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1 PINsafe Migration Path

Please see our [Install / Upgrade](#) page for information about upgrading PINsafe.

2 Upgrade PINsafe

2.1 Overview

Swivel upgrades and migration can be performed by following the below procedures. This document covers all Swivel 3.x versions. The Swivel license is compatible within major versions 3.1 to 3.2, etc, but a new license is required between versions 2.1 to 3.1. To determine your version see [Version Information](#).

For information on upgrading the Swivel virtual or hardware appliance see [Patch Appliance Install](#)

See the following table for an overview on the options for an [Upgrade](#)

2.2 Prerequisites

1. What DB is Swivel using: Internal, MySQL, Other?
2. Is a Virtual IP being used?
3. Type of virtual or hardware appliance installation: Active/Active, Active/Passive, or Standalone.
4. Access to the virtual or hardware appliances using root or admin. Referred to as ?Login? for the remainder of the document.
5. Test Transports and authentication are all working before the upgrade.
6. Create a directory under root called upgrade
7. New copy of pinsafe.war placed in /root. If using an virtual or hardware appliance see [Copying appliance files How to Guide](#)
8. In the case of HA configurations, both virtual or hardware appliances are working and functioning with the intended design.
9. Ensure Swivel is fully functional (check logs)
10. Put a freeze on Swivel administration changes and repository synchronisations during the upgrade (no PIN changes, account creations or deletions)
11. Turn off AD synchronisation on the server being upgraded
12. Ensure Swivel is fully backed up
13. [Downloads](#)

2.3 Upgrade Considerations

Ensure the OS/Appliance has the latest updates and patches see [Patch Appliance Install](#)

Where necessary schedule downtime

It is better to notify Swivel Secure in good time before an upgrade

Where necessary request professional services through your reseller

Where available carry out upgrade on test system prior to production system

Site specific customisations may need these customisations to be applied after the upgrade, these include [Custom Transports](#) and external databases are used such as MS SQL and Oracle the drivers located in pinsafe/WEB-INF/lib such as sqljdbc.jar, sqljdbc4.jar need to be copied see [MS SQL Database How To Guide](#) and [Oracle Database How To Guide](#)

To upgrade Swivel by copying data from one virtual or hardware appliance to another you may wish to use WinSCP, see [WinSCP How To Guide](#)

2.4 Swivel Version Specific Considerations

For information on Swivel features in each version see [Versions FAQ](#). Swivel version prior to 3.6 may require a Java upgrade, see [JAVA upgrade](#).

2.4.1 Swivel PINsafe 2.x

2.x uses a different database and direct upgrades are only possible through Swivel Secure Support. An upgrade from version 2.x to version 3.x will require a new license.

2.4.2 Swivel PINsafe 3.1

When upgrading from 3.1 it is not possible to directly copy the 3.1 config.xml file to higher versions. The configuration should be manually entered through the Swivel administration console.

Unfortunately, there are problems with upgrading the database from version 3.1 to 3.8 or 3.9. The workaround is to upgrade to version 3.2 first. You can get a copy of 3.2 from [here](#).

As the upgrade to 3.2 is a temporary one, the recommended procedure is as follows. Note that the paths below assume you are upgrading a virtual or hardware appliance. If you are not using a virtual or hardware appliance, substitute the appropriate location of the Tomcat webapps folder:

