software AG

Entire Net-Work Administration

Installation

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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:

System Requirements	Describes the system requirements of Entire Net-Work.
Installation Overview	Contains general information that applies to all Entire Net-Work installations.
Software AG Mainframe Product Licensing	Describes Software AG's mainframe product license support and processing.
z/OS Environments	Provides information about installing and running Entire Net-Work in the z/OS operating system environment.
Zap Naming Convention	Describes the naming convention used for Entire Net-Work zaps.

For information regarding Software AG product compatibility with IBM platforms and any IBM requirements for Software AG products, please review the *Product Compatibility for IBM Platforms* web page.

Notation "*vr* SP *s*", *vrs*, or *vr*: When used in this documentation, the notation "*vr* SP *s*", *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*.

1   About this Documentation

Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
`Monospace font`	Identifies service names and locations in the format `folder.subfolder.service`, APIs, Java classes, methods, properties.
Italic	Identifies: Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
`Monospace font`	Identifies: Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
|	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the | symbol.
[ ]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

Online Information and Support

Product Documentation

You can find the product documentation on our documentation website at **https://documentation.softwareag.com**.

In addition, you can also access the cloud product documentation via **https://www.software-ag.cloud**. Navigate to the desired product and then, depending on your solution, go to "Developer Center", "User Center" or "Documentation".

Product Training

You can find helpful product training material on our Learning Portal at **https://knowledge.softwareag.com**.

Tech Community

You can collaborate with Software AG experts on our Tech Community website at **https://tech-community.softwareag.com**. From here you can, for example:

- Browse through our vast knowledge base.

- Ask questions and find answers in our discussion forums.

- Get the latest Software AG news and announcements.

- Explore our communities.

- Go to our public GitHub and Docker repositories at **https://github.com/softwareag** and **https://hub.docker.com/publishers/softwareag** and discover additional Software AG resources.

Product Support

Support for Software AG products is provided to licensed customers via our Empower Portal at **https://empower.softwareag.com**. Many services on this portal require that you have an account. If you do not yet have one, you can request it at **https://empower.softwareag.com/register**. Once you have an account, you can, for example:

- Download products, updates and fixes.

- Search the Knowledge Center for technical information and tips.

- Subscribe to early warnings and critical alerts.

- Open and update support incidents.

- Add product feature requests.

Data Protection

Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR). Where applicable, appropriate steps are documented in the respective administration documentation.

2 System Requirements

This chapter describes the system requirements of Entire Net-Work.

Supported Operating System Platforms

Software AG generally provides support for the operating system platform versions supported by their respective manufacturers; when an operating system platform provider stops supporting a version of an operating system, Software AG will stop supporting that version.

For information regarding Software AG product compatibility with IBM platforms and any IBM requirements for Software AG products, please review the *Product Compatibility for IBM Platforms* web page.

Before attempting to install this product, ensure that your host operating system is at the minimum required level. For information on the operating system platform versions supported by Software AG products, complete the following steps.

1. Access Software AG's Empower web site at *https://empower.softwareag.com*.

2. Log into Empower. Once you have logged in, you can expand **Products & Documentation** in the left menu of the web page and select **Product Version Availability** to access the Product Version Availability screen.

3. Use the fields on the top of this screen to filter its results for your Software AG product. When you click the **Search** button, the supported Software AG products that meet the filter criteria are listed in the table below the filter criteria.

   This list provides, by supported operating system platform:

   ■ the Software AG general availability (GA) date of the Software AG product;

   ■ the date the operating system platform is scheduled for retirement (OS Retirement);

   ■ the Software AG end-of-maintenance (EOM) date for the product; and

   ■ the Software AG end-of-sustained-support (EOSS) date for the product.

> **Note:** Although it may be technically possible to run a new version of your Software AG product on an older operating system, Software AG cannot continue to support operating system versions that are no longer supported by the system's provider. If you have questions about support, or if you plan to install this product on a release, version, or type of operating system other than one listed on the Product Version Availability screen described above, consult Software AG technical support to determine whether support is possible, and under what circumstances.

Supported Hardware

For general information regarding Software AG product compatibility with other platforms and their requirements for Software AG products, visit Software AG's *Hardware Supported* web page.

