

# Entire System Server

## Installing Entire System Server (NPR) on Windows

Version 2.1.17

September 2025

This document applies to Entire System Server Version 2.1.17 and all subsequent releases.

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

Copyright © 1991-2025 Software GmbH, Darmstadt, Germany and/or its subsidiaries and/or its affiliates and/or their licensors.

The name Software AG and all Software GmbH product names are either trademarks or registered trademarks of Software GmbH and/or its subsidiaries and/or its affiliates and/or their licensors. Other company and product names mentioned herein may be trademarks of their respective owners.

Detailed information on trademarks and patents owned by Software GmbH and/or its subsidiaries is located at <https://softwareag.com/licenses>.

Use of this software is subject to adherence to Software GmbH's licensing conditions and terms. These terms are part of the product documentation, located at <https://softwareag.com/licenses> and/or in the root installation directory of the licensed product(s).

This software may include portions of third-party products. For third-party copyright notices, license terms, additional rights or restrictions, please refer to "License Texts, Copyright Notices and Disclaimers of Third-Party Products". For certain specific third-party license restrictions, please refer to section E of the Legal Notices available under "License Terms and Conditions for Use of Software GmbH Products / Copyright and Trademark Notices of Software GmbH Products". These documents are part of the product documentation, located at <https://softwareag.com/licenses> and/or in the root installation directory of the licensed product(s).

Use, reproduction, transfer, publication or disclosure is prohibited except as specifically provided for in your License Agreement with Software GmbH.

**Document ID: NPRUX-INSTALL-WIN-2117-20250930**

## Table of Contents

Preface .....	v
1 About this Documentation .....	1
Document Conventions .....	2
Online Information and Support .....	2
Data Protection .....	3
2 System Requirements .....	5
Operating Environments .....	6
Memory Space Requirements .....	6
Disk Space Requirements .....	6
Software Requirements .....	6
Additional Software Requirements for Red Hat Enterprise Linux 9 (x86-64) .....	7
3 Important Information .....	9
Administrator Status .....	10
Installation Directory .....	10
Side-by-Side Installations .....	11
Upgrading Your Entire System Server (NPR) Environment .....	11
Updating Your Entire System Server (NPR) Environment .....	11
4 Installing Entire System Server (NPR) .....	13
5 Structure and Usage of the npr.ini File .....	17
Sections .....	18
An npr.ini Sample File .....	20
Parameter Description .....	21
6 Completing the Installation .....	27
Setting up Entire System Server Components .....	28
7 Entire System Server (NPR) Directory Structure .....	31
Directories after Installation .....	32
npr.ini File .....	32
<installdir>\EntireSystemServer Directory .....	32
<installdir>\EntireSystemServer\bin Directory .....	33
%ProgramData%\Software AG\EntireSystemServer\work .....	33
%ProgramData%\Software AG\EntireSystemServer\log .....	33
8 Handling of EntireX Broker Error Codes .....	35
9 Product Operation: Windows Service Usage .....	37
Accessing Windows Services Control Panel .....	38
Starting the Server .....	38
Querying the Status of a Server .....	38
Stopping the Server .....	39
Windows Event Logging .....	39
10 Product Operation: Windows User Rights Assignment .....	41
11 Using nprwinservice to Maintain Windows Services of Entire System Server .....	43
Usage in BAT files .....	44
Functions .....	44
Parameters .....	45

Exit Code .....	45
Software AG Installer ID .....	45
Examples .....	46
Naming Conventions .....	48
12 List of Solved Issues .....	49

---

## Preface

---

Entire System Server (NPR) is installed using the Software AG Installer which you download from the Software AG Empower website at <https://empower.softwareag.com/>.

This documentation provides product-specific instructions for installing Entire System Server (NPR) on Linux and Windows. It is intended for use with *Using the Software AG Installer*. That guide explains how to prepare your machine to use the Software AG Installer, and how to use the Software AG Installer and Software AG Uninstaller to install and uninstall your products. The most up-to-date version of *Using the Software AG Installer* is always available at <http://documentation.softwareag.com/> (Empower login required).

This documentation is organized under the following headings:

<a href="#">System Requirements</a>	Supported operating system platforms and prerequisites.
<a href="#">Important Information</a>	Important information that you should be aware of before you start the installation.
<a href="#">Installing Entire System Server (NPR)</a>	How to install Entire System Server (NPR) with the Software AG Installer.
<a href="#">Structure and Usage of the npr.ini File</a>	Defining the behaviour of a server process.
<a href="#">Completing the Installation</a>	How to proceed after the installation.
<a href="#">Entire System Server (NPR) Directory Structure</a>	A description of the Entire System Server (NPR) directory structure after the installation.
<a href="#">Handling of EntireX Broker Error Codes</a>	An overview of EntireX Broker Error Codes.
<a href="#">Product Operation: Windows Service Usage</a>	Information for running Entire System Server (NPR) under Windows.
<a href="#">Product Operation: Windows User Rights Assignment</a>	Information on necessary user rights and their assignment.
<a href="#">Using nprwinservice to Maintain Windows Services of Entire System Server</a>	Information on how to use nprwinservice under Windows.
<a href="#">List of Solved Issues</a>	Solved Issues.

For important last-minute information, see the readme file that is provided with Entire System Server (NPR). You can find it in the Entire System Server (NPR) product documentation at <http://documentation.softwareag.com/> (Empower login required).



**Note:** Entire System Server (NPR) is using the user ID to connect and to get the data from the operating system, the data storing depends on the customer using Entire System Server (NPR) and logging feature using any script. For a customer to be compliant with the General

Data Protection Regulation (GDPR) in case a user wants his data to be deleted then there should be provisions to do so otherwise logging can be avoided.

