QLOGIC®

SANbox® 9000 Series

Stackable Chassis Switch

Frequently Asked Questions (FAQs) by Pre-Sales Partners & End-User Prospects

1. **Question:** Is the SANbox 9000 a Director Switch?

   Answer: The SANbox 9000 (SB9000) series is classified as a Core Switch for the Open Systems Fibre Channel (FC) Storage Area Network (SAN), with IP WAN interconnect for medium- to large-enterprise data center environments. The SB9200 BASE model with Fault Tolerant (FT) and HyperStack™ features is Director class, as it provides equivalent or better capabilities for Open Systems environments than a legacy Director switch, albeit without mainframe support. The SANbox 9000 Stackable Chassis switch is Designed-to-the-Core™ for Open Systems, and thus does not (and will not) support legacy mainframe FICON technology.

2. **Question:** Why does the product name include the word "Series"?

   Answer: The SANbox 9000 is a series (or portfolio) of several distinct product "models" targeted at different end-user needs, as well as certain competitive offerings. At initial General Availability (GA), QLogic will roll out the SB9100 ENTRY model and the SB9200 BASE model. We anticipate adding other models in the future.

3. **Question:** What are the key differences between an SB9100 ENTRY model and an SB9200 BASE model?

   Answer: The SANbox 9100 (SB9100) ENTRY model provides a standard configuration of a single CPU Blade and a single 16-port 4Gb FC I/O Blade. The SANbox 9200 (SB9200) BASE model has a standard configuration of dual CPU Blades and two 16-port 4Gb FC I/O Blades. Obviously, the price of the SB9100 ENTRY model is significantly lower than the SB9200 BASE model.

4. **Question:** When would an end-user customer want to select a BASE model over an ENTRY model?

   Answer: The key selection criteria would be performance throughput requirements. The SB9200 BASE model has twice the bandwidth of the SB9100 ENTRY model , and should always be chosen for the following industry areas: High Performance Computing (HPC), Video Broadcast, Satellite Telemetry, etc., that dictate high-throughput data streaming capabilities.

   The SB9100 Entry model may be more than adequate from a performance perspective if the user's applications are simply the typical Opens Systems IT business applications like e-mail, database, etc., since the actual data rates imposed on the 4Gb FC ports are typically less than 20 percent of their potential. And if the user is still predominantly running a 2Gb FC network, then the ENTRY model is a safe choice.

   Since the optional Fault Tolerant (FT) CPU Failover feature is supported for the BASE model (running firmware version 6.6 or later), end-user application availability requirements would become the next key selection criteria.

5. **Question:** Does the SB9200 BASE model with two CPUs provide higher availability than the SB9100 ENTRY model with one CPU?

   Answer: Both models have high availability because of the dual-redundant, hot-swappable Fan Blades and Power Supply Blades. A dual CPU 9200 BASE model without the FT CPU Failover feature will have significantly higher availability than the single CPU 9100 ENTRY model. The higher availability is from the new firmware (version 6.6 or later). When a CPU fails, the new firmware can immediately re-boot the switch on the cold standby CPU; however, the single CPU 9100 ENTRY model is unavailable until a replacement CPU Customer Replaceable Unit (CRU) is obtained and installed. With the optional FT license key feature installed, the dual CPU 9200 BASE model has no single point-of-failure vulnerability, and therefore has ultra-high availability (99.999 percent) via the automatic transparent CPU failover capability.

6. **Question:** Is the CPU Blade(s) hot pluggable/swappable, avoiding an interruption/outage to switch operation?
Answer: The answer is "no" for the SB9100 ENTRY model, as it contains a single CPU Blade 0, and thus cannot support CPU hot swap features. The answer is "yes" for a dual CPU 9200 BASE model running firmware version 6.6 or later (with or without the FT CPU Failover feature), as the secondary CPU that is not currently running the supervisor can be hot swapped while the primary CPU is running.

7. **Question:** Can a user field upgrade from an SB9100 ENTRY model to an SB9200 BASE model?
Answer: Yes – this is accomplished by ordering and installing (in place of the "blanks") a second CPU Blade and a second 4Gb I/O Blade (if the latter is not already present). No software changes are required and it is a non-disruptive process for an operating switch.

