

IBM WebSphere DataPower 7993 SOA Appliance - Migrating to the newer or later firmware

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Agenda

- § Resources
- § Considerations
- § Upgrade steps
- § Known issues
- § Backup Configuration

Agenda

§ This presentation describes the firmware upgrade process for a WebSphere DataPower 7993 SOA appliance to the newer firmware. The presentation also references migration tips to consider during migration and testing.

Resources

IBM® WebSphere DataPower support posts upgrade information in these technotes:

§ ReadFirst: Upgrading from 3.6.0.* levels of firmware on IBM WebSphere DataPower Appliance to a 3.7.2.2 or higher firmware level

<http://www-01.ibm.com/support/docview.wss?uid=swg27016007&aid=1>

§ Knowledge Collection: Firmware upgrades for the IBM WebSphere DataPower SOA Appliances

<https://www-304.ibm.com/support/docview.wss?uid=swg27015333>

Release Note

§ <https://www-304.ibm.com/support/docview.wss?uid=swg24014405>

The [Fix Central download site](#) is the location for accessing the latest DataPower firmware. Available on Fix Central are fix packs for:

- 4.0.2.* [Release Notes](#)
- 4.0.1.* [Release Notes](#)
- 3.8.2.* [Release Notes](#)
- 3.8.1.* [Release Notes](#)
- 3.8.0.* [Release Notes](#)
- 3.7.3.* [Release Notes](#)

4.0.2.2

Release date: 23 December 2011

[Last modified](#): 23 December 2011

Status: Available

APAR	Description
IC78400	LOG MESSAGE 0X08040008d BINARY DATA: MAXIMUM MESSAGE SIZE IS LOGGED ONLY IN DEFAULT DOMAIN
IC78887	HTTP SERVICE RETURNS A LAST-MODIFIED HEADER OF 1970 FOR CONTENT TYPES SUCH AS GIF.
IC78912	APPLIANCE RESTARTS WHEN USING DEBUG RULE ON XML MANAGER OPTIONS POLICY FOR NON-STREAMING REQUESTS.
IC79035	JSONX TO JSON TRANSFORM ACTION DOES NOT ESCAPE QUOTES CORRECTLY
IC79090	VALIDATE ACTION INCORRECTLY VALIDATES SOAP 1.2 FAULT DETAIL
IC79111	DISABLING PERMIT CONNECTIONS TO INSECURE SSL SERVERS ON PROFILE FAILS

Consideration

Recovery

- Backup the appliance

<https://www-304.ibm.com/support/docview.wss?uid=swg21377550>

Memory

- The new firmware has additional features and therefore takes more space than previous versions.

Applications

- There have been significant changes in some of the features which may result in changes being required to your environment.

Consideration

Prerequisites

- § The appliance must have 3.6.1.7 or later 3.6.1 firmware installed before upgrading to 3.7.2 or higher firmware levels to avoid known issues.
- § There must be at least 100 Megabytes of available Crypto space to complete the upgrade process.
- § Withdrawal of support for the 7993 DataPower appliance

9003 or firmware is 3.7.3 end in the 2011

[Withdrawal of Support for the DataPower Appliance 9003 hardware generation](#)

[Withdrawal of support for the IBM WebSphere DataPower SOA Appliances 3.7.3 firmware levels](#)

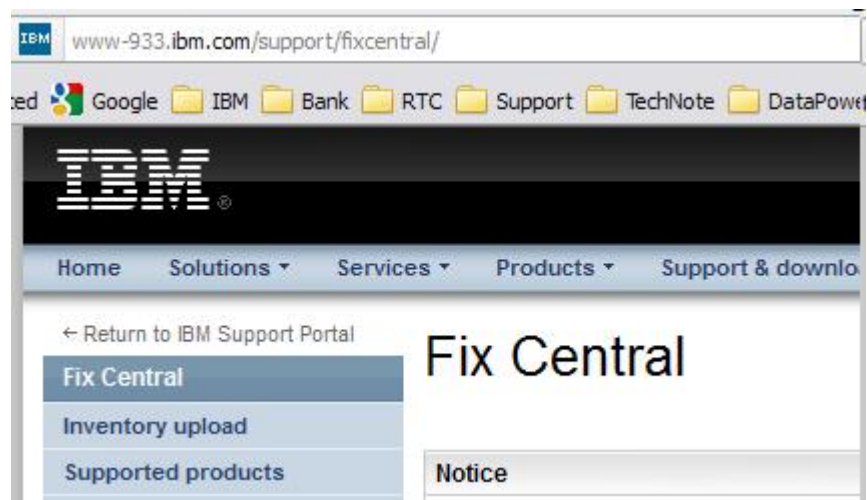
Upgrade steps for the 7993 Model Appliance

