

# A TSM rendszergazda szerszámosládája

Kósa Barna

Etalon-Informatika Kft.

[barna.kosa@etaloninfo.hu](mailto:barna.kosa@etaloninfo.hu)

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# Operációs rendszer parancsok

## Linux

- lsscsi
- mtx
- mt-st

## Mikor használjuk:

- üzembehelyezés
- hibakeresés

# Operációs rendszer parancsok

## Szalagkönyvtár eszközfájlok kilistázása

```
# lsscsi -g
```

[0:0:0:0]	disk	LSILOGIC	1030	IM	1000	/dev/sda	/dev/sg0
[0:1:0:0]	disk	IBM-ESXS	ST973401LC	FN	B41A	-	/dev/sg1
[0:1:1:0]	disk	IBM-ESXS	ST973401LC	FN	B41A	-	/dev/sg2
[3:0:0:0]	mediumx	IBM	03584L32		0104	-	/dev/sg7
[3:0:1:0]	tape	IBM	ULT3580-TD5		0104	-	/dev/sg3
[3:0:2:0]	tape	IBM	ULT3580-TD5		0104	-	/dev/sg4
[3:0:3:0]	tape	IBM	ULT3580-TD5		0104	-	/dev/sg5
[3:0:4:0]	tape	IBM	ULT3580-TD5		0104	-	/dev/sg6

# Operációs rendszer parancsok

## Szalagkönyvtár lekérdezése

```
# mtx -f /dev/sg7 status
```

```
Storage Changer /dev/sg7:4 Drives, 44 Slots ( 4 Import/Export )
```

```
Data Transfer Element 0:Empty
```

```
Data Transfer Element 1:Empty
```

```
Data Transfer Element 2:Empty
```

```
Data Transfer Element 3:Empty
```

```
Storage Element 1:Full :VolumeTag=E01001L4
```

```
Storage Element 2:Full :VolumeTag=E01002L4
```

```
Storage Element 3:Full :VolumeTag=E01003L4
```

```
.....
```

```
Storage Element 41 IMPORT/EXPORT:Empty
```

```
Storage Element 42 IMPORT/EXPORT:Empty
```

```
Storage Element 43 IMPORT/EXPORT:Empty
```

```
Storage Element 44 IMPORT/EXPORT:Empty
```

# Operációs rendszer parancsok

## Szalagkönyvtár vezérlése

```
# mtx -f /dev/sg7 load 1 0
```

```
# mtx -f /dev/sg7 unload 1 0
```

```
# mtx -f /dev/sg7 transfer 1 41
```



# Nem támogatott TSM parancsok

<http://www.lascon.co.uk/tsm-show-commands.php>

## SHOW Commands

- kliens
- szerver

# Nem támogatott TSM parancsok

## Kliens SHOW parancsok

```
tsm>show options
```

```
        SCHEDLOGNAME: dsmsched.log
```

```
        SCHEDLOGRETENTION: 7, D
```

```
        SCHEDMODE: PROMPTED
```

```
# dsmc show session | grep -i dedup
```

```
47 - server supports chunk protocol - Distributed  
deduplication
```

```
35 - client supports Distributed deduplication
```



# Nem támogatott TSM parancsok

## Szerver SHOW parancsok

```
tsm>show slots lib1
```

```
Device                : /dev/IBMchanger0
```

```
Drive    0, element 1
```

```
Drive    1, element 2
```

```
Drive    2, element 3
```

```
Drive    3, element 4
```

```
Changer 0, element 704
```

```
ImpExp 0, element number 768
```

```
ImpExp 1, element number 769
```

```
ImpExp 2, element number 770
```

```
ImpExp 3, element number 771
```

```
Slot 0, status Allocated, element number 1024, barcode present, barcode value  
<E01001L4>, devT=LTO,mediaT=427, elemT=ANY
```

```
Slot 1, status Allocated, element number 1025, barcode present, barcode value  
<E01002L4>, devT=LTO,mediaT=427, elemT=ANY
```

```
Slot 2, status Allocated, element number 1026, barcode present, barcode value  
<E01003L4>, devT=LTO,mediaT=427, elemT=ANY
```

