SYSRPC - Service Directory Maintenance - RPC 5.1

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Only applicable to Natural RPC Version 5.1.

The SYSRPC utility provides functions used to maintain a service directory in order to connect the client's calling program to a subprogram on a server. The service information is stored in the subprogram NATCLTGS and the XML-formatted file SERVDIRX (Natural text member).

For further information on how to apply the service directory function, refer to Specifying RPC Server Addresses as described in Operating a Natural RPC Environment in the Natural RPC documentation.

The following topics are covered below:

- Service Directory Concept
- Tree Nodes
- LOGON Option
- Transport Method

Service Directory Concept

The items of a service directory are node, server, library and subprogram. The hierarchical structure of these items is displayed as a tree view in the navigator of the SYSRPC utility window (see also Tree Navigation in Basic Functionality). The highest node level (root node) of the tree is Service Directory and the lowest is Service.

The node and server names specified in the Service Directory are either physical names or logical names and logical services.

Below is information on:

- Physical Nodes and Servers
- Location Transparency
- Example of Service Directory
- Using Logical Services and Logical Node Names

Physical Nodes and Servers

Physical node and server names denote the names of real nodes (valid TCP/IP or Entire Net-Work address) and servers.

In the Example of Service Directory below, two servers are defined for one node. Both servers are connected to the same node: ETB045. The remote CALLNAT to Subprogram SUB1 is executed on Server NRPC001, whereas Subprograms SUB2 and SUB3 are executed on Server NRPC002.

The server names specified here must be identical to the server names used in the Natural parameter module of the server tasks: see the parameter SRVNAME in the Natural Parameter Reference documentation. Analogously, the node name in the service directory must be identical to the node name specified for the server tasks: see the parameter SRVNODE in the Natural Parameter Reference documentation.

Location Transparency

Location transparency is a concept where physical node names can be replaced by logical names or a combination of physical node and server names can be replaced by logical services.

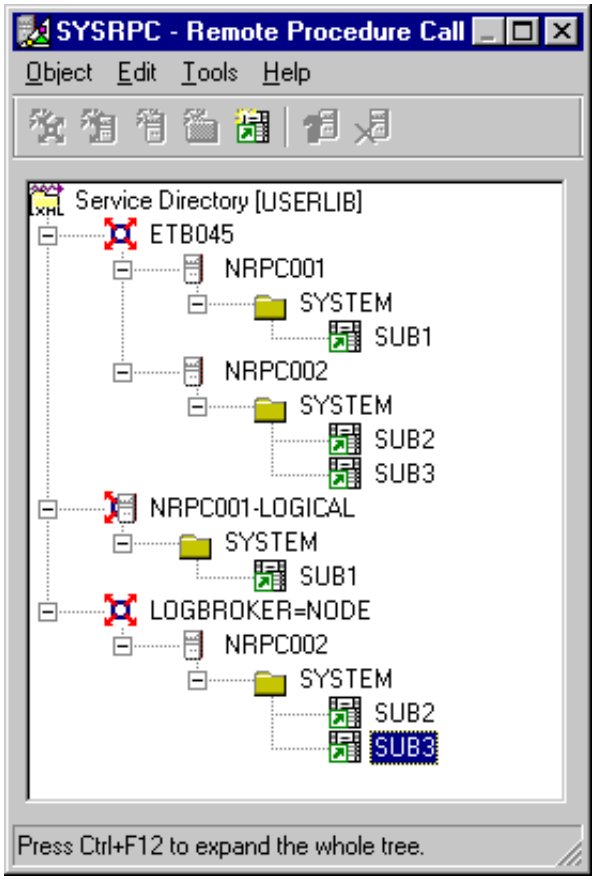
Logical node names and logical services are defined with EntireX and are assigned to physical node and server names at Natural runtime.

Related Topics:

- Using Location Transparency in Operating a Natural RPC Environment in the Natural RPC documentation.
- The relevant sections in the EntireX documentation.

In the Example of Service Directory below, the icon  indicates that NRPC001-LOGICAL is a logical service. LOGBROKER=NODE in the tree node Node indicates that NODE is the logical node name.

Example of Service Directory



Using Logical Services and Node Names

To define a logical service

- See the functions provided with the menu bar, the toolbar and the context menu as described in Basic Functionality.

