



IBM 2847 I/O Processor Fibre Channel SAN Load Source for IBM i5/OS®

Frequently Asked Questions & Answers



Date: Oct 5, 2005
Version 2.00

NOTE: Before using this information and the product it supports, read the information in the “Notices” section of this document.

First Edition (October 2005)

This edition applies to i5/OS V5R3, Licensed Internal Code (LIC) V5R3M5 and IBM eServer™ i5 servers

This document was created or updated on October 5,2005

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#2847 IOP: SAN Load Source for i5/OS FAQs

Question 1. *What is the purpose of the #2847 IOP?*

The #2847 IOP is designed to support the ability to place an i5/OS load source disk unit directly inside a fibre channel connected external storage device such as IBM TotalStorage® ESS model 800, DS6000 or DS8000 series. With this IOP and using one of the fibre channel disk adapters, the load source can be defined as an external disk unit without requiring an integrated internal disk unit on eServer i5 systems.

Question 2. *When will the #2847 IOP be generally available?*

The #2847 IOP is planned for general availability on October 14, 2005. Initially, a technical review will be required to be completed prior to shipment of the order to ensure proper planning and implementation considerations are in place.

Question 3. *How is the #2844 IOP different to the #2847?*

The #2847 IOP is specifically designed to support boot capabilities by placing the i5/OS load source disk unit directly inside one of the supported external storage servers. The table below summarizes the functionality differences between the two I/O processors.

| | #2844/#9844 IOP | #2847 IOP |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------|
| COMPARISONS | | |
| Additional IOAs that can be attached to this the IOP | Any IOA / controller using an IOP including tape & disk fibre channel adapters | Only disk fibre Channel controllers (minimum #2787 or #2766) |
| System attachment | POWER5 and earlier systems | POWER5 systems |
| Number of fibre channel disk IOAs per IOP | 1 | 1 |
| Price* | \$2100 | \$2500 |
| Attach SAN load source | No | Yes |
| Attach SAN disk | Yes | Yes |
| Attach SAN tape | Yes | No |
| IPL from SAN tape | No | No |
| Multi-path support | Yes | Yes, but not for SAN load source |
| *NOTE: Prices are in US dollars and subject to change without prior notice | | |

Question 4. *What iSeries hardware models and TotalStorage® subsystems are supported by the #2847 IOP?*

The #2847 IOP requires IBM eServer i5 system (Model 520, 550, 570, 595 or 9411-100) along with IBM TotalStorage disk storage subsystem. IBM has tested, and will therefore support IBM TotalStorage ESS model 800, DS6000 and DS8000 series. Other TotalStorage ESS models or any OEM hardware configurations are not tested.

- Question 5.** *How many Logical Disk Units (LUNs) are supported by the #2847?*
The LUNs are actually connected via a fibre channel adapter (#2766 or #2787), and the fibre channel disk adapter is driven by the new IOP. Besides the load source LUN, the #2847 can support up to 31 additional LUNs.
- Question 6.** *Does the #2847 IOP support multipath?*
Multipath I/O is not supported for the fibre channel i5/OS load source LUN only. Remaining LUNs that are driven by this IOP through a fibre channel I/O adapter can be enabled to take advantage of multipath I/O. You will need to purchase a second #2847 IOP instead of #2844, define an additional unprotected LUN, and use i5/OS mirroring to protect the load source LUN. Remaining LUNs can take advantage of multipath I/O.
- Question 7.** *Can the i5/OS multipath support be enabled for the fibre channel attached load source disk unit?*
No, use i5/OS mirroring instead by defining an extra LUN on the disk storage subsystem. Remaining LUNs on this IOP/IOA can take advantage of multipath support.
- Question 8.** *Do I have to replace all of my #2844 IOPs with #2847?*
No. There is no need to replace all of your #2844 IOPs with the new #2847 IOP. You only need one IOP to include support for external i5/OS load source per system or per i5/OS logical partition, or a maximum of two IOPs where you are enabling redundancy for the load source LUN. All additional LUNs can be configured using #2844.
- Question 9.** *Can I share #2847 across multiple LPARs on the same system?*
No. You will need to have a dedicated #2847 IOP for every load source LUN or up to two where you have redundancy enabled at the IOP level. Each LPAR will need its own IOP to support the i5/OS load source disk unit of that partition.
- Question 10.** *Is the #2847 IOP supported in Linux or AIX partitions on eServer i5?*
No. Linux and AIX partitions do not need IOPs, and none of the IOPs, including the #2847, are supported in these partitions. The supported fibre channel adapters installed in these partitions support boot capabilities for Linux or AIX kernels loaded in these partitions.
- Question 11.** *What are the minimum software requirements to support #2847?*
The following lists the minimum software requirements for i5/OS, HMC, system firmware and IBM TotalStorage disk storage subsystem:
- Licensed Internal Code: V5R3M5 LIC (level RS 535-A or later)
 - i5/OS Operating System: V5R3M0 Resave Level (level RS 530-10 or later)
 - System Firmware: 2.3.5
 - HMC Firmware: 5.1
 - Latest microcode levels for IBM ESS model 800, DS6000 or DS8000 series
 - Latest cumulative PTF package for i5/OS and Licensed Program Products.

