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## **DATA CENTER**

# **Brocade Fabric OS**

## **Target Path Selection Guide**

Brocade Fabric OS (Brocade FOS) Target Path releases are recommended code levels for Brocade Fibre Channel switch platforms. Use these guidelines when trying to determine the ideal version of Brocade FOS software; consider these guidelines in conjunction with other requirements that may be unique to your particular environment. This document is updated on a periodic basis when Brocade has modified or added new Target Path release recommendations.

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## Document History

Date Published	Comments
June 23, 2017	Updated the Brocade Target Path to FOS 8.0.2c.
April 14, 2017	Updated the recommendations for FICON, FICON emulation, and encryption products.
August 26, 2016	Updated the Brocade Target Path to FOS 7.4.1d.
April 18, 2016	Updated the Brocade Target Path to FOS 7.4.1b.
January 4, 2016	Updated Brocade FOS 7.3.1d and 7.2.1g as official Target Path releases.
September 29, 2015	Updated with Brocade FOS 7.3.1c as the official Target Path release; also updated with Brocade FOS 7.2.1f and FOS 6.4.3h.
July 23, 2015	Updated the recommendations to show Brocade FOS 7.3.1x and 7.4.0x as Target Path releases.
February 2, 2015	Clarified the recommendations for the Brocade 7800.
January 22, 2015	Updated for Brocade FOS 7.2 with 7.2.1d and FICON 7.3.0b recommended release. Added minimum information for the Brocade 7800 and Access Gateway.
July 10, 2014	Added Brocade FOS 7.2.1a and 7.0.2e to the list of Open Systems Target Path releases. Added Brocade FOS 7.2.0d and 7.2.0d1 as recommendations for FICON environments.
January 24, 2014	Added Brocade FOS 7.1.1c to the list of Open Systems Target Path releases. Removed Brocade FOS 7.2.0b as a recommendation for FICON environments.
January 10, 2014	Updated with new Brocade FOS 7.1.1a/b Target Path recommendations and 7.2.0b FICON environment recommendations. Clarified FICON environment recommendations.
March 6, 2013	Updated with new Brocade FOS 6.4.3d and 7.0.2c Target Path recommendations.
N/A	Skipped—synchronizing of versioning with Brocade internal documents.
May 28, 2012	First version.

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## Overview

This document provides guidance for selecting an ideal Brocade® Fabric OS® (Brocade FOS) code version for use on Brocade Fibre Channel (FC) switch platforms and also for selecting optimum versions of code to use when migrating from one version of Brocade FOS to another. These recommended Brocade FOS versions are referred to as “Target Path” releases.

Use the Brocade FOS Target Path release recommendations in this document in conjunction with advice and guidance from your Brocade switch vendor, as well as any special requirements and needs of your particular environment. Always refer to the Brocade FOS release notes and carefully review the “Important Notes and Known Defects” information before selecting and installing any version of Brocade FOS on a switch.

This document is updated on a periodic, as-needed basis to reflect the latest Brocade FOS Target Path release recommendations. Always check the latest version of this document when planning to install a new Brocade FOS release.

## Definition of a Target Path Release

A Brocade FOS release is identified as a Target Path release only if it meets the following criteria:

- It is a Brocade FOS version of firmware that was created primarily for stability and reliability and not for the introduction of new features. This version of firmware may contain Reliability, Availability, and Serviceability (RAS) improvements and enhancements, but it typically does not contain any new software features or support for new hardware.
- Most of the Brocade partners and OEMs have qualified and support the firmware version or are planning to do so in the immediate future. This qualification makes it an ideal option for environments in which customers procure Brocade equipment from more than one vendor.
- The specified code level (or an earlier patch at the same release level) must be deployed in a sufficient number of end-user production environments for a period of at least three months and must have no known critical issues or defects, including firmware-related issues identified in a Technical Service Bulletin (TSB).

Once a specific Brocade FOS code version is identified as a Target Path release, newer patches (that is, releases that vary only with a different letter appended to the release number) that are released on the same code stream can also be considered recommended Target Path releases. In some situations, it may be ideal to select one of the later patch releases in order to pick up a fix for an issue that is applicable to a particular site or environment. These newer patch releases may be formally announced as a Target Path release for that code level the next time this document is updated for new major release designations of Target Path. These newer patch releases may be considered Target Path releases after less than the three months of customer exposure time because patch releases typically contain minimal changes from their predecessors. Because the stability of the major code level release has already been verified, it is unnecessary to wait for this additional field exposure.

Note that for FICON® environments, the use of patch releases that are not specifically designated as qualified and supported for FICON is not recommended.

The Target Path release designation in no way implies or guarantees that a release will be free of defects or will not contain behavioral issues that could cause an impact in a production environment. However, following the Target Path release recommendations produces the most trouble-free environments for data center storage area networks (SANs) that use Brocade switching platforms.

Always review the latest version of the Brocade FOS release notes for the code level you are loading—as well as for the code level you are migrating from—before you update the firmware. The Target Path designation is not a guarantee that you will not encounter limitations in upgrading or downgrading firmware levels. Brocade recommends that all customers review the release notes to ensure a trouble-free migration and production environment.

## Target Path Release Designations

Table 1 specifies the Target Path release for each major version or family of Brocade FOS releases, beginning with Brocade FOS 7.3. In general, Brocade recommends running the most recent major code level that is supported by a particular hardware platform, although it is not necessary to upgrade if you do not need the new features or capabilities introduced in the later major release levels.