8. **Question:** Can a channel partner/reseller create an SB9100 ENTRY model in the field by simply removing a CPU Blade and a 4Gb 16-port FC I/O Blade from a SB9200 BASE model?
Answer: No. A third step is required, in which the CPU Blade must be replaced with a special CPU Blade "Blank" (QLogic SKU # SB9100-CPBL) and the I/O Blade must also be replaced with an I/O Slot "Blank" (QLogic SKU # SB9000-SLBL); otherwise, the unit airflow/cooling will not operate properly.

9. **Question:** Why doesn't the SANbox 9000 ship with 4Gb FC SFPs included?
Answer: FC 4Gb SFPs are considered an industry "commodity" and are thus very price sensitive on the market. Most channel partners, OEMs and often even end-user customers like to provide those in lieu of the switch vendor. Additionally, it helps to hold down inventory and associated costs by the elimination of the warehouse stocking of two separate units . . . one with SFPs and an identical one without SFPs.

10. **Question:** Can existing, installed SANbox 9000 chassis switches be HyperStacked now or in the future?
Answer: The initial GA product was "hardware ready" for a dual chassis module HyperStack. However, the optional license keyed software feature has just become available, shipping with firmware version 6.6 for the dual CPU SB9200 BASE model (with Enterprise Fabric Suite™ (EFS) 2007 software version 6.07 being a co-requisite). The license key software can be installed via NDCLA in the field. The software upgrade is chargeable on an individual chassis module basis – it requires a software License Key for each of the chassis modules in the dual HyperStack. Included with each of the two License Key features are two of the four required HyperStack Inter-Chassis Connection (ICC) cables.

11. **Question:** Is the HyperStack architecture the same method used with the current SANbox 5000 Series switches, e.g., stacked with 10Gb ISL XPAK ports?
Answer: No. The HyperStack architecture has separate/custom backplane-to-backplane ports on the CPU Blades that interconnect the two chassis modules via the unique HyperStack cables (set of four).

12. **Question:** Are the four HyperStack cables between the two SB9200 chassis modules redundant, fault tolerant, and hot swappable?
Answer: Yes: up to three of the four HyperStack ICC cables can fail without interruption to data traffic flow between the two chassis switch modules. A failed HyperStack ICC cable can be replaced via hot swapping, and is therefore non-disruptive to production operation. The replaced HyperStack ICC cable will automatically come online and begin participating in the data traffic flow.

13. **Question:** Can a user intermix I/O Blade types across the eight slots in the chassis module, and if so, does the user need to plan on which blades to install in certain slots?
Answer: Yes, the user has complete I/O Blade intermix flexibility across the eight slots regardless of blade types and quantities of each type. And no, there is absolutely no need to pay attention to which blade types are installed in which particular slots, as each and every slot has an identical number of data paths from each of the two CPU Blades. However, absolute maximum performance can be assured if both the server initiator and device target ports are used on the same I/O Blade (referred to as Local Switching).

14. **Question:** What is the purpose of the "fixed" blade in the center of the eight I/O Blade slots?
Answer: That blade is considered a Maintenance Panel (MP) and simply replicates the RJ-45 Ethernet ports on the rear of the chassis module on each CPU Blade. The MP does contain dual-redundant EEPROMs, one for each CPU Blade, which store the chassis module serial number along with other manufacturing information.

15. **Question:** When racking the SANbox 9000, does space have to be left open either above or below the 4U chassis module?
Answer: The SANbox 9000 does not need any empty rack space either above or below the 4U chassis module because of airflow or heat requirements, unlike certain competitive Director switches. A dual SB9200 model HyperStack can have 1U between the two units (e.g., space for a possible cable "comb" device).

16. **Question:** Can the SANbox 9000 Series chassis modules be "reverse racked"?
Answer: Yes, the rail kits that include adjustable mounting bracket "ears" are adjustable for reverse racking. However, SB9000 unit airflow direction should be considered. The initial SB9*x*00-*xx*B models are Back-to-Front airflow (front being I/O blade slots); the SB9*x*00-*xx*A models are Front-to-Back airflow. See the *SANbox 9000 Installation Guide* for more information.

