



Aprisa **SR**



Software Release Notes

Version 1.5.1

September 2012

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1. Introduction

Introduction

The previous Aprisa SR software version release relevant to this release is:

Software Version	Release Date
1.4.3	27 th April 2012

This release of Aprisa SR software is:

Software Version	Release Date
1.5.1	29 th August 2012

This document covers the major changes, product enhancements, new functionality, and bug fixes since Aprisa SR software version 1.4.3.

2. Released Files

Release Files

The following is a list of files released for Aprisa SR Software Version 1.5.1

File Name	File Type	File Function
asraduc_25u	ADUC Code	Discriminator micro controller code UHF 25 kHz radios
asraduc_25v	ADUC Code	Discriminator micro controller code VHF 25 kHz radios
asraduc_u	ADUC Code	Discriminator micro controller code UHF 12.5 kHz radios
asraduc_v	ADUC Code	Discriminator micro controller code VHF 12.5 kHz radios
asrapp	Upgrade App Code	Used to initiate radio software upgrade
asrboot	Bootloader	Used to initiate radio software startup
asrmain	Application Code	Main radio system software
asrrootfs	Root File System	Catalog of system files
asrver	Version File	Release build version
version.txt	Public Version File	Release information

3. Radio Software Upgrade

Software Upgrade Method

If your Aprisa SR network / radio is running software version 1.4.1 or later, you can use the Enhanced Software Upgrade Method on page 3.

If your Aprisa SR network / radio is running a software version previous to 1.4.1, you must use the Single Radio Upgrade Boot Method on page 6.

The radio software must be identical on all radios in the Aprisa SR network.

3.1. Enhanced Software Upgrade Method

Upgrade Type

A software upgrade can be performed on a single radio or an entire Aprisa SR network. If you have an existing network of Aprisa SR radios, follow the procedure 'Network Software Upgrade'.

If you have a single Aprisa SR radio requiring upgrade, follow the procedure 'Single Radio Upgrade File Transfer Method'.

If the Aprisa SR radio is part of a Aprisa SR Protected Station, follow the procedure 'Protected Station Software Upgrade'.

See the Aprisa SR User Manual 1.5.1 for more information.

Note: If a radio has been configured for a Protection Type of 'Redundant' or 'Serial Data Driven Switching' (see Aprisa SR User Manual 'Terminal > Operating Mode'), and that radio is no longer part of a Protected Station, the Protection Type must be changed to 'None' before the radio software upgrade can be achieved with the 'Radio Software Upgrade Process'.

3.1.1. Network Software Upgrade



File Transfer Method

This process allows customers to upgrade their Aprisa SR network from the central base station location without need for visiting remote sites.

The Software Pack is loaded into the base station with the file transfer process and distributed via the radio link to all remote stations.

When all remote stations receive the Software Pack version, the software can be remotely activated on all remote stations.

Process Steps

1. Unzip the software pack in to the root directory of a USB flash drive.
2. Insert the USB flash drive into the Host Port .
3. Using File Transfer, load the software pack into the base station (see SuperVisor > Software > File Transfer).
4. Remove the USB flash drive from the Host Port .
5. Distribute the software to the entire network of remote radios (see SuperVisor > Software > Remote Distribution).

Note: The distribution of software to remote stations does not stop customer traffic from being transferred. However, due to the volume of traffic, the software distribution process may affect customer traffic.

Software distribution traffic is classified as 'management traffic' but does not use the Ethernet management priority setting. Software distribution traffic priority has a fixed priority setting of 'very low'.

6. Activate the software on the entire network of remote radios (see SuperVisor > Software > Remote Activation).

Note: When the new software activates on the remote radios, all link communication from the base station to the remote will be lost. The base station will attempt to re-establish connectivity to the remote radios for the new version verification but this will fail. However, when the new software activates on the remote radios, the remote radio will reboot automatically and link communication will restore when the base station software is activated.