For some release levels, the Target Path release may contain some exceptions for special-purpose hardware platforms and functionality, such as encryption platforms, extension platforms, or embedded switches. These exceptions are called out for each major release level in the Notes column of Table 1.

**Table 1.** Target Path Releases by Major Brocade FOS Level

Major Brocade FOS Level	Target Path Release	Notes
FOS 7.3	7.3.1e	<p>FOS 7.3.1d is also a supported Target Path release.</p> <p>FOS 7.3.1e and 7.3.1d are both supported Target Path quality releases that customers can remain on while planning their next fabric upgrade to FOS 8.0 or 7.4 Target Path code levels. The recommendation is to upgrade to the FOS 8.0 Target Path code levels on all Gen 5/Gen 6 platforms and to upgrade to the FOS 7.4 Target Path code levels for all older platforms.</p> <p>All patches released after the listed Target Path on the same code level are also considered Target Path. The recommendation for new upgrades is to always select the highest patch on the Target Path code stream.</p>
FOS 7.4	7.4.1d	<p>FOS 7.4.1e is also a supported Target Path release for all SAN switches.</p> <p>FOS 7.4.1d contains a code change to address TSB-2015-239-A, as well as several enhancements and fixes to harden security.</p> <p>FOS 7.4.1b/c are also supported for Open Systems environments.</p> <p>Encryption products should remain at the FOS 7.4.1x code levels since the BES platform is no longer being supported in FOS 7.4.2 or higher code levels.</p> <p>All patches released after the listed Target Path on the same code level are also considered Target Path. The recommendation for new upgrades is to always select the highest patch on the Target Path code stream.</p>
FOS 8.0	8.0.2c	<p>FOS 8.0.2c is the supported Target Path for all SAN switches.</p> <p>All patches released after the listed Target Path on the same code level are also considered Target Path. The recommendation for new upgrades is to always select the highest patch on the Target Path code stream.</p>

**Note:** More recent versions of Brocade FOS code will be available that provide additional functionality. As a general recommendation, customers who wish to deploy these latest features and who cannot wait for a Target Path designation on that release level should use the latest release available.

Customers who do not have an immediate need for the latest features should follow the provided Target Path recommendations, selecting the latest Target Path release that provides the level of functionality required.

## Recommendations for FICON Environments

For customers with FICON environments, Brocade generally recommends the use of the most recently released version of Brocade FOS that is supported for a particular platform that has been qualified for FICON. Table 2 lists the latest Brocade FOS release at each major Brocade FOS level that has been qualified for use in FICON environments.

**Table 2.** Recommended FICON Qualified Releases by Major Brocade FOS Level

Major Brocade FOS Level	FICON Qualified Release	Notes
FOS 7.3	7.3.1c	FOS 7.3.0b and 7.3.1b are also FICON certified.  For FCIP FICON emulation (XRC, tape, etc.), Brocade recommends FOS 7.3.1c.
FOS 7.4	7.4.1d	FOS 7.4.1d is the recommended FICON Target Path release.  FOS 7.4.1d contains a code change to address TSB-2015-239-A, as well as several enhancements and fixes to harden security.  FOS 7.4.1b is also supported for FICON environments.  For FCIP FICON emulation (FW, OSTP, FICON XRC, tape, etc.), Brocade recommends FOS 7.4.1d9.
FOS 8.0	8.0.2b	FOS 8.0.2b is certified as Target Path for FICON.

**Note:** More recent versions of Brocade FOS code will be available that provide additional functionality. As a general recommendation, customers who wish to deploy these latest features and who cannot wait for a Target Path designation on that release level should use the latest release available.

Customers who do not have an immediate need for the latest features should follow the provided Target Path recommendations, selecting the latest Target Path release that provides the level of functionality required.

## Migrating to Target Path and FICON Recommended Releases

The following upgrade paths are recommended for customers who are running older versions of Brocade FOS and wish to upgrade to a Target Path release in order to avoid the known issues or pitfalls that might exist in some older versions of firmware. If a switch is already running at a major release level that is different from the specific code version recommended in the migration path, simply move forward to the next major release level's recommended Target Path release, and continue the migration process from there.

**Note:** Before installing the new code, always carefully review the Brocade FOS release notes for both the version of code that you are moving from and the version of code that is being installed.

## Upgrade Path to Brocade for Open Systems Environments

FOS 7.2.1g\* → FOS 7.3.1d/e → FOS 7.4.1d/e → FOS 8.0.2c

**\*Note:** Brocade FOS 7.2.1d or later is recommended for the Brocade 7800.

## Upgrade Path to Brocade for FICON Environments

FOS 7.2.1d → FOS 7.3.1c\* → FOS 7.4.1d\* → FOS 8.0.2b

**\*Note:** For FCIP FICON emulation (XRC, tape, etc.), substitute the recommended releases noted in Table 2.

## Future Target Path Releases

Because a Target Path release is based on proven reliability and a lack of critical issues, it is impossible to predict future Target Path releases. However, based on the very mature qualification process and planned release schedules for maintenance and patch releases, Brocade can provide some guidance as to the main code stream and expected timeframe for the next Target Path release.

Brocade currently expects the next Target Path release to be FOS 7.4.2a for both Open Systems and FICON. Future Target Path designations will be on the Brocade FOS 8.1x firmware level.

The future Target Path release level and timeframe are both subject to change without notice.