

Changes described by 12-370v1, included at end for reference. All changes are relative to 13-047v0.

Update to Table 210 – VA\_Port SW\_ILSs Command Codes on pages 279-280

<b>Encoded Value</b>	<b>Description</b>	<b>Abbreviation</b>
<b>XX00 0001h</b>	<b>VN_Port Reachability Notification</b>	<b>VNRN</b>
<b>XX00 0002h</b>	<b>VN_Port Unreachability Notification</b>	<b>VNUN</b>
<b>XX00 0003h</b>	<b>FCDF Reachability Notification</b>	<b>FDRN</b>
<b>XX00 0004h</b>	<b>FCDF Unreachability Notification</b>	<b>FDUN</b>
<b>XX00 0005h</b>	<b>N_Port_ID Route Distribution</b>	<b>NPRD</b>
<b>XX00 0006h</b>	<b>N_Port_ID and Zoning ACL Distribution</b>	<b>NPZD</b>
<b>XX00 0007h</b>	<b>Active Zoning ACL Distribution</b>	<b>AZAD</b>
<b>XX00 0008h</b>	<b>Distributed Switch Membership Distribution</b>	<b>DFMD</b>
<b>XX00 0009h</b>	<b>FCDF Gathered Configuration Notification</b>	<b>FGCN</b>

Updates to Table 212 – Descriptor Tags on pages 280-281

<b>Tag Value</b>	<b>Descriptor</b>	<b>Reference</b>
<b>0001h</b>	<b>VN_Port Reachability</b>	<b>17.7.2.2</b>
	...	
<b>0014h</b>	<b>RHello Interval</b>	<b>17.8.2.5</b>
<b>xxxxh</b>	<b>Physical Object Attribute Block</b>	<b>reference</b>
<b>xxxxh</b>	<b>Logical Port Object Attribute Block</b>	<b>reference</b>
<b>xxxxh</b>	<b>Physical Port Object Attribute Block</b>	<b>reference</b>

Insert the following as new subsections at the end of section 17.7.2

### FCDF Switch descriptor

Item	Size (Bytes)
Tag value = xxxx xxxh	4
Length=8	4
FCDF WWN	8

**FCDF WWN:** contains the WWN of an FCDF.

### Physical Object Attribute Block descriptor

Item	Size (Bytes)
Tag = xxxx xxxh	4
Length=variable	4
Number of Physical Object Attribute Blocks	4
Physical Object Attribute Block #1	Variable
Physical Object Attribute Block #2	Variable
...	Variable
Physical Object Attribute Block #n	Variable

**Number of Physical Object Attribute Blocks:** Contains the number of Physical Object Attribute Blocks that follow.

**Physical Object Attribute Block(s):** See FC-GS-7

## Logical Port Attribute Block descriptor

Item	Size (Bytes)
Tag = xxxx xxxh	4
Length=variable	4
Number of Logical Port Object Attribute Blocks	4
Logical Port Object Attribute Block #1	Variable
Logical Port Object Attribute Block #2	Variable
...	Variable
Logical Port Object Attribute Block #n	Variable

**Number of Logical Port Object Attribute Blocks:** Contains the number of Logical Port Object Attribute Blocks that follow.

**Logical Port Object Attribute Block(s):** See FC-GS-7

## Physical Port Attribute Block descriptor

Item	Size (Bytes)
Tag = xxxx xxxh	4
Length=variable	4
Number of Physical Port Object Attribute Blocks	4
Physical Port Object Attribute Block #1	Variable
Physical Port Object Attribute Block #2	Variable
...	Variable
Physical Port Object Attribute Block #n	Variable

**Number of Physical Port Object Attribute Blocks:** Contains the number of Physical Port Object Attribute Blocks that follow.

**Physical Port Object Attribute Block(s):** See FC-GS-7

Insert the following as a new subsection at the end of section 17.7.3

### FCDF Gathered Configuration Notification (FGCN)

The FCDF Gathered Configuration Notification is used by an FCDF to communicate its configuration details to the Primary Controlling Switch. An FCDF should transmit GFCN to the Primary Controlling Switch after the initialization sequences with the Primary Controlling Switch are completed and any time previously reported configuration details change. FGCN is also used by a Primary Controlling Switch to synchronize configuration details received from an FCDF to the Secondary Controlling Switch.

