ThinkSystem DW612S Neptune DWS enclosure overview

Product description and front, rear, and inside views
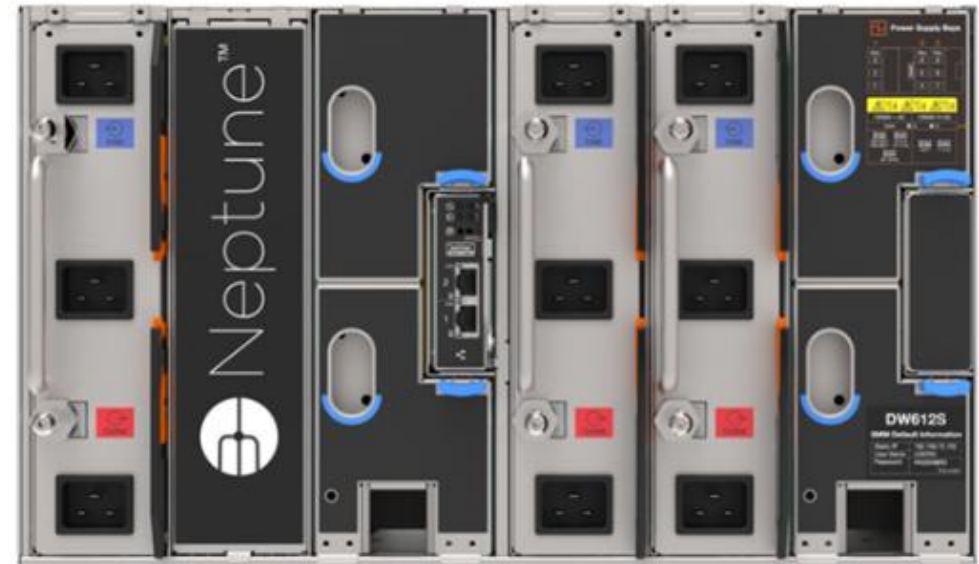
DW612S enclosure product overview

The DW612S enclosure is a new version of the DW612 enclosure. It uses the same chassis skeleton but has a new power supply unit at the rear of the chassis. The DW612S enclosure has configurations with six or nine air-cooled PSUs and also configurations with two or three direct water cooling (DWC) PSUs.
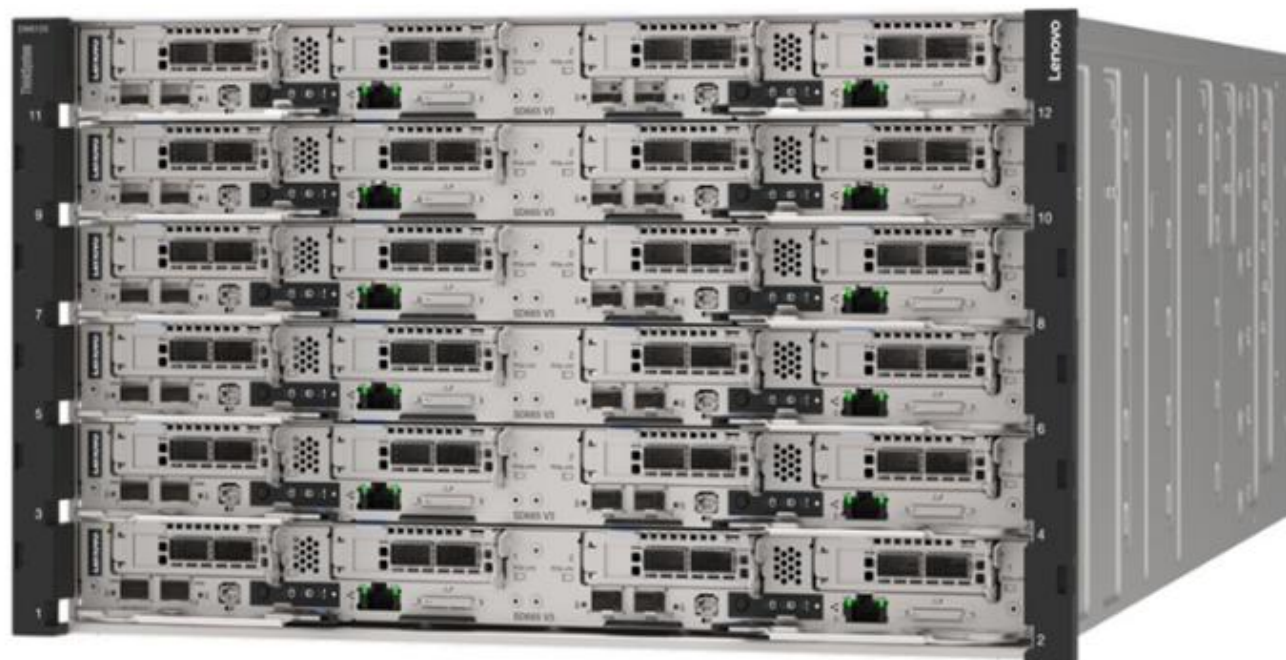

