

Data-in-Place Upgrade for Dell Storage SC4020

Transfer disks and enclosures to a new Dell EMC SC5020 or SC7020 array without purchasing additional capacity.

The Dell Storage SC4020 data-in-place upgrade offers:

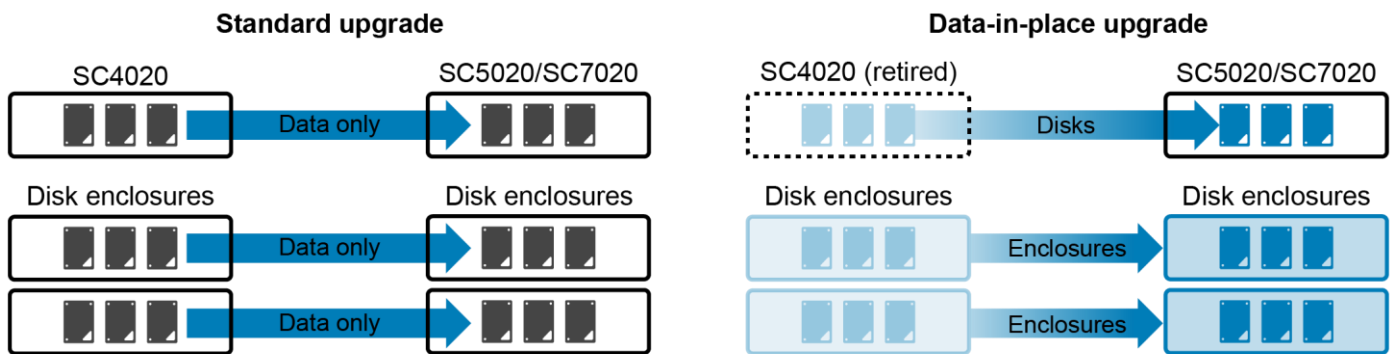
- Lower hardware costs: Protect your disk and disk enclosure investment, particularly with high-end, large-capacity SSDs.
- Quicker transfer: Avoid a long data-migration process. The disks, enclosures, data and configuration are moved intact, all at once.
- Software investment protection: Software licenses also transfer*.
- Simple process: The data-in-place upgrade is completed during a single maintenance window.
- Flexibility: Support for Fibre Channel and iSCSI configurations, as well as any disk or disk-enclosure configuration.

Upgrade while protecting your hardware investment

The data-in-place upgrade is a new option for upgrading a Dell Storage SC4020 array to a new SC Series array. Introduced with Dell Storage Center OS (SCOS) 7.3, the data-in-place upgrade allows you to move all disks and disk enclosures, with their data and configuration intact, from the SC4020 array to a new SC5020 or SC7020 array, protecting your disk and enclosure investment. SC4020 arrays with any supported disk and disk-enclosure configurations (spinning, hybrid or all-flash) are eligible for the data-in-place upgrade. The SC4020 is retired from service after the upgrade.

In addition to the data-in-place upgrade, the standard upgrade is another option which leverages volume replication or Live Migrate to move data to a new SC Series array. The data is moved over time, and the disks and enclosures are not moved. You can choose to keep the SC4020 in operation after the upgrade or retire it from service.

For either upgrade option, software licenses transfer*.



While the standard upgrade moves data only, the data-in-place upgrade moves disks and enclosures to the new array.

Determine your upgrade eligibility

To determine the eligibility of your SC4020 array for a data-in-place upgrade, a Dell EMC pre-sales representative will evaluate the following requirements:

- The invoice date of the SC4020 must be within the past three years.
- The array must be configured with Fibre Channel or iSCSI for front-end host connectivity. This upgrade is not supported if the SC4020 array is configured with SAS front-end hosts.
- A recent phone home (Dell SupportAssist) from the SC4020 array is required. For dark sites, a one-time USB phone home will satisfy this requirement.
- The SC4020 array must be covered by a current support contract.
- Existing hardware issues that would interfere with a successful upgrade must be resolved beforehand.

