New advanced functions and features for IBM System Storage DCS3700 and DCS3700+

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At a glance

IBM® DCS3700 and DCS3700+ add new controller, host interface card (HIC) options, hard disk drive features, more powerful premium features, and simplified ordering of the new premium features.

Overview

The recently released DCS3700 with Performance Modules (DCS3700+) now offers new functionality with new HICs, new controller firmware, an expanded feature set, and simplified ordering. Hosts will now be able to connect to the DCS3700+ with a 6 Gb SAS HIC or a 10 Gb iSCSI HIC. The new firmware allows T10 Protection Information (T10 PI) for selected drive options, helping to protect the user against data corruption at the drive level. The premium feature selections have been greatly simplified in this release, and the premium features for the DCS3700+ have expanded capabilities.

DCS3700 can now be upgraded with Performance Module Controllers to bring this new technology to the DCS3700 systems already installed at customer locations. The new SAS HIC for the Performance Module upgrade allows SAS connections for those customers that are using SAS host ports on their current installations. The upgrade to the new controllers is designed to leave intact the data, configurations, and premium features that have already been purchased, activated, and configured.

New 10K RPM disk drives will now be offered for DCS3700 and DCS3700+ systems, in single drive packs and in 10-packs. When used with the DCS3700+, these new drives will have the T10 PI capabilities available. The new controller firmware will also provide T10 PI capability on two other previously announced drive options, 300 GB 15K drives and 3 TB NLS SAS drives.

Key prerequisites

Controller Firmware (CFW) level 7.84, or later
DCS3700 1818 FC Prerequisites
Disaster Recovery Option for DCS3700 3951 CFW 7.84, or later
Back Up & Restore Option for DCS3700 3952 CFW 7.84, or later
Performance Read Cache for DCS3700 3953 CFW 7.84, or later
Super Key for DCS3700 3970 CFW 7.84, or later
Performance Module Controller 3101    CFW 7.84, or later
Upgrade
600 GB 10,000 rpm 6Gb SAS 2.5 3415    CFW 7.84, or later
HDD 10-pack
600 GB 10,000 rpm 6Gb SAS 2.5 3416    CFW 7.84, or later
HDD single
900 GB 10,000 rpm 6Gb SAS 2.5 3419    CFW 7.84, or later
HDD single
900 GB 10,000 rpm 6Gb SAS 2.5 3420    CFW 7.84, or later
HDD 10-pack

Controller Firmware 7.84 requires Storage Manager 10.84, or later.

DCS3700+ 1818    FC Prerequisites
10 Gb iSCSI HIC  3131 CFW 7.84, or later, FC #3100 or #3101
6 Gb SAS HIC     3132 CFW 7.84, or later, FC #3100 or
Disaster Recovery Option for DCS3700 Plus 3954 CFW 7.84, or later
Back Up and Restore Option for DCS3700 Plus 3955 CFW 7.84, or later
Performance Read Cache for DCS3700 Plus 3956 CFW 7.84, or later
Super Key for DCS3700 Plus 3971 CFW 7.84, or later

The T10 PI function is supported on the DCS3700 Performance Module Controller and requires:

- Controller firmware level 7.84, or later
- DS Storage Manager 10.84, or later
- DCS3700 Drive features
  - 300 GB 15,000 rpm 6Gb SAS 2.5 HDD 10-pack #3400
  - 300 GB 15,000 rpm 6Gb SAS 2.5 HDD single #3401
  - 3 TB 7,200 rpm 6Gb NL-SAS 3.5 HDD 10-pack #3460
  - 3 TB 7,200 rpm 6Gb NL-SAS 3.5 HDD single #3461
  - 600 GB 10,000 rpm 6Gb SAS 2.5 HDD 10-pack #3415
  - 600 GB 10,000 rpm 6Gb SAS 2.5 HDD single #3416
  - 900 GB 10,000 rpm 6Gb SAS 2.5 HDD single #3419
  - 900 GB 10,000 rpm 6Gb SAS 2.5 HDD 10-pack #3420

Planned availability date

For CFW 7.84, all premium features and host features 3101 and 3132: December 7, 2012

For drive features 3415, 3416, 3419, and 3420, and for host interface feature 3131: December 14, 2012.

Description

IBM System Storage® now provides several new updates to the DCS3700 and DCS3700 with Performance Module Controllers.

DCS3700

New Performance Controller Modules, host interface adapters for the Performance Controller Modules, CFW version 7.84, and new simplified options for premium features are now being offered as upgrades to existing DCS3700 systems. New
10K rpm drive features are also being released with 600 GB and 900 GB capacities, available in single drive packs and in 10-packs.

IBM System Storage combines major premium features to simplify ordering of DCS3700 systems. Some premium features are now included in the base CFW for no additional charge, and other premium functions are now included in separate premium feature options.