Air-cooled PSUs

DWC PSUs

DW612S front view

The ThinkSystem DW612S enclosure supports up to 12 SD665 V3 nodes on six full wide trays.
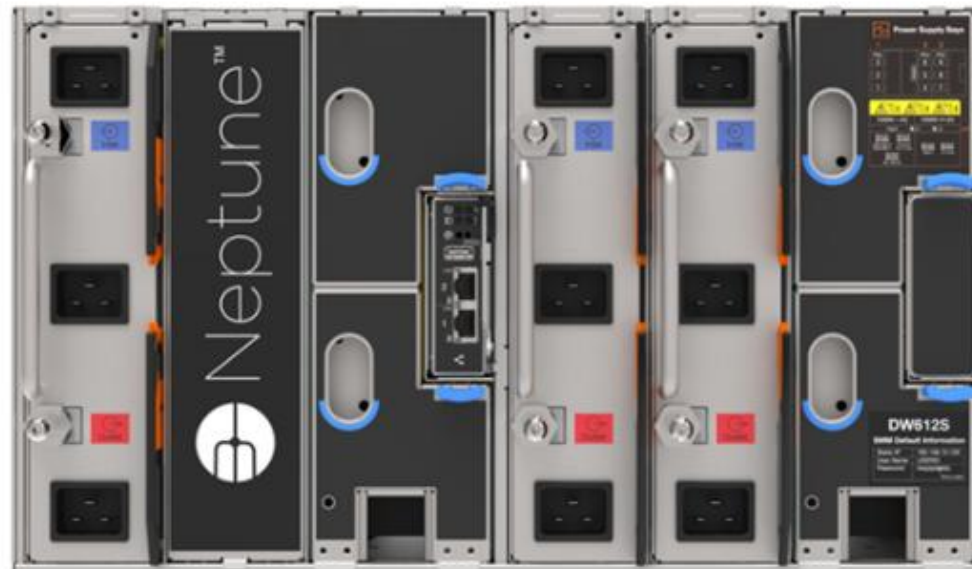

