

PSSP/GPFS configuration information for FAST on pSeries/AIX Servers

January 16, 2004

Supported configurations:

The following combinations of Clusters software, GPFS, and FAST are supported:

GPFS Cluster Environment	GPFS version	AIX version	FAST500	FAST600	FAST600 Turbo	FAST700	FAST900	Storage Manager
PSSP v3.2	v1.4	v4.3.3	X					v7.10
PSSP v3.4	v1.5	v4.3.3 v5.1.0	X	X		X	X	v7.10, v8.21, v8.3
PSSP v3.5	v2.1	v5.1.0 v5.2.0	X	X	X	X	X	v8.21, v8.3, v8.4
RSCT Peer Domain (RPD)	v2.1	v5.1.0 v5.2.0	X	X	X	X	X	v8.21, v8.3, v8.4
HACMP v4.4.1**	v1.5	v4.3.3 v5.1.0	X	X	X	X	X	v7.10, v8.21 v8.3, V8.4
HACMP v4.5.0** HACMP v5.1**	V2.1	v5.1.0 v5.2.0	X	X	X	X	X	v8.21, v8.3, v8.4

Recommended AIX software levels:

AIX 5.2, Maintenance Level 2 (APAR IY48488) and the following AIX fileset versions:

devices.fcp.disk.array 5.2.0.17 (PTF U495446, APAR IY51803)
devices.pci.df1000f7 5.2.0.15 (PTF U495397, APAR IY48386)

AIX 5.1, Maintenance Level 5 APAR IY48486) and the following AIX fileset versions:

devices.fcp.disk.array.rte 5.1.0.58 (PTF U495840, APAR IY51802)
devices.pci.df1000f7.com 5.1.0.57 (PTF U495842, APAR IY49747)

AIX 4.3.3, Maintenance Level 11 (4.3.3.75), with the following AIX fileset versions:

devices.fcp.disk.array.rte 4.3.3.87 (PTF U488156, APAR IY48242)
devices.pci.df1000f7.com 4.3.3.92 (PTF U495609, APAR IY48827)

Recommended PSSP, GPFS and HACMP software levels:

PSSP 3.2, APAR IY31012 (Only supported with FAST500 with FAST Storage Manager v7.10)

GPFS 1.4 (Only supported with FAST500 with FAST Storage Manager v7.10)

PSSP 3.4, and APAR IY31786

GPFS 1.5

PSSP 3.5, and APAR IY49062

GPFS 2.1

HACMP v4.4.1 ES**, and APARs IY31483 and IY31489

HACMP v4.5.0**, and APAR IY45099

HACMP v5.1**, and APAR IY45695

**This is a statement about GPFS in an HACMP cluster environment, where GPFS manages I/O access to the FAST Storage system. This is not a statement of general HACMP support for FAST devices. Please see the FAST HACMP configuration document for specific support statements for FAST subsystems with HACMP.

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FAStT software and firmware requirements

FAStT Storage Manager
v7.10
v8.21*
v8.3* <-recommended
v8.4* <-optional

***Note:** Later versions of FAStT Storage Manager can support FAStT systems with previous versions of firmware. For example, SM v8.3 can manage FAStT devices with 05.03.xx.xx and earlier firmware levels.

FAStT500 running one of the following combinations of Firmware and NVSRAM:

Firmware: 04.01.02.3x NVSRAM: CNV3552R710NT012
Firmware: 05.21.05.09 NVSRAM: CNV3552R821NT012
Firmware: 05.30.12.00 NVSRAM: N3552F500R830V04 <- recommended

FAStT600 running the following combination of Firmware and NVSRAM:

Firmware: 05.33.07.00 NVSRAM: N1722F600R833V03
Firmware: 05.40.07.0X NVSRAM: N1722F600R840V04 <- **FAStT600 Turbo option**

FAStT700 running one of the following combination of Firmware and NVSRAM:

Firmware: 05.21.05.09 NVSRAM: CNV1742R821NT012
Firmware: 05.30.12.00 NVSRAM: N1742F700R830V04 <- recommended
Firmware: 05.40.06.0X NVSRAM: N1742F700R840V03 <- optional

FAStT900 running the following combination of Firmware and NVSRAM:

Firmware: 05.30.12.00 NVSRAM: N1742F900R830V05
Firmware: 05.40.06.0X NVSRAM: N1742F900R840V02 <- optional

Configuration limitations

For the purposes of this document, FAStT = FAStT500, FAStT600 (+ Turbo), FAStT700, or FAStT900. These limitations are supplemental to any limitations that are already documented for FAStT Storage systems on pSeries/AIX servers.