- Question 12. Will the #2847 IOP work with any iSeries models?*
No. Only iSeries systems with POWER5 processor-based systems with an HMC will support #2847 IOP.
- Question 13. Why do I need a Hardware Management Console (HMC) with #2847?*
The introduction of POWER5 processor-based systems in 2004 along with the HMC enabled users to tag I/O processors to enable boot functions, regardless of the card slot placements. The #2847 IOP exploits this capability of the HMC to tag the IOP and direct IPL requests from the i5/OS load source placed in TotalStorage disk storage subsystem.
- Question 14. Do I need to upgrade any software on my HMC?*
You will need a minimum firmware level of 5.1 or above
- Question 15. Do I need to upgrade my system firmware on eServer i5 system?*
Yes, you will need a minimum system firmware level of 2.3.5 or above. The system firmware may also be updated using the HMC.
- Question 16. What changes do I need to make to TotalStorage ESS model 800, DS6000 or DS8000 series to support this new IOP?*
No microcode or hardware changes are required on the disk storage subsystem. However, during configuration time, it is important to ensure that the ports are defined as FC-SW and not as FC-AL. Failure to configure the ports as FC-SW will result into your system not being able to find the load source disk unit in the storage subsystem. For more information, see <http://www.redbooks.ibm.com/abstracts/sg247120.html>
- Question 17. Is the fibre channel load source supported on ESS model E10, E20, F10 or F20?*
No. Only ESS model 800 and the DS6000 or DS8000 series are supported configurations.
- Question 18. Will I have to define the load source LUN as a "protected" or as an "un-protected" LUN?*
If you are not planning to enable redundancy at the IOP level to provide an alternate path to the load source, the LUN can be defined as a protected LUN. You will only need to specify unprotected when deciding to mirror the load source LUN using i5/OS mirroring.
- Question 19. Will the fibre channel load source require direct connectivity to my SAN storage device, or can I go through a SAN fabric?*
You can either have a direct point-to-point connection from the fibre channel adapter to the Host Bay Adapter (HBA) on the storage subsystem, or utilize one of the supported SAN switches or directors. In the later case, zoning for eServer i5 LUNs is highly recommended

for easier problem isolation.

- Question 20. Where can I get additional information on #2847 IOP?*
For information on planning and implementation considerations required for installing the 2847 IOP, download the ITSO redbook; iSeries & TotalStorage: A Guide to Implementing External Disk on eServer i5; SG24-7120 at the following URL:
<http://www.redbooks.ibm.com/abstracts/sq247120.html>
- Question 21. Is the #2847 customer set up?*
Yes, just like the #2844, the #2847 is a customer set up I/O processor. You must ensure that all of the pre-requisites for hardware and software are met to ensure that the configuration is recognized.
- Question 22. Will my system come preloaded with i5/OS when I order #2847 and specify SAN load source?*
No, whenever your order the #2847 IOP, the preload of i5/OS software will be disabled since there may not be any integrated internal disk configured on that order. Instead, the system will be shipped with software media. Note: Where you have integrated internal load source specify feature code, manufacturing will preload i5/OS with the #2847 added as additional IOP.
- Question 23. Do I need to upgrade all of my partitions to V5R3M5, even though I only have one i5/OS LPAR that is connected to a SAN?*
You do not need to upgrade all of your i5/OS LPARs to V5R3M5 LIC or with the slip install of base i5/OS operating system. Only the partition that you are planning to enable with the fibre channel SAN load source will need to be upgraded. However, it is key that you upgrade the minimum firmware levels required for your HMC and system firmware – even when not all partitions will utilize #2847 IOP.
- Question 24. Can I order V5R3M5 for my existing iSeries 8xx model?*
Yes, you can order V5R3M5 for your existing iSeries 8xx model, but this will not be to support installation of #2847 IOP. You may need to have your backup or disaster recovery system at the same release levels as the production server, or you may need to load the latest software available as part of your preparation of upgrading to eServer i5 model and enabling fibre channel SAN load source at the same time. You will need to order a refresh for feature code 5825 for V5R3M5 SLIC and 2692 for i5/OS resave.
- Question 25. What is the difference between V5R3M5 and V5R3M0 for LIC?*
V5R3M5 includes support for #2847 and V5R3M0 does not.
- Question 26. Why do I need to order i5/OS resave with #2847?*
Yes, in order to support SAN load source capabilities on your eServer i5 system, you also need to ensure that you complete slip installation of base i5/OS over existing V5R3M0 i5/OS.

Question 27. Can I continue to use both internal and external storage even though I have ordered the #2847 IOP?