17. **Question:** What are the racking considerations for a dual chassis module HyperStack configuration?
Answer: The two stacked SANbox 9000 chassis modules will need to be immediately adjacent to each other in the rack, or at maximum, 1U apart (for a possible optical cable "comb"). This is because the future HyperStack cables will be limited to 25 inches (635 mm) in length. The minimum horizontal clearance from the back of the chassis module frame to the inside of the rack door for the HyperStack cables is 8 inches. See the *SANbox 9000 HyperStack Cable Installation Guide* for more pre-planning information.

18. **Question:** In a dual SB9200 chassis module HyperStack configuration, why are two (vs. one) domains required?
Answer: The two Domain solution was accepted to ensure fabric stability. However, just as with the SANbox 5000 Series, stacked SANbox 9000 switch modules are viewed/displayed by the software GUI as a single switch entity. And the SANbox 9000 Series supports up to 239 domain IDs in the fabric.
To have one Domain, the switch pair needs to present a single WWN to the rest of the fabric. This means that the two switches need one of the WWNs to be designated as the one (this is easy enough). If the switch with the promoted WWN is downed or removed in that scenario, the remaining switch is using the borrowed WWN. If the other switch is then moved and re-attached to the fabric, the fabric now sees two switches with the same WWN, and chaos would ensue.

19. **Question:** Will there be a future capability to stack more than two SANbox 9200 chassis modules?
Answer: The SANbox 9000 architecture is capable of supporting a greater than 2x HyperStack. QLogic chooses not to publicly disclose its future product plans, but will consider doing so under a formal non-disclosure agreement.

20. **Question:** What is the difference between a CRU and a FRU?
Answer: An FRU is considered to be a hardware component that is a Field Replaceable Unit, but only by a qualified service person. A CRU is a new architectural concept with the SANbox 9000, such that it is designed as a Customer Replaceable Unit in the field by the customer themselves rather than a service individual. This inherently leads to a lower product price, because the standard service offering need not include "onsite" replacement by a qualified service person.

21. **Question:** Is the bundled Enterprise Fabric Suite (EFS) 2007 software exclusively for the SANbox 9000?
Answer: No, the EFS2007 software that is site licensed can also be used to manage other QLogic SANbox switches, e.g., the SANbox 1400 and 5000 Series.

22. **Question:** In order to configure Inter-Switch Links (ISLs) between a SANbox 9000 and a SANbox 5000, does the SANbox 5000 firmware have to be upgraded to the same level as the SANbox 9000?
Answer: No. The SANbox 5000 can still be interconnected via ISLs while running the version 5 level, even though the SANbox 9000 runs the new version 6 level of firmware. (Note: Version 6 is now available for the new SANbox 5600Q series).

23. **Question:** What 10Gb optical X2 transceivers are qualified for interoperability with the SANbox 9000 Series?
Answer: As follows.

X2 Optical Type Transceiver Type	Vendor	Vendor Part #	RoHS-6	PB-FREE	QLogic SKU #
Short Wave	Merge Optic	TRP10GVP2103	Yes	Yes	X2-SW-01
Long Wave	Merge Optic	TRP10GDP0403	Yes	Yes	X2-LW-01

24. **Question:** Does the 10Gb 4-port I/O Blade support "donor" buffer credits to extend distance in order to mitigate performance degradation?
Answer: Yes. Unlike the SANbox 5000 series, the SANbox 9000 10Gb four-port I/O blades support the "donor" buffer credits feature. Any of the four ports on the 10Gb I/O Blade can donate up to 15 of their 16 buffer credits to another port on the same blade for a maximum total buffer credits for a single 10Gb port of 60 buffer credits. This functional capability is supported only in the version 6 firmware/software for the SANbox 9000 series; it is not supported in the SANbox 5000 series (even with version 6.7).

25. **Question:** Why are the ports on the 10Gb four-port I/O Blade type X2 whereas the 10Gb ports on the SANbox 5000 are type XPAK?
Answer: Because there is no industry standard for 10Gb port types. XPAK emerged in the market first, so that was used in the SANbox 5000. However, X2 was introduced later by Cisco®, and QLogic adopted that type, as we suspected that would simplify connectivity to their products. Since both of these port types use the same 10Gb Fibre Channel signal, cabling options are available for all interconnect combinations.

