



Software Provisioning Infrastructure (UMD/CMD)

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EGI Repositories



The **EGI Software Repository** provides access for the middleware distributions together with some Community Repositories

Two main categories:

- The Unified Middleware Distribution (**UMD**): redistribution of traditional middleware
- **IGTF** Distribution of Authority Trust Anchors: packages with the trust anchor information

OS Support

- AlmaLinux9 (EL9) : **UMD-5**

Provider:

- IBERGRID since 2021

EGI Repositories

- Complete redesign of the service:
 - Current infrastructure based on Nexus Repository OSS
 - Release workflow implemented in GitHub and Jenkins pipelines.
- Software Quality assurance - Full-automated approach
 - **Faster release cycle** with higher automation and less manual intervention

EGI Repositories

New Functionalities:

- IPV6 compliant
- New backend behind a proxy (HAProxy)
 - <https://repository.egi.eu/sw/production/> (prod)
 - <https://repository.egi.eu/software/umd/> (dev)
- High Availability (server side)
- Full automatic process until testing
- Testing -> production (manual git commit)

Tracking of the workflow all based on git

The screenshot shows the GitHub interface for the repository `egi-qc/software-releases`. The commit history table is as follows:

Commit	Author	Message	Time Ago	Commits
frontend-data	mariojmdavid	Add UMD-4.17.1 distribution	2 weeks ago	257
imgs	mariojmdavid	update README	9 minutes ago	257
json	mariojmdavid	Remove version from filename	3 months ago	257
rpms	mariojmdavid	Fix path	5 months ago	257
scripts	mariojmdavid	str.removeuffix() only works on python>3.9	3 months ago	257
.gitignore	mariojmdavid	Ignore Python compilation files	10 months ago	257
Dockerfile.build	mariojmdavid	Import UMD RPM key	4 months ago	257
Jenkinsfile	mariojmdavid	Download if json file has been modified	4 months ago	257
README.md	mariojmdavid	update README	9 minutes ago	257
RPM-GPG-KEY-umd-cmd	mariojmdavid	Import UMD RPM key	4 months ago	257
pylintrc	mariojmdavid	add class Config with environment variables, document conf options	9 months ago	257
requirements.txt	mariojmdavid	No need to have json module as requirement.	10 months ago	257

The README.md content includes the following sections:

Repositories for EGI UMD/CMD

EGI repository backend scripts and pipelines, for UMD/CMD releases. The repository structure is the following:

- `https://nexusrepoegi.a.incd.pt/repository/umd/5/`
 - `<OPERATING_SYSTEM>/release/<ARCH>`
 - `<OPERATING_SYSTEM>/test/ing/<ARCH>`
 - `<OPERATING_SYSTEM>/contrib/<ARCH>`

For example for Alma Linux 9 x86_64, the complete paths are:

- `https://nexusrepoegi.a.incd.pt/repository/umd/5/al9/release/x86_64`
- `https://nexusrepoegi.a.incd.pt/repository/umd/5/al9/testing/x86_64`
- `https://nexusrepoegi.a.incd.pt/repository/umd/5/al9/contrib/x86_64`

The process is as follows:

#	Script	Description
00	N.A.	Creation of a Pull Request (PR), containing the details of the new product's release (within <code>json/</code> folder).
01	< Jenkins SCM plugin >	git clone repository - get json
--	..	Parse json, get the list of files to download and produce list of

Software provisioning process:

