KeyScaler Upgrade Guide

UPGRADE FROM 6.7.4.1 TO 6.8.2

Security Level:	**External**
Author:	**Nirmal Misra**
Last Edit Date:	**7 July 2022**

Contents

1 Document Version Control

Version	Description	Author	Date
1.0	Initial Document Creation	Frode Nilsen	3/01/2019
2.0	Generic upgrade version	Nirmal Misra	02/11/2021
3.0	Upgraded Version	Ashley Johnson	27/01/2022
3.1	Updated for version 6.8.1	James Penney	27/06/2022
3.2	Updated for version 6.7.4.1 to 6.8.2	Nirmal Misra	06/07/2022
3.4	Review	Dillesh	07/7/2022

Item 1

2 Reference Document

#	Reference Document
1	Please refer to latest Release Notes for the upgrade version from DA Support

Item 2

3 Introduction

3.1 Document Overview

This document is a guide to upgrading the Device Authority KeyScaler Platform Server Software from the v6.7.4.1 version to the later version as advised by Device Authority support.

The process involves the following key steps:

- Checking the current KeyScaler system
- Stopping the services running
- Backup Database
- Backup KeyScaler - Creating a backup of the (*.war) files
- Removing the old folders
- Downloading and deploying the new (*.war) files
- Upgrading and Migrating the Database
- Restart KeyScaler System - Restarting the services on the system
- Verifying the changes

4 Prerequisites

4.1 Download Software

KeyScaler software can be obtained from DA Support from the customer Zendesk Portal.
Note: Please contact DA Support for access to Zendesk Portal

For the step to backup the MySQL Database, the root password will be required.

4.2 Upload software to KeyScaler Server

Upload the files to the `/tmp` directory of your KeyScaler server, e.g.

```
scp -i <pem file> <download path>/*.war centos@<keyscaler>:/tmp
```

Item 3 – Your computer: Upload files using scp/winscp utility

```
[root@localhost webapps]# pwd
/var/www/tomcat/webapps
[root@localhost webapps]# ls -al
total 454696
drwxr-xr-x. 10 dfactor_user tomcat      4096 Jul  6 13:13 .
drwxr-xr-x.  9 root         root         160 Nov 20  2021 ..
drwxr-x---. 13 dfactor_user tomcat      4096 Dec  9  2021 cp
-rw-r--r--.  1 root         root    52785900 Dec  9  2021 cp.war
drwxr-x---.  5 dfactor_user tomcat        48 Nov 20  2021 keyscaler-services
-rw-r--r--.  1 dfactor_user tomcat 120594521 Nov 20  2021 keyscaler-services.war
drwxr-x---.  4 dfactor_user tomcat        37 Dec  9  2021 kms
drwxr-x---.  5 dfactor_user tomcat        48 Nov 20  2021 kms-uservice
-rw-r--r--.  1 dfactor_user tomcat  66550521 Nov 20  2021 kms-uservice.war
-rw-r--r--.  1 root         root    66252181 Dec  9  2021 kms.war
drwxr-xr-x.  2 dfactor_user tomcat        77 Nov 20  2021 ROOT
drwxr-x---.  4 dfactor_user tomcat        63 Dec  9  2021 service
drwxr-x---.  5 dfactor_user tomcat        48 Nov 20  2021 service-access-controller
-rw-r--r--.  1 dfactor_user tomcat  44332920 Nov 20  2021 service-access-controller.war
-rw-r--r--.  1 root         root    75910173 Dec  9  2021 service.war
-rwxr-xr-x.  1 root         root         834 Jul  6 13:13 version.sh
drwxr-x---. 17 dfactor_user tomcat      4096 Dec  9  2021 wizard
-rw-r--r--.  1 root         root    39152138 Dec  9  2021 wizard.war
[root@localhost webapps]#
```

Item 4 – Files Uploaded to folder on KeyScaler System

4.3 Stop the KeyScaler Service

Log into the KeyScaler system, change to root user and stop the *dfactor* service:

```
[devuser@host ~]# sudo su
[root@host ~]# service dfactor stop
```

Item 5 – KeyScaler Server: Stop KeyScaler dfactor service

```
[root@Keyscaler6741 devuser]# service dfactor stop
Stopping DeviceAuthority D-Factor
Using DFACTOR_HOME: /var/dfactor
Using IDP_HOME: /var/dfactor/idp
Using CATALINA_BASE:   /var/www/tomcat
Using CATALINA_HOME:   /var/www/tomcat
Using CATALINA_TMPDIR: /var/www/tomcat/temp
Using JRE_HOME:        /usr/java/latest
Using CLASSPATH:       /var/www/tomcat/bin/bootstrap.jar:/var/www/tomcat/bin/tomcat-juli.jar
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option MaxPermSize=256m; support was removed in 8.0
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option UseSplitVerifier; support was removed in 8.0
DeviceAuthority D-Factor (pid 3243) is still running... Will attempt to forcefully terminate.
DeviceAuthority D-Factor successfully terminated
[root@Keyscaler6741 devuser]#
```

Item 6 – dfactor service terminated

4.4 Backup Existing System

Before you begin the KeyScaler upgrade, first follow the backup and update procedure outlined below:

4.4.1 Backup Database:

As Linux user *dfactor_user*, run the following commands to backup current KeyScaler database.

