

# Update PTU

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## 1 Motivation

The two main components of a PSA are

- PTU software.
- Device controller (DC) firmware.

While the DC firmware is basically the same for each PSA (even for different customers), the PTU software is highly dependent on customer requirements.

Hence, each customer is assigned an own git-repository, which will be loaded ("cloned") on the PSA when configuring the machine for the first time.

Two special tools, the **UpdateController** (a [Qt](#) binary [`up_dev_ctrl`]) and the **UpdateScript** (a [bash](#) script [`update_psa`]), work together to finish a PSA installation.

## 2 PSA: Initial configuration

For the initial configuration, a PSA loads a customer-specific git-repository, which structure is detailed below [**Structure of a customer git-repository**].

The "git clone" for the repository is done by the UpdateScript [`update_psa`]. It updates the file

/opt/app/tools/atbupdate/update\_log.csv

which will be interpreted by the UpdateController [`up_dev_ctrl`]. The structure of [`update_log.csv`] is detailed below.

Each line of `update_log.csv` represents a command for the UpdateController, which will either download certain files to the DC or execute some `opkg` commands [`The package manager "opkg"`].

### 3 PSA: Update

The update of a PSA is basically managed by `git`, a free and open source distributed version control system. Like many other Version Control Systems, `git` has a way to fire off custom scripts when certain important actions occur, so-called `hooks`. The hooks used for a PSA update are called `post-checkout` and `post-merge`.

The `post-checkout` hook is called when checking out some branch of the customer-repository (for instance when cloning the customer repository for the first time). In contrast, the `post-merge` hook is called when a `git pull` operation has been issued (more precisely, a `git-fetch` followed by a `git-merge`).

Both hooks update the file [`update_log.csv`], which is interpreted by the UpdateController in a second step.

### 4 up\_dev\_ctrl

The update-tool is a Qt binary ("`up_dev_ctrl`") and called by the system-controller application. It is installed under

```
/opt/app/tools/atbupdate/up_dev_ctrl
```

and has two responsibilities:

- Call update-script "`update_psa`".
- Update the device controller firmware.

#### 4.1 Calling the update-script "`update_psa`"

The update-script "`update_psa`" is about executing all `git`-commands necessary to clone and pull a customer repository.

## 5 update\_psa

Inside of such a repository, there are at least the following directories:

- **etc**
- **etc/dc**  
Contains the device controller firmware as binary file.
- **etc/psa\_config**  
Contains the printer template files (JSON).
- **etc/psa\_tariff**  
Contains the tariff files (JSON).
- **etc/psa\_update**  
Contains a single file for opkg-commands.

## 6 Structure of a customer git-repository

### 6.1 The post-checkout hook

TODO: checkout\_history

### 6.2 The post-merge hook

They are both located under the `.githubhooks`-directory

## 7 update\_log.csv

Table 1: Initial state of update\_log.csv

Request	Name	Date	Status
DOWNLOAD	/etc/dc/dc2c4.21.bin	2023-05-01T12:00:00	N/A
DOWNLOAD	/etc/psa_config/DC2C_print01.json	2023-05-01T12:00:00	N/A
DOWNLOAD	/etc/psa_config/DC2C_print02.json	2023-05-01T12:00:00	N/A
DOWNLOAD	/etc/psa_config/DC2C_print03.json	2023-05-01T12:00:00	N/A
DOWNLOAD	/etc/psa_config/DC2C_print04.json	2023-05-01T12:00:00	N/A
DOWNLOAD	/etc/psa_config/DC2C_print29.json	2023-05-01T12:00:00	N/A
DOWNLOAD	/etc/psa_config/DC2C_print32.json	2023-05-01T12:00:00	N/A
EXECUTE	opkg update	2023-05-01T12:00:00	N/A

Table 2: State of update.log.csv after updating

<b>Request</b>	<b>Name</b>	<b>Date</b>	<b>Status</b>
DONE	/etc/dc/dc2c4.21.bin	2023-05-01T12:00:00	N/A
DONE	/etc/psa_config/DC2C_print01.json	2023-05-01T12:00:00	N/A
DONE	/etc/psa_config/DC2C_print02.json	2023-05-01T12:00:00	N/A
DONE	/etc/psa_config/DC2C_print03.json	2023-05-01T12:00:00	N/A
DONE	/etc/psa_config/DC2C_print04.json	2023-05-01T12:00:00	N/A
DONE	/etc/psa_config/DC2C_print29.json	2023-05-01T12:00:00	N/A
DONE	/etc/psa_config/DC2C_print32.json	2023-05-01T12:00:00	N/A
DONE	opkg update	2023-05-01T12:00:00	N/A

## 8 The package manager ”opkg”

## 9 Known problems