



Upgrade and Rollback Guide Generation 2 Firmware



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Note:

Before using this information or the product it supports, read the information in “Notices” on page 13.

Sixth Edition (December 2007)

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Contents

Preface v

Background	v
Who Should Read this Guide.	v
Assumptions	v

Chapter 1. Upgrade from the WebGUI . . 1

Identify Current Licenses	1
Backup the Current Configuration	1
Remove Extraneous Files	2
Download the Firmware Image	2
Transfer the Firmware Image	3
Reload the Firmware Image	3
Install the Firmware Image	4
Verify Firmware Image Upgrade.	4

Chapter 2. Rollback from the WebGUI . . 5

Switch to a Previous Firmware Image	5
Verify Firmware Image	5

Chapter 3. Upgrade from the CLI 7

Identify Firmware Version	7
Identify Current Licenses	7
Backup the Current Configuration	7
Remove Extraneous Files	8
Transfer the Firmware Image	8
Reload the Device	8
Install the Firmware Image	8
Verify Firmware Upgrade	8

Chapter 4. Rollback from the CLI . . . 11

Roll Back the Firmware	11
Verify Firmware Rollback.	11

Notices 13

Trademarks	13
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Preface

Background

In November 2005 (with Firmware Release 3.4.x.x), IBM® WebSphere® DataPower® began a transition to a new generation of firmware, referred to as Generation 2, that provides simplified and streamlined firmware revision procedures. Specifically Generation 2 firmware supports:

- Firmware upgrade or rollback with a single file
- Single-command rollback to prior installed firmware release
- Encryption of the entire file system

Generation 2 firmware does not present an operational or functional change from previous firmware versions, which are referred to as Generation 1. This procedure simply alters file formats to provide an easier and more efficient firmware installation procedure.

Starting in February 2006 with Release 3.5.x.x, all subsequent releases are available in Generation 2 format only.

Who Should Read this Guide

Users who are performing any of the following actions should read this guide and follow its procedures to ensure an efficient and stable firmware upgrade or rollback.

- Upgrading from Generation 2 firmware version 3.4.x.x to a later Generation 2 firmware version
- Upgrading from Generation 2 firmware version 3.5.x.x to a later Generation 2 firmware version
- Rolling back from Generation 2 firmware version 3.4.x.x to the previously installed Generation 2 firmware version
- Rolling back from Generation 2 firmware version 3.5.x.x to the previously installed Generation 2 firmware version

In all cases, the actual procedure is identical.

Assumptions

This document makes the following assumptions:

- You have registered at the IBM Software Support web site at <http://www.ibm.com/software/support>.
If not registered, establish your support account by registering, and then login to the support site.
- You have the appropriate authority to perform the procedures in this document. Generally the authority is equal to that of the admin user.
 - For WebGUI, you have administrative access in the default domain.
 - For CLI, you have administrative access to the Flash configuration commands.

Chapter 1. Upgrade from the WebGUI

Use the procedures described in this section to upgrade previously installed Generation 2 firmware.

Prior to performing the upgrade process, you should read the *Release Notes* for the new Generation 2 firmware which are available at <http://www.ibm.com/software/support>. Review the following list to make certain that the target Generation 2 firmware meets your anticipated needs.

The Generation 2 firmware upgrade process involves the following steps:

1. Review this guide.
2. Confirm that the currently installed firmware is of Generation 2 format.
3. Identify the licensed features supported by the current firmware.
4. Backup the current configuration.
5. Remove extraneous files.
6. Download the new Generation 2 firmware image from the firmware download site.
7. Transfer the firmware image to the device.
8. Reload the previous firmware image.
9. Reboot the device to install the latest firmware image.
10. Verify the upgrade.

Most of these procedures are most commonly and easily performed with the browser-based Web GUI.

CLI users should review the procedures described in this chapter and then refer to Chapter 3, "Upgrade from the CLI," on page 7 for equivalent CLI syntax.

