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:

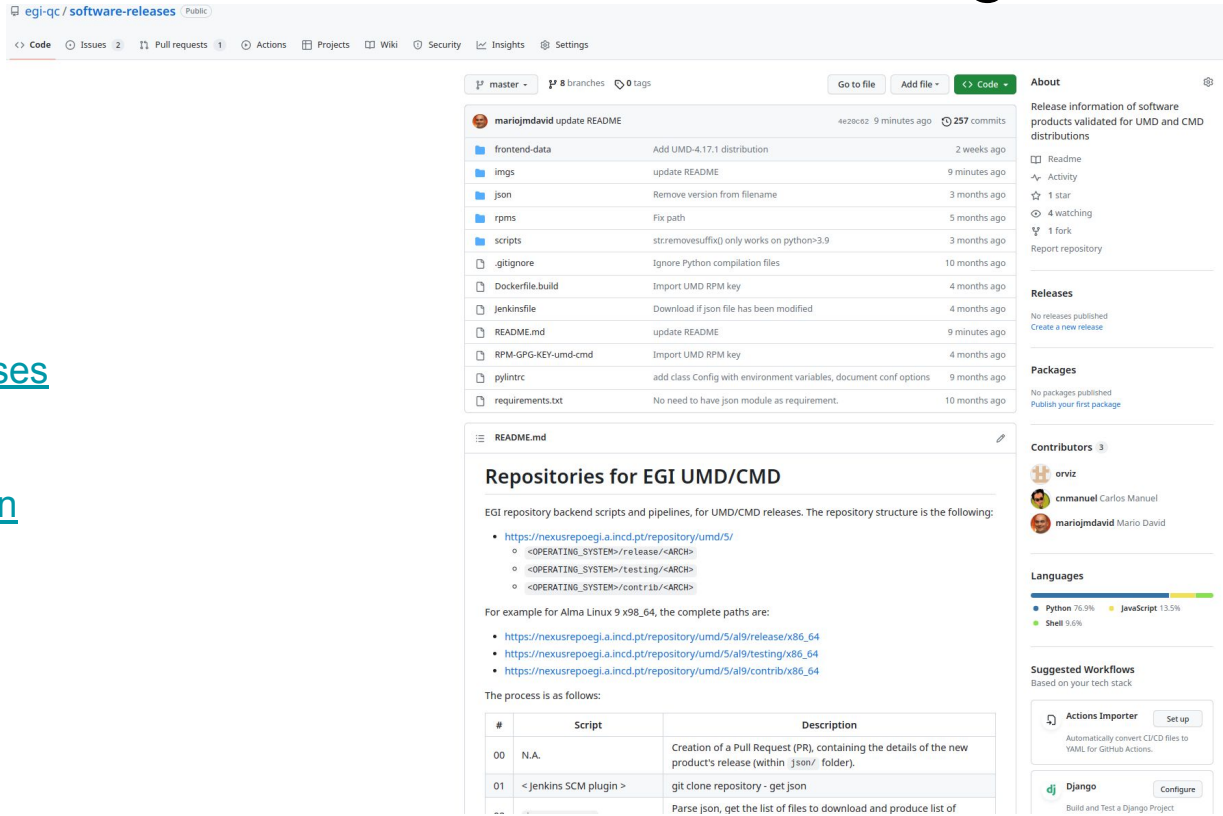
- IPV6 compliant
- New backend behind a proxy (HAProxy)
  - https://repository.egi.eu/sw/production/ (prod)
  - https://repository.egi.eu/software/umd/ (dev)
- High Availability (server side)
- Full automatic process until testing
- Testing -> production (manual git commit)