Adabas Requirements

This release of Entire Net-Work requires the Adabas components supplied in Adabas Limited Load Library (WAL) and the SVC from any currently supported version of Adabas. These are distributed on the installation media. For information about currently supported Adabas releases, read *End of Maintenance*, in the *Entire Net-Work Release Notes*.

⚠ **Important:** You should always use the most current Adabas load library or the Adabas limited library (WAL) as provided on the Entire Net-Work installation media, unless you have been specifically instructed otherwise by Software AG. Entire Net-Work Version requires Adabas mainframe version 8.3.4 or later or WAL 8.3.4 or later.

Software AG recommends that you concatenate the Entire Net-Work and Adabas 8 WAL with the Entire Net-Work library first in the sequence. The Adabas 8 router (that is, ADASVC in z/OS or z/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 Media Information* in the *Entire Net-Work Release Notes* and the *Software AG Product Delivery Report* provided with the Entire Net-Work installation media for information about the WAL library modules and the version of Adabas required. Refer to the *Adabas Installation* documentation 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. For complete information about the Adabas link routine modules, refer to the *Adabas Installation* documentation.

⚠ **Important:** If an ADALNK batch link routine has been linked or modified by Software AG product modules or user exits, it cannot be used in any application startups of Adabas utility jobs or Adabas, Entire System Server, Adabas Review Hub, or Entire Net-Work nuclei.

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.

3 Installation Overview

This section contains general information that applies to all Entire Net-Work installations.

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.

   For information regarding Software AG product compatibility with IBM platforms and any IBM requirements for Software AG products, please review the *Product Compatibility for IBM Platforms* web page.

2. Unload the installation libraries from the installation media. Refer to the *Software AG Product Delivery Report* for specific data set sequence numbers.

3. Prepare and install the product license file.

4. Prepare Entire Net-Work JCL and parameter statements.

5. Install the Adabas router, if necessary.

6. Complete any access method-related work.

7. 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 media. Sample JCL is provided in each of the platform-specific installation procedure sections.

The Entire Net-Work Installation Media

Refer to the *Software AG Product Delivery Report* that accompanies the installation media for information about the volume serial number, density, media type, data set names, and data set sequence numbers of the media.

The media 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 installation media.

Contents of the Release Media

The following table describes most of the libraries included on the release media. Once you have unloaded the libraries from the media, you can change these names as required by your site, but the following lists the names that are delivered when you purchase Entire Net-Work.

> **Note:** Some of the libraries listed below may not appear on your release media. If this is the case, it is likely that an update to that library was not necessary for the release.

Library Name	Description
APSvrs.LDnn	One or more Software AG internal libraries. The vrs in the library name represents the *version* of the internal library code, which is not necessarily the same as the version of Entire Net-Work
BTEvrs.LDnn	A Software AG internal library. The vrs in the library name represents the *version* of the internal library code, which is not necessarily the same as the version of Entire Net-Work
MLCvrs.JOBS	The sample job library for Software AG's common mainframe license check software. The vrs in the library name represents the *version* of the license check software, which is not necessarily the same as the version of Entire Net-Work.
MLCvrs.LOAD	The load library for Software AG's common mainframe license check software. The vrs in the library name represents the *version* of the license check software, which is not necessarily the same as the version of Entire Net-Work.
WAFvrs.JOBS	The sample z/OS job library for Entire Net-Work SAF Security. The vrs in the library name represents the *version* of Entire Net-Work SAF Security.
WAFvrs.LOAD	The z/OS load library for Entire Net-Work SAF Security. The vrs in the library name represents the *version* of Entire Net-Work SAF Security.
WAFvrs.SRCE	The z/OS source library for Entire Net-Work SAF Security. The vrs in the library name represents the *version* of Entire Net-Work SAF Security.
WALvrs.JOBS	The sample z/OS job library for Adabas Limited Load Library, containing code for Adabas components shared by Adabas and other Software AG products. The vrs in the library name represents the *version* of Adabas Limited Load Library.

