Entire Net-Work Administration

Entire Net-Work Installation

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Entire Net-Work

This document applies to Entire Net-Work Administration Version 5.9.1 and to all subsequent releases.

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

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1 Entire Net-Work Installation

This document explains how to install Entire Net-Work on supported mainframe platforms.

The Entire Net-Work Installation document is organized as follows:

Installation Overview	Contains general information that applies to all Entire Net-Work installations.
z/OS Environments	Provides information about installing and running Entire Net-Work in the z/OS operating system environment.

2 Conventions

Notation *vrs* or *vr*: When used in this documentation, the notation *vrs* or *vr* stands for the relevant version, release, and system maintenance level numbers. For further information on product versions, see *version* in the *Glossary*.

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This section contains general information that applies to all Entire Net-Work installations. It covers the following topics:

Installation Checklist

The following checklist outlines the steps for installing Entire Net-Work:

1. Prepare the environment as described in the section specific to the operating system and the Simple Connection Line Driver.
2. Unload the installation libraries from the installation tape. Refer to the Report of Tape Creation for specific data set sequence numbers.
3. Prepare Entire Net-Work JCL and parameter statements.
4. Install the Adabas router, if necessary.
5. Complete any access method-related work.
6. Start Entire Net-Work and establish connectivity with the partner nodes.

Using System Maintenance Aid

If you use Software AG's System Maintenance Aid (SMA), refer to the System Maintenance Aid manual for information about the installation process.

The installation procedures described in this section correspond to the jobs that SMA creates to install the product.

If you do not use SMA, you can modify and use the sample JCL to unload the Entire Net-Work libraries from the installation tape. Sample JCL is provided in each of the platform-specific installation procedure sections.

The Entire Net-Work Installation Tape

The Entire Net-Work installation tape is a standard label tape. Refer to the Report of Tape Creation that accompanies the tape for the volume serial number, density, media type, data set names, and data set sequence numbers.

The tape contains the installation data sets, a data set required by SMA, and one or more data sets containing maintenance fixes. Only the load modules required to run the Entire Net-Work line drivers purchased for your environment are included on the tape.

Adabas Requirements

Software AG recommends that you concatenate the Entire Net-Work and Adabas limited libraries with the Entire Net-Work library first in the sequence. The Adabas limited libraries (WAL*vrs*) are distributed on the installation tape. The Adabas router (that is, ADASVC in z/OS or VSE) must be installed on any node where Entire Net-Work is to be run, even if no servers are running on that node. Refer to the section *Installation Tape Information* in the *Entire Net-Work Release Notes* and the *Report of Tape Creation* provided with the Entire Net-Work installation tape for information about the WAL library modules and the version of Adabas required. Refer to the *Adabas Installation Manual* for information about installing the Adabas router in your environment.

Adabas client application programs need an Adabas Link Routine module suitable for the environment in which they run. For example, batch programs should be linked with ADAUSER, which loads current versions of ADALNK and supporting modules from the Adabas load library. TP environments usually require specialized Link Routine modules, such as ADALNC for CICS, which may require an additional license.

Adabas SVC

The Adabas SVC is required in z/OS to provide communications between user programs, Entire Net-Work, and Adabas or other servers. If already installed for Adabas or any other Software AG server, it can and should also be used for Entire Net-Work. The Adabas SVC number is specified in the ADARUN SVC=nnn parameter.

Adabas 7 Data Conversion

Entire Net-Work Administration requires UES-enabled databases, which enable it to perform data conversion instead of Entire Net-Work.

Running Entire Net-Work

Starting the Entire Net-Work Job/Task

When execution JCL, including the ADARUN and Entire Net-Work parameter statements, is created for each node, and all access method-specific definitions and installation steps are completed, Entire Net-Work can be started.

The execution job or procedure for Entire Net-Work must be started on each of the participating nodes. Once started, Entire Net-Work determines the interregion communications environment on its node, connects to neighboring nodes through the defined links, and exchanges all relevant information with the other nodes during the "handshaking" process following link connection.

While the Entire Net-Work tasks are active and connected, user programs on any node can access all active targets on any other node, regardless of the targets' locations.

If a link fails or cannot be connected properly, Entire Net-Work searches for possible alternate routes to complete the call. Once a disconnected link becomes available again, it is automatically considered for traffic.