Identify Current Licenses

It is important to obtain a full listing of all licensed features supported by the currently installed Generation 2 firmware; failure to obtain such a listing prevents you from identifying the proper upgrade image and may result in missing functionality after the upgrade is complete.

To view licensed features on the device, use the WebGUI to access the default domain.

Display the Licensing Information Screen (available from the **STATUS** → **System** → **Licensing Information** menu path).

Backup the Current Configuration

Back up the current configuration prior to performing the firmware upgrade.

Use the Export feature on the WebGUI to create an XML or ZIP file containing the entire configuration. You can do this if the device is currently running Release 3.2.1 or later.

1. Log into the default domain of the device.

2. Open the **ADMINISTRATION** menu bar in the WebGUI.
3. Click **Export Configuration** available from the **ADMINISTRATION** → **Configuration** → **Export Configuration** menu path.
4. Click the **Create a backup of entire system** radio button.
5. Click **Next**.
6. Follow subsequent prompts, accepting default values, to download the XML or ZIP file to a preferred location.

For additional information on using the Export utility, refer to exporting configurations in the *IBM WebSphere DataPower: WebGUI Guide*.

Remove Extraneous Files

Firmware upgrade is an ideal time to review and remove any old, extraneous or superseded files.

1. Use the File Management screens in the WebGUI to view device directories.
2. To delete old files, check the check box adjacent to the filename and click **Delete**.

Download the Firmware Image

Users obtain firmware images from the IBM Software Support site.

1. Use a browser to access <http://www.ibm.com/software/support>.
2. Login to the support site.
3. Navigate to the firmware updates section of the site for IBM WebSphere DataPower SOA Appliances.
4. Scroll down the screen to select and click the appropriate link for your Download Package.
5. In the Terms and conditions screen, click **I agree**.
6. In the Sign In screen, enter your **IBM support ID** in the IBM ID field, and your **IBM support Password** in the Password field, and then click **Submit**.
7. Scroll down the screen to the appropriate area that lists your product Release number.
8. Check the check box aligned with your Firmware Download.

Some examples of Generation 2 firmware image names are:

- xa3503.scrypt2
- xi3503.mq5310.scrypt2
- xi3503.mq5310.tam4102.scrypt2
- xs3503.mq5310.scrypt2
- xs3503.mq5310.tam4102.scrypt2
- xs3503.scrypt2
- xs3503.tam4102.scrypt2

Firmware image names take the following format:

productIDfirmwareVersion.licenseList.fileExtension

productID

The *productID* takes the value xa, xi, or xs and identifies a specific device — the XA35 XML Accelerator, the XI50 XML Integration Appliance, and the XS40 XML Security Gateway.

firmwareVersion

The *firmwareVersion* is a four-digit string that identifies the Generation 2 firmware version that will be installed by this conversion image, in the above cases version 3.5.0.3.

licenseList

The *licenseList*, which may or may not be present, and which may contain multiple entries, identifies the licensed features supported by this Generation 2 firmware image. For example, the firmware image `xi3503.mq5310.tam4102.scrpt2` supports the IBM WebSphere MQ and Tivoli® Access Manager licensed features.

fileExtension

All Generation 2 firmware images end with the `scrpt2` file extension.

Ensure that you select the product-specific firmware image that supports previously installed licensed features such as MQ or TAM.

9. Click **Yes** to accept the presented IBM certificate.
10. The IBM Download Director applet downloads your selection. When complete, click **X** to close the IBM Download Director screen.

Transfer the Firmware Image

Copy the firmware image to the `image:` directory.

The most convenient method of transferring files to the device is via the File Management Screen.

1. In the default domain, use the **ADMINISTRATION** → **Main** → **File Management** menu path to display the File Management screen.
2. Aligned with the image directory, click **Actions**, and then click **Upload Files**.
3. Click **Browse**. Navigate to select and highlight the file to upload.
4. In the File Upload screen, click **Open**.
5. Check the **Overwrite existing files** check box (optional).
6. Click **Upload**.
7. Click **Continue**.
8. Confirm transfer of the firmware image by expanding the image directory and viewing the new firmware image file.