Library Name	Description
WAL*vrs*.LOAD	The z/OS load library for Adabas Limited Load Library, containing code for Adabas components shared by Adabas and other Software AG products. The *vrs* in the library name represents the *version* of Adabas Limited Load Library.
WAL*vrs*.SRCE	The z/OS source library for Adabas Limited Load Library, containing code for Adabas components shared by Adabas and other Software AG products. The *vrs* in the library name represents the *version* of Adabas Limited Load Library.
WCC*vrs*.LOAD	The z/OS load library for Entire Net-Work CTC Option. The *vrs* in the library name represents the *version* of Entire Net-Work CTC Option.
WCP*vrs*.LOAD	The z/OS load library for Entire Net-Work. The *vrs* in the library name represents the *version* of Entire Net-Work.
WCP*vrs*.MVSTAR	The z/OS UNIX tar file for Entire Net-Work. The *vrs* in the file name represents the *version* of Entire Net-Work. This file is used to create the folder structure with subdirectories and files required for the Adabas Directory Server (ADI).
WCP*vrs*.SRCE	The z/OS source library for Entire Net-Work. The *vrs* in the library name represents the *version* of Entire Net-Work.
WDX*vrs*.LOAD	The z/OS load library for Entire Net-Work Limited Load. The *vrs* in the library name represents the *version* of Entire Net-Work Limited Load.
WSL*vrs*.LIBR	The z/VSE library for Encryption for Entire Net-Work. The *vrs* in the library name represents the *version* of Encryption for Entire Net-Work, which is not necessarily the same as the version of Entire Net-Work.
WSL*vrs*.LOAD	The z/OS load library for Encryption for Entire Net-Work. The *vrs* in the library name represents the *version* of Encryption for Entire Net-Work, which is not necessarily the same as the version of Entire Net-Work.
WTC*vrs*.LIBR	The z/VSE load library for Entire Net-Work TCP/IP Option. The *vrs* in the library name represents the *version* of Entire Net-Work TCP/IP Option.
WTC*vrs*.LOAD	The z/OS load library for Entire Net-Work TCP/IP Option. The *vrs* in the library name represents the *version* of Entire Net-Work TCP/IP Option.
WTC*vrs*.MOD	The BS2000 load library for Entire Net-Work TCP/IP Option. The *vrs* in the library name represents the *version* of Entire Net-Work TCP/IP Option.
WXF*vrs*.LOAD	The z/OS load library for Entire Net-Work XCF Option. The *vrs* in the library name represents the *version* of Entire Net-Work XCF Option.

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 parameters* 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 Parameters* 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*

4 z/OS Environments

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

Library Requirements

The source library requires one cylinder of 3390 DASD space. The load library requires four cylinders. See the section *Installation Media Information* in the *Entire Net-Work Release Notes* and the *Software AG Product Delivery Report* for additional information.

Installation Procedure

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

- Step 1: Copy the Installation Media Contents
- Step 2: Install the Adabas SVC
- Step 3: Prepare and Install the Product License File(s)
- Step 4: Customize the Entire Net-Work Startup Jobs
- Step 5: Modify the Entire Net-Work Parameters
- Step 6: Install Appropriate Line Drivers
- Step 7: Prepare Access Method-Specific Definitions
- Step 8: Apply Corrective Maintenance

Step 1: Copy the Installation Media Contents

Copy the data sets from the supplied installation medium to your disk before you perform the individual installation procedure for each component to be installed.

The way you copy the data sets depends on the installation method and the medium used:

- If you use System Maintenance Aid (SMA), refer to the copy job instructions provided in the *System Maintenance Aid* documentation.

- If you are not using SMA and want to copy the data sets from CD-ROM, refer to the README.TXT file on the CD-ROM.

- If you are not using SMA and want to copy the data sets from tape, follow the instructions in this section.

This section explains how to copy all data sets from tape to disk.

- Step 1: Copy Data Set COPY.JOB from Tape to Disk
- Step 2: Modify hilev.COPY.JOB on Your Disk

Step 1: Copy Data Set COPY.JOB from Tape to Disk

■ Modify the following sample job according to your requirements:

```
//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=tape-volser),
// LABEL=(2,SL)
//SYSUT2 DD DSN=hilev.COPY.JOB,
// DISP=(NEW,CATLG,DELETE),
// UNIT=3390,VOL=SER=disk-volser,
// SPACE=(TRK,(1,1),RLSE),
// DCB=*.SYSUT1
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//
```

where:

tape-volser is the VOLSER of the tape, for example: `T12345`,
hilev is a valid high-level qualifier, and
disk-volser is the VOLSER of the disk.

