

# **Natural Engineer Web Interface**

## **Installation and Configuration Guide**

Version 9.1.1

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This document applies to Natural Engineer version 9.1 and to all subsequent releases.

Specifications contained herein are subject to change, and these changes will be reported in subsequent revisions or editions.

Readers' comments are welcomed. Comments may be addressed to the Documentation Department at the address on the back cover. Internet users may send comments to the following e-mail address:

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# ABOUT THIS MANUAL

## Purpose of this manual

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This manual contains the Installation details for the Natural Engineer Web Interface (NEA).

It describes all aspects of installing Natural Engineer Web Interface on all supported platforms.

This manual should be read carefully before installing and using the product.

## Target Audience

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The target audience for this manual is intended to be any User of Natural Engineer Web Interface as well as Systems Administrators responsible for installing and configuring the product.

## Typographical Conventions used in this manual

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The following conventions are used throughout this manual:

<b>UPPERCASE TIMES</b>	Commands, statements, names of programs and utilities referred to in text paragraphs appear in normal (Times) uppercase.
<b>UPPERCASE BOLD COURIER</b>	In illustrations or examples of commands, items in uppercase bold courier must be typed in as they appear.
< >	Items in angled brackets are placeholders for user-supplied information. For example, if asked to enter <file number>, you must type the number of the required file.
<u>Underlined</u>	Underlined parts of text are hyperlinks to other parts within the online source manual. This manual was written in MS-Word 97 using the “hyperlink” feature.

The following symbols are used for instructions:

⇒	Marks the beginning of an instruction set.
□	Indicates that the instruction set consists of a single step.
1.	Indicates the first of a number of steps.

## How this manual is organized

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This manual is organized in the following chapters:

<b>Chapter</b>	<b>Contents</b>
1	Describes how to install and customize Natural Engineer Web Interface (NEA).

## Terminology

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This section offers some of the terms that are specific to the Natural Engineer product.

*Note: Familiarity is assumed with the general terminology of Natural, Adabas, Microsoft and Mainframe operating systems.*

### Analysis

The Analysis process of Natural Engineer searches application data within the Natural Engineer Repository, according to specified Search Criteria and generates reports on the search results.

### Application

An Application is a library or group of related libraries, which define a complete Application. In Natural Engineer, the Application can have a one-to-one relationship with a single library of the same name, or a library of a different name, as well as related steplibs. The Application refers to all the source code from these libraries, which Natural Engineer loads into the Repository.

### Browser

An Internet Browser such as Microsoft Internet Explorer or Netscape.

### Category

Categories in Natural Engineer specify whether and how a Modification is applied to the Natural code. Valid categories are: Automatic change, Manual change, Reject the default Modification, No change to the data item, and the data item is in Generated Code.

A category is further broken down according to type of change (for example: Keyword, Literal, Data Item, Database Access, Definition).

### Cobol

Abbreviation of Common Business Orientated Language. A programming language.

### Cobol Link

A Cobol Link is the link between the individual Cobol modules and the executable Cobol program referenced in the JCL object.

### Consistency

An option in the Analysis process that causes Natural Engineer to trace an Impact through the code, using left and right argument resolution to identify further code impacted by the code found.

### Database Access Definition

A collective term used to identify DDMs, SQL Tables or Predict User Views.



## About this manual

### Data Item

A collective term used for any data fields within a programming object. These can be user-defined variables, DDM fields or System Variables. It is inter-changeable with the term 'variable'.

### Environment

The Environment process is the means by which Natural Engineer generates a structured view of the application code in the Natural Engineer Repository. This provides application analysis reports and inventory information on the application and is used as the basis for Impact Analysis.

### Exception

An Exception is an Item identified as impacted that does not require a Modification. Where there are a few similar Exception Items, they can be treated as Exceptions, and rejected in the Modification review process. Where there are many similar (therefore not Exceptions), consideration should be given to changing the Search Criteria so they are not identified as impacted in the first place.

### Generated Code

This is code which has been generated by a Natural code generator, such as Construct, and which is not normally modified directly in the Natural editor.

### Impact

An Impact is an instance of a Natural code Item; e.g., data item or statement (a "hit" scored by the Analysis process) that matches the defined Search Criteria used in the Analysis process.

### Iteration

An Iteration is one examination cycle of a field identified according to the specified Search Criteria. For example, one Iteration is reading the field right to left. Multiple Iterations are performed when the option of 'Consistency' or Multi Search is requested for Analysis, and Natural Engineer performs as many Iterations as necessary to exhaust all possibilities of expressing and tracing the field, and can be limited by a setting in the NATENG.INI file.

### JCL

Job Control Language.

### JCL object

A JCL object is a collection of Job Control statements in the order which they are to be executed in a mainframe batch environment. Commonly referred to as JCL.

### Library

A single library of source code, which exists in the Natural system file.

### Modification

A Modification is a change suggested or made to an object or data item resulting in the required compliance of that object or data item. Modifications in Natural Engineer are classified according to Category and Type.

## **Natural Engineer Web Interface Installation Guide**

### **Refactoring**

Improving a computer program by reorganizing its internal structure without altering its external behavior.

### **Soft Link**

A Soft Link is where a link between two objects has been defined using an alphanumeric variable rather than a literal constant.

### **TLM**

Text Logic Members are used to contain the code required to support inclusion of common code into the application. An example of this is the code to include into an application before updating a database.

### **Type**

The Type of Modification available, for example: Data Item, Keyword and Literal.

### **Variable**

A collective term used for any data fields within a programming object. These can be user-defined variables, DDM fields or System Variables. It is inter-changeable with the term 'data item'.

## Related Literature

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The complete set of Natural Engineer manuals consists of:

**1 Natural Engineer Concepts and Facilities (NEE91-006ALL)**

The Concepts and Facilities manual describes the many application systems problems and solutions offered by Natural Engineer, providing some guidelines and usage that can be applied to Natural applications.

**2 Natural Engineer Release Notes (NEE91-008ALL)**

The Release Notes describe all the information relating to the new features, upgrades to existing functions and documentation updates that have been applied to Natural Engineer.

**3 Natural Engineer Installation Guide for Windows (NEE91-010WIN)  
Natural Engineer Installation Guide for Mainframes(NEE91-010MFR)  
Natural Engineer Installation Guide for Unix (NEE91-010UNIX)**

The Installation Guide provides information on how to install Natural Engineer on PC, Unix and mainframe platforms.

**4 Natural Engineer Administration Guide (NEE91-040WIN)  
Natural Engineer Administration Guide (NEE91-040MFR)  
Natural Engineer Administration Guide (NEE91-040UNIX)**

The Administration Guide provides information on all the various control settings available to control the usage of the different functions within Natural Engineer.

**5 Natural Engineer Application Management (NEE91-020WIN)  
Natural Engineer Application Management (NEE91-020MFR)  
Natural Engineer Application Management (NEE91-020UNIX)**

The Application Management manual describes all the functions required to add Natural applications into the Repository.

