

Pulse 2

Evaluation Guide

Mandriva Pulse 2 Evaluation Guide

Version 1.3.0beta

by Mandriva

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Introduction

Pulse 2 is Open Source Software that helps organizations to simplify application deployments, inventory updates and life cycle management of their computers.

Pulse 2 is a secure yet easy to use and flexible solution that allows software deployment and updates, no matter the number of computers, no matter their location.

Pulse 2 also handles the software and hardware inventory, remote diagnostics and remote desktop connection for helpdesk purposes.

Starting from version 1.3.0, thanks to the “Imaging” module, Pulse 2 also has the ability to backup and clone systems, either by network or local media (DVD).

Please carefully read this evaluation guide before even starting the demo image !

Requirements

In order to evaluate Pulse 2, please make sure you have the following :

- **VMware Player**^{1 2} (or VMware workstation, or VMware server),
- The uncompressed VMware **“Pulse 2 Evaluation” Image**,
- The **“Pulse 2 Evaluation” Guide** your are currently reading,
- The **“Pulse 2” User Manual**,
- A client to manage,
- A Web browser^{3 4}.

Some additional tools like the inventory agents for windows can be found on the webpage hosted by the Pulse 2 Evaluation image. To access it:

- From within the virtual machine : **http://localhost**
- From outside : **http://VMWARE_IP** (where **VMWARE_IP** should be replaced with the IP address of the VMware image, see “Appendix 2 - Change Network configuration” page 16 for more information).

1 <http://www.vmware.com/go/downloadplayer>

2 This guide do not covers its installation nor its usage; for any question related to the VMware Player installation or configuration, please check the documentation related to your operating system at <http://www.vmware.com/fr/products/player/faqs.html>

3 Mozilla Firefox at best, but others should work too

4 Java-equipped if you need to test remote-management related features

Environment Description

Some informations about the image itself.

1. Image configuration

The VMware image has been configured to work in most environments, and set up as follow :

- x86 32 bit,
- Hardware Level 4⁵,
- 256 MB of memory,
- a 16 GB SCSI hard-drive,
- “bridged” network controller,
- dynamic IP address,
- no other devices (floppy drive, CD reader., USB peripheral ...).

2. Operating system

The underlying operating system is build as follow :

- Based on **Mandriva Enterprise Server 5.1 for 586**,
- Desktop Environment set to **Gnome**,
- Default locale settings is **English** (with **qwerty** keyboard layout); French and Brazilian locales are also available,
- **No firewall**,
- **OpenSSH**.

3. Initial state

After the initial start of the VMware image :

- No client computer is declared,
- Two Windows applications are ready to be deployed :
 - Mozilla Firefox,
 - Mozilla Thunderbird
- Those applications can be registered in Pulse 2 (please see the User Manual),
- Only one web console account has been created (user “root”),
- No computer group has been declared.

⁵ See <http://kb.vmware.com/kb/1003746>

4. Passwords

The following accounts are activated within the image :

<i>Login</i>	<i>Password</i>	<i>Kind</i>	<i>Comment</i>
root	mandriva	System	System super user
mandriva		System	Single user
root	secret	Web console	Pulse 2 super user

The superuser (**root**) account password can be changed using the first time wizard. SSH access using this account is authorized.

5. Change locales

When first starting the VMware image, the configuration wizard is started to help you in setting the language of the environment.

If you do not want to change the default setting, please click on “**Cancel**”.

In other cases :

1. select your language, then click on “**Next**”,
2. select your timezone, then click on “**Next**”,
3. check the time settings are correct, then click on “**Next**”,
4. select your country, then click on “**Next**”,
5. select your keyboard layout, then click on “**Next**”.

You can start this assistant anytime : just go into “**System**”, “**Preferences**”, “**Locale Settings**”.

6. Reset the VMware image to its initial state

The VMware image can be reset anytime to its initial state by using the “Revert ” feature of VMware Player.

7. Where to find the Pulse 2 agents and the documentation

The documentation and Pulse 2 agents can be found by opening your browser to <http://localhost> from within the VMware image or from http://VMWARE_IP if accessed from elsewhere on the network (for example the target computer).

