Pulse 2 1.3.0 installation

on

Debian GNU/Linux 5.0

Jean-Philippe Braun – jpbraun@mandriva.com

09/08/2010

Table of contents

1 - Introduction

This document describes the steps to install a full featured version of Pulse 2 on a Debian based system.

Before that you must have a fresh up-to-date Debian Lenny 5.0 installation on your server.

As most of the data will lives in the `/var` directory it is recommended to create a dedicated partition for `/var`.

2 - Conventions

Command launched by the root user :

```
# command
```

File modification :

```
text in file
```

Filename, path, option or command : `/etc/init.d/ssh`

3 - Sources

An apt Pulse 2 repository is available for easy packages installation.

In your `/etc/apt/sources.list` file add the following line :

```
deb http://pulse2.mandriva.org/pub/pulse2/server/debian lenny nextstable
```

Then update the packages list :

```
# apt-get update
```

4 - Installation & configuration

Set `debconf` priority to medium :

```
# dpkg-reconfigure debconf
```

Then install the packages :

```
# apt-get install mmc-agent python-mmc-dyngroup python-mmc-imaging python-mmc-inventory python-mmc-msc python-mmc-pkgs python-mmc-pulse2 mmc-web-base mmc-web-dyngroup mmc-web-imaging mmc-web-inventory mmc-web-msc mmc-web-pkgs mmc-web-pulse2 slapd mysql-server
```

4.1 - OpenLDAP (slapd) setup

Pulse 2 needs a directory to store users information.

Debconf asks some information for slapd configuration.

4.1.1 - Slapd configuration

- domain name : `mandriva.com`
- organization : `mandriva`
- admin password : `secret`
- database : `HDB`
- LDAPv2 : `no`

4.1.2 - Schema installation

The mmc schema is needed to set ACLs on users in the MMC web interface :

```
# cp /usr/share/doc/python-mmc-base/contrib/ldap/mmc.schema /etc/ldap/schema/
```

Then in `/etc/ldap/slapd.conf` include the schema :

```
include /etc/ldap/schema/mmc.schema
```

Restart the `slapd` daemon :

```
# /etc/init.d/slapd restart
```

4.2 - Mysql setup

All information related to inventories, deployments and imaging functionalities are stored in a relational database.

Debconf will set a password for the root user.

4.2.1 - Databases setup

Get a shell in the mysql server and create the following databases and user :

```
# mysql -u root -p
mysql> create database pulse2;
Query OK, 1 row affected (0.00 sec)
mysql> create database msc;
Query OK, 1 row affected (0.00 sec)
mysql> create database imaging;
Query OK, 1 row affected (0.00 sec)
mysql> create database inventory;
Query OK, 1 row affected (0.00 sec)
mysql> create database dyngroup;
Query OK, 1 row affected (0.00 sec)
mysql> create user 'mmc'@'localhost' identified by 'mmc';
Query OK, 0 rows affected (0.00 sec)
mysql> grant all on pulse2.* to 'mmc'@'localhost';
Query OK, 0 rows affected (0.00 sec)
mysql> grant all on msc.* to 'mmc'@'localhost';
Query OK, 0 rows affected (0.00 sec)
mysql> grant all on imaging.* to 'mmc'@'localhost';
Query OK, 0 rows affected (0.00 sec)
mysql> grant all on inventory.* to 'mmc'@'localhost';
Query OK, 0 rows affected (0.00 sec)
mysql> grant all on dyngroup.* to 'mmc'@'localhost';
Query OK, 0 rows affected (0.00 sec)
mysql> flush privileges;
Query OK, 0 rows affected (0.00 sec)
```

The user “mmc@localhost” with the “mmc” password is already set by default in the configuration files. If you want to change the username or the password you will have to check the credentials in the following files :

- /etc/mmc/plugins/dyngroup.ini
- /etc/mmc/plugins/imaging.ini
- /etc/mmc/plugins/inventory.ini
- /etc/mmc/plugins/msc.ini
- /etc/mmc/plugins/pulse2.ini

4.2.2 - Databases tables installation

You can ignore the “Table '*.version' doesn't exist” errors.

```
# cd /usr/share/doc/python-mmc-pulse2/sql
# ./install.sh
# cd /usr/share/doc/python-mmc-msc/sql
# ./install.sh
# cd /usr/share/doc/python-mmc-imaging/sql
# ./install.sh
# cd /usr/share/doc/python-mmc-inventory/sql
# ./install.sh
# cd /usr/share/doc/python-mmc-dyngroup/sql
# ./install.sh
```

4.3 - MMC agent setup

In `/etc/mmc/plugins/base.ini` setup the following options according to the OpenLDAP configuration :

- `baseDN = dc=mandriva,dc=com`
- `password = secret` (slapd admin password)

In the same file uncomment the `[computer]` section and the `method = inventory` option.

Create the `/home/archives` directory.

