Quick start guide for data backup: Backup Archive Client installation for Linux

1 STEP

To install the software, use the root user or sudo rights.

1.1. In order to install Backup Archive Client (BAclient) follow the link and proceed downloading of installation. https://www.deac.eu/support/user-mannuals/installation-files/en/installation-files.html

From the list of files select the tar* format file **without** language abbreviation. Other files in the folder are interface language files that may be used if necessary. The files with README in the name are additional documents and more detailed information about the software.

1.2. Unzip the downloaded archive file.

tar xvf 7.x.x.x-TIV-TSMBAC-LinuxX86.tar

After the installation is finished, the folder and the downloaded installation file can be deleted.

2 STEP

Install the program that may vary to different Linux distributions. Installation packages are available in two different formats: RPM (RHEL, SLES, Centos, etc.) and DEB (Ubuntu, Debian).

2.1. Steps to be taken when choosing the RPM-based installation packages.

2.1.1. Install GSKit packages.
rpm -Uvh gskcrypt64-8.x.x.x.linux.x86_64.rpm gskssl64-8.x.x.x.linux.x86_64.rpm
2.1.2. Install Tivoli Storage Manager API.
rpm -ivh TIVsm-API64.x86_64.rpm
2.1.3. Make a backup installation for Java client, command line client, web client and the documentation*:
rpm -ivh TIVsm-BA.x86_64.rpm
* This document does not cover the configuration of Java web client.

2.2. Steps to be taken when choosing DEB-based installation packages.

2.2.1. Install GSKit packages.
sudo dpkg -i gskcrypt64_8.0-50.40.linux.x86_64.deb gskssl64_8.0-50.40.linux.x86_64.deb
2.2.2. Install Tivoli Storage Manager API.
 sudo dpkg -i tivsm-api64.amd64.deb
2.2.3. Make a backup installation for Java client, command line client, web client and the documentation*:
sudo dpkg -i tivsm-ba.amd64.deb
* This document does not cover the configuration of Java web client.

3 STEP

3.1. Configure BAclient by using prepared configuration file sample. Samples with name **dsm.opt** and **dsm.sys** can be found here: ftp://ftp.backuppro.eu/Linux/BA/v7r1/.

3.2. Copy and save configuration file samples in BAclient folder: /opt/tivoli/tsm/client/ba/bin/

3.3. Configuration file dsm.opt can be left without changes.

```
***************************************************
* This sample opt file is TSM Linux Client version 7.1.1 or higher.
* Replace ? with your parameters!
***************************************************


***************************************************
* custom settings                                 *
***************************************************
*DOMAIN                          "/ /home /data"
DOMAIN                  ALL-local


***************************************************
* Additional settings                             *
***************************************************
SERVERNAME              TSM
COMPRESSALWAYS          YES
```

3.4. Make the necessary corrections in dsm.sys configuration file sample. Fill in fields marked with "?" sign in the **Custom settings** field:

a) **NODENAME:** specify the backup node name, which was automatically assigned in BaaS portal, in the field **TSM Node id**.

b) **TCPSERVERADDRESS:** specify the backup node server address, which was automatically assigned in BaaS portal, in the field **TSM server address.**

Quick Start Guide on using Management (Cloud) portal can be found here.

```
***************************************************
* This sample sys file is TSM Linux Client version 7.1.1 or higher.
* Replace ? with your parameters!
***************************************************


***************************************************
* custom settings                                 *
***************************************************
SERVERNAME              TSM
NODENAME                ?
TCPSERVERADDRESS        ?
```

3.5. **Additional Settings** section is for additional configurations (ssl, cripts, compressions, other "management class"). These settings can be left by default.

```
***************************************
* Additional settings                *
***************************************

**use non default managment class for all data**
*INCLUDE.BACKUP          "*"         OPTIMUM

** Use ENCRYPTION or SSL or both to ensure secure backup data transfer using public data channels **
** We are using ENCRYPTION by default **
ENCRYPTIONTYPE          AES256
ENCRYPTKEY              SAVE
INCLUDE.ENCRYPT         "*"

** We use COMPRESSION by default **
COMPRESSION             YES
INCLUDE.COMPRESSION     "*"

** we do not use ssl by default **
**to use ssl http://www-01.ibm.com/support/knowledgecenter/SSGSG7_7.1.0/com.ibm.itsm.client.doc/t_cfg_
*SSL YES
*SSLDISABLELEGACYTLS YES
*TCPPORT 1443
TCPPORT 1500
```

