

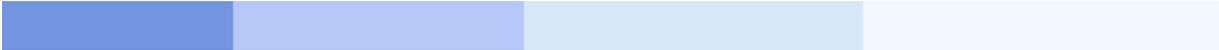


NATURAL

Natural

Release Notes

Version 5.1.1 for UNIX and OpenVMS



This document applies to Natural Version 5.1.1 for UNIX/OpenVMS and to all subsequent releases. Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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Release Notes

These Release Notes describe in summary form the enhancements and new features that are provided with the following products:

- Natural Version 5.1.1 for UNIX and OpenVMS
 - Natural Security Version 5.1.1 for UNIX and OpenVMS
 - Natural RPC Version 5.1.1 for UNIX and OpenVMS
-

Natural Version 5.1.1 Release Notes for UNIX and OpenVMS

These Release Notes describe in summary form the enhancements and new features that are provided with Natural Version 5.1.1 for UNIX and OpenVMS.

In addition to providing the enhancements and new features described below, Natural Version 5.1.1 consolidates all error corrections, modifications and enhancements provided with previous releases of Natural.

These Release Notes cover the following topics:

- General Information
 - New Features
 - Changes and Enhancements
 - Removed Functionality
-

General Information

This section covers the following topics:

- Installation
- Migrating Applications to Version 5.1
- Upcoming Natural Releases
- Support of Previous Natural Versions
- Known Issues
- Documentation

Installation

License Key File Handling (UNIX Only)

A path to a valid license key file is required during installation of Natural. The license key file is an XML file which is usually supplied on diskette with Natural. Alternatively, you can obtain a license key file from Software AG via your local distributor. The license key file will be delivered either by E-mail or on diskette as required.

Migrating Applications to Version 5.1

Natural applications generated with Natural 4 or Natural 3 can be executed with Natural 5 without cataloging the applications. However, to make use of any new features and improvements, such as portable Generated Programs, recataloging with Natural 5.1.1 is required.

Upcoming Natural Releases

NaturalX

DCOM in Natural for UNIX will not be developed in future versions of Natural and will not be available as of the next Natural version. The support of Natural classes used locally in applications will continue.

Large and Dynamic Alpha/Binary Formats in Natural RPC

The support of large alpha/binary and dynamic alpha/binary formats in Natural RPC will be realized in a future version of Natural RPC.

NATLOAD, NATUNLD and SYSTRANS

The utilities NATLOAD, NATUNLD and SYSTRANS will be discontinued with the next Natural release.

Handling for Database Access Loops with Regard to the Adabas Multifetch Feature

Natural for UNIX/OpenVMS makes use of the Adabas Multifetch feature for database access commands L1, L2, L3 and L9. This default configuration can be disabled for specific combinations of Adabas DBID, file number and command code.

In a future release of Natural, this handling for database access loops will be subject to change.

Support of Previous Natural Versions

Natural for UNIX and OpenVMS Version 3.1.1 is no longer supported.

Known Issues

Size Limitations Natural RPC Variables

Until the support of large alpha/binary and dynamic alpha/binary formats is realized, the limitations of 253 for Format A and 126 for Format B are still in effect.

Documentation

A revised set of Natural documentation is provided with this release of Natural Version 5.1.1 for UNIX/OpenVMS. All enhancements and new features described in these Release Notes are documented in the Natural Version 5.1.1 documentation set.

The documentation is provided in HTML format for online access using a Web browser and also in PDF format for viewing/printing using Adobe Acrobat.

In addition to the extensive hyperlinks available for online access and navigation, a powerful online search facility is provided.

For an overview of the Natural 5.1.1 documentation set, see the Documentation Main Menu.

New Features

This section covers the following topics:

- XML Toolkit
- Portable Generated Programs - GPs
- Entire System Server Interface
- Portable Work File Format available in the SYSOBJH, NATUNLD and NATLOAD Utilities
- New Parameters
- New Statements
- New User Exits

XML Toolkit

The XML Toolkit enables developers to process XML documents within Natural. The toolkit includes a wizard which generates Natural source code that provides the following features:

- Mapping Natural data definitions to DTDs;
- Serializing a Natural data structure and assigning its contents to an XML file;
- Mapping DTDs to Natural data definitions;
- Parsing an XML file and assigning its contents to a Natural data structure.