Install the FAStT as is required for base pSeries/AIX environments. Please consult the [IBM FAStT Storage Manager \(v7.10, v8.21, v8.3, v8.4\) for UNIX and AIX environments](#) and [aixreadme](#) files prior to installation. Please contact an IBM Storage Specialist if you have further questions.

- The FAStT200 is not supported in RVSD or GPFS Cluster configurations.
- FAStT subsystems with EXP100 disk enclosures are not supported in RVSD or GPFS configurations at this time.
- RVSD and GPFS Clusters are not supported in Heterogeneous Server configurations.
- Direct-attach connections are not allowed between host node and FAStT in RVSD or GPFS configurations.
- RVSD Clusters can support a maximum of 2 IBM Virtual Shared Disk and RVSD servers per FAStT partition.
- HACMP/GPFS clusters can support 2 - 32 servers per FAStT partition. In this environment be sure to read and understand the AIX device drivers queue depth settings as documented in the [IBM FAStT Storage Manager vX.yy Installation and Support Guide for UNIX and AIX environments](#) publication.
- Single Node Quorum is not supported in a two node GPFS cluster with FAStT disks in the configuration.
- For highest availability, distributing the HBA and FAStT connections across separate FC switches will minimize the effects of a SAN fabric failure.

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Usage notes specific to PSSP/GPFS environments

In GPFS file systems the following FAStT cache settings are supported:

Read cache enabled or disabled

Write cache enabled or disabled

Cache mirroring enabled or disabled, depending on the write cache mirroring setting*

The performance benefits of read or write caching is application dependent. It has been observed that when the application is dominated by large sequential objects, turning off read/write caching and cache mirroring can have performance benefits.

For the most current information on Device Driver or FAStT software and firmware versions, see the aixreadme file posted at specific Storage Manager web site listed below.

Storage Manager v7.10: <http://www-1.ibm.com/support/docview.wss?rs=506&uid=psg1MIGR-40711>

Storage Manager v8.21: <http://www-1.ibm.com/support/docview.wss?rs=506&uid=psg1MIGR-43839>

Storage Manager v8.3: <http://www-1.ibm.com/support/docview.wss?rs=506&uid=psg1MIGR-50177>

Storage Manager v8.4: <http://www-1.ibm.com/support/docview.wss?rs=506&uid=psg1MIGR-52950>

