

Chapter 14

NAND Redundant Boot

Redundant boot supported from NAND includes the following components:

- Boot Image checking tool
- Boot Image updating tool

The Boot Image checking tool is used for checking the boot streams integrity every time when system boots up. The Boot Image updating tool is used for updating image. If the update fails, then the checking tool can easily restore the image when the system boots up the next time. These tools cannot run simultaneously to prevent boot stream corruption.

14.1 NAND Redundant Boot Summary

Table 14-1 provides a summary of source code location, library dependencies and other BSP information.

Table 14-1. NAND Redundant Boot Summary

Driver Attribute	Definition
Target Platform (TGTPLAT)	iMX28-EVK-PDK1_9
Target SOC	N/A
SOC Common Path	N/A
SOC Specific Path	N/A
Platform Specific Path	..\PLATFORM\ <i><Target Platform></i> \SRC\COMMON\NANDBOOTBURNER ..\PLATFORM\ <i><Target Platform></i> \SRC\APP\UpdateSB
Driver DLL	N/A
SDK Library	N/A
Catalog Item(s)	N/A
SYSGEN Dependency	N/A
BSP Environment Variable(s)	N/A

14.2 Supported Functionality

The NAND Redundant Boot enables the system to provide the following software and hardware support:

1. Supports updating image from certain location on the device.
2. Supports restoring backup image when the update fails.
3. Supports updating backup image when user confirms the updated image works well.

14.3 Hardware Operation

This section explains about the hardware operations.

14.3.1 Conflicts with Other Peripherals and Catalog Items

No conflict.

14.4 Software Operation

Figure 14-1 shows the Boot Image updating tool’s work flow.

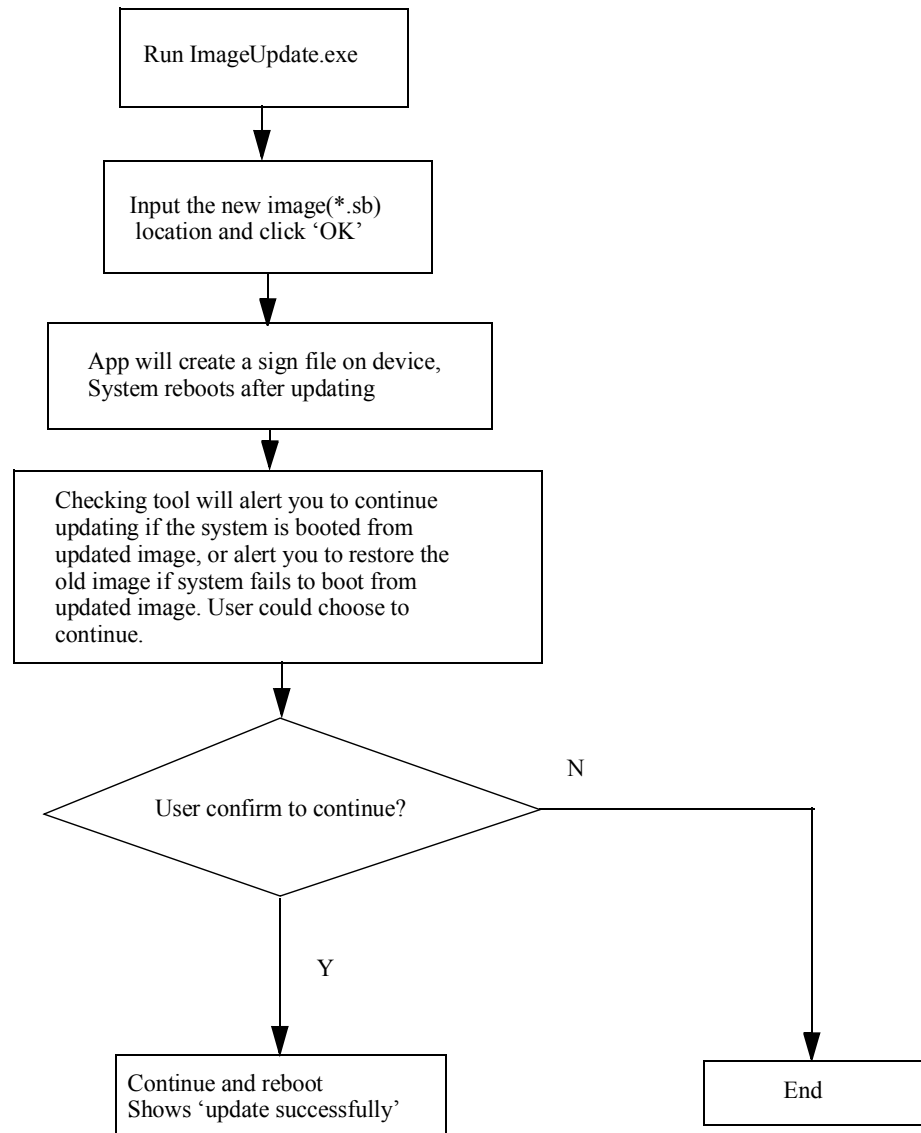


Figure 14-1. Image Updating Work Flow

Figure 14-2 shows the Boot Image checking tool's work flow.