#### FGCN request Sequence

**Addressing:** When used between a FCDF and the Primary Controlling Switch the S\_ID field shall be set to FFFF9h, indicating the originating VA\_Port, and the D\_ID field shall be set to FFFF9h, indicating the destination VA\_Port. When used between the two Controlling Switches the S\_ID field shall be set to FFFFd, indicating the originating VE\_Port, and the D\_ID field shall be set to FFFFd, indicating the destination VE\_Port.

**Payload:** the format of the FGCN request Sequence payload is show in

Item	Size (bytes)
SW_ILS Code = xx00 0009h	4
Destination Controlling Switch_Name	8
Originating FCDF Switch_Name	8
Descriptor List Length	4
FCDF Switch Descriptor	<i>See reference</i>
Physical Object Attribute Block descriptor	<i>See reference</i>
Logical Port Attribute Block descriptor	<i>See reference</i>
Physical Port Object Attribute Block descriptor	<i>See reference</i>

**Destination Controlling Switch\_Name:** contains the switch name of the destination Controlling Switch.

**Originating FCDF Switch\_Name:** contains the Switch\_Name of the requesting FCDF.

*Question: I copied this from FDRN. In the case of FDRN and FGCN, this can also be sent from the primary to the secondary. Should the description of this field reflect that?*

**Descriptor List Length:** contains the length in bytes of the subsequent list of descriptors.

**FCDF Switch Descriptor:** WWN of the FCDF for which configuration details are being reported.

**Physical Object Attribute Block descriptor:** describes the Physical Object Attributes of the FCDF. See FC-GS-7 for details.

**Logical Port Object Attribute Block descriptor:** describes the Logical Port Object Attributes of the FCDF. See FC-GS-7 for details.

**Physical Port Object Attribute Block descriptor:** describes the Physical Port Object Attributes of the FCDF. See FC-GS-7 for details.

### **FGCN reply Sequence**

*Copy from any other command*

Add as a new subsection to section 17.9

## Centralized Configuration Repository

FC-GS-7 defines commands that allow endpoints on the fabric to query the configuration of the Distributed Switch. Since the Controlling Switch provides this service, it is necessary to provide a mechanism to gather the configuration from the set of FCDFs. Out of band management interfaces will also find it desirable to query a central server to obtain the configuration for the distributed switch

FGCN provides this mechanism. After an FCDF joins the fabric, it should report any configuration details that may be retrieved via the FC-GS-7 command set to the Primary Controlling Switch using FGCN. An FCDF should also report any changes to any previously reported configuration data to the Primary Controlling Switch using FGCN. The Primary Controlling Switch shall use FGCN to transmit all configuration data received from any FCDF to the Secondary Controlling Switch.

Original presentation 12-370v1 follows for reference.

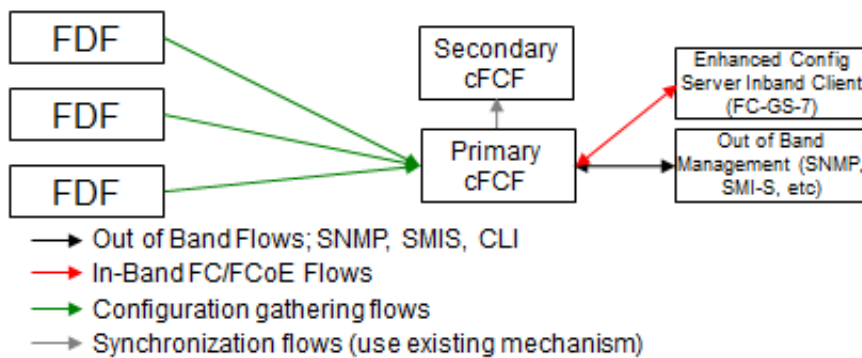


## Gather Distributed Switch Configuration

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12/04/2012

### Background: Central Configuration Server

- FC-GS-7 proposes Enhanced Fabric Configuration Server
  - <http://www.t11.org/ftp/t11/pub/fc/gs-7/12-028v2.pdf>
  - Configuration management supported by one entity
- Configuration must be gathered at a single entity