The contents of the samples directory SYSEXXT will be moved to the following directory in a future version:

FNAT/SYSEXXT/RES

For further information, see the XML Toolkit documentation.

Portable Generated Programs - GPs

GPs which are cataloged with Natural Version 5 are now portable across any Natural-supported UNIX, OpenVMS and Windows platform. This means that GPs which are cataloged with Natural Version 5 are now executable with Natural Version 5 on these platforms without recompilation. This feature simplifies the deployment of applications across open systems (UNIX, OpenVMS and Windows) platforms.

Natural applications generated with Natural Version 4 or Natural Version 3 can be executed with Natural Version 5 without cataloging the applications again (upward compatibility). In this case, the portable GP functionality is not available. To make use of the portable GP and other improvements, cataloging with Natural Version 5 is required.

Command processor GPs are not portable. The portable GP feature is not available for mainframe platforms. This means that Natural GPs which are generated on mainframe computers are not executable on UNIX, OpenVMS and Windows platforms without recompilation and vice versa.

For further information, see the section Portable Natural Generated Programs in the Programming Guide.

Entire System Server Interface

With Natural Version 5.1.1 for UNIX/OpenVMS, it is now possible to access Entire System Server (ESY) on the mainframe via the Entire System Server Interface (ESX). Entire System Server is a Software AG product that makes mainframe operating system information and system services available to the user, whether it be an application developer, systems programmer, or computer operator. Entire System Server provides a logical view of the operating system in much the same way as a database management system such as Adabas.

For demonstration purposes, an example application SYSNPE is available with Natural Version 5.1.1. SYSNPE contains sample Natural programs to illustrate the usage of operating system resources for the supported mainframe platforms OS/390, VSE/ESA and BS2000/OSD.

For further information on Entire System Server functionality, see the Entire System Server Overview in your mainframe documentation, the section Installing Natural Version 5.1.1 for UNIX or Installing Natural Version 5.1.1 for OpenVMS, the section PROCESS in the Natural Statements documentation and the section ESXDB in the reference documentation for parameters.

Portable Work-File Format available in the SYSOBJH, NATUNLD and NATLOAD Utilities

You can now specify the work-file type portable in the SYSOBJH, NATUNLD and NATLOAD utilities using the WORKFILETYPE (WFTYPE) parameter. You must specify WORKFILETYPE PORTABLE if you want to transfer cataloged objects between different platforms.

For further information on the WORKFILETYPE parameter in SYSOBJH, see the topic Option Setting in the section Direct and PROCEDURE Workplan Syntax under Commands - Overview in the SYSOBJH documentation.

For further information on the WORKFILETYPE parameter in NATUNLD and NATLOAD, see the sections NATUNLD Direct Command Syntax and NATLOAD Direct Command Syntax respectively.

New Parameters

ECPMOD Available in NATPARM

The profile parameter ECPMOD - Entire Connection Protocol Mode is now supported by the NATPARM utility. The default value has been changed to ON.

EDTRB

The EDTRB (Editor Ring Buffer) parameter is used to determine whether the ring buffer of the program editor is to be used or not. The following settings are available:

ON	When you open a new editing session in the program editor, the old session is stored to the buffer pool. When you leave the session with CANCEL or EXIT, the session is freed from the buffer pool.
OFF	When you open a new editing session in the program editor, the new session replaces the present session. If the AUTOSAVE parameter is activated, the contents of the session are saved to FUSER.

With Natural for UNIX/OpenVMS Version 4.1, all editor sessions except the current one were stored to the ring buffer.

For further information, see the section Multiple Editor Sessions under Program Editor in the User's Guide and the section EDTRB in your reference documentation for parameters.

ENDIAN

The ENDIAN parameter is used to increase the execution performance of portable GPs. The ENDIAN parameter determines the endian mode in which a portable GP is generated during compilation. There are three possible settings of the parameter:

DEFAULT	The endian mode of the machine on which the GP is generated.
BIG	Big endian mode: the high-order byte of the number is stored in memory at the lowest address, and the low-order byte at the highest address (the big end comes first).
LITTLE	Little endian mode: the low-order byte of the number is stored in memory at the lowest address, and the high-order byte at the highest address (the little end comes first).

