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ENTERPRISE LEVEL **STORAGE OS**
for EVERY BUSINESS

Remote Snapshot Control with API of Data Storage Software V6



DSS V6
DATA STORAGE SOFTWARE

16 TB



Easy to use, GUI based management provides performance and security.



Reliable disk based backup and recovery, along with Snapshot capability enable fast and reliable backup and restore.



Easy to implement remote Replication, at block or volume level, enables cost-effective disaster recovery.



IP based storage management combines NAS and iSCSI functionality for centralized storage and storage consolidation.

Software Version: DSS ver. 6.00 up10

Presentation updated: October 2010

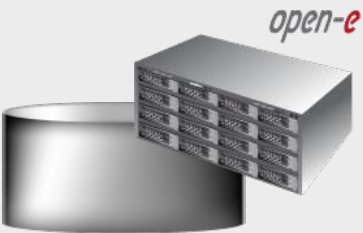
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TO SET UP REMOTE SNAPSHOT CONTROL WITH API, PERFORM THE FOLLOWING STEPS:

1. Download and install OpenSSH for Windows
2. Create an iSCSI Logical Volume with Snapshot
3. Settings API configuration on DSS V6
4. Issue the „snapshot_task“ command with „start“, „status“ and „stop“ options

NOTE:

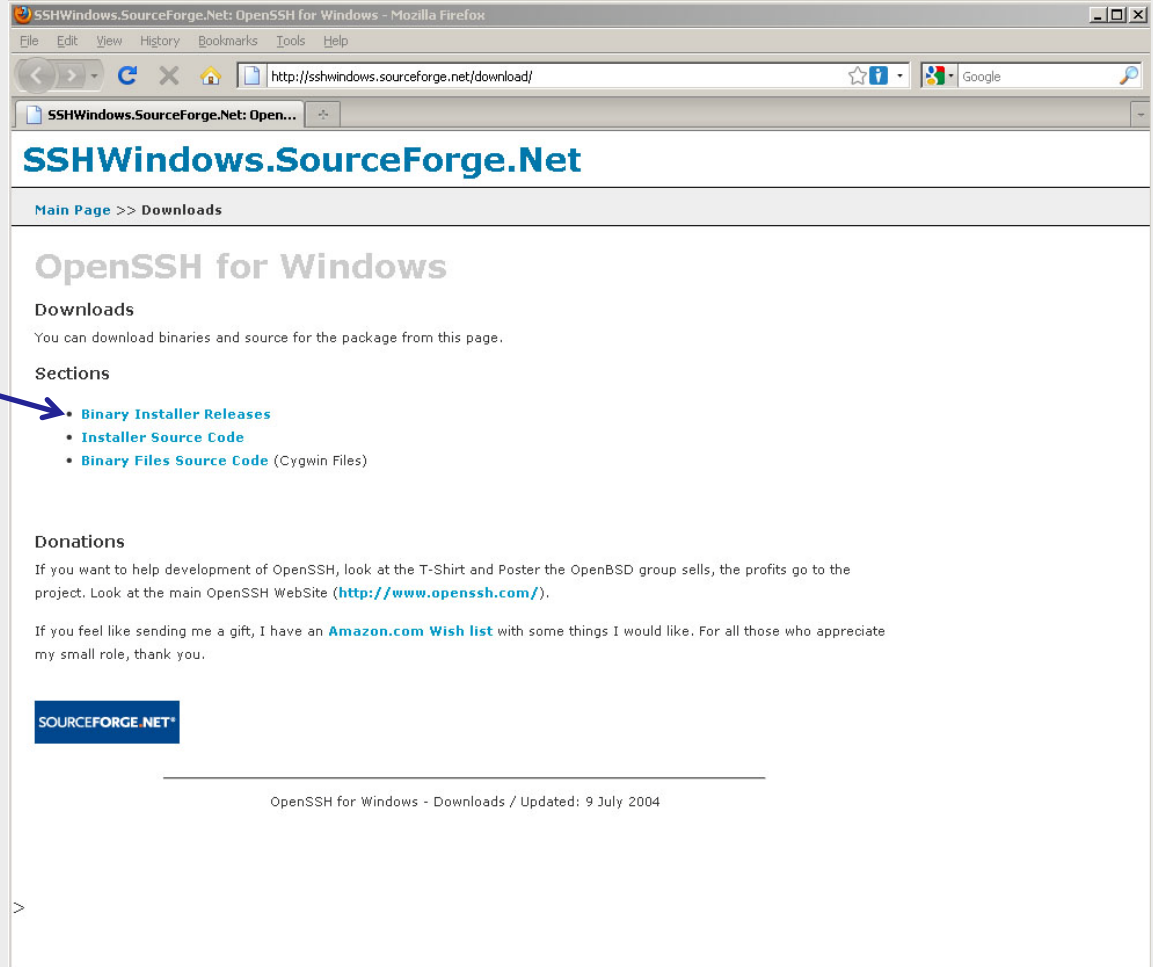
You must use DSS V6 up10 build 3719 or newer