# 1 About this Documentation

---

▪ Document Conventions .....	2
▪ Online Information and Support .....	2
▪ Data Protection .....	3

## Document Conventions

---

Convention	Description
<b>Bold</b>	Identifies elements on a screen.
Monospace font	Identifies service names and locations in the format <i>folder.subfolder.service</i> , APIs, Java classes, methods, properties.
<i>Italic</i>	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>.

### Product Training

You can find helpful product training material on our Learning Portal at <https://learn.software-ag.com>.

### Tech Community

You can collaborate with Software GmbH 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 GmbH 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 GmbH resources.

## Product Support

Support for Software GmbH 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

---

- Operating Environments ..... 6
- Memory Space Requirements ..... 6
- Disk Space Requirements ..... 6
- Software Requirements ..... 6
- Additional Software Requirements for Red Hat Enterprise Linux 9 (x86-64) ..... 7

## Operating Environments

---

### Operating System

Entire System Server (NPR) functions in any Windows environment that supports Natural Version 8.3.x.

## Memory Space Requirements

---

There are no specific memory requirements for operating the product.

## Disk Space Requirements

---

Approximately 1 MB of hard-disk space is required for Entire System Server (NPR) (without any Software AG Installer packages). This value depends on the installation hardware. On some platforms, it is higher.

If you install other products together with Entire System Server (NPR) in one step, see the installation documentation for these products for further information.

## Software Requirements

---

With Entire System Server 2.1 SP8 the following components will be installed automatically:

- EntireX Libraries Version 9.10 or higher

It is recommended that you use the latest versions of the above listed Software AG products. You can view all available Software AG product versions and check the dates when their maintenance ends by visiting Software AG's Empower web site at <https://empower.softwareag.com/>. Go to **Products > Product Version Availability**.

## Additional Software Requirements for Red Hat Enterprise Linux 9 (x86-64)

---

Before installing Entire Systems Server (NPR) on your machine, you first have to install the package `libxcrypt-compat`. The NPRTB component of Entire Systems Server (NPR) requires `libcrypt.so.1` which is no longer installed by default in Red Hat 9. Please ensure that the appropriate package is installed. You can do that by running the command:

```
yum install libxcrypt-compat
```



# 3 Important Information

---

- Administrator Status ..... 10
- Installation Directory ..... 10
- Side-by-Side Installations ..... 11
- Upgrading Your Entire System Server (NPR) Environment ..... 11
- Updating Your Entire System Server (NPR) Environment ..... 11

## Administrator Status

---

The person performing the installation must have administrator status.

## Installation Directory

---

During the installation, you are asked to specify an installation directory. Specify the installation directory in which to install Entire System Server (NPR). In case you want to use Entire System Server (NPR) together with Natural or other Software AG products, specify the installation directory in which you have installed these products. The user that you are using to install must have full read and write permissions to this directory.

We recommend that you use the *C:\Program Files\Common Files\softwareag* directory as the location for Entire System Server. But any other directory is also possible.

 **Important:** It is recommended that you do not install into a directory which is a subdirectory of a previous installation. Such a previous installation may have been created either with the Software AG Installer or by an installation tool that was used in the past.

The *npr.ini* file is delivered with Entire System Server (NPR) in the *<install-dir>\EntireSystemServer* directory. To be able to share a global *npr.ini* configuration file by multiple Entire System Server (NPR) installations, the installation copies the *npr.ini* file to the *C:\Program Files\Common Files\softwareag\EntireSystemServer* directory. The *<install-dir>\EntireSystemServer* directory will not be removed by an uninstallation.

Entire System Server (NPR) searches for the *npr.ini* file

1. at the place where the environment variable *NPR\_INI* points to
2. in the *C:\Program Files\Common Files\softwareag\EntireSystemServer* directory
3. in the *<install-dir>\EntireSystemServer* directory

If a user wants to use the local *npr.ini* file in the the *<install-dir>\EntireSystemServer* directory, he has to make sure that *NPR\_INI* does not point to an *npr.ini* file and he must delete or rename the *npr.ini* in the *C:\Program Files\Common Files\softwareag* directory.

During the installation, the script *<install-dir>\EntireSystemServer\INSTALL\inatnpr.bsh* is executed. If Natural is already installed in the installation directory, the script copies shared libraries of Entire System Server (NPR) into the *NATEXTLIB* directory.

## Side-by-Side Installations

---

You can install the same Entire System Server (NPR) version more than once on the same machine. And you can also install several different versions of Entire System Server on the same machine. This may be necessary to test a new Entire System Server version before it is taken over into a production environment. Each version, however, must be installed in a separate directory. That is, when Entire System Server is already installed, for example, in the directory *C:\Program Files\Common Files\softwareag*, you can install a second instance of Natural, for example, in a directory named *C:\Program Files\Common Files\softwareag2*.

If you install Entire System Server (NPR) more than once in different directories, these Entire System Server installations may share one *npr.ini* file.

Since Empower only offers the latest version of Entire System Server and other products, it is recommended that you create and keep an image of installed Entire System Server versions for possible later use. Installing from an image rather than downloading it from Empower will usually be faster, too. For further information, see *Using the Software AG Installer*.

## Upgrading Your Entire System Server (NPR) Environment

---

When one of the first two digits of the version number changes, we consider an installation as an upgrade installation.

## Updating Your Entire System Server (NPR) Environment

---

When the first two digits of the version number remain the same and the third or fourth digit changes, we consider an installation as an update installation.

It is not possible to update an existing Entire System Server Version 2.1. SP4 with an Entire System Server Version 2.1. SP8.