For further information, see the section Portable Natural Generated Programs in the Programming Guide and the section ENDIAN in your reference documentation for parameters.

ESXDB

The ESXDB parameter specifies the database ID used for Entire System Server's DDMs. The parameter can be modified at the following location:

Edit/Product Configuration/Entire System Server

For further information, see the section ESXDB in your reference documentation for parameters.

NOPROX

Specifies local domain(s), which shall be addressed directly, not via the proxy. The NOPROX parameter is used in the REQUEST DOCUMENT statement.

PROX

Specifies the URL of the (intranet) proxy server via which all requests have to be routed (optional). The PROX parameter is used in the REQUEST DOCUMENT statement.

PROXPORT

Specifies the port number of the proxy, if any is set. The PROXPORT parameter is used in the REQUEST DOCUMENT statement.

New Natural Statements

REQUEST DOCUMENT

The REQUEST DOCUMENT statement gives you the means to access a document which is located in an external system/or an external HTTP server. See the section REQUEST DOCUMENT in your Natural Statements documentation.

PROCESS

The PROCESS statement is used in conjunction with Entire System Server (mainframe only) via the Entire System Server Interface. See the section PROCESS in your Natural Statements documentation and the section Getting Started in the Entire System Server User's Guide (part of your mainframe documentation).

New User Exits

NATRPC01

You can now use the new user exit NATRPC01 (described in the Natural Remote Procedure Call documentation) instead of using error transactions. Natural RPC does not offer the use of error transactions on the server side. Although it is possible to define an error transaction, control will never be passed in the event of an error.

USR2032N

With the new user exit USR2032N, Natural provides the same functionality as an EntireX client. The commit option is set for the next CLOSE CONVERSATION statement which means that an implicit END TRANSACTION is issued on the server side when the conversation is closed. This enables you to write an application on the server without using explicit END TRANSACTION statements, this application being callable from a Natural client as well as from an EntireX client. The user exit has to be called before the next CLOSE CONVERSATION statement is executed.

Changes and Enhancements

This section covers the following topics:

- General Enhancements
- Parameter Enhancements
- Statement Enhancements
- Natural Web Interface

General Enhancements

Steplibs

*STEPLIB is only considered as a steplib when the user is in a FUSER library. The location of the library given as LSTEP is derived from its name. Apart from the library SYSTEM, libraries SYSxxx are assumed to be in FNAT and other libraries are assumed to be in FUSER.

Parameter Enhancements

ECPMOD

The profile parameter ECPMOD - Entire Connection Protocol Mode is now supported by the NATPARM utility. The default value has been changed to ON.

USIZE

The USIZE minimum and default size has been changed from 1 MB to 10 MB. You can leave the USIZE parameter set to 1MB, but the next time you change the setting in any way, Natural will only accept 10MB as a minimum value. If USIZE is set to zero, memory capacity is unrestricted.

Statement Enhancements

CALL

The maximum number of parameters which can be used in the CALL statement has been raised from 40 to 128.

Natural Web Interface

HTML to Natural Conversion Program - HTML2NAT

The conversion program HTML2NAT has been integrated into Natural and is no longer a stand-alone program. The HTML to Natural utility can now be accessed via the new program HTML2NAT in the Natural library SYSWEB. This means that you do not have to import the generated programs into Natural as they are saved and stowed directly in a Natural library.

Now, not only the <Natural> </Natural> Tags can be used, but also ASP-like script commands which are differentiated from text by the <% and %> delimiters.

For further information, see the Natural Web Interface documentation.

Renamed Programs in Library SYSWEB

Programs starting with NAT-* in the library SYSWEB have been renamed to WEB-* for improved consistency.

Now the only elements in the library SYSWEB starting with NAT-* are subprograms which can be called from the Internet.

All elements in the library SYSWEB starting with WEB-* are online utilities which are called from the command line.