To define a logical node name

- In the tree node Node, replace the existing value by LOGBROKER=*node-name*
  where *node-name* denotes the logical EntireX Broker name.

To remove a logical node name

- For a logical node name: in the Node field, remove the string LOGBROKER= and enter the name of an EntireX Broker.

To display physical names defined for logical services or nodes

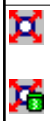
- Use the Ping command as described in the section Server Command Execution.
  Ping invokes a window that dispays the physical node and server names defined for a logical service or a physical node name defined for a logical node.

Tree Nodes

Below is a description of the Service Directory tree nodes. Each tree node is identified by a different icon.

For a definition of the node names mentioned, see Definition of Terms in the overview page of the Natural RPC documentation.

To manipulate the tree nodes, use the commands and functions provided with the menu bar, the toolbar and the context menu as described in Basic Functionality.

Icon	Tree Node	Explanation
	Service Directory root	The service directory root node indicates the name of the library from which the service directory was read: Service Directory [*library-name*]. For example: If you invoked the SYSRPC utility from the library USERLIB, the root reads "Service Directory [USERLIB]". For an explanation of other root node names that may occur, see Root Node Names below.
	Node	The name of the node to which the remote CALLNAT is sent. Maximum name length: Physical nodes: 32 characters Logical nodes: 192 characters Depending on the setting of the LOGON option, different icons are displayed for Node:  LOGON = No  LOGON = Yes See also LOGON Option below.
	Server	The name of the server on which the CALLNAT is to be executed. Maximum name length: 32 characters Depending on the setting of the LOGON option, different icons are displayed for Server:  LOGON = No  LOGON = Yes See also LOGON Option below.
	Logical Service	The name of a logical service. Maximum name length: 192 characters Depending on the setting of the LOGON option, different icons are displayed for a logical service:  LOGON = No  LOGON = Yes See also LOGON Option below.
	Library	The name of the library to which your client application is currently logged on. SYSTEM is also allowed.
	Service (Subprogram)	The name of the remote subprogram to be accessed from the client. Maximum number of entries: 500 subprograms.

Root Node Names

Below are the names of root nodes that may occur if the subprograms or files which are required by the Service Directory Maintenance function are missing, an explanation of what is missing, and instructions on changing the root node to Service Directory [*library-name*].

Node Name	Reason	Resolution
Service Directory from NATCLTGS [*library-name*]	The file SERVDIRX is missing. This is indicated by the icon  .	From the Options menu choose Save As or, modify any of the tree node items and choose Save. SERVDIRX is generated into the Text directory and the name of the root node changes.
Example Service Directory	The subprogram NATCLTGS and the file SERVDIRX are missing.	From the Options menu choose Save As or, modify any of the tree node items and choose Save. NATCLTGS and SERVDIRX are generated into the Subprograms and Text directory respectively and the name of the root node changes.
An empty tree	NATCLTGS, SERVDIRX and the DEF-GS example data (subprogram delivered in the Natural system library SYSRPC) are missing.	1. Create at least one new item for Node and Server or create at least one logical service.. 2. Save the modifications. NATCLTGS and SERVDIRX are generated into the Subprograms and Text directory respectively and the name of the root node changes.

LOGON Option

If the LOGON option is set, the client initiates a Natural logon to the server with the library name of the current library on the client, regardless of the library specified in the Service Directory.

After the remote CALLNAT has been executed (successfully or not), the server library is reset to its previous state. For more information, see Using the Logon Feature in the Natural RPC documentation.

The LOGON can be set on server or node level and applies to all definitions made on a hierarchically lower level. For example, if the LOGON option has been set for a certain server, it applies to all associated library and subprogram definitions.

To set a LOGON

- In the Service Directory tree, right-click the name of a Node, Server or Logical Service and select LOGON Option.
- Choose Yes to initiate the client's logon to the server.
  (The default is No.)

  If the logon has been initiated successfully for the Node selected, the icon indicating a node changes from  to  .
  If the logon has been initiated successfully for a Logical Service, the icon indicating a logical service changes from  to  .
  If the logon has been initiated successfully for the Server selected, the icon indicating a server changes from 

to  .

Transport Method

To specify the transport method

- In the Service Directory tree, right-click the name of a Node, Server or Logical Service, select Transport Method and
  - ACI for EntireX Broker ACI protocol (marked by default).
  - Or, under OpenVMS, CSCI for Entire Net-Work CSCI protocol.