# Ingyenes szoftverek

<http://www.spiritsoftware.biz/category/downloads/>

TSM Console Manager

TSM Script Editor

# TSM Console Manager

Console - TSM1 - Spirit Software Solutions TSM Console Manager - v3.0.0.0

TSM Console Manager

Exit Add Server User Profiles Add Group Filters Exclude Current Message Color Filter Pause Submit Command Font Control Look and Feel Settings Option Files Configure Check For Updates About Spirit Software Web Site Help and Info

TSM Servers TSM Server Groups Filters Control Configure Help and Info

TSM Servers

Groups  
Servers  
TSM1 - (Linux/x

Console - TSM1

Server	Message Time	Message Number	Message
TSM1	9/14/2013 7:51:31 PM		IBM Tivoli Storage Manager
TSM1	9/14/2013 7:51:31 PM		Command Line Administrative Interface - Version 6, Release 4, Level 0.1
TSM1	9/14/2013 7:51:31 PM		(c) Copyright by IBM Corporation and other(s) 1990, 2012. All Rights Reserved.
TSM1	9/14/2013 7:52:07 PM		Session established with server TSM1: Linux/x86_64
TSM1	9/14/2013 7:52:07 PM		Server Version 6, Release 3, Level 4.0
TSM1	9/14/2013 7:52:07 PM		Server date/time: 09/14/2013 19:51:21 Last access: 09/14/2013 19:50:40
TSM1	9/14/2013 7:57:16 PM	ANR8325I	Dismounting volume E01024L4 - 60 minute mount retention expired.
TSM1	9/14/2013 7:57:16 PM	ANR8336I	Verifying label of LTO volume E01024L4 in drive DRV1 (/dev/IBMtape0).
TSM1	9/14/2013 7:57:16 PM	ANR8468I	LTO volume E01024L4 dismounted from drive DRV1 (/dev/IBMtape0) in library LIB1.

# TSM konzol naplózása

tsmconsole

```
dsmadm -id=admin -pa=xxxx -console | awk 'BEGIN { c = "date \"+%Y-%m-%d %T\""; } { m=$0; c | getline; close( c ); print $0, m; }' | grep -v -f /root/bin/pattern.txt | tctee -u -a /var/log/tsm/tsmconsole.log
```

```
# tail -f /var/log/tsm/tsmconsole.log
```

013-09-14 21:18:24 ANR0984I Process 14 for COPY ACTIVATEDATA started in the BACKGROUND at 09:18:24 PM.

2013-09-14 21:18:24 ANR2110I COPY ACTIVATEDATA started as process 14.

2013-09-14 21:18:24 ANR1178I Copying active files from primary storage pool BACK1 to active data pool ACTD1 started as process 14.

2013-09-14 21:18:24 ANR1189I Removable volume E01028L4 is required for copying active data.

2013-09-14 21:18:33 ANR8337I LTO volume E01016L4 mounted in drive DRV1 (/dev/IBMtape0).



# TSM activity log archiválása

```
# tsmcli q actlog begindate=today-2 enddate=today-1 | tee  
actlog_2013-09-13.txt
```

```
09/14/13    00:00:07    ANR2102I Activity log pruning started: removing entries  
              prior to 09/13/2013 12:00:00 AM.
```

```
09/14/13    00:00:08    ANR2561I Schedule prompter contacting CENT1_ORCL  
(session  
              139) to start a scheduled operation. (SESSION: 4)
```

```
09/14/13    00:00:09    ANR8218W Unable to resolve address for  
sol1.etaloninfo.hu.  
              (SESSION: 4)
```

```
09/14/13    00:00:09    ANR0403I Session 139 ended for node CENT1_ORCL ().  
              (SESSION: 4)
```

```
09/14/13    00:00:09    ANR0406I Session 140 started for node CENT1_ORCL  
(Linux86)  
              (Tcp/Ip cent1.etaloninfo.hu(26671)). (SESSION: 140)
```

# TSM szkriptek

## Szkriptek létrehozása fájlból

```
>define script djobstart file='/work/djobstart.src'  
>define script djobstop file='/work/djobstop.src'
```