■ Execute the job to copy the data set `COPY.JOB` to your disk.

Step 2: Modify hilev.COPY.JOB on Your Disk

■ Modify *hilev.COPY.JOB* according to your requirements:

Set `EXPDT` to a valid expiration date, for example, `99365`.

Set `HILEV` to a valid high-level qualifier, for example, `USERLIB`.

Set `LOCATION` to a storage location, for example, `STORCLAS=ABC` or `UNIT=3390,VOL=SER=USR123`.

Step 3: Submit COPY.JOB

■ Execute *hilev*.COPY.JOB to copy single, multiple, or all data sets to your disk.

Step 2: Install the Adabas SVC

In systems where Adabas is not already installed, install the Adabas SVC.

Refer to the *Adabas Installation Manual* for specific details.

Step 3: Prepare and Install the Product License File(s)

You must install a valid license file on all mainframe platforms in which your Software AG mainframe product is installed. The license file is provided as an XML document (encoding is US-ASCII) and must remain in that format -- even on the mainframe. It must not be modified. Any modification of the license file will invalidate the digital signature and the license check will fail. If the check fails, you will not be able to run the product. In the event of a check failure, please contact your Software AG technical support representative.

License	License Load Module	License DDNAME
Entire Net-Work (WCP)	NETLIC	DDLIC
Entire Net-Work TCP/IP Option (WTC)	WTCLIC	DDLWTC
Entire Net-Work for zIIP	AZPADLIC	DDLAZPAD

The following table indicates which licenses are required when Entire-NetWork products and options are used.

	WCP License NETLIC or DDLIC	WTC License WTCLIC or DDLWTC (see note 1)	AZPAD License AZPADLIC or DDLAZPAD (see note 2)
WCP	**YES**	NO	**YES**
WCP+WTC	**YES**	**YES**	**YES**
WCA	NO	NO	**YES**
WDX	NO	NO	**YES**
ADATCP	NO	**YES**	**YES**

Note 1

WTC license is checked if a TCPI or TCPX driver is used

Note 2

AZPAD license is checked if ADARUN ZIIP=YES

> **Note:** Thirty days before the license expires, license check failure messages are produced. Your software product will still function, but these messages warn you that it is time to obtain a new license.

In this step, you will prepare the license file (obtain it from e-mail or the installation media and store it on your z/OS system) and then install it:

- Preparing the Product License File
- Installing the Product License File

Preparing the Product License File

The product license file is supplied on the individual customer installation media or separately via an e-mail attachment. Before you can install the license, you must transfer it from e-mail or the installation media and store it on a z/OS system. This section describes how to do this for a license distributed either by e-mail or on the installation media.

≫ **To prepare the license file from an e-mail attachment, complete the following steps:**

1   Transfer the license to z/OS, as described in *Transferring a License File from PC to a z/OS Host Using FTP*, in the *Software AG Mainframe Product Licensing*.

2   Verify that the transferred license file is stored in an Entire Net-Work source library (with RECFM=F or FB and LRECL=80), taking care to preserve its format as ASCII.

≫ **To prepare the license file from the installation media, complete the following steps:**

■   Verify that the license file is stored from the installation media into an Entire Net-Work source library (with RECFM=F or FB and LRECL=80), taking care to preserve its format as ASCII.

Installing the Product License File

Once the license file has been prepared, you can install it in one of two ways:

- You can convert the license to a load module (NETLIC) that is then loaded by Entire Net-Work.
- You can reference the license file in the Entire Net-Work startup job by DD statement.

This section describes both methods.

≫ **To convert the license file to a load module, complete the following steps:**

1   Review and modify sample job LICASM, as follows:

- Change the STEPLIB DD statement to point to your license load library (MLC*vrs*.LOAD).

- Change the SYSUT1 DD statement to point to the data set containing the Entire Net-Work license file you transferred to z/OS earlier.