- If you have not already done so, stop Tomcat on the existing virtual or hardware appliance, and take a copy of the database from `/usr/local/tomcat/webapps/pinsafe/WEB-INF/db/`. If you are using an XML repository, make sure you also copy `repository.xml` from `/usr/local/tomcat/webapps/pinsafe/WEB-INF/data/`.
- Extract `pinsafe.war` from the above zip file, and rename it to `pinsafe32.war`.
- Copy `pinsafe32.war` to the new virtual or hardware appliance inside `/usr/local/tomcat/webapps/`. Start Tomcat if it is not already running, and wait about a minute for `pinsafe32` to deploy.
- Login to the 3.2 system, create the database and set the mode to synchronised and the repository option will appear then create a repository based on the original 3.1 data source using the following exact names. For Active Directory use **Active Directory** for XML use **XML**.
- Stop Tomcat and copy the saved database from version 3.1 into `/usr/local/tomcat/webapps/pinsafe32/WEB-INF/db/`.
- (virtual or hardware Appliance only) Set the owner and group of the database folder and all sub-folders to `swivel`.
- Restart Tomcat and log into the console at `https://<pinsafe_address>:8080/pinsafe32`. Use the username `admin` and PIN `1234`.
- Set the mode to Synchronised and then set the active database to Internal. Set the repository type to match that of 3.1. If all goes well, the database will be upgraded to 3.2.
- Stop Tomcat and take a copy of the upgraded database.
- Deploy the latest version of PINsafe, if you have not already done so.
- Stop Tomcat and copy the 3.2 database to `/usr/local/tomcat/webapps/pinsafe/WEB-INF/db/`.
- If you are using an XML repository, copy `repository.xml` to `/usr/local/tomcat/webapps/pinsafe/WEB-INF/data/`.
- (virtual or hardware Appliance only) As before, make sure that the owner and group of the `db` folder and its contents, and also `repository.xml` if relevant, are set to `swivel`.
- Restart Tomcat.
- Follow the instructions to [configure PINsafe](#), with the following provisos: it is important when creating your initial repository that you set the type to match the type of your original repository. Also, the step to change the database should be the LAST step you make, AFTER you have created the repository and set mode to Synchronised.

You should now have a working database. Carry on as usual.

2.4.3 Swivel PINsafe 3.2

This also applies to upgrading from 3.1.

Group membership is not included in the old database. Therefore, you need to run a user sync at least once after upgrade to set your group membership.

When upgrading from Swivel 3.2

- 1). Stop Tomcat
- 2). Backup `/usr/local/tomcat/webapps/pinsafe`
- 3). Start Tomcat
- 4). Remove the `/usr/local/tomcat/webapps/pinsafe.war` folder which should delete the `/usr/local/tomcat/webapps/pinsafe` folder
- 5). Install the new version of Swivel by copying in the `pinsafe.war` file to `/usr/local/tomcat/webapps/` (version 3.8 is a good version to upgrade to)
- 6). In the Swivel Administration console, create a repository of the type used, e.g. Active Directory or XML, and give it the required name
- 7). Stop Tomcat
- 8). Copy from the backup the `db` folder to `/usr/local/tomcat/webapps/pinsafe/WEB-INF/` ensure ownership and permissions are the same
- 9). Start Tomcat
- 10). Login and select Mode Synchronised, and set the database to internal. The user data should reside in the correct repository and data can be Migrated to another database type if required.

2.4.4 Swivel PINsafe 3.5

With External databases some new tables are added. There may be with issues with MySQL tables [PINsafe upgrade fails on MySQL](#)

If you are using session sharing, you will need to edit `config.properties` after upgrade, as described [here](#). DO NOT copy the old `config.properties` file, as it will not be valid.

2.4.5 Swivel PINsafe 3.6

The animated security string requires JRE 1.6, the Java version may need [upgrading](#) (check `PINSafeK` for correct value such as 3500)

Custom Transports used in 3.5 or earlier will not work in Swivel PINsafe 3.6 or later, contact support@swivelsecure.com for an [updated transport](#)

2.4.6 Swivel PINsafe 3.7

If RADIUS groups are being used, then these may need to be re-entered as the group configuration has moved from `RADIUS/Server` to `RADIUS/NAS`

2.4.7 Swivel PINsafe 3.8

- If you currently have 'Check Password with Repository' set to 'Yes' on the Policy -> Password screen, you will need to define this against each agent where it is required as this is now configured against each agent, rather than being a general setting;
- If you currently have 'Check Password with Repository' set to 'Yes' on the Policy -> Password screen, this will no longer take effect upon the Swivel Administration Console login;
- Mobile clients (Swivlet/iPhone iClient/Android) will need to be upgraded to versions that include 3.8 Mobile Device Provisioning to utilise the new features provided see [Mobile Provision Code](#)
- Swivel virtual or hardware appliances will need to have their proxy upgraded for the 3.8 Mobile device provisioning see [Appliance Proxy Server Upgrade](#)
- Self-provisioning for the mobile clients is conducted via the ResetPIN application. This needs to be upgraded when upgrading to Swivel PINsafe 3.8. See [ResetPIN upgrade for PINsafe 3.8 How To Guide](#)

2.4.8 Swivel PINsafe 3.9

WARNING: there is a known issue in the current release of 3.9 which means that some configuration items are not loaded properly after an upgrade. In particular, this affects transport attributes and repository group definitions.

