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AX3800S/AX3650S Series

Stack Operation Guide

(Operation and Maintenance)

Edition 2

Document No. NTS-12-R-002

ALAXALA Networks Corporation

Preface

The purpose of this document is to help deepen your understanding of how to perform operations to operate and maintain the ALAXALA AX series stack functionality. Please use this document as a technical supplement to product manuals when operating or maintaining a switch using the stack functionality.

Related documents

- AX3800S/3650S Series product manuals (http://www.alaxala.com/en/techinfo/manual/index.html)
  Software manuals
  - Configuration Guide Vol. 1
  - Configuration Command Reference Vol. 1
  - Operation Command Reference Vol. 1

  Software Update Guide

Notes on using this document

The information in this document is based on the basic operations verified under an environment specified by ALAXALA Networks Corporation and does not guarantee operation of the functionality, performance, or reliability under all environment requirements. Please use this document as a supplement to product manuals.
Unless otherwise stated, the OS software version as of the creation of this document is as follows:

AX3650S	Ver. 11.10
AX3830S	Ver. 11.10

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Update history

Edition.	Rev.	Date	Changes	Location
1	-	May 2012	First edition was issued.	-
2	-	Feb. 2013	The title of this document was partially changed (*AX Series => AX3800S/AX3650S Series*).	Front cover
			Description of the OS versions was updated.	Preface
			Description on checking stack status (master/backup) and a switch number by LEDs or SOP was added.	1.4
			Description on procedures for changing a stack switch back to standalone mode was partially changed.	2.6
			Description on Stack Q & A (operation) was partially changed.	3.1

Contents

1. Operation of Stacks

1.1 Stack Operation Commands

The following table shows the stack operation commands. These operation commands are necessary to operate stacks.

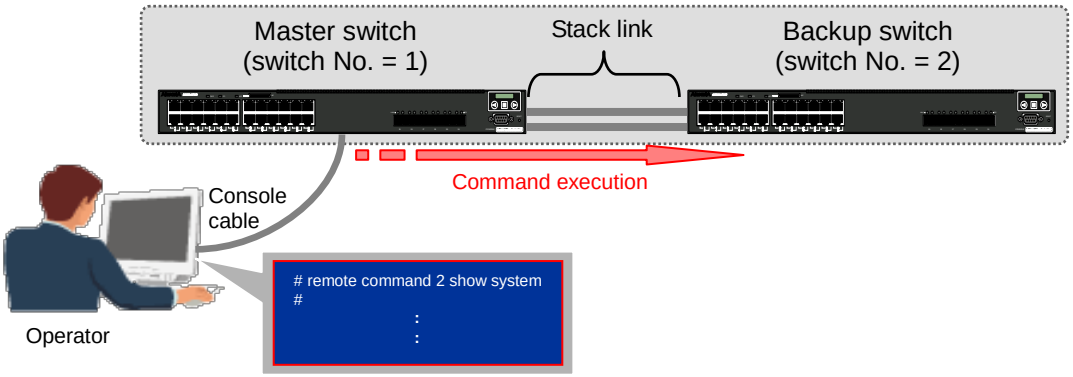
Command	Description
`remote command`	In a stack configuration, this command executes an operation command from the master switch to the specified member switch. The command is executed by setting the specified member switch to administrator mode. For information about the remote command, see *1.2 Remote Commands*.
`show switch [detail]`	Displays information on a member switch that makes up a stack or the status summary of such a switch. To display detailed information, add the option <`detail`>. This command is valid for a member switch running in a stack.
`set switch`	Changes the switch number of a switch that makes up a stack. This command is used to change a switch from standalone mode to stack mode, or vice versa. To apply a mode change, it is necessary to restart the switch. If a switch is restarted without specifying `stack enable` in a configuration command, its switch number is overwritten with `1`.
`dump stack`	Outputs detailed event trace information and control table information collected for a stack management program to a file. This command is used to collect a dump such as a fault dump. The storage directory and the name of the output dump file are as follows: Storage directory: `/usr/var/stack/` Output file name: `stack_dump.gz`

`cp <file 1> switch <switch no.> <file 2>`
Copying the file from the local switch to the specified switch
 	
`cp switch <switch no.> <file 1> <file 2>`
Copying the file from the specified switch to the local switch
	Copies the file from internal flash memory to the member switch with the specified switch number, or from the member switch with the specified switch number to the internal flash memory of the local member switch.
	This command is used to copy a software image file or fault dump file.

1.2 Remote Commands

1.2.1 What are remote commands?

In a stack configuration, a remote command is a stack-specific command for executing an operation command from the master switch to a specified member switch. Remote commands are necessary to collect switch-specific information (such as physical Ethernet interface information), update software, and perform a backup or restoration on member switches other than the master switch.



1.2.2 Remote command classification

The following table shows the major operation commands using remote commands.
Display-related commands and operation-related clear commands provide an option to select between a specific member switch (<*switch no.*>) and all member switches (`all`).

Classification	Command	Option
Display-related	`show version`	<*switch no.*> | `all`
	`show system`	↑
	`show interface`	↑
	`show port`	↑
Operation-related	`reload`	<*switch no.*>
	`ppupdate`#	↑
	`activate / inactivate`	↑
	`clear logging`	<*switch no.*> | `all`
	`clear counters`	↑
Maintenance-related	`backup`#	<*switch no.*>
	`restore`#	↑
	`show tech-support`	<*switch no.*> | `all`
	`dump stack`	↑
File operation-related	`ls / dir`	<*switch no.*> | `all`
	`cp / mv /rm`	<*switch no.*>

#: These commands are executed only from a master switch, as they are not allowed to be executed from a backup switch.

1.2.3 Using remote commands

An example of how to use a remote command is shown below. Specify either one or all member switches to which the command is to be executed, and then enter an operation command to be executed. A remote command can only be executed from a master switch.

