: Create Client Runtime Controls

Use Adabas Transaction Manager Online Services to define the required client runtime controls.

The required controls are described in section Parameters. Some special considerations are necessary when running with the RRMS interface active. Define a set of client runtime controls for those batch jobs, Com-plete systems, and IMS TM systems that require the transactional control of RRS, and pay particular attention to the `TransactionControl` client control.

## Step 5: Verify the System Logger and RRS Operation

Ensure that the system logger is active in your z/OS system and that RRS has been started. Refer to the *IBM z/OS* documentation for details.

## Step 6: Activate the Adabas Transaction Manager RRMS Interface

### ▶ To activate the RRMS Interface:

- 1 Specify `TMSYNCMGR=RRMS` in the ATM transaction manager parameters.
- 2 Ensure that the Adabas System Coordinator daemon is running with `PRODUCT=ATM`.



# 8 Installing Adabas Transaction Manager for z/VSE

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## The Installation Tape

---

Review the *Report of Tape Creation* that accompanies the release package before restoring the release data to disk.

The installation tape contains the following datasets in the sequence indicated in the report:

Data Set	Contents
ATM $vrs$ .LIBR	Executable modules and sample jobs
ATM $vrs$ .INPL	Online Services application
ATM $vrs$ .ERRN	Online Services messages

where  $vrs$  is the version, revision, and system maintenance level of the product. Use the comments in the jobs when modifying them to conform to site requirements.

## Installation Checklist

---

The Adabas System Coordinator must be installed prior to the installation of Adabas Transaction Manager. See the Adabas System Coordinator documentation for detailed information.

Once the required System Coordinator components have been installed, you can proceed to install Adabas Transaction Manager. The following checklist identifies the steps necessary to complete the installation:

Step	Description
1	Restore the Adabas Transaction Manager libraries from the installation tape
2	Prepare SYSATM
3	Enable the client process
4	Enable the database process for two-phase commit
5	Prepare the recovery file
6	Enable the Transaction Manager to run as a Service within Adabas System Coordinator daemons
7	Verify the installation



## Installation Procedure

Following is the general Adabas Transaction Manager installation procedure. The actual installation depends on your particular requirements and the specific contents of the release package provided by Software AG for your site. Information in the release package is intended for your system. If that information differs from the information in this section, use the release package information or contact Software AG technical support for assistance.

### Step 1: Restore the Adabas Transaction Manager Libraries

Use the following sample JCS to restore the Adabas Transaction Manager library. Modify the following variables to reflect the standards at your site:

Variable	Is the...
<i>cuu</i>	tape unit number
<i>vrs</i>	version, revision, and system maintenance level
<i>tttttt</i>	volume serial number of the installation tape
<i>xx</i>	file spacing information; see the Report of Tape Creation

```
* $$ JOB JNM=LIBREST,CLASS=0,DISP=D
* $$ LST CLASS=A,DISP=H
// JOB LIBREST
// ASSGN SYS006,cuu,VOL=tttttt
// ASSGN SYS005,IGN
// MTC REW,SYS006
// MTC FSF,SYS006,xx
// EXEC LIBR
RESTORE S=SAGLIB.AVIvrs:SAGLIB.AVIvrs -
TAPE=SYS006 TL=tttttt LIST=Y
/*
// MTC REW,SYS006
/&
* $$ EOJ
```

## Step 2: Prepare SYSATM

The Adabas Transaction Manager Online Services (SYSATM) objects are delivered on the Adabas Transaction Manager distribution tape.

### ▶ To prepare SYSATM:

- 1 Use your everyday Natural INPL job to load the administration tool (Natural application SYSATM) and associated message texts into your Natural system. For reference a sample Natural INPL job called CORI061 can be found with the sibling System Coordinator product in the jobs distribution file. The INPL job's work file 1 must reference the distribution file *ATMvrs.INPL* and work file 2 must reference *ATMvrs.ERRN*.



**Note:** If you use Natural Security in this system, define the libraries SYSATM and SYSMTvrs (where vrs is the level you are installing, for example 821) and protect as you require. You may define MENU as the startup transaction for SYSATM. However, you must not define a startup transaction for SYSMTvrs.

