

SAGE 3.2.x General Release Notes

Introduction

The SAGE Release Notes detail the features that are supported in the current release version(s). The notes also list the platforms that are currently supported and any additional ones that are newly added since the last release. There are example applications included in the SAGE binary release which demonstrates the SAGE functionality.

Supported Unified Reference Software Releases (URSR)

- 17.x, 18.x

For future URSR releases not listed above, please check with your Broadcom FAE for compatibility.

Supported SAGE Bootloader

- SAGE 3.2.5 and later requires SAGE Bootloader version $\geq 3.2.5$
- SAGE Bootloader 4.0.3 required for 7255A0 in SAGE Software Framework 3.2.16

Notable Changes Since SAGE 3.1.4

3.2.1

- Improved Netflix stability on multiple init/uninit
- Added support for secure HDMI receiver
- Improved Netflix Secure Store API
- Added initial DTU support (static) in SAGE
- Fixed common DRM TAs not loading
- Fixed crash on board with ≥ 4 GB in size
- Added 7271B0 SAGE support
- Added 7268B0 SAGE support
- Fixed Widevine crash during uninit
- Fixed for Netflix virtual clock reported time
- Removed 7364A0 Support
- Separated Common DRM TA into individual TAs
- Updated PlayReady Device Porting Kit (PK) from 3.0 to 3.2
- Allow Nexus apps to re-run on production parts after a clean Nexus exit.
- Added support for type 2 to type 3 drm conversion when OTP Keys (B-H) doesn't have SAGE key-ladder rights

3.2.2

- None

3.2.3

- Fixed memory leak during HDCP 2.2 repeater testing

3.2.4

- Improved SAGE long term testing stability

3.2.5

- Adjusted memory size calculation based on SoC with dual rank support (7260, 7271 and 7268 as of this writing)

3.2.6

- None

3.2.7

- Fixed compatibility issue with older DRM bin files

3.2.8 / 3.2.9

- Fixed Android system time not being set in Playready
- Allow application to set HDCP 2.2 Content Stream Type of '0' for non-SAGE (DRM/CA) contents
- Added support for dynamic DTU (URR mapping)
- Certain 3rd party HDR now requires appropriate licensing via BP3 (provisioning)
- Bundled with SAGE BL version 3.2.7

3.2.10

- Fix Netflix CRYPTO-002-TC1 and CRYPTO-001-TC1 failures
- Fix Widevine OEMCryptoLoadsCertificate.CertificateProvisionBadNonceKeyboxTest failure

3.2.11

- Fixed issue when upgrading from SAGE 3.1.x for the first-time

3.2.12

- Fixed DRM_Netflix_xx may return incorrect result due to stale data
- Improved robustness
- Added initial BP3 (Broadcom Provisioning Protocol for 3rd Party IP) Trusted Application (TA) Support

3.2.13

- Allow external key-slots on SAGE and HOST simultaneously for setting IV
- Added BP3 Macrovision support
- Added SVP lockdown error message on host
- Fixed PlayReady NTS SEC-908-TC11 test case
- Fixed Widevine's RSA key parsing
- Updated SSF Epoch value to 0x00001

3.2.14

- Fixed secure graphics support for 7260A0
- Placed HVD firmware into a separate secure region
- Various 3rd Party IP support and improvements

3.2.15

- Fixed 4GB on single MEMC support for 7271VC4L platforms
- Additional BP3 updates
- Removed SAGE support for 7364B0 and 7366B0 SoCs
- Corrected return code to RSA TA from SAGE
- Added check for HDCP Rx device status before authentication
- Fixed command processing return code to REE
- Added 7255A0 SAGE support. Please refer to URSR for additional information
- Added Secure RSA TA support
- Added initial 7260B0 support
- Added RPMB support in SAGE
- Added Android Keymaster TA
- Added runtime check to verify SAGE Alpha version Framework or Trusted Applications (TAs) are compatible
- Improved Playready 3.3 decrypt performance
- Released in URSR18.1

3.2.15.1

- Fixed for stability issue

3.2.15.2

- SRAM usage optimization

3.2.16

- SAGE Bootloader
 - 3.2.10 for all Zeus 4.x SoC except for 7255A0
 - 4.0.3 for 7255A0
- Added support Secure TrustZone Boot for 7255A0 (SAGE Bootloader 4.0.3)
- Added additional robustness in communication between Host and SAGE for HDCP22 Trusted Application
- Removed 7268A0 and 7271A0 Support
- Improved DRM decrypt time
- Fixed issue with resuming from S2 power mode for some SoCs (7271/7260/7268/7255)
- Forced enabling of HDCP1.4 for BP3 SoCs
- Requires host side patches when bundled with URSR 18.1

3.2.17

- SAGE Bootloader
 - 3.2.12 for all Zeus 4.x SoC except for 7255A0
 - 4.0.6 for 7255A0
- Fixed enabling HDCP 1.4 for 7260B0
- Added support for 7255 secure audio (SVP). This requires associated Monitor64, TZ Astra and TZ audio decoder application.
- Improved long term stability testing
- Added initial support for 7357A0
- Added various 3rd party IPs

3.2.18

- SAGE Bootloader
 - No change from SSF 3.2.17
- Passes Android's Keystore internal CTS/GTS testing
- Added option to disable SRAM TA-ext
- Added 3rd party certificate support
- Added additional PlayReady3 optimization (requires host patch)
- Added 3rd party feature request

Supported Base SoC (Zeus 4.2)

BCM7445D0/E0, BCM7439Bx, BCM7366C0, BCM7364C0, BCM7250B0, BCM7255A0, BCM7260A0/B0, BCM7271B0, BCM7268B0

Host SAGE Example Applications

The Broadcom Heartbeat application that tests if SAGE is running is located at: *BSEAV/lib/security/sage/utility/examples/heartbeat*

To run this application, execute the following command on the target platform: *./nexus heartbeat_tool*