Tracking of the workflow all based on git

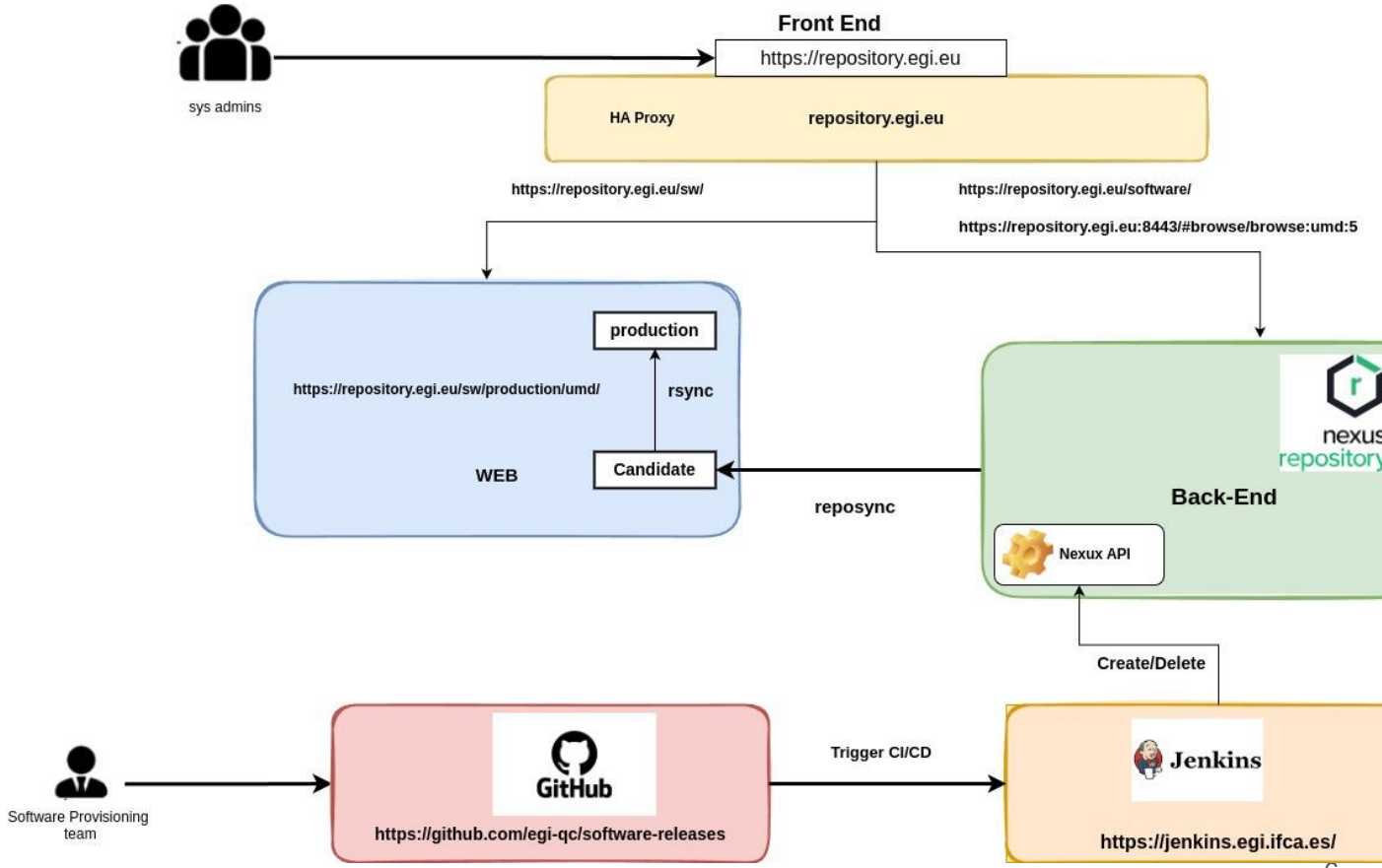
Software provisioning process:
https://github.com/egi-qc

Software Releases:
https://github.com/egi-qc/software-releases

Ansible playbooks for install software:
https://github.com/egi-qc/umd-verification