## Szkript módosítása

### Forrás fájl szerkesztése

```
>delete script djobstart  
>define script djobstart file='/work/djobstart.src'
```



# TSM szkriptek

## SQL query

<http://inhalt.serviert.de/wissen/ibm/sql-queries-tivoli-storage-manager-tsm-5.5-tsm-6.1>

<http://thobias.org/tsm/sql/>

```
>select volume_name, node_name, filespace_name,  
file_name from contents where node_name='ATOM1'  
and filespace_name like '/' and file_name like  
'/etc/hosts'
```

```
VOLUME_NAME: ARCS03L2  
NODE_NAME: ATOM1  
FILESPACE_NAME: /  
FILE_NAME: /etc/hosts
```

# A DB2 közvetlen lekérdezése

```
$ db2 connect to tsmdb1
```

```
$ db2 LIST TABLES for all
```

```
$ db2 LIST TABLES for schema TSMDB1
```

Table/View	Schema	Type	Creation time
-----	-----	-----	-----
ACTIVITY_LOG	TSMDB1	T	2011-01-04-15.51.18.145843
ACTIVITY_SUMMARY	TSMDB1	T	2011-01-04-15.51.19.384490
ACTIVITY_SUMMARY_VIEW	TSMDB1	V	2013-09-14-22.48.16.748289
ACTLOG	TSMDB1	V	2013-09-14-22.47.45.269105
ADMINISTRATORS	TSMDB1	T	2011-01-04-15.51.13.904132
ADMINS	TSMDB1	V	2013-09-14-22.47.48.631578
.....	.....	.....	.....

# A DB2 közvetlen lekérdezése

```
$ db2 describe table TSMDB1.MMS_DRIVES
```

Column name	Data type		Column		
	schema	Data type name	Length	Scale	Nulls
LIBNAME	SYSIBM	VARCHAR	31	0	No
DRIVENAME	SYSIBM	VARCHAR	31	0	No
DEVICE	SYSIBM	VARCHAR	65	0	Yes
DEVTYPE	SYSIBM	INTEGER	4	0	No
.....					
ONLINE	SYSIBM	INTEGER	4	0	No
.....					
WWN	S.YSIBM	VARCHAR	17	0	Yes
SERIAL	SYSIBM	VARCHAR	65	0	Yes

# TSM CLI

Linux, AIX

tsmcli

```
dsmadm -id=support -pa=password -dataonly=yes $*
```

```
# tsmcli q mount
```

```
ANR8329I LTO volume E01028L4 is mounted R/O in drive  
DRV1 (/dev/IBMtape0), status: IDLE.
```

```
ANR8329I LTO volume E01011L4 is mounted R/W in drive  
DRV4 (/dev/IBMtape3), status: IDLE.
```

# TSM CLI

Windows + Cygwin

tsmcli

```
cd /cygdrive/c/Program\  
Files/Tivoli/tsm/server/tsmdiag/  
eval "./dsmadm.exe -id=support -pa=password  
-dataonly=yes $*"   
cd - > /dev/null
```



# TSM CLI

Ugyanazt a műveletet kell elvégezni többször

```
# tsmcli q vol access=readonly
```

E01009L4	BACK1	LTOCLASS1	20.0 G	33.0	Filling
E01016L4	ACTD1	LTOCLASS1	28.9 G	72.0	Filling

```
# tsmcli q vol access=readonly | awk '{print $1}' | while read VOL
```

```
> do
```

```
> tsmcli update vol $VOL access=readwrite
```

```
> done
```

```
ANR2207I Volume E01009L4 updated.
```

```
ANR2207I Volume E01016L4 updated.
```

```
# tsmcli q vol | grep -e E01009L4 -e E01016L4
```

E01009L4	BACK1	LTOCLASS1	20.0 G	33.0	Filling
E01016L4	ACTD1	LTOCLASS1	28.9 G	72.0	Filling



# Több TSM szerver felügyelete

## Command routing

```
tsm: TSM1>cent63: q status
```

```
NR1699I Resolved CENT63 to 1 server(s) - issuing command Q  
STATUS against server(s).
```

```
ANR1687I Output for command 'Q STATUS' issued against server  
CENT63 follows:
```

```
Storage Management Server for Linux/x86_64 - Version 6,  
Release 3, Level 3.0
```

```
Server Name: CENT63
```

```
Server host name or IP address:
```

```
Server TCP/IP port number: 1500
```

```
Crossdefine: Off
```

```
Server Password Set: Yes
```