Create the backup directory if needed and back up the database. The default database name is *dfactordb*. If your installation has changed the database name, substitute the correct name in the command below.
Note: You will need the root database password in this process.

```
[root@host ~]# su - dfactor_user
[dfactor_user@host ~]

[dfactor_user@host ~]$ mkdir -p /var/dfactor/backups/
[dfactor_user@host ~]$ mysqldump -u root -p dfactordb > /var/dfactor/backups/<date>.dfactordb.sql
```

Item 7 – Back up KeyScaler Database

```
[root@Keyscaler6741 webapps]# su - dfactor_user
Last login: Thu Jan 27 09:01:33 UTC 2022 on pts/0
[dfactor_user@Keyscaler6741 ~]$ mkdir -p /var/dfactor/backups
[dfactor_user@Keyscaler6741 ~]$ mysqldump -u root -p dfactordb > /var/dfactor/ba
ckups/720122.dfactordb.sql
Enter password:
[dfactor_user@Keyscaler6741 ~]$ cd /var/dfactor/backups/
[dfactor_user@Keyscaler6741 backups]$ ls -al
total 640
drwxr-x---. 2 dfactor_user tomcat     34 Jan 27 09:04 .
drwxr-xr-x. 8 dfactor_user tomcat     79 Jan 25 10:06 ..
-rw-r--r--  1 dfactor_user tomcat 655244 Jan 27 09:04 720122.dfactordb.sql
[dfactor_user@Keyscaler6741 backups]$
```

Item 8 – Database backup

4.4.2 HA Backup of Databases

Log onto each HA KeyScaler device you have, take a backup of each MySQL database as mentioned in 4.4.1.

Note: If using Azure SQL log into your database using one of the KeyScaler servers and do the following:

```
[root@keyscaler-vm2 cert]# mysqldump -h [your mysql hostname].mysql.database.azure.com -u root@[your mysql hostname] -p dfactordb > /var/dfactor/backups/<date>/dfactordb.sql
Enter password:[Root Password]
```

4.4.3 Backup KeyScaler

4.4.3.1 Backup the KeyScaler /var/dfactor/data folder that contains:

- NSS keystore
- Tenant packages and licenses
- Samples package

```
[dfactor_user@host ~]$ mkdir -p /var/dfactor/backups/dfactor/data
[dfactor_user@host ~]$ cp -R /var/dfactor/data /var/dfactor/backups/dfactor/data
```

Item 9 – Backup Data

4.4.4 Backup KeyScaler Binaries and Properties

Log onto each individual KeyScaler instance and take a backup of the .war files in */var/www/tomcat/webapps* directory and all of the *.properties files in */var/dfactor/conf*

```
[root@Keyscaler6741 conf]# ls -al
total 36
drwxr-x---. 2 dfactor_user tomcat 237 Jan 29 12:36 .
drwxr-xr-x. 9 dfactor_user tomcat  93 Jan 29 12:36 ..
-rw-r-----  1 dfactor_user tomcat 686 Jan 26 18:06 cp.properties
-rw-r-----  1 dfactor_user tomcat 699 Jan 26 17:59 dae.properties
-rw-r-----  1 dfactor_user tomcat 724 Jan 26 17:35 kms.properties
-rw-r-----  1 dfactor_user tomcat 435 Jan 26 17:37 kmssa.properties
-rw-r-----  1 dfactor_user tomcat 125 Jan 26 18:01 kssa.properties
-rw-r--r--. 1 dfactor_user tomcat 400 Jan 24 16:49 sac-mqtt.properties
-rw-r--r--. 1 dfactor_user tomcat 591 Jan 24 16:47 sac.properties.disabled
-rw-r-----  1 dfactor_user tomcat 176 Jan 26 17:59 securerepo-syslog.properties
-rw-r-----. 1 dfactor_user tomcat 451 Jan 26 14:02 wizard.properties
[root@Keyscaler6741 conf]# mkdir backup
[root@Keyscaler6741 conf]# cp * backup/
cp: omitting directory 'backup'
[root@Keyscaler6741 conf]# ls -al backup/
total 36
drwxr-xr-x  2 root         root   237 Jan 29 12:36 .
drwxr-x---. 3 dfactor_user tomcat 251 Jan 29 12:36 ..
-rw-r-----  1 root         root   686 Jan 29 12:36 cp.properties
-rw-r-----  1 root         root   699 Jan 29 12:36 dae.properties
-rw-r-----  1 root         root   724 Jan 29 12:36 kms.properties
-rw-r-----  1 root         root   435 Jan 29 12:36 kmssa.properties
-rw-r-----  1 root         root   125 Jan 29 12:36 kssa.properties
-rw-r--r--  1 root         root   400 Jan 29 12:36 sac-mqtt.properties
-rw-r--r--  1 root         root   591 Jan 29 12:36 sac.properties.disabled
-rw-r-----  1 root         root   176 Jan 29 12:36 securerepo-syslog.properties
-rw-r-----  1 root         root   451 Jan 29 12:36 wizard.properties
[root@Keyscaler6741 conf]#
```