## Mechanism for Gathering Configuration Data

### ▪ SW-ILS Message on VA-VA links

- FCDF Gathered Configuration Notification (FGCN)
- Pushed from FDF/FCDF to cFCF after DFMD or when something changes
- Pushed from Primary cFCF to Secondary cFCF as part of backup synchronization
  - Message from FDF/FCDF to Primary does not require reformatting when pushed from Primary to Secondary
- Uses TLVs specified by FC-GS-7

## FGCN Request Payload

Item	Size (bytes)
SW_ILS Code = xx00 0009h	4
Destination Controlling Switch_Name	8
Originating FCDF Switch_Name	8
Descriptor List Length	4
FCDF Switch Descriptor	12
Physical Object Attribute Block Descriptor	Variable
Logical Port Attribute Block Descriptor	Variable
Physical Port Object Attribute Block Descriptor	Variable

## FCDF Switch Descriptor

Item	Size (bytes)
Tag = TBD	4
Length=8	4
FCDF WWN	8

## Attribute Block Entry – Generic FC-GS-7 TLV

Item	Size (bytes)
Attribute Block Entry Type	2
Attribute Block Entry Length	2
Attribute Block Entry Value	Variable

- **From FC-GS-7, 12-028v3, Table 101**
- **Maps following specific attribute blocks**
  - Physical Object Attribute block
  - Logical Port Object Attribute Block
  - Physical Port Object Attribute Block

## Physical Object Attribute Block Descriptor

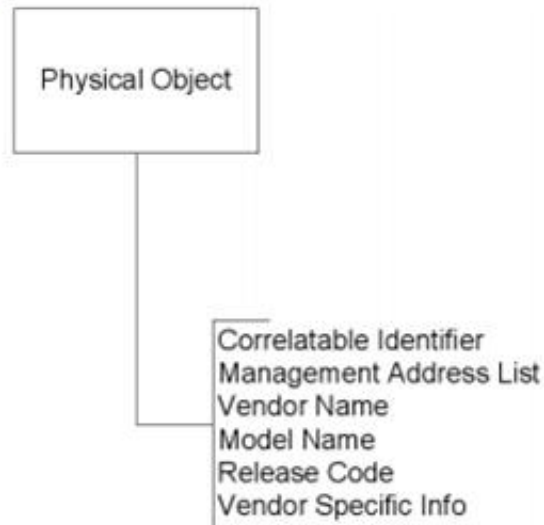
Item	Size (bytes)
Tag = TBD	4
Length=variable	4
Number of Physical Object Attribute Blocks	4
Physical Object Attribute Block #1	Variable
Physical Object Attribute Block #2	Variable
...	Variable
Physical Object Attribute Block #n	Variable

## Physical Object Attribute Block (12-028v3, table 107)

Type (hex)	Value				
	Description	Length (Bytes)	Type	Required	Multiples allowed <sup>a</sup>
0001	Correlatable Identifier	8	Binary	Yes	No
0002	Management Address	1-255	ASCII	No	Yes
0003	Vendor Name	1-255	Binary	No	Yes
0004	Model Name	1-255	ASCII	Yes	No
0005	Firmware Version	1 - 255	ASCII	No	Yes
0006	Vendor Specific Information		ASCII	No	No
other values	Reserved				

<sup>a</sup> If a Interconnect Element Attribute Block contains multiple types for a type that does not allow multiples the command shall be rejected with a reason code of 'Unable to perform command request' and a Reason Code Explanation of 'Platform Attribute Block Contains Multiple Attributes of the Same Type'.

