IBM Education Assistance for z/OS V2R1

Item: CIM Port Decommissioning
Element/Component: CIM

Agenda

- Presentation Objectives

- Overview

- Usage & Invocation

- Installation

- Presentation Summary

- Appendix

Presentation Objectives

- z/OS Storage Management: CIM_FCPort channel Port Decommission

  - Introducing DMTF Port Decommission Interface
    - As defined in DMTF CIM schema 2.31

  - Platform specific extension:
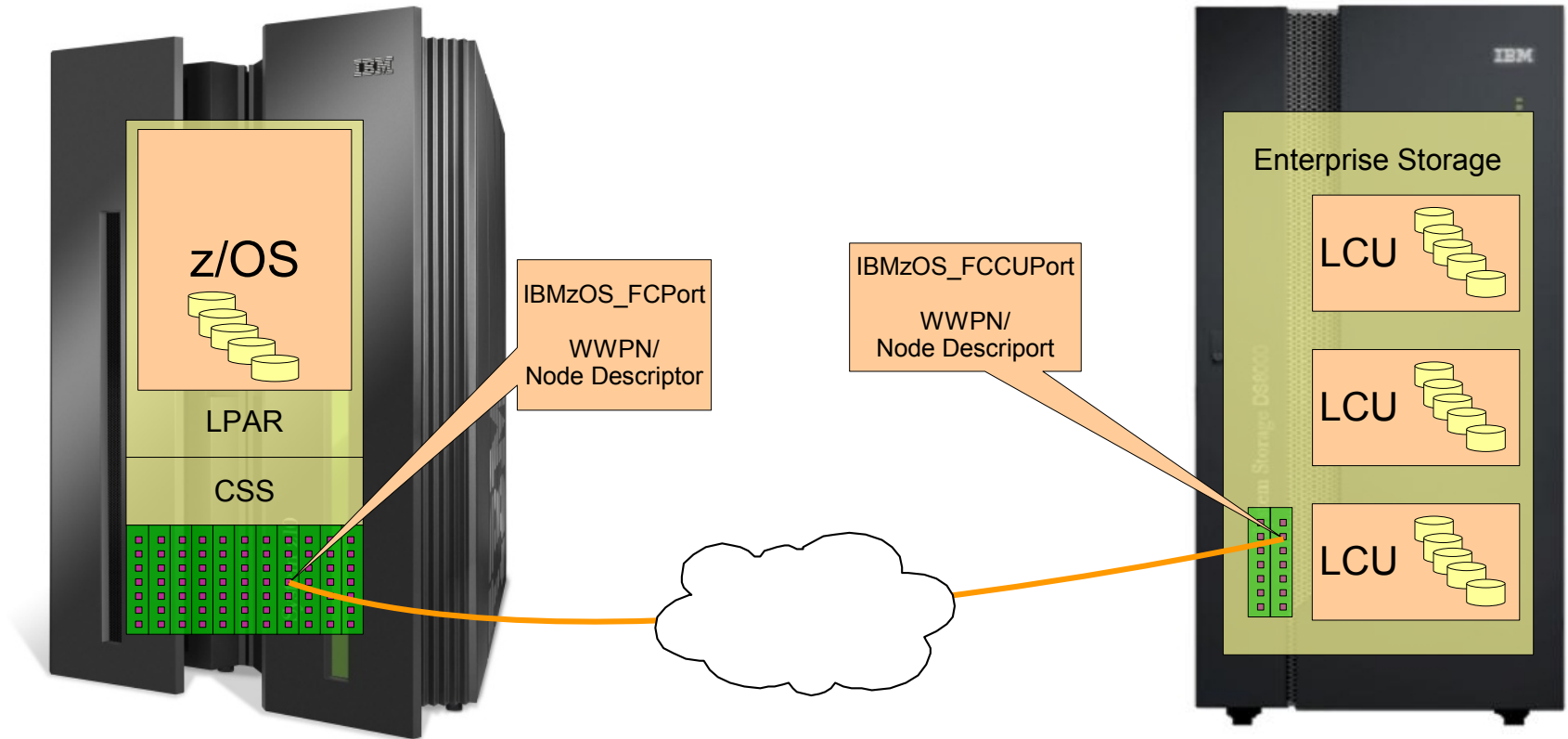   - Introducing IBMzOS_FCCUPort CIM class for control unit port representation of z/OS
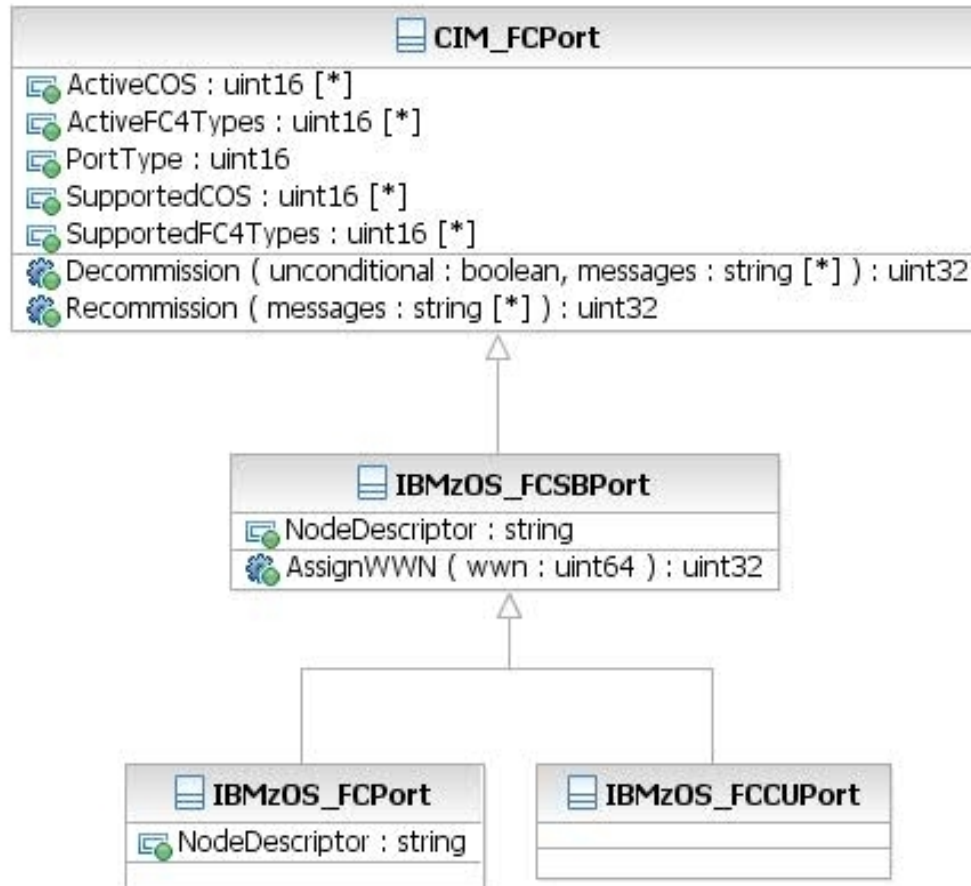
Overview