12 two-socket nodes (two per tray)
in a 6U enclosure

Lenovo

PSU configuration

The DW612S enclosure has both air-cooled PSU configurations and DWC PSU configurations. Air-cooled PSUs and DWC PSUs cannot be used together in the same enclosure.
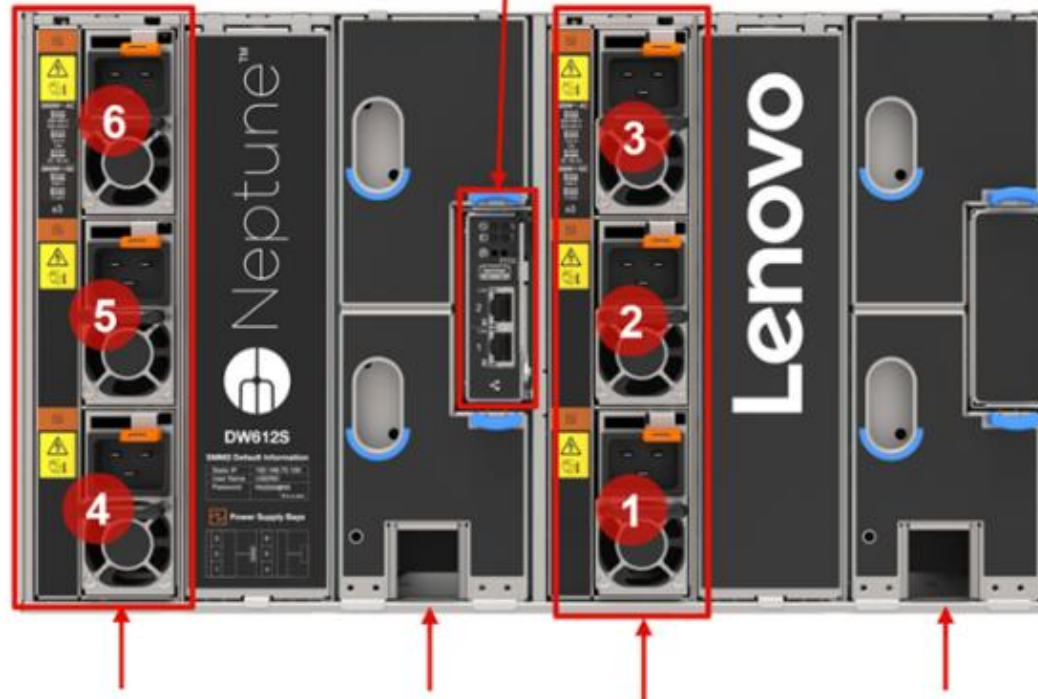

Air-cooled PSUs

DWC PSUs

Click the buttons to see more information about the DW612S PSU configurations.
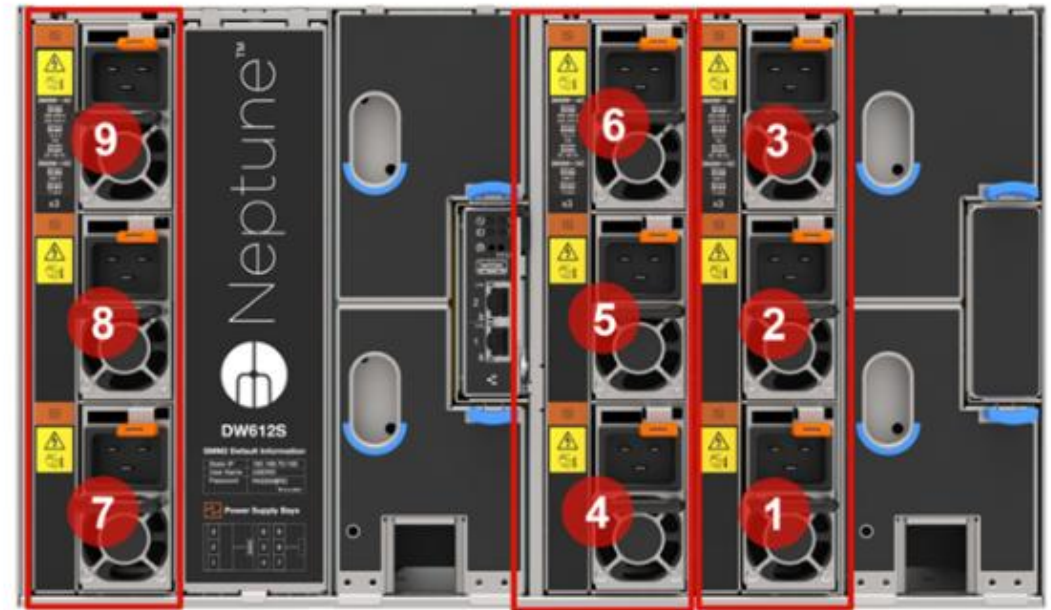
Air-cooled PSU configurations

Six air-cooled PSUs

System Management Module 2 (SMM2)

