

IBM Tivoli Key Lifecycle Manager Version 1.0  
z/OS Interim Fix 2 README

Abstract

Readme documentation for IBM® Tivoli® Key Lifecycle Manager for z/OS, Version 1.0 Interim Fix 2 including installation-related instructions, prerequisites and corequisites, and list of fixes. All IBM Tivoli Key Lifecycle Manager for z/OS fix packs are cumulative. This interim fix contains the content of all prior fix packs published to date. This interim fix does not contain interim fix 1A.

Readme file for: IBM® Tivoli® Key Lifecycle Manager for z/OS  
Product/Component Release: 1.0  
Update Name: Interim fix 2  
Fix ID: 1.0.0-TIV-TKLM-IF0002  
TKLM for z/OS Interim Fix 2 APAR: OA29108  
Publication date: 28 August 2009  
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Platform support

Tivoli Key Lifecycle Manager platforms supported with initial release installed  
z/OS V1 Release 9, or later

Download location

The distribution medium for the IBM Tivoli Key Lifecycle Manager Version 1.0 Interim Fix 2 PTF (FMID HCKL100, APAR OA29108) is magnetic tape or electronic download from Retain. The PTF contains the following SMP/E installable part:  
CKLTB001 OA29108A HCKL100

Platforms updated by this interim fix.

Product/Component Name  
IBM Tivoli Key Lifecycle Manager version 1.0 Interim Fix 2 -

1.0.0-TIV-TKLM-IF0002

Platform

z/OS V1 Release 9, or later

APAR

OA29108

Prerequisites and corequisites

None.

Known issues with TKLM for z/OS V 1.0 Interim Fix 2

- \* tklmDeviceAdd and tklmDeviceUpdate command line help do not reflect the DS8K changes to add partner certificates

- o The tklmDeviceAdd and tklmDeviceUpdate CLI commands incorrectly states that the value of aliasOne and aliasTwo for DS8K must be the same value. It also incorrectly states that if both aliases are specified with different values, aliasTwo value will be ignored and it will be set to the same value as aliasOne.

- o The tklmDeviceAdd and tklmDeviceUpdate CLI commands for DS8K now allow a partner certificate. Therefore, the value of aliasOne and aliasTwo for DS8K no longer have to be the same and they can be two different values. aliasOne is a required attribute and aliasTwo is optional.

- \* tklmCertList and tklmKeyList CLI command error messages are inconsistent for wrong keystore name.

- o When an incorrect keystore name is passed into the tklmKeyList CLI command, the following error message is displayed:

```
WASX7278I: Generated command line: AdminTask.tklmKeyList(
'-alias abc00000000000000000000 -keyStoreName "Tivoli Key
Lifecycle"') CTGKM0002 Command failed: CTGKM0558E Cannot
find the keystore named: Tivoli Key Lifecycle.
```

- o When an incorrect keystore name is passed to the tklmCertList CLI command, the following error message is displayed:

```
WASX7278I: Generated command line: AdminTask.tklmCertList(
'-alias cert1 -keyStoreName "Tivoli Key Lifecycle"')
CTGKM0002E Command failed: CTGKM0530E Cannot find the
certificate.
```

- \* When user attempts to create the master keystore Tivoli Key Lifecycle Manager shows the following error:

```
CTGKM0104E Unable to add
keystore.java.management.MBeanException: RuntimeException
thrown in RequiredModelMBean while trying to invoke
operation addKeyStore
```

The keystore path and file name must not be installed in the %TIP\_HOME%\products\tklm\keystore\tklmKeystore.jceks. This filename is internally used by the Tivoli Key Lifecycle Manager keystore and the master keystore.

- \* When using Tivoli Key Lifecycle Manager command line interface (CLI) all parameters containing spaces must be enclosed in single quotes.