- Specify an appropriate user load library for the L.SYSLMOD DD statement.

  > **Note:** This user load library must also be included in the STEPLIB concatenation for the Entire Net-Work.

2   Submit sample job LICASM. This job runs the MAKE function of the LICUTIL utility to convert the license text file to an assembler source module. LICASM then links and assembles the assembler source to generate a load module called NETLIC, which is stored in the specified user load library (L.SYSLMOD DD statement). For more information about the LICUTIL utility, read *Using The License Utility: LICUTIL*, in the *Software AG Mainframe Product Licensing*.

3   Update your Entire Net-Work startup jobs to reference the user load library so NETLIC will be loaded by Entire Net-Work, as described in *Step 4: Customize the Entire Net-Work Startup Jobs*.

⋙ **To reference the license file in the Entire Net-Work startup job, complete the following steps:**

1   Make sure any previously-created NETLIC load module is inaccessible to the Entire Net-Work load library being used in your Entire Net-Work startup job. Entire Net-Work first tries to load NETLIC and, if unsuccessful, it reads from a DDLIC data set referenced in the Entire Net-Work startup job.

2   Update your Entire Net-Work startup jobs to reference the license, as described in *Step 4: Customize the Entire Net-Work Startup Jobs*.

Step 4: Customize the Entire Net-Work Startup Jobs

Customize the Entire Net-Work startup jobs. The following modifications must be made:

1. Software AG licensing requires that the modules LICMAIN and LICUTIL be loaded when Entire Net-Work starts up. These modules are distributed in the MLC*vrs*.LOAD library. You must either:

   - Copy LICMAIN and LICUTIL into NETWRK.*vrs*.LOAD; or

   - Concatenate MLC*vrs*.MVSLOAD with NETWRK.*vrs*.LOAD.

2. Verify that the license file is correctly referenced in each startup job. Do either of the following:

   - Verify that the NETLIC load module, installed in *Step 3: Prepare and Install the Product License File*, is stored in a load library that is accessible to the Entire Net-Work load library. Add the user load library in which NETLIC resides to the STEPLIB concatenation of the Entire Net-Work startup job or copy the NETLIC library into NETWRK.*vrs*.LOAD.

   - Verify that there is no NETLIC load module accessible to the Entire Net-Work load library and that the following DD statement is included in the ADANUC job:

```
//DDLIC     DD  DISP=SHR,DSN=dsn
```

where *dsn* is the data set name of the license file loaded from the installation media (in ASCII format). Note that *dsn* could reference a member in a partitioned data set.

> **Note:** Entire Net-Work first tries to load NETLIC and, if unsuccessful, it reads from the DDLIC data set.

3. Data set names for the database and libraries must be customized for your installation.

> **Note:** Be sure to include appropriate user load libraries.

Step 5: Modify the Entire Net-Work Parameters

Modify the Entire Net-Work parameters.

See the section *Entire Net-Work Parameter Statements* in the *Entire Net-Work Reference Guide*.

Step 6: Install Appropriate Line Drivers

Perform the line driver-dependent installation procedure and prepare the DRIVER and LINK statementsfor the TCPX line driver.

Step 7: Prepare Access Method-Specific Definitions

Prepare the required access method-specific definitions.

Step 8: Apply Corrective Maintenance

Apply corrective maintenance.

Refer to the *Software AG Product Delivery Report* to determine whether any files containing corrective maintenance (i.e., data sets named *pppvrs*.ZAPS) are supplied on the installation media. If so, restore the data sets using IEBCOPY, and then follow the corrective maintenance instructions in the $READMVS member.