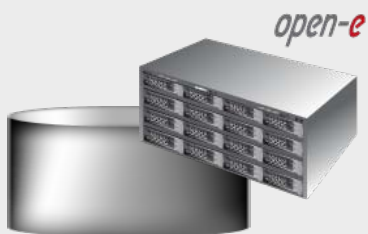


Data Storage Software (DSS)
Address IP:192.168.0.220

1. Download and install OpenSSH for Windows

Download OpenSSH from <http://sshwindows.sourceforge.net/download/> and install on your PC.

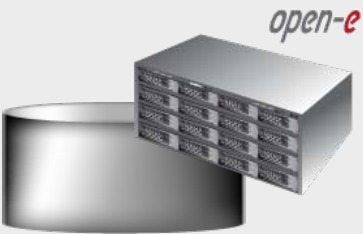




Data Storage Software (DSS)
Address IP:192.168.0.220

2. Create iSCSI Logical Volume with Snapshot

After logging on the DSS V6 please go to „CONFIGURATION“ tab, **Volume manager** and Vol. groups. Next select the appropriate volume group (vg00) from the list on the left and in **Volume manager** function create a new iSCSI volume of the required size. In order to confirm click **apply** button.



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Address IP:192.168.0.220

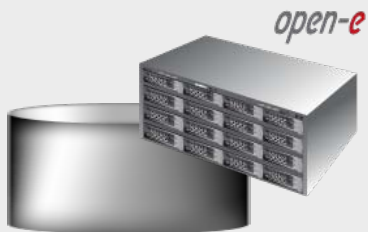
2. Create iSCSI Logical Volume with Snapshot

After reloading the page in the field Action select "new snapshot" of the required size (in this example 10 Gb), and click apply button.

The screenshot shows the open-e web interface for Data Storage Software V6. The navigation menu includes SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is 'Volume manager' under 'CONFIGURATION > volume manager > Vol. groups > vg00'. A message indicates that logical volume lv0000 has been created successfully. A table lists logical volumes and system volumes:

Logical Volume	Type	Snap.	Rep.	Init.	Blocksize (bytes)	Size (GB)
lv0000	B				N/A	100.00
System volumes						
Reserved Pool						4.00
Reserved for snapshots						0.00
Reserved for system						1.00
Reserved for replication						0.00
Free						360.72

Below the table, the 'Action' dropdown is set to 'new snapshot' and the 'Assign to volume' dropdown is set to 'Just create snapshot volume'. A slider shows the current size of the free space, and the 'add:' field is set to '10.00 GB'. The 'apply' button is visible at the bottom right.



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2. Create iSCSI Logical Volume with Snapshot

Next in Snapshot definition function assign appropriate logical volume (in this example lv0000) , and click **apply** button.