**6 Natural Engineer Application Documentation (NEE91-022WIN)  
Natural Engineer Application Documentation (NEE91-022MFR)  
Natural Engineer Application Documentation (NEE91-022UNIX)**

The Application Documentation manual describes all the available functions to document a Natural application within the Repository. These functions will help enhance / supplement any existing systems documentation such as BSD / CSD / Specifications etc.

## Natural Engineer Web Interface Installation Guide

- 7 Natural Engineer Application Analysis and Modification (NEE91-023WIN)**  
**Natural Engineer Application Analysis and Modification (NEE91-023MFR)**  
**Natural Engineer Application Analysis and Modification (NEE91-023UNX)**

The Application Analysis and Modification manual describes all the available functions to carry out analysis of Natural applications; including basic keyword searches. The modification process is described and detailed to show how it can be applied to modify single selected objects within a Natural application, or the entire Natural application in one single execution.

- 8 Natural Engineer Application Restructuring (NEE91-024WIN)**  
**Natural Engineer Application Restructuring (NEE91-024MFR)**  
**Natural Engineer Application Restructuring (NEE91-024UNX)**

The Application Restructuring manual describes the analysis and modification functionality required to carryout some of the more sophisticated functions such as Object Builder.

- 9 Natural Engineer Utilities (NEE91-080WIN)**  
**Natural Engineer Utilities (NEE91-080MFR)**  
**Natural Engineer Utilities (NEE91-080UNX)**

The Utilities manual describes all the available utilities found within Natural Engineer and, when and how they should be used.

- 10 Natural Engineer Reporting (NEE91-025ALL)**

The Reporting manual describes each of the reports available in detail, providing report layouts, how to trigger the report and when the report data becomes available. The various report-producing mediums within Natural Engineer are also described.

- 11 Natural Engineer Batch Processing [Mainframes] (NEE91-026MFR)**  
**Natural Engineer Batch Processing [Unix] (NEE91-026UNX)**

The Batch Processing manual describes the various batch jobs (JCL/Scripts) and their functionality.

- 12 Natural Engineer Messages and Codes (NEE91-060ALL)**

The Messages and Codes manual describes the various messages and codes produced by Natural Engineer.

- 13 Natural Engineer Web Interface Installation and Configuration Guide(NEA84-010ALL)**

The Web Interface Installation and Configuration Guide provides information on how to install and configure the Natural Engineer Web Interface.

- 14 Natural Engineer Advanced Services (NEE91-017WIN)**  
**Natural Engineer Advanced Services (NEE91-017MFR)**  
**Natural Engineer Advanced Services (NEE91-017UNX)**

The Advanced Services manual describes various advanced options such as the Refactoring of Natural application source code with Natural Engineer, conversion of applications for Natural for Ajax, Business Rule processing and Data Masking.

# NATURAL ENGINEER WEB INTERFACE

## Chapter Overview

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This chapter describes some additional installation process and options to use the Natural Engineer Web Interface (NEEGUI) with Natural Engineer (NEE).

The Natural Engineer Web Interface is a web based application that accesses the Natural Engineer repository via additional Natural programs.

The installation is a multi user install where clients access a common NEE repository using a web server (IIS or Apache) and either EntireX or NAS to execute the NEE Natural objects.

The topics covered are:

- 1. Installation**
- 2. Post Installation Configuration**

Describes the post installation configuration tasks required to the Natural components of the NEA Installation.

- 3. Installation of NEA Server**
- 4. ENTIREX Configuration**
- 5. Web Server Backend**
- 6. Additional Information**

# 1

## Natural Engineer Web Interface Installation Guide

### Installation

---

The Natural Engineer Web Interface is automatically installed when the main Natural Engineer product is installed. This is performed using the SAG Installer. For further information on installing the main Natural Engineer product please see the relevant Natural Engineer Installation Guide.

The Natural Engineer Web Interface is provided in the NEA subdirectory of the main Natural Engineer Web Installation directory.

## Post Installation Configuration

This section describes the post installation configuration tasks that are required to the Natural components of the NEA installation. The Natural Objects to run the Natural Engineer Web Interface will have been loaded into the SYSNEEI library during the normal Natural Engineer Installation.

### Initialization Routines

There are three supplied initialization routines in SYSNEEI library: INIMF-NX, INIPC-NX and INIUX-NX. If this is a new installation, rename these objects to INIMF-N, INIPC-N and INIUX-N respectively and amend the entries to match your environment. If this is an existing installation, check parameters in INIMF-NX, INIPC-NX and INIUX-NX and see if they need transferring to existing objects.

### Settings

Group Header / Parameter	Description
<b>##COBOL-SECTION</b>	
<b>SOURCE-DIR</b>	The full directory name where the COBOL Source members are located.
<b>SOURCE-EXTNS</b>	The suffixes of the COBOL Source members. Default = ,COB,CBL,CCP NB: The initial , (comma) means also check for members with no suffix.
<b>COPY-DIR</b>	The full directory name where the COBOL Copycode members are located.
<b>COPY-EXTNS</b>	The suffixes of the COBOL Copycode members. Default = ,CPY, COP NB: The initial , (comma) means also check for members with no suffix.
<b>MAP-DIR</b>	The full directory name where the COBOL Map members are located.

## Natural Engineer Web Interface Installation Guide

Group Header / Parameter	Description
<b>MAP-EXTNS</b>	<p>The suffixes of the COBOL Map members.</p> <p>Default = ,BMS</p> <p>NB: The initial , (comma) means also check for members with no suffix.</p> <p>NB: COBOL only applicable to PC (INIPC-N) and Mainframe(INIMF-N)</p>
<b>##JCL-SECTION</b>	
<b>SOURCE-DIR</b>	The full directory name where the JCL Source members are located.
<b>SOURCE-EXTNS</b>	<p>The suffixes of the JCL Source members.</p> <p>Default = ,JCL</p> <p>NB: The initial , (comma) means also check for members with no suffix.</p>
<b>COPY-DIR</b>	The full directory name where the JCL Copycode members are located.
<b>COPY-EXTNS</b>	<p>The suffixes of the JCL Copycode members.</p> <p>Default = ,PRC</p> <p>NB: The initial , (comma) means also check for members with no suffix.</p>
<b>PROCLIB-DIR</b>	The full directory name where the JCL Procedures are located.
<b>PROCLIB-EXTNS</b>	<p>The suffixes of the JCL Procedures.</p> <p>Default = ,PRC</p> <p>NB: The initial , (comma) means also check for members with no suffix.</p> <p>NB: JCL only applicable to PC (INIPC-N) and Mainframe(INIMF-N)</p>



## ##APPS-SECTION

### XAPPS

List of Applications to be excluded from being shown.

Applications to be excluded are specified delimited by a comma

Default = ‘ ‘

### OBJ-GROUP-MAX

Maximum number of objects to be shown per Object group.

Default = ‘1000’

### OBJ-COMMENTS

Show Object Comments when hovering.