For example:

```
print AdminTask.tklmKeyStoreDelete ('-storeName "Tivoli
    Key Lifecycle Manager Keystore" -confirm y')
```

#### Known limitations with TKLM for z/OS V 1.0 Interim Fix 2

- \* Tivoli Key Lifecycle Manager for z/OS version 1.0 must be successfully SMP/E installed prior to the installation of the Tivoli Key Lifecycle Manager fix pack.
- \* Tivoli Key Lifecycle Manager version 1.0 backups taken using the "Backup and Restore" option in GUI or the tklmBackupRun CLI command without any fix pack installed cannot be restored once a fix pack has been applied.
- \* Problems can occur if you migrate keys that are members of multiple key groups in Encryption Key Manager to Tivoli Key Lifecycle Manager. The key is successfully migrated and made a member of the first key group. However, for subsequent key memberships, the migration code will log an error indicating the key and key group were not able to be migrated. You can use the migrated keys to read data, but cannot use the migrated keys to write from any group other than the first group membership that was successfully migrated. The error message is similar to this example:

```
com.ibm.tklm.common.exception.KLMException: CTGKM0851E The
group cannot be created because an entity (key) cannot be
in multiple key groups.
```

Contact support in order to complete migration. Do not install the fix pack until the migration is successful.

#### Installation information:

Installation instructions for the TKLM for z/OS V 1.0 Interim Fix 2 are located in README file, oa29108.pdf, at the following URL:

<ftp://ftp.software.ibm.com/eserver/zseries/zos/tklm/pdf/oa29108.pdf>

The TKLM for z/OS V 1.0 Interim Fix 2 README file references various sections of the TKLM V 1.0 Infocenter, located at the following URL:

<http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/index.jsp?topic=/com.ibm.tklm.doc/welcome.htm>

## Installing the Tivoli Key Lifecycle Manager fix pack.

### Prior to fix pack installation

1. Ensure that Tivoli Key Lifecycle Manager is not being utilized before installing the fix pack. If your facility has a "service maintenance outage" process, consider installing this fix pack during a arrange service outage.
2. A backup of your Tivoli Key Lifecycle Manager server should be performed prior to installing this fix pack. Follow the steps 'Backing up critical files' in the Administering section of the Tivoli Key Lifecycle Manager Product Manuals.

### Instructions

- A. If this is a NEW install of TKLM for z/OS follow the instruction in the "IBM Tivoli Key Lifecycle Manager: Installation and Configuration Guide", chapter "Installing Tivoli Key Lifecycle Manager for z/OS", up to and including step 3, "SMP/E install Tivoli Key Lifecycle Manager for z/OS".

If TKLM for z/OS has previously been installed skip all steps up to an including step 3.

In either case, keep this section of the Installation and Configuration Guide open as we will follow it through the steps below.

- B. Both NEW and PREVIOUS installs should SMP/E install the TKLM for z/OS Interim Fix 2 PTF (APAR OA29108).
- C. Both NEW installs and PREVIOUS installs should follow step 4 to create a directory that will contain the fix pack packages and files. For example, create a directory containing the APAR name so it may easily be identified in the future.

```
mkdir /tklmAparOA29108
```

Note: For PREVIOUS installs DO NOT use the same directory that was used to install the original version of TKLM for z/OS V1 or any of the previous fix packs. The original install directory and all previous fix pack directories must be left in tact as they will be needed by the fix pack install scripts to apply the fix pack.

You must create a new directory for housing and installing the fix pack. It is recommended that a new filesystem be created for this new fix pack directory (mountpoint).

For Sysplex installs, create a new unique directory on every subsystem that contains an instance of TKLM for z/OS. Each directory should be created under its associated subsystem root directory.

For example:

```
mkdir /SYSTEM_NAME/tklmAparOA29108
```

The fix pack must be applied to each instance of TKLM for z/OS in order to bring all members of the Sysplex up to the fix pack level. Ensure that the following 4 steps, D through G, are performed in parallel on each subsystem that contains an instance of TKLM for z/OS.

