

**Hardware Release Notes**  
**for the**  
**ISR 9288 and ISR 9096**  
**DDR Modules**

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# 1. System Requirements

## 1.1 DDR Modules

In order to operate the Voltaire ISR 9XXX in DDR environment, the following components are required:

- DDR fabric and line modules:
  - sLB-24D and sFB-12D for the ISR 9288
  - sLB-24D and sFB-4D for the ISR 9096
  - sRBD-D (Router Blade Drawer for DDR) for hosting IPR and FCR modules

### NOTES



DDR fabric boards (sFB-12D or sFB-4D) can only operate with DDR line boards (sLB-24D) and DDR router blade drawers (sRBD-D).

SDR fabric boards (sFB-12 or sFB-4) can only operate with SDR line boards (sLB-24 or sLB-8-12) and SDR router blade drawers (sRBD).

DDR boards cannot be mixed and matched with SDR boards.



DDR chassis can host SDR cards as well.

## 1.2 Support for Existing Systems in the Field

Existing ISR 9XXX chassis in the field, which are not DDR ready, are not suitable to run in DDR mode.

DDR ready ISR 9XXX chassis are identified by the following characteristics:

- ISR 9XXX chassis, revision EAA-BAA or higher
- A "DDR Ready" label applied at the front left hand side of the ISR 9XXX chassis, as shown in the picture below.



### 1.3 High-Memory Management Board (sMB-HM)

When used in a federated configuration, the Voltaire ISR 9288 switch running software revision 3.4.3, requires a sMB-HM (high memory) module. Standalone ISR 9288 configurations will operate fine with the regular sMB module.

New ISR 9288 chassis platforms are equipped with sMB-HM modules and are only shipped with sMB-HMs (by default).

If an existing chassis in the field is populated with standard sMB module(s) and if this system is in a federated configuration greater than 288 ports, the sMB module(s) should be replaced with sMB-HM module(s).

For the ISR 9096, the sMB module remains the default and will support all software revision 3.4.3 functionality. However, for complex federated configurations managing fabric that spans over multiple ISR 9096 and ISR 9024 chassis, or where over 288 InfiniBand ports are being managed, it is recommended to use a sMB-HM module for the ISR 9096 as well. Please contact your Voltaire account representative if you are not sure which sMB is required for your configuration.

## 2. Known Issues for the ISR 9XXX Hardware

Module	Summary	Description
DDR Modules	DDR connectivity limitations	A few ports may suffer internal connectivity limitations or may be assigned to operate in SDR mode.
sFB	Card Insertion	When inserting a sFB (Spine Board) unit, verify that it is locked tight into the chassis including tightening of screws. After a unit insertion, perform visual inspection on all physical link LEDs (green light) to verify the existence of stable link state (LED is not blinking)
sLB	Card Insertion	sLB (Line Board) units should be installed starting from the top slot down.

## 3. ISR 9XXX System Functionality and Limitations

#	Module	Summary
1	sMB	sMB hot-swap LED is currently not functioning
2	System	While the system is working, and when swapping and/or inserting new units, it is recommended to wait 15 seconds between each unit swapping/inserting, in order for the system to perform refresh according to recent changes. This comment is relevant to modules defined above as hot swappable.