Architecture



Nexus

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**

Nexus

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

Nexus

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

Nexus

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

Nexus

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

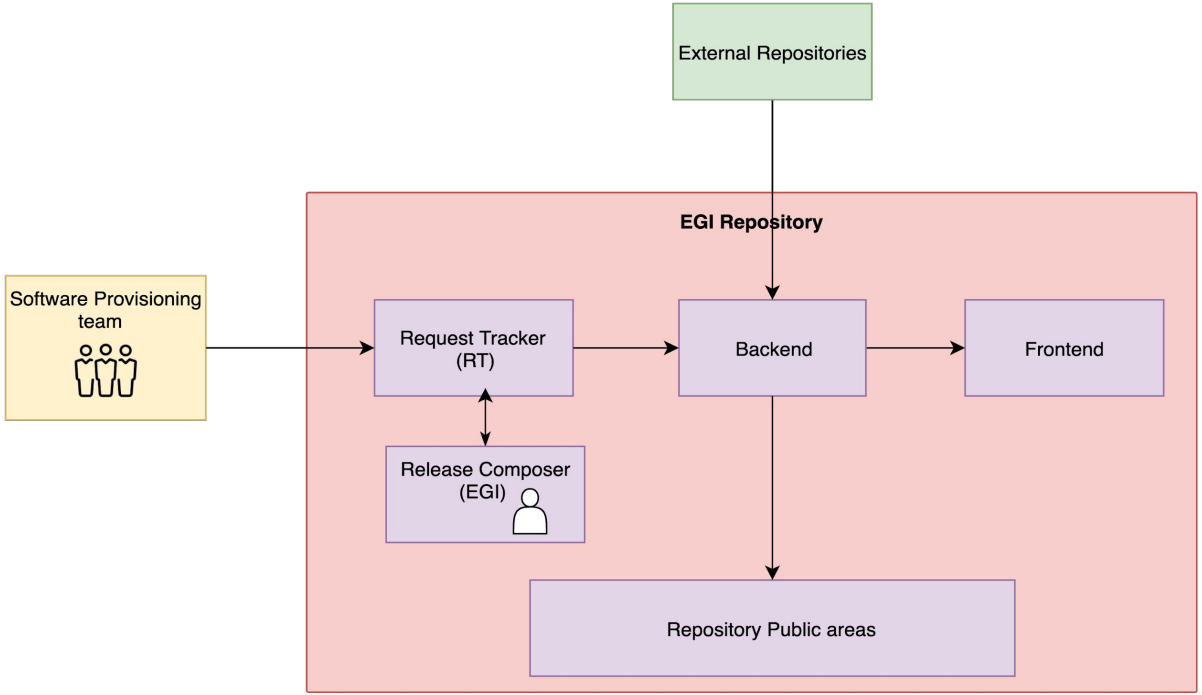
Future:

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

End

Questions?

UMD-4 architecture (old)

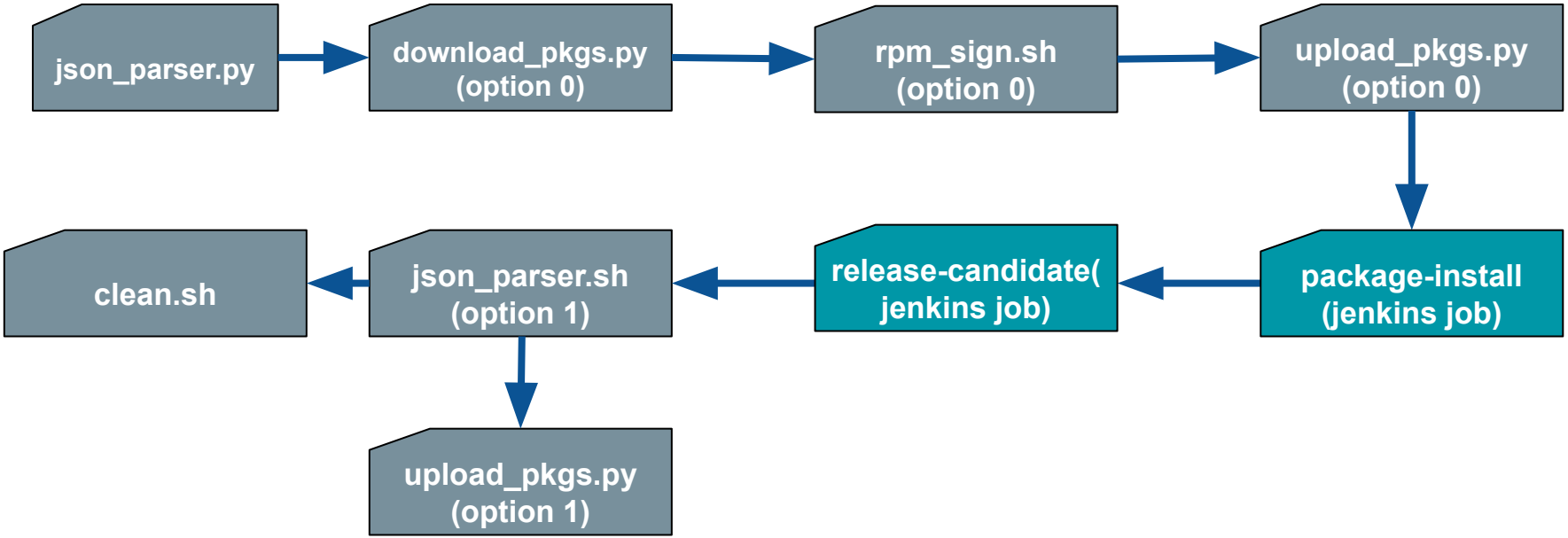


Old setup:

- 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)

Pipeline

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

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.