



ZykronixOTA





Specification:

Zykronix OTA updates are designed to upgrade the underlying operating system and the read-only apps installed on the device system partition.

Zykronix Android based products in the field can receive and install over-the-air (OTA) updates to the system and application software. Our Android based products have a special recovery partition with the software needed to unpack a downloaded update package and apply it to the rest of the system. One important feature of OTA is that one central location can send an update to all the users.

Zykronix OTA mechanism requires our Partner's application software and hardware of the target device to support the feature, namely the receipt and installation of new software received via wired or wireless network from the Zykronix OTA server.

New software is transferred to the device, installed, and put into use. It is often necessary to turn the device off and back on for the new programming to take effect, our OTA will automatically perform this action.

Zykronix software team works with partners using our hardware and OTA to add the OTA functionalities in the partner's software application.

Life of an OTA update

A typical OTA update contains the following steps:

1. Device performs regular check in with OTA servers and is notified of the availability of an update.
2. Update downloads to a cache or data partition, and its cryptographic signature is verified against the certificates. User is prompted to install the update.
3. Device reboots into recovery mode, in which the kernel and system in the recovery partition are booted instead of the kernel in the boot partition.
4. Recovery binary is started by init. It finds command-line arguments in /cache/recovery/command that point it to the downloaded package.
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5. Recovery verifies the cryptographic signature of the package against the public keys in /res/keys (part of the RAM disk contained in the recovery partition).
6. Data is pulled from the package and used to update the boot, system, and/or vendor partitions as necessary. One of the new files left on the system partition contains the contents of the new recovery partition.
7. Device reboots normally.
8. The newly updated boot partition is loaded, and it mounts and starts executing binaries in the newly updated system partition.
9. As part of normal startup, the system checks the contents of the recovery partition against the desired contents (which were previously stored as a file in /system). They are different, so the recovery partition is re-flashed with the desired contents. (On subsequent boots, the recovery partition already contains the new contents, so no re-flash is necessary.)

The system update is complete!