Yes, you can continue to combine usage of both storage solutions based on your application and business needs, even when you have ordered #2847 IOP. IBM recommends that within a given Auxiliary Storage Pool (ASP), you may want to keep one type of storage technology rather than inter-mixing the technologies for the same ASP. When defining multiple LPARs on the same system, you may have a requirement to allocate internal storage to certain LPARs and SAN based disk storage on other LPARs.

*Question 28. Do I need to order #2847 IOP when creating Independent Disk Pools (IASP), or do I just need the IOP for *SYSBASE disk storage pool only?*

IASP do not require a load source, so you do not need to order one for every IASP you create. However, a minimum of one IOP is needed to configure a SAN load source for the *SYSBASE if you are not planning to use integrated internal storage.

Question 29. How do I install #2847 on my iSeries model 8xx system, or in one of the LPARs on this system?

#2847 IOP is not supported on iSeries model 8xx, therefore you cannot install it on the system or in any of the LPARs that are defined on these systems.

Question 30. Will the #2847 IOP work with V5R3M0 Licensed Internal Code?

No, minimum LIC requirement is V5R3M5 or later.

Question 31. What happens to my system name and network attributes when I perform a point in time FlashCopy operation?

FlashCopy creates an identical image of the source system, and every system and user object, including history logs, message queues, system configuration attributes, locales, and network configuration attributes are duplicated. When enabling the cloned system image, you will want to perform a manual IPL to change the system name, network attributes, and re-assign hardware resource names for your network configuration objects prior to entering the cloned partition to your network.

Question 32. Multipath I/O is not supported on #2847. Does this mean that remaining LUNs attached to the fibre channel I/O adapter cannot utilize multipath I/O?

Only the load source LUN cannot be enabled for multipath I/O. Remaining LUNs (up to 31 or them) can benefit from multipath I/O support. For example, if you have one IOP/IOA with 32 LUNs and want to enable multipath I/O, you will need to purchase an additional #2847 (instead of #2844) with a #2787 IOA. You will then define an unprotected LUN with the same capacity as the primary load source on the disk storage subsystem and mirror the load source to the new LUN using i5/OS mirroring options. The remaining 31 LUNs can then

be enabled to have a redundant path using multipath I/O.

Question 33. Will the base IOP that is installed in every system unit be replaced with the new #2847 IOP?

No. Amongst other devices, the base IOP is used to drive internal DVD or CD ROM drives, ECS communications link, and base. These are still required even when you plan to attach all of your disk storage using external SAN disk storage subsystem.

Question 34. Why does it take a long time to ship the #2847 IOP?

In order to ensure that some important planning and implementation considerations are completed prior to enabling the new #2847 IOP, IBM has deployed a mandatory technical review for all system orders which have this new IOP. A questionnaire will automatically be generated, which needs to be completed and returned to rchiroc@us.ibm.com. IBM Rochester will then schedule a Technical Review call, after which the order will be approved for shipment. Additional questions regarding the Technical Review or the Questionnaire can be directed to rchiroc@us.ibm.com

Question 35. Do I need to complete the questionnaire that I got after I ordered the #2847 IOP?

Yes, it is important to complete the questionnaire and mail the responses back to rchiroc@us.ibm.com, so that the required Technical Review can be scheduled prior to processing your order.

Question 36. Will the configuration tools such as eConfig and LPAR Validation Tool (LVT) support #2847 IOP?

Configuration tools to support this new IOP will be enhanced and made available on Oct 4, 2005.

Question 37. Where do I obtain information about the #2847 IOP in InfoCenter?

At present, the eServer or iSeries InfoCenter will not have any documentation for the #2847 IOP. For information on planning and implementation considerations required for installing the #2847 IOP, download the ITSO redbook; iSeries & TotalStorage: A Guide to Implementing External Disk on eServer i5; SG24-7120 at the following URL: <http://www.redbooks.ibm.com/abstracts/sg247120.html>

Question 38. How many fibre channel adapters are supported by the #2847 IOP?

One – either a #2787 or a #2766. The later is now withdrawn from marketing.

Question 39. Can I use the #2847 to attach my tape fibre channel I/O adapter, and also boot from it?

No. The #2847 IOP is only designed to support SAN i5/OS load source LUN, and up to 31 additional LUNs. Tape adapters are not supported by this IOP.

Question 40. How many card slots does the #2847 IOP require? Can the IOP be installed in 32-bit slot or does it need to be in a 64-bit slot?

The IOP occupies one card slot and it can be placed in either a 32-bit or a 64-bit slot. It is highly recommended that the fibre channel disk adapter be placed in a 64-bit card slot for optimum performance.

Question 41. With #2847 IOP, does it mean that IBM is no longer developing internal storage?

The #2847 IOP is yet another proof point towards the continued enhancements we have seen on SAN for iSeries systems. Integrated internal storage continues to be used by majority of iSeries customers. The strategy is to continue investments in both these technologies and provide clients with the storage solution flexibility to enable disk storage subsystem decisions to be made based on application and business requirements.

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