- D. Both NEW installs and PREVIOUS installs should follow step 5 to give the ssrecfg and ssregrp ID's ownership of the fix pack directory.

```
chown SSRECFG:SSREGRP /tklmAparOA29108
```

- E. Both NEW installs and PREVIOUS installs should follow step 6 to give the ssrecfg and ssregrp ID's read, write, and execute permission of the fix pack directory.

```
chmod 770 /tklmAparOA29108
```

- F. Both NEW installs and PREVIOUS installs should follow step 7 to switch to the ssrecfg user ID.

```
su ssrecfg
```

- G. Both NEW installs and PREVIOUS installs should follow step 8 to copy the fix pack tklm.tar file to the fix pack directory and extract its contents.

```
cd /tklmAparOA29108
cp /usr/lpp/tklm/tklm.tar /tklmAparOA29108/tklm.tar
tar oxvfp tklm.tar
```

- H. NEW installs should copy the 3 DB2 sample SPUFI scripts from the fix pack to a PDS.

```
cp -T /tklmAparOA29108/samples/tklmsql_zos_install.db2
    "'/'TKLM.SPUFI.OA29108(tklmdb2i)'"
cp -T /tklmAparOA29108/samples/tklmsql_zos_uninstall.db2
    "'/'TKLM.SPUFI.OA29108(tklmdb2u)'"
cp -T /tklmAparOA29108/samples/tklmsql_zos_migrate.db2
    "'/'TKLM.SPUFI.OA29108(tklmdb2m)'"
```

Note: PREVIOUS installs should already have a customized version of the sample SPUFI scripts from when Fix Pack 1 was applied and can skip this step.

For New Sysplex installs, if you are running DB2 in datasharing mode between all subsystems within your parallel sysplex, you should only copy the fix pack sample SPUFI scripts to one subsystems PDS.

- I. NEW installs should follow Step 10, 11, and 12 for DB2 setup, SMF setup, and migration preparation. New

installs should not run the sample SPUFI migrate script, tkmlsql\_zos\_migrate.db2.

PREVIOUS installs should already have an updated TKLM Database in place as a result of applying Fix Pack 1 and can skip this step.

Note: For NEW Sysplex installs, if you are running DB2 in datasharing mode between all subsystems within your parallel sysplex, you should only customize and execute the sample SPUFI script on one subsystem.

For NEW installs, the sample SPUFI scripts, tkmlsql\_zos\_install.db2, will create a new TKLM Database with name TKLMDBFP.

- J. NEW installs and PREVIOUS installs that need to create or change their installation parameters (for example the SSRECFG password) should follow step 13 to create a new TKLM response file.

PREVIOUS installs who have a valid TKLM response file may continue to use it to install the fix pack and skip this step.

```
/tklmAparOA29108/bin/createResponseFile.sh
```

Note: For Sysplex installs, if you need to create or change your installation parameters you will need to perform this step on all subsystems.

- K. NEW Installs should follow step 14 to install a new copy of TKLM at this fix pack level.

PREVIOUS installs should instead run the updateTKLM.sh script located within the fix pack.

The -previousVersion flag is a mandatory argument of the updateTKLM.sh script that is used to point to your previous install directory of TKLM for z/OS.

For Interim Fix 2 the previous install directory should be your Fix Pack 1 install directory.

New Installs:

```
/tklmAparOA29108/bin/installTKLM.sh
```

Previous Installs:

```
/tklmAparOA29108/bin/updateTKLM.sh -previousVersion  
/tklmAparOA28422
```

Note: Sysplex installs will need to perform this step on all subsystems.

- L. Optionally both NEW and PREVIOUS installs may follow step 15 to configure file based auditing.

- M. NEW installs should follow steps 16, 17, and 18 for RACF

Keyring setup and to configure SSRE to use available authentication data when an unprotected URI is accessed.

PREVIOUS installs should skip this step.

Note: NEW Sysplex installs will need to perform this step on all subsystems.

Performing the necessary tasks after fix pack installation.