When the Remote Activation process gets to the 'Remote Radios On New Version' step, don't wait for this to complete but proceed to step 7

7. Activate the software on the base station radio (see SuperVisor > Software > Manager).
 8. When the base station restarts with the new software, rediscover the nodes (see SuperVisor > Maintenance > Advanced > Discover Nodes).
 9. Check that all remote radios are now running on the new software (see SuperVisor > Network Table).
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3.1.2. Single Radio Upgrade File Transfer Method

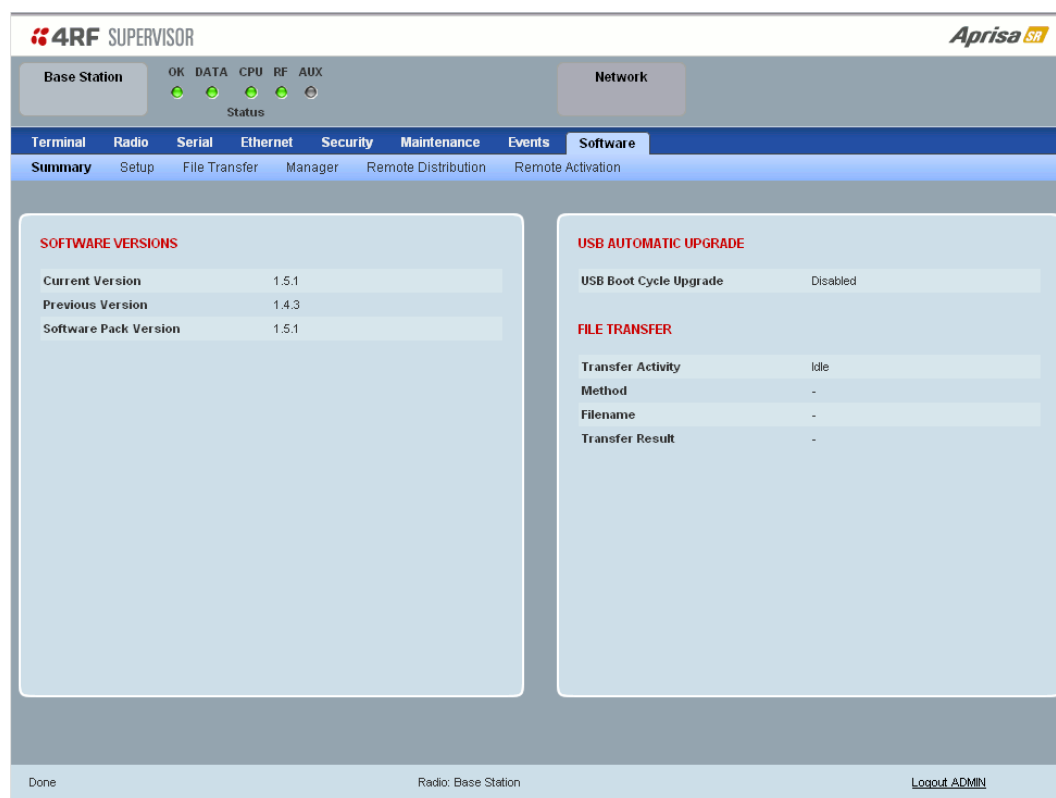
File Transfer Method

This process allows customers to upgrade a single Aprisa SR radio.

The Software Pack is loaded into the radio with the file transfer process and activated.

Process Steps

1. Unzip the software pack in to the root directory of a USB flash drive.
2. Insert the USB flash drive into the Host Port .
3. Using File Transfer, load the software pack into the radio (see SuperVisor > Software > File Transfer).
4. Remove the USB flash drive from the Host Port .
5. Activate the software on the radio (see SuperVisor > Software > Manager). This can take up to a few minutes.
6. The new software version can be verified with SuperVisor > Software > Summary Current Version.




Upgrade Did Not Start

If the upgrade process did not start, the Aprisa SR could already be operating on the version of software on the USB flash drive. This will be indicated by flashing display panel OK LED and then the OK, DATA and CPU will light steady green.

If any display panel LED flashes red or is steady red during the upgrade process, it indicates that the upgrade has failed. This could be caused by incorrect files on the USB flash drive or a radio hardware failure.

3.2. Single Radio Upgrade Boot Method

Method



The Aprisa SR radio software is upgraded simply by plugging a USB flash drive containing the new software into the USB A host port  on the Aprisa SR front panel and power cycling the radio.

Procedure

To minimize disruption of link traffic and prevent your radios from being rendered inoperative, please follow the procedures described in this section together with any additional information or instructions supplied with the upgrade package.

The radio software must be identical on all radios in the Aprisa SR network.