<https://github.com/egi-qc>

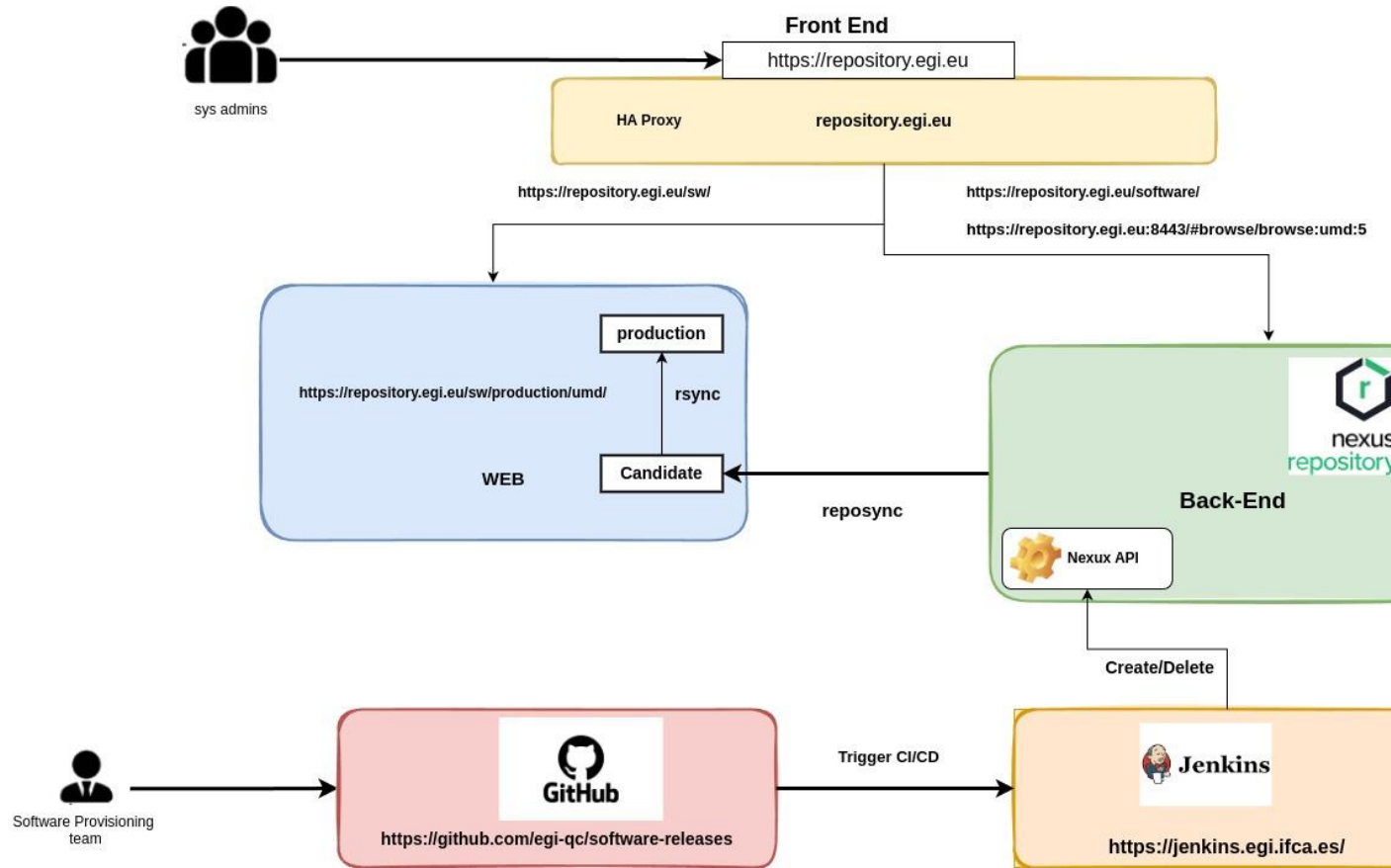
Software Releases:

<https://github.com/egi-qc/software-releases>

Ansible playbooks for install software:

<https://github.com/egi-qc/umd-verification>

Architecture



Yum repositories (new structure)

UMD-5 only

1. **release**: Main repository with all the packages (= to production).
2. **testing**: testing repository with rpm not fully validated in production environment. RPM belonging to release declared as production ready will be moved from testing to release.
3. **contrib**: repository for specific communities or special services. (**NEW**)

Dropped repositories: Staged Rollout and Release Candidate

- UMD-5 Open for beta testers (September 2024)
 - <https://repository.egi.eu/umd/distribution.html?id=5.0.0#5.0.0>
 - **Install instructions:**
 - <https://repository.egi.eu/umd/installation-notes.html?id=5>

Yum repositories (new structure)

Production

[UMD-5]

name=UMD 5 main repository (Alma Linux 9)

baseurl=https://repository.egi.eu/sw/production/umd/5/al9/release/\$basearch

enabled=1

priority=1

gpgcheck=1

gpgkey=https://repository.egi.eu/repository/umd/5/UMD-5-RPM-PGP-KEY

EPEL 9 required

UMD higher priority than EPEL

Priorities already part of DNF

Need crb almalinux9 enabled

No more base / updates >> release

Yum repositories (new structure)