HINT:

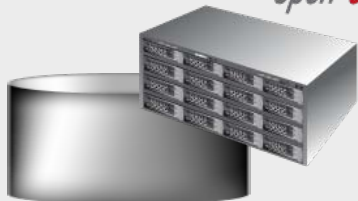
For additional details about creating targets for the logical volume and the snapshot volume, please refer to the documents in the How-to Resources section on the web.

The screenshot shows the open-e web interface for configuring storage. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The current page is 'CONFIGURATION > volume manager > Vol. groups > vg00'. The main content area is divided into several sections:

- Vol. groups:** Shows a tree view with 'vg00' selected.
- Vol. replication:** Shows options for 'Use volume replication' and 'WORM', both unchecked.
- Reserved for snapshots:** 10.00
- Reserved for system:** 1.00
- Reserved for replication:** 0.00
- Free:** 350.72
- Action:** A dropdown menu set to 'new NAS volume'.
- add:** A text input field containing '0.00' followed by 'GB'.
- apply:** A red button.
- Snapshot definition:** A table with columns 'Name', 'LV', and 'Status'. It contains one entry: 'snap00000' with 'lv0000' in the 'LV' column and 'unused' in the 'Status' column. Below the table is an 'apply' button and a note: 'Please apply changes or press "reload" button to discard'.

At the bottom, there is an 'Event Viewer' icon and the text 'Data Storage Software V6 - All rights reserved'.

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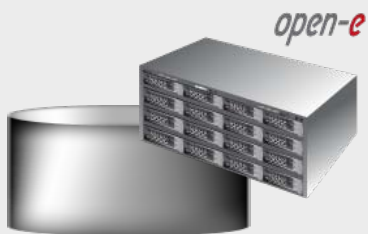
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3. Settings API configuration on DSS V6

Next please go to „SETUP” tab, „administrator”. In API Configuration function, check box „Use API” and in field „Password”, please enter the Password and retype password. In order to confirm click **apply** button.

After reloading page, click on „Show advanced”

The screenshot shows the open-e web interface. At the top, there is a navigation bar with tabs for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is the SETUP tab, and the user is logged in as administrator. The main content area displays three configuration panels: UPNP settings, Remote console access, and API Configuration. The API Configuration panel is expanded, showing the following options: Use API (checked), Allow IP: (empty text field), Set port: (22223), Password: (masked with dots), and Confirm password: (masked with dots). There is a "Show advanced >>" link and an "apply" button at the bottom of the panel. A footer message reads: "Please apply changes or press 'reload' button to discard".



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3. Settings API configuration on DSS V6

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DATA STORAGE SOFTWARE V6

SETUP CONFIGURATION MAINTENANCE STATUS HELP

You are here: SETUP > administrator

Remote access set

apply

API Configuration

Use API

Allow IP:

Set port:

Password:

Confirm password:

Hide advanced <<

Please generate and download a key if you want to use the API functionality without a password.

1. Generate and download new key by clicking "Generate and download"

2. Download already existing key by clicking "Download"

generate and download

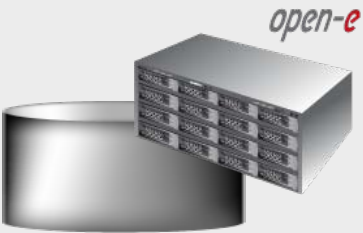
download

apply

Event Viewer:

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Please click on **generate and download** button.



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3. Settings API configuration on DSS V6

Next, save the generated key into a local folder, e.g. C:\API.

The screenshot shows the open-e web interface for Data Storage Software V6. The navigation menu includes SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is 'Remote access settings' with an 'apply' button. The 'API Configuration' section is active, showing options to use the API, set an allow IP, port (22223), and password. A 'Hide advanced <<' link is visible. Below the configuration, there are instructions: '1. Generate and download new key by...' and '2. Download already existing key by...'. A file dialog box is open, showing a key file 'A0000031_20091014224847.key' being downloaded from 'https://192.168.0.220'. The dialog asks 'What should Firefox do with this file?' and 'Save File' is selected. An 'apply' button is at the bottom of the configuration panel.

