Distributed testbed management

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- **What are the changes in the certification process**
- **Testbeds and product team**
- **Resources available**
- **Building a testbed on demand**
- **Concept of custom BDII**
- **Custom site for certification scenario**
- **Sharing configuration information**
- **VO, CA, VOMS server certification**

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- **Each product team certifies its own product**

- **Each team has to maintain its type of node on a testbed**
  - Product node type is generally the server-side of a service and layers of the other products
  - There is also the client-side type of nodes (UI, WN and VOBOX) that are not one product, but the client-side of almost all products

- **Certification can be done in parallel with the other teams**

- **Product has to be backward-compatible with the production version**

- **SA3 method :**
  - Production release + patches certified = next release

- **Product team method = each team releases their own product**

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- **We have three choices:**
  - One main testbed where everybody maintains their own product and makes the certification of the new version on it directly
    - Impossible to keep the testbed in a green state
  - One testbed per product team
    - Update management is complex - always certifying on the production release
    - Heavy maintenance - much time lost due to this
  - One main testbed in production release and a set of sub-testbeds per team in certification mode
    - Each team manages its type of nodes on the stable testbed
    - Each team can certify its own product on its testbed-part using central resources to have a full site architecture

- **The lightest way to certify is the 3rd solution**
  - Each team manages its own product
  - Need to maintain three package repositories
    - Production, Certified and to be certified (per product team)

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YAIM configuration

Production pkgs repository

Certified pkgs repository

Product team Testbed part

Product team pkgs repository

TopBDII

Central certification TB with the current production version

Nagios

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- **To configure the stable testbed we need collaboration between all product teams**

- **To work on that we need to share YAIM configuration files**
  - A tool to merge the information of each product team for the configuration
  - The services folder in YAIM
    - This folder can separate site information in configuration files per type of node

- **For the sharing of the yaim configuration we can use a simple tool to create configuration files for download like our BDII editor**

- **When we don't need to add or remove types of node the maintenance of the central testbed "should" be really simple**