# 4

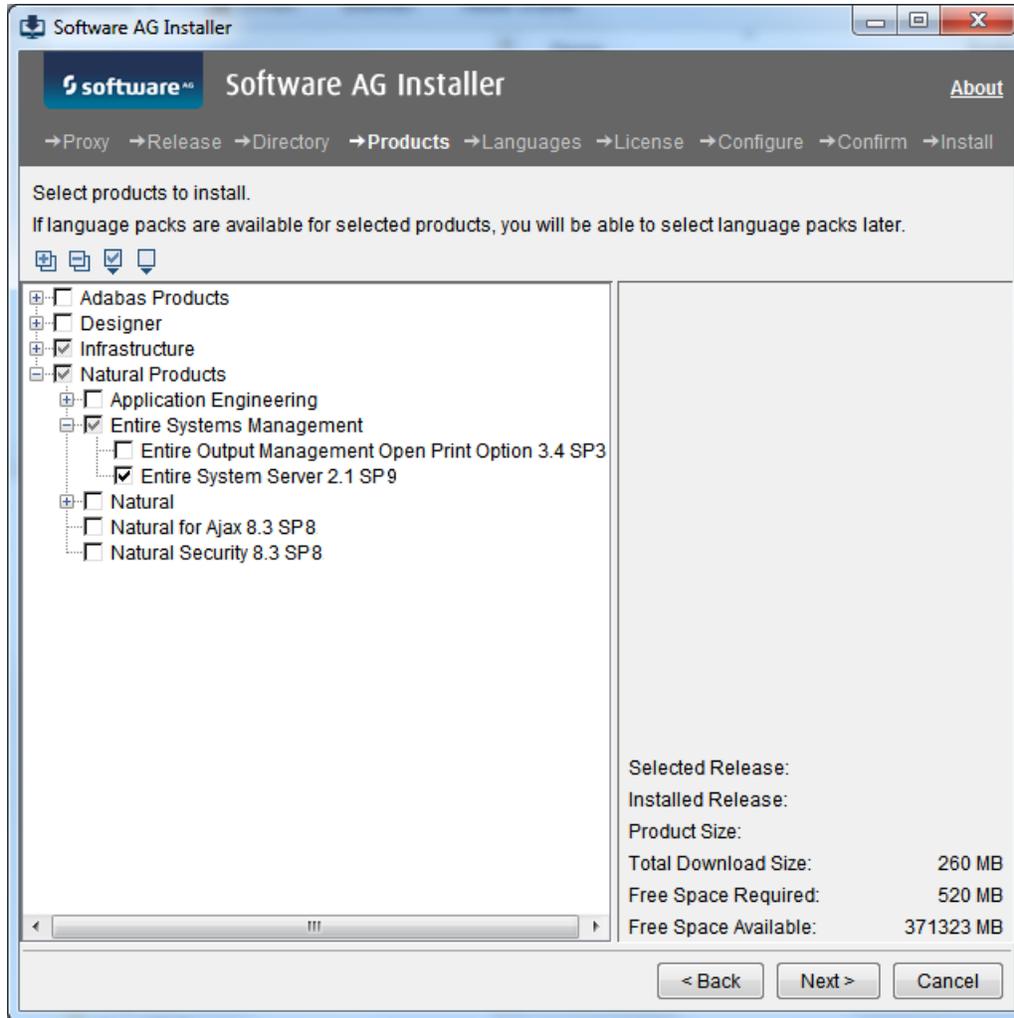
## Installing Entire System Server (NPR)

---

This installation documentation provides just a brief description on how to install Entire System Server (NPR) directly on the target machine using the Software AG Installer . For detailed information on the Software AG Installer, see *Using the Software AG Installer*.

### » To install Entire System Server (NPR)

- 1 When the first page of the Software AG Installer (the so-called Welcome panel) is shown, choose the **Next** button repeatedly (and specify all required information on the shown panels as described in *Using the Software AG Installer*) until the panel containing the product selection tree appears. This tree lists the products you have licensed and which can be installed on the operating system of the machine on which you are installing.
- 2 To install Entire System Server (NPR) with all of its product components, expand the **Natural Products** node and select **Entire Systems Management > Entire System Server**.