Three PSUs   Water outlet from the enclosure   Three PSUs   Water inlet to the enclosure
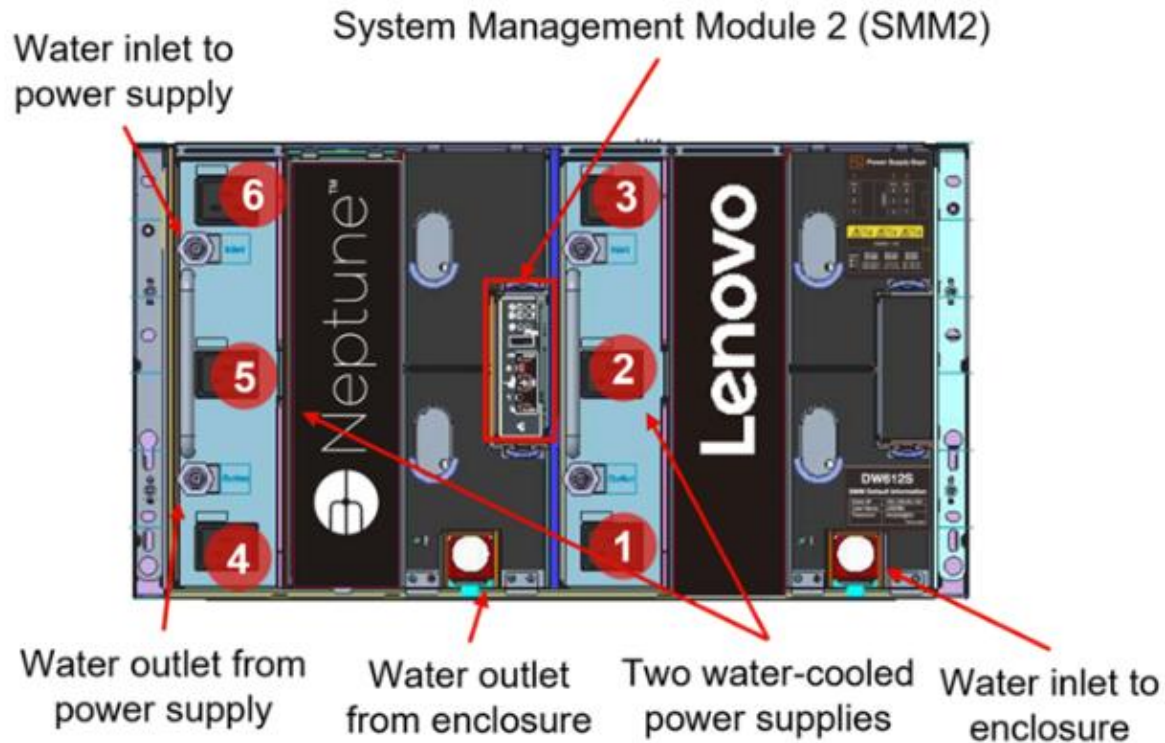
Nine air-cooled PSUs

Note: The configuration with six air-cooled PSUs can be upgraded to nine air-cooled PSUs. For more information, refer to tip HT512577 on Lenovo Support or to the next section in this course.
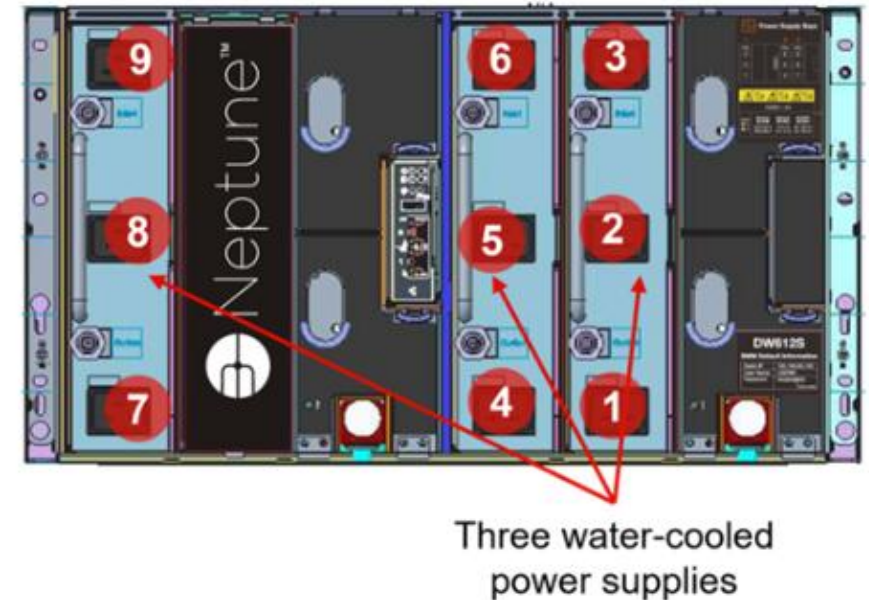
DWC PSU configurations – PSU numbering