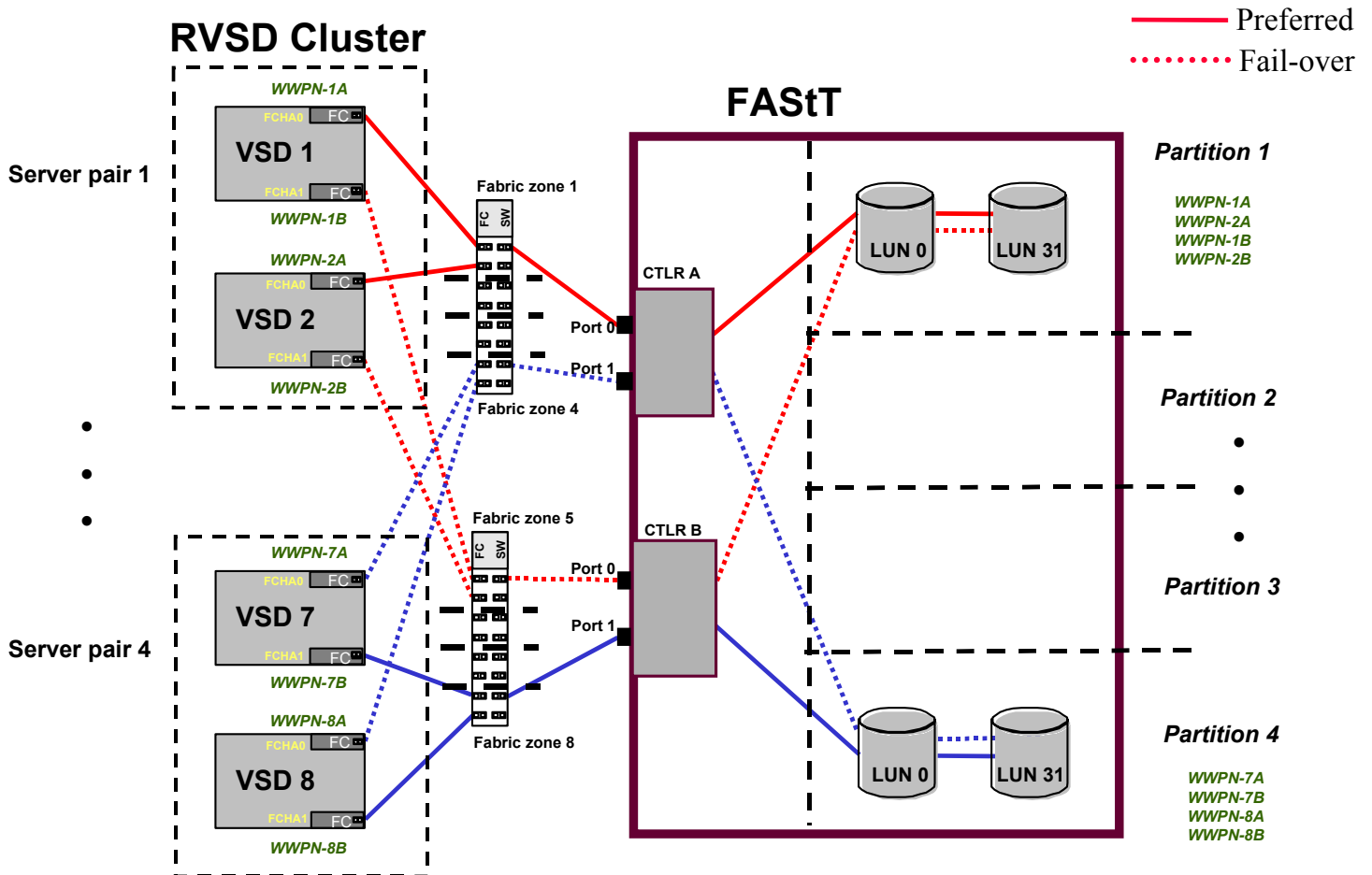
Logical configuration diagrams (on next pages).

For the purposes of clarity, the diagrams show a preferred and fail-over path from an HBA pair to a given volume or set of volumes. A preferred path to a volume is determined when the volume is created and assigned to a FAStT controller. The controller to which it is assigned determines which path is "preferred" or active for I/O transfer. Volumes can, and in most cases should, be distributed across both controllers, thus balancing the I/O load across HBAs and FAStT controllers.

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RVSD Cluster Configuration example with single FASTt
 Shown with 2 partitions (4 maximum) per FASTt