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
//DDLIC DD DSN=NETWRK.vrs.LICENSE,DCB=(RECFM=FB,LRECL=80,BLKSIZE=80*n) <---See Note 3
//DDPRINT  DD SYSOUT=*                               <--- see Note 4
//NETPRNT  DD DISP=SHR,DSN=WCAvrs.NETPRNT            <--- see Note 5
//MPMDUMP  DD SYSOUT=*                               <--- see Note 6
//SYSUDUMP DD SYSOUT=*
//DDCARD   DD DISP=SHR,DSN=WCAvrs.SRCE(ADARUN)       <--- see Note 7
//         DD DISP=SHR,DSN=WCAvrs.SRCE(FORCEN)
//DDKARTE  DD DISP=SHR,DSN=WCAvrs.SRCE(NWKWCA)       <--- see Note 8          ↵
```

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 data set of the STEPLIB concatenation should always be your most current Adabas load library (Entire Net-Work Administration Version 6.3 requires Adabas mainframe Version 8 or above) or the Adabas limited library (WAL), as provided on the Entire Net-Work installation media, unless you have been specifically instructed otherwise by Software AG.

3. DDLIC contains the binary license key. It is only required if a license module is not present in the STEPLIB.

4. All Entire Net-Work Administration print output is written to DDPRINT.

5. 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.

6. 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.

7. DDCARD contains the ADARUN parameters or it identifies the library member in which the ADARUN parameters are defined. These ADARUN parameters define the interregion communications parameters for Entire Net-Work. See the section *ADARUN Parameters* in the *Entire Net-Work Reference Guide*.

8. 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
```

Installing Entire Net-Work for zIIP

This section is organized as follows:

- Prerequisites
- Libraries
- License
- Installation Steps

Prerequisites

Prerequisite for Entire Net-Work for zIIP is a z13 mainframe with one or more zIIP engines, running z/OS 2.1 or above. Entire Net-Work for zIIP needs one zIIP engine to perform effectively.

To run with zIIP support enabled (e.g., ADARUN parameter `ZIIP=YES`), the Entire Net-Work kernel must be APF-authorized.

Libraries

The support of Entire Net-Work for zIIP requires the following Adabas for zIIP library:

- AZP835.LOAD

Entire Net-Work for zIIP requires that the Adabas SVC contains support for zIIP:

- Module ADASVC from the AZP835.LOAD library supports Adabas Version 8.3 databases.
- If the Adabas SVC used for running Entire Net-Work for zIIP is also to be used for Adabas Version 8.4 databases, use a Version 8.4 ADASVC with the following maintenance applied:
  - ADASVC from ADA842.LOAD: Apply zap AO842003.

- ADASVC from ADA841.LOAD: Apply zap AO841008.

For the Entire Net-Work for zIIP license check (see **License** below), use the Mainframe License Check version 1.3.3 from the following library:

- MLC133.LOAD

License

Entire Net-Work for zIIP requires an associated license file (AZPAD) in addition to the Entire Net-Work license file. This is the same license file that is used for an Adabas nucleus. If the AZPAD license is not provided or erroneous, the kernel will run with Entire Net-Work for zIIP deactivated (`ZIIP=NO`).

The AZPAD license can be transferred to the mainframe in the same way as the Entire Net-Work license. The license can be made available to the nucleus as a load module with the name AZPADLIC. This is similar to the handling of the Entire Net-Work license load module NETLIC described in *Software AG Mainframe Product Licensing*. Alternatively, the license file can be referred to by a 'DDLAZPAD' DD statement in the nucleus job/started task. This is a fallback in case the AZPADLIC module cannot be loaded.

Installation Steps

≫ **Perform the following steps to install Entire Net-Work for zIIP**

1   Add the Adabas for zIIP load library to your Entire Net-Work startup jobs (see also **Libraries**, above).

2   Set up the required license modules or datasets (see **License** above).

3   Install the Adabas SVC that contains zIIP support.

   - Module ADASVC from the AZP835.LOAD library supports Adabas Version 8.3 databases.

   - Module ADASVC from the ADA842.LOAD library, with zap AO842003 applied, supports Adabas Version 8.4 and Adabas Version 8.3 databases, including Adabas for zIIP.

     Alternatively, use module ADASVC from the ADA841.LOAD library, with zap AO841008 applied.

4   Specify ADARUN parameter `ZIIP=YES`.

5   Start the Entire Net-Work kernel.

Enabling Direct TCP/IP Access (ADATCP) to Your Adabas Nucleus

- Connection Through a Direct TCP/IP Link
- Activating the TCP/IP Link

Connection Through a Direct TCP/IP Link

The database must be UES-enabled for TCP/IP access.