26. **Question:** What are the physical options for creating a 10Gb FC ISL between a SANbox 9000 and a SANbox 5000?
Answer: 1) 18-inch/456mm X2-XPAK copper cable 2) 78-inch/2m X2-XPAK copper cable 3) 984-ft/300m Short-Wave optical transceivers/cable 4) 1.2 mi/2 Km Long-Wave optical transceivers/cable.

27. **Question:** Can I create a 10Gb FC ISL between two SANbox 9000s?
Answer: Yes, via an 18-inch/456mm X2-X2 copper cable, a 72-inch/2m X2-X2 cable, or with Short-Wave or Long-Wave optical X2 transceivers/cables.

28. **Question:** When will the announced IP Intelligent Storage Router I/O Blades be available for SANbox 9000?
Answer: Please contact your QLogic Channel Sales Partner or OEM Sales Representative because the QLogic development plan for iSCSI and FCIP on an IP blade is in the process of being changed due to market demand.

29. **Question:** Why are there no longer standard QLogic "Exchange" and "Select" Global Services offerings for the SANbox 9000 series?
Answer: Global Services felt that 24x7 Technical Phone Support was appropriate for the entire SANbox 9000 Series for competitive reasons, as opposed to the current 8x5 with standard offerings on other SANbox products. Therefore, Exchange was replaced by Preferred, and Select was replaced by Choice. "Prime" already included 24x7.

30. **Question:** Why did previous SANbox switch products have a two-year hardware/service warranty but the SANbox 9000 Series only has a one-year term?
Answer: The legal and financial compliance regulations in the United States have recently changed dramatically and have become more restrictive. One of the new constraints is that hardware and software warranty/service terms match. Thus, with SANbox 9000, the hardware/warranty service and software/warranty maintenance terms are set identically at one year.

31. **Question:** Why doesn't the SANbox 9000 standard hardware/service warranty include Next Business Day (NBD) on-site replacement rather than the NBD advanced spare delivery with no replacement?
Answer: Because the SANbox 9000 is exclusively designed for Customer Replaceable Unit (CRU) hardware components, rather than the legacy Field Replaceable Unit (FRU) requiring qualified service personnel. QLogic decided to pass on the associated savings in product/service price to its customers.

32. **Question:** What are the prices of the future IP Blades and the now-available FT CPU Failover feature and the HyperStack feature?
Answer: See your respective QLogic Channel or OEM Sales representative.

33. **Question:** To what extent is the SANbox 9000 a non-blocking architecture?
Answer: The SB9200 BASE model's architecture is based on a full non-blocking 10Gb dual CPU backplane design, which is also fully non-blocking in a dual chassis module, split backplane, HyperStack configuration.

34. Question: Under what conditions will the SANbox 9000 incur port oversubscription?

Answer: Since that is a highly complex and broad scope question, QLogic will provide a separate detailed internal document to cover that topic. See your respective QLogic Channel or OEM Sales representative.

35. Question: Will my SANbox 9000 arrive as configured-to-order with all hardware components/features installed?

Answer: Both models of the SANbox 9000 chassis modules will ship with the standard [1 or 2] 4Gb FC 4Gb I/O Blades installed as well as the CPU [1 or 2], Fan [2] and Power Supply [2] blades. However, any additional I/O Blades will ship separately as CRUs for customer installation upon arrival. *Note*: all individually orderable accessories (e.g., cables, SFPs, etc.) will ship separately from the chassis module package for field installation by the customer.

36. Question: Does the SANbox 9000 support 2Gb Fibre Channel fabrics?

Answer: Yes, the SANbox 9000 4Gb Fibre Channel I/O Blade supports auto-sensing to automatically and transparently negotiate to run at both 2Gb and 1Gb Fibre Channel fabric operational speeds.

37. Question: Is the 9100 [model] blocking if it is only capable of 400-Gbps [bandwidth]? If not, what is the performance benefit of the second CPU?

Answer: Yes, the SB9100 model can be blocking, depending on how many of the ports are "locally switched" on the blade. The data traffic for these ports does NOT get routed off the blade through the CPU, but is processed on the I/O blade itself. Worse case is that SB9100 would begin to incur blocking beyond 48 ports if all of the following conditions are met:

i. None of the ports were "locally switched".
ii. None of the ports are 10Gb Fibre Channel (all 4Gb Fibre Channel).
iii. All of the 4Gb ports are fully saturated from a performance utilization standpoint.