1. Download the Firmware

To get the latest versions of the firmware go to IBM Fix Central:

- <http://www-933.ibm.com/support/fixcentral/>

Download the prerequisite firmware



Identify The Firmware Image File Which Matches Your Appliance

- § For the DataPower firmware image names have the following format: `zzNNNN.licenses.scrypt2`.
- § **DataPower model:** `zz` represents as DataPower model which is on the top left of the banner on WebGUI page as `XI50.....`. For example: `xiNNNN.licenses.scrypt2`.
- § **License Information:** It represents what licenses you have in this appliance. For a DataPower with ODBC license, the image would be: `xiNNNN.odbc.scrypt2`.
- § **Current Firmware:** `NNNN` represents current firmware. For a DataPower with ODBC license and you want to upgrade to 3.8.1.18 the image would be: `xi38118.odbc.scrypt2`



Upgrade steps for the 7993 Model Appliance

Select product
Find product

Select the product below.

When using the keyboard to navigate the page, use the **Alt** and **down arrow** keys to navigate the selection lists.

Product Group

Product

Installed Version

Continue

Identify fixes

WebSphere, WebSphere DataPower SOA Appliances (3.8.1, All platforms)

Identify fixes

Search for fixes for your specific product, type, and platform or search for a fix by ID.

<input type="radio"/>	Browse for fixes	Browse for all fixes for your specific product, release, and platform.
<input type="radio"/>	APAR or SPR	Search for fixes by entering one or more APAR or SPR numbers each separated by a comma. (e.g. PK10998).
<input type="radio"/>	Individual fix IDs	Search for updates by entering one or more fix IDs each separated by a comma. (e.g., ibm_fw_aacraid_8kl-5.2.0-15411_linux_32-64).
<input checked="" type="radio"/>	Text	Search for fixes containing all the entered key words, such as problem area, exception, or message ID, in any order.

Additional query options

Do not show fixes that change my installed version (3.8.1)

Continue
 Back

Specify the version and model

Upgrade steps for the 7993 Model Appliance


Select files to download using Download Director



Select the fixes you want to download and click the **Download now** button.

Order number: 39410857

Total size: 801.22 MB

1. fix pack: XI50-9003-9235-41954BX-3.8.1.18-Firmware (801.22 MB) Dec 18, 2011
DataPower-3.8.1.18-XI50-9003-9235-41954BX

 [Fix list](#)

 **Download now**  **Back**

Download the fixpack from website.

Download options for HTTP/FTP and download director

Download options

- Download method: HTTP
- Include requisites: Yes

[Change download options](#)

Close [x]

Download options

Select the download method to be used to download fixes.

- Download using Download Director
(requires Java enabled browser)
 What is this?
- Download using bulk FTP
 What is this?
- Download using your browser (HTTP)

CAUTION: Do not assume that Fix Central will show you all the prerequisites you need.
 Be sure to always click the **More information** link for additional prerequisite and other important fix information.
 Click [here](#) for an explanation of what prerequisites you can expect Fix Central to provide.

Include prerequisites and co-requisite fixes (you can de-select the ones you do not need later)

Continue
 Close

Download files using HTTP

Download files using HTTP

WebSphere, WebSphere DataPower SOA Appliances (3.8.1, All platforms)

Download files using your web browser

Click the download link next to each file to download it.

Order number: 39455381










Total size: 801.22 MB

fix pack: XI50-9003-9235-41954BX-3.8.1.18-Firmware

 [Fix list](#)

DataPower-3.8.1.18-XI50-9003-9235-41954BX

The following files implement this fix.

-  [xi38118.odbc.scrpt2 \(71.41 MB\)](#)
-  [xi38118.odbc.tam61.scrpt2 \(76.45 MB\)](#)
-  [xi38118.odbc.tam61.tibco.scrpt2 \(76.77 MB\)](#)
-  [xi38118.odbc.tam6.scrpt2 \(75.71 MB\)](#)
-  [xi38118.odbc.tam6.tibco.scrpt2 \(76.04 MB\)](#)
-  [xi38118.odbc.tibco.scrpt2 \(71.73 MB\)](#)
-  [xi38118.scrpt2 \(55.57 MB\)](#)
-  [xi38118.tam61.scrpt2 \(60.6 MB\)](#)
-  [xi38118.tam61.tibco.scrpt2 \(60.92 MB\)](#)