Default = ‘Y’

Valid values = ‘Y’, ‘N’

### XREF-LEVEL-MAX

The amount of levels to drill down to for Application Map Cross Reference and Application Cross Reference functions.

### XREF-OBJ-MAX

The amount of objects to be shown for Application Map Cross Reference and Application Cross Reference functions.

### CODEPAGE

The name of the codepage to be used.

Default = ‘ ‘

Valid values = ‘*codepagename*’, SYSTEM, ON

‘*codepagename*’ = use specified codepage source but source codepage overrides.

SYSTEM = use \*CODEPAGE setting to encode all source but source codepage overrides \*CODEPAGE.

ON = only encode any source with a codepage set.

NB: This is used in conjunction with the settings in the mainframe Natural Parameter module.

# 1

## Natural Engineer Web Interface Installation Guide

### SECURITY

Will restrict access to applications based on userid.

Default = ‘ ‘

Valid values = NSC, Y, “ “

NSC = The userid will be checked against Natural Security(if present) to determine the level of access to the application.

Y = The userid will be checked against the Natural Engineer Security User Exit (NEEUEX6 in SYSNEE) to determine the level of access to the application.

“ “= No Security checking will be undertaken.

## ##RPC-SECTION

### BUFSIZE

The Buffer size for RPC.

Default = ' ' (will be set internally to 30K)

## ##TRACE-SECTION

### TRACE

Internal debug setting to set Tracing on.

Default = ' '

Valid values = 'Y' , ' '

Only to be used when requested by Support personnel.

### FILE

Internal debug setting to specify location of Trace file.

Only to be used when requested by Support personnel.

### LEVEL

Internal debug setting to specify Trace Level.

Only to be used when requested by Support personnel.

## ##REQUESTS-SECTION

### LISTLITERALLIMIT

Limits the amount of records retrieved by the LIST LITERALS Report.

Default = '5000'

### LISTKEYWORDSOBJLIMIT

Limits the amount of objects retrieved by the List Keywords Report.

Default = '1000'

### LISTLITERALSOBJLIMIT

Limits the amount of objects retrieved by the List Literals Report.

Default = '1000'

### LISTMAPSHOWMESSAGESAUTO

If set to 'Y' any REINPUT type messages will automatically be shown when a map is displayed. If set to 'N' the identification of these messages will be controlled by a button.

Default = 'N'.

**##WEB-SECTION****ADMINUSER**

Determines if user has the authority to delete Web Cache requests.

To delete cache Login Security must be active and the userid set for login must be in this list or if http\_user from web server matches ADMINUSER value, the deletion options for the List Web Cache screen are shown.

**##ADA-SECTION****BIN**

The full directory name where ADABAS is installed e.g., C:\SoftwareAG\_9.12\Adabas.

*Note: This is only applicable to the PC (INIPC-N).*

**DBRANGES**

Determines the range of Databases to be shown in the Adabas Live Databases treeview section.

Entries may be singular or a range e.g, 1-5,7,9-12 will show databases 1 2 3 4 5 7 9 10 11 12.

**FILERANGES**

Determines the range of Files to be shown in the Adabas Live Databases treeview section.

Entries may be singular or a range e.g, 1-5,7,9-12 will show files 1 2 3 4 5 7 9 10 11 12.

Default 1-255.

**DEBUG**

Internal debug setting.

Default = 'N'

Valid values = 'Y' , 'N'

Only to be used when requested by Support personnel.

The following section is only applicable to the PC (INIPC-N). It contains settings to control the Maintenance options of Natural Engineer.

*Note: These options may not be available depending on product licensing.*

## ##ADMIN-SECTION

### LOGIN

Determines if security is to be used to control access to particular functions.

Default = 'N'.

Valid Values='Y','N','O'

Y= User is required to signon and a signon screen will be presented upon invoking the Natural Engineer Web Interface.

N= User is not required to signon

O= Optional to signon. Users may choose to logon by selecting the User Login icon from the Banner Menu.

*Note: User Profiles are stored within a text member in the SYSNEEI library LOGIN-T. This member should not be manually changed as the passwords are encrypted. Any User Profile Maintenance should be undertaken by using the Login Maintenance function from the Site menu. There is 1 default user profile provided ADMIN pwd ADMIN, it is recommended that the password is changed to a site standard (max 8 bytes).*

*This is provided as LOGIN-TX. If this is a new installation, rename this object to LOGIN-T.*

There are three user types available

Master - can manage login users. These have access to Login Maintenance function.

Admin - can execute maintenance functions

blank - can signin and view system(just in case sites wants all users to signon only)

# 1

## Natural Engineer Web Interface Installation Guide

### SECURITY

Determines if security is to be used to control access to particular functions.

Default = 'NEA'.

Valid Values= 'NEA'

### ##NEE-SECTION

#### INI

The full directory name where the Initialization file for Natural Engineer e.g., NATENG.INI, resides.

This would typically be equivalent to Work File 1 in the Natural Engineer Parameter Module (SYSNEE).

#### BAT

The full directory name where the batch files that are used to invoke and control the various maintenance functions within Natural Engineer reside.

For example:

<install-dir>\NaturalEngineer\NEA\BAT

#### DATA

The full directory name where the DATA file for Natural Engineer resides.

This would typically be equivalent to Work File 4 in the Natural Engineer Parameter Module (SYSNEE).

#### NATPARM

The name of the Natural Parameter Module to be used for running the batch processes e.g., NEEGUIB or NATENG.

#### NATLIB

The name of the Natural Library where Natural Engineer is installed e.g., SYSNEE.

#### NATURAL

The full directory name where the Natural Run Time executable resides

e.g., C:\SoftwareAG\_9.10\Natural\bin\natrt.exe

#### DEBUG

Default=N

Only to be used when requested by support personnel.

The following sections should only be modified if requested by support personnel.

*Note: These options may not be available depending on product licensing.*

### ##EXTRACT-SECTION

<b>STA</b>	The full directory name where the status files from the Extract batch process are located.
<b>MSG</b>	The full directory name where the message files from the Extract batch process are located.
<b>OUT</b>	The full directory name where the .OUT files from the Extract batch process are located.
<b>ERR</b>	The full directory name where the error files from the Extract batch process are located.
<b>DEBUG</b>	Default=N Only to be used when requested by support personnel.
<b>##LOAD-SECTION</b>	
<b>MSG</b>	The full directory name where the message files from the Load batch process are located.
<b>ERR</b>	The full directory name where the error files from the Load batch process are located.
<b>DEBUG</b>	Default=N Only to be used when requested by support personnel.
<b>##DELETE-SECTION</b>	
<b>MSG</b>	The full directory name where the message files from the Delete batch process are located.
<b>DEBUG</b>	Default=N Only to be used when requested by support personnel.
<b>##METRICS-SECTION</b>	
<b>MSG</b>	The full directory name where the message files from the Application Metrics batch process are located.
<b>ERR</b>	The full directory name where the error files from the Application Metrics batch process are located.
<b>DEBUG</b>	Default=N Only to be used when requested by support personnel.
<b>##JCLANALYSIS-SECTION</b>	
<b>MSG</b>	The full directory name where the message files from the JCL Analysis batch process are located.
<b>DEBUG</b>	Default=N Only to be used when requested by support personnel.