However, several of the ports are often locally switched. In this case, the performance load/utilization on 4Gb Fibre Channel ports averages out to less than 13 percent. Therefore, blocking is not likely to occur even with all 128 ports in use. To mitigate this situation, use the dual CPU 9200 model that provides double (800-Gbps) bandwidth.

38. Question: Are there bend radius requirements for the HyperStack cables?

Answer: No. The HyperStack cables are made up of multiple copper wires within the EMI shielding sheath, so they can be radically bent to reduce the clearance requirement (to 8 inches or less). QLogic has a recommended HyperStack cable management plan that is documented in the new technical publication *HyperStack Cable Installation Guide*.

39. Question: What is a [EFS2007] site license?

Answer: Enterprise Fabric Suite 2007 software is licensed on an end-user site basis. A single copy of Enterprise Fabric Suite may be loaded onto multiple workstations or servers located at one geographical address. Each copy of the Enterprise Fabric Suite can manage an unlimited number of fabrics and an unlimited number of QLogic SANbox switches, including all SB5000 series, 1400, and legacy SB2 switches.

40. Question: Can you assign different levels of [administrator] management for the software?

Answer: Yes, Enterprise Fabric Suite 2007 and SANbox switches support two levels of authority:

i. Admin Authority equals "True"– Full administration authority to view and modify the switch and its configuration; however, only the "admin" account can create, remove, and modify user accounts.
ii. Admin Authority equals "False" – User can view only switch status and configuration.

41. Question: What [4Gb Fibre Channel] SFPs are supported? Can any SFP be used?

Answer: Since the SANbox 9000 Series 4Gb I/O Blade is based on the same ASIC as the SANbox 5602, the list is the same regarding QLogic "qualified/recommended" SFPs:

SFP TYPE	Vendor	Vendor Part #	RoHS-6	Pb-FREE
4Gb Short Wave	Finisar	FTLF-8524P2BNL	Yes	Yes
		FTLF-8524P2BNV	Yes	Yes
	JDSU	JSH-42S3AB3	Yes	Yes
		JSH-42S4DB3	Yes	Yes
4Gb Long Wave	Finisar	FTLF-1424P2BCR	Yes	Yes
		FTLF-1324P2BTL	Yes	Yes
	JDSU	JSH-42L3AB3-20	Yes	Yes
		JSH-42L3AB3-5	Yes	Yes

However, the SANbox 9000 Data Sheet specifications do indicate that all "hot-pluggable, industry-standard 3.3 volt SFPs" are supported in terms of operation (but does not guarantee that these SFPs will operate at their full performance capabilities).

42. Question: Where can I find the SANbox 9000 Configurator?

Answer: On the QLogic internal ViSION portal and on the QLogic external Partner Connection web sites. The configurator has recently been updated to include the new FT and HyperStack features.

43. Question: Since everything will be on a blade, will the SANbox 8000 be incorporated on a blade? If so, when?

Answer: Yes, the current plan (which is subject to change by QLogic) has a target date of CY2008.

44. Question: What is the functionality of the future Storage Services blade?

Answer: The planned future Storage Services blade for the SANbox 9000 will offer the same functionality as the current box-based SANbox 8000 product, namely:

i. SAN-wide storage volume management, provisioning, and capacity expansion
ii. Heterogeneous SAN-wide data replication
iii. Non-disruptive data migration
iv. Heterogeneous remote and asynchronous replication
v. Snapshot-based Continuous Data Protection (CDP)

45. Question: What extended Inter-Switch Link distances are supported with the Donor Buffer Credit feature?

Answer: The following table summarizes the extended ISL distances achievable by utilizing Donor Buffer Credits:

Donor Ports	Buffer Credit Allocation by Blade Type		Distance @ 1 Gb/sec	Distance @ 2 Gb/sec	Distance @ 4 Gb/sec	Distance @ 10Gb/sec
Per I/O Blade	1/2/4 Gb/sec	10 Gb/sec	SANbox 9000 to 9000 or 5000 ISLs	SANbox 9000 to 9000 or 5000 ISLs	SANbox 9000 to 9000 or 5000 ISLs	SANbox 9000 to 9000 ISLs only
0	16	16	26km	13km	6km	2km
1	30	30	50km	25km	12.5km	4.17km
2	45	45	75km	37.5km	18.75km	6.25km
3	60	60	100km	50km	25km	8.34km
4	75	-	125km	62.5km	31.25km	-
5	90	-	150km	75km	37.5km	-
6	105	-	175km	87.5	43.75km	-
7	120	-	200km	100km	50km	-
8	135	-	225km	112.5km	56.35km	-
9	150	-	250km	125km	62.5km	-
10	165	-	275km	137.5km	68.75km	-
11	180	-	300km	150km	75km	-
12	195	-	325km	162.5km	81.25km	-
13	210	-	350km	175km	87.5km	-
14	225	-	375km	187.5km	93.75km	-
15	240	-	400km	200km	100km	-