Syntax examples for the SSH command using the key:

```
ssh -i path_to_the_downloaded_key -2 -p 22223 -l api ip_address command
```

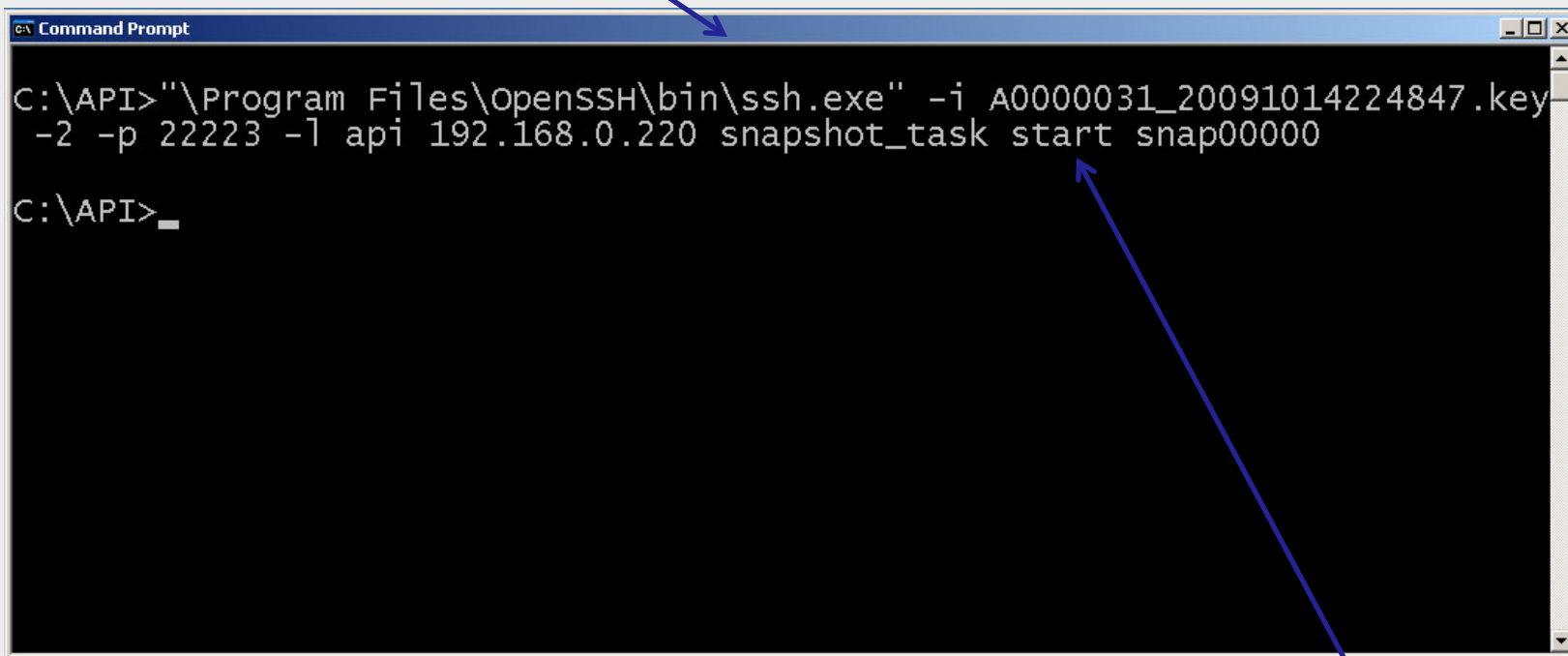
- option: **-i** sets the path to the downloaded key file,
- option: **-2** sets the version of the SSH protocol used for the connection,
- option: **-p** sets the connection port (default: 22223),
- option: **-l** sets the user (the user must be **api**),
- option: **ip_address** sets the IP address of the storage server you want to connect to,
- option: **command**; the command consist of the command name and optional parameters and optional object names.