Upgrade steps for the 7993 Model Appliance

2. The first step is to perform a full reboot of the appliance.
3. From the Control Panel of the WebGUI select “System Control”:



Scroll to the “Shutdown” Section and check that “Reboot System” is selected and click “Shutdown”



Shutdown

Mode: Reboot System *

Delay: 1 Second(s)

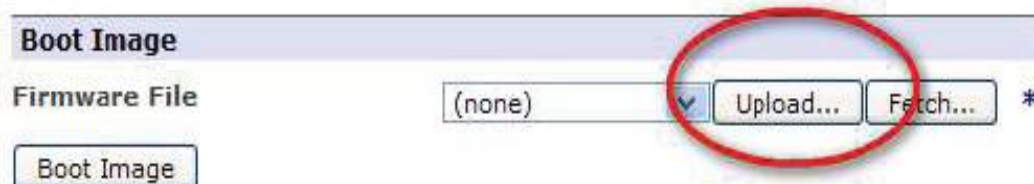
Shutdown

Upgrade steps for the 7993 Model Appliance

4. Upload the prerequisite firmware to the appliance
5. From the Control Panel of the WebGUI select “System Control”:
6. In the “Boot Image” section select “Upload”

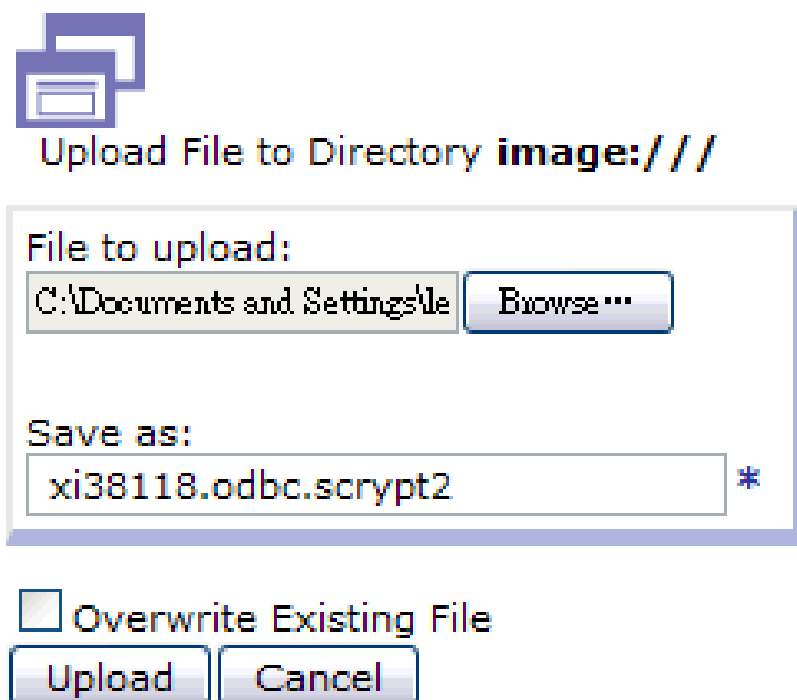


System Control



Upgrade steps for the 7993 Model Appliance

7. Browse to the prerequisite firmware and upload



Upgrade steps for the 7993 Model Appliance

8. After the firmware has uploaded the next step is to perform a “Reload”
 - ▶ Scroll to the “Shutdown” section and select “Reload Firmware” from the dropdown and then select “Shutdown”

The screenshot shows a web interface for the Shutdown section. The 'Mode' dropdown menu is set to 'Reload Firmware'. The 'Delay' is set to '1' second. The 'Shutdown' button is highlighted with a red circle.

Shutdown	
Mode	Reload Firmware ▼
Delay	1 Second(s)
<input type="button" value="Shutdown"/>	

Upgrade steps for the 7993 Model Appliance

9. When the appliance is ready and you have logged back in select “System Control”
10. In the Boot image section select the firmware from the dropdown and then select “Boot Image”
Then confirm.



Boot Image

Firmware File

Known Issue: Not enough space

What to do if you receive the message:

“Loading firmware failed: Insufficient flash space available”

Known Issue: Not enough space

- § The first step to try will be to install the “base image” of the current firmware level for your appliance using the steps.
- § Reboot
- § Upload image
- § Reload
- § Boot image

Known Issue: Not enough space

§ If there is not enough space to install the base images perform the following steps:

Log into the CLI as the admin users and enter:

- config
- flash
- boot delete

```
xs40# config
Global configuration mode
xs40(config)# flash
Flash configuration mode
xs40(config-flash)# boot delete
```

Known Issue: Not enough space (cont)

§ If you are still receiving the error then you will need to reinitialize the appliance.