- Each 1/2/4Gb and 10Gb port is supported by a data buffer with a 16-credit base capacity (that is, 16 maximum sized frames).
- Longer distances can be spanned at full bandwidth on 1/2/4Gb or 10Gb ports by extending buffer credits to G_Ports, F_Ports, and E_Ports (per table above).
- Each 1/2/4Gb or 10Gb port on an I/O blade can donate up to 15 of their 16 base buffer credits, which a recipient port on the same I/O blade can borrow.
- The recipient port also loses a single base buffer credit in the process.
- Prerequisite minimum cable lengths apply as well. ***CAUTION:*** Do not assign more buffer credits than shown in the table for a given cable length; additional buffer credits can cause a data overrun/loss.

Note: Version 6.3 or later firmware running on the SANbox 5600Q series will not support Donor Buffer Credits on 10Gb ISL ports in the SANbox 5000 series switch.

46. Question: Are there plans to offer an Infiniband [I/O] Blade?

Answer: Not at the present time, but QLogic will continue to assess the market need for an Infiniband I/O Blade on the SANbox 9000. Until then, QLogic recommends using the Infiniband switch products available as part of our recent SilverStorm Technologies™ acquisition.

47. Question: Are license keys associated with the Fault Tolerant Transparent CPU Failover and HyperStack features?

Answer: Yes, there are individual software license keys associated with both the now-available FT and HyperStack features. These keys are required on a chassis module serial number basis.

48. Question: Is the SANbox 9000 Series available in a Front-to-Back airflow version?

Answer: As of February, 2007, both SANbox 9000 models can be ordered in an "A" Front-to-Back Airflow version (new SKU #s SB9100-16A-E and SB9200-32A-E). Corresponding Front-to-Back Power Supply Blade and Fan Blade Spares are also available (new SKU #s SB9000-APS and SB9000-AFAN). *Note*: As an alternative, both "A" and "B" airflow model chassis modules can be reversed racked with existing adjustable rail kits.

49. Question: Will an upgrade kit be available to change a currently installed SANbox 9100 or 9200 model from "B" Back-to-Front airflow to "A" Front-to-Back airflow?

Answer: No upgrade kits are currently planned. However, the upgrade can be accomplished by the customer buying replacement spare "A" Power Supply Blades and "A" Fan Blades Spares. *Note*: all installed Power Supply and Fan Blades in a chassis module must be the same direction or the switch will boot up in a faulted (but operable) state with a FAN_FLOW_MISMATCH warning message. The fault condition cannot be cleared by the Administrator other than by physically replacing the FAN/PS BLADES so that they all have the same airflow direction.

50. Question: Has the SANbox 9000 Series Configurator Sales Tool be updated to include these new "-E" SKUs?

Answer: Yes, the SANbox 9000 Configurator Sales Tool has been updated for the new "-E" SKUs. In addition, the 10Gb ISL cables/transceivers, Spare CRUs/FRUs, software maintenance renewal SKUs, and FT/HyperStack features have been included. *Note*: the Configurator Sales Tools are available on the QLogic internal ViSION portal and the QLogic external Partner Connection web sites.

51. Question: Can the SANbox 9000 Series switches interoperate in a heterogeneous fabric with non-QLogic switches?

Answer: Yes, the SANbox 9000 Series switches can interoperate with Brocade®, McDATA®, and Cisco switches in the same fabric, as long as the non-QLogic switches are operating in "Open Mode". Specifically, QLogic does not support interoperability with these switches in their respective "Native Modes".

52. Question: Since the Serial port on the CPU Blade has an RJ-45 connector, how can I attach to a cable with a DB-9 connector?