- 2 Use the following parameter to define the Natural session where SYSATM is to be used:

```
LFIL=(152,dbid,fnr<,passw><,cipht)
```

where *dbid* and *fnr* define the location of the Adabas System Coordinator configuration file.

Alternatively, assemble the Natural parameter module with

```
NTFILE, ID=152, DBID=dbid, FNR=fnr
```

## Step 3: Enable the Client Process

### ▶ To enable the Adabas Transaction Manager client process:

- 1 For the Adabas System Coordinator:
  - make the modified Adabas link module available
  - make the generated configuration module CORCFG available, and
  - make the Adabas System Coordinator load library available
- 2 For Adabas Transaction Manager:
  - make the Adabas Transaction Manager load library available
- 3 For each Client:

- refer to the section Client Runtime Controls for details on how to define the necessary runtime controls to enable a client for transaction management.

#### Step 4: Enable the Database Process for Two-Phase Commit

##### ▶ To enable the Adabas Transaction Manager database process for two-phase commit:

- 1 For the Adabas System Coordinator:
  - make the Adabas System Coordinator load library available.
- 2 For Adabas Transaction Manager:
  - set the Adabas parameter `ADARUN DTP=RM`.
  - include a DD statement for `DDWORKR4`.

Ensure this identifies a suitable WORK dataset which is allocated and formatted in the same way as the main WORK data set. In the case of a Cluster Services or Parallel Services database, the WORK 4 dataset is shared by all members of the cluster.



**Important:** For details about the WORK4 dataset, including information about sizing, please refer to the Adabas documentation, under *Defining an Adabas Database*, which is part of *Database Maintenance Tasks* in the section *DBA Tasks*.

- make the Adabas Transaction Manager load library available.



**Note:** An unmodified ADALNK must be available to the database in preference to the ADALNK created during the installation of the Adabas System Coordinator.

#### Step 5: Prepare the recovery file

All recovery information is maintained in a single direct access file defined to the Adabas System Coordinator daemon where the transaction manager service runs. The recovery file is shared by all transaction managers operating in the same Adabas System Coordinator group. For reference a sample formatting job called CORIO40 can be found with the sibling System Coordinator product in the jobs distribution file. Change the parameters in this sample job with the following considerations:

“dsname” (file name)

Specify the file name, for example SAG.ATM $\overline{vrs.cor-group-name}$ .TMRFI

“nn” (file size in cylinders) and “@@@” (device type)

The minimum block size of the file must be 4096 bytes, and we recommend a minimum size of 13,500 blocks for each transaction manager sharing the file. With reference to the Adabas Device Types and Block sizes section of the DBA Reference Summary, calculate how many cylinders are required for this many blocks based on the device type(s) available at your site. For example, when formatting a file assigned as a WORK component (as defined in the sample job), 13,500 blocks equates to 100 cylinders (*nn*) when using a 3390 device type (“@@@”).



**Note:** It is very important that all transaction managers operating within the same Adabas System Coordinator group **share the same recovery file.**

### Step 6: Enable the Transaction Manager to run as a Service within Adabas System Coordinator Daemons

► To enable the Transaction Manager to run as a service within Adabas System Coordinator daemons:

- 1 set PRODUCT=ATM in the parameter input of each System Coordinator daemon within which you wish to run the Transaction Manager.



**Important:** See the section Parameters for a description of all runtime parameters which affect Transaction Manager operation. These runtime parameters must be prefixed with ‘ATM’ when defining them in the parameter input of the System Coordinator daemon within which the Transaction Manager is operating.

- 2 make the Adabas Transaction Manager load library available.
- 3 refer to the section [Prerequisites...Adabas System Coordinator](#) for information on the System Coordinator daemon dataset definitions necessary for the correct operation of the Transaction Manager.



**Note:** An Adabas Transaction Manager must be run in each operating system image that will participate in distributed transaction processing (DTP). If more than one Adabas SVC is used in the same system image, an Adabas Transaction Manager must be run under each Adabas SVC that will participate in DTP.

## Step 7: Verify the Installation

Use the procedure described in section [Verifying the Installation](#) to ensure that the installation has been successful.



