• Dynamic Channel-path Management (DCM) was initially shipped in z/OS Release 1.
  - At that time, FICON Native channels were not supported, and DCM only supported ESCON® and FICON Bridge channels.
  - DCM in general (and FICON DCM for that matter) allows z/OS to manage channel paths (FICON and ESCON) dynamically.
  - It's a management tool that needs to be identified and controlled, that should be noted.

**NOTE:** Defining an I/O configuration to maximize availability and performance is very complex and cumbersome. What normally ends up happening is many clients tend to over-configure the I/O configuration to manage performance peaks.

• The solution provided allows z/OS V2R1 to dynamically manage FICON channel paths and control unit ports in response to workload changes.
  - FICON DCM support is extended to now allow cascaded or multi-switch connections for managed paths.
  - This enhancement simplifies I/O configuration definition task, improve overall I/O performance, permit a more efficient use of hardware resources, dynamically balances I/O resources based on workload demand and could bring an enhanced availability by dynamically adding new channel paths for certain error conditions.
  - The change eliminates requirement of only one switch between processor and control unit.
  - It utilizes switch port link addresses for cascaded connections and can have a mixture of managed cascaded channel paths and managed non-cascaded channel paths.

**General usage and invocation**

In order to enable DCM, the following steps should be done:

- Define managed control units in the IPOF by specifying at least one static channel (two are suggested for availability) and specifying one or more asterisks to indicate that managed channels can be assigned.
- Static channels must be defined as shared or spanned and switch attached. The control unit must be able to make changes in a cascaded configuration where the control unit is only attached to the exit switch. DCM at lower levels will mark the control unit as ineligible for use in another, in response to changes in the workload requirements.

**FICON Installation**

The following steps should be taken to install FICON DCM:

- Create a plan to explore DCM beginning with a "start small" project.
- To determine the number of manage channels and control unit interfaces a workload analysis should be performed.
- Ensure at least one system in the LPAR cluster is enabled to make dynamic configuration changes.
- Ensure CUP feature is installed on switches that will be connected to managed channels.
- Change the I/O configuration definition (IOCDF):
  - Define managed control units.
  - Define managed channel paths.
  - Define switch devices.
  - Activate the new I/O configuration.
- Ensure that switch devices are brought online to z/OS.

**DCM is a portion of ROD and represents a combination of hardware strengths and software flexibility.** Paths can be managed between the processor and the control units in the system. Dynamic Channel Path Management (DCM) enables the system to respond to changing channel requirements by moving channels from lesser used control units to more heavily used control units as needed.

**Additional suggestions to evaluate DCM after installation**

In order to evaluate the environment and any possible problem after the DCM implementation it is suggested the following:

- Enable DCM Component Tracing for IOS (update IEIEXECxx and CTIEXECxx).
- Utilize RMF report (channel, device, IQD, and ESS) with interval not greater than 15 minutes.

**Interactions and dependencies**

**NOTE:** There is no software dependency consideration.

From hardware perspective, the following points should be considered:

- Processor: All currently supported processors.
- Channels: All currently supported FICON channels.
- Coupling Facility: Required if running Multi-system.
- Static channels must be defined as shared or spanned and switch attached. The control unit must be able to make changes in a cascaded configuration where the control unit is only attached to the exit switch. DCM at lower levels will mark the control unit as ineligible for use in another, in response to changes in the workload requirements.