4.4.4.1 Rename the KeyScaler dfactor tools (if they were deployed previously)

```
[dfactor_user@host ~]$ mv /var/dfactor/dfactor.tools /var/dfactor/backups/dfactor.tools.datestamp
```

Item 10- Backup KeyScaler tools

4.4.4.2 Back up the application war files:

Backup previous war files to be replaced.
The existing *.war files can be found in the following directory:

```
[root@host ~]# cd /var/www/tomcat/webapps
```

*Item 11 – *.war file directory*

```
[root@Keyscaler6741 webapps]# ls -al
total 459900
drwxr-xr-x. 10 dfactor_user tomcat      4096 Jan 26 18:40 .
drwxr-xr-x.  9 root         root         160 Jan 25 10:03 ..
drwxr-x---  13 dfactor_user tomcat      4096 Jan 26 18:07 cp
-rw-r--r--   1 root         root    53554020 Jan 26 18:07 cp.war
drwxr-x---   5 dfactor_user tomcat        48 Jan 26 18:02 keyscaler-services
-rw-r--r--   1 root         root   122182673 Jan 26 18:02 keyscaler-services.war
drwxr-x---   4 dfactor_user tomcat        37 Jan 26 16:59 kms
drwxr-x---   5 dfactor_user tomcat        48 Jan 26 17:39 kms-uservice
-rw-r--r--   1 root         root    67142814 Jan 26 17:38 kms-uservice.war
-rw-r--r--   1 dfactor_user tomcat  67020588 Jan 26 16:59 kms.war
drwxr-xr-x.  2 dfactor_user tomcat        77 Jan 25 10:03 ROOT
drwxr-x---   4 dfactor_user tomcat        63 Jan 26 18:00 service
drwxr-x---   5 dfactor_user tomcat        48 Jan 26 18:40 service-access-controller
-rw-r--r--   1 root         root    44333445 Jan 26 18:40 service-access-controller.war
-rw-r--r--   1 root         root    76680956 Jan 26 18:00 service.war
-rwxr-xr-x   1 root         root         834 Jan 26 18:39 version.sh
drwxr-x---. 17 dfactor_user tomcat      4096 Jan 25 10:06 wizard
-rw-r--r--.  1 dfactor_user tomcat  39997021 Jan 25 10:03 wizard.war
[root@Keyscaler6741 webapps]#
```

*Item 12 – List of all the existing *.war files*

Create a new directory e.g., *backup/webapps* and move these *.war files into that new directory:

```
[dfactor_user@host ~]$ mkdir /var/dfactor/backups/webapps
```

```
[dfactor_user@host ~]$ cp /var/www/tomcat/webapps/*.war  /var/dfactor/backups/webapps/
```

*Item 13 – Backup the *.war files*

4.5 Remove the old folders

For the new *.war files to take effect, first delete their respective folders, so that new ones get created.

```
[dfactor_user@host ]$ cd /var/www/tomcat/webapps/
[dfactor_user@host ]$ rm -rf cp/
[dfactor_user@host ]$ rm -rf keyscaler-services/
[dfactor_user@host ]$ rm -rf kms/
[dfactor_user@host ]$ rm -rf kms-uservice/
[dfactor_user@host ]$ rm -rf service/
```

Item 14 – Remove the old application folders

If the SAC is running on the same server:

```
[dfactor_user@host webapps]$ rm service-access-controller.war
[dfactor_user@host webapps]$ rm -rf service-access-controller/
```

Item 15 – Remove old files and directories for SAC (same server)

If the SAC is running on a different server, transfer the *sac.tar.gz* file to the SAC server. The directions below assume the file have been paced in the */tmp* folder.
Log into the SAC server, and stop the SAC service

```
[root@host ]# /var/www/tomcat/bin/shutdown.sh
# change  to dfactor_user
[root@host ]# su - dfactor_user
# remove the existing SAC and deploy the new one
[dfactor_user@host ]$ cd /var/www/tomcat/webapps/
[dfactor_user@host webapps]$ rm service-access-controller.war
[dfactor_user@host webapps]$ rm -rf service-access-controller
```

Item 16 – Separate SAC Server – Remove Old files and directories

At this point, you are ready to upgrade the KeyScaler system.

5 Upgrade KeyScaler

5.1 Upgrade and Migrate Database

Steps outlined in this section must be run as Linux user *dfactor_user*

1) Deploy KeyScaler tools (dfactor_tools.tar.gz) under /var/dfactor by using the instructions in Deploying the D-FACTOR tools.