3.6. **Default Include/Exclude settings** section is for changing exclusion lists. These settings can be left by default.

```
***************************************
* Default Include/Exclude settings    *
***************************************

* Example on how to exclude files + subdirs
*EXCLUDE /opt/oracle_stage/*
*EXCLUDE /opt/oracle_stage/.../*

***************************************
* Files to be sent without client compression
EXCLUDE.COMPRESSION "*.ARC"
EXCLUDE.COMPRESSION "*.arc"
EXCLUDE.COMPRESSION "*.ARJ"
EXCLUDE.COMPRESSION "*.arj"
EXCLUDE.COMPRESSION "*.ASF"
EXCLUDE.COMPRESSION "*.asf"
EXCLUDE.COMPRESSION "*.AVI"
EXCLUDE.COMPRESSION "*.avi"
EXCLUDE.COMPRESSION "*.CAB"
EXCLUDE.COMPRESSION "*.cab"
EXCLUDE.COMPRESSION "*.FXD"
EXCLUDE.COMPRESSION "*.fxd"
EXCLUDE.COMPRESSION "*.FXR"
EXCLUDE.COMPRESSION "*.fxr"
EXCLUDE.COMPRESSION "*.GHO"
EXCLUDE.COMPRESSION "*.gho"
EXCLUDE.COMPRESSION "*.GIF"
EXCLUDE.COMPRESSION "*.gif"
EXCLUDE.COMPRESSION "*.GZ"
EXCLUDE.COMPRESSION "*.gz"
EXCLUDE.COMPRESSION "*.IMG"
EXCLUDE.COMPRESSION "*.img"
EXCLUDE.COMPRESSION "*.JAR"
EXCLUDE.COMPRESSION "*.jar"
EXCLUDE.COMPRESSION "*.JPG"
EXCLUDE.COMPRESSION "*.jpg"
EXCLUDE.COMPRESSION "*.LHA"
EXCLUDE.COMPRESSION "*.lha"
EXCLUDE.COMPRESSION "*.LZH"
EXCLUDE.COMPRESSION "*.lzh"
EXCLUDE.COMPRESSION "*.MP3"
EXCLUDE.COMPRESSION "*.mp3"
EXCLUDE.COMPRESSION "*.MPEG"
EXCLUDE.COMPRESSION "*.mpeg"
EXCLUDE.COMPRESSION "*.PDF"
EXCLUDE.COMPRESSION "*.pdf"
EXCLUDE.COMPRESSION "*.PST"
EXCLUDE.COMPRESSION "*.pst"
EXCLUDE.COMPRESSION "*.RAR"
EXCLUDE.COMPRESSION "*.rar"
EXCLUDE.COMPRESSION "*.SXC"
EXCLUDE.COMPRESSION "*.sxc"
EXCLUDE.COMPRESSION "*.SXD"
EXCLUDE.COMPRESSION "*.sxd"
EXCLUDE.COMPRESSION "*.SXG"
EXCLUDE.COMPRESSION "*.sxg"
EXCLUDE.COMPRESSION "*.SXI"
EXCLUDE.COMPRESSION "*.sxi"
EXCLUDE.COMPRESSION "*.SXM"
EXCLUDE.COMPRESSION "*.sxm"
EXCLUDE.COMPRESSION "*.SXW"
EXCLUDE.COMPRESSION "*.sxw"
EXCLUDE.COMPRESSION "*.TAR"
EXCLUDE.COMPRESSION "*.tar"
EXCLUDE.COMPRESSION "*.TIF"
EXCLUDE.COMPRESSION "*.tif"
EXCLUDE.COMPRESSION "*.TGZ"
EXCLUDE.COMPRESSION "*.tgz"
EXCLUDE.COMPRESSION "*.WMA"
EXCLUDE.COMPRESSION "*.wma"
EXCLUDE.COMPRESSION "*.ZIP"
EXCLUDE.COMPRESSION "*.zip"
EXCLUDE.COMPRESSION "*.7z"
EXCLUDE.COMPRESSION "*.7Z"
```