In `/etc/default/mmc-agent` change `ENABLE=no` to `ENABLE=yes`

Then start the mmc-agent daemon :

```
root@imaging:~# /etc/init.d/mmc-agent start
Starting Mandriva Management Console XML-RPC Agent: mmc-agent 3.0.1 starting...
Using Python 2.5.2 (r252:60911, Jan 24 2010, 14:53:14)
Using Python Twisted 8.1.0
Running as euid = 0, egid = 0
Multi-threading enabled, max threads pool size is 20
Importing available MMC plugins
Created OU ou=Users,dc=mandriva,dc=com
Created OU ou=Groups,dc=mandriva,dc=com
Created OU ou=System,dc=mandriva,dc=com
The default user group Domain Users does not exist. Please create it before adding
new users.
This version is a community version.
Registering authenticator baseldap / base.BaseLdapAuthenticator
Registering authenticator externalldap /
mmc.plugins.base.externalldap.ExternalLdapAuthenticator
Registering provisioner externalldap /
mmc.plugins.base.externalldap.ExternalLdapProvisioner
Plugin base loaded, API version: 9:0:5 build(7323)
Inventory False
Inventory is activating
Inventory finish activation
Plugin inventory: Inventory database version is 10
Registering computer manager inventory /
```

```
mmc.plugins.inventory.computers.InventoryComputers
Registering provisioner inventory /
mmc.plugins.inventory.provisioning.InventoryProvisioner
Registering computer location manager inventory / <class
'mmc.plugins.inventory.locations.InventoryLocation'>
Plugin inventory loaded, API version: 0:0:0 build(7272)
Pkgs is activating
Plugin pkgs loaded, API version: 0:0:0 build(86)
ImagingDatabase is activating
ImagingDatabase finish activation
Registering computer profile manager imaging /
mmc.plugins.imaging.profile.ImagingProfile
Registering imaging computer profile manager imaging /
mmc.plugins.imaging.imaging.ComputerImagingImaging
Registering pulse2 manager imaging / mmc.plugins.imaging.pulse.ImagingPulse2Manager
Registering computer manager imaging /
mmc.plugins.imaging.computer.InventoryComputers
Plugin imaging loaded, API version: 0:0:0 build(7130)
Dyngroup database is connecting
Dyngroup database connected (version:3)
Registering computer group manager dyngroup /
mmc.plugins.dyngroup.group.DyngroupGroup
Registering computer profile manager dyngroup /
mmc.plugins.dyngroup.profile.DyngroupProfile
Registering computer manager dyngroup /
mmc.plugins.dyngroup.computers.DyngroupComputers
Plugin dyngroup loaded, API version: 0:0:0 build(7266)
Msc database is connecting
Msc database connected
Plugin msc loaded, API version: 0:0:0 build(7157)
Pulse2 database is connecting
Pulse2 database connected (version:1)
Registering pulse2 manager pulse2 / mmc.plugins.pulse2.pulse.Pulse2Pulse2Manager
Plugin pulse2 loaded, API version: 0:0:0 build(7132)
MMC plugins activation stage 2
Selecting authenticator baseldap / base.BaseLdapAuthenticator
Authenticator baseldap successfully validated
Selecting provisioners: None
```

```
Selecting computer manager: inventory
Plugin dyngroup: dynamic groups are enabled
QueryManager is trying to load plugin dyngroup
QueryManager plugin dyngroup is disabled by configuration.
QueryManager is trying to load plugin inventory
QueryManager plugin inventory loaded
funcGet halfstatic:
Path - DisplayName
Selecting computer location manager: inventory
SSL enabled, but peer verification is disabled.
Listening to XML-RPC requests
done.
```

You can check the MMC interface on `http://server_ip/mmc/`

- login : `root`
- password : `secret` (slapd admin password)

4.4 - Pulse 2 services setup

Install the following packages :

```
# apt-get install pulse2-imaging-client pulse2-imaging-server pulse2-inventory-server pulse2-launcher pulse2-package-server pulse2-scheduler uuid-runtime
```

4.4.1 - Pulse 2 package server configuration

The configuration file is located in `/etc/mmc/pulse2/package-server/package-server.ini`.

Change the host option to the external IP address of the server :

```
host = 192.168.0.237
```

Uncomment the `[imaging_api]` section and the `uuid` option. Create a uuid with the `uuidgen` command :

```
[imaging_api]
# mount_point = /imaging_api
uuid = 1ade5fc8-84e6-4321-8134-97012936e29a
```

Create the `/tmp/package_tmp/put1` directory or change the `tmp_input_dir` option. This is the input dir for new deployment packages (MSC module).

```
# mkdir -p /tmp/package_tmp/put1
```

Restart the package server :

```
# /etc/init.d/pulse2-package-server restart
```

In `/etc/mmc/plugins/msc.ini` setup the package server IP :

```
[scheduler_api]
host = 192.168.0.237
...
[package_api]
mserver = 192.168.0.237
...
```

In `/etc/mmc/plugins/pkgs.ini` change the `server` option to the package server IP :

```
[user_package_api]
server = 192.168.0.237
```