# Több TSM szerver felügyelete

tsm

SERVER=\$1

ADMIN=\$( grep \$SERVER \$PASSWORD\_FILE | awk '{print \$2}' )

PASSWORD=\$( grep \$SERVER \$PASSWORD\_FILE | awk '{print \$3}' )

```
if [ "$SERVER" == "" ]; then
    echo "No server specified"
    exit 1
```

```
else
```

```
    dsmadm -id=$ADMIN -pa=$PASSWORD -se=$SERVER
```

```
fi
```

# Több TSM szerver felügyelete

dsm.sys

SErvername	tsm1
COMMMethod	TCPip
TCPPort	1500
TCPServeraddress	192.168.0.234
Passwordaccess	GENERATE
SErvername	tsm2
COMMMethod	TCPip
TCPPort	1500
TCPServeraddress	192.168.0.235
Passwordaccess	GENERATE
.....	

# TSM monitorozás

A PATH állapotok figyelés

```
$ dsmadm -id=nagios -pa=xxxx -dataonly=y "query path"
```

A lekérdezések nyomot hagynak az activity log-ban

```
tsm: TSM1>q actlog begintime=now-00:01
```

Date/Time

Message

```
-----  
09/14/13 23:30:35 ANR2017I Administrator ADMIN issued command: QUERY  
PATH (SESSION: 48)  
09/14/13 23:30:51 ANR2017I Administrator ADMIN issued command: QUERY  
ACTLOG begintime=now-00:01 (SESSION: 48)
```

# TSM monitorozás

További lehetőségek

- üzenetek küldése syslog-ba
- e-mail küldése
- SNMP trap küldése



# TSM monitorozás nyomok nélkül

## TSM drive állapot lekérdezése

```
$ db2 describe table TSMDB1.MMS_DRIVES
```

Data type		Column			
Column name	schema	Data type name	Length	Scale	Nulls
LIBNAME	SYSIBM	VARCHAR	31	0	No
DRIVENAME	SYSIBM	VARCHAR	31	0	No
DEVICE	SYSIBM	VARCHAR	65	0	Yes
DEVTYPE	SYSIBM	INTEGER	4	0	No
ELEMENT	SYSIBM	INTEGER	4	0	Yes
.....					
ONLINE	SYSIBM	INTEGER	4	0	No
.....					
OWNER	SYSIBM	VARCHAR	65	0	Yes
.....					
WWN	SYSIBM	VARCHAR	17	0	Yes
SERIAL	SYSIBM	VARCHAR	65	0	Yes



# TSM monitorozás nyomok nélkül

Query PATH

```
$ db2 "select LIBRARY,DEVICE,ONLINE from  
TSMDB1.NA_PATH" | grep -v "\-" | awk  
'{print $1,$2,$3}'
```

LIBRARY	DEVICE	ONLINE
---------	--------	--------

LIB1	/dev/IBMtape2	1
------	---------------	---

LIB1	/dev/IBMtape3	1
------	---------------	---

LIB1	/dev/IBMtape0	1
------	---------------	---

LIB1	/dev/IBMtape1	1
------	---------------	---

# TSM monitorozás nyomok nélkül

Query DRIVE

```
$ db2 "select LIBNAME,DRIVENAME,ONLINE  
from TSMDB1.MMS_DRIVES" | grep -v "\-"  
| awk '{print $1,$2,$3}'
```

LIBNAME	DRIVENAME	ONLINE
---------	-----------	--------

LIB1	DRV1	1
------	------	---

LIB1	DRV2	1
------	------	---

LIB1	DRV3	1
------	------	---

LIB1	DRV4	1
------	------	---

# TSM monitorozás nyomok nélkül

```
$ ssh nagios@tsm1 su - tsm -c "db2 connect  
to tsmdb1; db2 \"select  
LIBNAME,DRIVENAME,ONLINE from  
TSMDB1.MMS_DRIVES\" | grep -v \"\|-\" | awk  
'{print $1,$2,$3}'"
```