
spkrepo Documentation

Release 0.1

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Release v0.1

Spkrepo is a feature rich Synology Package Repository application. It is compatible with DSM 4.2 on onwards and comes with an API, advanced permission management and an admin interface.

Documentation

1.1 API

spkrepo exposes a [RESTful](#) API and returns standard HTTP Status Codes in all responses. Data is returned as JSON.

1.1.1 Authentication

To access the API, user must be registered, have the `developer` role and generated an API key from the profile page. The `Authorization` header is mandatory and must contain the API key as user with no password. If the authentication fails, a `401 Unauthorized` is returned.

Warning: For security reasons, only **one** API key can be valid at a time. Should the API key be compromised, a new one can be generated from the profile page.

1.1.2 Errors

In case of ambiguous error, a detailed explanation is returned in JSON as message

```
HTTP/1.1 422 UNPROCESSABLE ENTITY
Content-Length: 43
Content-Type: application/json

{
  "message": "Unknown architecture: myarch"
}
```

1.1.3 Endpoints

POST /api/packages

Post a SPK (Synology Package) to the repository.

First a *Package* is created if not existing already, based on the *name*. Only users with `package_admin` role can create new packages, other users must be defined as *maintainers* to be able to continue.

Then a *Version* is created with its appropriate relationships if not existing already, based on the *package* and the *version*.

Lastly, a *Build* is created with its appropriate relationships and files saved on the filesystem.

Note: The created *Build* is not *active* by default

Example response:

```
HTTP/1.1 201 CREATED
Content-Length: 97

{
  "architectures": ["88f628x"],
  "firmware": "3.1-1594",
  "package": "btsync",
  "version": "1.4.103-10"
}
```

Status Codes

- 201 Created – SPK registered
- 400 Bad Request – Request contained no body
- 403 Forbidden – Insufficient permission
- 409 Conflict – A *Build* already exists
- 422 Unprocessable Entity – Invalid or malformed SPK
- 500 Internal Server Error – Signing or filesystem issue

1.2 Models

1.2.1 Referential

```
class spkrepo.models.Architecture (**kwargs)

    builds
    code
    classmethod find (code, syno=False)
    from_syno = {'88f6282': '88f628x', '88f6281': '88f628x'}
    id
    to_syno = {'88f628x': '88f6281'}

class spkrepo.models.Firmware (**kwargs)

    build
    classmethod find (build)
    firmware_string
    id
    version
```

```
class spkrepo.models.Language(**kwargs)
```

```
    code
    classmethod find(code)
    id
    name
```

```
class spkrepo.models.Service(**kwargs)
```

```
    code
    classmethod find(code)
    id
```

1.2.2 Users

```
class spkrepo.models.User(**kwargs)
```

```
    active
    api_key
    authored_packages
    confirmed_at
    email
    github_access_token
    id
    maintained_packages
    password
    roles
    username
```

```
class spkrepo.models.Role(**kwargs)
```

```
    description
    classmethod find(name)
    id
    name
    users
```

1.2.3 Core

```
class spkrepo.models.Package(**kwargs)
```

```
author
author_user_id
download_count
classmethod find(name)
id
insert_date
maintainers
name
recent_download_count
screenshots
versions

class spkrepo.models.Version(**kwargs)

all_builds_active = <sqlalchemy.sql.elements.BinaryExpression object>
beta = <sqlalchemy.sql.elements.BinaryExpression object>
builds
changelog
conf_conflicts
conf_dependencies
conflicts
dependencies
descriptions
displaynames
distributor
distributor_url
icons
id
insert_date
install_wizard
license
maintainer
maintainer_url
package
package_id
path
report_url
```

```
    service_dependencies
    startable
    upgrade_wizard
    upstream_version
    version
    version_string = <sqlalchemy.sql.elements.BinaryExpression object>
class spkrepo.models.Build(**kwargs)

    active
    architectures
    checksum
    downloads
    extract_size
    firmware
    firmware_id
    classmethod generate_filename(package, version, firmware, architectures)
    id
    insert_date
    md5
    path
    publisher
    publisher_user_id
    save(stream)
    version
    version_id
```

1.2.4 Data

```
class spkrepo.models.Screenshot(**kwargs)

    id
    package
    package_id
    path
    save(stream)
class spkrepo.models.DisplayName(**kwargs)

    displayname
```

```
    language
    language_id
    version_id
class spkrepo.models.Description(**kwargs)

    description
    language
    language_id
    version_id
class spkrepo.models.Icon(**kwargs)

    id
    path
    save(stream)
    size
    version
    version_id
```

1.2.5 Statistics

```
class spkrepo.models.Download(**kwargs)

    architecture
    architecture_id
    build
    build_id
    date
    firmware_build
    id
    ip_address
    user_agent
```

1.3 Utilities

```
class spkrepo.utils.SPK(stream)
    SPK utilities

    Parameters stream(fileobj) – SPK file stream

    BOOLEAN_INFO = {'startable', 'support_conf_folder'}
    Boolean INFO keys
```

REQUIRED_INFO = {'displayname', 'arch', 'package', 'firmware', 'version', 'description'}

Required keys in the INFO file

SIGNATURE_FILENAME = 'syno_signature.asc'

Signature filename

conf_filename_re = re.compile('^conf/.+\$')

Regex for files in conf

icon_filename_re = re.compile('^PACKAGE_ICON(?:_(?P<size>120|256))?\.\PNG\$')

Regex for icons in files

icon_info_re = re.compile('^package_icon(?:_(?P<size>120|256))?\$')

Regex for icons in INFO

info_line_re = re.compile('^(?P<key>\w+)= "(?P<value>.*)"\$', re.MULTILINE)

Regex for a line of the INFO file

package_re = re.compile('^[\w-]+\$')

Regex for package in INFO file

script_filename_re = re.compile('^scripts/.+\$')

Regex for files in scripts

sign (*timestamp_url*, *gnupghome*)

Sign the package

Parameters

- **timestamp_url** – url for the remote timestamping
- **gnupghome** – path to the gnupg home

unsign ()

Remove the signature file of the package

wizard_filename_re = re.compile('^WIZARD_UIFILES/(?P<process>install|upgrade|uninstall)_uifile(?:_[a-z]{3})?\$')

Regex for a wizard filename

1.4 Exceptions

class spkrepo.exceptions.**SpkrepoError**

Base class for exceptions in spkrepo

class spkrepo.exceptions.**SPKParseError**

Exception raised when SPK parsing fails

class spkrepo.exceptions.**SPKSignError**

Exception raised when SPK signing fails

Changelog

2.1 0.1

release date: 2014-11-30

- Initial release

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