**##DCTANALYSIS-SECTION****MSG**

The full directory name where the message files from the Decision Table Analysis batch process are located.

**DEBUG**

Default=N

Only to be used when requested by support personnel.

**##IMPACT-SECTION****MSG**

The full directory name where the message files from the Impact Analysis batch process are located.

**CRIT**

The full directory name where the Impact Criteria for the Impact Analysis batch process are located.

**DEBUG**

Default=N

Only to be used when requested by support personnel.

**##SOFTLINKS-SECTION****MSG**

The full directory name where the message files from the Softlink Analysis batch process are located.

**DEBUG**

Default=N

Only to be used when requested by support personnel.

**##EXTRACTDDL-SECTION****LOG**

The full directory name where the log files from the Extract SQL Tables process are located.

**MSG**

The full directory name where the message files from the Extract SQL Tables batch process are located.

**OUT**

The full directory name where the .OUT files from the Extract SQL Tables batch process are located.

**ERR**

The full directory name where the error files from the Extract SQL Tables batch process are located.

**DEBUG**

Default=N

Only to be used when requested by support personnel.

**##LOADDDL-SECTION****LOG**

The full directory name where the log files from the Load SQL Tables process are located.

**MSG**

The full directory name where the message files from the Load SQL Tables batch process are located.



## Natural Engineer Web Interface

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**IN**

The full directory name where the .OUT files created from the Extract SQL Tables batch process are located.

**DEBUG**

Default=N

Only to be used when requested by support personnel.

# 1

## Natural Engineer Web Interface Installation Guide

### Natural Parameter Modules

If this is a new installation you will need to create a Natural Parameter module for the NEA interface. The following steps should be followed to achieve this.

1. Using the Natural Configuration utility save a copy of the NEEPARM parameter file as NEEGUI
2. Modify the NEEGUI parameter module as follows:
  - i. Natural Execution Configuration - System Variables
    1. Check the Automatic logon checkbox.
    2. Change the startup library (INIT-LIB) to be SYSNEEI.
    3. Remove the Startup program (STARTUP).
    4. Add SYSNEE to the steplib list.
    5. Move SYSNEE to the top of the steplib list.
    6. Remove all work file entries.
    7. If using codepages set Regional Settings
      - CP= codepagename.
      - CPCVERR=OFF.
3. Save the parameter file NEEGUI.

### Mainframe Natural Parameter Module

- i. Natural Execution Configuration – Regional Settings (if using codepages)
  1. CFICU=ON
  2. CP= *codepagename*.
  3. CPCVERR=OFF.

If using codepages then the CODEPAGE setting in the mainframe initialization routine (INIMF-N) will need to be set also.

## Natural User Exits

The Natural Engineer Web Interface utilizes various Natural user exits. These need to be made available to the Natural session where you are running.

USR1005N  
USR1007N  
USR1019N  
USR1040N  
USR1054N  
USR1056N  
USR1058N  
USR2004N  
USR2005N  
USR2018N  
USR2026N  
USR2030N  
USR3013N  
USR4206N  
USR4220N  
USR6203N  
USR8219N

*Note: This can be achieved by copying the User Exits to the SYSTEM library on FUSER or adding the SYSEXT FNAT library as a steplib to your NATPARM module.*

## Maintenance Functions

The Maintenance options contain facilities to modify the Natural Engineer Repository. These options are optional but if they are to be made available for use within the Natural Engineer Web Interface certain configuration options need to be undertaken.

The following steps should be followed to achieve this.

### General Configuration

#### 1. Security

To enable the Maintenance options to be active security has to be active. This is controlled by the [LOGIN](#) and [SECURITY](#) settings in the ##ADMIN-SECTION of the Initialization file e.g. INIPC-N in the SYSNEEI library.

This is required if you running against a windows or mainframe server.

### Windows

#### 1. Batch Files

The Maintenance options are dependant on certain batch functionality. If you are running against a windows server then this is provided by the use of BAT files. These are delivered as template files .tpl and need to be renamed before use by removing the suffix .tpl and configured on the server to enable Natural Engineer Web Interface to run certain batch functions e.g., extApp.bat.tpl should be renamed to extApp.bat.

For installations under Natural 9.1 the BAT files reside in

<install-dir>\NaturalEngineer\Nea\Bat\

*Note: First time installations of Natural Engineer Web Interface may have the BAT files renamed automatically during the install. Subsequent update installations may supply the BAT files with the .tpl suffix in order to not override any potential customer modifications that have been made. If you have an existing installation then the supplied BAT files templates should be checked and any changes applied to your existing BAT files.*

## Mainframe

### 1. Initialization Settings

If you are running against a mainframe server then the following initialization parameters need to be changed. The initialization parameters are contained in a text member: `###CINI`. This text member resides in the Natural Engineer mainframe library `SYSNEE`.

The maintenance functions will utilize the mainframe Natural Engineer RJE JCL processes.

Group Header / Parameter	Description
[EXTRACT]	
STA=	<p>Default=N</p> <p>Set to Y if using Natural Engineer Web Interface (NEA) Maintenance functions. Allows NEA Batch Execution to retrieve Natural Engineer extract status messages.</p> <p>Possible values Y,N</p> <p><i>NB: The <a href="#">OUTFILE</a> setting in JCL-MVS section also needs setting so that the NEA batch execution can pick up the Natural Engineer extract file.</i></p>
[JCL-MVS]	
OUTFILE=	<p>Set to the name of the Natural Engineer extract file if using the Natural Engineer Web Interface (NEA) maintenance functions.</p> <p>For example NATENG.%APP%.%EXT%.DATAV</p> <p><i>NB: The <a href="#">STA</a> setting in EXTRACT section also needs setting so that the NEA batch execution can pick up the Natural Engineer extract status messages.</i></p>

# 1

## Natural Engineer Web Interface Installation Guide

### NEA Security

If you require NEA security to be active to manage the Maintenance functions then perform the following steps to activate:

1. Initialization Routines [##ADMIN-SECTION – SECURITY](#) setting.
2. Initialization Routines [##ADMIN-SECTION – LOGIN](#) setting.

### NEE Cloud

If you are running in a NEE Cloud environment and require Security and Maintenance functions perform the following steps to activate:

1. Initialization Routines [##ADMIN-SECTION – SECURITY](#) setting.
2. Initialization Routines [##ADMIN-SECTION – LOGIN](#) setting.
3. [Maintenance](#) Functions section.

## NEA Server (NAS) Installation

---

This section describes the installation of the NEA Server (NAS). This is used if the Natural Engineer Web Interface is running in multi-user mode with a web-server instead of EntireX.

### Windows

1. Update NAS.INI file to match your directory structure used e.g.,

C:\SoftwareAG\_9.10\NaturalEngineer\Nea\

If using Natural Security

```
[NEE]
NATLIB=SYSNEEI,userid,password
```

Where *userid* and *password* are the userid and password defined to Natural Security for the NEA Server.