1. Specify a switch number or `all`, and then enter a display or operation command.

```
# remote command [<switch no.> | all] <command>
```

2. This example collects Ethernet interface 2/0/1 information from switch No. 2.

```
# remote command 2 show interfaces gigabitethernet 2/0/1
Switch 2 (Backup)
-----------------
Date 2012/04/20 11:43:00 UTC
NIF0:
Port1: active up 1000BASE-T full(auto)  0012.e242.6e82
         :
```

3. This example collects Ethernet interface information from all member switches. If `all` is specified, master switch information is displayed first.

```
# remote command all show interfaces
Switch 1 (Master)
-----------------
Date 2012/04/20 11:43:00 UTC
geth1/0/1: NIF0/Port1
       active up 1000BASE-T full(auto)  0012.e242.b298
         :
Switch 2 (Backup)
-----------------
Date 2012/04/20 11:43:00 UTC
geth2/0/1: NIF0/Port1
       active up 1000BASE-T full(auto)  0012.e242.6e82
         :
```

Master information displayed first

1.3 Configuration

In a stack, all member switches that make up the stack run in the same configuration. The running configuration of a stack configuration can only be edited from the master switch and cannot be edited from the backup switch. Also, the `show running-config` running configuration display command cannot be executed from a backup switch. Therefore, to edit or display a configuration, use the master switch.

Running configuration	Master switch	Backup switch
Editing	○ Allowed	× Not allowed
Display	○ Allowed	× Not allowed

1.4 Checking switch statuses and switch numbers

As shown below, there are two ways for checking switch statuses and switch numbers. With Ver.11.10 or later, you can check them by LEDs or SOPs on switch panels.

◆ Check by display panels

You can check the switch status/number of a switch by LEDs on its front panel if the switch is an AX3800S series switch or by its system operation panel (hereinafter, referred to as SOP) if it is an AX3650S series switch. Procedures and display examples are as follows.

➢ AX3800S series

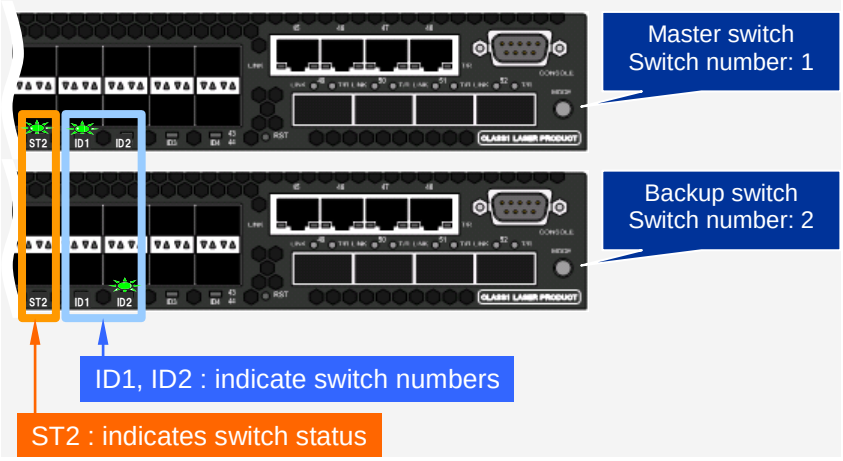
You can check the switch status/number by LEDs on the front panel of a switch. For standalone switches, all these LEDs are in power-off state.

On the master switch, LED (ST2) is lit.

You can check the switch status by LED (ST2). The LED is lit when the switch is a master switch, and it is powered off when the switch is a backup switch.

The switch number is indicated by LED (ID1 or ID2).

The switch number is indicated by LED (ID1 or ID2). ID1 is lit when the switch number is 1, and ID2 is lit when the switch number is 2.



➢ AX3650S series

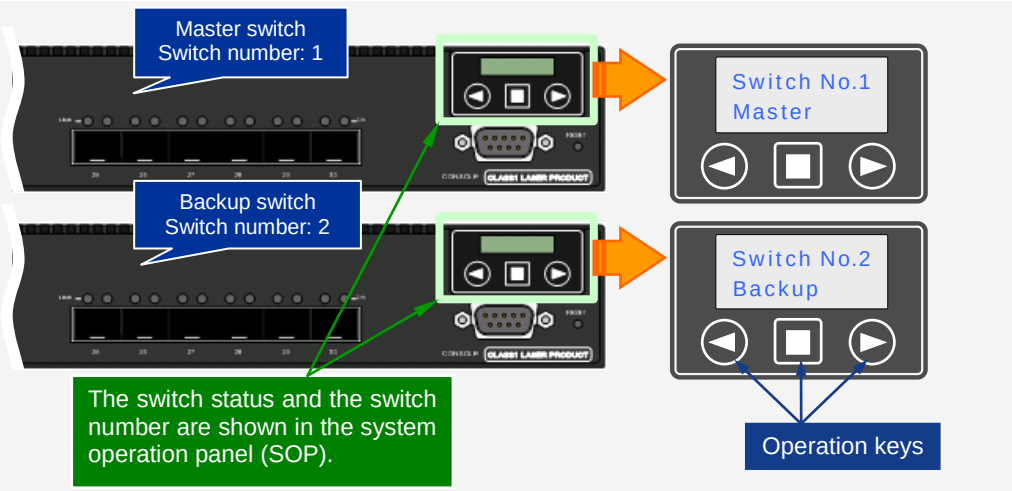
You can check the switch status/number by the SOP mounted on the front panel of a switch.

The switch status and switch number are shown in the SOP.

Information on stack status (switch status, switch number) is shown in the following occasions.

- ✓ **Switch status is changed (e.g., backup => master).**
- ✓ **One of the keys in the SOP is pressed down.**

The information in the SOP disappears when 60 seconds have passed after it is shown. However, it appears again if one of the keys in the SOP is pressed. For a standalone switch, no information is shown in the SOP.



◆ Check via a console

To check the status/number of a switch via a console, you must log into the switch. The login procedures are shown below. To log in from a remote operation terminal via telnet, log into the master switch.

(1) Connect to the console and log into the switch.

Connect the console cable and log into the member switch.

(2) At the command prompt, check the switch status (master/backup).

When you are logged into the member switch, the command prompt appears. From the command prompt, you can check the member switch status (master/backup).