Process Steps

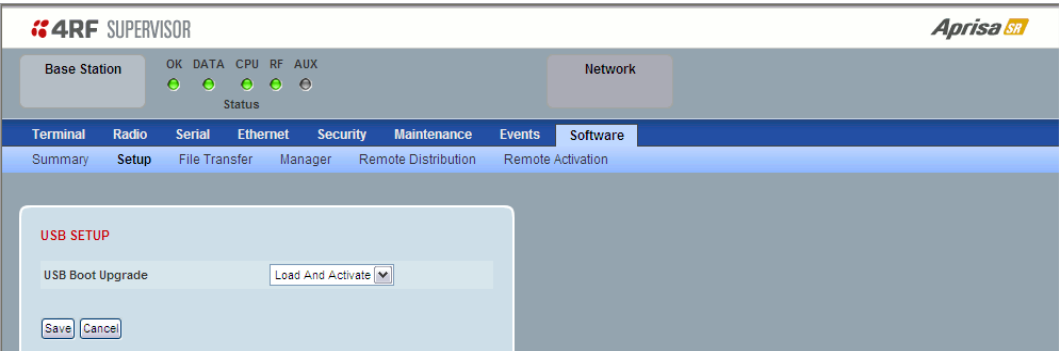
1. Check that the SuperVisor USB Boot Upgrade setting is set to 'Load and Activate' (see SuperVisor > Software > Setup).
 2. Unzip the software release files in to the root directory of a USB flash drive.
 3. Power off the Aprisa SR and insert the USB flash drive into the Host Port .
 4. Power on the Aprisa SR.
 5. The software upgrade process is complete when the OK LED lights solid orange. This can take about 2 minutes.
 6. Remove the USB flash drive from the Host Port .
 7. Power cycle the Aprisa SR.
-

Upgrade Did Not Start

If the USB boot upgrade process did not start, the Aprisa SR could already be operating on the version of software on the USB flash drive. This will be indicated by flashing display panel OK LED and then the OK, DATA and CPU will light steady green.

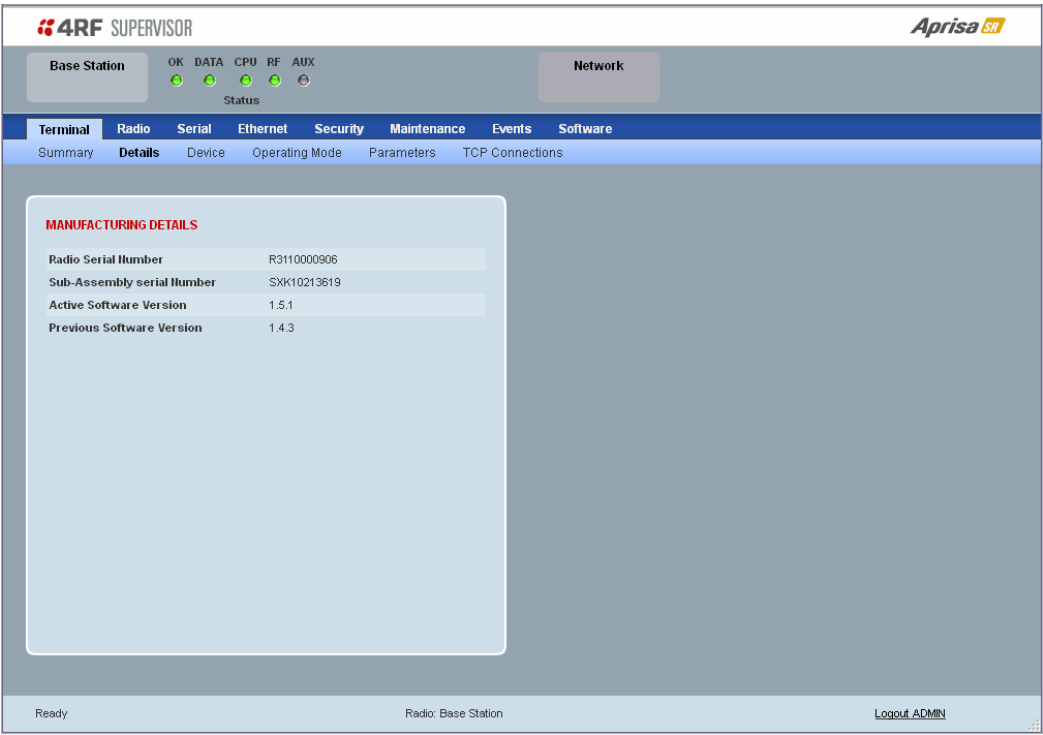
If any display panel LED flashes red or is steady red during the upgrade process, it indicates that the upgrade has failed. This could be caused by incorrect files on the USB flash drive or a radio hardware failure.

Check that the SuperVisor USB Boot Upgrade setting is set to 'Load and Activate'.