   Note: New tools must be deployed with each upgrade

2) Run the Database Upgrader tool, ***dbupgrade.sh*** that will:
   - upgrade the database schema
   - migrate all the data

```
[dfactor_user@host tmp]$ cd /var/dfactor/dfactor.tools/bin/
[dfactor_user@host bin]$ ./dbupgrade.sh

Using MySQL Connector: /var/www/tomcat/lib/mysql-connector-java-5.1.40-bin.jar
DAE Tools 6.8.2 Build 2, Copyright (c) 2011-2021, DeviceAuthority Inc., All Rights Reserved.

Migrating D-Factor data based upon the following properties:
 Application Home  : file:/var/dfactor/dfactor.tools/bin/../
 Database          : mysql
 JDBC Connect String: jdbc:mysql://localhost:3306/dfactordb
 Database Server   : localhost
 Database Name     : dfactordb
 User Name         : dfactor_user

Using Database version: X.U, state: upgradeComplete

Added X.Y.0.1 upgrader..
Please select one of these options to do database upgrade:
0. Exit
1. Upgrade Schema
2. Migrate Data (Important: migrate data only after all nodes have completed the schema upgrade)

Please enter [0/1/2] to proceed with the upgrade: 1
CAUTION: This schema upgrade utility will connect to D-Factor Database
      so that it will be usable by the current release of D-Factor.
      The database should be backed up before you proceed.

      IMPORTANT: Please ensure the following before proceeding:
      - Your database is BACKED UP
      - Your database is UP and RUNNING
      - The D-Factor is NOT RUNNING

Do you want to continue? [y/n] (Default: n) y

 Upgrading database schema from "X.Y.0.1" to "X.Y.0.2"

     Upgrading schema...

     Schema upgrade from "X.Y.0.1" to "X.Y.0.2" complete.

Please select one of these options to do database upgrade:
0. Exit
```

1. Upgrade Schema
2. Migrate Data (Important: migrate data only after all nodes have completed the schema upgrade)

Please enter [0/1/2] to proceed with the upgrade: 2
CAUTION: This data migration utility will connect to D-Factor Database
and migrate the data so that it will be usable by the current
release of D-Factor. The database should be backed up before you
proceed.

IMPORTANT: Please ensure the following before proceeding:
- Your database is BACKED UP
- Your database is UP and RUNNING
- The D-Factor is NOT RUNNING
Do you want to continue? [y/n] (Default: n) y

Data will be migrated from version "X.U" to version "X.Y.0.6"

Migrating database from "X.U" to "X.Y.0.1"

migrating data...

Data migration complete, performing post-migration schema actions...

Database migration from "X.U" to "X.Y.0.1" complete.

Item 17 -Updating the database schema and Migrating the Data (note: the build number may vary)

```
[dfactor_user@localhost bin]$ ./dbupgrade.sh
Using MySQL Connector: /var/www/tomcat/lib/mysql-connector-java-5.1.40-bin.jar
DAE Tools 6.8.2 Build 2, Copyright (c) 2016-2022, Device Authority Ltd., All Rights Reserved.

Migrating D-Factor data based upon the following properties:
  Application Home    : file:/var/dfactor/dfactor.tools/bin/../
  Database            : mysql
  JDBC Connect String: jdbc:mysql://localhost:3306/dfactordb
  Database Server     : localhost
  Database Name       : dfactordb
  User Name           : dfactor_user

Using Database version: 6.7.4.1, state: upgradeComplete

Added 6.8.0.1 upgrader..
Added 6.8.0.2 upgrader..
Added 6.8.0.3 upgrader..
Added 6.8.0.4 upgrader..
Added 6.8.1.1 upgrader..
Added 6.8.1.2 upgrader..
Added 6.8.1.3 upgrader..
Added 6.8.2.1 upgrader..
Please select one of these options to do database upgrade:
0. Exit
1. Upgrade Schema
2. Migrate Data (Important: migrate data only after all nodes have completed the schema upgrade)

Please enter [0/1/2] to proceed with the upgrade:
```