1. Log in. You will see the command prompt.

   If the switch you are logged in to is the master: Only the host name is displayed.
   ```
   hostname>
   ```

   If the switch you are logged in to is the backup: The host name and switch number (<02>) are displayed together with <B>, which indicates a backup.
   ```
   hostname-02B>
   ```

(3) Use the appropriate stack operation command to check the switch number.

The stack operation command `show switch` can be used to check the switch number.

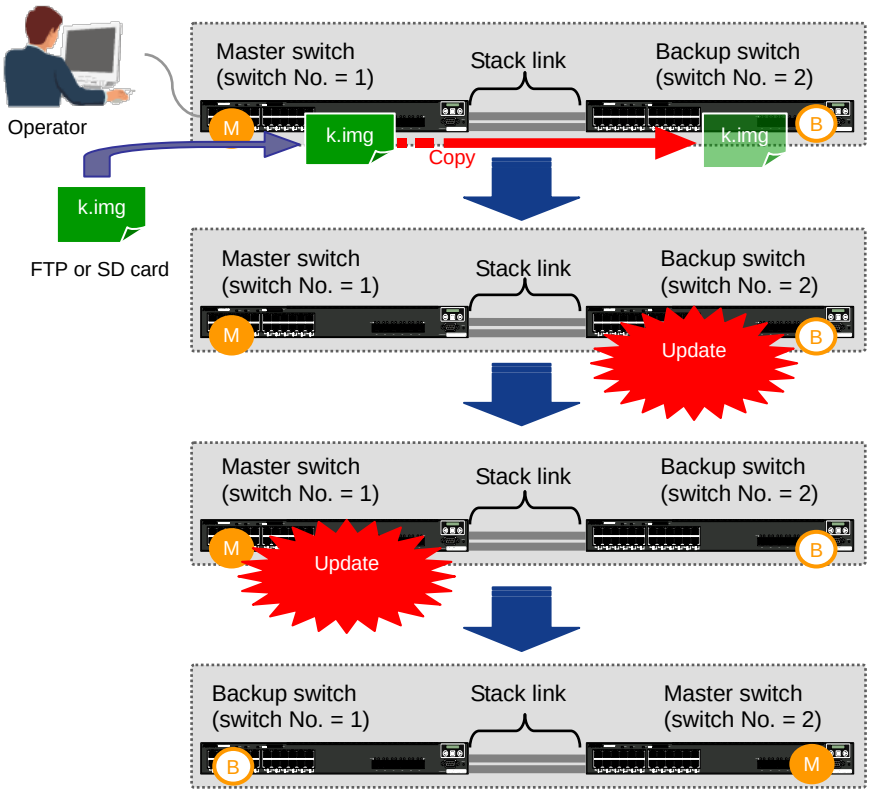
1. Use the stack operation command to check the switch number.

```
# show switch
Date 2012/04/20 11:38:56 UTC
Stack status : Enable          Switch No : 1
System MAC Address : 0012.e242.b298
No  Switch status  Model         Machine ID     Priority  Ver
 1  Master        3650-24t6xw   0012.e242.b298  20        1
 2  Backup        3650-24t6xw   0012.e242.6e82  10        1
```

1.5 Software Update Procedures

To update software in a stack configuration, it is necessary to transfer an update file to each member switch and to update the software on the individual switch.
The recommended procedure for software update in a stack configuration is as follows.

◆ Recommended update procedure



(1) Prepare the update file on the master switch and copy the file to the backup switch.

To update a non-master switch, it is necessary to store the update file on the target switch before executing the update command.

1. Use FTP or the SD card to transfer the software update file to the master switch.

2. Use the following command to copy the update file from the master switch to the backup switch.

```
# cp /usr/var/update/k.img switch 2 /usr/var/update/k.img
```

(2) Update the backup switch.

Update the backup switch.

1. Use the `remote` command to update the backup switch.

```
# remote command 2 ppupdate /usr/var/update/k.img
```

2. When the update is complete, the backup switch automatically restarts.

3. Make sure that the backup switch is up and running successfully, and that the two-switch stack configuration has been established.

```
# remote command 2 show switch
```

(3) Update the master switch.

Update the master switch.

1. Update the master switch.

```
# ppupdate /usr/var/update/k.img
```

2. When the update is complete, the master switch automatically restarts. The backup switch now becomes the master.

(4) Check the status of the stack.

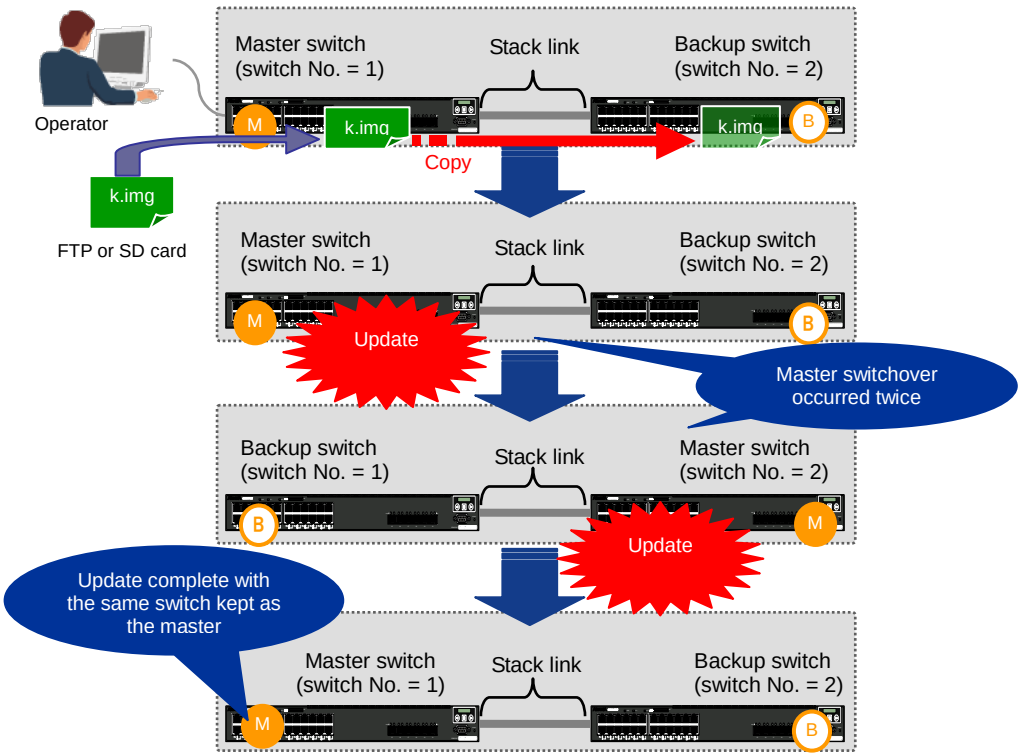
Use the appropriate operation command to make sure that the two-switch stack configuration is running. This completes the software update procedure.