A TCP/IP link uses Entire Net-Work modules. These modules communicate using the standard ADALNK module. Translation tables can be customized and reassembled and then made available in the Adabas STEPLIB. The Adabas ADALNK module is supplied with the LNKUES module and the default translation tables ASC2EBC and EBC2ASC.

The Entire Net-Work WCP*vrs* and WTC*vrs* libraries must be defined in the STEPLIB concatenation. The sample startup job for a UES-enabled nucleus with TCP/IP support is provided in member ADANUCT. For more information, read *JCL Required for UES and TCP/IP Support (z/OS)*, in the *Adabas z/OS Installation Guide*.

UES-enabled databases are connected directly through TCP/IP using the Adabas standard batch or TSO link routine ADALNK. The sample job stream to link the ADALNK module with your modified translation tables is ALNKUES.

In addition, the ADALNK module must have the correct SVC set in the LNKGBLS module.

- Step 1: Assemble the LNKGBLS module with the correct SVC
- Step 2: Assemble the Two Translation Tables into the Adabas Load Library (SMA Job Number I056)
- Step 3: Link the Translation Tables and LNKUES into ADALNK
- Step 4: Make ADALNK Available to the Adabas Nucleus

Step 1: Assemble the LNKGBLS module with the correct SVC

The LNKGBLS is delivered in the ADA*vrs*.SRCE library and its assemble job is in ADA*vrs*.JOBS(ASMGBLS). Use the job as a guide to assemble the LNKGBLS module with the correct SVC.

Step 2: Assemble the Two Translation Tables into the Adabas Load Library (SMA Job Number I056)

Assemble the ASCII to EBCDIC and EBCDIC to ASCII translation tables, either default or customized. Use job ALNKUES in the ADA*vrs*.JOBS library as a guide for customizing site-specific JCL.

Step 3: Link the Translation Tables and LNKUES into ADALNK

It is now necessary to (re)link ADALNK with LNKUES and your customized and reassembled translation tables.

Link the ADALNK, ASC2EBC, EBC2ASC, LNKUES, and other user exit modules into a final ADALNK module that is UES-enabled. Place this load module into a "USER.LOAD" library. Sample job LNKLNK8 is provided as a guide in the ADA*vrs*.JOBS library.

Step 4: Make ADALNK Available to the Adabas Nucleus

The (re)linked ADALNK must be made available to the Adabas nucleus.

If you are calling Adabas Version 8 directly through a TCP/IP link and the correct ADALNK is not available to the Adabas nucleus or the SVC has not been set correctly, Adabas produces unexpected results, such as response code 148 (ADARSP148) and empty buffers.

Activating the TCP/IP Link

≫ **To activate a direct TCP/IP link to the Adabas nucleus:**

1   Set the ADARUN parameter `TCPIP=YES`.

2   Specify a universal resource locator (URL) in the ADARUN parameter TCPURL.

Specifying a URL

The URL is a 20-byte address that conforms to the RFC specification for URLs.

You can specify the URL required to activate the direct TCP/IP link in the ADARUN parameter `TCPURL`. For more information, read *TCPURL Parameter: TCP/IP Universal Resource Locator*, in the *Adabas Operations Manual*.

5 Zap Naming Convention

The naming convention used for Entire Net-Work zaps is:

```
Wcvrsnnn
```

Each of the letters in this naming convention is now described.

W

The letter W is used to indicate that the zap is for the Software AG Entire Net-Work product.

c

Specifies a system component code that identifies the Entire Net-Work component to which the zap applies. The following table describes the component codes that might be used in an Entire Net-Work zap:

Code	Entire Net-Work Component
D	z/VSE-dependent mainline
M	Operating system-independent mainline
O	OS/390 and z/OS-dependent mainline
T	Operating system-independent, Simple Connection Line Driver
U	Simple Connection Line Driver z/OS-dependent
V	Simple Connection Line Driver z/VSE-dependent
Y	Optional zaps, placed in the ZAPOPT member in the WCP*vrs*.MVSSRCE library.
Z	Simple Connection Line Driver BS2000-dependent

v

Identifies the version number of Entire Net-Work.

r

Identifies the release number of Entire Net-Work.

s

Identifies the system maintenance (SP) level number of Entire Net-Work.

nnn

Specifies the actual zap number.

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