1. Both NEW installs and PREVIOUS installs should verify the fix pack installation by following step 19 and ensuring that TKLM is listed on the ISC Console welcome page at Version 1.0.0.2.
2. A backup of your Tivoli Key Lifecycle Manager server should be performed after installing this fix pack. Follow the steps 'Backing up critical files' in the Administering section of the Tivoli Key Lifecycle Manager Product Manuals.

Note: For additional information on installing TKLM for z/OS within a Parallel Sysplex read the next section of the Tivoli Key Lifecycle Manager Product Manuals, "Installing Tivoli Key Lifecycle Manager on z/OS Parallel Sysplex systems".

Recovering from a failed fix pack installation

Steps for rolling back Tivoli Key Lifecycle Manager for z/OS Version 1, z/OS V1 Release 9, or later.

Instructions

- A. Start an OMVS session and switch to the SSRECFG user ID.

```
su ssrecfg
```

- B. Change directory to the location of the fix pack install directory.

```
cd /tklpmAparOA29108
```

- C. Run the updateTKLM.sh script with the -recover and -previousVersion flags.

The -previousVersion flag is a mandatory argument of the updateTKLM.sh script that is used to point to your previous install directory of TKLM for z/OS.

For Interim Fix 2 the previous install directory should be your Fix Pack 1 install directory.

```
/tklmAparOA29108/bin/updateTKLM.sh -recover  
-previousVersion /tklmAparOA28422
```

Note: For Sysplex installs, steps A,B and C above must be performed on all subsystems that contain an instance of TKLM at the Interim Fix 2 level in order to roll

back to the Fix Pack 1 level.

#### Fix pack installation error conditions

Exit Code - Description - Possible Causes, Recovery Actions

- 2 - Uninstall Failed - The uninstall script failed to uninstall all TKLM components. See the log file in /tklmAparOA29108/logs for more information.
- 3 - TKLM Fix Pack Install Failed - The install script failed to install all TKLM components. See the log file in /tklmAparOA29108/logs for more information.
- 4 - TKLM Database Connection Failure - TKLM's failed to connect to DB2. Ensure that your DB2 user ID has access to the TKLM database and your password is correct.
- 5 - Cannot Create Log File - The TKLM scripts were unable to create a log file in the /tklmAparOA29108/logs directory. Ensure that the /tklmAparOA29108/logs directory is owned by the SSRECFG user ID and SSREGRP group ID, and that the permissions are set to 770 (read, write, and execute for owner and group). Also ensure that you are logged on as the SSRECFG user ID.
- 8 - Cannot Backup Config Files - The TKLM update script failed to backup the TKLM configuration files. Ensure that the /tklmAparOA29108 directory is owned by the SSRECFG user ID and SSREGRP group ID, and that the permissions are set to 770 (read, write, and execute for owner and group). Ensure that the TKLM\_HOME directory within the SSRE config hfs allows the SSRECFG user ID read and write access. Also ensure that you are logged on as the SSRECFG user ID.
- 9 - Cannot Restore Config Files - The TKLM update script failed to restore the TKLM configuration files. Ensure that the /tklmAparOA29108 directory is owned by the SSRECFG user ID and SSREGRP group ID, and that the permissions are set to 770 (read, write, and execute for owner and group). Ensure that the TKLM\_HOME directory within the SSRE config hfs allows the SSRECFG user ID read and write access. Also ensure that you are logged on as the SSRECFG user ID.
- 10 - Log Directory is a File - The TKLM scripts failed to create a log file within the /tklmAparOA29108/logs directory because /tklmAparOA29108/logs is a file, not an actual directory. Rename the /tklmAparOA29108/logs file to something else, and create a new directory named /tklmAparOA29108/logs. This directory should be owned by the SSRECFG user ID and SSREGRP group ID, and the permissions should be set to 770 (read, write, and execute for owner and group).
- 11 - Database Migration Failed - There was a failure with the database migration. See the log file for more information.
- 12 - Invalid TKLM Version - Either the fix pack level you are trying to install or the previous level you are pointing to with the -previousVersion flag is not valid. Execute the /tklmAparOA29108/bin/versionInfo.sh script to ensure you are installing z/OS Service Level: OA29108, and execute the /tklmProductInstall/bin/versionInfo.sh to ensure your previous version is the original version of TKLM for z/OS, z/OS Level: t10\_072.090209.