3.7. **Default settings** section is for default configuration parameters. These settings can be left by default.

```
**********************************************
* Default settings                           *
**********************************************

TCPBUFFSIZE              512
TCPWINDOWSIZE            255
TXNBYTELIMIT             102400
REVOKEREMOTEACCESS       ACCESS

PASSWORDACCESS           GENERATE

QUERYSCHEDPERIOD         6
SCHEDMODE                POLLING

ERRORLOGNAME             "/opt/tivoli/tsm/client/ba/bin/dsmerror.log"
ERRORLOGRETENTION        30 D

SCHEDLOGNAME             "/opt/tivoli/tsm/client/ba/bin/dsmsched.log"
SCHEDLOGRETENTION        30 D
```

4 STEP

In order to save the password locally and for creating automatic data backup it is necessary to connect to the program. Also, for safety reasons, it is necessary to change default password.
4.1. When connecting for the first time enter user id and password.

a) **User id:** TSM Node id or node name. It was given in clause 3.4. so keep it unchanged.

b) **Password:** Node password that was generated automatically when creating new node in BaaS portal.

Quick Start Guide on using Management (Cloud) portal can be found here.

4.2. Run tsm command line program, which provides information on the parameters of the session with the server:
dsmc q ses
4.3. Change password by entering current password and then entering new password:
dsmc set password

5 STEP

5.1. Set and configure the setup for creating data backup schedule that may vary to different Linux distributions.
5.2. Steps to be taken when configuring the system service "dsmcad". We recommend using "dsmcad" in the following cases:
a) when using Linux distributions with the RPM-based installation package.
b) when using configuration file sample.
c) when not using ssl for connection with the backup server.

5.2.1. Add service with default settings for those system services that are launched automatically.
chkconfig --add dsmcad
5.2.2. Restart the service.
service dsmcad restart

5.3. Steps to be taken when configuring data backup schedule with system process "dsmc sched". We recommend using "dsmc sched" in the following cases:
- a) when using Linux distributions with DEB-based installation package.
- b) when not using dsmcad service.
- c) when using ssl for connection with backup server.

Execute the command:

dsmc sched

5.3.1. In case of using "dsmc schedule" process, it is necessary to delete or comment the default setting "managedservices schedule" of the configuration file dsm.sys (see Step 3) by adding at the beginning of the line * or by replacing it with "managedservices webclient", in case of using tsm web client.

5.3.2. In order to run the process with its staring at the same time, several technique may be used:
- a) by creating rc script.
- b) by adding system startup file /etc/inittab.

    TSM::once:/usr/bin/dsmc sched > /dev/null 2>&1 # TSM scheduler
- c) by adding system startup file /etc/rc.local.

    /usr/bin/dsmc sched > /dev/null 2>&1 &

Warning. In order to activate changes, it is necessary to restart process **"**dsmc schedule" each time when changing TSM client configurations.

6 STEP

6.1. Make a backup copy to random folder in order to check whether the system works correctly and to enter and save the encryption key.
- a) For successful creation of automated data backup with switched encryption, it is necessary to specify the encryption key. Encryption key will be required at the first backup time.

- b) Make a manual data backup by using the command line dsmc. For example, run the incremental backup for folder /root/, its sub-folder and for their files by using Linux console:

dsmc Incremental /root/ -subdir=yes

6.2. Enter encryption key.

Warning. Keep the encryption key in a safe place, as no data will be available without a key!

7 STEP (optional)

Data restore by using command line dsmc

7.1. Possible action sequences:

- a) To run BAclient and then execute commands.
- b) To run BAclient with already defined parameters.

The discharge list of available backups in the directory "/root /".
The system will show only last actual versions.

dsmc query backup /root/

The discharge list of available backups in the directory "/root /".
The system will show also inactive (deleted, changes) actual versions.

dsmc query backup /root/ -inactive

The discharge list of available backups in the directory "/root /" and subdirectories.
The system will show only last actual versions.

```
dsmc query backup /root/ -subdir=yes
```

Restore the active version of a file.
The system will make a restore and will report about status changing.

```
dsmc restore /root/error.log
```

Open restoration interface, where all active and inactive files are available in the directory "/root/".
The necessary files can be selected and restored.

```
dsmc restore -pick -inactive /root/
```

More information in IBM documentation here.