CFW version 7.84 now includes additional functions and features:

- 128 partitions
- 32 FlashCopy®
- 511 VolumeCopy (IBM recommends using VolumeCopy with FlashCopy)
- Full Disk Encryption

Additional premium feature options include:

- **Disaster Recovery Option for DCS3700** offers 16 Enhanced Remote Mirrors (synchronous over Fibre Channel, including FC over Ethernet) and 32 Global Mirrors (asynchronous over Fibre Channel and IP mirroring over iSCSI)
- **Backup and Restore Option for DCS3700** offers for up to 512 point in time instances of Enhanced FlashCopy
- **Performance Read Cache for DCS3700** enables the utilization of solid state disks (SSDs) for accelerating reads from the storage, helping to increase performance of the Disk System for certain workloads
- **Super Key for DCS3700** enables all the functionality in the Disaster Recovery Option, the Backup and Restore Option, and the Performance Read Cache

All other premium feature keys remain available, and functional, with CFW version 7.84. Customers that upgrade to CFW version 7.84 will find that the keys that have already been purchased and activated still work as the functions worked before the firmware upgrade. Also, upgrading with the keys that were previously announced will still continue to unlock in the latest CFW version 7.84 the functionality that was delivered in earlier versions of CFW.

New drive capacities with new speed characteristics are being introduced to provide additional drive performance. Next generation 10K rpm drives are being released in 600 GB and 900 GB capacities. Each capacity drive is being released in 10-pack and single drive pack to accommodate single drive SSD purchases, offering a new choice in performance storage systems.

**DCS3700 with Performance Modules (DCS3700+)**

The recently released DCS3700 with Performance Modules (DCS3700+) is being updated with new hardware options such as dual port 10 Gb iSCSI and 4-port 6Gb SAS HICs for optional use in the available slot in the Performance Module. The new CFW version 7.84 and the new 600 GB and 900 GB 10K drive options are also being released for the DCS3700+.

With SAS ports now being available for the DCS3700+, controller modules in older DCS3700 systems currently installed in the field can be replaced by Performance Modules as an upgrade.

DCS3700+ has larger functional capabilities:

- 12 GB, 24 GB, and 48 GB cache per disk system
- 512 partitions
- 1024 VolumeCopies
- 2048 Thin Provisioned volumes
- T10PI Data Protection protocols on some drive options
- Expansion to 360 drives
Users adding upgrades to existing DCS3700 installations will get the additional functionality and expansion capability, while still being able to use the legacy volumes and premium features that have already been purchased and configured.

With the new CFW version 7.84, premium features for the DCS3700+ have greater capabilities than the features for the units without Performance Modules. Ordering and installation for these features has also been simplified, and include:

- **Disaster Recovery Option for DCS3700 Plus**: offers 16 Enhanced Remote Mirrors (synchronous over Fibre Channel, including FC over Ethernet) and 128 Global Mirrors (asynchronous over Fibre Channel and IP mirroring over iSCSI)
- **Backup and Restore Option for DCS3700 Plus**: for up to 2048 point in time instances of Enhanced FlashCopy
- **Performance Read Cache for DCS3700 Plus**: enables volumes on SSDs for read caching frequently accessed data from heavily used data volumes, enabling faster reads for certain workloads
- **Super Key for DCS3700 Plus**: enables all the functionality in the Disaster Recovery Option, the Backup and Restore Option, and the Performance Read Cache

The use of the DCS3700 Performance Module controller also enables T10 PI data protection protocols on T10 PI capable drives. The new drive features being announced are all T10 PI formatted at 520 bytes per block. The following existing drive features are now being announced with new T10PI enhanced functionality:

- 300 GB 15,000 rpm 6Gb SAS 2.5 HDD 10-pack #3400
- 300 GB 15,000 rpm 6Gb SAS 2.5 HDD single #3401
- 3 TB 7,200 rpm 6Gb NL-SAS 3.5 HDD 10-pack #3460
- 3 TB 7,200 rpm 6Gb NL-SAS 3.5 HDD single #3461

**Accessibility by people with disabilities**

A US Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at


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**Product number**

<table>
<thead>
<tr>
<th>Description</th>
<th>Machine type</th>
<th>Model</th>
<th>Feature number</th>
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<td>80C</td>
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<td>Performance Read Cache for DCS3700</td>
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<td>Super Key for DCS3700</td>
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<td>3970</td>
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<tr>
<td>Performance Module Controller Upgrade</td>
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<td>1818</td>
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<td>1818</td>
<td>80C, 80E</td>
<td>3415</td>
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Additional information

T10 Protection Information (PI)

T10 Protection Information can be enabled between the storage controller and its disk drives. T10 PI requires the use of PI-formatted disk drives. The drive options in this announcement are PI-formatted drives. They are formatted at 520 bytes per sector, with 512 bytes for user data and 8 bytes for integrity metadata. The drives can be used with or without T10 PI function enabled and can be intermixed within a storage enclosure or across storage systems with non-PI formatted drives.