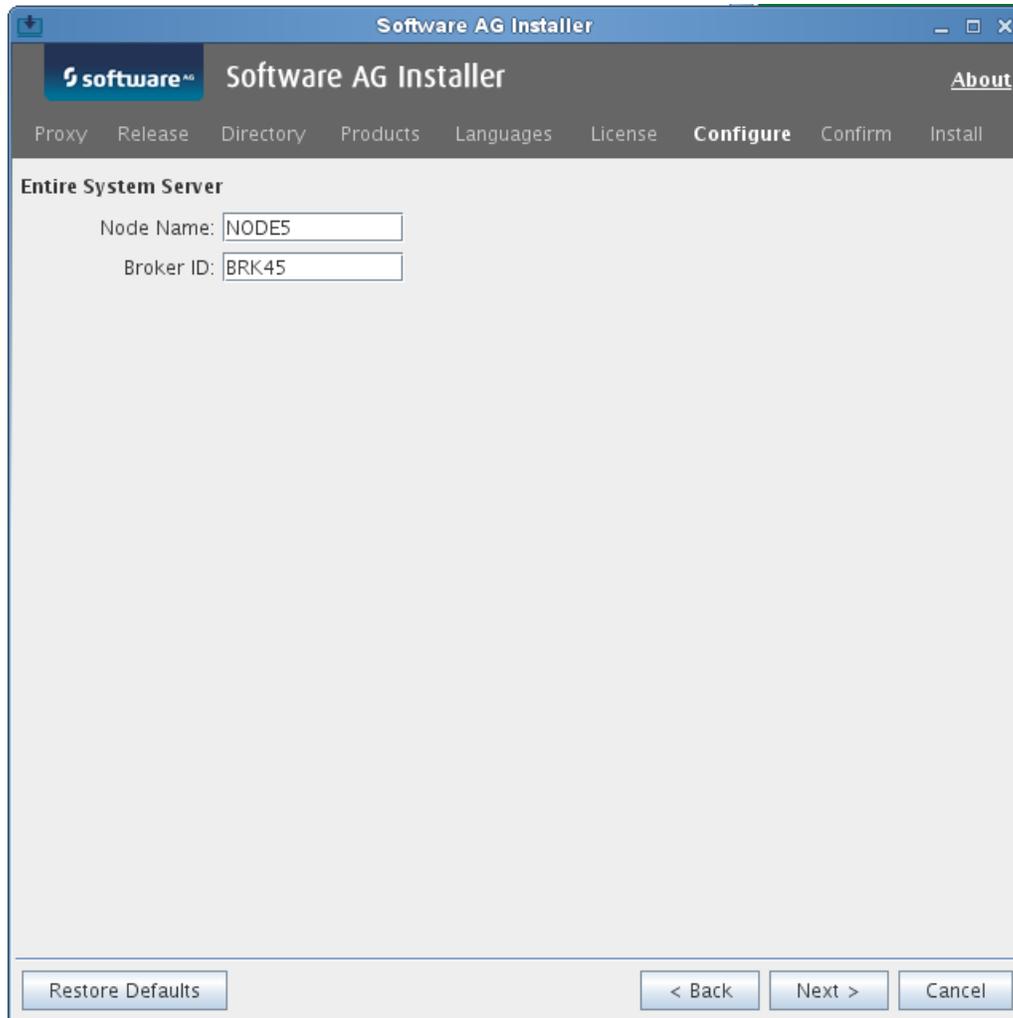


The installer automatically selects any additional component which is also required, including EntireX Libraries if you have not installed this component yet.

- 3 Choose the **Next** button.
- 4 Read the license agreement, select the check box to agree to the terms of the license agreement, and choose the **Next** button.

 **Note:** If you are installing other products together with Entire System Server (NPR), several panels may appear that are not explained in this documentation. See the documentation for these products for more information.

5



First-time installation only. Depending on your selection in the tree, the installer may ask for a **Node Name** and a **Broker ID**. Enter valid values and choose the **Next** button.



**Note:** If you use Entire System Server only locally, i.e. without broker communication, you can enter dummy values for **Node Name** and **Broker ID**. In this case, broker communication will not be activated and you have to replace the dummy values in the *npr.ini* file manually, to activate broker communication.

- 6 On the last panel, review the list of products and items you have selected for installation. If the list is correct, choose the **Next** button to start the installation process.

When the Software AG Installer has completed, the first-time installation, additional configuration steps are required. See [Completing the Installation](#) for further details.



# 5 Structure and Usage of the npr.ini File

---

- Sections ..... 18
- An npr.ini Sample File ..... 20
- Parameter Description ..... 21

## Sections

---

The *npr.ini* file is structured in a single or multiple sections.

- DEFAULTS
- NPR Identifier
- Local Node
- NPRMGR
- DRIVEMAP

### DEFAULTS

A DEFAULTS section is used to define default values for the [<NPR identifier>] sections. Any item defined in the DEFAULTS section can also be defined in any <NPR identifier> section. If an item is not defined in such a section, the definition of the DEFAULTS section is being used. Note that this does not hold for parameters such as `Server_Local` or `IPC_Prefix` which are specific to a particular section and have no default.

### NPR Identifier

For each NPR service provided on a given machine, one [<NPR identifier>] section is to be defined. Additional sections can be defined for remote services (on other machines), so that they can be controlled by the `nprmgr` utility.

### Local Node

Local nodes are special NPR nodes which are invoked directly from a Natural session

- on the same machine where the Natural session is executed;
- without EntireX Broker communication.

To enable different log and trace settings for multiple local NPR nodes, the environment variable `NPR_LOCAL_SECTION` has to be set, and if the defined section exists in *npr.ini*, the settings from the local node will be used from that section. To use this feature, the variable `NPR_LOCAL_SECTION` is to be set before the invocation of Natural for NOP online or Monitor or RPC server, example:

Shell script code:

```
NPR_LOCAL_SECTION=npr_local_1
export NPR_LOCAL_SECTION
natural parm=...
...
```

**npr.ini:**

```
[npr_local_1]
Log_File_Prefix=log_local_1
Trace_File_Prefix=trace_local_1
Trace_Level=100
Command_Log_Level=4
...
[npr_local_2]
Log_File_Prefix=log_local_2
Trace_File_Prefix=trace_local_2
Trace_Level=0
Command_Log_Level=0
...
```

**NPRMGR**

The NPRMGR section is relevant for the utility nprmgr only. The following parameters can be specified in this section:

- Locale\_String
- Command\_Log\_Level
- Trace\_Level
- Log\_File\_Prefix
- Trace\_File\_Prefix

**DRIVEMAP**

Definition of file server drives within Entire System Server for Windows: The *npr.ini* file can have the optional section DRIVEMAP.

The definitions made here must match the settings that can be retrieved with the Windows NET USE command.