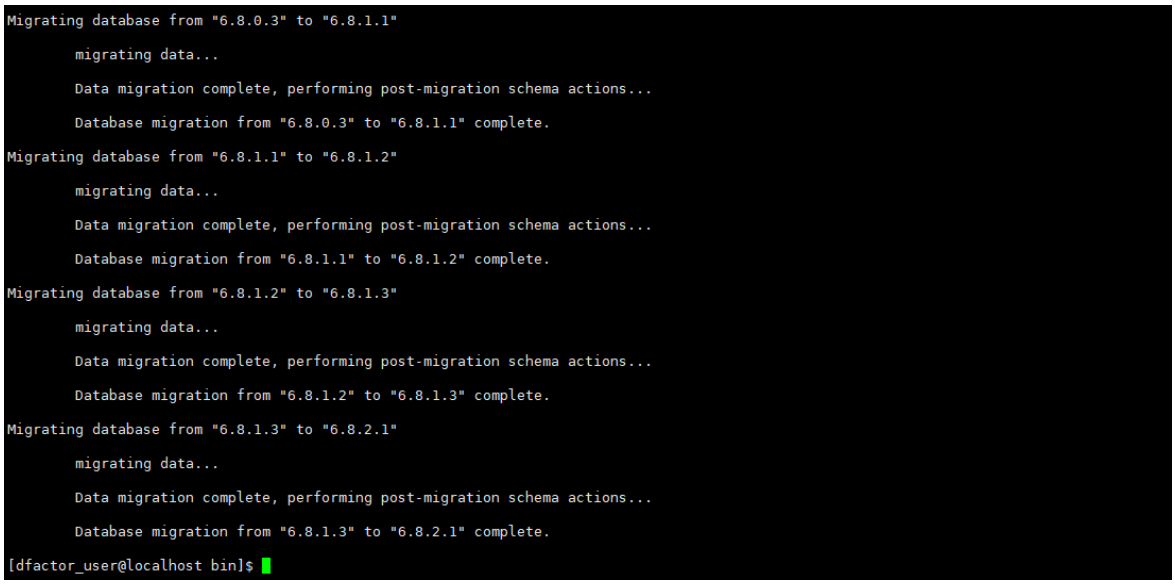
Item 18 – Database Upgrade Output

```
Do you want to continue? [y/n] (Default: n) y

  Upgrading database schema from "6.7.4.1" to "6.8.0.1"

        Upgrading schema...

        Schema upgrade from "6.7.4.1" to "6.8.0.1" complete.

  Upgrading database schema from "6.8.0.1" to "6.8.0.2"

        Upgrading schema...

        Schema upgrade from "6.8.0.1" to "6.8.0.2" complete.

  Upgrading database schema from "6.8.0.2" to "6.8.0.3"

        Upgrading schema...

        Schema upgrade from "6.8.0.2" to "6.8.0.3" complete.

  Upgrading database schema from "6.8.0.3" to "6.8.0.4"

        Upgrading schema...

        Schema upgrade from "6.8.0.3" to "6.8.0.4" complete.

  Upgrading database schema from "6.8.0.3" to "6.8.1.1"

        Upgrading schema...

        Schema upgrade from "6.8.0.3" to "6.8.1.1" complete.

  Upgrading database schema from "6.8.1.1" to "6.8.1.2"

        Upgrading schema...

        Schema upgrade from "6.8.1.1" to "6.8.1.2" complete.

  Upgrading database schema from "6.8.1.2" to "6.8.1.3"

        Upgrading schema...

        Schema upgrade from "6.8.1.2" to "6.8.1.3" complete.

  Upgrading database schema from "6.8.1.3" to "6.8.2.1"

        Upgrading schema...

        Schema upgrade from "6.8.1.3" to "6.8.2.1" complete.

Please select one of these options to do database upgrade:
0. Exit
1. Upgrade Schema
```

Item 19 – DB Schema Upgrade Output

```
Please enter [0/1/2] to proceed with the upgrade: 2
CAUTION: This data migration utility will connect to D-Factor Database
         and migrate the data so that it will be usable by the current
         release of D-Factor. The database should be backed up before you
         proceed.

         IMPORTANT: Please ensure the following before proceeding:
         - Your database is BACKED UP
         - Your database is UP and RUNNING
         - The D-Factor is NOT RUNNING

Do you want to continue? [y/n] (Default: n) y

Data will be migrated from version "6.7.4.1" to version "6.8.2.1"

Migrating database from "6.7.4.1" to "6.8.0.1"

        migrating data...

        Data migration complete, performing post-migration schema actions...

        Database migration from "6.7.4.1" to "6.8.0.1" complete.

Migrating database from "6.8.0.1" to "6.8.0.2"

        migrating data...

        Data migration complete, performing post-migration schema actions...

        Database migration from "6.8.0.1" to "6.8.0.2" complete.

Migrating database from "6.8.0.2" to "6.8.0.3"

        migrating data...

        Data migration complete, performing post-migration schema actions...

        Database migration from "6.8.0.2" to "6.8.0.3" complete.

Migrating database from "6.8.0.3" to "6.8.0.4"

        migrating data...

        Data migration complete, performing post-migration schema actions...

        Database migration from "6.8.0.3" to "6.8.0.4" complete.

Migrating database from "6.8.0.3" to "6.8.1.1"

        migrating data...

        Data migration complete, performing post-migration schema actions...
```

Item 20 – Database Migration Output



Item 21 – Database Migration Output - continued

Note: For an HA Environment you only need to do this on one SQL server on the cluster and sync when brought back online.

5.2 Upgrade Master and Tenant Packages

In this step, you will be updating the Tenant Accounts onto the server that will be running the KeyScaler Control Panel.

- Core Package for Tenant accounts contains DDKG libraries and KeyScaler Agents for Tenants.