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BDII Web Config

site-info.def

Line format: [IDENTIFIER] [URL]

```
####################################
# General configuration variables #
####################################

# List of the batch nodes hostnames and optionally the subcluster ID the
# WN belongs to. An example file is available in
# ${INSTALL_ROOT}/glite/yaim/examples/wn-list.conf
# Change the path according to your site settings.
WN_LIST=${INSTALL_ROOT}/glite/yaim/examples/wn-list.conf

# List of unix users to be created in the service nodes.
# The format is as follows:
# UID:LOGIN:GID1,GID2,...:GROUP1,GROUP2,...:VO:FLAG:
# An example file is available in ${INSTALL_ROOT}/glite/yaim/examples/users.conf
# Change the path according to your site settings.
# For more information please check ${INSTALL_ROOT}/glite/yaim/examples
/users.conf.README
USERS_CONF=${INSTALL_ROOT}/glite/yaim/examples/users.conf

# List of the local accounts which a user should be mapped to.
# The format is as follows:
# "VOMS_FQAN":GROUP:GID:FLAG:[VO]
# An example file is available in ${INSTALL_ROOT}/glite/yaim/examples/groups.conf
# Change the path according to your site settings.
# For more information please check ${INSTALL_ROOT}/glite/yaim/examples
/groups.conf.README
# NOTE: comment out this variable if you want to specify a groups.conf per VO
# under the group.d/ directory.
GROUPS_CONF=${INSTALL_ROOT}/glite/yaim/examples/groups.conf
```
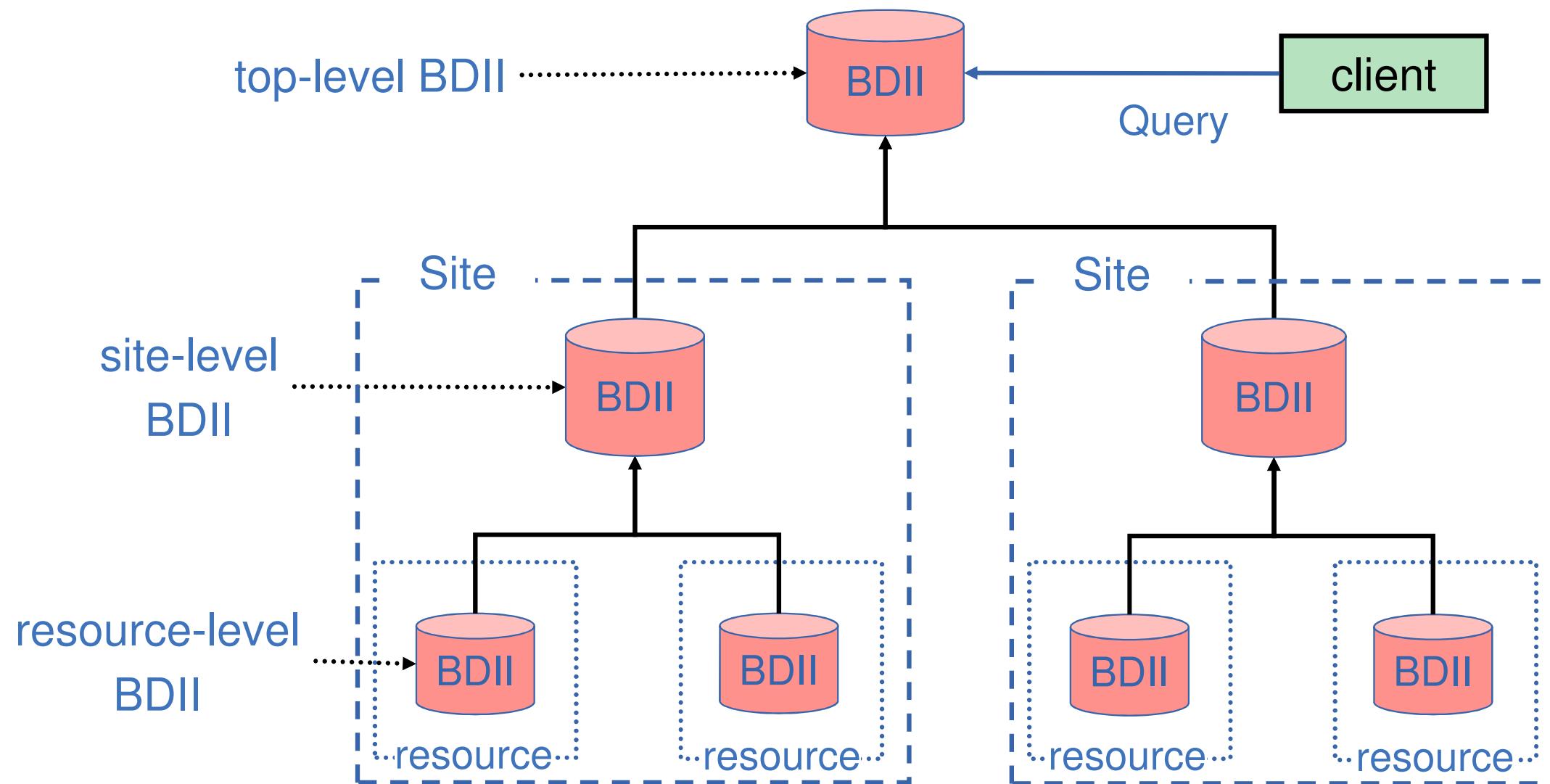
(Save) (Cancel)

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- **A certification scenario needs a set of node types and my nodes**
  - How to get those resources only by installing my nodes

- **The art of the GIP plugin**
  - The architecture of BDII allows us to design a site the way that we want creating our information provider

- **How to get any resources like ones on my site**
  - siteBDII get node resources
  - topBDII get siteBDIIs resources
  - A customBDII provide filtered and arranged resources

- **A BDII configuration is a set of ldap strings to fetch information about resources in the correct format**
  - We need to be able to add new resources to the site and top BDII by ourselves

- **An information provider is a module that produces information published by the BDII server (can be static or dynamic)**

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top-level BDII ┈┈┈┈┈┈┈┈┈➤ [BDII] ◄──── [client]
                                    Query