DIP Upgrade Eligibility for: 12345 / 67890

CUSTOMER NAME

DIP Eligible: **YES** 

Install Date: 10/25/2016

Invoice Date: 10/18/16

Last Phonehome time: 11/11/2017

Date Eligible for Upgrade?: YES

Storage Center Version: 6.7.20

SAS Front End: NO

Number of Controllers: 2

Phonehome within 30 days: YES

A Dell EMC representative uses Quote Center to verify your eligibility for a data-in-place (DIP) upgrade.

Consider your upgrade options

Carefully review the upgrade options to determine if a data-in-place upgrade is right for your needs. While a data-in-place upgrade can provide financial advantages for SSD disk configurations, other factors should also be considered.

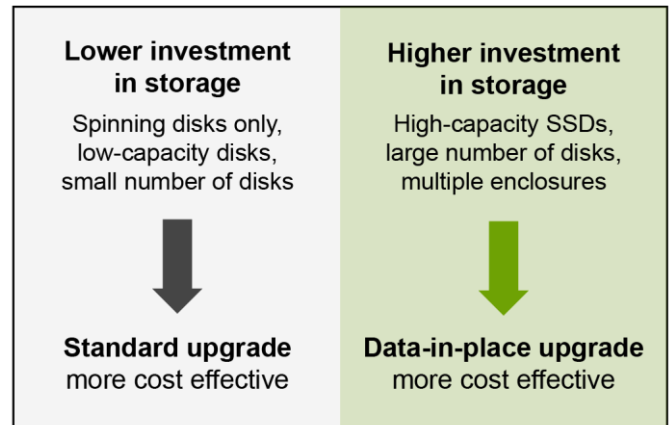
Factor	Data-in-place upgrade	Standard upgrade
Time requirement	Requires two hours of downtime, minimum (varies per configuration). If physically moving disk enclosures, add 30 minutes of downtime per enclosure moved. Before the upgrade, it is recommended to move critical workloads using Live Migrate or Live Volume to lessen impact of downtime.	Migrating a large amount of data could take weeks or months, and may require additional cost and effort.
Performance impact	If one or more 6Gb/s disk enclosures are moved from an SC4020 array to an SC5020 or SC7020 array, all disks in new array will operate at 6Gb/s.	The SC5020 and SC7020 array offer twice the SAS back-end bandwidth at 12Gb/s, and support newer SSDs.
Upgrade source (SC4020 array)	Array must be retired from service after upgrade. Arrays configured for SAS front-end connectivity are not eligible for upgrade.	Array may be kept in service, which is ideal if repurposing the array, such as moving it to a disaster-recovery role.
Upgrade targets	SC5020 and SC7020 arrays only are supported. The upgrade does not support other SC Series models such as the SC5020F, SC7020F or SC9000.	All SC Series arrays are supported.
Other requirements	Requires assistance from Dell EMC Infrastructure Delivery Services (IDS) or a certified channel partner. Extra service cost (services up-charge).	

Choose the best-value solution

The data-in-place upgrade is typically more cost effective if you have a significant investment in SSDs. For example, the SC4020 array is configured with twenty-four 3.84 TB SSDs, with or without disk enclosures.

The standard upgrade is typically more cost effective if the SC4020 array has a small number of less-expensive, low-capacity spinning disks. For example, the array is configured with twelve 600 GB 15K HDDs with no disk enclosures.

Speak with your Dell EMC sales representative to determine the cost effectiveness of a data-in-place upgrade for your SC4020 disk configuration.



Cost comparison between standard and data-in-place upgrade options.