Note: You will need to have the **Tenant Account Number** available for these steps

1) On the KeyScaler server that is running the Control Panel, go to the */var/dfactor* directory

```
[dfactor_user@host ~]$ cd /var/dfactor
```

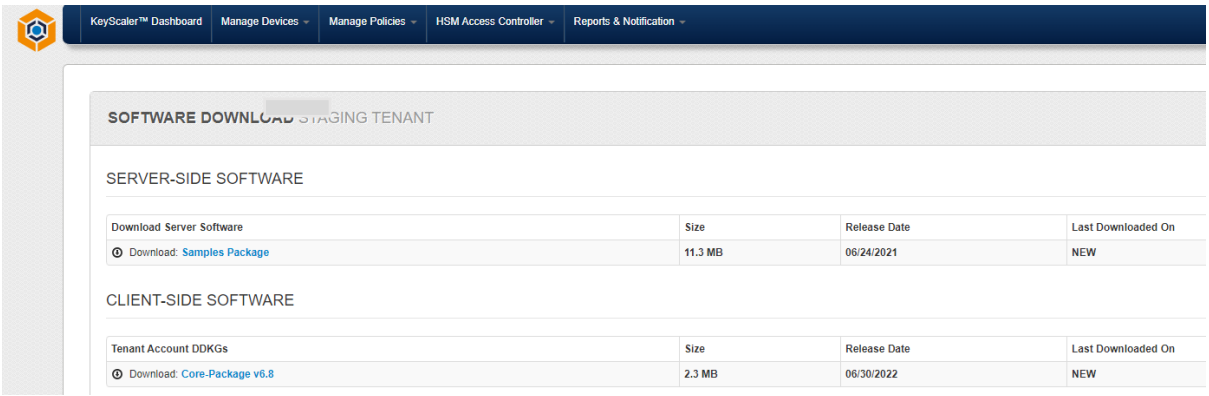
Item 22 – Change Directory

2) As the Linux user *dfactor_user*, unzip the tenant CP and DAE tenant packages into CP's hosted downloaded directory *(/var/dfactor/data/cp-hosted-downloads)*

```
## Install Tenant ddkgs (Make sure you have the correct ddkg package for that tenant)
[dfactor_user@host ~]$ mv /var/dfactor/data/cp-hosted-downloads/<1st tenant_account_number> /var/dfactor/data/cp-hosted-downloads/<tenant_account_number>.backup
[dfactor_user@host ~]$ cp coreX.Yzip /var/dfactor/data/cp-hosted-downloads/<tenant_account_number>

## If there are additional tenants, repeat the above steps for each additional tenant account. Make sure the correct ddkg package for the specific tenant
```

Item 23 – Upgrade Tenant Packages

Note: For HA environment, you will need to make sure this is done for each KeyScaler instance that hosts the CP component.



Item 24- KeyScaler CP – Sample Updated Download Software Screen

5.3 Deploy KeyScaler Software Components

Deploy the new war files that will upgrade system from current version to latest version

Copy the *.war files that were uploaded to the KeyScaler system in section 4.2 Upload software to KeyScaler Server to webapps directory:

```
[root@host ~]# cp /tmp/*.war /var/www/tomcat/webapps/
[root@host ~]# ls -al
```

*Item 25 – Copy *.war files to the webapps directory*

```
[root@     -remote-factory software]# cp *.war /var/www/tomcat/webapps/
cp: overwrite '/var/www/tomcat/webapps/cp.war'? y
cp: overwrite '/var/www/tomcat/webapps/keyscaler-services.war'? y
cp: overwrite '/var/www/tomcat/webapps/kms-uservice.war'? y
cp: overwrite '/var/www/tomcat/webapps/kms.war'? y
cp: overwrite '/var/www/tomcat/webapps/service-access-controller.war'? y
cp: overwrite '/var/www/tomcat/webapps/service.war'? y
[root@     -remote-factory software]# ls -al /var/www/tomcat/webapps/
total 406560
drwxr-xr-x.  6 dfactor_user tomcat      274 Jul  6 13:22 .
drwxr-xr-x. 10 root         root        183 Oct  7  2021 ..
drwxr-xr-x.  2 dfactor_user tomcat      176 May 16 12:40 backup
drwxr-x---. 13 dfactor_user tomcat     4096 Jul  6 13:22 cp
-rw-r--r--.  1 root         root   54650184 Jul  6 13:22 cp.war
drwxr-x---.  4 dfactor_user tomcat       37 Jan 27 15:43 epic-azure-keyvault
-rw-r--r--.  1 dfactor_user tomcat 42273300 Jan 27 15:43 epic-azure-keyvault.war
-rw-r--r--.  1 root         root   57242952 Jul  6 13:22 keyscaler-services.war
-rw-r--r--.  1 root         root   63537499 Jul  6 13:22 kms-uservice.war
-rw-r--r--.  1 root         root   66016792 Jul  6 13:22 kms.war
drwxr-xr-x.  2 root         root         39 Mar 23 15:22 Metadata_migration_v1
-rw-r--r--.  1 root         root   42614622 Jul  6 13:22 service-access-controller.war
-rw-r--r--.  1 root         root   89959756 Jul  6 13:22 service.war
-rwxr-xr-x.  1 root         root        839 Jan 10 12:39 version.sh
[root@     -remote-factory software]#
```

Item 26 – Sample list of all KeyScaler war file components in webapps directory

Note: For HA Environment, make sure to do this on each KeyScaler instance. Make sure to check the properties files are ready and available for the KeyScaler instance to use.