The contents of the samples directory SYSWEB will be moved to the following directory in a future version:

FNAT/SYSWEB/RES

Removed Functionality

This section provides an overview of functionality no longer supported with Natural Version 5.1.1. and covers the following topics:

- Natural RPC Support of CSCI
- Natural RPC Support of CSCPATT Parameter
- Support of Entire DB Stopped

Natural RPC Support of CSCI for UNIX

As announced, CSCI is no longer supported with this version of Natural RPC for UNIX.

Note: CSCI is still supported under OpenVMS.

Natural RPC Support of CSCPATT Parameter for UNIX

As the CSCI transport protocol is no longer supported by Natural for UNIX, the CSCPATT profile parameter will be rejected. The value CSCI will be rejected if it is specified as transport protocol for the DFS, RDS or TRANSP parameters.

Note: CSCI is still supported under OpenVMS.

Support of Entire DB

Entire DB for UNIX and OpenVMS is no longer supported.

Natural Security Version 5.1.1 Release Notes for UNIX and OpenVMS

These Release Notes describe the enhancements and new features that are provided with Version 5.1.1 of Natural Security for UNIX and OpenVMS.

In addition to providing the enhancements and new features described in these Release Notes, Natural Security Version 5.1.1 also consolidates all error corrections, modifications and enhancements provided with the previous patch-level releases of Natural Security. Version 5.1.1 contains all changes applied to Version 4.1.2 as error corrections.

This document covers the following topics:

- Using Multiple Versions of Natural Security
 - Central Administration in a Heterogeneous Environment
 - Administrator Services Enhancements
 - User Maintenance Enhancements
 - Library Maintenance Enhancements
 - Other Enhancements
-

Using Multiple Versions of Natural Security

The Natural Security system file FSEC can be shared by Natural Security Versions 4.1.1, 4.1.2 and 5.1.1.

To ensure the consistency and completeness of the security data on a shared FSEC file, it is strongly recommended that you use only the highest Natural Security version for Natural Security maintenance.

If you use a shared FSEC file, it is **not** necessary to transfer any security data with SECULD/ SECLOAD.

For further information, see the section Shared Natural Security System File FSEC under General Installation Information in the Natural Security installation documentation.

Central Administration in a Heterogeneous Environment

With Natural Security, you can also control access to Natural in a heterogeneous environment, that is, an environment comprising Natural on a mainframe computer and Natural on various non-mainframe platforms (OpenVMS, UNIX, Windows NT/2000, and Windows 98).

To make security administration in such a heterogeneous environment easier, Natural Security Version 3.1 for mainframes allows you to store all security data in a single mainframe FSEC system file, and maintain them centrally for all other platforms in the heterogeneous environment using Natural Security on the mainframe computer.

Thus, security administration can be simplified and standardized on a company-wide basis.

The security data on the mainframe FSEC file are accessible from the non-mainframe platforms via Entire Net-Work. On a non-mainframe platform, you can retrieve these central security data, but not maintain them (neither directly nor via interface subprograms).

For further information on Natural Security in heterogeneous environments, please refer to your Natural Security documentation (Version 5.1.1 for OpenVMS, UNIX and Windows or Version 3.1 for Mainframes).

Administrator Services Enhancements

Administrator Services Menu/Set General Options/Logging of Maintenance Functions

This option displays a window in which you can determine the object types whose modifications are to be logged. In previous versions, "external objects" could only be marked collectively here, applying to all types of external objects; as of Version 5.1.1, you can activate/deactivate the logging for each type of external object individually.

Administrator Services Menu 2/Processing of Maintenance Log Records

List Log Records: The Log File Maintenance batch-mode function "List Log Records" has been enhanced: In addition to listing the contents of the log file, it also displays for each record the components of the security profile concerned; moreover, the components that were modified will be marked. The batch report displayed corresponds to the information displayed by the function List Security Profile Maintenance Logs.

External Objects: Until Version 4.1.2, the object type "external objects" could only be selected collectively for the functions List Security Profile Maintenance Logs and Log File Maintenance. As of Version 5.1.1, you can select each type of external object individually.