Complete your upgrade

Prior to the performing the data-in-place upgrade, your Dell EMC representative will help you complete the following:

- A pre-sales representative will verify that your SC4020 array is eligible using the Quote Center sales tool.
- IDS or a channel partner will review your new array's power requirements (voltage, PSU, and PDU), availability of key management certificates with SED-only SC4020 systems, and cable/port requirements if consolidating SFP+ and RJ45 ports.
- IDS or a channel partner will run data-in-place system checks on the SC4020 array and help resolve any errors or warnings. Replication or Live Volume errors do not need to be resolved until prior to the upgrade.
- The representative will quote and order a new SC5020 or SC7020 array that is configured with an appropriate Fibre Channel or iSCSI configuration. IDS or a channel partner will later install the SC5020 or SC7020 array.
- The representative will establish a maintenance window to perform the upgrade. Before the start of the maintenance window, they will help you ensure that critical data on the SC4020 is protected. This includes using SC Series volume replications to an existing SC Series array, or traditional backup methods.

During the maintenance window, IDS or a channel partner will help you perform the following:

- Verify all SC Series volume replications from SC4020 array are temporarily stopped (restore points are saved).
- If using Live Volume, verify all primary Live Volume roles are swapped to another SC Series array.
- Verify the hosts and workloads on the SC4020 are taken offline.
- Run final health and eligibility checks on the SC4020 array.
- Verify the SC4020 array and the SC5020 or SC7020 array are running the same version of SCOS 7.3.
- Ensure the hardware serial numbers of the SC5020 or SC7020 array are changed to match the SC4020 array being retired. These steps are performed from the SCOS CLI.
- Execute the upgrade and power off the SC4020 array.
- Remove the disks from the SC4020 chassis and install them in the SC5020 or SC7020 chassis.
- Re-cable the disk enclosures from the SC4020 array to the SC5020 or SC7020 array.
- Power on the SC5020 or SC7020 array, which comes online with the same configuration as the SC4020 array.
- Assist you with bringing your hosts and workloads online to verify system health.
- Perform cleanup steps, which includes retiring the SC4020 array from service.
- Optional: If the scope and duration of the maintenance window permits additional work, IDS or a channel partner will assist with adding new I/O cards, disks or expansion drawers to your new SC Series array if needed.

Frequently asked questions

Q: Can I perform a data-in-place upgrade on my own?

A: The upgrade process requires assistance from IDS or a certified channel partner. You may assist with many of the pre-upgrade and post-upgrade steps.

Q: Which models of disks and disk enclosures are supported?

A: Any disk or disk enclosure that is compatible with the SC4020 array is supported with the data-in-place upgrade.

Q: How much downtime is required for the maintenance window?

A: A data-in-place upgrade requires a minimum of two hours downtime for the SC4020 array. IDS or your channel partner will help determine how much downtime to expect. Preparation steps will help minimize downtime.

Q: If something goes wrong, what is the recovery process?

A: The evaluation process will ensure that errors or warnings that would interfere with a data-in-place upgrade are identified and resolved beforehand. If the upgrade fails, the standard recovery process moves the disks and enclosures back to the SC4020 array with the data and configuration intact. Recovery in place on the target system may be possible if simple hardware issues are encountered during the upgrade.

Q: What if a service-level agreement will not permit downtime for a critical workload on the SC4020 array?

A: If there are other SC Series arrays in the environment with sufficient capacity, use SC Series volume replication or Live Migrate to move critical workloads to other SC Series arrays before the maintenance window.

Q: Does the SC4020 array stay in service after a data-in-place upgrade?

A: The SC4020 array is retired from service after the upgrade.

Q: Can I use an existing SC5020 or SC7020 array in my environment as a target for a data-in-place upgrade?

A: A data-in-place upgrade requires purchasing a new, appropriately configured SC5020 or SC7020 array (without disks). Existing SC Series arrays in the environment are not eligible targets for a data-in-place upgrade.

Q: Is the SC5020F or SC7020F (SC All-Flash array) supported as a target?

A: An SC4020 array with 100% flash configuration is eligible for a data-in-place upgrade, but the target must be an SC5020 or SC7020 array.

How to get started with a data-in-place upgrade

Contact your Dell EMC sales representative to begin your upgrade. The representative will verify the age and configuration of your SC4020 array and provide a quote for an appropriately configured SC5020 or SC7020 array, along with support services. The representative will schedule the upgrade at a time that is best for you.

*May require software true-up costs reflecting the price difference for software features between platforms.



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