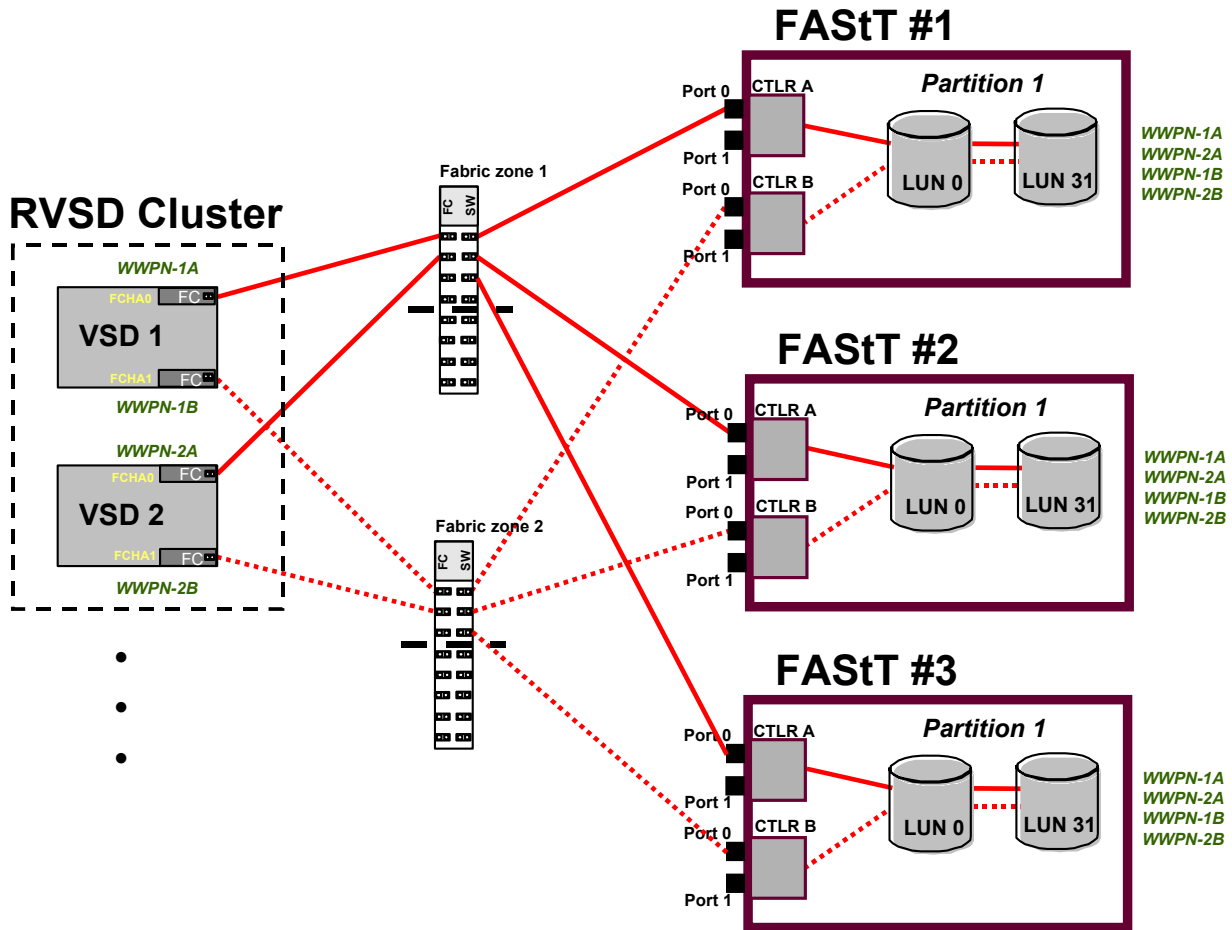


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RVSD Cluster Configuration example with multiple FASTt
Shown with 1 partition per FASTt