## 4. Copper Cables Recommendations when Working with DDR

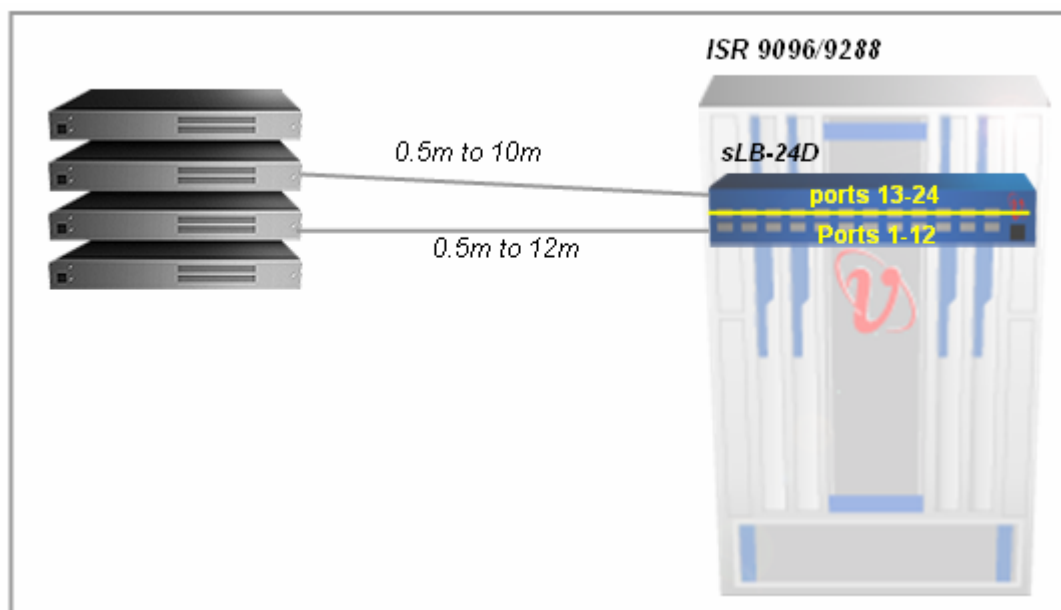
DDR signaling between HCAs and switches, as well as in-between switches connectivity, require some attention when planning for cables installation. Moreover, cables recommendations are slightly different when referring to the lower 12 ports of the sLB-24D or ISR 9024D (ports 1 to 12) and the upper 12 ports of the sLB-24D or ISR 9024D (ports 13 to 24), as detailed below.

**NOTE**


The following recommendations mostly apply to sLB-24D modules with revision BAA-AAA.

- Connecting between HCA 4X0 and ISR 9XXX, running DDR signals, the recommended specifications for the 4X IB cables are presented in the table below. All specifications are for the minimum AWG, larger AWG may be substituted.

Length	HCA-Switch (ISR 9024D / sLB-24D)
1m	30AWG
2m	30AWG
3m	30AWG
4m	30AWG
5m	28AWG
6m	26AWG
7m	26AWG
8m	24AWG
9m	24AWG
10m	24AWG
12m	24AWG (switch ports 1-12 only)

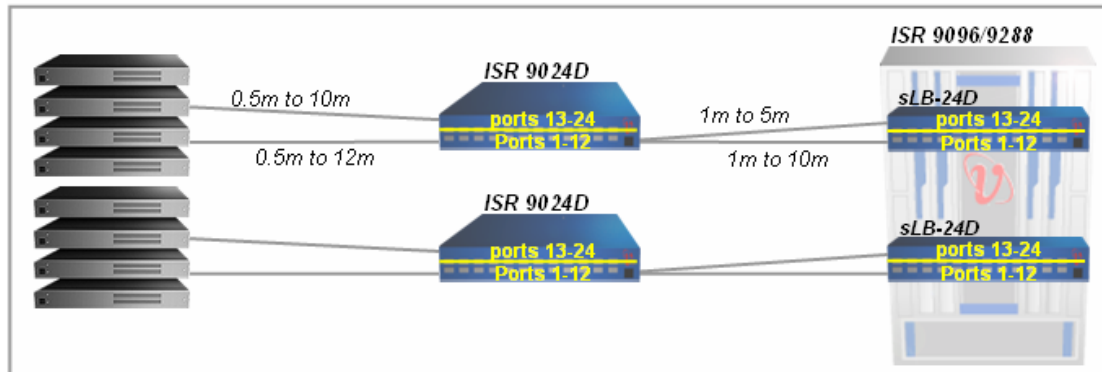


- Connecting in-between switches (specifically ISR 9XXX acting core switch and ISR 9024D acting edge switch) the recommended specifications for the 4X IB cables are presented in the table below. All specifications are for the minimum AWG, larger AWG may be substituted.

Length	ISR 9024D (1-12*) to sLB-24D (1-12)	ISR 9024D (1-12) to sLB-24D (13-24**)	ISR 9024D (13-24) to sLB-24D (1-12)
1m	30AWG	24AWG	30AWG
2m	30AWG	24AWG	30AWG
3m	30AWG	24AWG	28AWG
4m	30AWG	24AWG	28AWG
5m	28AWG	24AWG	24AWG
6m	28AWG	NA	24AWG
7m	26AWG	NA	24AWG
8m	26AWG	NA	24AWG
9m	24AWG	NA	NA
10m	24AWG	NA	NA
12m	24AWG (in-between ISR 9024D)	NA	NA

\* Referring to lower switch ports No. 1-12.

\*\* Referring to upper switch ports No. 13-24.



#### NOTE



It is not recommended to interconnect between upper 12 ports of one module to upper 12 ports of another.