# 9 Installing CICS Resource Manager Interface for z/VSE

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If you intend to use Adabas Transaction Manager through the CICS Resource Manager Interface (RMI), use the following installation procedure in conjunction with the installation procedure for the Adabas task-related user exit (TRUE) described in the *Adabas Installation for z/OS* documentation.



**Note:** CICS/ESA Version 4.1 or above or CICS/TS Version 1.2 or above is required.

## Installation Checklist

---

The steps needed for a successful installation are as follows:

Step	Description
	Before proceeding with the installation, ensure that all necessary preparation has been completed as described in section <b>Before You Install</b> .
1	Perform standard installation procedure for Adabas Transaction Manager, and verify the installation.
2	Follow the steps for the installation of the Adabas TRUE, with the changes described below.
3	Establish CICS definitions for Adabas Transaction Manager RMI programs.
4	Copy the Adabas Transaction Manager RMI modules into a CICS RPL library.
5	Enable the required CICS facilities.
6	Define client runtime controls for the CICS system.
7	Activate the Adabas Transaction Manager CICS Resource Manager Interface (RMI).

## Installation Procedure

---

The following is the general RMI installation procedure. All steps are required for a successful installation.

The actual installation depends on your particular requirements and the specific contents of the release package provided by Software AG for your site. Information in the release package is intended for your system. If that information differs from the information in this section, use the release package information or contact Software AG technical support for assistance.



## Step 1: Install Adabas Transaction Manager

It is strongly recommended that you first install and verify the execution of the ATM transaction manager and client proxy without activating the RMI.

## Step 2: Install the Adabas TRUE

This process is fully described in the *Adabas Installation for VSE/ESA* documentation. However, the installation process for the RMI differs in a few points from that described. Follow the instructions below as you go through the installation process.

### ▶ To activate the RMI:

- 1 Set the following values in the ADAGSET macro:

RMI=YES	activate the CICS Resource Manager Interface (RMI)
TRUE=YES	run as a task-related user exit (TRUE)

- 2 When linking the Adabas command-level link component, you must link in the Adabas System Coordinator stub module.
- 3 When you assemble and link the Adabas task-related user exit, include the Adabas Transaction Manager RMI interface module in the link step. Sample job ATMI080X can be adapted for this purpose.

## Step 3: Establish CICS Definitions for the RMI Programs

### ▶ To establish CICS definitions for the RMI programs:

- Use DFHCSDUP or the CEDA RDO entry panels to add the following definitions to your CSD file:

```
DEFINE PROGRAM(ATMRMIRO) GROUP(ADABAS)
DESCRIPTION(ATM Vvrs RESYNC DRIVER INTERFACE)
LANGUAGE(ASSEMBLER) RELOAD(NO) RESIDENT(YES) USAGE(NORMAL)
USELPACOPY(NO) STATUS(ENABLED) CEDF(NO) DATALOCATION(ANY)
EXECKEY(USER) EXECUTIONSET(FULLAPI)

DEFINE PROGRAM(ATMRMIRS) GROUP(ADABAS)
DESCRIPTION(ATM Vvrs RESYNC DRIVER)
LANGUAGE(ASSEMBLER) RELOAD(NO) RESIDENT(YES) USAGE(NORMAL)
USELPACOPY(NO) STATUS(ENABLED) CEDF(YES) DATALOCATION(ANY)
EXECKEY(USER) EXECUTIONSET(FULLAPI)

DEFINE PROGRAM(ATMORID) GROUP(ADABAS)
```

```
DESCRIPTION(ATM Vvrs PARAMETER OVERRIDER)
LANGUAGE(ASSEMBLER) RELOAD(NO) RESIDENT(YES) USAGE(NORMAL)
USELPACOPY(NO) STATUS(ENABLED) CEDF(YES) DATALOCATION(ANY)
EXECKEY(USER) EXECUTIONSET(FULLAPI)

DEFINE TRANSACTION(TMRS) GROUP(ADABAS)
DESCRIPTION(ATM Vvrs RESYNC DRIVER)
PROGRAM(ATMRMIRS) TWASIZE(128) PROFILE(DFHICST) STATUS(ENABLED)
TASKDATALOC(ANY) TASKDATAKEY(USER) STORAGECLEAR(NO)
RUNAWAY(SYSTEM) SHUTDOWN(DISABLED) ISOLATE(YES) DYNAMIC(NO)
PRIORITY(1) TRANCLASS(DFHTCLOO) DTIMOUT(NO) INDOUBT(BACKOUT)
RESTART(NO) SPURGE(NO) TPURGE(NO) DUMP(YES) TRACE(YES)
RESSEC(NO) CMDSEC(NO)
```

—where *vrs* is the version, revision, and SM level of Adabas Transaction Manager.