- The appliance is returned to factory settings
- All configurations and data erased

§ Note you will need to have serial access to the appliance to complete the configuration of the appliance after the reinitialization is complete

Known Issue: Not enough space (cont)

Reinitialize the appliance

§ Reboot

§ Upload firmware image

§ Log into the CLI and enter:

- config

- flash

- reinit <filename of the firmware image>

§ Reinitialize Technote

– **Resetting an IBM WebSphereDataPower SOA Appliance to initial factory settings**

<https://www-304.ibm.com/support/docview.wss?uid=swg21244>

```
xs40# config
Global configuration mode
xs40(config)# flash
Flash configuration mode
xs40(config-flash)# reinit 360
```

Known Issue: Not enough space (cont)

§ When the reinitialize is complete log into the serial console using the default user/password admin/admin and follow the steps in the setup Guide to configure:

Ethernet interfaces

Enable WebGUI

Enable SSH

Known Issue: Not enough space (cont)

- § When the appliance is configured and you are able to log into the WebGUI and if you are not at the desired firmware level continue the upgrade process following the steps previously described in this presentation.

- § When the appliance has been upgraded to the final firmware version import the system backup and test the applications.

Known Issue: Others

- § IMPORTANT: After any failed upgrade attempts, reboot (shutdown reboot) the appliance.

- § If you see a message indicating "**extracting firmware firmware parsing error**". Download the image file again. The filesize should be close to the same size as on Fix Central. They will not be exact, but should be very close. Perform a shutdown reboot, then installed the build again.

- § Warnings have been detected: Would you like to continue? **Firmware does not contain supported feature 'SQL-ODBC'**. This message indicates that the firmware image is not a match to the appliance.

- § If you see this message after upgrading "**... Upgrade failure in dynamic loader: Switch active firmware failed The dynamic loader failed to upgrade the system (-1)**". The resident loader will be used instead ...". Confirm that the firmware upgrade was successful by checking the appliance firmware level via the WebGUI or "show version" CLI command. This message is informational.

Known Issue: Others

- § When upgrading the firmware on an appliance, make sure you wait until the firmware upgrade completes before entering other commands. If you have an appliance with the HSM feature, the reboot portions of the upgrade steps can take 15 minutes to complete.

- § If the upgrade is not working, check the throttle setting and turn them off temporarily while uploading the image file and upgrading the firmware in **Objects -> System Settings-> Throttle Settings**. Perform a shutdown reboot, installed the build again.

- § Reboot the appliance then upload the image via the WebGUI and use the following CLI commands to upgrade the firmware. Note: When uploading the firmware image you may rename it to make typing it into the CLI command easier. If the upgrade fails save any messages from this session to assist in troubleshooting the upgrade issue.
config
flash
boot image <image name>

Other tips

§ Unable to connect using network services: WebGUI or ssh after upgrading firmware.

This can occur if you are using a custom cert or authentication for the management services and any of the associated certs are expired. Expired certs are removed at upgrade time.

The first step is to verify that the network is functioning correctly using these commands:

```
show int
```

```
show int mode
```

