Introduction To RPC/XDR

This chapter introduces and defines the Cisco IOS for S/390 RPC/XDR packages. It introduces the RPC/XDR packages and defines the terms Remote Procedure Call (RPC) and External Data Representation (XDR).

Introduction to RPC

The Remote Procedure Call (RPC) package defines a procedure calling model for distributed applications. The External Data Representation (XDR) defines a standard representation for data in the network to support heterogeneous network computing.

The Cisco IOS for S/390 RPC/XDR lets you create custom distributed applications and network services using the mainframe and the resources of the network. Both client and RPC functionality exist in this implementation. This means an application on the mainframe using RPC/XDR can not only provide resources to the network, but can access resources and initiate activity on the network as well. RPC/XDR includes both RPC and XDR library routines.

The C language interface to the RPC/XDR library is compatible with the UNIX operating system reference standard, which facilitates development of network services on the mainframe. You can select from the RPC package a TCP or UDP transport on which to run your application.

Remote Procedure Call (RPC)

RPC is an independent set of functions used for accessing remote nodes on a network. Using RPC network services, applications can be created in much the same way a programmer writes software for a single computer using local procedure calls. The RPC protocols extend the concept of local procedure calls across the network, which means that you can develop distributed applications for transparent execution across a network.

External Data Representation (XDR)

XDR is a vendor-independent method of representing data. By using the XDR standard data representation convention, systems do not have to understand and translate every data format that may exist on the network; there is only the one convention. Data is translated into XDR format before it is sent over the network and, at the reception point, is translated into the data convention used there. This means that you can integrate new computer architectures into the network without requiring the updating of translation routines.

The new architecture simply includes a routine that translates its data format into XDR format and the new member of the network is ready to go. Using XDR, data can be accessed or exchanged among machines of various hardware and software architectures without any translation or interpretation problems. Word lengths, byte ordering, and floating point representations appear to be the same to all nodes in the network.