Guided tour of Pulse 2

Pulse 2 is quite complete and versatile. This chapter will attempt to present the main Pulse 2 features.

1. Preparation

A check list to verify that everything is OK :

- Make sure you meet the requirement (see page 5),
- Start the virtual machine.

The system will boot, then a graphical session will be automatically opened. You are now ready to proceed.

2. Your first boot

At first boot, a wizard will be automatically launched, which will enable you to change your “locale” settings (language, keyboard layout). Please see “Change locales“ (page 7).

You will then be prompted to set the administrative password (**root**); see “Passwords” page 7 if you want to keep the original value.

Then you will be asked to change your network settings. Please see “Appendix 2 - Change Network configuration” page 16 to discover the different available profiles. If you plan to follow this guide, please switch to “Imaging” or “Mixed” network configuration (see page 17, “Switching from one configuration to another”).

Last, a web browser will be run. Just choose your language, then click on “Connect”. This will log you into the web console. The password for this “root” account is not the same as your system password. It is the root password of the LDAP directory server, which is set to “secret” in this image.

3. Your first system backup

Following these instructions, you will be able to make a backup of a client system.

1. Make sure your are in “Imaging” or “Mixed” network configuration (see page 17, “Switching from one configuration to another”),
2. Plug a network cord between your VMware host and your client,
3. Start the client, makes sure it attempt a network boot (see your vendor's documentation, but usually hitting “F12” will do the trick).

The client will start a PXE probe :


```
Intel(R) Base-Code, PXE-2.1 (build 082j)
Copyright (C) 1997-2000 Intel Corporation
CLIENT MAC ADDR: XX XX XX XX XX XX GUID: XXXXXXXX XXXX XXXX XXXXXXXXXXXX
CLIENT IP: 172.31.1.171 MASK: 255.255.255.0 DHCP IP: 172.31.1.79
```

Then :

```
Address       : 172.31.1.171
Netmask       : 255.255.255.0
Server        : 172.31.1.79
Gateway       : 172.31.1.1
Configuration : default configuration
Environment   : Mandriva Pulse 2
SMBios        : 2.3
Manufacturer  : Mandriva
Product       : Pulse 2 Client
Version       : 1.0
Serial        : 12345
```

And finally display the following menu :

```
Continue Usual Startup
Register as Pulse 2 Client
```

4. Choose “Register as Pulse 2 Client”, press “enter”, you will then be presented some instructions asking for a name. Simply enter name for the machine, for example “testclient1”
5. The following menu should display :

```
Continue Usual Startup
Create a backup
```

In some situations, client declaration can take a few seconds, you can refresh the menu by hitting “R” if the menu do not contain a “Create a backup” item.

6. Choose “Create a backup”, press “enter” and let the client boot and make its backup; speed should be between 6 and 12 MB/s, mainly depending on your client configuration,
7. While the client is backing up, log into the web interface,
8. Click on “Imaging” : you will see the log of the backup currently in progress at the bottom of the page,
9. While the backup is running, you can play around, even unplug the network cable : Pulse 2 know can handle such situations and the backup will resume as soon as the cable is plugged back,
10. At the end of the backup, click on “Computers”, “Imaging management” at the right of the computer name, then click on the “Images and masters” tab: the new image is in the “Available images” list.

Before running the backup, we could have selected the partition we want to save from the web interface.

4. Your first system restoration

Now an image is available, we will restore it. For practical reason, it will be restored on the same client.

1. Make sure you are in “Imaging” or “Mixed” network configuration (see page 17, “Switching from one configuration to another”),
2. In the web interface, click on “Computers”, “Imaging management” at the right of the computer name, then click on the “Images and masters” tab: the new image is in the “Available images” list,
3. On the right of the image name, click on “Edit image”,
4. Set Label and Description as needed, then click on “Validate and Convert to Master”,
5. You may also attach a postinstallation script (“shutdown” is a good start), then finally “Save”,
6. The image item can now be added in the client bootmenu, just click on “Add item to menu”, check “Displayed”, “Validate”, and finally on the “Synchronize” button which just appeared at the top of the page,
7. Now boot your client on the network (or hit “R” if the menu is still displayed), the image should appear in the menu ; choose it and watch the image being restored.
8. If you previously choose “Shutdown” as postinstall script, the computer will eventually halt.