1. Make sure that the former master switch (switch No. 1) has restarted as a backup switch and that the two-switch stack configuration is running.

```
# show switch
```

◆ If you do not want to change the master switch to a different switch

If you do not want to change the master switch to a different switch even after completing an update, you can do so by updating the master switch first. The same switch keeps the master role. However, please note that doing so has some drawbacks. For example, master switchover will occur twice, and the communication interruption time will become longer due to the dynamic routing used, as compared to the recommended procedure.
When updating the master switch first, consider these drawbacks. An overview of the procedure is as follows:



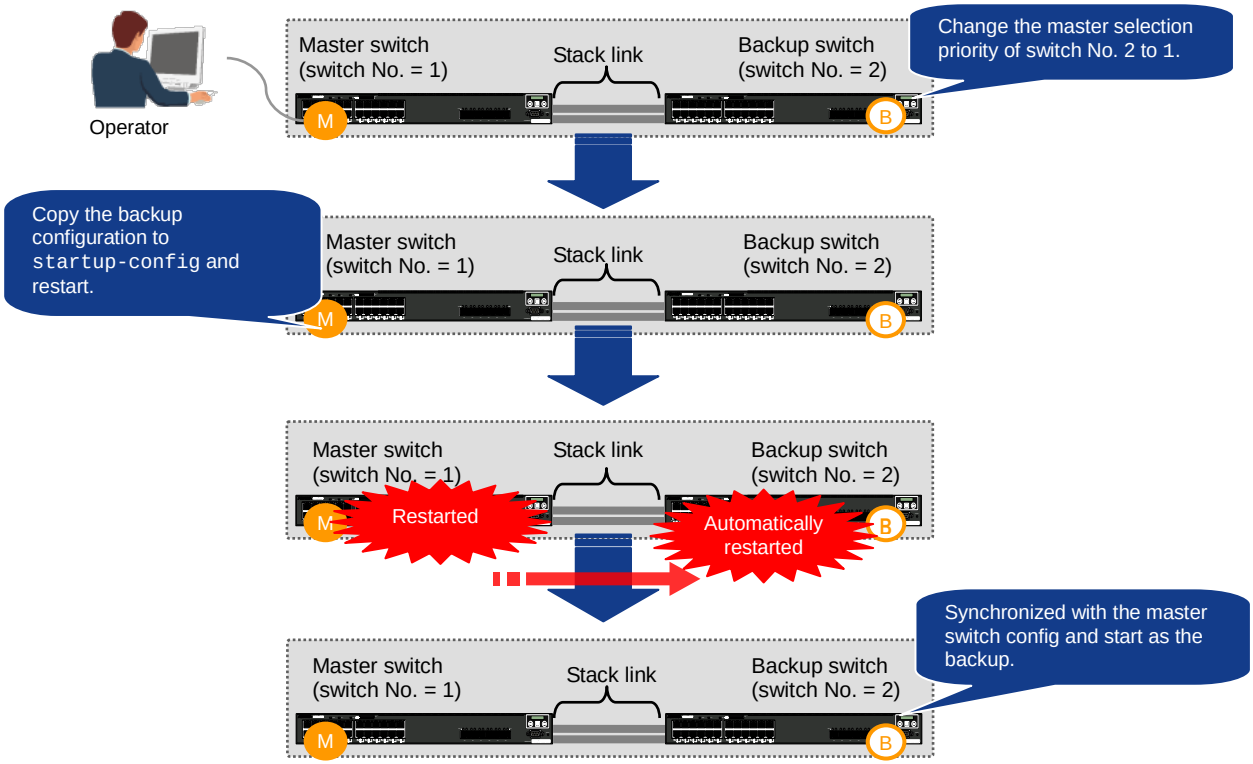
1.6 Procedure for Restoring a Configuration Backup Online

This section describes how to restore a backed-up configuration online. Since this procedure requires the restart of all member switches, a temporary communication interruption occurs. The backed-up configuration must meet the following prerequisites.

◆ Prerequisites

The backed-up configuration file must meet the following prerequisites:

- No stack port has been changed.
- No switch number has been changed.
- No stack member model has been changed.



(1) Change the master selection priority of the backup switch.

Prepare the backup config file in the master switch and use the `config` setting command to temporarily change the master selection priority of the switch number for the backup switch to `1`.

1. Prepare the backup config file in the master switch.

2. Change the master selection priority of the backup switch (switch No. 2) to `1` and save the new setting.

```
config# switch 2 priority 1
config# save
```

(2) Copy the backup config to the startup config.

Copy the backed-up config to the startup config file. Perform this step only to the master switch.

1. Copy the backup config file to the startup config file.

```
# copy backup-config.cnf startup-config
Configuration file copy to startup-config? (y/n)  y
```

(3) Restart the master switch.

Use the appropriate operation command to restart the master switch. After the master switch restarts, the backup switch with switch No. 2 will start automatically after a while.

1. Restart the master switch. The backup switch will restart automatically.

```
# reload no-dump-image –f
```

(4) Check the status of the stack and its running configuration.

The member switch with switch No. 2 is synchronized with the master switch configuration and restarts as a backup switch. When the two member switches fully restart, check the status of the stack and its running configuration.