**Note:** If storage protection is active in your CICS system, EXECKEY(CICS) should be specified for the PROGRAM definitions.

### Step 4: Copy RMI Modules into a CICS RPL library

The following programs, supplied in the ATM load library, must be made available in the LIBDEF concatenation of your CICS JCL procedure:

```
ATMRMIR0
ATMRMIRS
ATMORID
```

### Step 5: Enable the Required CICS Facilities

Adabas Transaction Manager uses the External CICS Interface (EXCI) to trigger the re-synchronization of incomplete transactions during restart. Therefore, the CICS system in which you are installing the RMI must have inter-region communication enabled, and must be enabled for EXCI, the external EXEC CICS interface, which requires a generic connection. Refer to the relevant IBM documentation for details.

### Step 6: Define Client Runtime Controls for CICS

Use Adabas Transaction Manager Online Services to define the required client runtime controls for the CICS job.

The required controls are described in section Parameters. Some special considerations are necessary when running with the RMI active. Define a set of client runtime controls for the CICS job. Pay particular attention to the `Client-sideTransactionManager`, `TransactionModel` and `TransactionControl`, as well as the `GenerateExternalSyncpoint` client controls.

## Step 7: Activate CICS Resource Manager Interface

▶ **To activate the CICS Resource Manager Interface:**

- 1 Ensure that the CICS EXCI load library is available in the LIBDEF SEARCH concatenation of your Adabas System Coordinator daemon job or JCL procedure within which the ATM transaction manager is to run as a service.
- 2 Ensure that this Adabas System Coordinator daemon is running.
- 3 Start CICS.



# 10

## Installing Adabas Transaction Manager for BS2000

---

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## The Installation Tape

---

Review the *Report of Tape Creation* that accompanies the release package before restoring the release data to disk.

The installation tape contains the following data sets in the sequence indicated in the report:

Data Set	Contents
ATM $vrs$ .JOBS	Installation jobs, utility jobs
ATM $vrs$ .MOD	Executable modules
ATM $vrs$ .INPL	Online Services application
ATM $vrs$ .ERRN	Online Services messages

where  $vrs$  is the version, revision, and system maintenance level of the product.

## Installation Checklist

---

The Adabas System Coordinator must be installed prior to the installation of Adabas Transaction Manager. See the Adabas System Coordinator documentation for detailed information.

Once the required System Coordinator components have been installed, you can proceed to install Adabas Transaction Manager. The following checklist identifies the steps necessary to complete the installation:

Step	Description
1	Copy the Tape Contents to a BS2000/OSD Disk
2	Prepare SYSATM
3	Enable the client process
4	Enable the database process for two-phase commit
5	Prepare the recovery file
6	Enable the Transaction Manager to run as a Service within Adabas System Coordinator daemons
7	Verify the installation

## Installation Procedure

Following is the general Adabas Transaction Manager installation procedure. The actual installation depends on your particular requirements and the specific contents of the release package provided by Software AG for your site. Information in the release package is intended for your system. If that information differs from the information in this section, use the release package information or contact Software AG technical support for assistance.

### Step 1: Copy the Tape Contents to a BS2000/OSD Disk

#### ► To copy the tape contents to a BS2000/OSD disk:

- 1 Copy the library *SRVnnn.LIB* from tape to disk.