Masters are shared by all clients : the image could also have been restored on another client, even by bootable DVD if an iso image was generated by clicking on “Create a bootable iso”.

5. Installing agents on your client

Make sure you are in “Deployment” or “Mixed” network configuration (see page 17, “Switching from one configuration to another”).

Now that you possess a backup of your client, you can safely deploy the Pulse 2 agents on it; this we able you to :

- gather an up-to-date inventory,
- deploy software on it,
- take control of your system.

Pulse 2 is bundled with a all-in one Windows package, which contain everything to perform the above task. To install it, please download then run the “agent pack” (see “Register a client” page 13).

If a firewall is up, make sure that the **TCP/22 port is open** and **ICMP echo requests are allowed**, and reboot the computer.

Your client is now ready to be managed by Pulse 2.

6. Your first application deployment

1. Click on “Computers”, then on “Software Deployment” on the right of the client name

You may notice that the client is reachable by looking at the green light.

2. In the package list, click on the package you want to deploy, then on “Validate”
3. Deployment is now in progress, you can follow it in the web interface (refresh the page).

See user manual for more informations.

7. Your first Remote Control

1. Click on “Computers”, then on “Remote Control” on the right of the client name,
2. If prompted about an untrusted java application being executed, answer “execute”,
3. On the client computer, when prompted about a connection coming from “127.0.0.1”, accept the connection,
4. You will then be able to see the remote desktop content.

By default, Remote Control is set to “guest” mode : you will not be able to interact with the remote computer.