The workaround is to stop and restart Tomcat after you have completed the upgrade process, before you do anything else: in particular, before you run a user sync.

2.4.9 Swivel PINsafe 3.9.1

Software release only. For Active/Passive appliances upgrading to 3.9.1 or higher contact Swivel support.

For upgrading to Swivel virtual or hardware Appliances to version 3.9.2 or higher see [Upgrade Appliance](#)

Version 3.9.1 only allows one instance to be run under Tomcat. Multiple instances of older versions may still be run. Swivel will make an external copy of the required information, see [Transient Data Storage](#). Note the [Transient Data Storage](#) may now need to be included in the backups.

When upgrading software only installations (not virtual or hardware appliances) from Swivel 3.9.1 to a higher version, the pinsafe.war file simply needs to be copied into the /webapps folder, except where custom transports are used and/or when not using the Internal, or MySQL DB, in this case backup the DB driver or custom transports need to be copied before upgrading Swivel, refer to the relevant sections below for details on the upgrade.

Note that, since user attributes are a new feature of 3.9.1, if you upgrade from an earlier version, you will need to configure the required attributes for the repositories and then run a user sync before they are available.

2.4.10 Swivel PINsafe 3.9.2 and later

For upgrading to Swivel virtual or hardware appliances to version 3.9.2 or higher see [Patch Appliance Install](#)

For non-appliance (software only) installations, the procedure is the same as for 3.9.1. For Active/Passive appliances upgrading to 3.9.1 or higher contact Swivel support. Note the [Transient Data Storage](#) may now need to be included in the backups.

For virtual or hardware appliances, you must upgrade the virtual or hardware appliance using the [Patch Appliance Install](#). Please do so before attempting to upgrade to version 3.9.2. or later Once you have installed the virtual or hardware appliance patch, use the [Patch Swivel Install](#) procedure to install the 3.9.2 or later version.

2.5 Microsoft Windows Swivel Upgrade

The following article covers the Microsoft Windows Swivel Upgrade steps [Upgrading PINsafe on Microsoft Windows](#)

2.6 Swivel Upgrade on virtual or hardware Appliances

For upgrading to Swivel virtual or hardware Appliances to version 3.9.2 or higher see [Patch Appliance Install](#)

For upgrading Swivel software **TO** version 3.2-3.9 follow the below

2.6.1 Virtual or hardware appliance System Preparation

Determine which version of the virtual or hardware appliance is being used, see [Appliance types FAQ](#)

The following steps are required for all Swivel upgrades on an virtual or hardware appliance.

Access the command line, and create a temporary backup area:

```
mkdir /root/upgrade
```

2.6.2 Upgrading Swivel Standalone virtual or hardware Appliances

For upgrading to Swivel virtual or hardware Appliances to version 3.9.2 or higher see [Patch Appliance Install](#)

Login to the Swivel administration web interface on the virtual or hardware appliance.

Change Mode to ?Slave?, and change the Database to ?shipping?.

Login to the virtual or hardware appliance:

Stop Tomcat:

```
service tomcat5 stop
```

Now proceed with the upgrade process described below [Upgrading from Versions 3.2-3.9](#) on the primary virtual or hardware appliance. After upgrading the primary virtual or hardware appliance repeat the process for the secondary virtual or hardware appliance.

2.6.3 Upgrading Swivel Active/Passive Appliances

Older Active/Passive appliances can only be upgraded to Swivel version 3.9. To upgrade beyond this version on Active/Passive appliances, contact Swivel support.