Specifying the Control Statements

There are five types of Entire Net-Work control statements:

- ADARUN control statements define the interregion communications environment. Some ADARUN parameters are the same as for Adabas; others are similar, but are designed specifically for Entire Net-Work. For more information, see the section *ADARUN Control Statements* in the *Entire Net-Work Reference Guide*
- NODE statements define the node's name and operating characteristics. For more information, see the section *Entire Net-Work NODE Statements* in the *Entire Net-Work Reference Guide*.
- DRIVER statements define the line driver type to be loaded. For more information, see the section *Entire Net-Work DRIVER Statements* in the *Entire Net-Work Reference Guide*.
- LINK statements define the links to other nodes.For more information, see the section *Entire Net-Work LINK Statements* in the *Entire Net-Work Reference Guide*

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This section provides information about installing and running Entire Net-Work in the z/OS operating system environment. It covers the following topics:

Installation Procedure

To install Entire Net-Work on a z/OS system, perform the following steps for each machine:

1. Copy the tape contents to disk, as described in ***Copying the Tape Contents to Disk***, later in this section.

   The source library requires one cylinder of 3390 DASD space. The load library requires four cylinders. See the section *Installation Tape Information* in the *Entire Net-Work Release Notes* and the *Report of Tape Creation* for additional information.
2. In systems where Adabas is not already installed, install the Adabas SVC.

   Refer to the *Adabas Installation Manual* for specific details.
3. Relink ADARUN for APF authorization, if required.
4. Customize the Entire Net-Work startup job.
5. Modify the Entire Net-Work parameters.

   See the section *Entire Net-Work Parameter Statements* in the *Entire Net-Work Reference Guide*.
6. Perform the line driver-dependent installation procedure and prepare the DRIVER and LINK statementsfor the TCPX line driver.
7. Prepare the required access method-specific definitions.
8. Apply corrective maintenance.

   Refer to the Report of Tape Creation to determine whether any files containing corrective maintenance (i.e., data sets named ppp*vrs*.ZAPS) are supplied on the installation tape. If so, restore the data sets using IEBCOPY, and then follow the corrective maintenance instructions in the $READMVS member.

Copying the Tape Contents to Disk

If you use Software AG's System Maintenance Aid (SMA), refer to the *System Maintenance Aid Manual* for information about the installation process.

If you are not using SMA, follow the instructions in this section.

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 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 installation procedure for each component.

To copy all data sets from tape to disk:

1 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=<vvvvvv>,
// SPACE=(TRK,(1,1),RLSE),
// DCB=*.SYSUT1
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//
```

Substitute a valid high-level qualifier for *hilev*, the tape number for *Tnnnnn*, and the volume serial number for *vvvvvv*.

2 Modify COPY.JOB to conform to your local naming conventions and set the following disk space parameters before submitting the job:

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

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

APF Authorization

Certain line drivers require that Entire Net-Work run in supervisor state with AMODE (31). For other line drivers supervisor state is not required but does provide significant performance advantages. Using AMODE (31) allows buffers to be above the 16 MB line.

To run in supervisor state, the Entire Net-Work load library and all other load libraries in the STEPLIB concatenation must be APF-authorized. Also, ADARUN must be linked into one of these APF-authorized libraries with SETCODE AC(1). ADARUN can be linked as shown in the following example:

```
//LINKRUN EXEC PGM=IEWL
//SYSPRINT   DD    SYSOUT=*
//SYSUT1     DD    UNIT=SYSDA,SPACE=(CYL,(1,1))
//ADALIB     DD    DSN=adabas.loadlib,DISP=SHR
//SYSLMOD    DD    DSN=network.loadlib,DISP=SHR   <=== APF-AUTHORIZED
//SYSLIN     DD    *
 MODE     AMODE(31),RMODE(24)
 INCLUDE  ADALIB(ADARUN)
 SETCODE  AC(1)
 NAME  ADARUN(R)
```

Execution Job Example

The following is an example of an Entire Net-Work z/OS execution job. (See the sample source member JCLNET in the source library for an alternate example.) More JCL may be needed, depending on the node configuration (types of line drivers, number of links, and so on). For more information, refer to the Simple Connection Line Driver documentation.

```
//*-------------------------------------------------------------*
//*                     SAMPLE   JCL                            *
//*-------------------------------------------------------------*
//STEP1 EXEC PGM=ADARUN,REGION=2048K,TIME=1440       <--- see Note 1
//STEPLIB  DD DISP=SHR,DSN=WCAvrs.LOAD,DCB=BLKSIZE=32760
//         DD DSN=WAL.vrs.LOAD,DISP=SHR               <--- see Note 2
//DDPRINT  DD SYSOUT=*                                <--- see Note 3
//NETPRNT  DD DISP=SHR,DSN=WCAvrs.NETPRNT             <--- see Note 4
//MPMDUMP  DD SYSOUT=*                                <--- see Note 5
//SYSUDUMP DD SYSOUT=*
//DDCARD   DD DISP=SHR,DSN=WCAvrs.SRCE(ADARUN)        <--- see Note 6
//         DD DISP=SHR,DSN=WCAvrs.SRCE(FORCEN)
//DDKARTE  DD DISP=SHR,DSN=WCAvrs.SRCE(NWKWCA)       <--- see Note 7
```

Here is a sample of the contents of library member NWKWCA, listing the Entire Net-Work parameter statements for this Entire Net-Work Administration execution:

