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To: T10 Committee Membership
From: Edward A. Gardner, Ophidian Designs
Subject: SRP Target Identifiers

The February 20-21, 2001 SRP working group agreed that (quoting from 01-073r0):

> The SRP target port corresponds to an IOC. The TCA's port identification may be advisory information on how to reach an SRP target port or IOC, but is not part of the SRP target port identifier.

> Each IOC (each IOC GUID) identifies a single SRP target port. That is, there shall be only one SRP service ID (ServiceEntry) per IOC.

That is, when SRP is used over Infiniband^{TM}, an SRP target port identifier shall be an EUI-64 value corresponding to the Infiniband^{TM} IO Controller GUID.

I propose that we extend this to any use of SRP (e.g. SRP over VI). An SRP target port identifier shall be an EUI-64 value. The annex describing the use of SRP on a specific transport shall also describe the interpretation of the SRP target port identifier, if any.

Note that as described in George Penokie's "Names, Addresses, Identifiers, Oh my!" (01-084), an EUI-64 has the properties of both an identifier and a name. I will continue to use the term "SRP target port identifier" pending resolution of George's proposal.

Other transports such as VI may not already provide a way to resolve an EUI-64 value to an SRP target port. To address this we add the SRP target port identifier to the SRP_LOGIN_REQ information unit. The server (connection request recipient) shall either associate the connection with the specified SRP target port or reject the connection request.

In the case of Infiniband^{TM} this is usually redundant. It either matches the IO Controller GUID or the connection is rejected. Note that it does address a possible race condition if an IO Controller is hot swapped between discovery and connection establishment.

In the case of VI or some other transport, the SRP target port identifier in the login request may be necessary to locate the proper target. For example, consider a bridge from VI to Infiniband^{TM}, where the bridge could use the identifier to locate the proper IO Controller.

The remainder of this document is draft text intended for Annex A.

Overview of Infiniband^{TM} Addressing

Figure 1 illustrates the structure of an Infiniband^{TM} IO Unit. That figure shows several IO Controllers accessible through a single Channel Adapter with two Ports. Although not shown in that figure, an IO Controller may be accessible through multiple Channel Adapters, each with one or more Ports.

Each Channel Adapter is identified by a permanent EUI-64 called the NODEGUID.

Each Port of a Channel Adapter is identified by a permanent EUI-64 called the PORTGUID. Each Port is also identified by one or more GID values and one or more LID values, which are assigned by the subnet manager. An LID identifies a path through the Infiniband^{TM} fabric to a Port as well as a Port itself.

Each IO Controller is identified by a permanent EUI-64 called the IO CONTROLLER GUID. Each IO Controller is also identified by a slot, an index of the IO Controllers accessible through a Channel Adapter.

Each IO Controller provides one or more services. SRP is one service that IO Controllers may provide. Each service is identified by one entry in a list of SERVICEENTRIES, containing an architecturally specified SERVICENAME and a vendor unique SERVICEID.
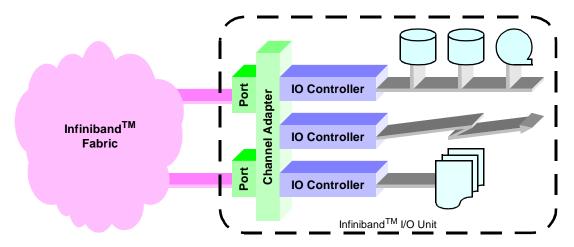
Figure 1 - Infiniband^{TM} IO Unit Structure

Target Ports

An SRP target port attached to an Infiniband^{TM} Fabric shall be an IO Controller. The SRP target port identifier shall be the value of the IO Controller GUID. The Infiniband^{TM} specifications define means that an SRP initiator port attached to an Infiniband^{TM} Fabric may use to establish communication with an SRP target port.

> NOTE 3 - A single SRP target port may be accessed using multiple paths through an Infiniband^{TM} Fabric, which may include multiple Infiniband^{TM} Ports on one or more Channel Adapters.

Any Channel Adapter allowing attachment of an SRP target port to an Infiniband^{TM} Fabric shall implement the Device Management Agent class of Infiniband^{TM} general management services.

The IOCONTROLLERPROFILE attribute describing an SRP target port shall report the component values listed in table 1.

Table 1 - IOCONTROLLERPROFILE component values

Component	Value
GUID	SRP target port identifier
IO CLASS	FF00h
IO SUBCLASS	609Eh
PROTOCOL	0108h
PROTOCOL VERSION	See table 2

Table 2 - PROTOCOL VERSION values

Value	Description
0000h	The IO Controller does not claim conformance to any standard.
0001h	The IO Controller claims conformance to this standard.
0002h - FFFFh	Reserved

Table 3 lists values that may be reported in the SERVICENAME components of the SERVICEENTRIES attribute for an SRP target port. The first entry (entry 00h) in the SERVICEENTRIES list for an SRP target port shall report the SERVICENAME component value SRP.T10.NCITS.

Table 3 - SERVICENAME values

Value	Description
SRP.T10.NCITS	SRP operation over a Reliable Connection channel.

EDITOR'S NOTE 1 - The Infiniband^{TM} specifications are ambiguous about how the service name is padded within the fixed size (40 byte) SERVICENAME component. I believe the name is supposed to be padded with nulls (00h), however I need to confirm that.