Penrose Virtual Directory 2

Penrose Virtual Directory 2.0 Release Notes

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These Release Notes contain important information about Penrose Virtual Directory 2.0, including overviews of new features, installation notes, and known issues.

Penrose Virtual Directory has three important components: Penrose Server, client tools to help manage the server, and Penrose Studio, a user interface to help manage Penrose Server.

A virtual directory creates a consolidated, high-level directory view from different sources of information. Information from different sources are consolidated into a single, LDAP-style directory structure, with virtual object classes and attributes populated by the information in different sources. The data doesn't have to be copied from one application to another; Penrose Virtual Directory uses mappings pull information from the entries and generate the new, virtual entry on the fly.

Penrose Virtual Directory is a simple and flexible way to make accessing information across a network environment easier, whether this involves a new view of LDAP and database sources, bridging between Active Directory and other LDAP servers, or performing an easier NIS migration.

1. New in Penrose Virtual Directory 2.0

Penrose Virtual Directory 2.0 enhances and expands its virtual directory operations, introduces synchronization and migration tools for NIS, allows identity federation for user entries in multiple types of sources, and offers an improved user interface.

1.1. Advanced Attribute Mapping

In the virtual directory, there has to be some way to relate the attributes in the source — which could be an Active Directory server, NIS domain, or database — to the OpenLDAP-style directory attributes. This is accomplished through *fields* and *mappings* for virtual directory sources, which map the attribute in the source (field) to the virtual directory entry.

Penrose Virtual Directory 2.0 supports advanced mappings which can run scripts to transform the source data before it is carried into the virtual directory entry or after the entry is generated.

1.2. Enhanced Identity Federation

Penrose Virtual Directory 2.0 expands and strengthens its *identity federation* feature.

Regular virtual directory mappings require that at sources share at least one attribute value in common; this shared value is the way that the virtual directory server recognizes what identities to join to form the virtual entry.

Identity federation, or *identity linking*, is a way to create a single combined identity when the data sources do not share a common attribute. An administrator can manually identify entries the entries to link togetner in LDAP, Active Directory, or NIS sources. These identities are then copied into a centralized repository and synchronized.

Penrose Virtual Directory 2.0 introduces a new directory structure for identity federation, new modules to handle identity linking, caching, and user and group synchronization, and tools to resolve ID number collisions and change file and directory ownership based on reassigned ID numbers.

1.3. Tools to Detect and Resolve UID/GID Conflicts

When users have multiple accounts on multiple servers, it is very likely that user and group ID numbers are not uniformly asigned. With isolated and local servers, that isn't a problem. As the different identities are grouped into a single global repository, however, there can be conflicts when two users share the same IDs or when a single user has multiple IDs. Two tools are available in Penrose Virtual Directory 2.0, UID Conflict Detection and GID Conflict Detection, to help manage ID numbers in the

global repository used for identity federation.

1.4. Ownership Alignment Tools

When UID/GID conflicts are resolved, the file permissions on NIS servers may be out of sync. This tool identifies and lists all of the files and directories affected by UID/GID conflict detection, which allows administrators to reset file permissions easily.

1.5. Assisted NIS Migration and Synchronization

Identity federation is supported for three types of sources: Active Directory servers, LDAPv3-compliant servers like Red Hat Directory Server, and NIS servers and clients. Because the federated identities are stored in a new, separate global repository, identity federation can be used to migrate NIS domains to Active Directory or other LDAP servers. To help with that, identity federation also includes tools for NIS synchronization, to manually copy new entries or modifications from the NIS domain into the global repository.

1.6. Improved Penrose Studio

The entire user interface has been redesigned, with simplified and easier to navigate menus and a clear hierarchy to view virtual directory entries, browse virtual and real LDAP directories, and configure Penrose Server by adding entries, importing and exporting schema, and managing services.

There have also been numerous bug fixes and design enhancements to make using Penrose Studio easier.

2. System Requirements

This section contains information related to installing and upgrading Penrose Virtual Directory 2.0, including prerequisites and hardware or platform requirements.

2.1. Required Packages

For running either Penrose Server or Penrose Studio, other applications and software must be installed on your server before installing Penrose Server or Penrose Studio.

