

# FIP Clear Virtual Link Reason Codes

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## Problem



- When a FIP Clear Virtual Link (CVL) is received by an ENode, there is no mechanism to directly determine why the CVL was transmitted.
- This causes a problem during trace analysis

## CVL (Timeout)



- Case 1 - A timeout due to missing VN\_Port FIP Keep Alive frames
  - $2.5 * FKA\_VN\_PERIOD = 225$  seconds by default
- Case 2 - A timeout due to missing ENode FIP Keep Alive frames
  - $2.5 * FKA\_ADV\_PERIOD = 20$  seconds by default
- In the case of the missing VN\_Port FIP Keep Alive frames
  - it is usually impossible to go backward in the trace 225 seconds when any kind of I/O is running since the buffer will wrap
  - As a result it is usually impossible to determine if this is the reason for the CVL
  - One could infer the reason for the CVL based on its contents, but this could potentially require additional knowledge about the environment that would also not be present in the trace

## CVL (VF\_Port offline)



- Case 1 - A configuration change is made by the Administrator
  - The user disables the VF\_Port
- Case 2 - The fabric is no longer operational
  - The FCF is in AG/NPV mode and all links to the core switch are removed.

## Proposed solution



- Create a new non-Critical FIP Descriptor that may be included in a FIP CVL







# New FIP Descriptor Reason Codes



**Table 49 (new) – Reason Codes**

Encoded Value (bits 23-16)	Description	Explanation
00h	Timeout	A FIP Keep Alive Timeout has been exceeded
01h	VF_Port State Change	The operational state of the VF_Port has changed

# New FIP Descriptor Reason Code Explanations



**Table 50 (new) – Reason Code Explanations**

Encoded Value (bits 15-8)	Description	Explanation
00h	ENode FIP Keep Alive Timeout	2.5 * FKA_ADV_PERIOD has passed since the last ENode FIP Keep Alive Frame was received by the FCF.
01h	VN_Port FIP Keep Alive Timeout	2.5 * FKA_VN_PERIOD has passed since the last VN_Port FIP Keep Alive Frame was received by the FCF.
02h	Configuration Change	A configuration change has been performed on the FCF that requires the Virtual Link to be deinstantiated.
03h	Fabric Offline	The Fibre Channel Functionality within the FCF has been disabled or is not longer accessible.

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