- Problem Statement / Need Addressed
  - If a device or control unit ports needs to be taken down related to a fabric action, it has to be assured that any users of those ports are first given the opportunity to cease using them.

- Solution
  - Support DMTF Port Decommission Interface to
    - Decommission a FICON or Control Unit port
    - Recommission a FICON or Control Unit port

- Benefit / Value
  - Reduce or eliminate outages caused by accidentally shutting down ports that are in use.

Overview

z/OS

LPAR

CSS

IBMzOS_FCPort

WWPN/
Node Descriptor

IBMzOS_FCCUPort

WWPN/
Node Descriport

Enterprise Storage

LCU

LCU

LCU

CIM Class Diagram for Port Decommissioning

CIM classes for Port Decommissioning

- New Control Unit Port representation IBMzOS_FCCUPort class
  - NodeDescriptor
    - e.g. "002107.900.IBM.75.000000074011.0103"
  - PermanentAddress
    - WWPN of contol unit port

- FICON port representation IBMzOS_FCPort class
  - New Property
    - NodeDescriptor
        e.g "002097.E40.IBM.51.000000070B82.F04F"
  - Existing Properties
    - StatusDescriptions[]
        When OperationalStatus Stopped (11) value of "DECOMMISSIONED"
    - DeviceID
        CHPID decimal representation
    - PermanentAddress
        WWPN of the channel

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Instance Method CIM_FCPort::Decommission

Decommission a switch port. All channels or devices attached to the port will be taken offline. The system will reject this command for a channel port if it would remove the last path to an online device. For a device port, the system will not take a device offline if it would remove the last path to an online device.