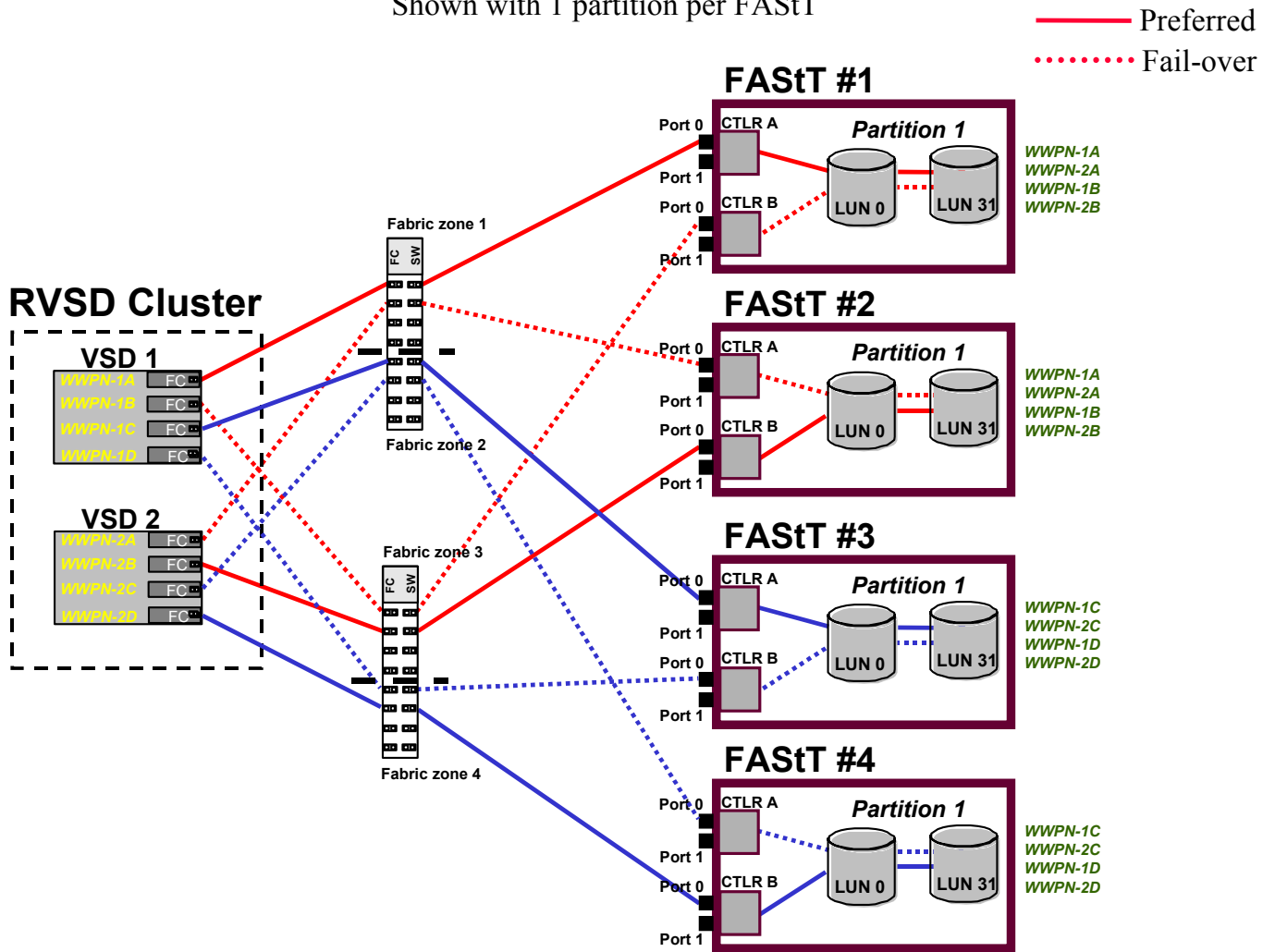
— Preferred
..... Fail-over



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Typical RVSD Cluster Configuration example with multiple FASTt
Shown with 1 partition per FASTt

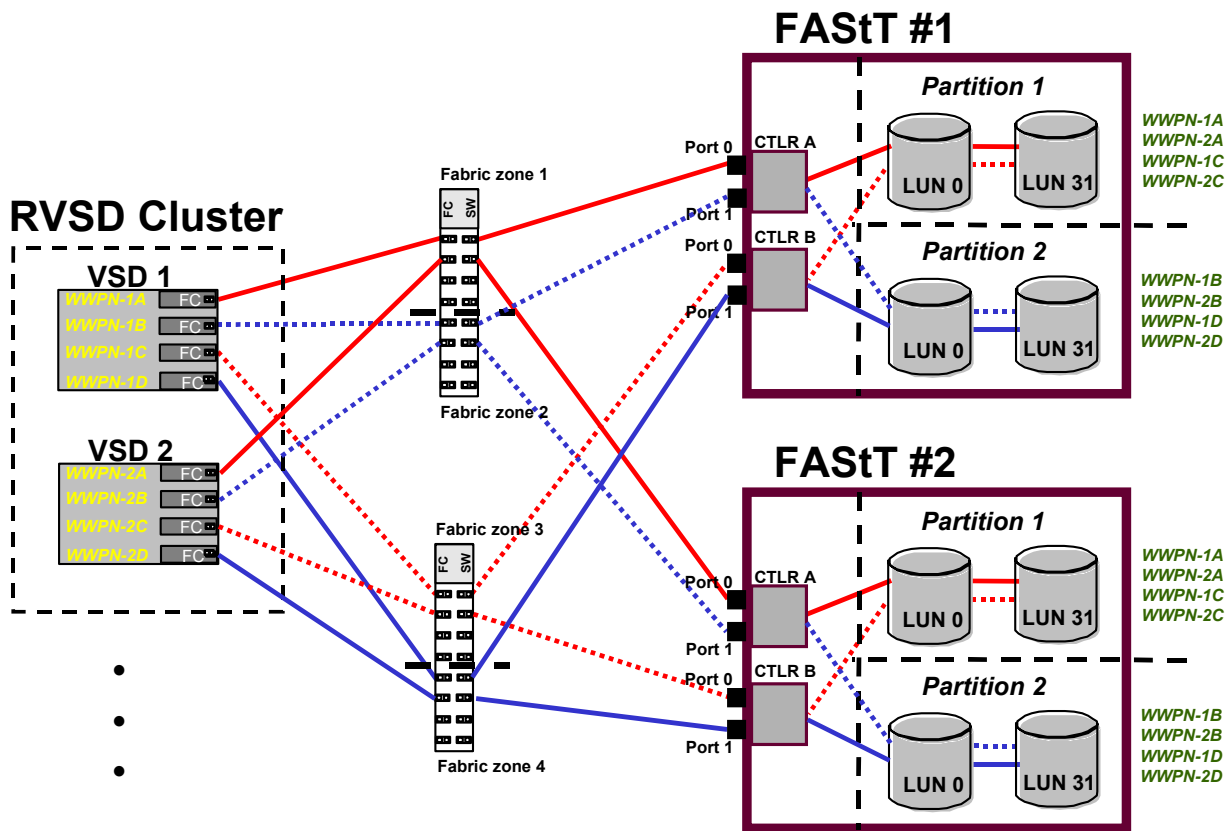


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RVSD Cluster Configuration example with multiple FASTt
Shown with 2 partitions per FASTt

