EUROPEAN MIDDLEWARE INITIATIVE

WNoDeS: CLIENT INSTALLATION AND CONFIGURATION

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CONTENTS

1 INTRODUCTION

The goal of this plan is to provide tests for all WNoDeS components in agreement with EMI approved Testing policy specified at link https://twiki.cern.ch/twiki/bin/view/EMI/EmiSa2TestPolicy.

Certification testing of release or update of release aims at testing release candidates to ensure final functionality and quality of distribution. The outcomes are Test Reports for each WNoDeS components. The structure of planned tests is the same as is required by EMI Testing policies.

2 WNoDeS COMPONENTS

WNoDeS is characterized by the following components (as shown in Figure 1):

Mandatory components: bait, hypervisor, manager, nameserver and site-specific.

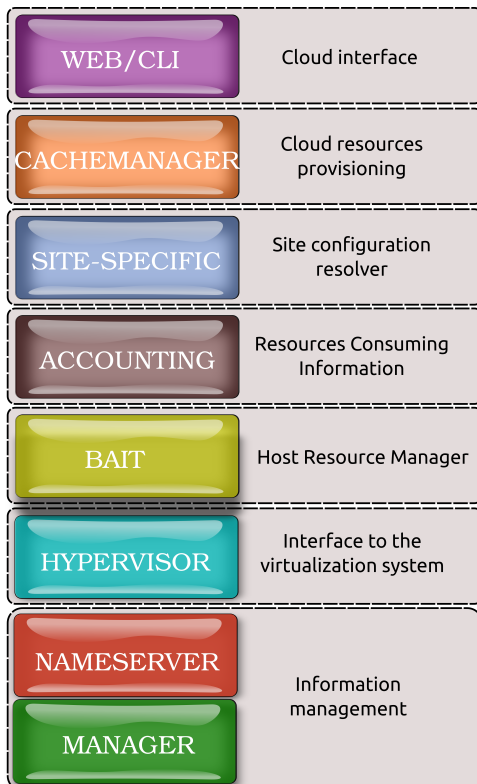**Cloud components:** Web/CLI and cachemanager

Figure 1: The overall WNoDeS components.

This version of WNoDeS supports an important feature called *mixed mode* that allows a computing farm to use the same physical worker node to execute both real jobs and virtual jobs. Table 1 sums up the pros and cons of enabling mixed mode feature.

Table 1: List of Pros and Cons

Pros	Cons
Increase the flexibility of the configuration of a farm	In case of LSF, increase the number of LSF licenses needed
Allow system administrators to progressively integrate WNoDeS into existing data centers	Add one more configuration step to execute standard real job in the system when the queue supports WNoDeS
Optimize the resource usage	
Allow jobs that require full performance to be executed on physical systems.	
Allow jobs that require hardware that is not easily virtualized to be executed on physical systems.	

Looking at Figure 1 from the top to the bottom:

Web/CLI provides compliance with the OCCI 1.1 specification and resources provisioning via a CLI or simple HTTP methods. Can be used to provide self-instantiation of virtual machines by local users;

Chachemanager takes care of Cloud resorces provisionig; speeds up the allocation of virtual machines; keeps a cache of ready-to-use virtual machines, matches them to user requirements and makes them readily available for consumption;

Site-Specific can be considered as the site configuration resolver. It is the component that sends the resource request to the `wnodes_bait` service and checks the job status;

Accounting provides information on the resources that are used by a subject: cpu cores, bandwitdh, ram and disk space;

Bait is the host resource manager responsible for verifying that there are resources to execute both real jobs and virtual jobs, requiring the instantiation of the virtual machine when necessary, and executing the job on the suitable resource;

Hypervisor is mainly the interface to the virtualization system responsible for instantiating virtual machines where the virtual job will be executed. However, if the mixed mode feature is enabled, it is also able to run real job;

Nameserver, Manager can be considered as the information management. The nameserver is a sort of catalogue responsible for keeping trace of all the virtual machines currently running for each hypervisor, and all the virtual machine images stored in the configured repository (see Section **??**). The `Manager` is a Command Line Interface (CLI) that is responsible for the configuration of the repository of the virtual machine images. It provides a set of options to handle images, VLANs, hostnames, bait and hypervisor configuration files. Furthermore, it supports a set of options that manage bait and hypervisor status.

3 INSTALLATION

The `wnodes_cli` component must have been installed on the user machine.

1. Install one of the supported Operating System: SL5 64 bit, SL6 64 bit

2. Not require host certificate

3. Satisfy common repository settings:

    - on sl5

        ```
        # wget http://archives.fedoraproject.org/pub/epel/5/x86_64/
        epel-release-5-4.noarch.rpm
        # yum localinstall --nogpgcheck epel-release-5-4.noarch.rpm
        ```

    - on sl6

        ```
        # wget http://archives.fedoraproject.org/pub/epel/6/x86_64/
        epel-release-6-7.noarch.rpm
        # yum localinstall --nogpgcheck epel-release-6-7.noarch.rpm
        ```

4. Satisfy EMI repository settings:

    - on sl5

        ```
        # wget http://emisoft.web.cern.ch/emisoft/dist/EMI/3/sl5/x86_64/
        base/emi-release-3.0.0-1.sl5.noarch.rpm
        # yum localinstall --nogpgcheck emi-release-3.0.0-1.sl5.noarch.rpm
        ```

    - on sl6

        ```
        # wget http://emisoft.web.cern.ch/emisoft/dist/EMI/3/sl6/x86_64/
        base/emi-release-3.0.0-1.sl6.noarch.rpm
        # yum localinstall --nogpgcheck emi-release-3.0.0-1.sl6.noarch.rpm
        ```

5. Satisfy EGI repository settings

    ```
    # wget http://repository.egi.eu/software/production/cas/1/current/
    repo-files/EGI-trustanchors.repo -O /etc/yum.repos.d/EGI-trustanchors.repo
    ```

6. Clean YUM cache

    ```
    # yum clean all
    # yum makecache
    ```

7. Install CA

```
# yum install CA*
```

8. Install WNoDeS cli

```
# yum install wnodes_cli
```

4 CONFIGURATION

The configuration file `/etc/wnodes/cli/wnodes-cli.cfg` needs to be customized as follows:

```
[server]
# occi server hostname fully qualified
endpoint =
# occi server port
port = 8443
# CA path
ca_path = /etc/grid-security/certificates

[infrastructure]
category = compute

[content]
# type can be either text/plain or text/occi
type = text/plain

[nameserver]
# WNoDeS nameserver hostname fully qualified
ns_host =
# WNoDeS nameserver port
ns_port = 8219

[user]
# user certificate file name
#user_cert =
# user key file name
#user_key =
# user proxy file name
user_proxy =
# user pub key file name
pub_key =
# user vo
vo =
```

where `server`, `infrastructure`, `content`, `nameserver`, and `user` are mandatory sections. Users can adopt either their certificates or theri proxies.

Set the environment variable PATH.

```
export PATH:$PATH:/usr/bin/wnodes/cli/
```