*With Natural Security (either AUTO=ON or AUTO=OFF) ensure that SYSNEE is a STEPLIB for library SYSNEEI. It is recommended to make SYSNEE and SYSNEEI libraries not protected.*

2. NEA uses port number 19999 by default, (PORT= setting in [NAS] section of the NAS.INI). If you need to change this then you must also change the CONFIG.js file in the 'C:\SoftwareAG\_9.10\NaturalEngineer\Nea\Nea\config' subdirectory.
3. Update NATURAL.BAT file to match your Natural environment. This will include the name of the directory Natural executes from and the NATPARM module created (default NEEGUI).
4. Start NAS.EXE and a command window will appear.

*NB: If you are running in a Windows 7 environment then you will need to ensure that the NAS.EXE is "Run as Administrator".*

5. Execution

# 1

## Natural Engineer Web Interface Installation Guide

To start the Web Interface by executing

C:\SoftwareAG\_9.10\NaturalEngineer\Nea\NEA\NEA.html

### Running NAS as a Service

Under Windows it is possible to run NAS as a service to automate its execution.

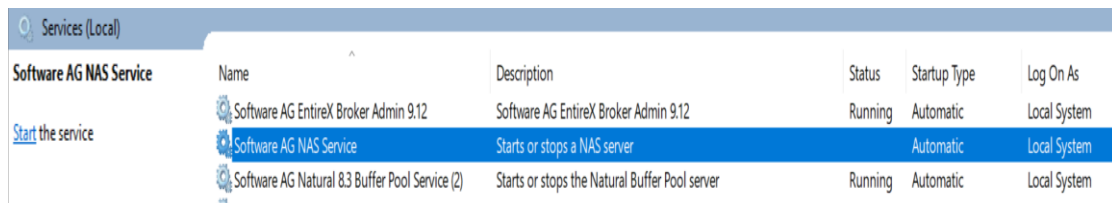
1. Start a Command Prompt (CMD.EXE) as an Administrator and navigate to the directory that the NAS modules reside in.

2. Issue the following command to add NAS as a service.

nassrv -install

*NB: NAS may be removed as a service by issuing the command nassrv -remove*

3. Invoke View Local Services from Control Panel within Windows.



The screenshot shows the 'Services (Local)' window in Windows. It contains a table of installed services. The 'Software AG NAS Service' is highlighted in blue. The table has columns for Name, Description, Status, Startup Type, and Log On As.

Name	Description	Status	Startup Type	Log On As
Software AG EntireX Broker Admin 9.12	Software AG EntireX Broker Admin 9.12	Running	Automatic	Local System
Software AG NAS Service	Starts or stops a NAS server		Automatic	Local System
Software AG Natural 8.3 Buffer Pool Service (2)	Starts or stops the Natural Buffer Pool server	Running	Automatic	Local System

If Startup Type is not “Automatic” or Log On As is not “Local System”, amend via Properties (contextmenu for the service).

4. If the Service is not already started - Start the service.
5. To check if NAS is running correctly as a service check the Windows Task Manager to see if the NAS background processes are running.



## Natural Engineer Web Interface

1

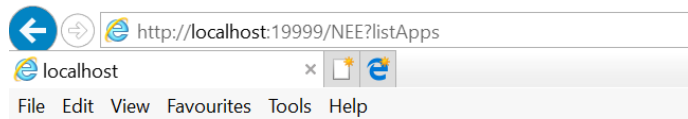
There should be two processes:

NAS server itself

nassrv.exe (NAS service which fires off NAS server)

NAS Server (32 bit)	0%	0.7 MB	0 MB/s	0 Mbps	0%
▼ nassrv.exe (32 bit)	0%	0.5 MB	0 MB/s	0 Mbps	0%
Software AG NAS Service					
Natural 9.2.7 (32 bit)	0%	2.6 MB	0 MB/s	0 Mbps	0%

- Invoke a browser window and run a request against the NAS server e.g.,



```
<?xml version="1.0" encoding="UTF-8"?>
- <listAppsResult ns="nee">
  - <apps>
    <app lang="N" desc="AAT app" name="AAT"/>
    <app lang="C" name="ABC335"/>
    <app lang="J" name="ABF"/>
    <app lang="N" name="ACENT"/>
    <app lang="N" name="AGEREC"/>
    <app lang="N" name="AAT"/>
```

# 1

## Natural Engineer Web Interface Installation Guide

### Mainframe (z/OS)

On the NEEvrs.JOBS dataset you will find a member called NEASERV which contains a sample for running the Natural Engineer Access (NEA) server. It references two members from the NEEvrs.SRCE dataset:

- NEAPARM
  - Contains parameters controlling Natural Sessions that will be activated by the NEA server.
- NEAINI
  - Initialization settings controlling the NEA server.

### Customizing NEAPARM

Modify the NEAPARM module used for the NEA (NAS) Server as follows:

1. If you are running with Natural Security with AUTO=OFF you will need:  
*IM=D,AUTO=OFF*
2. Set the LFILE setting for LFILE 96 to be the Natural Engineer Repository file.
3. Ensure DBCLOSE setting is set ON.

### Customizing NEAINI

Modify the NEAINI module:

1. If you are running with Natural Security with AUTO=OFF you will need:  
*[NEE]*  
*NATLIB=SYSNEEI,userid,password*
2. Check the following setting points to the NEEvrs.SRCE dataset as set in your environment:  
*[NAS]*  
*WEBROOT= NEEvrs.SRCE*

*NOTE: With Natural Security (either AUTO=ON or AUTO=OFF) ensure that SYSNEE is a STEPLIB for library SYSNEEI. It is recommended to make SYSNEE and SYSNEEI libraries not protected.*

It is recommended to start the NEA server as a started task as it will wait to process requests from NEE Web clients. To shutdown the NEA Server a member NEASERVCL may be utilized. This is located on the NEEvrs.JOBS dataset.

NB: ADARUN needs to be linked REUS if the mainframe NEA server is to be used.

## Unix

1. Update NAS.INI file to match your directory structure used, default is

`/opt/softwareag/nee/vvrs/INSTALL/NEA/NAS`

If you are using compression (the default) then the relevant ZLIB package for your Unix operating system will need to be installed. The zlib= setting in the NAS.INI needs to be set for your operating system.

NB: If the ZLIB package is installed into a non-default directory then the LIBPATH environment variable will need to be changed accordingly.

2. Update natural.sh file to match your Natural environment. This will include the name of the directory Natural executes from and the NATPARM module created (default NEEGUI).
3. Copy the relevant nas server executable for your operating system from `$NEEDIR/$NEEVERS/INSTALL/NEA/NAS/BIN/operating_system` to the same directory that the nas.ini is located in. Default is `$NEEDIR/$NEEVERS/INSTALL/NEA/NAS`
4. Start the nas server executable.