A HA A/P pair uses disk replication between two appliances, therefore upgrading the primary appliance will automatically upgrade the standby. However to prevent the cluster from switching over, the service that monitors Tomcat will need to be stopped.

Login to the Swivel administration web interface on the Primary appliance.

Change Mode to ?Slave?, and change the Database to ?shipping? (Swivel PINsafe 3.2 or later only).

Login to the Secondary appliance:

Stop Monitor and Heartbeat:

```
service mon stop
service heartbeat stop
```

This will prevent the Passive appliance taking over whilst Tomcat is stopped on the Active appliance.

Login to the Primary appliance:

Stop Monitor and Tomcat:

```
service mon stop
service tomcat5 stop
```

Do NOT stop heartbeat on the Primary appliance.

Now proceed with the upgrade process described below [Upgrading from Versions 3.2-3.9](#) on the primary appliance.

2.6.4 Upgrading Swivel Active/Active virtual or hardware Appliances

For upgrading to Swivel virtual or hardware Appliances to version 3.9.2 or higher see [Patch Appliance Install](#)

A HA A/A pair uses DB replication between two virtual or hardware appliances, therefore both appliances will require upgrading, as the Swivel configuration file is not part of the replication. However to prevent the cluster from switching over, the service that monitors Tomcat will need to be stopped.

When upgrading to Swivel PINsafe 3.5 or higher, ensure Swivel virtual or hardware appliance [permissions are correct](#)

Ensure databases are correctly synchronised between Swivel virtual or hardware appliances.

If a Virtual IP is NOT being used ignore all heartbeat related commands.

Login to the Swivel administration web interface on both virtual or hardware appliances.

Change the Mode to ?Slave?, and change the Database to ?shipping? (make a note of the DB currently being used).

Login to Standby virtual or hardware appliance:

Stop Monitor, Heartbeat and Tomcat:

```
service mon stop
service heartbeat stop
service tomcat5 stop
```

If the virtual or hardware appliances are using a virtual IP, this will prevent a fail-over taking place.

Login to the Primary virtual or hardware appliance:

Stop Monitor, Heartbeat and Tomcat:

```
service mon stop
service heartbeat stop
service tomcat5 stop
```

If the virtual or hardware appliances are using a virtual IP, this will prevent a fail-over taking place.

If MySQL is being used to replicate the DB, create a secure copy. If Oracle or another external DB is being used to provide Swivel DB replication ensure that a valid DB backup is taken.

Login to the Primary virtual or hardware appliance:

Backup MySQL replicated DB (enter command on one line):

```
mysqldump --single-transaction --flush-logs pinsafe_rep > /root/upgrade/mysql_rep_backup_$$$.sql
```

Now proceed with the upgrade process described below [Upgrading from Versions 3.2-3.9](#) on the primary virtual or hardware appliance. After upgrading the primary virtual or hardware appliance repeat the process for the secondary virtual or hardware appliance.

2.6.5 Upgrading Swivel DR virtual or hardware Appliances

For upgrading to Swivel virtual or hardware Appliances to version 3.9.2 or higher see [Patch Appliance Install](#)

Login to the DR, virtual or hardware appliances and ensure Mode is set to ?Slave?, and change the Database to ?shipping?

Follow the [Upgrading Swivel Generic Information](#)

After the upgrade ensure Swivel has been upgraded as expected

Ensure Swivel is functioning as expected

Ensure Swivel servers are set back to the correct database type and Mode

2.7 Upgrading to Versions 3.9.1 or higher

For upgrading to Swivel Appliances to version 3.9.2 or higher see [Patch Appliance Install](#)

For upgrading to versions 3.9.1 and higher (excluding 3.9) the, the pinsafe.war file can be copied into the webapps folder as part of the upgrade, but make a copy of custom transports and the <database name>.jar file in WEB-INF/lib before upgrading and copy back in as below.

