

Software Distribution

Book-keeping requirements for DAR

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Static and dynamic installations

Static:

- required software is pre-installed on the worker node
 - software is a pre-requisite for the job:
 - Job knows what particular products and versions it needs
 - Worker keeps the list of available software
 - Resource broker matches requirements and availability
- ☞ **GRID tools or human operated.**

Dynamic:

- Required software is fetched by the job and wiped out after job is completed
 - Job is able to fetch the required products and versions it needs
 - Worker provides necessary disk space

Current test bed uses human-operated static installations.

Common sense suggests the combination of statically installed general purpose software (OS, common HEP software, tools) and dynamically installed experiment and user specific software.

What DAR can do for us

- DAR packs applications for particular version of SCRAM managed project into a dar-file.
 - under applications here is meant an executable file or set of files, accompanied by all required shared libraries and data files, that can be executed in particular environment to accomplish a particular physics task
- Dar unpacks and installs applications in arbitrary location and creates scripts to initialize corresponding runtime environment.
- DAR works in highly automated fashion
- DAR distributions are self-contained and do not depend on any other products, except for the operating system.
-  Dar does not create applications.
-  Dar does not transfer distributions.

What pacman can do for us

- Search list of specified caches for a specified product
- Fetch distribution
- Unpack distributions and execute installation scripts
- Execute un-install scripts (if provided)
- Provides a uniform front-end interface for various software distributions.
- Pacman allows to specify “collections” of distributions via dependencies mechanisms.

 Pacman does not create distributions.

 Pacman does not support versions.

What DAR+Pacman can do for us

Main software distribution components (steps)

Supported by DAR:

packaging, no transfer, unpacking, installation, setup

Supported by PACMAN:

no packaging, transfer, unpacking, installation, setup

- Neither DAR, nor pacman can do the full distribution cycle, but they two complement each other and can cover all steps.
- Both DAR and pacman are highly automated and can take all technical part of the distribution process, given that all necessary input information is available.
 - **we need list of ready applications to start with.**

Assignments and distribution

- Applications list (set of versions and executables and input files) is defined and noted in the RefDB
- As soon as executables are not a part of the release, a tool is required to convert RefDB information into ready applications.
- Currently we create them manually on e-mail request.
- For each assignment RefDB should also contain a reference to the suitable DAR distribution.

Security and Trust

- Pacman: trusting caches (cache managers), who , in turn trust software releases
- DAR trusts the release and the installed applications, and for the cross check it can provide detailed information about all distributed components and other attributes.

Proposals:

- DAR + pacman solution works for both static and dynamic installations.
 - Dar2pacman interface should be developed
- Tool is required to create applications, based on request from the RefDB and pack them into DAR distribution.
 - RefDB2DAR interface should be developed
- Dar will generate necessary meta-data for use by interested parties
 - Dar2xxxx interface will be required