## Web Server Backend

---

This section describes the configuration of the Web Server backend. The user may use EntireX or a NAS server if EntireX is unavailable.

### General Configuration

- 1) Copy the following files from the WEB directory to the 'scripts' directory of the web server for IIS, or 'cgi-bin' for Apache: IIE.EXE, IIE.INI

If you are using the HTML version and wish to download charts then the following file also needs to be copied to the 'scripts' directory of the web server:

C:\inetpub\wwwroot\nea\lib\jqwidgets\export\neaexport.exe

- 2) Update IIE.INI as required to match your environment

(a) If using EntireX change the following;

[NEE]

DRIVER=RPC

[RPC]

BROKER=name of broker executing:port number

SERVER=NEERPC

NATLIB=SYSNEEI

TIMEOUT=600

USERID= broker userid

PASSWORD=broker password

*NB: , If no USERID/PASSWORD supplied will default to IIEUSER/IIEPASS.*

SECURITY= (if set to Y set kernel security to Y in ACI calls)

If using Natural Security with EntireX configuration:

SUSERID= (userid of RPC Server jobs)

SPASSWORD= (password of RPC Server jobs)

*NOTE: With Natural Security (either AUTO=ON or AUTO=OFF) ensure that SYSNEE is a STEPLIB for library SYSNEEI. It is recommended to make SYSNEE and SYSNEEI libraries not protected.*

NB: If using EntireX then the tasks in the EntireX Configuration section will also need to be followed.

b) If using NAS change the following;

```
[NEE]
DRIVER=NAS ,
```

```
[NAS]
HOST=IP Address or host name of the machine that NAS is running on.
```

If EntireX or EntireX mini runtime is not installed on the machine NAS is executing on then rename iie.exe to be iieold.exe and rename iienas.exe to be iie.exe.

c) Review the CACHE settings;

```
[CACHE]
CACHE=Y
DIR= C:\inetpub\wwwroot\NEA\cache
```

Setting CACHE=Y means that requests accessed via the webserver will store the results in the directory specified.

*NOTE: Set the permissions to allow WRITE access for all users to this directory. Any other clients accessing the same request via the webserver will not require the request to execute again but be resolved by the webserver.*

Any changes in applications loaded in the Natural Engineer repository will mean the cache files for the application must be removed to access the most up to date information.

If webserver caching is set on then the CACHE-CONTROL setting needs to be modified to optimize client caching.

```
[IIE]
LAST-MODIFIED=Sat, 01 Jan 2011 09:07:04 GMT
CACHE-CONTROL=max-age=60
```

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## Natural Engineer Web Interface Installation Guide

Clients can view the cache file by the option “listCache” under “Site” on the tree view. A batch process is available to list, delete and add caching entries. The modules are in the CACHE dir under NEA.

A cache.bat file is provided to execute the cache module, examples of the input parameters are contained in the top of the file.

Parameter values are listed below:

1. Option – the option required  
Parameter name -opt Possible values (list, del, add)
2. Output – optional output file for messages  
Optional output file for messages from the processing
3. Application – application name options  
Parameter name -app Possible values ( appname, appname .... Or \* for all)  
Parameter name -alvl Reports produced, values (a – application reports, o - object reports, f – field reports)  
Parameter name -gbl Global reports, values (y – site reports and other object types loaded on tree view)

### Examples

1. Process COBJCLNT application accessed on web server and cache object level reports and log output messages

```
cache.exe -opt add -url http://mywebsite/scripts/iie.exe -app COBJCLNT -alvl o -out C:\temp\neacache.txt
```

2. Delete COBJCLNT cached objects

```
cache.exe -opt del -url http://mywebsite/scripts/iie.exe -app COBJCLNT
```

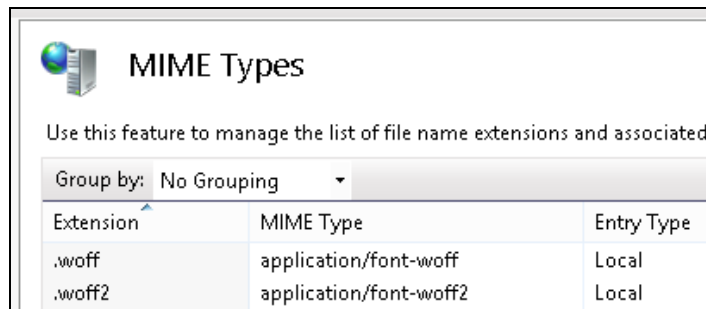
3. List COBJCLNT objects

```
cache.exe -opt list -url http://mywebsite/scripts/iie.exe -app COBJCLNT
```

### 3) MIME Types for WOFF Fonts

The following MIME types for WOFF fonts should be added

For IIS Manager



For Apache

Add the following to the conf/mime.types file

```
application/font-woff    woff
application/font-woff2   woff2
```

# 1

## Natural Engineer Web Interface Installation Guide

### Additional Configuration

The following additional configuration tasks need to be applied after Installation.

- 1) Copy the NEA directory to the WEBROOT directory of the webserver e.g., for IIS  
c:\inetpub\wwwroot.
- 2) Change CONFIG.JS in the NEA\CONFIG sub directory (normally located in  
c:\inetpub\wwwroot\nea\config\)

```
// Web Server (default)
NAS_SERVER      = "/scripts/iie.exe";
```

- 3) Downloading Charts and Grids

If you wish to download charts and grids in the HTML5 version then the following tasks need to be performed:

#### a. Using PHP

1. To capture a chart or grid requires PHP to be installed on the web server.
2. After installing PHP the config.js file must be changed to make the script available.

```
DOWNLOAD_FILE = "/nea/lib/jqwidgets/export/save-file.php";
DOWNLOAD_IMAGE = "/nea/lib/jqwidgets/export/export.php";
```



## b. Using NEAEXPORT.EXE

If PHP is not available you can download grids using this option.

1. If the Apache web server is used an additional change must be made to the httpd configuration file to identify the location of the export script by adding the following, adjusting for the correct drive id.

```

325 #
326 # ScriptAlias: This controls which directories contain server scripts.
327 # ScriptAliases are essentially the same as Aliases, except that
328 # documents in the target directory are treated as applications and
329 # run by the server when requested rather than as documents sent to the
330 # client. The same rules about trailing "/" apply to ScriptAlias
331 # directives as to Alias.
332 #
333 ScriptAlias /cgi-bin/ "C:/Program Files (x86)/Apache Software Foundation/Apache2.2/cgi-bin/"
334
335 ScriptAlias /nea/lib/jqwidgets/export/ "C:/Program Files (x86)/Apache Software Foundation/Apache2.2/htdocs/nea/lib/jqwidgets/export/"
336
337 </IfModule>
338 <IfModule cgid_module>
339 #
340 #