If the SAC is running on a different server, transfer the sac.tar.gz file to the SAC server and unpack the file. The directions below assumes that the file has been placed in the */tmp* folder:

```
[dfactor_user@host webapps]$ tar -xvzf /tmp/service-access-controller.war -C /var/www/tomcat/webapps
```

Item 27 - Deploy the SAC software on separate SAC server

5.3.1 Update KMSSA Properties

To prevent a collision with a reserved property name, the '**pid**' property in the KMSSA has been updated to use the new name '**pidentity**.' To make this change, do the following:

1) Edit the file at */var/dfactor/config/kmssa.properties*
2) Change the name of the '*pid'* property to '*pidentity'*
3) Save the kmssa.properties file

```
broadcast.bufsize=15000
keepalive.interval=10000
pidentity=d042b4a2-fa2c-4305-940c-3c8ddae7d35e
broadcast=false
keepalive.threshold=5
mode=OA
broadcast.timeout=1000
authenticated=true
broadcast.interval=10
broadcast.port=8888
keyscaler.kms.1=demo.mykeyscaler.com:8443
kafka.bootstrap.servers=demo.mykeyscaler.com\:9092
psecret=2e392554-9b34-7656-83ce-0523444 7bf85
```

Item 32 – The updated kmssa.properties file

5.4 Start the KeyScaler Service

Check that you are root user and start the *dfactor* service:

```
[devuser@host ~]# sudo su
[root@host ~]# service dfactor start
```

Item 33 – KeyScaler Server: Start KeyScaler Server

Note: For an HA environment make sure you start the services on ALL KeyScaler instances.

```
[root@    -remote-factory software]# service dfactor start
Starting DeviceAuthority D-Factor
Using DFACTOR_HOME: /var/dfactor
Using IDP_HOME: /var/dfactor/idp
Using CATALINA_BASE:   /var/www/tomcat
Using CATALINA_HOME:   /var/www/tomcat
Using CATALINA_TMPDIR: /var/www/tomcat/temp
Using JRE_HOME:        /usr/java/latest
Using CLASSPATH:       /var/www/tomcat/bin/bootstrap.jar:/var/www/tomcat/bin/tomcat-juli.jar
Tomcat started.
[root@    -remote-factory software]#
```

Item 34 – dfactor service started

If the SAC is running on a different server:

```
# Execute on Service Access Controller server, if different from rest of the application stack
[root@host ~]# sudo su
[root@host ~]# service dfactor start
```

Item 35 – Start SAC services

5.5 Post-Upgrade Verification

5.5.1 Verify Kafka and Zookeeper services are still running

Note: This section only applies to environments using a local Kafka service – if you are using a managed service (i.e., Azure Event Hubs for Kafka), you may skip this section.

Ensure that the kafka and zookeeper services are still running:

```
[root@host ~]# ps ax | grep -i 'zookeeper'
```

Item 28 – KeyScaler Server: check zookeeper service

Item 29 – KeyScaler Server: zookeeper service example output

```
[root@host ~]# ps ax | grep -i 'kafka\.Kafka'
```

Item 30 – KeyScaler Server: check kafka service

Item 31 – KeyScaler Server: kafka service example output

If not running, then execute the following two commands and check again.

For Kafka version for HA systems: **kafka_2.11-1.0.0**:

```
[root@host ~]# /opt/kafka_2.11-1.0.0/bin/zookeeper-server-start.sh -daemon /opt/kafka_2.11-1.0.0/config/zookeeper.properties
[root@host ~]# /opt/kafka_2.11-1.0.0/bin/kafka-server-start.sh -daemon opt/kafka_2.11-1.0.0/config/server.properties
```

Item 32 – KeyScaler Server: to start Kafka and zookeeper services for kafka_2.11-1.0.0

On single stack (non-HA systems) If using Kafka version **kafka_2.12-2.8.1** then use the following commands:

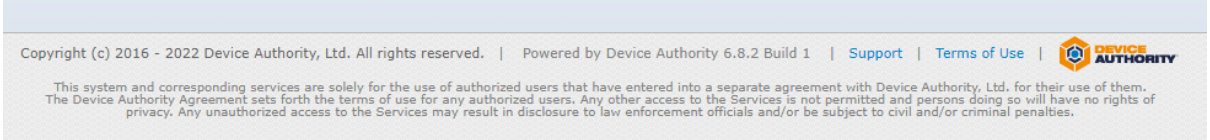
```
[root@host ~]# /opt/kafka_2.12-2.8.1/bin/zookeeper-server-start.sh -daemon /opt/kafka_2.12-2.8.1/config/zookeeper.properties
[root@host ~]# /opt/kafka_2.12-2.8.1/bin/kafka-server-start.sh -daemon /opt/kafka_2.12-2.8.1/config/server.properties
```