- 15 - Log Directory Does Not Exist - The TKLM scripts failed to create a log file because the /tklmAparOA29108/logs directory does not exist. Create a new directory named /tklmAparOA29108/logs. This directory should be owned by the SSRECFG user ID and SSREGRP group ID, and the permissions should be set to 770 (read, write, and execute for owner and group).
- 20 - No Response File Found - The TKLM scripts failed to find a response file. Use the -responseFile flag to specify a valid response file, or create a new response file using the /tklmAparOA29108/bin/createResponseFile.sh script.
- 25 - Cannot Create Response File - The createResponseFile.sh script failed to create a response file. Ensure that the directory where you are trying to create the response file is owned by the SSRECFG user ID and SSREGRP group ID, and the permissions are set to 770 (read, write, and execute for owner and group). If no path is specified the default response file will be written to /tklmAparOA29108/bin/tklmInstall.response
- 30 - Cannot Update Response File - The createResponseFile.sh script failed to create a response file. Ensure that the directory where you are trying to create the response file is owned by the SSRECFG user ID and SSREGRP group ID, and the permissions are set to 770 (read, write, and execute for owner and group). If no path is specified the default response file will be written to /tklmAparOA29108/bin/tklmInstall.response
- 35 - Invalid Input - Invalid input was passed to the TKLM script. Run the script again with valid input.
- 40 - Invalid Response File - The response file passed to the TKLM script is not valid. Create a new response file using the /tklmAparOA29108/bin/createResponseFile.sh script.
- 45 - Cannot Create SSRE Product Directory - There was a failure when creating the SSRE product directory. This directory is located within your SSRE config HFS under SSRE\_HOME. Ensure that the SSREGRP group has read, write, and execute permission of the SSRE\_HOME directory.
- 50 - Cannot Create TKLM Product Directory - There was a failure when creating the TKLM product directory. This directory is located within your SSRE config HFS under SSRE\_HOME/products. Ensure that the SSREGRP group has read, write, and execute permission of the SSRE\_HOME/products directory.
- 55 - TKLM\_UI/Server Install Failed - There was a failure when deploying the TKLM binaries within SSRE. Ensure that the SSRE Config HFS is not full and that the SSREGRP group has read, write, and execute permission of the SSRE\_HOME directory. Also ensure that the contents of the /tklmAparOA29108/bin directory are owned by the SSRECFG user ID and SSREGRP group ID, and the permissions are set to 770 (read, write, and execute for owner and group).
- 60 - Cannot Start WAS Server - There was a problem starting SSRE. Ensure that you have specified the correct password for the SSRECFG user ID within the response file or by using the -wasPassword flag. Try stopping SSRE from the console and running the TKLM script again.
- 65 - Cannot Stop WAS Server - There was a problem stopping SSRE. Ensure that the TKLM key server is not busy serving

- keys and attempt to stop SSRE from the console. If SSRE will not stop from the console you may need to cancel it before you can run the TKLM script again.
- 70 - Database Configuration Failure - There was a problem configuring the database connection. Ensure that you have specified the correct DB2 parameters in the response file and that DB2 is started on the system.
  - 75 - Copy Failure - A file copy failed. Ensure that the file system is not full and that the SSRECFG ID has write permission to copy the file to the destination.
  - 80 - Plugin Initialization Failure - The TKLM binaries failed to initialize within SSRE. Ensure that the SSRE Config HFS is not full and that the SSREGRP group has read, write, and execute permission of the SSRE\_HOME directory. Also ensure that the contents of the /tklmAparOA29108/bin directory are owned by the SSRECFG user ID and SSREGRP group ID, and the permissions are set to 770 (read, write, and execute for owner and group).
  - 85 - Invalid Response File - The response file passed to the TKLM script is not valid. Create a new response file using the /tklmAparOA29108/bin/createResponseFile.sh script.
  - 90 - Error In Migration - The EKM to TKLM migration failed. Ensure that the EKM files and configuration is valid.
  - 95 - TKLM Already Installed - A TKLM install failed because TKLM is either installed or in a partially installed state. Use the update script, /tklmAparOA29108/bin/updateTKLM.sh, to update TKLM to the fix pack, or use the uninstall script, /tklmAparOA29108/bin/uninstallTKLM.sh, to uninstall TKLM.
  - 99 - Internal Error - There was an internal error while running the TKLM scripts. See the log file in the /tklmAparOA29108/logs directory for more information.