This action 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=9), 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
<tape-device> = device-type of the tape, e.g. TAPE-C4
<volser> = VOLSER of tape (see Report of Tape Creation)
```

- 2 Copy the procedure *COPY.PROC* from tape to disk

Call the procedure *P.COPYTAPE* in the library *SRVnnn.LIB* to copy the procedure *COPY.PROC* to disk:

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

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

3 Copy all product files from tape to disk

Enter the procedure `COPY.PROC` to copy all Software AG product files from tape to disk:

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

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

## Step 2: Prepare SYSATM

The Adabas Transaction Manager Online Services (SYSATM) objects are delivered on the Adabas Transaction Manager distribution tape.

▶ **To prepare SYSATM:**

- 1 Use your everyday Natural INPL job to load the administration tool (Natural application SYSATM) and associated message texts into your Natural system. For reference a sample Natural INPL job called CORI061 can be found with the sibling System Coordinator product in the jobs distribution file. The INPL job's work file 1 must reference the distribution file `ATMvrs.INPL` and work file 2 must reference `ATMvrs.ERRN`.



**Note:** If you use Natural Security in this system, define the libraries `SYSATM` and `SYSMTvrs` (where `vrs` is the level you are installing, for example 821) and protect as you require. You may define `MENU` as the startup transaction for `SYSATM`. However, you must not define a startup transaction for `SYSMTvrs`.

- 2 Use the following parameter to define the Natural session where SYSATM is to be used:

```
LFILE=(152,dbid,fnr<,passw><,cipht>)
```

where `dbid` and `fnr` define the location of the Adabas System Coordinator configuration file.

Alternatively, assemble the Natural parameter module with



```
NTFILE, ID=152, DBID=dbid, FNR=fnr
```

### Step 3: Enable the Client Process

#### ▶ To enable the Adabas Transaction Manager client process:

- 1 For the Adabas System Coordinator:
  - make the modified Adabas link module available (BLSLIBnn);
  - make the generated configuration module CORCFG available (BLSLIBnn); and
  - make the Adabas System Coordinator load library available (BLSLIBnn).
- 2 For Adabas Transaction Manager:
  - make the Adabas Transaction Manager load library available (BLSLIBnn).
- 3 For each Client:
  - refer to the section Client Runtime Controls for details on how to define the necessary runtime controls to enable a client for transaction management.

### Step 4: Enable the Database Process for Two-Phase Commit

#### ▶ To enable the Adabas Transaction Manager database process for two-phase commit:

- 1 For the Adabas System Coordinator:
  - make the Adabas System Coordinator load library available (BLSLIBnn).
- 2 For Adabas Transaction Manager:
  - set the Adabas parameter `ADARUN DTP=RM`.
  - include a DD statement for DDWORKR4.

Ensure this identifies a suitable WORK dataset which is allocated and formatted in the same way as the main WORK data set. In the case of a Cluster Services or Parallel Services database, the WORK 4 dataset is shared by all members of the cluster.



**Important:** For details about the WORK4 dataset, including information about sizing, please refer to the Adabas documentation, under *Defining an Adabas Database*, which is part of *Database Maintenance Tasks* in the section *DBA Tasks*.

- make the Adabas Transaction Manager load library available (BLSLIBnn).



**Note:** An unmodified ADALNK must be available to the database in preference to the ADALNK created during the installation of the Adabas System Coordinator.

### Step 5: Prepare the recovery file

All recovery information is maintained in a single direct access file defined to the Adabas System Coordinator daemon where the transaction manager service runs. The recovery file is shared by all transaction managers operating in the same Adabas System Coordinator group. For reference a sample formatting job called CORI040 can be found with the sibling System Coordinator product in the jobs distribution file. Change the parameters in this sample job with the following considerations:

```
“dsname” (file name)
```

Specify the file name, for example `SAG.ATMvrs.cor-group-name.TMRFI`