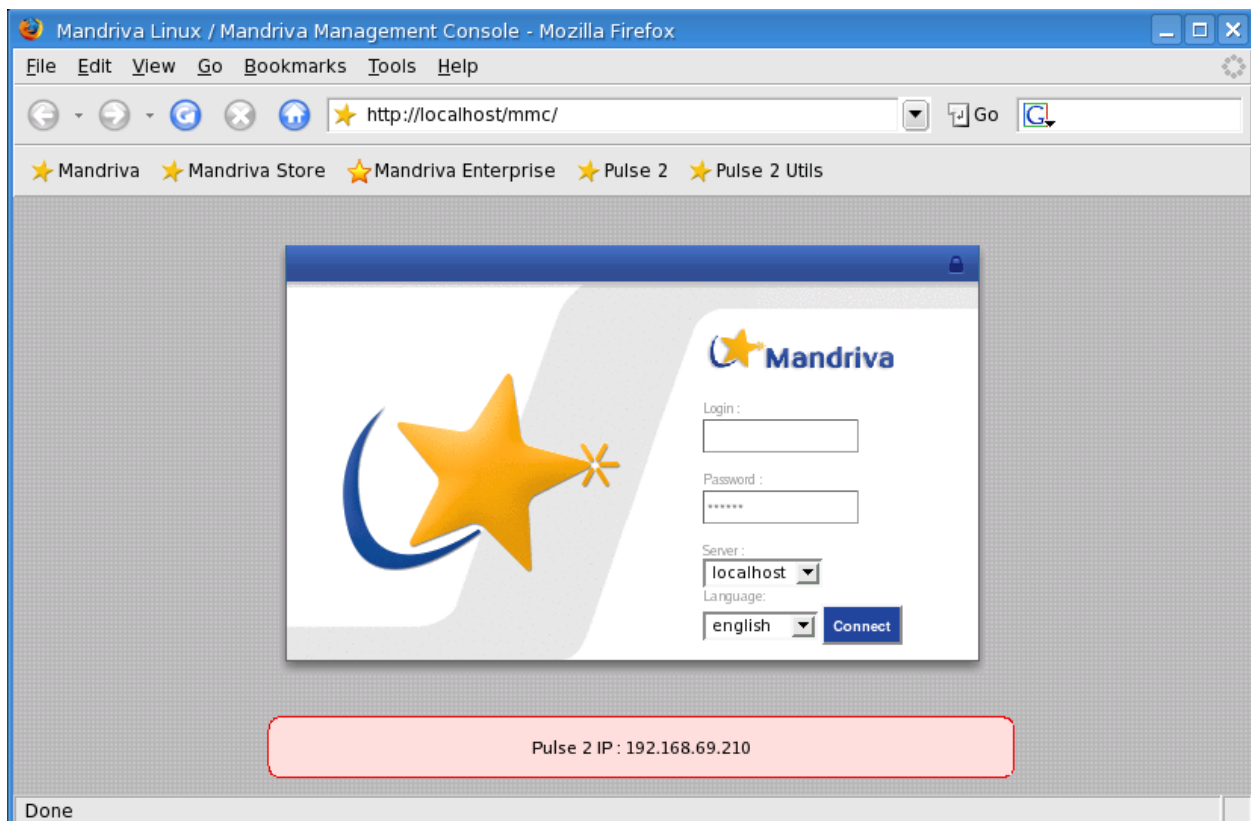
Appendix 1 - Basic Operations

Here are describe some of the basic operations you may perform within Pulse 2.

1. Connect to the Pulse 2 Console

The Pulse 2 administration console can be access from within the VMware image with Firefox pointing to <http://localhost/mmc> . It can also be accessed from another computer with a Web Browser using http://VMWARE_IP/mmc (where VMWARE_IP should be replaced with the IP address of the VMware image, see 'Appendix 2 - Change Network configuration' page 16 for more information).

To log in the Console, please use Pulse 2 main user, named “root ”; see page 7.



The IP address obtained by the Pulse 2 server is shown in a pink square on the page <http://localhost/mmc> visible from the local web browser of the image.

2. Register a client

By reading the following chapter, you may end thinking that registering clients is a quiet boring and long task; but in production environment, it is indeed possible to bulk-record clients, either passively by importing a client list into Pulse 2, or actively by deploying the inventory agent on all the clients using mechanisms like GPOs.

2.1. By running an inventory on a MS/Windows Client

Please make sure that your are not in “Imaging” configuration.

From the client, please go through the following steps :

1. Open a Web browser to **http://VMWARE_IP** (replace **VMWARE_IP** by the Pulse 2 server IP address),
2. Download the “pulse2-win32-agents-pack-1.2.4.exe” archive and save it. This is an auto-extractible archive holding all elements which able the client target to be used from Pulse 2 :
 - **Pulse 2 Secure Agent**, to deploy applications over the target,
 - **Pulse 2 Inventory Agent**, to perform the client inventory,
 - **Pulse 2 Remote Desktop Agent**, to take remote control of the client.
3. Click on the downloaded archive : it will then be uncompressed and automatically start the installation wizard,
4. On the first wizard page, it is possible to (un-)select the agents to install; excepted the **Pulse 2 Remote Desktop Agent** all of them are mandatory (**Inventory Agent** to declare the client in Pulse 2, **Secure Agent** to make some deployments),
5. On the second page, fill the Pulse 2 server IP address,
6. Start the installation,

Your computer is now know from Pulse 2, you will be able to see it in a few seconds by clicking on the “Computers ” tab.

2.2. By running an inventory on a Linux Client

Please make sure that your are not in « Imaging» configuration.

2.2.1. Install the Pulse 2 Secure Agent

If no Pulse 2 Secure Agent is available for your specific platform, please use the SSH server packaged for your operating system.

In order to allow Pulse 2 to connect to your client, you will need to copy the only line from the “public key ” file at the end of the “/root/.ssh/authorized_keys ” file from the client.

2.2.2. Install the inventory agent

Depending on your Linux flavor, please use the related method :

- on Mandriva

```
urpmi ocsinventory-agent
```

- on Debian and Ubuntu

```
aptitude install ocsinventory-agent
```

- on Fedora / CentOS / RedHat

```
yum install ocsinventory-agent
```

2.2.3. Run the inventory agent

If the OCS Unified Agent is installed, run the following command under the root account (replace VMWARE_IP by the Pulse 2 server IP address) :

```
ocsinventory-agent --server=http://VMWARE_IP:9999/ocsinventory
```

Your computer is now recorded into Pulse 2, you will be able to see it in a few seconds by clicking on the “Computers ” tab.

2.3. By Network boot

Please make sure that your are in « Imaging » configuration.

Just do a network boot with the client, and use the “Register as Pulse 2 client” entry.