Item 33 – KeyScaler Server: to start Kafka and zookeeper services kafka_2.12-2.8.1

6 Upgrade Sanity Tests

6.1 KeyScaler Control Panel

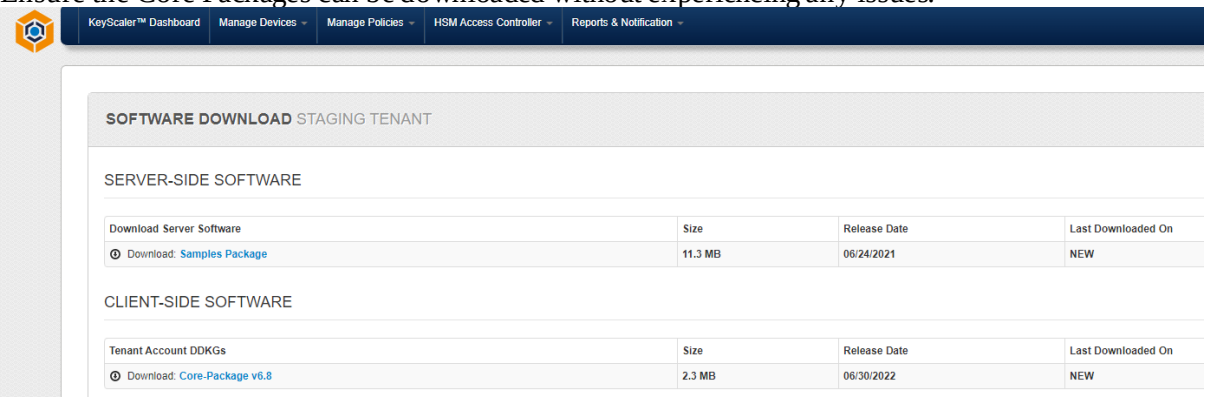
Login to the control panel and check all looks normal. Ensure the version at the bottom of the page matches the latest version you have deployed:



Item 34 – Check KeyScaler version number

6.2 Download Core Packages

Ensure the Core Packages can be downloaded without experiencing any issues.



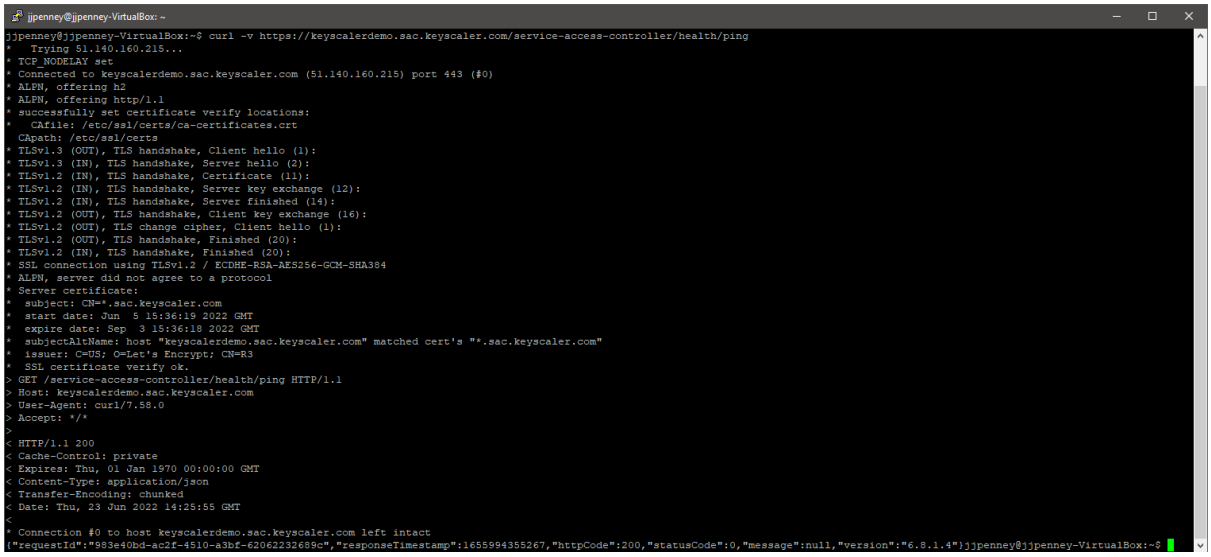
Item 35 – Control Panel: Download Software

6.3 Curl to the SAC

From any device ensure you can curl to the SAC and get a HTTP code 200 message back as follows:

```
root@host:~$ curl -v https://sac.xyzcorpXY.com:8443/service-access-controller/health/ping
```

Item 36 – Your computer: CURL Test command



Item 37 – Your computer: cURL Test output

Important: In case of any issue please Contact DeviceAuthority Support, support@deviceauthority.com

-------- End of Document ---------