User Maintenance Enhancements

Modify User/Time Differential Parameter

You can now set the Time Differential in user profiles of type TERMINAL not only to a value of hours/minutes, but also to "*". This has the same effect as the Natural profile parameter TD=AUTO, which means that the time differential will be computed by comparison of physical and logical machine times.

Modify User/Additional Options/Session Options/UNLOCK Parameter

For compatibility reasons, the Unlock parameter is now available under User/Additional Options/Session Options. However, the UNLOCK system command is not implemented on UNIX and OpenVMS systems.

Library Maintenance Enhancements

Additional Options/Restrictions/Session Parameters/DU Parameter

The DU parameter can now be set to ON/OFF/blank instead of T/F.

Additional Options/Restrictions/Session Parameters - RPC Restrictions/Close All Databases

The new option Close All Databases allows you to control the logon/logoff-dependent closing of databases. It affects all databases which have been opened by remote subprograms contained in the library you are maintaining. The following settings are available:

N	The databases are not closed when a logon/logoff to/from the library is performed.
Y	The databases are closed when a logon to the library is performed.
F	The databases are closed when a logon to the library is performed, and when a logoff from the library is performed.

This option is only relevant if the option LOGONRQ=ON is set in the Natural profile parameter RPC or NTRPC macro. If you wish to have one user-queue element per client session for each database accessed by the RPC server, it is recommended that you set LOGONRQ=ON and "Close All Databases" to "Y" or "F".

Note: The Natural RPC Session Parameters screen is displayed by pressing PF8 on the Session Parameters screen.

Additional Options/Restrictions/Session Parameters - RPC Restrictions/Logon Option

This option determines which logon data are evaluated when the library is accessed by the RPC server. The following settings are available:

N	Library ID, user ID and password are evaluated.
A	Only library ID and user ID are evaluated (similar to the Natural profile parameter AUTO=ON, but for the current library only).

Command Restrictions

The SCAN command is now verified.

Statement Restrictions

The following Natural statements can now also be allowed/disallowed: CALLDBPROC, CLOSE CONVERSATION, CREATE OBJECT, DEFINE CLASS, DEFINE WORK FILE, END-RESULT, OPEN CONVERSATION, SEND METHOD.

Other Enhancements

Return to Active Library

A setup record is written for the first library the user logs on to (or for the default library when AUTO=ON). This setup record is used to establish a return library to which control is returned when a RETURN is issued. The library ID in the setup record is used to create the LOGON command. For further information, see the section SETUP in your Command Reference documentation.

Location of Source Modules Available with Natural Security

The source modules for modules which are delivered with source code, such as user exits, logon exits, logon maps and interface sample programs, can now be found in the library SYSSEC. The maps for mailbox display, NSC-M--1 and NSC-M--2 have been replaced by the maps NSC-MY-1 and NSC-MY-2 respectively. If you wish to customize logon or user exits, refer to the appropriate sections of the Natural Security documentation for information on where to copy the object modules.

PROFILE Command - Special Link Indicated

The Natural system command PROFILE shows the user the conditions of use currently in effect. The current value of the Natural system variable *GROUP is shown in the Link ID field. Now an asterisk (*) next to the ID indicates that the group's/user's link to the current library is a Special Link.

Interface Subprogram NSCXR

The interface subprogram NSCXR provides the following three new functions:

- List cross references for command processors
Lists all libraries and users for a command processor and lists the status of the functional security definition. For further information, see the example program PGMXR012.
- List available utility profiles
For further information, see the example program PGMXR013.
- Retrieve user ID or library ID
You specify the name of the user or library, and the interface subprogram will return the corresponding

user/library ID. For further information, see example program PGMXR014.

Example programs PGMXR*nnn* showing how to invoke the subprogram NSCXR, as well as the explanatory texts TXTXR*nnn*, are provided in source form in the library SYSSEC.

Interface Subprogram NSCMA

The subprogram NSCMA is used to perform maintenance/retrieval functions for mailbox security profiles from outside of the library SYSSEC.

Example programs PGMXR*nnn* showing how to invoke the subprogram NSCMA, as well as explanatory texts TXTMA*nnn*, are provided in source form in the library SYSSEC.