Six DWC PSUs

Nine DWC PSUs

Water inlet to power supply

System Management Module 2 (SMM2)

Water outlet from power supply

Water outlet from enclosure

Two water-cooled power supplies
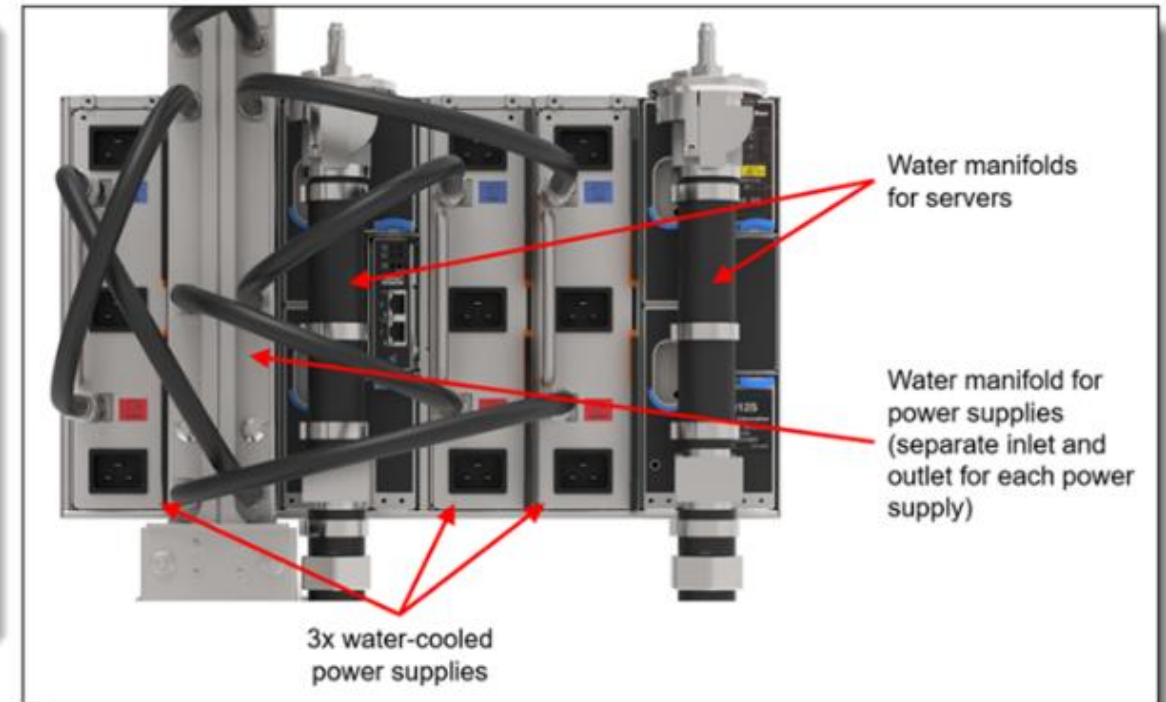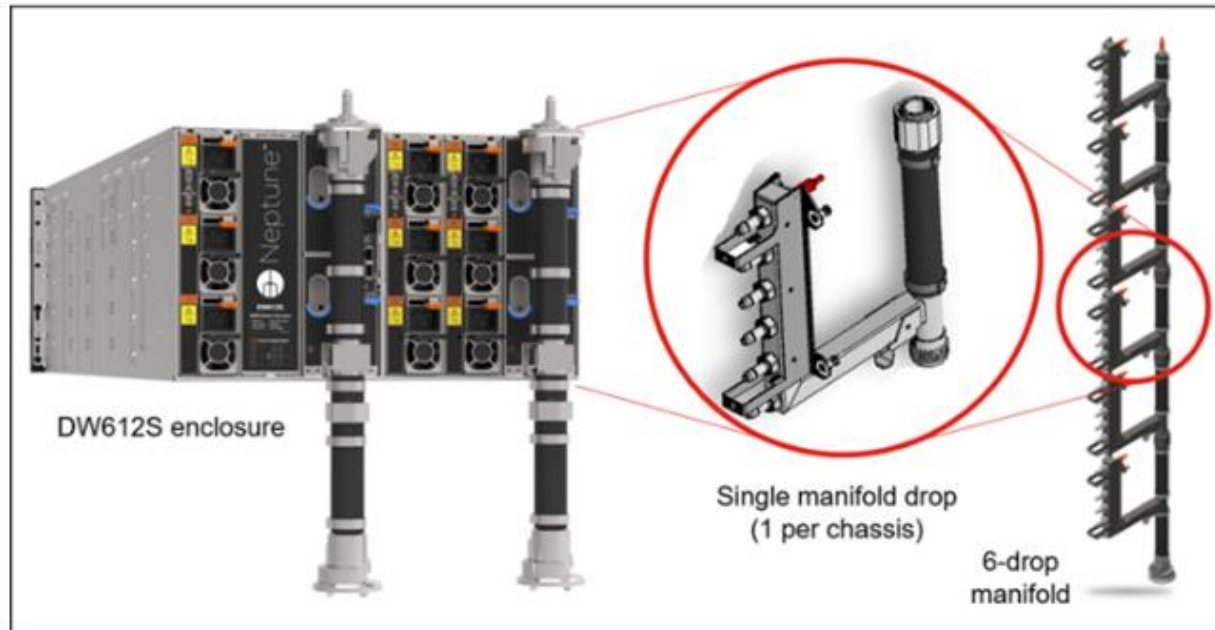
Water inlet to enclosure

