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# Introduction

This document describes the structure and content of the FR22 application zip file format. For more general information about FR22 applications, see the samples and documentation provided at <https://github.com/NordicID/fr22_samples/>.

# Zip file directories

## meta/

The *meta* directory contains files describing the application. The *meta* directory is mandatory to have in application zip files.

### meta/manifest.json

Currently the only file in the meta *directory* is *manifest.json*. The structure of *manifest.json* is described later in this document. The *meta*/*manifest.json* file is mandatory to have in application zip files.

## data/

The *data* directory is a directory containing plugin data that should be preserved during application upgrades. All other directories will be overwritten during application upgrades. Suitable files to store in this directory is configuration files and non-volatile data generated by the application at runtime. Note that the application must itself handle any format changes between application versions for files in this directory.

Files existing in the *data* directory on the device:

* Are not removed during upgrade
* Are not overwritten with files from the zip file during upgrade

### data/environment

The *data/environment* file is a text file containing environment variables for the plugin and other plugins depending on this plugin. The file contains of KEY=VALUE lines separated by newlines.

Other plugins wanting to inherit this environment should depend on the plugin. The FR22 plugin architecture will load the environment file for the plugins automatically.

## bin/

The *bin* directory contains executables and libraries for the application.

### Bin/PluginName

*bin/PluginName* is the default executable to use when starting the plugin, but it can be overridden in meta/manifest.json). *PluginName* is the name of the plugin as specified in *meta/manifest.json*.

## frontend/

The *frontend* directory contains static files (html/js/css/images) used by the application WebUI.

# manifest.json

The supported JSON in manifest.json is as follows:

{

// name of the plugin (mandatory)

"name": "PluginName",

// version of the plugin, specified as major.minor.patch, where

// major/minor/patch each are one or more integers (mandatory)

"version": "1.0.1",

// Lists of plugins/applications this plugin/application depends on. The

// plugin can't be installed before all dependencies have been installed.

// The plugins in startup/depends are implicitly added to these lists (but

// these dependcy lists do not imply a startup dependency; startup/depends

// has to be used to enforce that).

// The version specifiers in the dependencies follow these rules:

// https://www.python.org/dev/peps/pep-0440/#version-specifiers

// (optional)

"depends": {

// (optional)

"plugins": [

{

// (mandatory)

"name": "OtherPlugin",

// (optional)

"version": ">=1.2.3"

}

],

// (optional)

"applications": [

{

// (mandatory)

"name": "OtherApplication",

// (optional)

"version": "==1.2.3"

}

],

// (optional)

"firmware": {

// (optional)

"version": "==0.0.1"

}

},

// options relating to startup of the plugin (optional)

"startup": {

// executable (and arguments) to execute at plugin start, if left unspecified,

// bin/PluginName is used

// environment variables (e.g., ${VAR}) set by the backend (in

// /run/nid-plugin/PluginName/environment) and other plugins this plugin depends

// on can also be used here

// (optional)

"exec\_start": "bin/PluginExe -c data/PluginName.conf",

// enable and start the plugin automatically after installation (i.e., the default

// state of the start/stop button after installation), defaults to false (only

// enable if the plugin executable needs no configuration to work)

// (optional)

"default\_autostart": true,

// starts after plugin/OtherPlugin has been started and include

// their environment

// (optional)

"depends": {

// (optional)

"plugins": [

"OtherPlugin"

],

// (optional)

"applications": [

"OtherApplication"

]

}

}

}

# AR8x compatbility

In addition to the application file format described here, applications made for Nordic ID’s previous generation of fixed readers (Sampo S2/AR series) are also compatible and installable directly on FR22 readers. Support for this older application format is provided as backwards compatibility and is not the subject of this document, see <https://github.com/NordicID/ar8x_samples> for more information.