

## Avago SAS 9300 series of 12Gb/s SAS HBAs

### Frequently Asked Questions



#### What is included when I buy an Avago SAS 9300 HBA?

Each member of the SAS 9300 HBA product family; the 9300-4i, 9300-8i, 9300-4i4e, 9300-8e, 9300-16e, and 9300-16i purchased from an authorized distributor is packaged with a Quick Installation Guide, a resource CD with documentation and software drivers and alternate low profile mounting bracket. The basic package is called a "Single" package as it includes just one HBA. See below for information on cables.

#### What is the difference between a "Single" and "Kit" package?

In addition to the "Single" package, some models are available in "Kits" which include compatible cables for connection to the internal ports of SAS 9300 HBAs. "Kits" only exist for the 9300-4i, 9300-8i and 9300-4i4e HBAs. There is no "Kit" for the 9300-8e, 9300-16e, and 9300-16i because of the large variation in required cable lengths for external applications. The cable packaged in the kit is a "breakout" cable, connecting the SFF8643 HBA connector to 4 individual SFF8482 (SAS disk drive) connectors, each including its own power pigtail and connector.

#### Are the SAS 9300 HBAs similar to any existing Avago HBAs?

The Avago SAS 9300 series of HBAs offer the same port configurations as prior HBAs, but with enhanced 12Gb/s SAS storage connectivity. Cabling and drivers differ from the prior product lines however.

6Gb/s SAS, PCIe 2.0	6Gb/s SAS, PCIe 3.0	New 12Gb/s SAS, PCIe 3.0
9211-4i	--	9300-4i
9211-8i	9207-8i	9300-8i
9212-4i4e	9207-4i4e	9300-4i4e
9200-8e	9207-8e	9300-8e
9201-16e	9206-16e	9300-16e
9201-16i	--	9300-16i

#### Why did the cables change on the SAS 9300 HBAs from those used on prior models?

Compliance with the SAS Standard requires new connectors. The new connectors for internal connection are formally designated SFF8643 (replacing SFF8087) and for external connection SFF8644 (replacing SFF8088). The standard called out the new connectors in order to reliably support the higher signaling frequencies in 12Gb/s SAS interfaces. More information on the SAS 3.0 standard and cabling specifics can be found at <http://www.scsita.org/library/12gbs-sas>

#### Where can I find cables to support new SAS 9300 HBAs?

A wide range of internal and external cables compliant with the SAS and connector standards are available from Avago SAS 9300 distributors and the online store at [store.lsi.com](http://store.lsi.com). A number of cables allow for connecting the SAS 9300 to existing 6Gb/s SAS enclosures and backplanes, to allow current systems to benefit from the increased processing speeds of the new SAS 9300 HBA.

#### I've heard references to other 12Gb/s SAS HBAs from Avago. How do they compare to the SAS 9300 HBAs available in the channel?

Avago sells other HBA models directly to specific OEM customers with OEM specific features that may not operate universally and are not therefore generally available through Avago distributors. All the SAS 9300 series HBAs are shipped from the Avago factory with "IT" firmware and operate with the hardware listed on the SAS 9300 compatibility list on the under Host Bus Adapters at <http://www.lsi.com/support/Pages/interoperability.aspx>

## What is the difference between “IT” and “IR” HBA firmware?

“IT” firmware maximizes the connectivity and performance aspects of the HBA. “IR” firmware offers limited RAID functionality via RAID 0, 1, and 10 capabilities. Legacy PCIe Gen 2 HBAs with internal connectors still ship with “IR” firmware. The latest versions of both firmware types are maintained on the channel website at: <http://www.lsi.com/support/Pages/Download-Search.aspx>. Full featured 12Gb/s RAID capability is also available in the Avago MegaRAID product line.

## Are the 9300-16e, 9300-8e and 9300-4i4e HBAs compatible with the Avago SAS 6160 Switch?

The 9300-16e, 9300-8e and 9300-4i4e are both compatible with the Avago SAS 6160 SAS Switch. Connection to the SAS Switch requires one of the external hybrid cables with the SFF8644 connector attaching to the HBA and the SFF8088 connector attaching to the SAS Switch. The cables are available in 1 meter (LSI00336), 2 meter (LSI00237) and 6 meter (LSI00238) lengths. The same cables will connect with legacy 6Gb/s JBODs that appear on the SAS 9300 compatibility list under Host Bus Adapters at <http://www.lsi.com/support/Pages/interoperability.aspx>

## Can I review documents before purchasing an HBA?

Yes. All the documents included with any of the SAS 9300 series HBAs are available on the channel website at <http://www.lsi.com/products/host-bus-adapters/pages/default.aspx>. Just click on the specific HBA you are interested in and then on the “Documentation” tab to see the complete list of available documents. Other information is available on the “At A Glance”, “Specifications”, “Software” and “Optional Products” tabs.

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