2.8 Upgrading to Versions 3.2-3.9

For upgrading to Swivel virtual or hardware Appliances to version 3.9.2 or higher see [Patch Appliance Install](#)

The WEB-INF directory is located under /usr/local/apache-tomcat-x.x/webapps/pinsafe

1. It is highly recommended that you take a copy of the entire ?/WEB-INF/ folder but specifically ensure steps 2-4, and 5-6 if relevant, are completed.

```
cp ?rp /usr/local/tomcat/webapps/pinsafe /root/upgrade/
```

2. Back up the PINsafe configuration by taking a copy of .../WEB-INF/conf/config.xml to a safe location.

```
cp ?p /usr/local/tomcat/webapps/pinsafe/WEB-INF/conf/config.xml /root/upgrade
```

3. Back up the PINsafe ranges file by taking a copy of .../WEB-INF/conf/ranges.xml to a safe location.

```
cp ?p /usr/local/tomcat/webapps/pinsafe/WEB-INF/conf/ranges.xml /root/upgrade
```

4. Back up the PINsafe ranges file by taking a copy of .../WEB-INF/conf/config.properties to a safe location.

```
cp ?p /usr/local/tomcat/webapps/pinsafe/WEB-INF/conf/config.properties /root/upgrade
```

5. Back up the PINsafe User Repository by taking a copy of .../WEB-INF/data/repository.xml to a safe location.

```
cp ?p /usr/local/tomcat/webapps/pinsafe/WEB-INF/data/repository.xml /root/upgrade
```

6. Back up the PINsafe user data by taking a copy of everything under .../WEB-INF/db to a safe location. This is only relevant if you are using the Internal database.

```
cp ?rp /usr/local/tomcat/webapps/pinsafe/WEB-INF/db /root/upgrade
```

7. If you have any custom transport classes, note that classes from 3.5 or earlier are not compatible with 3.6 or higher. Check with Swivel Secure if there is an upgrade available. As a matter of principle, when Swivel Secure develops a custom transport class for a customer, it is included as a standard component in the next release of Swivel software. Please check with Swivel that your transport is available and/or still valid before upgrading.

8. Back up the Swivel logs by taking a copy of everything under .../WEB-INF/logs to a safe location. The upgrade will not fail if you do not backup logs, but you will not be able to view old log entries.

```
cp ?rp /usr/local/tomcat/webapps/pinsafe/WEB-INF/logs /root/upgrade
```

9. If the Internal, or MySQL DB is not being used, backup the DB driver file ..WEB-INF/lib (check with Swivel Secure the name of the driver file).

```
cp -p /usr/local/tomcat/webapps/pinsafe/WEB-INF/lib/<driver>.jar /root/upgrade
```

10. Remove the current Swivel installation by deleting the pinsafe.war file. Tomcat will remove the associated directory.

```
service tomcat5 start
rm ?f /usr/local/tomcat/webapps/pinsafe.war
service tomcat5 restart
```

11. Copy new pinsafe.war file to the webapps folder.

```
cp ?p /root/pinsafe.war /usr/local/tomcat/webapps
```

12. Stop the Tomcat service.

```
service tomcat5 stop
```

13. Restore the config.xml file to .../WEB-INF/conf/config.xml

```
cp ?p /root/upgrade/config.xml /usr/local/tomcat/webapps/pinsafe/WEB-INF/conf
```

14. Restore the ranges.xml file to .../WEB-INF/conf/ranges.xml

```
cp ?p /root/upgrade/ranges.xml /usr/local/tomcat/webapps/pinsafe/WEB-INF/conf
```

15. PINsafe 3.6 OR LATER ONLY: Restore the config.properties file to .../WEB-INF/conf/config.properties

```
cp ?p /root/upgrade/config.properties /usr/local/tomcat/webapps/pinsafe/WEB-INF/conf
```

NOTE: Step 15 is strictly only necessary if you are using session sharing. See note for upgrading from 3.5 if session sharing is enabled.

