

SNMP Agent Version 2.6

Installation and User's Guide

STOREWAY DPA



STOREWAY DPA

SNMP Agent Version 2.6

Installation and User's Guide

Software

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Chapter 1. Overview of the SNMP agent

This guide explains how to activate and use the SNMP agent which is integrated into the StoreWay DPA version 2.6.

See:

["Contents of the SNMP package" page 8](#)

["Activate the SNMP agent" page 9](#)

["Accessing SNMP information" page 10](#)

["Configuring the SNMP agent on the StoreWay DPA" page 11](#)

["Elements made available by the StoreWay DPA SNMP agent" page 12](#)

["MIB traps" page 13](#)

["Client configuration" page 15](#)

Contents of the SNMP package

The elements in the SNMP package are provided in the StoreWay DPA installation:

- > The SNMP agent with StoreWay DPA version 2.6 which adds SNMP function to the StoreWay DPA software.
- > The StoreWay DPA MIB (StoreWayDPA-MIB.txt). This file describes the SNMP information provided by the StoreWay DPA using the standard MIB format. The MIB file is in the folder **/SNMP** on the CD **StoreWay® DPA Initial Setup (Windows), Agents (Windows, Linux, Netware, MAC OS), Graphical User Interface Setup, ASM & Disaster Recovery Agents Windows) Version X.X.XXX**.

Activate the SNMP agent

The SNMP agent is installed automatically with the StoreWay DPA 2.6. This installation enables you to recover SNMP information on the StoreWay DPA and perform basic requests from one or several machines. Simply copy the MIB from the CD to a destination directory to make it available:

- > Copy the StoreWayDPA-MIB.txt file onto the required machine(s) on which the SNMP supervisor should preferably be installed (for example net-snmp). The MIB file is available on the CD-Rom **StoreWay® DPA Initial Setup (Windows), Agents (Windows, Linux, Netware, MAC OS), Graphical User Interface Setup, ASM & Disaster Recovery Agents Windows) Version X.X.XXX**. The file is in the directory **/SNMP**.
- > The destination folder for this MIB file can vary according to the systems. It is called "MIBS" and can generally be found in :

```
/etc/snmp/mibs  
/usr/share/snmp/mibs  
/usr/local/share/snmp/mibs
```

- > To make this StoreWay DPA MIB available to SNMP supervision tools (for example net-snmp), position the MIBS environment variable as follows:

```
$ export MIBS=+StoreWayDPA
```

Accessing SNMP information

The StoreWay DPA SNMP agent communicates with the protocols SNMP v1 and v2c. It does not communicate with protocol v3 and does not manage either authentication or data encryption.

You must perform requests using the « public » community :

```
$ snmpget -v 2c -c public <StoreWay_DPA_name >
sysUpTime.0 SNMPv2-MIB::sysUpTime.0 = Timeticks: (63) 0:1:3.00
```

NOTE: These requests only work if you have already activated the SNMP agent.

To view information made available by the StoreWay DPA MIB, you can browse it with the tool `snmptranslate`:

```
$ snmptranslate -IR -Tp StoreWayDPA
+-- dpa(28204)
|
+-- StoreWayDPA(1)
|
+-- StoreWayDPATable(1)
| |
| | +--StoreWayDPAEntry(1)
| | |   Index: dpaIndex
| | |
| | | +-- -R-- Integer32 dpaIndex(0)
| | | |   Textual Convention: StoreWayDPAIndex
| | | |   Range: 1..2147483647
| | | +-- -R-- String      dpaSerial(1)
| | | |   Textual Convention: DisplayString
| | | |   Size: 0..12
| |
|
...

```

You can also use the `snmpwalk` command:

```
$ snmpwalk -v 2c -c public < StoreWayDPA name > StoreWayDPA
StoreWayDPA::dpaIndex.1 = INTEGER: 1
StoreWayDPA::dpaSerial.1 = STRING: 805344280114
StoreWayDPA::dpaModel.1 = STRING: MB150
StoreWayDPA::dpaVersion.1 = STRING: 2.6.100
...
```

For a field-level description:

```
$ snmptranslate -IR -Td dpaMTA
StoreWayDPA::dpaMTA
...
DESCRIPTION    "Mail transport agent state."
...
```

Configuring the SNMP agent on the StoreWay DPA

The StoreWay DPA SNMP agent requires very little configuration. The only essential configuration is the "trapsink" which enables you to specify the machine on which the traps need to be sent. If this element is not configured, no trap will be sent. This does not prevent the rest of the SNMP agent from working.

