KB25230 - [Network Connect] How to install the 32-bit Network Connect client on 64-bit Linux platforms

Synopsis

This article describes how to install the 32-bit Network Connect client on 64-bit Linux platforms.

Problem or Goal

This article provides information on how to install the 32-bit Network Connect client on 64-bit Linux platforms.

Note that a native Network Connect 64-bit client is not available at this time.

Cause

Solution

From 7.3 and above, Pulse Secure PCS devices support 64-bit Linux (Redhat, OpenSuse, and Ubuntu) for Network Connect. Refer to the Release Notes for the correct supported platforms (Pulse Connect Secure (PCS)).
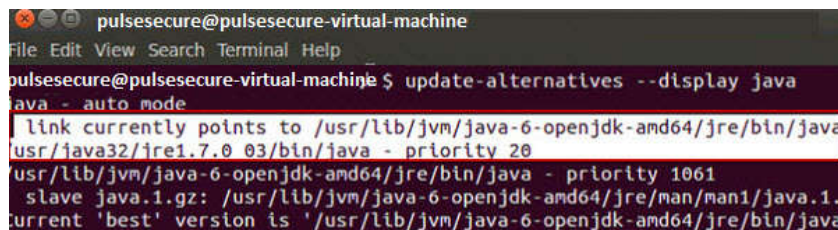
Note: Pulse Secure made changes in the existing 32-bit Network Connect client to launch it on 64-bit Linux platforms. It has all the necessary components/dependencies for the 32-bit NC.

To launch Network Connect on 64-bit Linux, you must have the 64-bit Mozilla Firefox browser, with the Java plug-in already configured. You can use both the Oracle and OpenJDK JRE. If the OpenJDK JRE is installed, the **IcedTea-Web plug-in** (Java plug-in) should be 1.2 or above.

```
sudo apt-get install icedtea-7-plugin
```

You also must perform the procedure below:

1. Install the 32-bit Java version (you must be root user to perform the steps):

    - 32-bit Java installation (Oracle JRE 6/ Oracle JRE 7, OpenJDK JRE 6/OpenJDK JRE 6):

        - Download **jre-7u3-linux-i586.tar.gz** and copy it to a folder (for example,**/usr/java32**).

        - Run the **tar --xvf jre-7u3-linux-i586.tar.gz.**

2. Update the **alternatives** link for Java (use the correct commands for your flavor of Linux):

    - Use the **sudo update-alternatives --install /usr/bin/java java <32 bit java path> <priority>** command.

    - For example: **sudo update-alternatives --install /usr/bin/java java /usr/java32/jre1.7.0_03/bin/java 10.**

    - Ensure that the default Java version is still 64 bit. This can be checked by looking at the **link currently points to** string in the output of the **update-alternatives --display java** command.

    - If the default Java version is 32 bit, change it to 64 bit by using the **sudo update-alternatives --config java** command.

    - After performing the above steps, alternative links will look as shown in the image below (the highlighted rows show both the 32-bit Java path and the default Java version:

        Note: If 32 bit Java is installed via package managers, such as apt-get, yum or zypper, the 'alternatives' link may get automatically updated. In such a case, you can skip Step 2.

3. Install the standard 32 bit libraries and components:

    - **Ubuntu (12.05 and below)**:

        ```
        sudo apt-get  install ia32-libs
        ```

    - **Ubuntu (13.x and above):**

        Starting with Ubuntu 13.x, ia32-libs were removed from the package index. The following steps are a workaround to install the required libraries:

        ```
        sudo ln -s /usr/bin/update-alternatives /usr/sbin/
        # Network Connect looks for update-alternatives from /usr/sbin/
        ```

```
sudo dpkg --add-architecture i386
sudo apt-get update
# Allowing multiarch libraries to get both necessary 32-bit libraries for Network Connect

sudo apt-get install libstdc++6:i386 lib32z1 lib32ncurses5 lib32bz2-1.0 libxext6:i386 libxrender1:i386 libxtst6:i386 libxi6:i386
# Retrieve ia32-libs manually
```

- **RedHat/Fedora**:

```
yum -y install xterm
yum -y ld-linux.so.2
yum -y libstdc++.so.6
yum -y libz.so.1
yum -y libXext.so.6
yum -y libXrender.so.1
yum -y libXtst.so.6
```

- **OpenSUSE**:

```
zypper install libXi.so.6
```

Now you can connect to the VPN server and click the start button to launch Network Connect. If the Network Connect launcher applet can find the 32-bit Java path in the alternatives links, Network Connect will successfully launch. Otherwise, the following error message is generated: **Setup failed. Please install 32 bit java and update alternatives links using update-alternatives command. For more details, refer KB article KB25239.**

To launch Network Connect via the command line, use the following command:

```
<java_path> -cp NC.jar -h <ivehostname> -u <username> -p <password> [-r <realm>]
-f <ivecertificate_in_der_format> [-l <gui_log_level> [-L <ncsvc_log_level>] [-y <proxy> -
z <proxy_port> [-s <proxy_username> -a <proxy_password> [-d <proxy_domain>]]]
```

<java_path> is the path to the 32 bit Java version.

Note:

- The IcedTeaPlugin will display the error `Start: Applet not initialized` if the common name (CN) of the VPN's web server certificate does not match the host name, which is typed in the address bar.
- This is not an issue with the Pulse Secure VPN. To resolve this, you can add the common name (CN) in `/etc/hosts` and access the VPN server via the common name, instead of the IP address.

Purpose   Configuration

**Related
Links**