```

2. If Microsoft IIS v7 is used a script map for the NEAEXPORT.EXE should be added

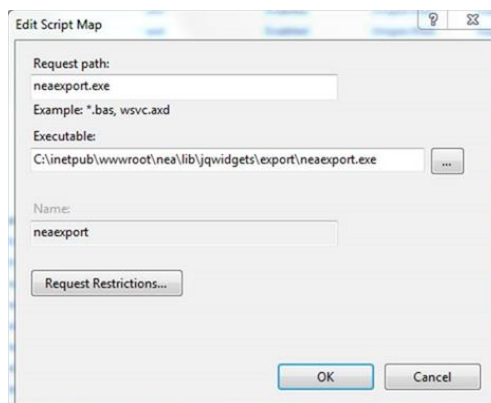
Select the default web site and then select ‘\_Handler Mappings’

Select ‘\_Add Script Map...’ and set

Request Path = neaexport.exe

Executable = C:\inetpub\wwwroot\nea\lib\jqwidgets\export\neaexport.exe

Name = neaexport



# 1

## Natural Engineer Web Interface Installation Guide

*Note: If you have copied neaexport.exe to the 'scripts' directory of the web server then you may specify that location in the Executable.*

- 4) Command to execute the NEEGUI via web server is 'http://hostname/nea/nea.html'

## EntireX Configuration

This section describes the configuration of Entire X, if required. Only if using a web server.

- 1) Add an entry to the Broker attributes file:

Typical setting:

```
DEFAULTS = SERVICE
  CONV-LIMIT           = UNLIM
  CONV-NONACT          = 20M
  LONG-BUFFER-LIMIT   = UNLIM
  NOTIFY-EOC          = YES
  SERVER-NONACT        = 5M
  SHORT-BUFFER-LIMIT  = UNLIM
  CONVERSION           = (SAGTRPC, OPTION=SUBSTITUTE)
```

```
CLASS=RPC, SERVER=NEERPC, SERVICE=CALLNAT
```

- 2) Create new NATPARM module NEERPC with the same entries as NEEGUI
- 3) Update the NEERPC module to include RPC entries, add to RPC Server tag the following: Start session as RPC server activated, Server name is NEERPC, Server node is the Broker name used.

Typical Settings:

```
DBID=200,
FNAT=(200,7),
FUSER=(200,50),
FDIC=(200,60),
LFILE=(96,200,96),
CFICU=ON,CP=AUTO,
STACK=(LOGON SYSNEEI),
STEPLIB=SYSNEE,
RPC=(SERVER=ON,RPCSIZE=256,MAXBUFF=252,SRVNAME=NEERPC,NTASKS
=(1,5),
SRVNODE=broker-name,TIMEOUT=20,TRACE=2,CPRPC=IBM01140)
```

# 1

## Natural Engineer Web Interface Installation Guide

If the Remote Procedure Call (RPC) server is located on the mainframe (z/OS) there is a sample JCL in NEEvrs.SRCE(NEARPC). This uses a member from the NEEvrs.SRCE dataset:

- NEARPC
  - Contains sample RPC parameters and the user should amend the following:

LFILE 96	Point to the NEE repository file.
SRVNAME	Name of Broker Service
SRVNODE	Name of Broker instance

## EntireX MiniRuntime

You will need to ensure that the Web Server has access to the EntireXMiniRunTime 32 bit environment.

EntireXMiniRunTime\_x32.EXE should be executed on the Web Server.

Once installed, you should copy erx.dll from e.g.,

“C:\SoftwareAG\_9.10\common\EntireX\exx\_32\bin”

to the “scripts” directory, normally c:\inetpub\scripts when using IIS or cgi-bin if using Apache.

## Microsoft IIS Configuration

If you are using a Microsoft IIS Webserver then the following steps will need to be performed:

### 1. Install CGIModule Handler Mapping

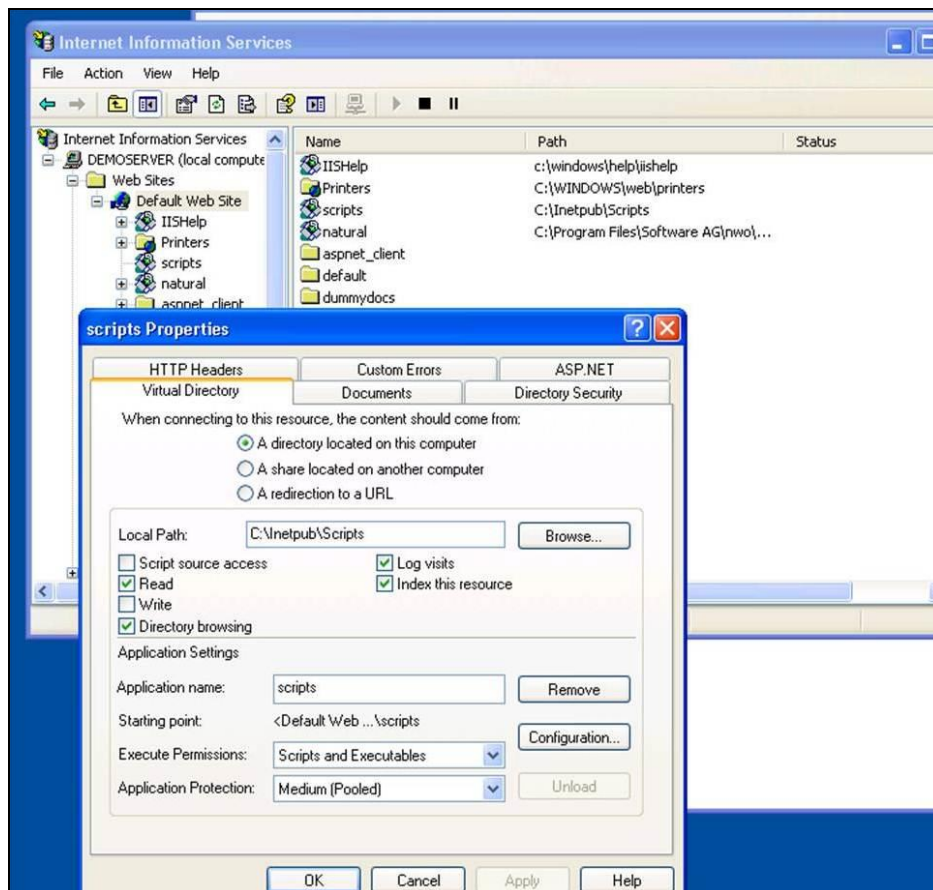
Add the Module for CgiModule for the '\_Default Web Site' and ensure that it is enabled.

*Note: If not present, select 'Add Managed Modules' and select 'System.Web.Handlers.ScriptModule, System.Web.Extensions' giving it a name such as CGIModule.*

## 2. Configure Microsoft IIS directories

Add the required Active Virtual Directory for the 'Default Web Site' e.g., C:\inetpub\scripts ensuring that the Execute Permissions are set to "Scripts and Executables".

The following figure shows sample settings for Microsoft IIS v6.