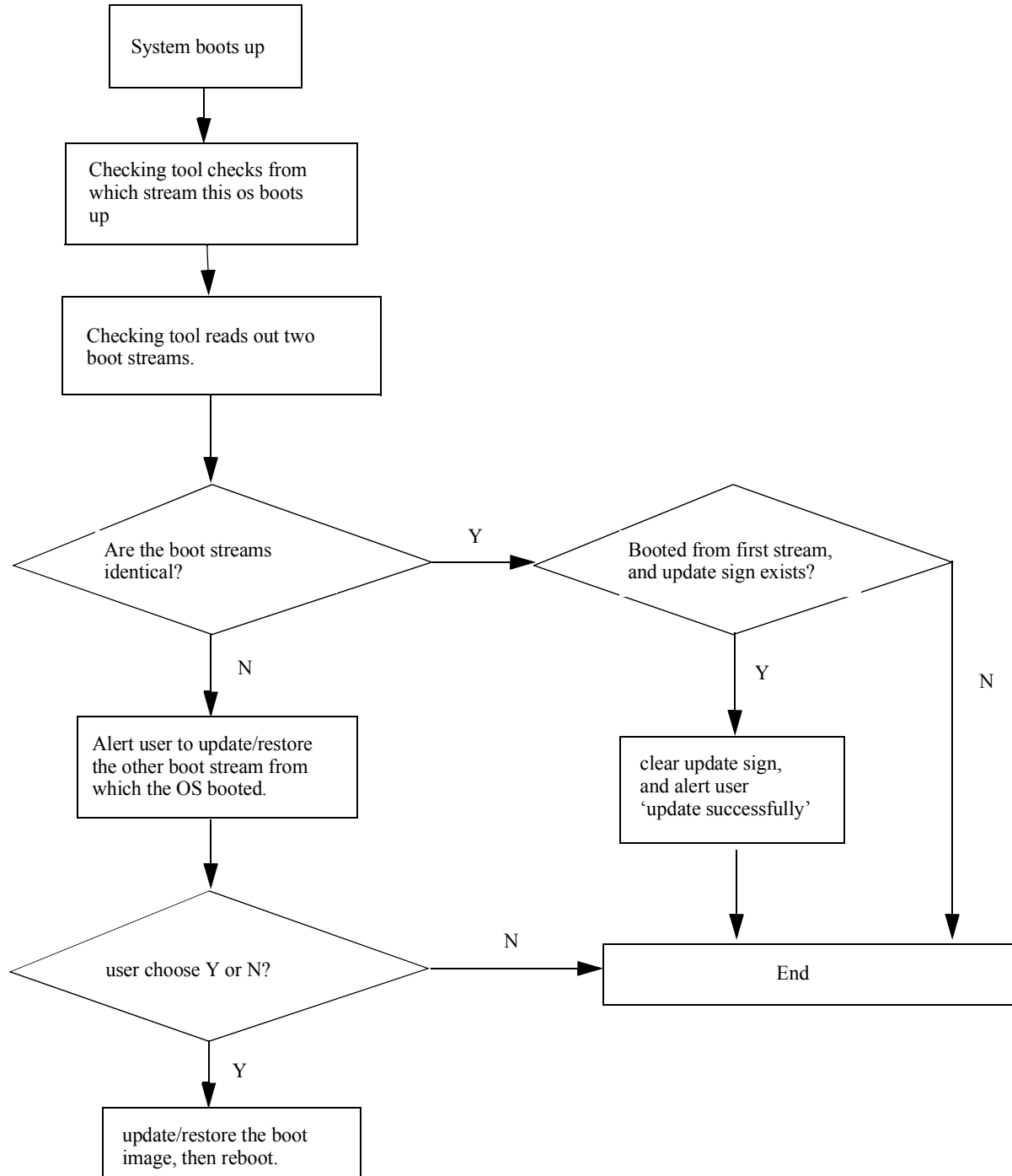


Figure 14-2. Image Checking Work Flow

14.5 Unit Test

The following section describes the testing update and restore functionality:

14.5.1 Testing Update Functionality

Perform the following steps to test the update functionality:

1. Run ImageUpdate.exe
2. Select the new image(*.sb)
3. Click **OK**.The image is updated and system reboots after update.
4. Ensure that this startup is from new image.
5. A continue update message appears asking the user to confirm the update.
6. Click **YES** to continue. The Image is updated and the system reboots.
7. After this startup, a **update successfully** message appears.

14.5.2 Testing Restore Functionality

Use the following steps to test the restore functionality:

1. Run ImageUpdate.exe
2. Select the new image(*.sb)
3. Click **OK**. The image is updated and the system reboots.
4. Ensure that this startup is from new image.
5. A message is displayed asking the user to continue updating.
6. Click **NO**.
7. Power OFF the device and power ON.
8. After this startup, a message is displayed asking the user to recover.
9. Click **YES** to continue. The image is recovered and the system reboots.
10. Ensure that this startup is from the old image.