Natural RPC Version 5.1.1

As of Natural Version 5.1.1 PL 5 for UNIX and OpenVMS, the Natural Remote Procedure Call is available as a separate subcomponent of Natural. This measure will enable the Natural development team to provide new Natural RPC versions independent of new Natural versions for the various platforms supported. Currently, the old and the new Natural RPC versions are both available.

Note:

The default installation of Natural Version 5.1.1 PL 5 will use the old Natural RPC version.

For details on installing the new Natural RPC with Natural Version 5.1.1 PL 5, see RPC Installation below.

This section describes the product features, changes and enhancements introduced with Natural RPC Version 5.1.1. The following topics are covered:

New Features

- Support of Large and Dynamic Alpha and Binary Variables
- Maximum Length for Node and Server Names Increased to 32 Characters
- Support of the EntireX Broker ACI V6
- Support of SSL for the TCP/IP Communication
- Support of EntireX Location Transparency
- New User Exit USR2035N
- Prerequisites

Enhanced Features

- Support of Multiple EntireX Broker Logons (User EXIT USR2071N)
- Enhancements to User Exits
- Enhancements to Status Function RPCINFO

SYSRPC Utility Enhancements and Modifications

- Generation of Service Directory (NATCLTGS) in User Library
- Support of Long Node and Server Names
- Support of EntireX Location Transparency
- Add Properties for Old Remote Directory and the Transport Protocol to Local Directory

Changed Features

- Implicit END TRANSACTION in a Conversation
- Release of Adabas Retain Sets
- Changes to RPCERR
- Changes to PIng and TErminate Messages
- Service Directory (NATCLTGS) in User Library

Natural RPC Installation

- Installation of the New Natural RPC under UNIX
 - Installation of the New Natural RPC under OpenVMS
-

New Features

- Support of Large and Dynamic Alpha and Binary Variables
- Maximum Length for Node and Server Names Increased to 32 Characters
- Support of the EntireX Broker ACI V6
- Support of SSL for the TCP/IP Communication
- Support of EntireX Location Transparency
- New User Exit USR2035N
- Prerequisites

Support of Large and Dynamic Alpha and Binary Variables

With Natural RPC Version 5.1.1, large alpha/binary and dynamic alpha/binary formats are supported in the parameter list of a remote CALLNAT execution. In case of dynamic alpha/binary variables, the server may increase or decrease the size of the received dynamic variables. Only the current size is sent back to the client.

Large and dynamic alpha and binary variables are only supported with automatic RPC execution, that is without using Natural RPC stubs.

In case of dynamic alpha and binary variables the client uses the value of the Natural RPC profile parameter MAXBUFF for the receive buffer length. If either Entire Net-work is used as transport layer or the Natural profile parameter ACIVERS is less than 3 the value for MAXBUFF must not exceed:

- 32 (ACIVERS=1, Entire Net-work and TCP/IP)
- 30 (ACIVERS=2, Entire Net-work and TCP/IP)
- 30 (ACIVERS=3 and above, Entire Net-work only)

Maximum Length for Node and Server Names Increased to 32 Characters

With Natural RPC Version 5.1.1, the maximum length for node and server name has been increased to 32 characters to be compliant with the EntireX Broker ACI. This enhancement allows you to specify a fully qualified TCP/IP node name and makes the etc/hosts and etc/services definitions obsolete.

Neither the interface nor the internal structure of the local directory NATCLTGS has been changed. See also Support of Long Node and Server Names below.

Support of the EntireX Broker ACI V6

The Natural RPC profile parameter ACIVERS has been enhanced to enable you to specify Version 6.

