5.4.10 Data Center Bridging Facts

Data Center Bridging (DCB) is designed to bridge disparate network fabrics together in the data center. Traditionally, isolated network fabrics are deployed for separate purposes. For example:

- A production network fabric for day-to-day traffic between servers, routers, and workstations. Usually, this is done using standard Ethernet hardware.
- A SAN fabric dedicated to storage traffic between servers and shared storage devices. This can be accomplished using dedicated Fibre Channel or Ethernet hardware.

This scenario works, but it doubles your organization's network infrastructure and its associated management overhead because two separate network fabrics must be implemented and maintained.

DCB is designed to eliminate the need for separate network fabrics. DCB allows you to converge fabrics onto a single network infrastructure. DCB does this by:

- Providing interoperability between DCB-capable network adapters and DCB-capable switches.
- Providing a lossless Ethernet transport between a Windows server and the switch it is connected to by enabling priority-based flow control on the network adapter.
- Allowing you to assign the network traffic associated with an application to a particular class or priority.
- Allowing you to allocate bandwidth on the network to a specific class of traffic. This can be configured to ensure there is adequate bandwidth reserved for your SAN traffic on a standard production Ethernet LAN.

DCB can only be implemented if it is supported by your network hardware. Low-end network hardware usually doesn't support DCB. DCB requires:

- DCB-compatible Ethernet network adapter(s) to be installed in servers.
- DCB-compatible hardware switches be deployed on the network.
- DCB be configured on both the network switches and the NICs in servers. On Windows servers, this is done by installing the DCB feature using Server Manager. The process for configuring DCB on switches will vary by manufacturer. Consult your switch documentation.