Site   Site

site-level
BDII ┈┈┈┈┈➤ [BDII]   [BDII]

resource-level
BDII ┈┈┈➤ [BDII]   [BDII]   [BDII]   [BDII]
         resource resource   resource resource

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BDII Web Config

Files	Commands			
cert-tb-cern	Show	Link	Edit	Delete
Testbed-Top	Show	Link	Edit	Delete
site-info.def	Show	Link	Edit	Delete

Create a new file

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BDII Web Config

cert-tb-cern

Line format: [IDENTIFIER] [URL]

```
#
# Site A BDII Conf File
#

CE    ldap://lxbra2307.cern.ch:2170/mds-vo-name=resource,o=grid
CTBSA3INFN ldap://cream-37.pd.infn.it:2170/mds-vo-name=resource,o=grid
BDII   ldap://lxbra2306.cern.ch:2170/mds-vo-name=resource,o=grid

CREAMCE   ldap://lxbra2308.cern.ch:2170/mds-vo-name=resource,o=grid
SE    ldap://lxbra1910.cern.ch:2170/mds-vo-name=resource,o=grid
DPM   ldap://lxb7608v1.cern.ch:2170/mds-vo-name=resource,o=grid
LFC   ldap://lxb7608v3.cern.ch:2170/mds-vo-name=resource,o=grid
PX   ldap://lxbra2304.cern.ch:2170/mds-vo-name=resource,o=grid
FTS   ldap://lxbra2310.cern.ch:2170/mds-vo-name=resource,o=grid
VOBOX   ldap://lxb7607v2.cern.ch.cern.ch:2170/mds-vo-name=resource,o=grid
LFCAZER   ldap://vtb-generic-92.cern.ch:2170/mds-vo-name=resource,o=grid

# Andrew Certification
AE-CREAM ldap://vtb-generic-104.cern.ch:2170/mds-vo-name=resource,o=grid
AE-LCGCE   ldap://vtb-generic-100.cern.ch:2170/mds-vo-name=resource,o=grid

# Alex certification
ALEX_CREAM ldap://vtb-generic-114.cern.ch:2170/mds-vo-name=resource,o=grid
```
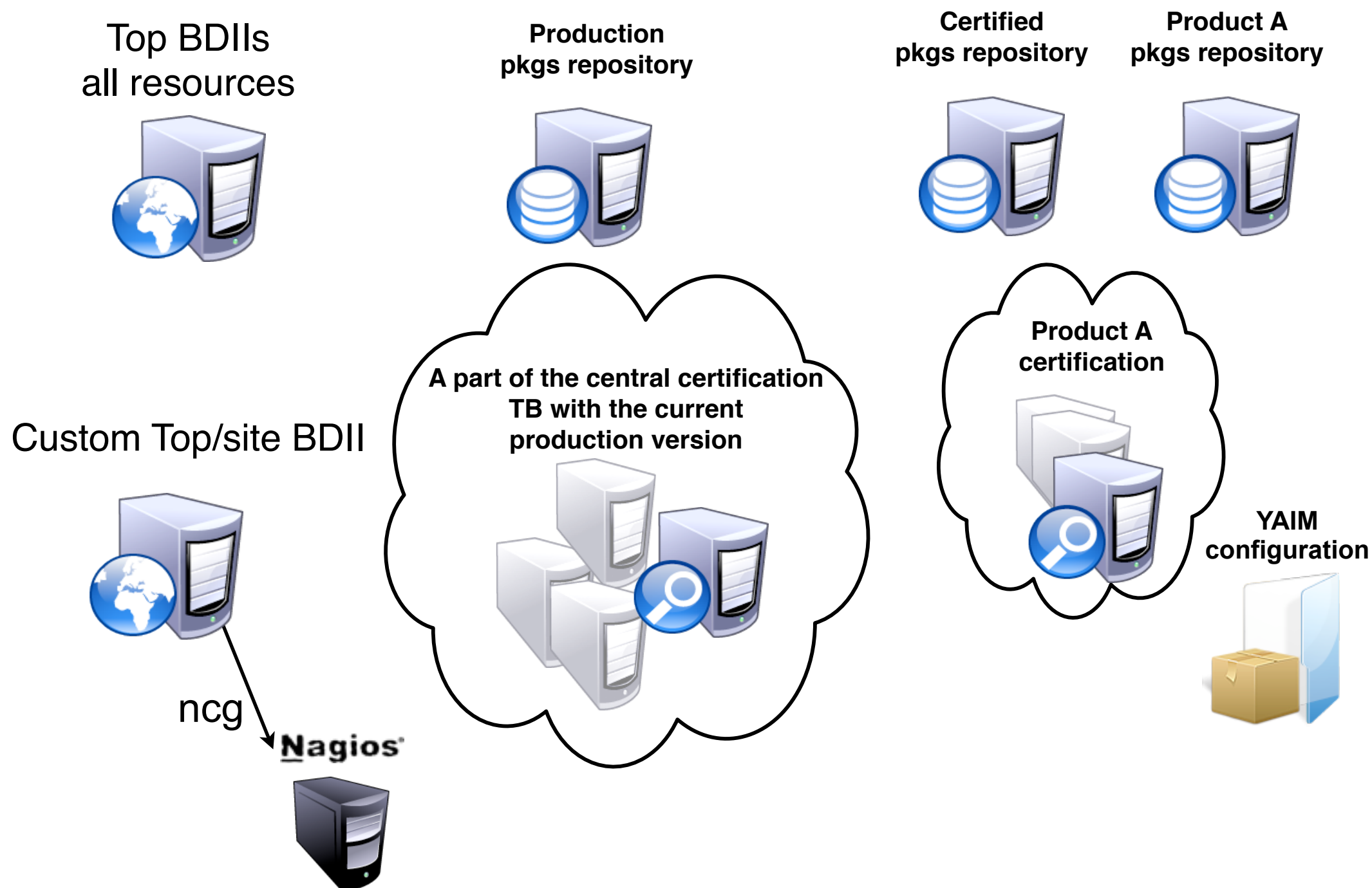
(Save) (Cancel)