List of fixes

APAR fixes included in TKLM for z/OS v 1.0 Interim Fix 2

APAR No. Sev. Abstract

IZ56776 3 POTENTIAL DS8000 DEADLOCK AND ISOLATED KEY SERVER (IKS)

APAR fixes included in TKLM for z/OS v 1.0 Fix Pack 1

APAR No. Sev. Abstract

IZ44726 3 ADMINTASK.TKLMKEYEXPORT DOES NOT CLOSE OUTPUT STREAM

IZ44728 3 PASSWORD LENGTH VALIDATION IS NOT DONE FOR TKLMKEYSTOREUPDATE

IZ44844 2 EXPORTING SYMMETRIC KEYS FROM TKLM REQUIRES PRESENCE OF A

IZ45439 3 SSL PORT FAILS TO STAY UP IF SSL CERT ALIAS IS MIXED CASE

IZ45522 3 ADD CHECK TO NOT ALLOW RESTORE FROM VERSION 1.0 TO 1.0.0.1

IZ47216 2 RESTORE FAILS WHEN USING A TKLM BACKUP TAKEN BEFORE DST CHANGE

IZ47241 2 THE EXPORTING OF A PRIVATE KEY TO A PKCS12 KEYSTORE VIA TKLMKEYEXPORT,

EXPORTS ONLY THE CERTIFICATE AND NOT  
THE KEY

OA28640 3 LTO KEY GROUP MODIFY FAILS FOR SELECT GROUPS  
OA28644 3 CKLISMKD SMP/E SAMPLE DOES NOT CREATE  
/USR/LPP/TKLM PATH

IZ49606 3 WHEN USING CLI YOU NEED TO ENCAPSULATE IN  
QUOTE, PARAMETERS THAT CONTAIN SPACES.  
THIS INFORMATION IS NOT IN THE  
DOCUMENTATION.

IZ49678 3 TKLMDEVICEUPDATE COMMAND DOES NOT UPDATE KEY  
ALIAS2 FOR 3592

IZ49679 3 PROVIDE CORRECT ERROR MESSAGE WHEN RUN THE  
TKLMKEYIMPORT COMMAND TO IMPORT A  
SECRET KEY WITH WRONG PRIVATE KEY  
ALIAS.

IZ49680 3 MESSAGE "CTGKM0505I FOUND 1 KEYSTORE(S)" WAS  
NOT DISPLAYED WHEN TKLMKEYSTORELIST  
COMMAND WAS EXECUTED SUCCESSFULLY WITH  
ANY PARAMETER VALUES.

IZ49681 3 TKLMKEYIMPORT COMMAND IMPORTING A PRIVATE KEY  
WITHOUT SPECIFYING THE PASSWORD CAUSES  
MBEANEXCEPTION

IZ49684 3 CERT REMAINS AS SSL DEFAULT EVEN IF DELETED  
FROM THE KEYSTORE

IZ49686 3 FIX TKLMKEYEXPORT ERROR MSG WHEN PATH NOT  
RESOLVABLE

IZ49688 3 GROUPS W/ > 10% KEYS LEFT APPEAR ON HOME PAGE  
IZ49750 3 MAY NOT SEE AN IMPORTED KEY USING EITHER THE  
GUI OR THE TKLMKEYLIST COMMAND

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