Support of SSL for the TCP/IP Communication

Secure Socket Layer (SSL) support for the TCP/IP communication to the EntireX Broker has been introduced. To enable the EntireX Broker to recognize that the TCP/IP communication should use SSL, you have to use one of the following methods:

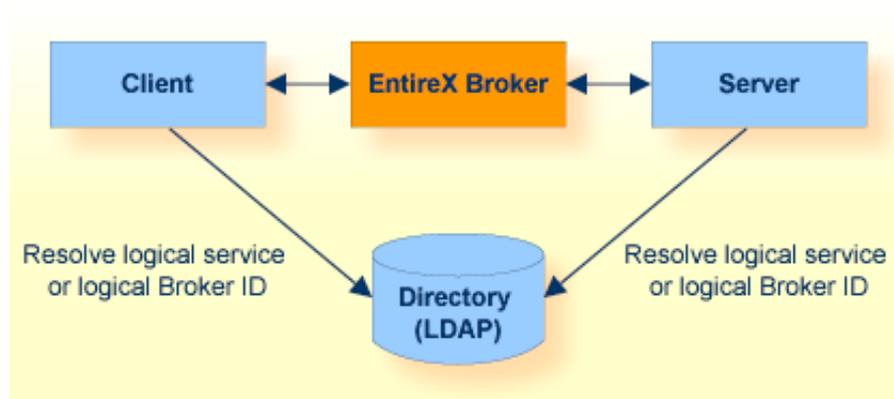
- Append the string :SSL to the node name.
- Prefix the node name with the string //SSL:

To use SSL, an SSL parameter string must be passed to the EntireX Broker on the very first call.

For more details about SSL and the SSL parameter string, see the EntireX documentation.

Support of EntireX Location Transparency

With EntireX, location transparency is possible. Instead of using the physical node name and the physical server name, a server can be addressed by a logical name. This makes the location of the EntireX Broker and the name of the server transparent to clients and servers. The logical name is mapped to the physical node and server names by the EntireX Broker stub before it is used the first time.



For more details about the EntireX Location Transparency, see the **EntireX documentation**.

To take advantage of location transparency, the Natural RPC has been enabled to accept a logical name wherever only a physical node and a physical server name could be specified before.

The maximum length of a logical name is 192 characters. To avoid new Natural profile parameters, a logical name is specified in the server name and node name part of the already existing parameters. There are two kinds of logical names:

- **Logical node names**
With a logical node name, you specify a logical name for a node only in conjunction with a physical server name.
- **Logical services**
With a logical service, you specify a logical name for both the node and the server. To define a logical service, the node name has to be set to *, and the server name contains the logical service name.

The following components refer to node and server names:

- The Natural profile parameters SRVNODE, SRVNAME, DFS and RDS.
- Service maintenance of the SYSRPC utility
- Service directory (NATCLTGS)
- User exits USR2007N, USR2071N
- Service programs RPCERR, RPCINFO

The new information about logical service names is stored in the local directory NATCLTGS without changing its interface or its internal structure. All information is stored as attribute/ value pairs and the logical service names are just added under a new attribute.

The interface to the user application programming interfaces (user exits) USR2007N and USR20071N has not been changed. To be able to retrieve or specify long logical service names, the respective PDA fields have been defined with the VALUE RESULT option and their length has been increased.

New User Exit USR2035N

For the support of the Secure Socket Layer (SSL) communication, the new user exit USR2035N is provided to set the required SSL parameter string.

Prerequisites

- EntireX Version 6.2 if you want to use location transparency.

Enhanced Features

- Support of Multiple EntireX Broker Logons (User EXIT USR2071N)
- Enhancements to User Exits
- Enhancements to Status Function RPCINFO

Support of Multiple EntireX Broker Logons (User Exit USR2071N)

The user exit USR2071N has been enhanced to allow you to Logon to multiple EntireX Brokers concurrently. That is, if you have already issued a Logon to an EntireX Broker, a Logon to a new EntireX Broker does no longer imply the Logoff from the current one.

Enhancements to User Exits

To support long node and server names, the user exits USR2007N and USR2071N have been enhanced to accept and return node and server names having a length of up to 192 characters. Existing callers who are using 8-character-long names will still work and need not be adapted.

Enhancements to Status Function RPCINFO

To support long node and server names, the RPCINFO subprogram has been enhanced to return the up to 32 character long physical node and server names. Existing callers which use 8 character long names will still work and need not be adapted. For compatibility reasons, the RPCINFOL local data area still uses 8-character-long node and server names.