Answer: An RJ-45 to DB-9 conversion dongle is included as a standard accessory with each chassis module.

53. Question: Since the Blades are CRUs, is there a maintenance option to stock replaceable parts on [a customer's] site?

Answer: Global Services does not presently have a specific Service Plan that provides such an option. However, CRU spare part SKUs are available in the QLogic Order Entry System; the customers can buy these themselves.

54. Question: Is it possible for a QLogic channel partner to provide SANbox 9000 maintenance?

Answer: QLogic Global Services currently offers our QSPP program, which allows Signature and Signature Preferred partners to provide part of the service delivery. In return, they buy different SKUs off a discounted price list. If the partner has the appropriate training, they can be authorized on this SANbox 9000 platform. Please contact your QLogic Global Services representative for more information.

55. Question: Is the SANbox 9000 Series on EMC®'s E-Lab™ ESM qualification listing?

Answer: Yes, both the SB9100 ENTRY model and the SB9200 BASE model are on the EMC® E-Lab ESM Listing as of January, 2007. These models can be ordered on the QLogic Order Entry system as SKU #s SB9100-16A-E and SB9200-32A-E. These new "-E" SKUs are Front-to-Back airflow models and do NOT have 4Gb SFPs included. Finally, existing installed SB9000 models can be non-disruptively upgraded via NDCLA to this EMC qualification level by installing the latest firmware version (6.2.1.06) and the new EFS2007 software version (6.03.06), both available via download from the QLogic web site. See February's QLogic NSG Marketing Bulletin for more information. *Note*: FT/HyperStack firmware version 6.6 and EFS2007 software version 6.07 are currently being qualified in the EMC E-Lab.

56. Question: How much additional power does a dual SANbox 9200 HyperStack use versus two individual SANbox 9200s?

Answer: An additional 20 watts with no data traffic; 40 watts with full data trafic.

57. Question: What is the warranty period on the HyperStack cables?

Answer: Since the HyperStack cables are classified as an accessory, the warranty period is 90 days.

58. Question: To create a dual SB9200 model HyperStack, how many license keys do I need to purchase?

Answer: Two; one for each of the two SB9200 chassis modules. Since each HyperStack License Key SKU includes two HyperStack cables, two license keys will have the required four HyperStack cables.

59. Question: Does the HyperStack feature require the FT feature or vice versa?

Answer: No, the HyperStack and FT features are independent, but are available only on the dual CPU SB9200 model.

60. Question: Is there a way to manually force a CPU Failover with the FT feature installed?

Answer: Yes, there is an administrator switchover command that causes the supervisor operation on the primary CPU to be switched over to the hot standby secondary CPU. *Note*: the previous primary CPU then becomes the secondary CPU and is in hot standby mode (rather than in faulted mode with an actual CPU failover initiated by the system).

61. Question: What happens if the HyperStack cables are not configured exactly as specified in the *HyperStack Cable Installation Guide*?

Answer: The SB9200 firmware checks for proper HyperStack ICC cable installation and generates an alarm when the cables are not installed in the proper configuration. The switch will boot up, but the alarm condition cannot be cleared until the cable configuration is correctly installed.

62. Question: If an SB9200 does not have either the FT or HyperStack feature, is there any reason to run the later firmware (version 6.6) and EFS2007 software (version 6.07)?

Answer: Yes, the inherent fault tolerance of an SB9200 dual CPU model is improved with the later firmware and software. With previous firmware (6.2) and software (6.03) versions, the supervisor could only run on CPU 0 (in slot 0). If CPU 0 failed, the user had to physically swap the CPU blades to re-boot. With the 6.6 version firmware and the 6.07 version software, the user can immediately re-boot and run the supervisor on the surviving CPU in either slot 0 or slot 1.

63. Question: Is there a free trial period available on either the FT License or HyperStack Feature License?

Answer: Not at this time. Please contact your respective QLogic Channel or OEM Sales representative.

QLOGIC

Corporate Headquarters QLogic Corporation 26650 Aliso Viejo Parkway Aliso Viejo, CA 92656 949.389.6000

Europe Headquarters QLogic (UK) LTD. Surrey Technology Centre 40 Occam Road Guildford Surrey GU2 7YG UK +440(0)1483 295825

SN0032601-00 Rev B 07/07