For additional information on using the **Upload** utility, refer to Firmware Upgrades in the *IBM WebSphere DataPower: WebGUI Guide*.

Reload the Firmware Image

Boot the device after removing extraneous files.

1. In the default domain, use the **ADMINISTRATION** → **Main** → **System Control** menu path to display the System Control screen.
2. Under **Shutdown**, select the **Reload Firmware** option from the **Mode** values-list.
3. Click the **Shutdown** button.
4. In the Confirm Action screen, click **Confirm**, and then click **Close**. After the device boots, log back into the default domain of the device.

Install the Firmware Image

Having loaded the firmware image onto the device, you will next designate that firmware image as the boot image and reboot the device.

1. In the default domain, use the **ADMINISTRATION** → **Main** → **System Control** menu path to display the System Control screen.
2. Under **Boot Image**, use the **Firmware File** values-list to select the newly-transferred firmware image.
3. Click the **Boot Image** button.
4. In the Confirm Action screen, click **Confirm**.
5. Click **Close** to boot the device. A boot can take as long as 5 minutes.
6. When the DataPower login screen refreshes, log back into the device into the default domain.

If, for any reason, the device is unable to install the firmware image, an error notification appears. The device will either not boot as requested, or it will boot using the existing firmware.

Verify Firmware Image Upgrade

Once you have upgraded, check the version information on the updated device to verify that the new Generation 2 firmware has been successfully installed.

1. Display the Version Information Screen (available from the **STATUS** → **System** → **Version Information** menu path).
2. Verify that the version matches the newly-installed Generation 2 firmware image.
3. Verify that the **version** and **Running DPOS** strings are identical.
4. Select **STATUS** → **Main** → **Object Status** to display the Object Status Screen.
5. Verify the presence of configured objects.
6. Submit sample traffic to the device to confirm operations.

Chapter 2. Rollback from the WebGUI

After performing the upgrade procedure described in Generation 2 Firmware Upgrade, the device supports an *active*, or running firmware image installation (consisting of the newly-installed Generation 2 firmware image and associated configuration file), and a *passive*, or backup firmware image installation (consisting of the prior Generation 2 firmware image and associated configuration data).

Using either the WebGUI or the CLI, you can switch to the *passive* install; thus, restoring the device to a known, tested operational state.

Note: All configuration changes made to the *active* installation do not automatically migrate to the *passive* installation.

CLI users should review the procedures described in this chapter and then refer to Chapter 4, “Rollback from the CLI,” on page 11 for equivalent CLI syntax.

Switch to a Previous Firmware Image

Use the System Control Screen from the **ADMINISTRATION** → **Main** → **System Control** menu path to toggle between active and passive firmware image installations.

1. Click the **Firmware roll back** button.
2. On the Configure Action screen, click **Confirm**.
3. Click **Close** to boot the appliance. A boot can take as long as 5 minutes.
4. After 3 minutes or so, click **Save Config**, and then click **Logout**.
5. Log back into the device into the default domain.

Verify Firmware Image

Once you have rolled back, check the version information to verify that the previously passive Generation 2 firmware is now the active, running firmware.

Verification can most easily be accomplished by displaying the Version Information Screen (available from the **STATUS** → **System** → **Version Information** menu path).

1. Verify that the **version** and **Running DPOS** strings are identical.
2. Select **STATUS** → **Main** → **Object Status** to display the Object Status Screen.
3. Verify the presence of configured objects.
4. Submit sample traffic to the device to confirm operations.

Chapter 3. Upgrade from the CLI

Use the following command sequences to implement the procedures described in Chapter 1, “Upgrade from the WebGUI,” on page 1.

For information about commands, refer to *IBM WebSphere DataPower: Command Reference*.