HINT:

In order to list the full command set, please issue the 'help' command. If you enter a command with missing parameters or missing object name thy system will prompt with full syntax of the command. Once complete command is entered it will run at once and non- interactive. A user script with API commands must be executed first on a testing system, not on a production system.

Please run the DOS command prompt box and change directory to the directory where you have saved the key, e.g.: C:\API

4. Issuing „snapshot_task” command with „start”, „status” and „stop” options

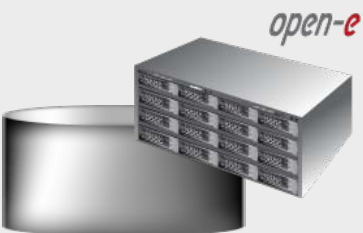


```
C:\API>"\Program Files\OpenSSH\bin\ssh.exe" -i A0000031_20091014224847.key  
-2 -p 22223 -l api 192.168.0.220 snapshot_task start snap00000  
C:\API>_
```

HINT:

Entering the command line, please use the tab key for auto-complete of the program and key path or name

Please enter the "snapshot_task" API command with "start" option



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4. Issuing „snapshot_task” command with „start”, „status” and „stop” options

Please check the snapshot status in GUI menu: **STATUS** tab, **Tasks**. It must show "in use/active".

The screenshot displays the open-e web interface. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The current page is 'STATUS > tasks > Snapshots'. The 'Tasks' sidebar menu is expanded to show 'Snapshots' selected. The 'Running tasks' table shows the following data:

Name	Type	Start time
▼ snap00000	Snapshot	2009-10-14 22:51:12

Below the table, the task details are shown:

LV: lv0000
Status: **in use/active**
Size: 10.00 GB
Usage: 0.01%

The 'Tasks log' table shows the following data:

Time	Name	Type	Status	Action
▼ 2009-10-14 22:51:29	snap00000	Snapshot	OK	Started
▼ 2009-10-14 22:50:41	snap00000	Snapshot	OK	Stopped
▼ 2009-10-14 22:50:03	snap00000	Snapshot	OK	Started

You can check the snapshot status with the following API command: "snapshot_task" with option "status".

4. Issuing „snapshot_task" command with „start", „status" and „stop" options

```
C:\API>"\Program Files\OpenSSH\bin\ssh.exe" -i A0000031_20091014224847.key  
-2 -p 22223 -l api 192.168.0.220 snapshot_task status snap00000  
active  
C:\API>_
```