Testing

```
[UMD-5-testing]
```

```
name=UMD 5 nexus testing (Alma Linux 9)
```

```
baseurl=https://repository.egi.eu/sw/production/umd/5/al9/testing/$basearch
```

```
enabled=0
```

```
priority=1
```

```
gpgcheck=1
```

```
gpgkey=https://repository.egi.eu/repository/umd/5/UMD-5-RPM-PGP-KEY
```

**Packages under testing but already
validated**

Yum repositories (new structure)

External Contribution (new)

[UMD-5-contrib]

name=UMD 5 contrib (Alma Linux 9)

baseurl=https://repository.egi.eu/sw/production/umd/5/al9/contrib/\$basearch

enabled=0

priority=1

gpgcheck=1

gpgkey=https://repository.egi.eu/repository/umd/5/UMD-5-RPM-PGP-KEY

**Packages under testing but already
validated: Caso**

Umd-5 first release (products list)

Arc 6.20.1

WN 5.1.0

UI 7.0.0

Dcache 9.2.25

Gfal2 2.23.0

Frontier-squid 5.9.2

**Voms 2.1.0, voms-api 3.3.3,
voms-client-java 3.3.4,
voms-client-cpp 2.1.0**

Apel 2.1.0

xroot 5.7.1

htcondor-ce 23.0

cvmfs 2.11.5

config-egi 2.6.1

egi-cvmfs 6.7.28

Davix 0.8.7

Ui 7.0.0

BDII 6.0.3

Site-bdii 1.0.8

UMD evolution

Future:

- Integration with SQAaaS from EOSC-Synergy
 - **Allow full pipeline tests**
- Allow it to be used by **external users**:
 - EGI / EOSC marketplace

End

Questions?

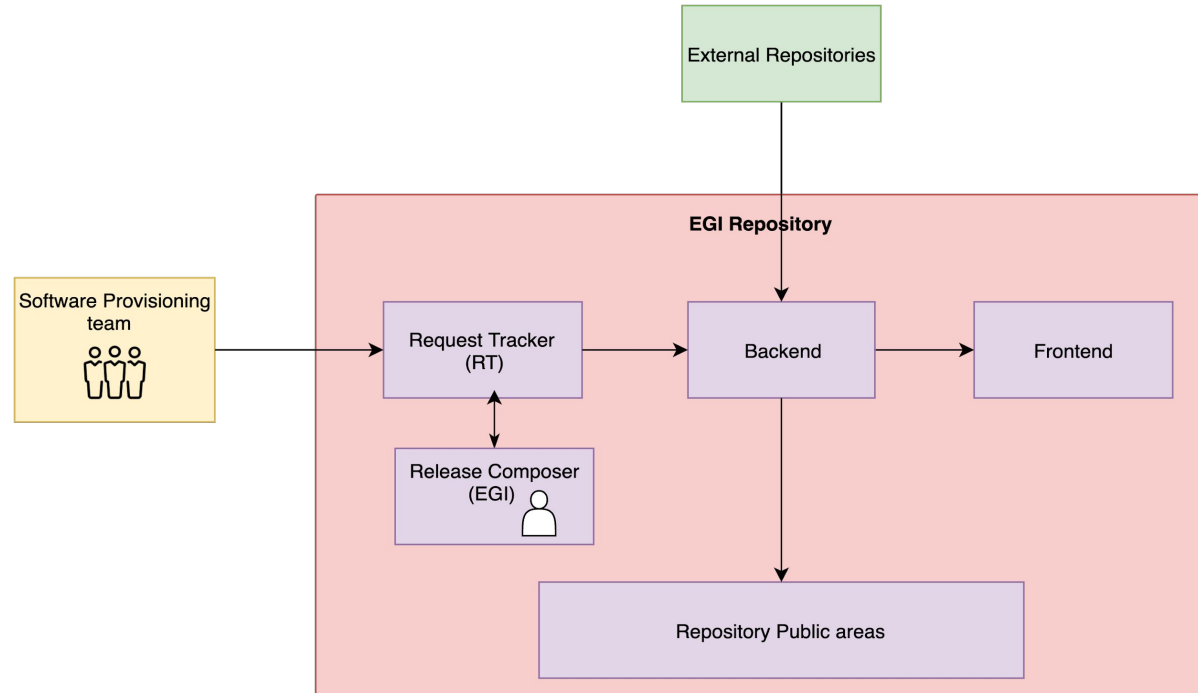


Repositories for UMD and CMD

UMD-4 architecture (old)