```
“nn” (file size in cylinders) and “@@@” (device type)
```

The minimum block size of the file must be 4096 bytes, and we recommend a minimum size of 13,500 blocks for each transaction manager sharing the file. With reference to the Adabas Device Types and Block sizes section of the DBA Reference Summary, calculate how many cylinders are required for this many blocks based on the device type(s) available at your site. For example, when formatting a file assigned as a WORK component (as defined in the sample job), 13,500 blocks equates to 100 cylinders (*nn*) when using a 3390 device type (“@@@”).



**Note:** It is very important that all transaction managers operating within the same Adabas System Coordinator group **share the same recovery file**.

### Step 6: Enable the Transaction Manager to run as a Service within Adabas System Coordinator Daemons

▶ **To enable the Transaction Manager to run as a Service within Adabas System Coordinator daemons:**

- 1 set `PRODUCT=ATM` in the parameter input of each System Coordinator daemon within which you wish to run the Transaction Manager.



**Important:** See the section Parameters for a description of all runtime parameters which affect Transaction Manager operation. These runtime parameters must be prefixed with 'ATM' when defining them in the parameter input of the System Coordinator daemon within which the Transaction Manager is operating.

- 2 make the Adabas Transaction Manager load library available (BLSLIBnn).

- 3 refer to the section [Prerequisites...Adabas System Coordinator](#) for information on the System Coordinator daemon dataset definitions necessary for the correct operation of the Transaction Manager.

### **Step 7: Verify the Installation**

Use the procedure described in section [Verifying the Installation](#) to ensure that the installation has been successful.



# 11 Verifying the Installation

---

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- Verify Two-Phase Commit Operation ..... 51

At the end of the installation process, you should verify that the installation was successful by performing the steps described in this section.

## Verify Client Communication with the Transaction Manager

---

► **To verify client communication with the transaction manager:**

- 1 If it is currently executing, stop the TP system where you will use Adabas Transaction Manager Online Services.

This must be a TP system in which the Adabas Transaction Manager client has been installed, with client runtime controls `ATM=ON` and System Coordinator Group Name identifying the group within which the transaction manager is operating.

- 2 Start the transaction manager.
- 3 Start (or restart) the TP system so that the Adabas Transaction Manager client is loaded and initialized.
- 4 Log on to the Adabas Online System (AOS). Select Adabas Transaction Manager to invoke the Online Services application `SYSATM`.
- 5 The transaction manager is identified automatically by the Adabas Transaction Manager client proxy when you enter `SYSATM`.

One of the listed items should be recognizable either as the Terminal ID you noted in step 4 or the User ID of your current session, depending on your TP environment. This verifies the basic operation of the Adabas Transaction Manager client proxy.

- 6 Select Special Services, then Fix Display.

The default fix display is for the local client, but by choosing `PF4 'Other'` and marking the Coordinator Daemon option along with the Node ID of the System Coordinator daemon within which the transaction manager is operating, the transaction manager fix display is shown. This verifies that communication with the transaction manager is functioning correctly, even if the list of fixes is empty.

- 7 Terminate your `SYSATM` session.

## Verify Two-Phase Commit Operation

▶ To verify two-phase commit operation:

- 1 Start two databases with the parameter setting `ADARUN DTP=RM`: one database containing a standard Employees file and the other database containing a standard Vehicles file.
- 2 In library `SYSMTvrs` (where *vrs* is the version, revision, and system maintenance level of Adabas Transaction Manager), modify the test program `DEMOTDP` so that it correctly refers to the Employees and Vehicles files.
- 3 Execute the `DEMOTDP` program, supplying a non-zero value when prompted for a new personnel number.
- 4 When the message “About to commit” is displayed
  - start a new session in your TP system
  - log on to the Adabas Online System (AOS)
  - select Adabas Transaction Manager, then Transaction Manager Information, and then Active Transactions.

The display of your pending transaction should indicate that two databases are involved in it.



**Note:** This test is not valid in a CICS/RMI environment in which Natural executes in pseudo-conversational mode. In this mode, the `INPUT` statement that displays the message “About to commit” causes CICS to take a syncpoint at end-of-task and commit the pending Adabas updates. To verify correct operation in a CICS/RMI environment, this test should be done in a Natural session that was started with `PSEUDO=OFF`, or for which the runtime control `TransactionModel` has been set to `DYNAMIC`.



**Note:** This test is not valid in an IMS TM environment in which RRMS acts as the superior transaction coordinator. In such an environment, the `ADARUN TMSYNCMGR` parameter should take the value `NONE` for the purposes of this test.

- 5 Display additional details of the transaction by marking it on the screen and pressing `Enter`.
- 6 Return to the session where your transaction is waiting to be completed and press `Enter`.
- 7 Use `SYSATM` to check that the transaction no longer appears in the Transaction Manager Information “Active Transactions” list.
- 8 Execute the program `DEMOTDP` again to ensure that the personnel number was changed consistently in the Employees and Vehicles files.

You can now be assured of global transaction integrity in client environments and databases where the software is installed.