2.1.1. Java Development Kit 1.5.0

Penrose Server and Penrose Studio both require Sun's version of Java Development Kit (JDK) 1.5.0 or higher. To install JDK version 1.5.0:

1. Download Sun JDK 5.0 from *http://1java.sun.com/1javase/1downloads/1index_jdk5.jsp*.

2. Install the JDK. This may be downloaded as an RPM or as an executable binary. For example:

```
./jdk-1_5_0_17-linux-amd64.bin
```

2.1.2. Ant

Penrose Server and Penrose Studio both require Apache Ant 1.7 or higher. To install Ant 1.7:

1. Download Apache Ant from *http://1ant.apache.org/1bindownload.cgi*.

2. Unzip and install the packages. For example:

```
tar xzvf apache-ant-1.7.1-bin.tar.gz
```

3. Set an environment variable that points to Ant's home directory.

```
export ANT_HOME=home_directory
```

4. Add Ant's `/bin` directory to your path.

```
export PATH=$PATH:Ant_home/bin
```

2.2. Penrose Server Supported Platforms

Penrose Server 2.0 is supported on the following platforms:

- Red Hat Enterprise Linux 4.7, 32-bit and 64-bit

- Red Hat Enterprise Linux 5.2, 32-bit and 64-bit, including virtual guests

2.3. Penrose Studio Supported Platforms

Penrose Studio is supported on the following platforms:

- Red Hat Enterprise Linux 4.7, 32-bit and 64-bit

- Red Hat Enterprise Linux 5.2, 32-bit and 64-bit, including virtual guests

- Microsoft Windows XP and Server 2003

3. Installing Penrose Server 2.0

For more detailed instructions to install Penrose Server 2.0, see the *Penrose Admin's Guide*.

3.1. Installing Penrose Virtual Directory

A virtual directory maps information from disparate data sources, such as directory services and databases, into a single location for users to access, while keeping the virtual service lightweight and simple to administer. Penrose Server establishes the virtual directory.

1. Download the RPMs. There are two packages for Penrose Server, one for the core server and the other for client tools.

2. Install the packages. For example:

```
rpm -i vd-server-2.0-build#.el5.noarch.rpm
vd-client-2.0-build#.el5.noarch.rpm
```

   The Penrose Server components are installed in the **/opt/vd-server-2.0** and **/opt/vd-client-2.0** directories.

3. Make sure that the proper JDK is configured for Penrose Server to use:

   a. Open the **vd.conf** file with the Penrose Server directory.

```
vim /opt/vd-server-2.0/etc/vd.conf
```

   b. Add the **JAVA_HOME** environment variable, pointing to Sun JDK 1.5.0. For example:

```
JAVA_HOME=/usr/lib/jdk1.5.0_17/
```

   c. After editing the **vd.conf** file, copy it into the host's **/etc** directory.

```
cp /opt/vd-server-2.0/etc/vd.conf /etc
```

4. Run a configuration script to reset the server hostname, give the admin username and password, and set the port numbers and other information for the associated LDAP and JMX services. Hitting **Enter** accepts the defaults in the brackets.

   For example:

```
[root@server bin]# ./vd-config.sh
Configuring VD Server:
```

```
----------------------

Hostname [server.example.com]:
Root DN [uid=admin,ou=system]:
Root Password [*****]: secret12
User account [root]:
Group account [root]:

Configuring OpenDS Service:
---------------------------

LDAP Enabled [true]:
LDAP Port [389]:
Secure LDAP Enabled [true]:
Secure LDAP Port [636]:
SSL Certificate Name [server-cert]:
Key Store Type (JKS/PKCS12) [PKCS12]:
Key Store File [config/keystore.p12]:
Key Store PIN File [config/keystore.pin]:


Configuring JMX Service:
-----------------------

RMI Port [1099]:
RMI Transport Port [40888]:
```

3.2. Installing Penrose Studio

Red Hat Penrose Studio is a simple user interface for administering entries, mapping, and data sources in Penrose Server, as well as a browser for the virtual directory. Penrose Studio is a client to access Penrose Server and can be installed on different machines, even different platforms, than Penrose Server itself.

3.2.1. On Red Hat Enterprise Linux

1. Download the RPM.

2. Install the packages. For example:

```
rpm -ivh vd-studio-2.0-build#.el5.i386.rpm
```

Penrose Studio is installed in **/opt/vd-studio-2.0** on Red Hat Enterprise Linux systems.

> **NOTE**
> The default username and password for Penrose Studio to use to connect to the Penrose Server is **uid=admin,ou=system** and **secret**, respectively.

3.2.2. On Windows

1. Download the Windows installer.

2. Double-click the **.exe** file, and go through the installer.

Penrose Studio is installed in **C:\Program Files\Identyx Corporation\VD Studio 2.0** on Windows systems.

> **NOTE**
> The default username and password for Penrose Studio to use to connect to the Penrose Server is **uid=admin,ou=system** and **secret**, respectively.

4. Known Issues

The following are some of the most important known issues in Penrose Server 2.0. If applicable, supported workarounds are also described.

Bug Number	Description	Workaround
491917	If the heap settings are too high in the **/etc/vd.conf** file, then external tools used by Penrose Server may not run. This means that, on slower connections, high heap settings can slow down or stop NIS synchronization entirely because Penrose Server cannot properly run the synchronization tools.	Lower the heap settings.

Table 1. Known Issues in Penrose Server 2.0