Check the Result

Login in to SuperVisor and select Terminal > Details to view the Active and Previous software versions.





3.2.1. Protected Station Software Upgrade

Procedure

The Protected Station software upgrade can be achieved without disruption to traffic.

This procedure assumes that the Primary radio is active and the Secondary radio is standby.

Process Steps

1. Using the Hardware Manual Lock switch, force the primary radio to active.
 2. Insert the USB flash drive with the new software release into the secondary radio Host Port .
 3. Power cycle the secondary radio. The radio will be upgraded with the new software.
 4. When the secondary radio upgrade is completed, remove the USB flash drive, power cycle the secondary radio and wait for it to become standby.
 5. Using the Hardware Manual Lock switch, force the secondary radio to active.
 6. Insert the USB flash drive with the new software release into the primary radio Host Port .
 7. Power cycle the primary radio. The radio will be upgraded with the new software.
 8. When the primary radio upgrade is completed, remove the USB flash drive, power cycle the primary radio and wait for it to become standby.
 9. Set the Hardware Manual Lock switch to the Auto position. The secondary radio will remain active and the primary radio will remain standby. To set the primary radio to active, use the hardware lock switch to select the primary radio and wait for it to become active, then set the hardware manual lock switch to the Auto position.
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4. Software Enhancements

4.1. Major Enhancements

Payload Security Profile

Previously, if the Payload Security was changed, it needed to be changed on all the radios in the Aprisa SR network simultaneously or the network would fail. This is because the Payload Security parameters must be the same on all radios in the network.

In software version 1.5.1, support has been added for Payload Security Profiles. The Payload Security Profile enables the user to predefine a security profile with a specified name and manage the distribution and activation process.

The Payload Encryption Key Type of Raw Hexidecimal has also been added.

This feature is setup in SuperVisor > Security > Setup.



The screenshot shows the 'Security' tab in the SuperVisor interface. Under the 'Setup' sub-tab, there are two main sections: 'PAYLOAD SECURITY PROFILE SETUP' and 'KEY ENCRYPTION KEY SETUP'.

PAYLOAD SECURITY PROFILE SETUP

- Security Profile Name: New Security Profile
- Security Scheme: AES Encryption + CCM Authentication 32-bit
- Payload Encryption Key Type: Passphrase
- Payload Encryption Key Size: AES-128
- Payload Encryption Key: [Redacted]
- Buttons: Save, Cancel

KEY ENCRYPTION KEY SETUP

- Key Encryption Key Type: Passphrase
- Key Encryption Key Size: AES-192
- Key Encryption Key: [Redacted]
- Buttons: Save, Cancel

When the Payload Security Profile has been setup, it can be distributed to all remote radios and activated with Security > Distribution.

The Key Encryption Key provides the ability to encrypt the Payload Encryption Key so it can be safely transmitted over the radio link to remote radios.

The Key Encryption Key must be the same on all radios in the Aprisa SR network

Network Protocol Compression

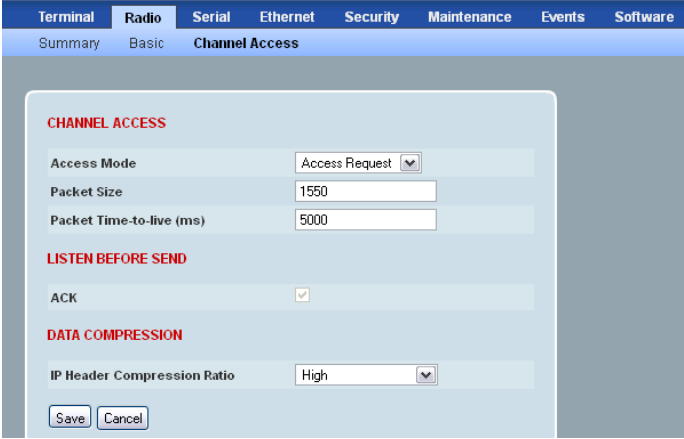
In software version 1.5.1, with a point to multi-point network with no repeaters and using the channel access mode of Access Request, the network address packet header size has been reduced to improve network performance.

IP Header Compression

In software version 1.5.1, support has been added for IP Header Compression to reduce IP header traffic.

The IP Header Compression implements TCP/IP ROHC v2 (Robust Header Compression v2. RFC4995, RFC5225, RFC4996) to compress the IP header.

This option is set in SuperVisor > Radio > Channel Access.