Three water-cooled power supplies

DWC PSU modules contain three DWC PSUs and cannot be separated. If one DWC PSU in a DWC PSU module fails, the whole module needs to be replaced.

DW612S water cooling design

The DW612S water cooling design is the same as that used in the DW612 DWC enclosure. For more information, refer to the ThinkSystem SD650 WCT section in course ES71709B - Servicing the Lenovo ThinkSystem SD650 Server.

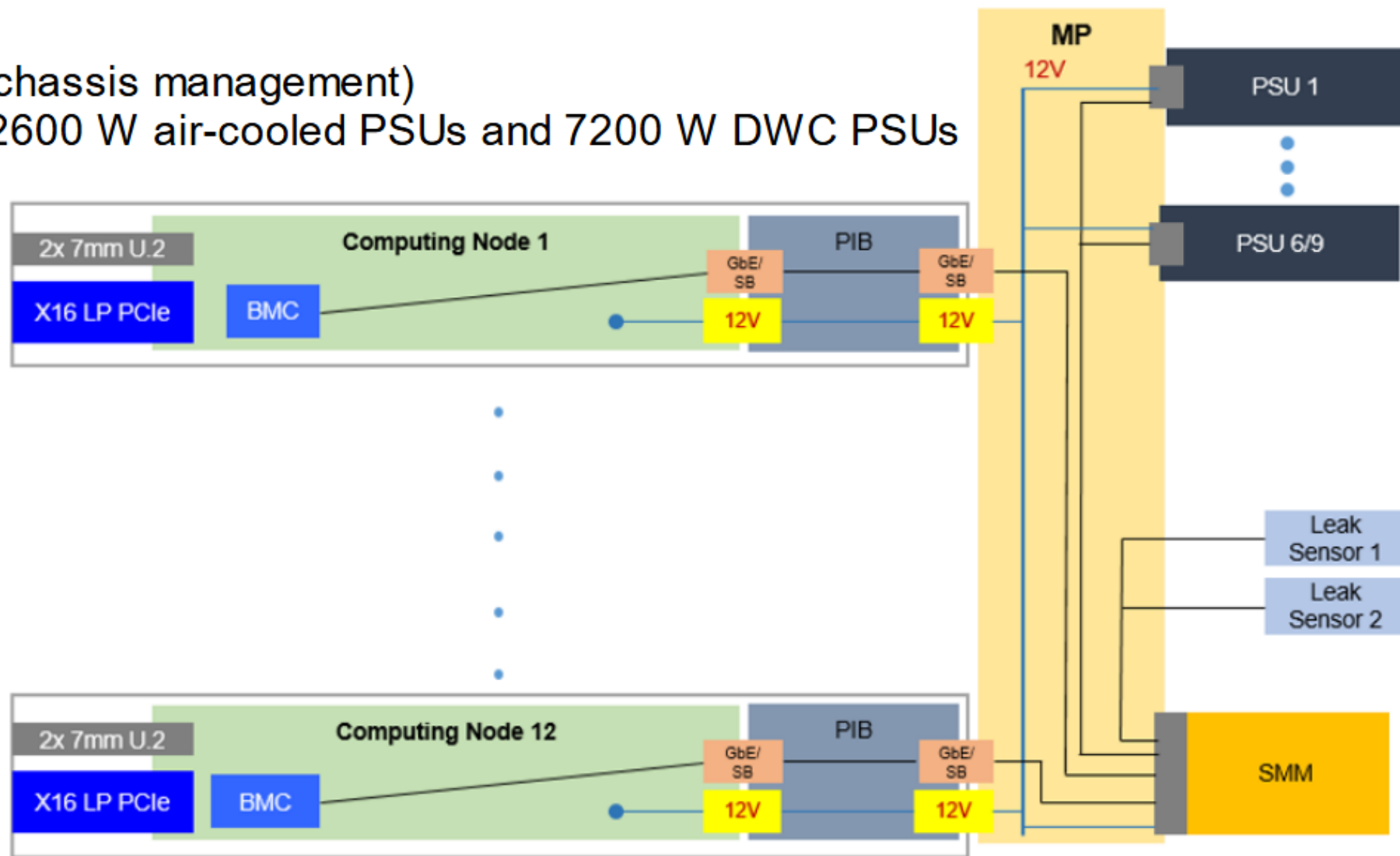DW612S enclosure

Single manifold drop (1 per chassis)

6-drop manifold

Water manifolds for servers

Water manifold for power supplies (separate inlet and outlet for each power supply)

3x water-cooled power supplies

DW612S enclosure features

Items	Descriptions
Form Factor	• 6U rack-mounted chassis
Node	• Up to six SD665 V3 full wide trays with 12 compute nodes – two compute nodes per tray
Server support	• ThinkSystem SD650 V2, SD650 V3, SD650-N V3, SD665 V3
Midplane	• Provides a connection between the 12 servers in the front to the power supplies • Provides signals to control power consumption and node throttling as needed
System Management Module (SMM2)	• Integrated systems management functions and control of enclosure power • Hot-swappable • Browser and CLI-based user interfaces for remote access
Ports (on SMM2)	• Two RJ45 ports at the rear of the chassis for 10/100/1000 Ethernet connectivity to SMM2 for power and chassis management • One USB 2.0 port for FFDC log downloads
Power Supply	• Six or nine air-cooled PSUs, 2400 W or 2600 W Platinum (CFFv4) • Three 7200 W water-cooled PSUs • Supports N+1 redundancy with OVS or non-redundant configurations

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Note: For more information about system specifications, refer to Lenovo Press.

DW612S enclosure system block diagram

- 12 V centric design
- Shared PSU CFFv4
- Daisy-chained SMM2 (chassis management)
- Supports 2400 W and 2600 W air-cooled PSUs and 7200 W DWC PSUs

DWC PSU manifold

The DWC PSU manifold is a 42U manifold designed for ThinkSystem SD Series DWC trays with DWC PSUs.
A DWC PSU manifold includes 18 water inlet quick connects (labeled blue) and 18 water outlet quick connects (labeled red).

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