Each definition for a network drive consists of one line. A line must contain these 3 keyword parameters:

**Local**

The local drive letter, followed by ':', example: G:

**Remote**

The remote path, example: \\daefs01\sagtemp

### Type

Must match one of the following:

Microsoft for Windows file servers

NetWare for Novell Netware

### Example:

```
[DRIVEMAP]
  Local=G: Remote=\\sag-hq\temp Type=Microsoft
  Local=T: Remote=\\daefs01\sagtemp Type=NetWare
```

## An npr.ini Sample File

---

```
; Entire System Server
; Version 2.1.2 PL 0
; (C) 2001, Software AG
; Entire System Server INI file
; This file has been customized during the installation process,
; but it is possible to modify this information at any time using
; any text editor available on the system
```

```
[DEFAULTS]
Local_node=<node name>
Integration_Mechanism=ETB,<ETB id>
ETB_Wait=30
ETB_Replica=no
Log_File_Prefix=default
Trace_Level=0
Trace_File_Prefix=trdef
Command_Log_Level=0
IPC_Prefix=aaaa
Administrator=sag
```

```
[nprdemo]
Local_node=DEMONODE
Integration_Mechanism=ETB,ETB098
ETB_Wait=30
ETB_Replica=no
Log_File_Prefix=nprdemo
Trace_Level=10
Trace_File_Prefix=trdemo
Command_Log_Level=0
IPC_Prefix=dddd
```

## Parameter Description

- Server=<server>
- Server\_Local={yes|no|compare}
- Integration\_mechanism=ETB,<broker id>
- ETB\_Wait=<seconds>
- ETB\_Replica={yes|no}
- ETB\_Dup\_Check={yes|no}
- Log\_File\_Prefix=<string>
- Trace\_Level=<integer>
- Trace\_File\_Prefix=<file name>
- Command\_Log\_Level=<number>
- Locale\_String={yes|no|<string>}
- SSL\_Trust\_Store=<full qualified path to a SSL certificate file>
- Broker\_User=<user name for Broker>
- Broker\_CPW=<ciphered password for Broker\_User>
- Administrator=<admininstrator user name>
- Admin\_Group=<admininstrator group name>
- Admin\_CPW=<administrator's ciphered password>
- Open\_File\_Timeout=<seconds>

### Server=<server>

Default	Description
localhost	Host name of the machine on which the NPR service is executed. With Server=localhost the local machine can be specified. This value is always converted to upper case before it is passed to the Broker.



#### Notes:

1. Before version 2.1.2.10, the keyword 'Local\_Node' was used for this parameter. For compatibility reasons, 'Local\_Node' is still supported.
2. For Local node sections, you can specify Server=localhost.

**Server\_Local={yes|no|compare}**

Default	Description
compare	Determines how nprmgr shall access the service.
yes	The service is handled as executed as own process on the local host.
no	The service is handled as executed as own process on a remote host.
compare	The name of the server defined in <code>Server=</code> , and the local host name will be compared to it. If they match, the service will be treated as local.



**Note:** This keyword cannot be overridden from the [DEFAULTS] section. It must be defined specifically for the service.

**Integration\_mechanism=ETB,<broker id>**

Default	Description
None	Integration mechanism. This item identifies the integration mechanism by the NPR server. EntireX Broker and UCI are supported as integration mechanisms.

Examples for *broker ID*:

BKR034            Standard definition.

etb034:3800:TCP Use TCP/IP, host ibm1, port 3800 (for EntireX TCP/IP communication)

pcsn2:1958:SSL Use SSL, host pcsn2, port 1958 (for EntireX SSL communication)

**ETB\_Wait=<seconds>**

Default	Description
30	EntireX Broker timeout.

**ETB\_Replica={yes|no}**

Default	Description
no	Replica server option. Currently not supported.

**ETB\_Dup\_Check={yes|no}**

Default	Description
yes	If <i>yes</i> , the NPR service checks first if a service with the same name is already registered at the EntireX Broker. If this is the case, the second service will shut down immediately. If <i>no</i> is specified, the duplicate check will not be performed.

**Log\_File\_Prefix=<string>**

Default	Description
Default	Global log file prefix. This item identifies the prefix of the global log file that will be generated in the %NPR_HOME%\work directory.

**Trace\_Level=<integer>**

Default	Description
0	Trace level for server's trace file. 0 (zero) means: no trace. Values can range from 0 to 999.

**Trace\_File\_Prefix=<file name>**

Default	Description
nprtrace	The trace output will be written to %NPR_HOME%\work\ <i>file-name</i> .log.

**Command\_Log\_Level=<number>**

Default	Description
0	<ul style="list-style-type: none"> <li>■ 0 no command logging</li> <li>■ 1 log after NPR call</li> <li>■ 2 log before and after NPR call</li> <li>■ 3 log before and after NPR call plus EntireX Broker error code logging</li> <li>■ 4 like 3, with more call parameter logging</li> </ul> <p>Log data is written to the trace file.</p>

**Locale\_String={yes|no|<string>}**

Default	Description
no	If yes, Locale_String for the Broker equals the value retrieved by the setlocale function. If no, no locale string is passed to the Broker. If a string is defined, it will be passed unchanged to the Broker. The maximum string length is 40 characters.

 **Note:** To enable communication of the utility nprmgr with EntireX Broker, this parameter must be specified in section NPRMGR.

**SSL\_Trust\_Store=<full qualified path to a SSL certificate file>**

Default	Description
none	If this parameter is set, SSL Broker communication will be used, and the given full qualified file name is taken as SSL certificate file. If this parameter is not set, SSL Broker communication will not be used.

 **Note:** This parameter is required for SSL Broker communication only.

**Broker\_User=<user name for Broker>**

Default	Description
none	User name to be used for Broker security. This user ID is used for the Broker logon. The parameter Broker_CPW is required, too.