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- **The BDII has a concept of plugins to put your own customised information provider**

- **Simple example: I want to get the SEs from site SITE_NAME to appear like SEs on my site MY_SITE_NAME**

  – I need a provider on one of my BDII (the site BDII is the logical one) to provide this information

  – In the provider folder /opt/glite/etc/gip/provider/ we just create a shell script to fetch the data with ldapsearch

- **Fetch data from a site BDII and change the site name**

  – ldapsearch -x -LLL -H "ldap://siteBDII.cern.ch:2170" -b "Mds-Vo-name=SITE_NAME,o=grid" objectClass=GlueSE | sed 's/SITE_NAME/MY_SITE_NAME/g'

- **Create a Nagios configuration to monitor the new setting**

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Top BDIIs
all resources

Production
pkgs repository

Certified
pkgs repository

Product A
pkgs repository

Custom Top/site BDII

A part of the central certification
TB with the current
production version

Product A
certification

YAIM
configuration

ncg

Nagios

- **A certification VO**
  - Only used on the certification grid

- **Two VOMS servers**
  - Central stable one (production release)
  - The product team one for certification
  - With the support of the certification VO only

- **A set of test users**
  - Each certifier will use a certification test user configured to use the CA and VO certification

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- **Main testbed administrates using "all" product teams in a shared environment**

- **Testbed pieces for certification of products**

- **Three package repositories production, certified and to be certified**

- **Configuration-sharing with all the product teams**

- **Art of the testbed design using BDIIs from any site**

- **VO, CA VOMS server for certification only**

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- **NAGIOS configuration and installation**
  - https://twiki.cern.ch/twiki/bin/view/EGEE/GridMonitoringNcgYaim
- **BDII editor**
  - https://svnweb.cern.ch/trac/gridinfo/browser/poorman
- **Video demo**
  - In my personal twiki page https://twiki.cern.ch/twiki/bin/view/Main/LouisPoncet
  - https://twiki.cern.ch/twiki/pub/Main/LouisPoncet/DynBDII.swf
  - https://twiki.cern.ch/twiki/pub/Main/LouisPoncet/NagiosReconf.swf
- **EGEE testbed wiki page**
  - https://twiki.cern.ch/twiki/bin/view/EGEE/EGEETestbeds

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