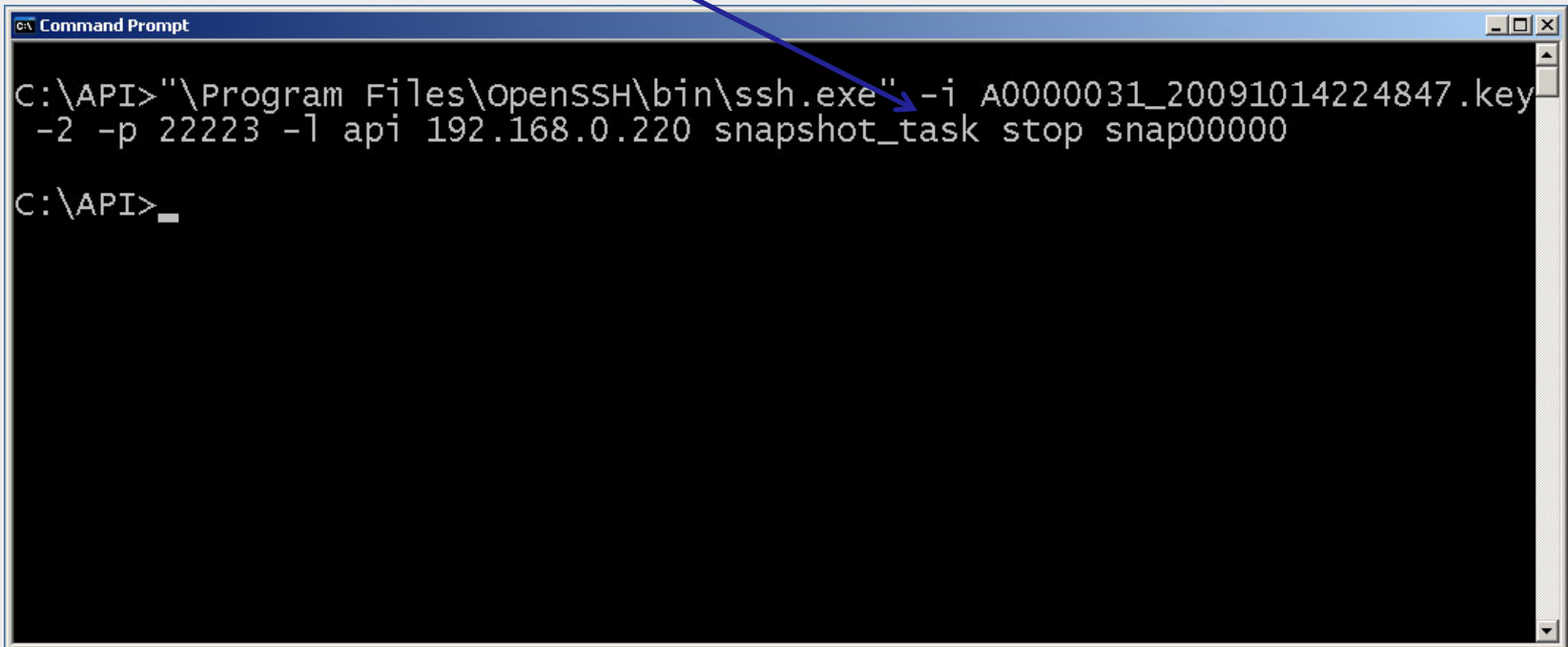
HINT:

Entering the command line please use tab key for auto-complete of the program and key path or name

The API command "snapshot_task status" returns status: "active"

In order to stop the snapshot remotely, please issue „snapshot_task” command with option „stop”

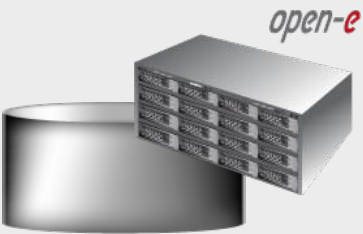
4. Issuing „snapshot_task” command with „start”, „status” and „stop” options



```
C:\API>"\Program Files\OpenSSH\bin\ssh.exe" -i A0000031_20091014224847.key  
-2 -p 22223 -l api 192.168.0.220 snapshot_task stop snap00000  
C:\API>_
```

HINT:

Entering the command line please use tab key for auto-complete of the program and key path or name



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4. Issuing „snapshot_task” command with „start”, „status” and „stop” options

Now the function **STATUS** tab, **Tasks**, tasks show no active snapshot.

The screenshot shows the open-e web interface. The top navigation bar includes tabs for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is titled "STATUS" and shows a breadcrumb "You are here: STATUS > tasks > Snapshots".

The "Tasks" section on the left lists several task types: Backup, Restore from backup, Data Replication, Antivirus, Volume Replication, and Snapshots. The "Snapshots" task type is selected.

The "Running tasks" section shows an "Info" message: "No running tasks!".

The "Tasks log" section displays a table of task history:

Time	Name	Type	Status	Action
2009-10-15 00:00:43	snap00000	Snapshot	OK	Stopped
2009-10-14 22:51:29	snap00000	Snapshot	OK	Started
2009-10-14 22:50:41	snap00000	Snapshot	OK	Stopped
2009-10-14 22:50:03	snap00000	Snapshot	OK	Started

Thank you!