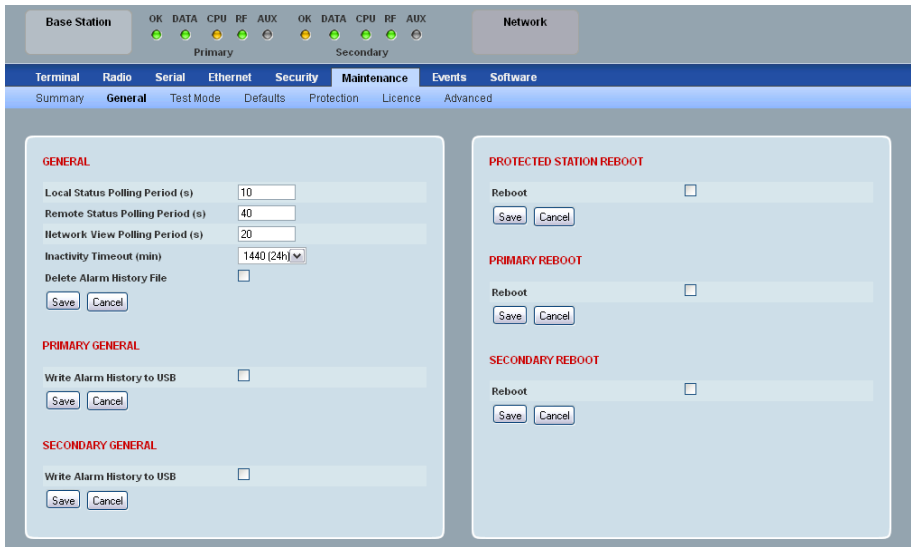
The IP Header Compression ratio can be set to High, Medium or Low.

See Aprisa User Manual 1.5.1 for more information.

Protected Station Management

Previously, primary and secondary radios of protected stations were managed separately by logging into one radio and configuring it and then logging into the partner radio and configuring it.

In software version 1.5.1, both the primary and secondary radios of protected stations are managed with a single management session i.e. by logging into one radio of a protected station, all the common parameters are set automatically on the partner radio and individual parameters are set from one SuperVisor screen e.g.

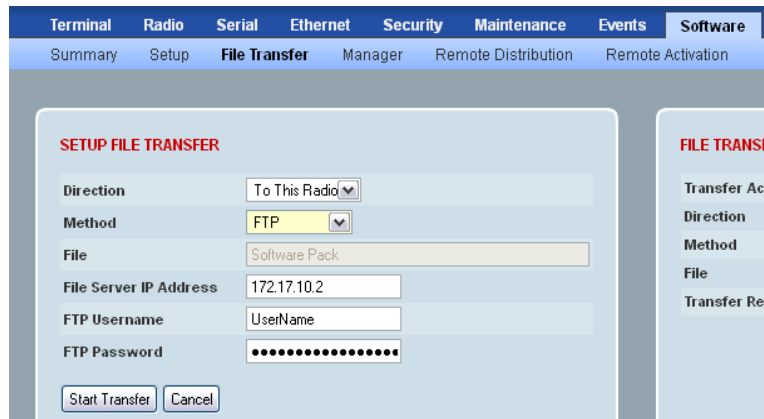


4.2. Minor Enhancements

FTP File Transfer

Previously, new software could only be uploaded to the radio from a USB flash drive. In software version 1.5.1, software can also be uploaded to the radio from an FTP server.

This upload is controlled in SuperVisor > Software > File Transfer.



The screenshot shows the 'File Transfer' setup window in the SuperVisor software. The window has a blue header with tabs for 'Terminal', 'Radio', 'Serial', 'Ethernet', 'Security', 'Maintenance', 'Events', and 'Software'. The 'Software' tab is active, and the 'File Transfer' sub-tab is selected. The main area is titled 'SETUP FILE TRANSFER' and contains the following fields:

- Direction:** A dropdown menu set to 'To This Radio'.
- Method:** A dropdown menu set to 'FTP'.
- File:** A text input field containing 'Software Pack'.
- File Server IP Address:** A text input field containing '172.17.10.2'.
- FTP Username:** A text input field containing 'UserName'.
- FTP Password:** A text input field with masked characters (dots).

At the bottom of the form are two buttons: 'Start Transfer' and 'Cancel'.

See Aprisa User Manual 1.5.1 for more information.

5. Software Bug Fixes

5.1. Major Bug Fixes

None

5.2. Minor Bug Fixes

None

6. Hardware Enhancements

None