Synopsis:

```
uint32 Decommission(boolean Force, string Messages[])
```

Parameters:

boolean Force (in):
(Default: false)
Takes a port offline even if it is the last path to a device or affects the systems ability to communicate with a device over this path.

string EmbeddedInstance("CIM_Message") Messages[](out):
When the decommissioning request was denied or more detail information is available for a successful invocation, this parameter returns one or more IOS message(s).

Return values:

0 – Confirmed: The port was taken offline
1 – Denied other: The port cannot be taken offline for an unspecified reason.
2 – Denied In Use: The port cannot be taken offline because it is still in use.
3 – Denied last Path: The port cannot be taken offline because it is the last path to a device.

Authorizations:

Caller requires UPDATE access to SAF profile IOSPORTS CL(FACILITY)

Instance Method CIM_FCPort::Recommission

Recommission a switch port that was DECOMMISSIONed. All channels or devices attached to the port that were online before the DECOMMISSION will be brought back online.

Synopsis:

```
uint32 Recommission(string Messages[])
```

Parameters:

string EmbeddedInstance("CIM_Message") Messages[](out):

When the decommissioning request was denied or more detail information is available for a successful invocation, this parameter returns one or more IOS message(s).

Return values:

0 – OK:	The port was successfully brought online.
1 – Other:	The port cannot be taken online for an unspecified reason.
2 – Denied:	The port is not in state decommissioned and therefore cannot be recommissioned.

Authorizations:

Caller requires UPDATE access to SAF profile IOSPORTS CL(FACILITY)

Instance Method CIM_FCPort::AssignWWN

Binds a WWN for a port without an identified WWPN.

Attention: The binding is lost after IPL.

Synopsis:

```
uint32 AssignWWN( uint64 wwn )
```

Parameters:

uint64 wwn (in):   The world wide name to be assigned to the port in decimal number format.

Return values:

0	Completed without error.
1	The WWN could not be assigned because the logical device already has a fixed WWPN, discovered from the hardware.
2	The logical device already has the same WWPN bound to it.
3	Unexpected error

Authorizations:

Caller requires UPDATE access to SAF profile IOSPORTS CL(FACILITY)

Example

```
cimcli execQuery 'SELECT * from CIM_FCPort WHERE PermanentAddress="5005076401260ABA"'
```

```
path=
//BOESOC1/root/cimv2:IBMzOS_FCPort.CreationClassName="IBMzOS_FCPort",DeviceID="67",
SystemCreationClassName="IBMzOS_ComputerSystem",SystemName="TEST.ibm.com"

//Instance of IBMzOS_FCPort
instance of IBMzOS_FCPort
{
....
Name = "TEST:2:43";
PermanentAddress = "5005076401260ABA";
NodeDescriptor = "002097.E40.IBM.51.000000070B82.F043";

....
};
```

Example (cont.)

```
cimcli invokeMethod 'IBMzOS_FCPort.CreationClassName="IBMzOS_FCPort",
DeviceID="67",SystemCreationClassName="IBMzOS_ComputerSystem",SystemName="TEST.ibm.com"'
Decommission
```

```
IOS320I Switch port decommission request for CHPID 34 WWPN 5005076401260ABA
IOS322I Switch port decommission request for WWPN 5005076401260ABA for the following paths:
      CHPID 43 to device(s) 05000-0505F,050A0-050AF,05100-0513F
      05150-0516F,051A0-051AF,051D0-051EF
      05300-0530F,053A0-053AF,05400-05ADF
      05B00-05BDF,05C00-05CDF,05D00-05D5F
      05F00-05F7F,05FA0-05FFF
IOS324I Switch port DECOMMISSION request successful for WWPN 5005076401260ABA
```

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Installation

- To invoke the Decommission or Recommission method the caller requires UPDATE ACCESS on IOSPORTS FACILITY class profile

  - Missing authorization is indicated by message CEZ03031E.

```
PERMIT IOSPORTS CLASS(FACILITY) ID(CFZUSR) ACCESS(UPDATE)
```

```
CEZ03031E Request user ID CFZUSR requires UPDATE permission on profile
    IOSPORTS CL(FACILITY).
```

Presentation Summary

- z/OS representation of a control unit port by IBMzOS_FCCUPort class.

- z/OS CIM adds support for …

  - Decommission/Recommission on FICON channel ports
  - Decommission/Recommission on control unit channel ports

    ... to gracefully take path's offline.

- Use of this support requires
  - Additional security definitions

Appendix

- IBM z/OS Common Information Model Users Guide Book# SC34-2671

- CIM & WBEM Standards by the DMTF
  - http://www.dmtf.org/standards