### 3. If using IIS v7, add script map for IIE Executable

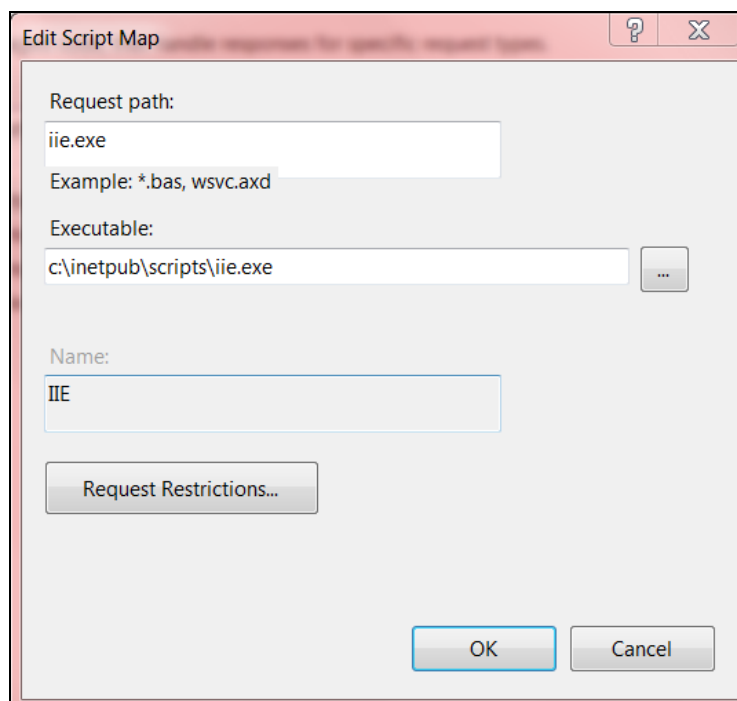
Select the default web site and then select `_Handler Mappings`

Select `_Add Script Map...` and set

Request Path = `iie.exe`

Executable = `C:\inetpub\scripts\iie.exe`

Name = `IIE`



# 1

## Natural Engineer Web Interface Installation Guide

4. If using IIS v7 and you wish to use NEAEXPORT for downloading charts and grids in the HTML5 version a script map for the NEAEXPORT.EXE should be added

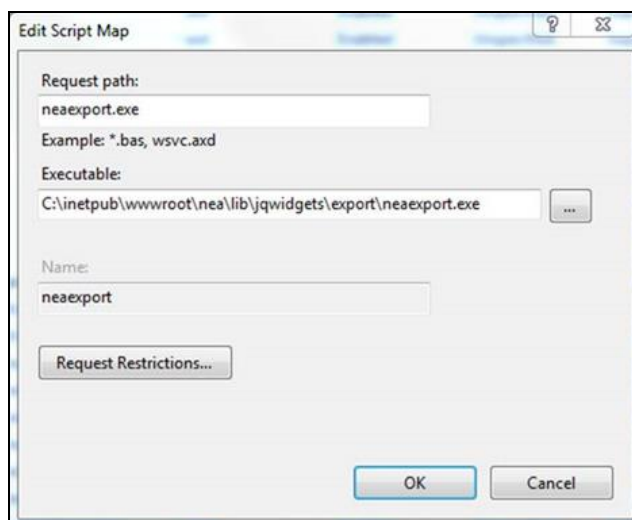
Select the default web site and then select ‘\_Handler Mappings’

Select ‘\_Add Script Map...’ and set

Request Path = neaexport.exe

Executable = C:\inetpub\wwwroot\nea\lib\jqwidgets\export\neaexport.exe

Name = neaexport



*Note: If you have copied neaexport.exe to the 'scripts' directory of the web server then you may specify that location in the Executable.*



## Additional Information

---

This section describes any additional considerations and information pertaining to the NEA Installation.

### Predict Access

- 1) If you have information in Predict you can view file and field information in NEE by connecting your FDIC file to the NEEGUI parameter module.

### Execution Commands

The following commands may be input to invoke particular functions of NEA via the web server.

#### HTML5 Version

Function	Command
NEEGUI	<a href="http://hostname/nea/nea.html">http://hostname/nea/nea.html</a>
ONLINE Help	<a href="http://hostname/nea/help.html">http://hostname/nea/help.html</a>
Book Overview	<a href="http://hostname/nea/book.html">http://hostname/nea/book.html</a>

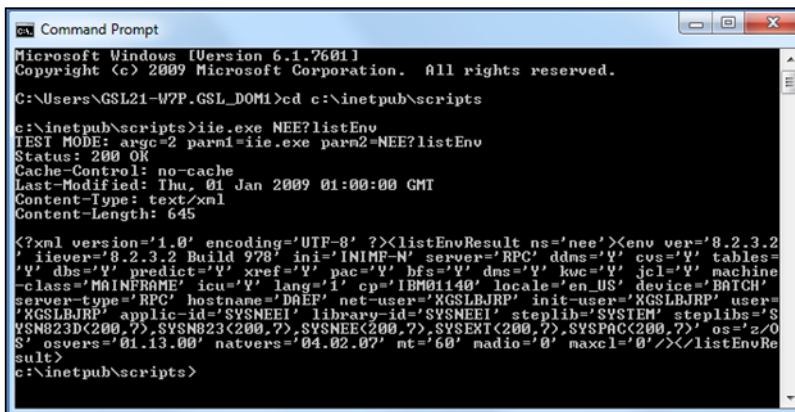
## Test Connectivity outside of Web Browser

To test connectivity without using the Web Server, within a command prompt, go to the scripts directory & type:

```
iie.exe NEE?listEnv
```

This will issue a call direct to the EntireX & RPC Servers.

The output should be similar to the following:



```

Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\GSL21-W7P.GSL_DOM1>cd c:\inetpub\scripts

c:\inetpub\scripts>iie.exe NEE?listEnv
TEST MODE: argc=2 parm1=iie.exe parm2=NEE?listEnv
Status: 200 OK
Cache-Control: no-cache
Last-Modified: Thu, 01 Jan 2009 01:00:00 GMT
Content-Type: text/xml
Content-Length: 645

<?xml version='1.0' encoding='UTF-8' ?><listEnvResult ns='nee'><env ver='8.2.3.2'
  iiever='8.2.3.2 Build 978' ini='INIMF-N' server='RPC' ddms='Y' cvs='Y' tables=
'Y' dhs='Y' predict='Y' xref='Y' pac='Y' bfs='Y' dms='Y' kwc='Y' jcl='Y' machine
-class='MAINFRAME' icu='Y' lang='1' cp='IBM01140' locale='en_US' device='BAICH'
server-type='RPC' hostname='DAEP' net-user='XGSLBJRP' init-user='XGSLBJRP' user=
'XGSLBJRP' applic-id='SYSNEE1' library-id='SYSNEE1' steplib='SYSTEM' steplib='S
YSN823D(200,?)' SYSN823(200,?)' SYSNEE(200,?)' SYSEXT(200,?)' SYSPAC(200,?)' es='z/0
S' osvers='01.13.00' natvers='04.02.07' nt='60' nadio='0' maxcl='0' /></listEnvRe
sult>
c:\inetpub\scripts>
  
```

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