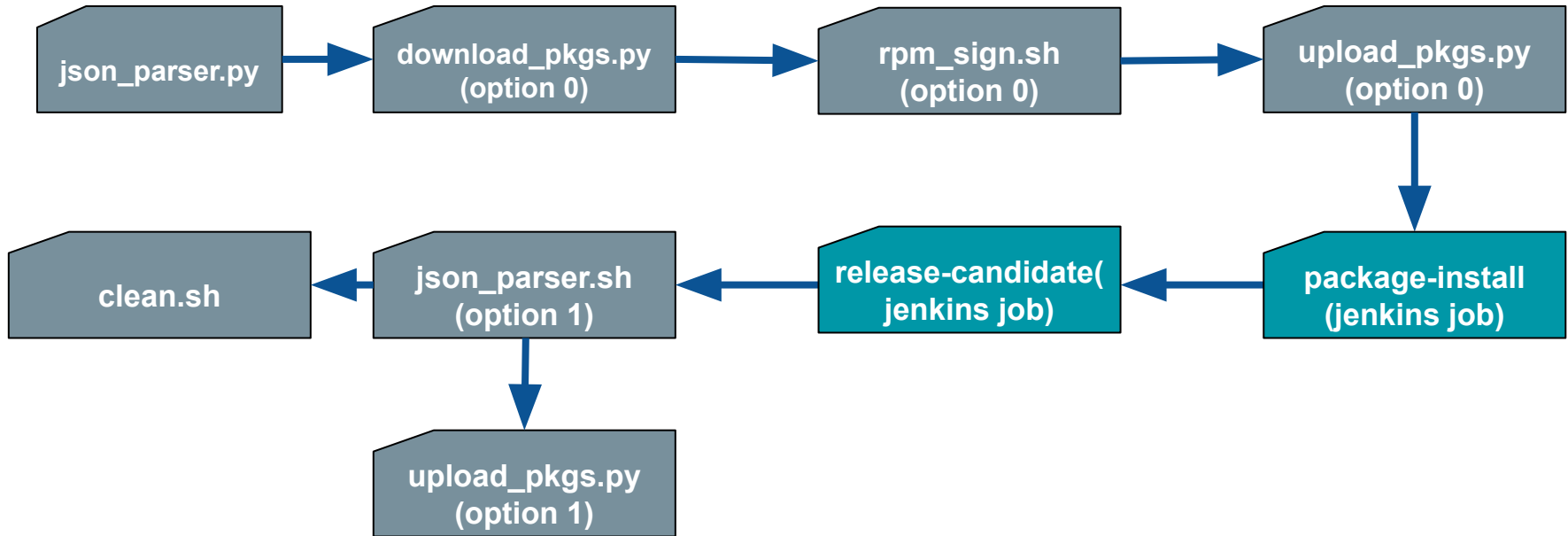
Old setup:

- No new functionalities for many years, since it's hard to implement them.
- Backend based on perl scripts with tight relation with RT.
- To many manual steps (RT fully manual) leading to a large delay in the releases of packages
- Frontend outdated which could lead to security issues (**already replaced by a simplified version**)



UMD/CMD new Workflow

<https://github.com/egi-qc/software-releases>



Approved the Release (Testing/Production repository)



The pipeline is as follows:

1. `json_parser.py`: parse json, get the list of files to download and produce list of filenames (packages).
2. `download_pkgs.py` (option 0): download the packages to a temporary directory.
3. `rpm_sign.sh` (option 0): rpm sign each package.
4. `rpm_sign.sh` (option 0): verify signature of each package.
 - a. a. verification of the packages
5. `upload_pkgs.py`: upload each package to nexusrepo.
6. `Package-install`: Validate package installations from testing repository and perform functional tests.
7. `release-candidate`: Install all packages in release repo together with the new packages from testing
8. `json_parser.sh`: Produce new json file as asset of the new release
9. `clean.sh`: clean temporary directories.