```
*                    NODE STATEMENT                                *
*------------------------------------------------------------------*
NODE NODENAME CQTIMER=60,               -
              LOG=NO,                   -
              MAXPATH=10,               -
              NTRACE=1000,              -
              REPLYTIM=60,              -
              TIMER=20
*
*-------------------------------------------------------------------------
*                                                                        *
*     DRIVER TCPX                                                        *
*                                                                        *
*-------------------------------------------------------------------------
DRIVER  TCPX     API=OES,                                  -
                 SERVERID=1996,                            -
                 USERID=CCCC
*-------------------------------------------------------------------------
*                   E N D   O F   P A R A M E T E R S ..                 *
*-------------------------------------------------------------------------
```

Notes:

1. The region size required varies with the number and type of links, as well as other operating parameters.
2. The second STEPLIB should always be your most current Adabas load library (Entire Net-Work Administration Version 5.9.1 requires Adabas Version 7.1.2 or above) or the Adabas limited library (WAL), as provided on the Entire Net-Work installation tape, unless you have been specifically instructed otherwise by Software AG.
3. All Entire Net-Work Administration print output is written to DDPRINT.
4. All diagnostic information from tracing, logging, and abends is written to the NETPRNT file if it is open (otherwise it is written to the DDPRINT file). NETPRNT can be allocated to a large data set that can be copied when closed. The data set should be created with the DCB attributes RECFM=FBA and LRECL=121. To do this, allocate the file SHR. This causes the data set to be erased at the time the file is opened. Be aware that the diagnostic information is very large and will fill a data set quickly. When this happens, the file is closed and all additional output is sent to DDPRINT. This diagnostic information is created by Entire Net-Work and does not include the operating system dump information written to SYSUDUMP.
5. If MPMDUMP is defined, a snap dump is produced during any abnormal termination. In some error situations, the MPMDUMP dump may contain more pertinent information than the SYSUDUMP dump.

6. DDCARD contains the ADARUN control statements or it identifes the library member in which the ADARUN control statements are defined. These ADARUN control statements define the interregion communications parameters for Entire Net-Work. See the section *ADARUN Control Statements* in the *Entire Net-Work Reference Guide*.
7. DDKARTE contains Entire Net-Work parameter statements or identifies the library member in which the parameter statements are defined. These parameter statements describe the local environment and the network connections for this node. See the section *Entire Net-Work Parameter Statements* in the *Entire Net-Work Reference Guide*.

Entire Net-Work can also be installed as a started task; no special considerations apply.

Entire Net-Work uses cross-memory services similar to Adabas in z/OS systems. As a result, z/OS removes the address space and initiator when Entire Net-Work terminates operation. This is normal and should not be regarded as an error.

Entering Operator Commands

During execution, a number of operator commands may be issued to Entire Net-Work to display or modify the system status. These commands are essentially identical for all operating environments. See the section *Entire Net-Work Operator Commands* in the *Entire Net-Work Reference Guide*.

The way in which operator commands are presented to Entire Net-Work depends on the operating system and is identical to the way operator commands are presented to Adabas.

In z/OS environments, the following operator commands are used:

```
MODIFY (abbreviation = F)
STOP (abbreviation = P)
```

The STOP command serves as an alternative to the NETEND command and terminates Entire Net-Work. Its synonyms are described as part of the following example.

Example:

Entering the following long form MODIFY command results in the following status displays (assuming that NETWK is the name of the started task running Entire Net-Work):

```
MODIFY NETWK,D STATS
NET0090I: BUFFER USAGE STATISTICS:
NET0091I: ASYNCH. BUFFERS:     000016 (= 24.2 %) OF 000064 K USED
NET0091I: LONG TERM BUFFERS:   000000 (=  0.4 %) OF 000064 K USED
NET0091I: SHORT TERM BUFFERS:  000000 (=  6.1 %) OF 001025 K USED
NET0091I: ATTACHED BUFFERS:    000000 (= 11.9 %) OF 000080 K USED
```

```
NET0091I: REQUEST QUEUE:       000000 (=  6.0 %) OF 000050 RQES USED
NET0087I: 0000010847 REQUESTS FROM LOCAL RQ
```

The following two commands are equivalent ways to terminate the Entire Net-Work session:

```
F NETWK,NETEND
P NETWK
```

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