2.4. By manual declaration using the web interface

To do this you will need the following informations about your client :

- its name,
- its MAC address,
- its IP address.

On the web interface, click on “Computer ”, “Add a computer ”.

3. Connect to an existing GLPI system

Pulse 2 can use its own inventory database or an existing GLPI system⁶.

In order to configure Pulse 2 to use an existing GLPI system, you will need to edit a few files. You can use your favorite editor (“kedit” and “vi” are available).

Theses changes have to be done under the **root** user account.

3.1. Deactivate the Pulse 2 inventory in /etc/mmc/plugins/inventory.ini

Line 2, change :

```
disable = 0
```

for

```
disable = 1
```

⁶ When using GLPI, inventories and client registration are not handled by Pulse 2.

3.2. Activate the GLPI plugin in /etc/mmc/plugins/glpi.ini

Line 2, change

```
disable = 1
```

for

```
disable = 0
```

Then configure “dbhost”, “dbname”, “dbuser” and “dbpasswd” to the values used for your GLPI database.

3.3. Configure /etc/mmc/template/etc/mmc/plugins/base.ini

Line 108, replace :

```
method = inventory
```

by

```
method = glpi
```

3.4. Restart the service

Restart the mmc-agent service for Pulse 2 to consider those new settings.

```
service mmc-agent restart
```

Appendix 2 - Change Network configuration

Three predefined network settings are available within the Pulse 2 demo image. Depending of your network environment and the features you want to test, you will need to switch between these environments. The reason is technical, yet quiet simple : the imaging feature relies on a DHCP server to work, which can lead to network issue when deployed in a unknown production environment.

1. “Deployment” configuration

This is the default configuration, targeted to be used to evaluate the “deployment” aspect of Pulse 2 on physical clients :

- the VMware image network mode has been set to “Bridge”,
- the network interface gets its IP address from your enterprise network,
- the internal DHCP server is disabled.

NOTE THAT YOU WILL NOT BE ABLE TO TEST THE PULSE 2 “IMAGING” FEATURE WHILE IN THIS CONFIGURATION !

2. “Imaging” configuration

In this configuration :

- the VMware image network mode is set to “Bridge”,
- the internal network interface IP address is fixed to the following value : **172.31.1.79/24**,
- the internal Pulse 2 DHCP server is activated.

Because of the “DHCP” plus “Bridge” combination, you must not activate this configuration while plugged on your enterprise network. In other words, keep nearby a solution to be isolated (with your test clients) : a basic ethernet switch or hub, even a simple network cable will do the trick.

MAKE SURE YOU ARE NOT PLUGGED ON YOUR ENTERPRISE NETWORK WHEN USING THIS CONFIGURATION !

Also keep in mind that VMware Player has some trouble when running a “bridged” virtual machine without a plugged network cable.

3. “Mixed” configuration

Obviously, in real life, you do not need to switch between two configurations to use both deployment and imaging at the same time. The third configuration is crafted to be used – always for test purposes – within a fully virtualized environment :

- the VMware image network mode is set to “NAT”,

- the network interface gets its IP address from the internal VMware server,
- the internal Pulse 2 DHCP server is activated, but only for the PXE part (remaining DHCP requests are let to the internal VMware server).

Please note that some tweaking has to be done VMware-side for your setup to be fully operational :

- You have to note the Pulse 2 server IP somewhere, and then put the virtual machine in pause
- You have to manually set the network mode to “NAT”,
- Then stop the vmware server
- You will have to open the VMware dhcpd config file :
 - under MS/Windows :
<Documents and Setting>\All Users\Application Data\VMware\vmnetdhcp.conf,
 - under GNU/Linux :
/etc/vmware/vmnet1/dhcpd.conf,
- And add the two following lines in the “subnet” section:

```
filename "/bootloader/pxe_boot";  
next-server VMWARE_IP;
```

Don't forget to replace VMWARE_IP by the Pulse 2 server IP address !

Once done, start Vmware again.

Note that virtualizing Pulse 2 is strongly discouraged in production environment.

4. Switching from one configuration to another

On the desktop of the virtual machine, you will find a shortcut: “Change Network Environment.sh”. Just run it and follow the instructions.