T10 PI can be used with any RAID level. To use the T10 PI function, all drives within the RAID array must be PI-formatted drives PI-formatted and non-PI formatted drives can be intermixed within a RAID array, but then the T10 PI function cannot be enabled on that Array.

Publications

The following publications are shipped with the product:

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<tr>
<td>Shipped in hard copy:</td>
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<tr>
<td>System Storage DCS3700 Quick Start Guide</td>
<td>00Y5688 (Part number)</td>
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<td>Shipped on Host Kit DVD:</td>
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<td>IBM System Storage DCS3700 Storage Subsystem and DCS3700 Storage Subsystem with Performance Module Controllers Installation, User’s, and Maintenance Guide</td>
<td>GA32-0959</td>
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<tr>
<td>IBM System Storage DS3000, DS4000®, and DS5000 Command Line Interface and Script Commands Programming Guide</td>
<td>GA32-0961</td>
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<tr>
<td>IBM System Storage DS® Storage Manager Version 10.8 Installation and Host Support Guide</td>
<td>GA32-2221</td>
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<tr>
<td>IBM System Storage DS Storage Manager Version 10 Copy Services User’s Guide</td>
<td>GA32-0964</td>
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On the web:
All of the above publications.

All of the above publications are available on the IBM support website

http://www.ibm.com/storage/support/

Product publications are available in English. IBM may translate these product publications. When completed, translations will be available through country ordering systems and the IBM support website.
Publications and product documentation are available at the IBM System Storage Support site
http://www.ibm.com/systems/support/storage/

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For details on education offerings related to specific products, visit

Select your country, and then select the product as the category.

Technical information

Specified operating environment

Hardware requirements

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<th>Component</th>
<th>Model</th>
<th>FC</th>
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Controller Firmware 7.84 requires Storage Manager 10.84 or later.

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900 GB 10,000 rpm 6 Gb SAS 2.5in HDD 10-pack 3420 CFW 7.84, or later

The T10 PI function is supported on the DCS3700 Performance Module Controller and requires:

- Controller firmware level 7.84, or later
- DS Storage Manager 10.84, or later
- DCS3700 Drive features
  - 300 GB 15,000 rpm 6Gb SAS 2.5 HDD 10-pack #3400
  - 300 GB 15,000 rpm 6Gb SAS 2.5 HDD single #3401
  - 3 TB 7,200 rpm 6Gb NL-SAS 3.5 HDD 10-pack #3460
  - 3 TB 7,200 rpm 6Gb NL-SAS 3.5 HDD single #3461
  - 600 GB 10,000 rpm 6Gb SAS 2.5 HDD 10-pack #3415
  - 600 GB 10,000 rpm 6Gb SAS 2.5 HDD single #3416
  - 900 GB 10,000 rpm 6Gb SAS 2.5 HDD single #3419
  - 900 GB 10,000 rpm 6Gb SAS 2.5 HDD 10-pack #3420

Compatibility

Refer to the IBM System Storage Interoperation Center (SSIC) for a comprehensive list of supported environments, devices, and configurations

http://www.ibm.com/systems/support/storage/config/ssic

Planning information

Customer responsibilities

Physical configuration and installation planning are customer responsibilities. Refer to the IBM Systems Storage DCS3700 Installation, User’s, and Maintenance Guide for additional information.

You are responsible for downloading or obtaining from IBM, and installing designated Machine Code (microcode, basic input/output system code (called BIOS), utility programs, device drivers, and diagnostics delivered with an IBM machine) and other software updates in a timely manner from an IBM Internet website or from other electronic media, and following the instructions that IBM provides. You may request IBM to install Machine Code changes; however, you may be charged for that service.

Cable orders

No cables required.

Security, auditability, and control

This product uses the security and auditability features of host hardware, host software, and application software.
The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

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Contact your IBM representative for the list of selected services available in your country, either as standard or customized offerings, for the efficient installation, implementation, and/or integration of this product.

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**Terms and conditions**

**Warranty period**

One year

An IBM part or feature installed during the initial installation of an IBM machine is subject to a full warranty effective on the date of installation of the machine. An IBM part or feature that replaces a previously installed part or feature assumes the remainder of the warranty period for the replaced part or feature. An IBM part or feature added to a machine without replacing a previously installed part or feature is subject to a full warranty effective on its date of installation. Unless specified otherwise, the warranty period, type of warranty service, and service level of a part or feature are the same as those for the machine in which it is installed.

**Customer setup**

No
**Machine code**
Same license terms and conditions as base machine

**Pricing**

For all local charges, contact your IBM representative.

**Announcement countries**

All European, Middle Eastern, and African countries.

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