16. If an internal database is being used, restore the database.

```
cp -rp /root/upgrade/db/* /usr/local/tomcat/webapps/pinsafe/WEB-INF/db/
```

17. If an XML repository is being used restore the repository.xml file.

```
cp ?p /root/upgrade/repository.xml /usr/local/tomcat/webapps/pinsafe/WEB-INF/data
```

18. Restore your custom transport classes if relevant.

19. Restore the old log files.

```
cp ?rp /root/upgrade/logs/* /usr/local/tomcat/webapps/pinsafe/WEB-INF/logs
```

20. Restore the JDBC driver file if you backed it up (replace the name of the driver with the name used previously)

```
cp -p /root/upgrade/<driver>.jar /usr/local/tomcat/webapps/pinsafe/WEB-INF/lib/
```

21. Ensure that the ownerships and permissions on the files that have been restored are correct.

```
chown ?R swivel:swivel /usr/local/tomcat/webapps/pinsafe
chmod ?R 775 /usr/local/tomcat/webapps/pinsafe/WEB-INF/db
```

22. Start the Tomcat service.

```
service tomcat5 start
```

23. PINsafe 3.9 only: once the configuration has been successfully upgraded, restart the Tomcat service again (as described above).

```
service tomcat5 restart
```

2.8.1 Standalone virtual or hardware Appliance

Login to the Swivel administration web interface.

1. Test that the configuration has been correctly upgraded.
2. Configure the Swivel DB for use with Swivel by changing the Database back to the value prior to the upgrade. Check logs for errors.
3. Check users have been correctly migrated, and test a user can authenticate.
4. To start AD updates, change the Mode to ?Synchronized?.

2.8.2 Active/Passive Appliance

1. Test that the configuration has been correctly upgraded.
2. Configure the Swivel DB for use with Swivel by changing the Database back to ?internal?. Check the logs for any errors.
3. Check users have been correctly migrated, and test a user can authenticate.
4. To start AD updates, change the Mode to ?Synchronized? (Swivel PINsafe 3.2 or later only).

Login to the Primary virtual or hardware appliance:

Start Monitor:

```
service mon start
```

Login to the Secondary virtual or hardware appliance:

Start Monitor and Heartbeat:

```
service heartbeat start
service mon start
```


2.8.3 Active/Active virtual or hardware Appliance

If a Virtual IP is NOT being used ignore all heartbeat related commands.

Login to the Swivel administration web interface on the Primary virtual or hardware appliance.

1. Test that the configuration has been correctly upgraded.
2. Configure the Swivel DB for use with Swivel by changing the Database back to the value prior to the upgrade. Check logs for errors.
3. Check users have been correctly imported, and test a user can authenticate.

Login to the Swivel administration web interface on the Standby virtual or hardware appliance.

4. Test that the configuration has been correctly upgraded.
5. Change the Swivel DB for use with Swivel by changing the Database back to the value prior to the upgrade. DB will already have been updated by the Primary.

Check users have been correctly imported, and test a user can authenticate.

Before continuing ensure that the primary and standby virtual or hardware appliances have been upgraded to the correct version

6. To start AD updates, change the Mode to ?Synchronized? on the Primary virtual or hardware appliance, and then the Standby virtual or hardware appliance if required.

Login to Primary virtual or hardware appliance:

7. Start Heartbeat and Mon:

```
service heartbeat start
service mon start
```

Login to Standby virtual or hardware appliance:

8. Start Heartbeat and Mon:

```
service heartbeat start
service mon start
```

2.9 Additional Information

After upgrading you may see that any repository you had will exist on the new installation and it will be named after the associated hostname (or hostname followed by context in the case of the XML repository). Therefore if you had an AD repository in 3.2 you will have an XML repository in 3.3 named after the AD server's hostname (or IP address)

If you had an AD repository on your 3.2 installation you will now have the option to add an XML repository. It is recommended that you do this as this gives you the ability to create admin accounts whilst you are working on the installation

2.10 Troubleshooting

Upgrade to 3.9.1 fails on Swivel virtual or hardware appliance with Swivel settings not imported, and Swivel set to defaults. This can occur when Swivel is upgraded without installing the relevant patch, see https://kb.swivelsecure.com/wiki/index.php/Upgrade_PINsafe#Swivel_PINsafe_3.9.1. Restore Swivel from backup and carry out upgrade using patch.

[Transports absent after upgrade](#)