## Physical Object



## Logical Port Object Attribute Block Descriptor

Item	Size (bytes)
Tag = TBD	4
Length=variable	4
Number of Logical Port Object Attribute Blocks	4
Logical Port Object Attribute Block #1	Variable
Logical Port Object Attribute Block #2	Variable
...	Variable
Logical Port Object Attribute Block #n	Variable

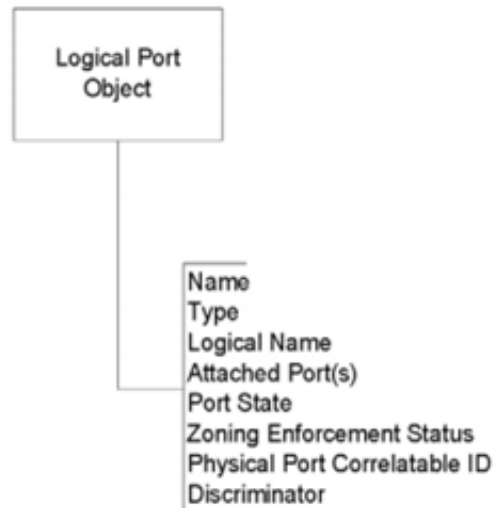
## Logical Port Object Attribute Block (12-028v3, table 109)

Type (hex)	Value				
	Description	Length (Bytes)	Type	Required	Multiples allowed <sup>a</sup>
0001	Name	8	Binary	Yes	No
0002	Type	1	Binary	Yes	No
0003	Logical Name	1-255	Binary	No	No
0004	Attached Port	8	Binary	Yes	Yes
0005	Port State	1 - 255	ASCII	No	No
0006	Zoning Enforcement Status	1 - 255	ASCII	No	Yes
0007	Physical Port Correlatable Identifier		ASCII	No	No
0008	Discriminator	1	Binary		
other values	Reserved				

<sup>a</sup> If a Interconnect Element Attribute Block contains multiple types for a type that does not allow multiples the command shall be rejected with a reason code of 'Unable to perform command request' and a Reason Code Explanation of 'Platform Attribute Block Contains Multiple Attributes of the Same Type'.

<sup>b</sup> Attached Port is required if Port State is

## Logical Port Object



## Physical Port Object Attribute Block Descriptor

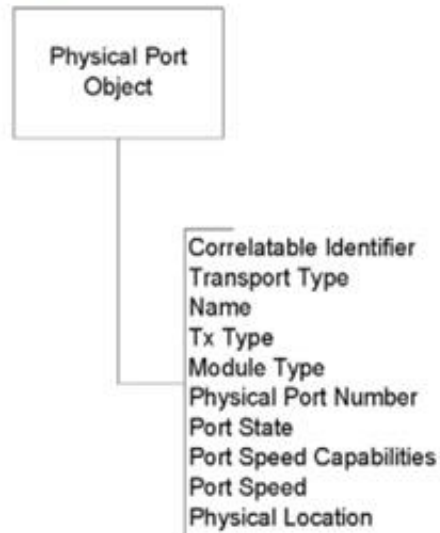
Item	Size (bytes)
Tag = TBD	4
Length=variable	4
Number of Physical Port Object Attribute Blocks	4
Physical Port Object Attribute Block #1	Variable
Physical Port Object Attribute Block #2	Variable
...	Variable
Physical Port Object Attribute Block #n	Variable

## Physical Port Object Attribute Block (12-028v3, table 117)

Type (hex)	Description	Value			
		Length (Bytes)	Type	Required	Multiples allowed <sup>a</sup>
0001	Correlatable Identifier	8	Binary	Yes	No
0002	Transport Type	1-255	ASCII	No	Yes
0003	Name	1-255	Binary	No	Yes
0004	Tx Type	8	ASCII	Yes	No
0005	Module Type	1 - 255	ASCII	No	No
0006	Physical Port Number	1 - 255	ASCII	No	Yes
0007	Port State		ASCII	No	No
0008	Port Speed Capabilities				
0009	Port Speed				
0010	Physical Location				
other values	Reserved				

<sup>a</sup> If an Interconnect Element Attribute Block contains multiple types for a type that does not allow multiples the command shall be rejected with a reason code of 'Unable to perform command request' and a Reason Code Explanation of 'Platform Attribute Block Contains Multiple Attributes of the Same Type'.

## Physical Port Object



Thank you

# Thank you