1. Check the status of the stack and its running configuration.

```
# show switch

# show running-config
```

2. Stack Maintenance

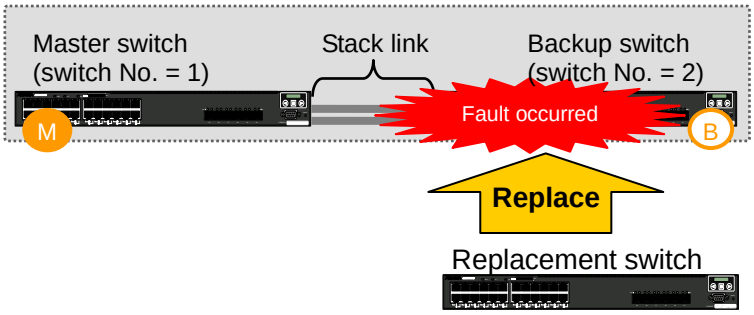
This chapter describes maintenance work, such as a hardware replacement, which is necessary if a member switch fails or if another problem occurs in a stack configuration.

2.1 Overview of Backups and Restorations

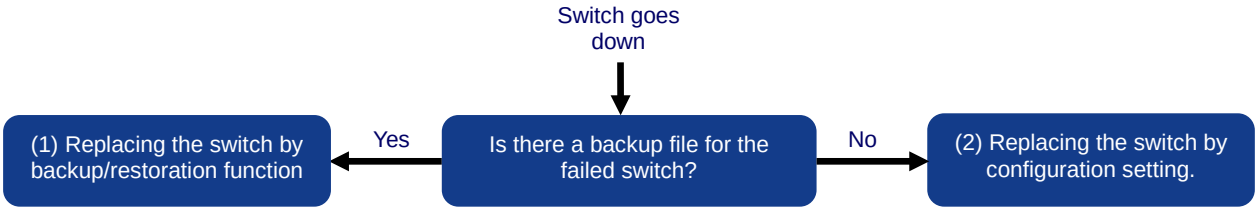
The AX series has backup and restore functionality.
The backup functionality backs up the settings (including the configuration), software, and license information of a running switch. The restore functionality restores the backed up hardware information to the switch.

In a stack configuration, the backup and restore functionality makes it easier to do maintenance work by eliminating the necessity of software version matching and configuration settings if it becomes necessary to replace a switch due to a hardware fault or other problem.
Therefore, when using a stack, it is recommended that the backup functionality be used to save a backup file before operating the stack.

2.2 Replacing a Switch



If it becomes necessary to replace a member switch due to a hardware fault in a stack configuration, the following replacement methods are available. Select the appropriate replacement method according to the workflows.
The following description assumes backup switch replacement. If it is necessary to replace a master switch due to a port fault or other problem, stop the master switch, switch the master switch to a different switch, and then use the same procedure to replace the original master switch.



(1) Replacing the switch by backup/restoration function

On each member switch, use the SD card for backup/restoration. This method is recommended because it makes maintenance work easier. Command-free maintenance functionality is also available.
For details, see *2.3 Backup and Restoration Using SD Cards*.

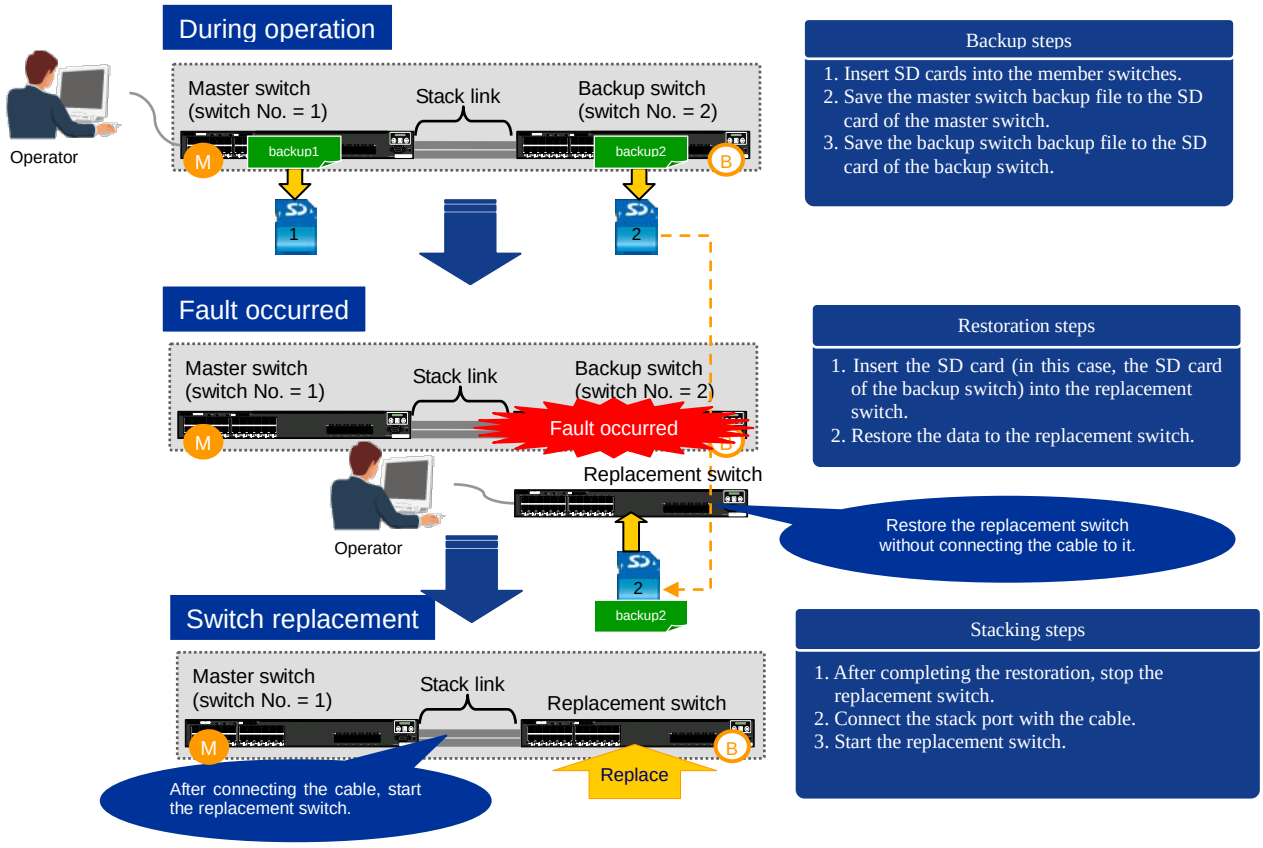
(2) Replacing the switch by configuration setting

If there is no backup file, it is necessary to match the software version between the replacement switch and the other member switches and to configure stack-related settings.
For details, see *2.4 Configuring Settings for Replacement*.