SYSRPC Utility Enhancements and Modifications

With Natural RPC Version 5.1.1, the following changes and enhancements have been made to the Natural SYSRPC utility:

- Generation of Service Directory (NATCLTGS) in User Library
- Support of Long Node and Server Names
- Support of EntireX Location Transparency
- Add Properties for Old Remote Directory and the Transport Protocol to Local Directory

A short description of these changes and enhancements is given below. For more details, refer to the SYSRPC utility documentation.

Generation of Service Directory (NATCLTGS) in User Library

The generated service directory (subprogram NATCLTGS) is stored in the current user library. For this reason, it is recommended to LOGON to the application library (or one of its STEPLIBs) used by the client at runtime library before you invoke the SYSRPC utility.

Support of Long Node and Server Names

To be compliant with the EntireX Broker, the Service Directory Maintenance function enables you to specify node and server names of up to 32 characters. For compatibility reasons, a new editing functionality of the Service Directory Maintenance is provided in addition to the existing one. The new editing functionality will only be used if the new Natural RPC is activated. Otherwise, the old editing functionality will still be used.

Support of EntireX Location Transparency

To support the EntireX Location Transparency, the Service Directory Maintenance function enables you to specify logical node names and logical services of up to 192 characters. For compatibility reasons, this support is only available if the new Natural RPC is activated.

Add Properties for Old Remote Directory and the Transport Protocol to Local Directory

The RDS specific properties "expiration time" and "unique directory identifier" are integrated into the local directory using appropriate tags.

The property "transport protocol" has also been added, which makes the Natural profile parameter ACIPATT obsolete. For compatibility reasons, ACIPATT is still supported, but ignored.

Changed Features

- Implicit END TRANSACTION in a Conversation
- Release of Adabas Retain Sets
- Changes to RPCERR
- Changes to PIng and TErminate Messages
- Service Directory (NATCLTGS) in User Library

Implicit END TRANSACTION in a Conversation

If OPRB=OFF has been set on the Natural RPC server side, an implicit END TRANSACTION statement is issued at the end of the execution of each remote subprogram. This may lead to inconsistent data in the database if a conversation is established which should be rolled back as part of the database transaction when the modifications are already committed.

With Natural RPC Version 5.1.1, the OPRB setting has no effect on the conversation. An implicit END TRANSACTION is still executed after execution of the last remote CALLNAT of a conversation if OPRB=OFF is specified.

Non-conversational CALLNATs are not affected and behave as before. That is if OPRB=OFF is specified on the server side, an implicit END TRANSACTION is executed at the end of the execution of the remote subprogram.

Release of Adabas Retain Sets

At the end of a non-conversation CALLNAT and at the end of a conversation, a RELEASE SETS is issued to release all Adabas retain sets. This ensures that the next request which may be for a different client will not see the data.

Changes to RPCERR

To support long node and server names, the RPCERR program shows the up to 32 character long physical node and server names. The display window has been adapted accordingly. For compatibility reasons, the long names will only be shown if the new RPC is activated for this session. Otherwise, the short names will still be shown.

Changes to PIng and TErminate Messages

The PIng and TErminate messages have been enhanced and indicate that there is a Natural RPC server (in contrast to an EntireX RPC server) and the operating system where the Natural RPC server is running (e.g. MVS/ESA).

Service Directory (NATCLTGS) in User Library

The service directory (subprogram NATCLTGS) is no longer generated into library SYRPC but into the current user library. If you want to generate NATCLTGS in library SYSRPC, you must first LOGON to library SYSRPC before invoking the SYSRPC utility.

Note:

It is strongly recommended that you generate NATCLTGS in the user library and leave the library SYSRPC on the FNAT unchanged.

Natural RPC Installation

Installation of the New Natural RPC under UNIX

To activate the new Natural RPC, you must relink your Natural and set the new **make** parameter `RPC=511`.

If you do not specify the installation parameter `RPC`, the current Natural RPC version is installed (default).

Installation of the New Natural RPC under OpenVMS

To activate the new Natural RPC, you must set the logical name `NATRPC` to `NATRPCX511n.EXE` before you start your Natural, where *n* is the current patch level ($n \geq 5$).

To reactivate the current Natural RPC version, you must set the logical name `NATRPC` back to `NATRPC511n.EXE` (default), where *n* is the current patch level ($n \geq 5$).