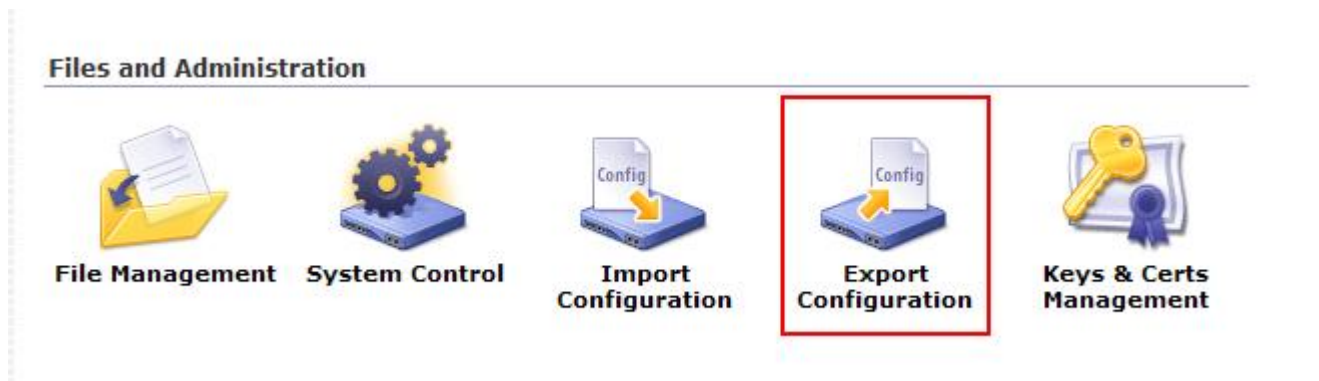
```
show route
```

§ These commands will show if there is any network activity as well as the connection details such as link speed. Once the network is confirmed the quickest way to recover the web management and ssh services is to delete them and recreate them with the default settings using the serial console. These commands will reset the RBM's, ACL's, WebGUI and SSH services all to the default settings. Note: If the ssh is working you may omit any commands with the ssh.

```
config
web-mgmt
no ssl
exit
write mem
y
no web-mgmt
no ssh
rbm
reset
exit
acl web-mgmt
reset
exit
acl ssh
reset
exit
write mem (key step to remove the current settings)
y
web-mgmt <ip to listen on or 0.0.0.0 for all> <port to use default is 9090>
ssh <ip to listen on or 0.0.0.0 for all> <port to use default is 22>
write mem
y
```

Backup your configuration

- § Use the following procedure to backup all exportable configuration data for your original appliance. Only the subset of the appliance configuration that is visible to the account you are logged in to will be exported, so first ensure that you are logged into the WebGUI as admin.
- § Select **ADMINISTRATION > Configuration > Export Configuration**. This will display the Initial Export Configuration screen



Backup your configuration (Cont.)

- § Select **Create a backup of the entire system**, and click **Next** to display the file name screen.
- § You should provide a meaningful description of the appliance configuration you are exporting in the comment field. This will help to identify the backup at a later date.



Backup your configuration (Cont.)

- § Specify a file name for the export file that will be created in the export: directory. The default file type is .zip. If a file with the specified name already exists, it will be overwritten.
- § Click **Next**. The exportable appliance configuration will be written to the specified file (in the export: directory). Copy this file to a safe (off-box) location. When you import the configuration into the new appliance, this file should reside on your client system, so you may wish to perform the copy using the Download button, which will copy it to your browser client machine.
- § Click **Done**.

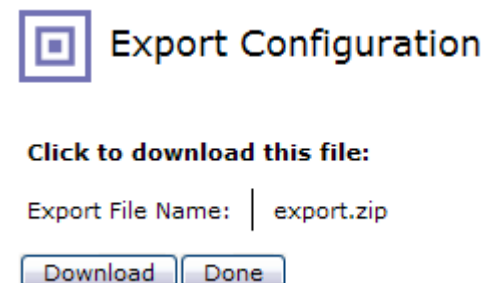


Export Configuration

Comment

Deployment Policy (none)

Export File Name *



Export Configuration

Click to download this file:

Export File Name: | export.zip

§ The export file you created above contains the complete configuration of your original appliance, with the exception of the following types of object:

User Account objects

Certificate objects

Key objects

Password maps.

Tech note: How to move your configuration from a WebSphere DataPower SOA appliance model 7993/9002 to a model 9235/9004

<https://www-304.ibm.com/support/docview.wss?uid=swg21377550>

Summary

§ Check online resources for the latest information

Review considerations

Memory usage

Applications / Features

Follow upgrade steps

Additional upgrade to the Prerequisite firmware

§ Best practice upgrade procedure

- Reboot
- Load firmware
- Reload
- Boot image

§ Additional steps may be required

Additional WebSphere Product Resources

- § Discover the latest trends in WebSphere Technology and implementation, participate in technically-focused briefings, webcasts and podcasts at: <http://www.ibm.com/developerworks/websphere/community/>
- § Learn about other upcoming webcasts, conferences and events: http://www.ibm.com/software/websphere/events_1.html
- § Join the Global WebSphere User Group Community: <http://www.websphere.org>
- § Access key product show-me demos and tutorials by visiting IBM Education Assistant: <http://www.ibm.com/software/info/education/assistant>
- § View a Flash replay with step-by-step instructions for using the Electronic Service Request (ESR) tool for submitting problems electronically: <http://www.ibm.com/software/websphere/support/d2w.html>
- § Sign up to receive weekly technical My Notifications emails: <http://www.ibm.com/software/support/einfo.html>

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Or go to https://www.ibm.com/survey/oid/wsb.dll/s/ag21f?wsb34=swg_user

Questions and Answers