2.3 Backup and Restoration Using SD Cards

2.3.1 Operation command-based procedure

This section describes how to back up and restore switch information using operation commands on an operation management terminal.



◆ Backup procedure

To use an operation command to back up switch information in a stack configuration, use the command from the master switch.

(1) Insert SD cards into the appropriate member switches.

Insert an SD card into each of the master and backup switches.

(2) Save the master switch backup file to the SD card of the master switch.

Use the `backup` operation command to save the master switch backup file to the SD card.

1. Log into the master switch and use `backup` to save a backup image file to the SD card.

```
# backup mc sw1_backup.dat
```

2. When the backup is complete, make sure that the SD card contains the backup file.

```
# ls mc-dir
```

(3) Save the backup switch backup file to the SD card of the backup switch.

Use the `remote command` and `backup` operation commands to save a backup switch backup file to the SD card.

1. Log into the master switch and use `remote command 2 backup` to save a backup image file to the SD card.

```
# remote command 2 backup mc sw2_backup.dat
```

2. When the backup is complete, make sure that the SD card contains the backup file.

```
# remote command 2 ls mc-dir
```

◆ Restoration procedure

(1) Save the backup file to the SD card.

Save the backup image file with the appropriate switch number to the SD card.

(2) Insert the SD card into the replacement switch and start restoration.

When the replacement switch is up and running, insert the SD card and use the appropriate operation command to start restoration. The command will restore operation information including software and config information, and the switch will restart automatically.

1. Restore the backup image file with the appropriate switch number by specifying the memory card.

```
# restore mc sw2_backup.dat
```

(3) Stop the switch, connect the stack link, and restart the switch.

When the restart is complete, stop the replacement switch. The purpose of this step is to prevent switchover between the master switch and the backup switch.

1. When the restart is complete, stop the replacement switch.

```
# reload stop –f no-dump-image
#
ROM 00.06.10
Rom:
```

2. Connect the stack link and restart the switch. Instead, you can turn the power switch off and then on.

```
ROM 00.06.10
Rom: boot
. . . . . .
```

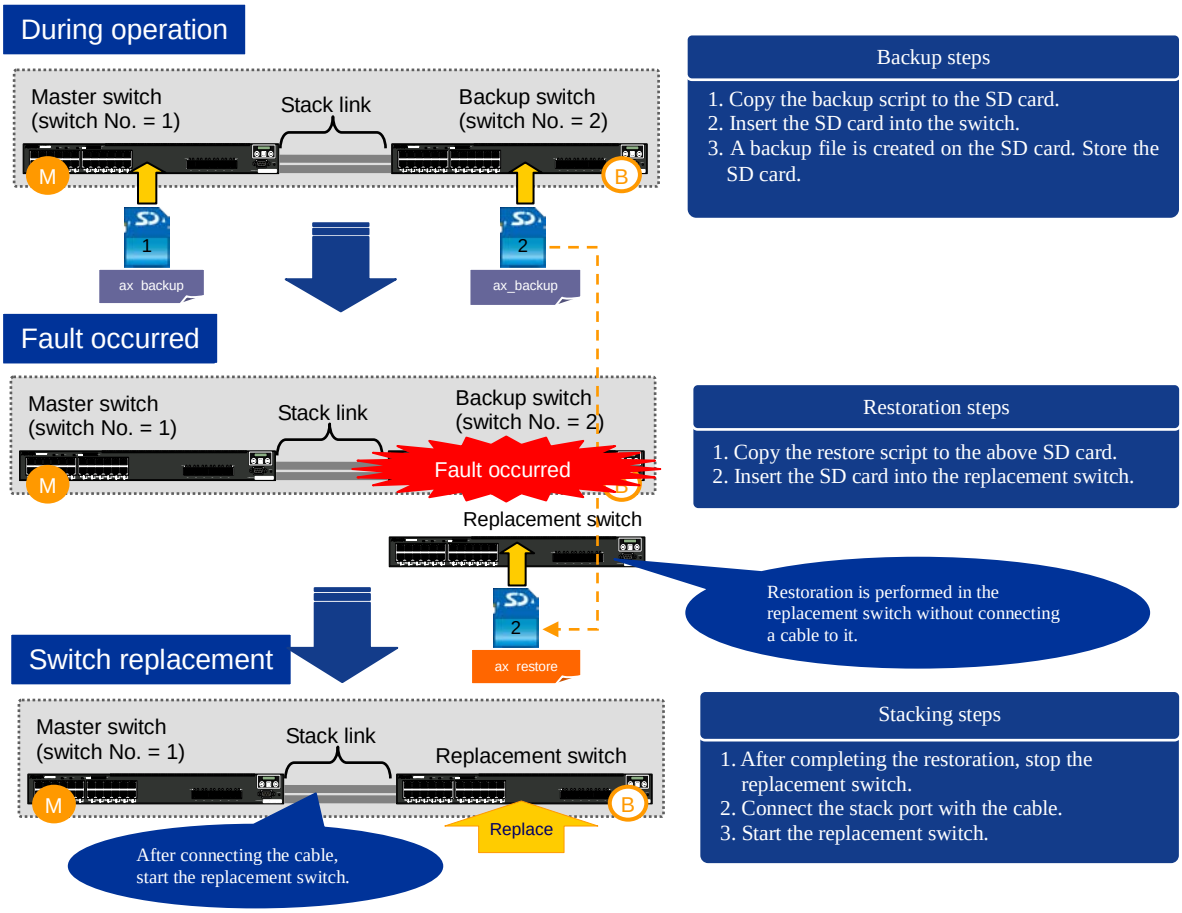
3. Make sure that the member switch with switch No. 2 is running as a backup switch in a two-switch stack configuration.

```
# show switch
```

2.3.2 Command-free maintenance functionality-based procedure

The command-free maintenance functionality allows maintenance to be performed simply by inserting an SD card containing a maintenance script file# into the switch without using an operation terminal.
This command-free functionality can also be used in a stack configuration to back up and restore switch information. This section describes how to perform a backup and restoration using the command-free maintenance functionality in a stack configuration.