 **Note:** This parameter is required only if Broker security is used. Otherwise, this parameter has no meaning.

**Broker\_CPW=<ciphered password for Broker\_User>**

Default	Description
none	If Broker security is used, the ciphered password for the Broker logon must be specified here. To cipher a given password, invoke the utility nprpwc which prompts for a password and returns the ciphered password. Invoke nprpwc in a cmd.exe shell.

 **Note:** This parameter is required only if Broker security is used.

**Administrator=<administrator user name>**

Default	Description
none	User name that has privileges over the server process. The parameter <code>Admin_CPW</code> is required, too.

 **Note:** This parameter is required for some `nprmgr` functions in non-interactive mode.

**Admin\_Group=<administrator group name>**

Default	Description
none	Domain to be used for the administrator.

 **Note:** This parameter is required for some `nprmgr` functions in non-interactive mode.

**Admin\_CPW=<administrator's ciphered password>**

Default	Description
none	Ciphered password for the administrator. To cipher a given password, invoke the utility <code>nprpwc</code> which prompts for a password and returns the ciphered password. Invoke <code>nprpwc.exe</code> in a <code>cmd.exe</code> shell.

 **Note:** This parameter is required for some `nprmgr` functions in non-interactive mode.

**Open\_File\_Timeout=<seconds>**

Default	Description
0 seconds (no timeout check)	Entire System Server periodically checks for files opened by the own process which were not accessed during the last <i>seconds</i> .

 **Notes:**

1. If this parameter is missing, or if `Open_File_Timeout=0`, no file timeout check will be performed.
2. If run standalone (as a Broker service): Entire System Server checks its internal file table and the file descriptors of its own process.
3. If run in local mode: Entire System Server checks its internal file table only. Any files opened by the calling process remain untouched (e.g. Natural workfiles).
4. Each forced file closure by timeout will be logged in the Entire System Server trace file



# 6 Completing the Installation

---

- Setting up Entire System Server Components ..... 28

## Setting up Entire System Server Components

---

Entire System Server on Linux is set up with the following steps

- [Step 1: Customize EntireX Broker](#)
- [Step 3: Set Environment Variable ETB\\_TIMEOUT](#)
- [Step 4: Customize the NPR Server](#)
- [Step 5: Start Work with Entire System Server](#)

### Step 1: Customize EntireX Broker

The following definitions must be included in the EntireX Broker attribute file:

```
DEFAULTS=SERVICE
TRANSLATION=SAGTCHA
SERVER=<nodename>
CLASS=NPR
SERVICE=<npr_identifier>
```

where

<code>&lt;nodename&gt;</code>	is the identification of the node where the server is active.
<code>&lt;npr identifier&gt;</code>	is the identification of the service name provided for the NPR server.

Repeat these definitions for every NPR server specified in the *npr.ini* file. For instance, if an NPR server is available in the HP001 node with the service name *nprdemo*, the following definitions must be created:

```
DEFAULTS=SERVICE
TRANSLATION=SAGTCHA
SERVER=HP001
CLASS=NPR
SERVICE=nprdemo
```

For installing EntireX Broker, see the latest documentation.

### Step 3: Set Environment Variable ETB\_TIMEOUT

To enable an Entire System Server (NPR) service to stop while the TCP/IP connection to the Broker is down, the environment variable `ETB_TIMEOUT` is automatically set to 60 seconds by `NPRETB` and `NPRMGR`. This avoids a hang of the broker stub during a disconnected TCP/IP connection, and allows the stopping of `npretb` in such a situation. Note that `ETB_TIMEOUT` remains unchanged if it was set before the execution of `npretb` resp. `nprmgr`.

### Step 4: Customize the NPR Server

The `npr.ini` file is used to define the behavior of the server processes. It is structured in one `[DEFAULTS]` section and one or more `[<npr identifier>]` sections.

You can define settings either in the `[DEFAULTS]` section or in an `[<npr identifier>]` section:

- [Define Settings in a Section](#)
- [Settings in a \[<npr identifier>\] Section](#)

#### Define Settings in a Section

The `[DEFAULTS]` section contains default values that apply to all servers. For a particular server such a default can be overwritten by providing an `[<npr identifier>]` section with an alternative setting.

#### Settings in a [<npr identifier>] Section

The `[<npr identifier>]` sections are optional, and can be created or modified later. They are used to define items specific to a certain server when these are different from default.

Any item defined in the `[DEFAULTS]` section can also be defined for each `[<npr identifier>]` section.

Any item defined in the `[DEFAULTS]` section can also be defined for each `[<npr identifier>]` section. If an item is not defined in this section, it is taken from the `[DEFAULTS]` section.

### Step 5: Start Work with Entire System Server

See chapter [Product Operation: Windows Service Usage](#).



# 7 Entire System Server (NPR) Directory Structure

---

▪ Directories after Installation .....	32
▪ npr.ini File .....	32
▪ <installdir>\EntireSystemServer Directory .....	32
▪ <installdir>\EntireSystemServer\bin Directory .....	33
▪ %ProgramData%\Software AG\EntireSystemServer\work .....	33
▪ %ProgramData%\Software AG\EntireSystemServer\log .....	33

The following tables outline the contents of the Entire System Server directories.

## Directories after Installation

---

The results of the installation are:

- The Entire System Server (NPR) parameter definitions are in *%Program Files%\Common Files\Software AG\EntireSystemServer\npr.ini* ;
- Executable files are in *<installdir>\EntireSystemServer\bin*.

During the first start, a log and a work directory will be created:

- *%ProgramData%\Software AG\Entire System Server\log*
- *%ProgramData%\Software AG\Entire System Server\work*

## npr.ini File

---

After installation, the *npr.ini* file is located at *%ProgramFiles%\Common Files\Software AG\EntireSystemServer\npr.ini*.