Identify Firmware Version

Use the **show version** command under the Global Configuration Mode to view version, firmware and DPOS information.

```
xs40# configure terminal
Global Configuration Mode
xs40(config)# show version

        version: XS40.3.5.1.0
           build: main.124514
    build date: 2006/01/19 10:04:11
watchdog build: XS40.3.5.1.0
installed DPOS: XS40.3.5.1.0
   running DPOS: XS40.3.5.1.0

xs40(config)#
```

Identify Current Licenses

Use the **show license** command under the Global Configuration Mode to view license information.

```
xs40(config)#
xs40(config)# show license

Feature      Enabled
-----
xs40(config)#
```

Backup the Current Configuration

The CLI provides no method for directly downloading files from the device flash to the local workstation, unless the local workstation is running an HTTP, FTP, or SCP server. If the local workstation is not running such services, another host must be used to hold the back up files.

To copy files from the device to another host using the CLI, enter Global Configuration mode and use the **copy** command to copy files from the device. For example:

```
xs40(config)# copy config:///autoconfig.cfg
ftp://user@server.domain.com/backup/autoconfig.cfg
```

You will need to do this for all of the files you need to back up.

Remove Extraneous Files

Use the **dir** and **delete** commands under the Global Configuration Mode to remove extraneous files.

```
xs40(config)# dir local:
File Name                               Last Modified          Size
-----
secureTrust.xsl                         Tue Aug 17 0:07:04 2004 8876506
stripFootersHeaders.xsl                 Fri Aug 20 17:17:49 2004 1859368
...
7.0 MB available to image:

xs40(config)# del local:secureTrust.xsl
File deletion successful
xs40(config)#
```

Transfer the Firmware Image

Use the **copy** command to move files onto the device. To use the CLI, the host where the image files are located must have an active HTTP, FTP, or SCP server.

The following example command would be used to transfer a firmware file to the device:

```
xs40(config)# copy http://server.domain.com/xs3503.scrpyt2
image:///xs3503.scrpyt2
```

Reload the Device

Use the **shutdown reload** command under the Flash Configuration Mode to reload the device.

```
xs40(config)# flash
Flash Configuration Mode
xs40(config-flash)# shutdown reload
xs40(config-flash)#
```

Install the Firmware Image

Use the **boot image** command under the Flash Configuration Mode to designate the boot image.

```
xs40(config)# flash
Flash Configuration Mode
xs40(config-flash)# boot image xs3503.scrpyt2
.....Firmware upgrade successful
Device is rebooting now.
xs40(config)#
```

Verify Firmware Upgrade

Use the **show version** command under the Global Configuration Mode to display firmware and DPOS information.

```
xs40# configure terminal
Global Configuration Mode
xs40(config)# show version

version: XS40.3.5.1.0
build: main.124514
build date: 2006/01/19 10:04:11
```



```
watchdog build: XS40.3.5.1.0
installed DPOS: XS40.3.5.1.0
running DPOS: XS40.3.5.1.0
xs40(config)#
```

Use the **show services** command under the Global Configuration Mode to view object information.

```
xs40# configure terminal
Global Configuration Mode
xs40(config)# show services
...
xs40(config)#
```

Chapter 4. Rollback from the CLI

Use the following command sequences to implement the procedures described in Chapter 2, “Rollback from the WebGUI,” on page 5.

For information about commands, refer to *IBM WebSphere DataPower: Command Reference*.

Roll Back the Firmware

Use the **boot switch** command under the Flash Configuration Mode to roll back the firmware.

```
xs40(config)# flash
Flash Configuration Mode
xs40(config-flash)# boot switch
Firmware rollback successful
Device is rebooting now
```

Verify Firmware Rollback

Use the **show version** command under the Global Configuration Mode to view version information.

```
xs40# configure terminal
Global Configuration Mode
xs40(config)# show version

        version: XS40.3.5.1.0
          build: main.124514
    build date: 2006/01/19 10:04:11
watchdog build: XS40.3.5.1.0
installed DPOS: XS40.3.5.1.0
  running DPOS: XS40.3.5.1.0
xs40(config)#
```

Use the **show services** command under the Global Configuration Mode to view object information.

```
xs40# configure terminal
Global Configuration Mode
xs40(config)# show services
...
xs40(config)#
```

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