

# **NPIV Functionality Profile**

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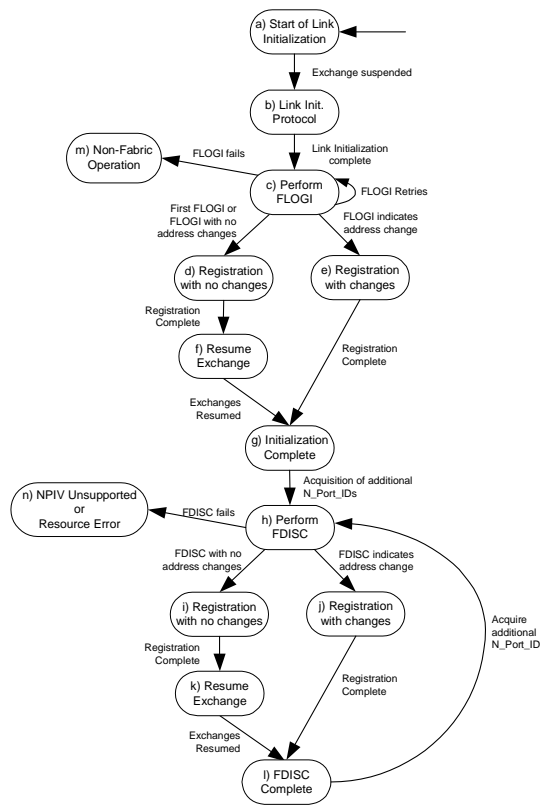
# Overview

- “N\_Port ID Virtualization (NPIV) provides a FC facility for sharing a single physical N\_Port among multiple N\_Port IDs, thereby allowing multiple initiators, each with its own N\_Port ID, to share the N\_Port.”
- Detailed guidelines presented to ensure devices implement a common methodology
  - ◆ Ensures interoperability between devices
  - ◆ Ensures Backward Compatibility with current implementations and Legacy Devices
- Defined FC-MI & FC-FS Features & Functionality in support of NPIV
- Detailed in NPIV Functionality Profile - Text T11/02-338v1

# Acquisition Procedure

- Link Initialization
  - ◆ No change - used same Protocol defined in FS and used in MI
- Obtain first N\_Port ID - Acquisition of FLOGI assigned N\_Port ID
  - ◆ With the exception of Loop Behavior removed, used the same Nx\_Port Initialization Procedure as defined in MI with minor changes
    - Transitions & steps redefined for Registration & Resume Exchange Requirements - No impact to current implementations.
- Obtain additional IDs using FDISC - Acquisition of FDISC assigned N\_Port ID
  - ◆ Utilized FDISC Request Sequence to acquire additional IDs - Procedure used is similar to Acquisition of FLOGI assigned N\_Port ID
  - ◆ No impact to Legacy devices
    - Exit step provided for devices that do not support NPIV
    - Historical usage of FDISC is unaffected

# Acquisition Procedure (Cont.)



# Features & Functionality

- Buffer-to-buffer flow control management
  - ◆ BB\_Credit - total number of receive buffers mutually shared between all N\_Port IDs within a physical Port
  - ◆ BB\_Credit\_CNT - total number of transmitted frames, inclusive of all N\_Port ID frames within a physical Port
- Priority
  - ◆ Priority is set for the duration of the Sequence Initiative
- Name Server Object Registration
  - ◆ Registration based on the FLOGI or FDISC payload
  - ◆ Port type shall be registered as N\_Port (loop not supported)

# Features & Functionality (Cont.)

- Name Server Object Registration (Cont.)
  - ◆ Name Server Object - Full Removal supported, as defined in MI. Two additional functions defined
    - Associated Port ID and attributes removed when LOGO received
    - Re-login with the Fabric prior to performing logout
    - Since original release (T11/02-338v0), Minor update (clarification) to Name Server Object Removal - Full Removal.
- Registered State Change Notification
  - ◆ Restated requirements defined in MI. Modified to include registration and notification of additional N\_Port IDs.
  - ◆ Since original release (T11/02-338v0), updated text to include 02-454v0 Proposal - RSCN changes for FC-MI-2 & included new Requirements for Area Format RSCN. **Area RSCNs are utilized to minimize RSCNs (i.e., N\_Port re-log in). Coalescing of RSCNs is an alternative.**

# Features & Functionality (Cont.)

- Zoning
  - ◆ Zoning supported, as defined in MI
  - ◆ In addition, added items to the Zoning Support table
    - Basic & Enhanced Zoning
    - Node Name
    - Hard Zoning
    - SFC & UFC
  - ◆ Logout Procedure
    - For completeness, Restated FS Explicit & Implicit Logout Requirements