The file contains the Entire System Server parameter definitions. This is a text file that can be edited with any text editor, for example Notepad.

## <installdir>EntireSystemServer Directory

---

Library / File / Directory	Explanation
<i>npr.txt</i>	Text file describing the content of the <i>npr.ini</i> file.
<i>bin</i>	Directory containing all executable files and DLLs of the current product version. See below.
<i>work</i>	Directory containing the temporary files associated with the server or other components, generated during the activity of Entire System Server. This directory also contains the log files. See below.

## <installdir>\EntireSystemServer\bin Directory

---

Library / File / Directory	Explanation
<i>npretb.exe</i>	Executable file associated with the NPR server.
<i>libnpr.dll</i>	DLL file required by <i>npretb.exe</i>
<i>eorxcl.exe</i>	Cleanup utility program for Entire Operations.
...	Other NPR files.

## %ProgramData%\Software AG\EntireSystemServer\work

---

If not existing, this directory will be created at the first start of the NPR service.

This directory can contain work files which are created and maintained by the products using NPR, e.g. NOP and NOM.

## %ProgramData%\Software AG\EntireSystemServer\log

---

If not existing, this directory will be created at the first start of the NPR service.

This directory may contain log and trace files of NPR.



# 8

## Handling of EntireX Broker Error Codes

---

The Entire System Server nodes on Linux and Windows use the EntireX Broker as middleware for the communication with Entire Operations monitors. If communication errors occur, the EntireX Broker error codes will be examined. This is done as follows:

EntireX Broker Code	Action
0000 / 0000	Normal operation.
0003 / 0005	Partner finished the conversation. Temporary error. Entire System Server waits until the communication returns to normal operation.
0003 / 0010	EOC due to deregister of partner. Temporary error. Entire System Server waits until the communication returns to normal operation.
0003 / 0011	Partner has canceled conversation. Temporary error. Entire System Server waits until the communication returns to normal operation.
0003 / 0011	EOC due to LOGOFF of partner. Temporary error. Entire System Server waits until the communication returns to normal operation.
0003 / 0067	Partner timeout occurred. Temporary error. Entire System Server waits until the communication returns to normal operation.
0003 / 0073	Conversation timeout occurred. Temporary error. Entire System Server waits until the communication returns to normal operation.
Others	Severe error. Entire System Server writes the message to the sysout and performs a shutdown. Please check the sysout for the error reason.



**Note:** Please refer to the documentation of the EntireX Broker for details about EntireX Broker error codes.



# 9 Product Operation: Windows Service Usage

---

- Accessing Windows Services Control Panel ..... 38
- Starting the Server ..... 38
- Querying the Status of a Server ..... 38
- Stopping the Server ..... 39
- Windows Event Logging ..... 39

This chapter covers the following topics:

## Accessing Windows Services Control Panel

---

The Entire System Server for Windows is designed as a Windows service. It can be started and controlled by the Windows services control panel.

### ➤ To access the Windows services control panel

- Invoke **My Computer > Control Panel > Services**

German: **Arbeitsplatz > Systemsteuerung > Dienste**

The installation program creates the Windows Services **Entire System Server (standard)**

## Starting the Server

---

### ➤ To change the service definition to "automatic"

- Set "Startup" to "automatic".

Then Entire System Server will be started automatically during system startup.

Otherwise, the service must be started manually from the Windows services control panel.

The Entire Net-work Service must be running so Entire System Server can establish the communication to EntireX Broker.

## Querying the Status of a Server

---

Use the Windows services control panel and check whether its status is "Started" (German: "Ge-startet").

You can get additional information by viewing the Entire System Server log file in the directory `%ProgramData%\Software AG\Entire System Server\log`.

## Stopping the Server

---

The server is stopped implicitly during a system shutdown. You may stop the server implicitly at any time by using the Windows services control panel.

It may take some time until the server has finished the current actions. This amount of time is delimited by the value of `ETB_Wait` in the `<npr identifier>` entry in the file `npr.ini`.

## Windows Event Logging

---

Entire System Server for Windows writes Event Logging entries.

### ➤ To invoke Windows Event Logging

- 1 Invoke **Start > Programs > Administrative Tools (Common) > Event Viewer**
- 2 Select **Log > Application**

German: **Protokoll > Anwendung**.

You will find the Entire System Server entries with the source names NPR.

- 3 Double-click on these entries to read their contents.



# 10 Product Operation: Windows User Rights Assignment

---

Every Windows user ID being used as JCL user ID or submit user ID must have the Windows right Logon as a batch job.

If a Windows user ID does not have this right, logon in batch (as being performed by the NOP and NOM Monitors) will fail.

In NOP, the message NPR3418 User :1:: batch logon not granted will be shown and / or logged.

## ➤ To assign this right for Windows user IDs

- 1 Using the Windows search function, search for App **Local Security Policy** (in German: **Lokale Sicherheitsrichtlinie**) and execute it in administrator mode.

Or:

Open a command prompt (e.g. CMD) as administrator. Type in `secpol.msc` and press Enter.

- 2 Go to **Security Settings > Local Policies > User Rights Assignment**.
- 3 Open the properties of **Logon as a batch job**. If necessary, add user(s) or group(s) to the list, so that the required user(s) will get the right.

If you cannot add a dedicated user ID (e.g. because the Active Directory does not allow it), you can add **Everyone** (in German: **Jeder**).



# 11 Using nprwinservice to Maintain Windows Services of Entire System Server

---

- Usage in BAT files ..... 44
- Functions ..... 44
- Parameters ..... 45
- Exit Code ..... 45
- Software AG Installer ID ..... 45
- Examples ..... 46
- Naming Conventions ..... 48

nprwinservice is a tool that can be used to maintain the Windows services of Entire System Server. It must be executed from a Windows command prompt with administrator privileges.