#: For information about how to use script files for the command-free maintenance functionality, contact your distributor.



◆ Backup procedure

(1) Copy the backup script to the SD card.

Copy the `ax_backup` backup script to the `/ax_mente` directory of the SD card. Do not place any other scripts in the `/ax_mente` directory.

(2) For each member switch, insert the SD card into it and create a backup file.

For each member switch, insert the SD card into its slot. In a stack configuration, each member switch has a different switch number, thus it is necessary to back up switch information for each member switch.
When the SD card access lamp (ACC LED) turns off, remove the SD card from the slot. A backup image file is saved in the `/` directory of the SD card under a name of *MMMM*`_`*yyyymmdd*`_backup_`*n*`.dat` (in which, *MMMM*: host name, *yyyy*: year, *mm*: month, *dd*: day, and *n*: serial number within the MC).

Please note that the saved backup image file has the same file name among all the member switches. It is recommended that a tab be attached on each SD card being inserted so that the backup file and switch number can be identified.

◆ Restore procedure

(1) Copy the restore script to the SD card.

Copy the `ax_restore` restore script to the `/ax_mente` directory of the SD card. Do not place any other scripts in the `/ax_mente` directory.

(2) Prepare the backup file in the SD card.

Prepare the backup image file in the `/` directory of the SD card. Change the name of the backup file saved in the backup procedure from `MMMM_yyyymmdd_backup_n.dat` to `ax_backup.dat`.

(3) Insert the SD card into the replacement switch and start the restoration.

When the replacement switch is turned on and is up and running, insert the SD card and start restoration. When the SD card access lamp turns off, remove the SD card. The replacement switch restarts automatically to complete the restoration.

1. Before connecting the cable to the replacement switch, insert the SD card into its slot.
2. When the SD card access lamp turns off, remove the SD card from the slot.
3. The switch automatically restarts in 30 to 60 seconds to complete the restoration.

(4) Stop the switch, connect the stack link, and restart the switch.

When the restart is complete, turn the replacement switch off to stop it. The purpose of this step is to prevent switchover between the master switch and backup switch.

1. When the blinking ST1 status lamp, which is one of the switch LEDs, stops blinking, the restart is complete. When the restart is complete, turn the replacement switch off to stop it. This prevents switchover between the master and backup.
2. Establish stack links between the member and replacement switches.
3. Turn the replacement switch on to recover the stack configuration.

2.4 Configuring Settings for Replacement

To use a replacement switch if no switch information is backed up with the backup functionality, it is necessary to manually match the software version/license of the replacement switch with those of the other member switches and configure stack-related settings.

(1) Check the optional license and software of the member switches and replacement switch.

To add a replacement switch to a stack configuration, it is necessary to match the software version and license of the replacement switch with those of the other member switches. Make sure that the software version and license of the replacement switch match those of the running member switches. If they do not match, match the software version and license of the replacement switch with those of the other member switches.

(2) Match the software version and license of the replacement switch.

If the software version or license of the replacement switch differs from that of the running member switches, obtain the same software version or license to match it.

1. Update the software of the replacement switch to match it with the version of the member switches.

```
# ppupdate /usr/var/update/k.img
```

2. Match the license information of the replacement switch with the version of the member switches.

```
# set license key-code 0123-4567-89ab-cdef-0123-4567-89ab-cdef
```

(3) Place the replacement switch in a single-switch stack.

Set a switch number and enable the stack in the replacement switch, and restart the switch to place it into a single-switch stack.

1. Use the operation command to set the switch number. In this example, specify a switch number of 2.

```
# set switch 2
```

2. Use the `config` command to enable the stack.
   In response to the message confirming the configuration changes, enter `y`.

```
config# stack enable
After this command execute, please save configuration editing now in
startup-config, and please reboot a device.
Do you wish to continue ? (y/n): y
```

3. Save the configuration and return to administrator mode.

```
config# save
config# exit
```

4. Restart the replacement switch. After restarting, the replacement switch runs as switch No. 2.

```
# reload no-dump-image -f
```

(4) Configure settings necessary to configure a stack.

Specify a stack port and set the master selection priority to prevent master switch switchover.

1. Set the Ethernet interface of the replacement switch as a stack port.

```
config# interface range tengigabitethernet 2/0/25-26
config-if-range# switchport mode stack
config-if-range# exit
```

2. Set the master selection priority to `1` to prevent master switch switchover.

```
config# switch 2 priority 1
```

3. Save the configuration and return to administrator mode.

```
config# save
config# exit
```

(5) Connect the stack ports to form a two-switch stack.

Connect the stack ports of the replacement switch and running member switch, and make it into a two-switch stack.

1. Connect the stack ports of the replacement switch and running member switch.

2. Since the master selection priority of the replacement switch is set to `1`, the replacement switch restarts automatically as a backup switch.

3. Make sure that the two-stack configuration is running.

```
# show switch detail
```

2.5 Fault Information Collection Procedures

This section describes how to collect fault information in a stack configuration.

◆ Collecting fault dump information

(1) Check to see whether there are dump files.

Check to see whether there are dump files.

1. Check to see whether there are dump files.

```
# remote command all show dumpfile
Switch 1 (Master)
-----------------
Date 2012/05/17 11:03:22 UTC
  [/dump0]:
    File Name          rmdump
    Date               2012/04/27 06:10:31
    Version             17 11.8.A
    Serial No          TA03FA24T6XWS406012R001
    Factor             User operation

  [/usr/var/hardware]:
    No dump file.

Switch 2 (Backup)
-----------------
Date 2012/05/17 11:03:22 UTC
  [/dump0]:
    File Name          rmdump
    Date               2012/04/23 04:26:20
    Version             17 11.8.A
    Serial No          TA03FA48T4XWS406212R001
    Factor             User operation

  [/usr/var/hardware]:
    No dump file.
```

Since the backup switch uses the same file name as the master switch, be careful so that the file is not overwritten.