— Preferred
..... Fail-over

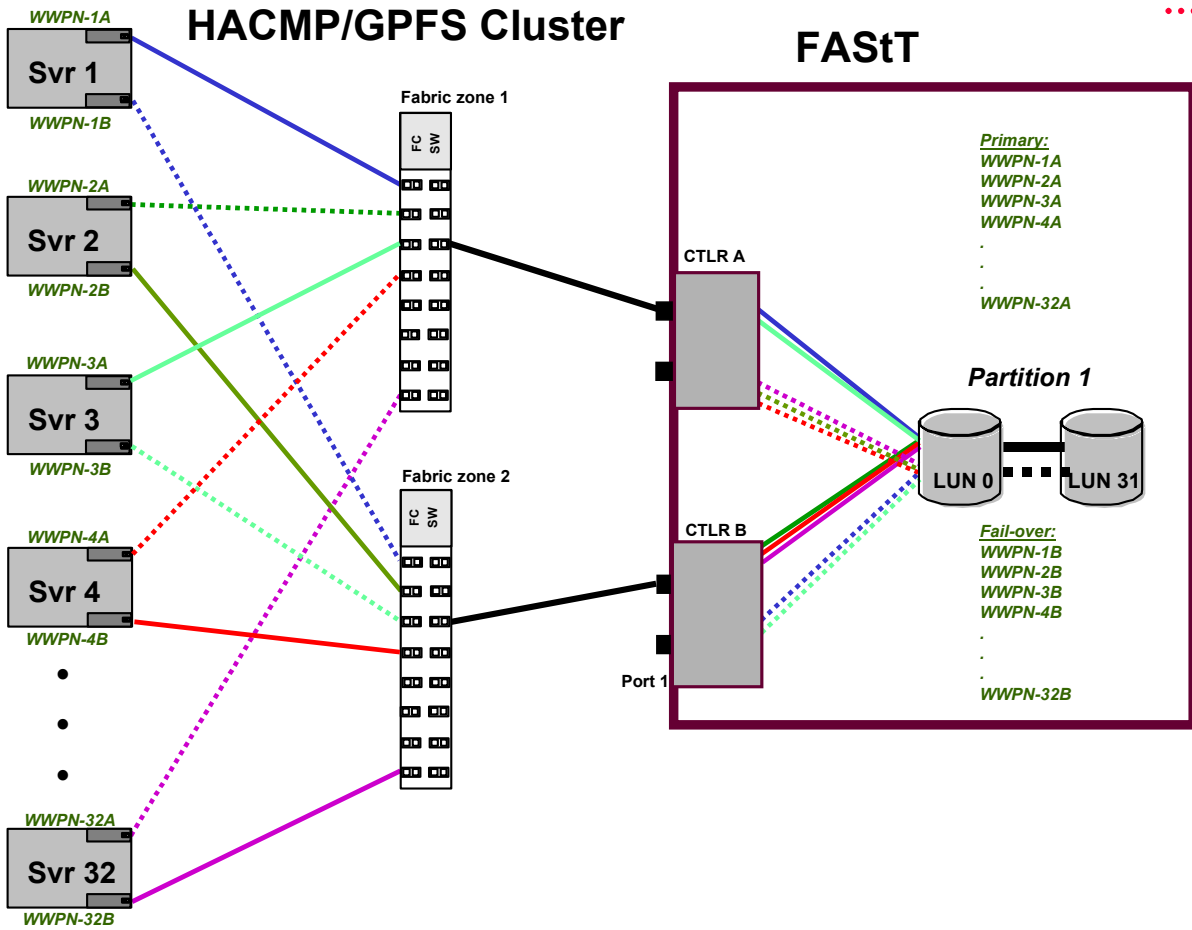


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HACMP/GPFS Cluster Configuration example with single FASTt
Shown with 1 partition per FASTt

— Preferred
..... Fail-over



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HACMP/GPFS Cluster Configuration example with multiple FASTt
Shown with 2 partitions per FASTt