➤ **To access nprwinservice**

- In the command prompt enter "*<INSTALLDIR>\EntireSystemServer\bin\nprwinservice*"

The utility nprwinservice is started. When invoked without parameters, a list of possible parameters is now displayed.

## Usage in BAT files

---

nprwinservice can be used in BAT files too, as it does not interact with the caller. It is highly recommended to check the **exit code** of nprwinservice in BAT files.

## Functions

---

```
nprwinservice /add <npr_service> using <npr_service_template>
```

Adds a Windows service for *<npr\_service>* using the template *<npr\_service\_template>*

```
nprwinservice /add <npr_service> [id <id>] exe  
    <full qualified name of npretb.exe>
```

Adds a Windows service for *<npr\_service>* [with SAG Installer ID *<id>*] for the executable *<full qualified name of npretb.exe>*

```
nprwinservice /delete <npr_service> [path <path prefix>]
```

Delete Windows service for *<npr\_service>* (service: wildcard possible) (optional: path prefix selection)

```
nprwinservice /list <npr_service> [path <path prefix>]  
    [autostart]
```

List NPR Windows service(s) (service: wildcard possible) (optional: path prefix selection)

```
nprwinservice /start <npr_service> [path <path prefix>]
[autostart]
```

Start NPR Windows service(s) (service: wildcard possible) (optional: path prefix selection)

```
nprwinservice /stop <npr_service> [path <path prefix>]
[autostart]
```

Stop NPR Windows service(s) (service: wildcard possible) (optional: path prefix selection)

## Parameters

Parameter	Description
autostart (optional)	Handle only NPR service(s) with start type 'automatic'.
<id> (optional)	SAG Installer ID. It will be appended in brackets to the Windows service name for uniqueness.  If the file <InstallDir>\EntireSystemServer\nprinstall.ini exists, and if <id> is not specified, the SAG Installer ID will be taken from there.

## Exit Code

nprwinservice returns exit code 0 (zero), if the function was performed successfully. In all other cases (e.g. if a service could not be found), the exit code is not equal 0 (zero).

The exit code is always being written to the output of nprwinservice also. See [Examples](#).

## Software AG Installer ID

NPR Windows service names may contain a Software AG installer ID as suffix. For example:  
NPR\_npr\_pcxyz01 (123).

Such names must be enclosed in double quotes in the nprwinservice command. See [Examples](#).

## Examples

---

The examples are shown with output.

**List all NPR Windows services defined on the current Windows system:**

```
nprwinservice /list

Windows service NPR_npr_pcxyz01
... state: running - autostart: yes
Windows service NPR_npr_pcxyz01 (10001)
... state: stopped - autostart: no
Windows service NPR_npr_t01
... state: stopped - autostart: no
Windows service NPR_npr_t01 (20000)
... state: stopped - autostart: no
4 service(s) listed
Exit code 0
```

**List the NPR Windows services, which are started automatically during Windows startup:**

```
nprwinservice /list * autostart

Windows service NPR_npr_pcxyz01
... state: running - autostart: yes
1 service(s) listed
Exit code 0
```

**Adding a new NPR Windows service, by cloning an existing service, using the SAG Installer ID:**

```
nprwinservice /add npr_pcxyz01_02 using npr_pcxyz01

Reading C:\SoftwareAG\EntireSystemServer\nprinstall.ini
INSTALLER_ID=1
Windows service NPR_npr_pcxyz01_02 (1) added
Exit code 0
```

**Adding a new NPR Windows service, by cloning an existing service, without usage of the SAG Installer ID:**

```
nprwinservice /add npr_pcxyz01_03 id none using npr_pcxyz01  
Windows service NPR_npr_pcxyz01_03 added  
Exit code 0
```

**Deleting an NPR Windows service:**

```
nprwinservice /delete "npr_pcxyz01_02 (1)"  
Windows service NPR_npr_pcxyz01_02 (1) deleted  
Exit code 0
```

**Starting an NPR Windows service:**

```
nprwinservice /start npr_pcxyz01  
Windows service NPR_npr_pcxyz01 started  
1 service(s) started  
Exit code 0  
  
nprwinservice /start npr_pcxyz01  
Windows service NPR_npr_pcxyz01 is running already  
0 service(s) started  
Exit code 1
```

**Stopping an NPR Windows service:**

```
nprwinservice /stop npr_pcxyz01  
Windows service NPR_npr_pcxyz01 stop pending - waiting 10 seconds  
Windows service NPR_npr_pcxyz01 stop pending - waiting 10 seconds  
Windows service NPR_npr_pcxyz01 stop pending - waiting 10 seconds  
Windows service NPR_npr_pcxyz01 stopped  
1 service(s) stopped  
Exit code 0
```

**Notes:**

1. It may take some time, until the Windows service stopping is performed.
2. If you define a new NPR Windows service, for example by copying, you must make sure that the related NPR Broker service definition exists in the *npr.ini* file.

## Naming Conventions

---

The NPR Windows service names are derived from the NPR EntireX Broker service names by adding the prefix **NPR\_** to the existing EntireX Broker service names.

For example, if the existing EntireX Broker service name is *npr\_sample01*, the derived Windows service name would be *NPR\_npr\_sample01*.

If a Windows service name is not prefixed by **NPR\_** in any nprwinservice command, the prefix **NPR\_** is being set automatically.

### Example

The command

```
nprwinservice /list npr_pcxyz01
```

is equivalent to

```
nprwinservice /list NPR_npr_pcxyz01
```

# 12

## List of Solved Issues

---

See *README.FIX*.