(2) Copy the dump file to the master switch.

If the dump file exists in the backup switch, copy the file to the master switch. Since the master switch uses the same dump file name as the backup switch, change the file name so that it can be identified with the switch number.

1. On the master switch, make a copy of the dump file of the master switch (with switch No. 1) and rename the file name.

```
# cp /dump0/rmdump sw1_rmdump
```

2. Copy the dump file from the backup switch (with switch No. 2) to the master switch and rename the file name.

```
# cp switch 2 /dump0/rmdump sw2_rmdump
```

(3) Copy the collected dump files to an SD card or transfer them to your FTP server.

Copy the collected dump files to an SD card or transfer them to your FTP server.

◆ Collecting show tech-support information

(1) Execute the show tech-support remote command.

Collect show tech-support information from all member switches including the master and backup by specifying all.

1. Specify a file name to redirect **show tech-support** information to the file.
   Also, execute the remote command from the master switch by specifying **all** to collect the information from the master and backup switches.

   ```
   # remote command all show tech-support > show-tech.txt
   ```

   Collect **show tech-support** information for the two switches, from the master first and then the backup, into a file. The file is saved in **/usr/home/operator** of the master switch.

Note: The information can be collected from individual switches. In this case, please note that, if the same file name is used for different member switches, the existing file is overwritten.

(2) Copy the collected information to an SD card or transfer it to your FTP server.

Copy the collected show tech-support information to an SD card or transfer it to your FTP server.

2.6 Changing a Switch Back to Standalone Mode

This section describes how to change a switch back from stack mode to standalone mode. Please note that this procedure converts a member switch of a stack back to operate as standalone again.
Also, this procedure requires standalone backup configurations for a target switch model. The configuration files are attached to this document. You can store and use them whenever needed.

Configuration files for each series/model

Series	Model	File name
AX3800S	AX3830S-44XW	default_3830_44XW.txt
	AX3830S-44X4QW	default_3830_44X4QW.txt
AX3650S	AX3650S-24T6XW	default_3650_24T6XW.txt
	AX3650S-20S6XW	default_3650_20S6XW.txt
	AX3650S-48T4XW	default_3650_48T4XW.txt

(1) Save configuration files into a flash memory card.

Save the configuration files of a target member switch into a flash memory card.

(2) Remove cables from the target member switch.

To prevent a loop, remove all cables from the target member switch.

(3) Copy the saved configuration files to the startup-config and restart the switch.

Copy the saved configuration file to the startup-config, and restart the target switch.

1. Copy the initial configuration saved in step (1) to startup-config.

```
# copy backup_3650s-24t6xw.cnf startup-config
```

2. Restart the switch.

```
# relaod no-dump-image -f
```

3. Stack Q&A

This chapter provides questions and answers about stack operation and maintenance.

3.1 Operation Q&A

Q1: Is it possible to distinguish whether a switch is a master or backup by appearance?

A1: From Ver.11.10, stack information is displayed on a switch panel. You can check switch status (master/backup) by LEDs for AX3800S series switches and by the system operation panel (SOP) for AX3650S series switches.

⇨ *1.4 Checking the switch number of a master switch*

Q2: How can I confirm the log information of a backup switch?

A2: It is possible to collect backup switch log information from the master switch. A log header has a master or backup switch identifier, so it is possible to determine which type of switch the log information is from.

Q3: Are there any operation commands available to switch from master to backup or vice versa?

A3: No dedicated operation command is available. However, it is possible to switch the master switch to standby mode by restarting the master switch.

Q4: Is it always necessary to use a master switch to edit configurations and execute operation commands?

A4: Configurations can be edited only from a master switch. Operation commands can be executed from a backup switch by connecting the console to and logging into it.# However, in general, execute them from a master switch. When a telnet connection is used, log into the master switch.

#: Some operation commands are not allowed to be executed from a backup switch.

⇨ *1.3 Configuration*

3.2 Maintenance Q&A

Q1: Is it possible to replace a switch without using an operation command?

A1: The SD card-based command-free maintenance functionality is available. This functionality allows you to replace a switch by inserting and removing an SD card for backup and restoration without using an operation terminal.

⇨ *2.3.2 Command-free maintenance functionality-based procedure*

Q2: On which switch is `show tech-support` to be executed?

A2: `show tech-support` needs to be executed on both a master and a backup switch.

⇨ *2.5 Fault Information Collection Procedures*

4. Appendix

◆ Commands supporting the remote command

The following table lists the operation commands supporting the remote command.

Classification	Command
Display-related	show system
	show version
	show license
	show interfaces
	show port
	show switch
	show environment
	show channel-group statistics
	show access-filter
	show qos-flow
	show qos queueing
	show cpu
	show processes
	show sessions (who)
	show power
	show mc
	show flash
	show memory
	show dumpfile
	show netstat
	show logging
	show logging console
Operation-related	ppupdate
	activate
	inactivate
	format mc
	set license
	set exec-timeout
	set terminal help
	set terminal pager
	set logging console
	clear logging
	clear counters
	clear power
	clear access-filter
	clear qos-flow
	clear qos queueing
	clear netstat
	clear tcp
	clear control-counter
	erase license
	erase dumpfile
	erase protocol-dump unicast
	erase protocol-dump ipv4-multicast
	restart link-aggregation
	restart vlan
	restart spanning-tree
	restart ntp
	restart gsrp
	restart efmoam

	restart loop-detection restart ipv4-multicast
	debug protocols unicast
	no debug protocols unicast
	killuser
Maintenance-related	show tech-support
	backup
	restore
	dump stack
	dump protocols link-aggregation
	dump protocols vlan
	dump protocols spanning-tree
	dump protocols gsrp
	dump protocols efmoam
	dump protocols loop-detection
	dump protocols unicast
	dump protocols ipv4-multicast
	hexdump
File operation-related	ls
	dir
	cat
	cp
	mkdir
	mv
	rm
	rmdir
	delete
	undelete
	squeeze
	diff
	grep
	tail
	df
	du

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