Restart mmc-agent : `/etc/init.d/mmc-agent restart`

4.4.2 - Pulse 2 launchers configuration

Generate ssh keys with default configuration and no passphrase for the root user :

```
# ssh-keygen -t dsa
```

In `/etc/mmc/pulse2/launchers/launchers.ini` set the `tcp_sproxy_host` option to the server external IP address :

```
tcp_sproxy_host = 192.168.0.237
```

Restart the service :

```
# /etc/init.d/pulse2-launcher restart
```

4.4.3 - Pulse 2 scheduler configuration

If there isn't any DNS server on the network for clients computers change the `resolv_order` option in `/etc/mmc/pulse2/scheduler/scheduler.ini` to :

```
resolv_order = ip fqdn hosts netbios
```

4.4.4 - Pulse 2 imaging server configuration

In `/etc/mmc/pulse2/imaging-server/imaging-server.ini` set the package server IP address :

```
[package-server]
host = 192.168.0.237
```

Restart the service :

```
# /etc/init.d/pulse2-imaging-server restart
```

We have to register the imaging server in Pulse 2 :

```
# pulse2-package-server-register-imaging -m https://mmc:s3cr3t@127.0.0.1:7080 -n
'My Imaging Server'
```

- the login `mmc:s3cr3t` is setup in `/etc/mmc/pulse2/package-server/package-server.ini`

Then in the MMC web interface (http://server_ip/mmc) go into the Imaging module and associate the imaging server to the root entity (`UUID1`).

4.5 - DHCP server setup

The imaging module of Pulse 2 needs PXE functionalities, NFS and TFTP services.

For PXE configure the DHCP server on the network to serve the Pulse 2 PXE bootmenu. For example with dhcp3-server in `/etc/dhcp3/dhcpd.conf` :

```
##########################################
# This is a dhcpd sample file for Pulse 2 #
##########################################
ddns-update-style ad-hoc; # mandatory since 3.0b2pl11

# When using a NAS, uses DHCP option 177
option pulse2-nfs code 177 = text;

# PXE definitions
option space PXE;
option PXE.mtftp-ip code 1 = ip-address;
option PXE.mtftp-cport code 2 = unsigned integer 16;
option PXE.mtftp-sport code 3 = unsigned integer 16;
option PXE.mtftp-tmout code 4 = unsigned integer 8;
option PXE.mtftp-delay code 5 = unsigned integer 8;
option PXE.discovery-control code 6 = unsigned integer 8;
option PXE.discovery-mcast-addr code 7 = ip-address;

# PXE boot following the PXE specs
class "PXE" {
    match if substring(option vendor-class-identifier, 0, 9) = "PXEClient";
    vendor-option-space PXE;
    option PXE.mtftp-ip 0.0.0.0;
}

# Etherboot boot
class "Etherboot" {
    match if substring (option vendor-class-identifier, 0, 11) = "Etherboot-5";
    option vendor-encapsulated-options 3c:09:45:74:68:65:72:62:6f:6f:74:ff;
    option vendor-class-identifier "Etherboot-5.0";
    vendor-option-space PXE;
    option PXE.mtftp-ip 0.0.0.0;
```

```
}

subnet 192.168.0.0 netmask 255.255.255.0 {
    option broadcast-address    192.168.0.255;    # broadcast address
    option domain-name          "pulse2.test";    # domain name
    option domain-name-servers  192.168.0.2;      # dns servers
    option routers              192.168.0.2;      # default gateway

    pool { # Only defined pool
         # uncomment the two following lines for PXE-only boot
         # allow members of "PXE"; # PXE-only
         # allow members of "Etherboot"; # PXE-only
         range                 192.168.0.170 192.168.0.180;
         filename              "/bootloader/pxe_boot";
         next-server           192.168.0.237;
    }
}
```

- `filename` and `next-server` are the relevant options to set

4.6 - TFTP setup

Pulse 2 use the atftpd server as it supports multicast.

```
# apt-get install atftpd atftp
```

- don't use inetd
- tftp root : `/var/lib/pulse2/imaging`

Then check the configuration :

```
# atftp localhost
tftp> get /bootloader/pxe_boot
tftp> quit
# rm pxe_boot
```

4.7 - NFS setup

```
# apt-get install nfs-kernel-server
```

In `/etc/exports` share the following directories :

```
################################
# The Pulse 2 exported folders #
################################
/var/lib/pulse2/imaging/computers       *(async,rw,no_root_squash,subtree_check)
/var/lib/pulse2/imaging/masters         *(async,rw,no_root_squash,subtree_check)
/var/lib/pulse2/imaging/postinst        *(async,ro,no_root_squash,subtree_check)
```

Reload the configuration :

```
# /etc/init.d/nfs-kernel-server reload
```

Check the export list :

```
# showmount -e
Export list for imaging:
/var/lib/pulse2/imaging/masters   *
/var/lib/pulse2/imaging/postinst  *
/var/lib/pulse2/imaging/computers *
```