The SNMP configuration page is in the StoreWay DPA interface:

> **settings/StoreWay DPA/Network/SNMP**

We can specify 3 elements :

- > the machine which will receive traps (enter a name and IP address),
- > the physical location of the StoreWay DPA (postal address, « server room » « building D » etc.),
- > the StoreWay DPA administrator.

These last 2 elements are optional and can be configured using other means (snmpset, for example) but when they are configured by the StoreWay DPA interface they can no longer be configured by any other means than by emptying the fields in the SNMP page.

Elements made available by the StoreWay DPA SNMP agent

In addition to the StoreWay DPA MIB, the StoreWay DPA SNMP agent makes certain additional MIB information available in the SNMP supervisor.

A complete list of this information can be retrieved using snmpwalk :

```
$ snmpwalk -v 2c -c public < StoreWay_DPA_name > 1
```

Below are a few examples of information made available by the SNMP agent:

The system table contains :

- > The uptime (sysUpTime.0),
- > The StoreWay DPA name (sysName.0),
- > The physical location (sysLocation.0) or the administrator's contact details (sysContact.0)

The ifTable regroups information on the network traffic :

- > Interface name (ifDescr.[23]),
- > Interface speed (ifSpeed.[23]),
- > Number of in octets (ifInOctets.[23])
- > Number of out octets (ifOutOctets.[23])
- > Number of incoming errors (ifInErrors.[23])
- > ...

Information on the StoreWay DPA "load average":

- > laLoad.[123] : load average over 1, 5 and 15 minutes
- > laErrorFlag.[123] : 0 if OK, 1 if a threshold is exceeded (respectively 50 60 and 70)
- > laErrorMessage.[123] : contains a message if the threshold is exceeded

MIB traps

The StoreWay DPA MIB provides SNMP v2c-type traps. There are two main types of trap:

- > Traps which correspond to backups performed.
- > Traps which correspond to alarms.

See:

["Traps corresponding to alarms" page 13](#)

["Traps which correspond to backups performed" page 13](#)

Traps which correspond to backups performed

Once a backup is over, the SNMP agent sends one of the following traps:

- > **dpaJobEndedOk** : sent when a job completes without error or warning.
- > **dpaJobEndedWithWarnings** : sent when a job completes with warnings.
- > **dpaJobError** : sent when a job ends in error.
- > **dpaJobAborted** : sent when a job is aborted (timeout or human action).
- > **dpaJobLost** : sent when a job is lost.
- > **dpaJobNotStarted** : sent when a programmed job could not be started.

Traps corresponding to alarms

These traps correspond to alarms sent to the StoreWayDPA. There are 20 in total: 4 severities multiplied by 5 categories.

Alarm trap severities

Info	Information-type alarms
Minor	Minor alarm
Major	Major alarm
Critical	Critical alarm

The 5 categories of alarm traps

These traps carry the associated severity name followed by the trap category, with everything preceded by « dpaAlarm ».

BackupEvent	Backup or restoration event alarm
DiskProblem	Disk or disk bay alarm
DriveEvent	Alarm concerning the drives/media (robots, manual drives, DVD drives).
AgentProblem	Problem with a backup agent, a system or an application.
General	Alarms concerning the license and updates ...

When the trap StoreWayDPA:dpaAlarmMinorBackupEvent is sent by the StoreWay DPA, this means a minor alarm has just been sent to the StoreWay DPA to warn of a minor backup event.

Additional information returned by alarm traps

Traps corresponding to alarms include two additional text elements:

- > **the alarm name** (dpaAlarmName)
- > **the comment associated with the alarm** (dpaAlarmComment).
- > **job_type** :
 - 1 : backup
 - 2 : synthetic backup
 - 4 : restoration
- > **type** :
 - 1 : incremental backup
 - 2 : full backup
- > **is_pra** :
 - 0 : is not a DRP (Disaster Recovery Plan)
 - 1 : is a DRP (Disaster Recovery Plan)
- > **host** : name of backed up system
- > **app** : name of backed up application
- > **profile** : name of backup profile
- > **volume** : volume backed up in KB
- > **nb_objects** : number of objects backed up

Example

```
job_type=1
type=2
is_pra=0
host=machine22
app=Exchange 2007
profile=monprofil
volume=51200
nb_objects=72
```

Signifies that a total classic backup (not part of a DRP) has been performed on machine22 concerning the application Exchange 2007.

We can see that 51 200 KB and 72 objects have been backed up.

Chapter 2. Client configuration

The user is free to manage as he sees fit the information at his disposal by the StoreWay DPA SNMP agent. There is a major choice of tools to display this information. The following example uses a Nagios configuration. We will see examples of how to create:

- > Hostgroups (groups of StoreWay DPA)
- > Hosts (the StoreWay DPA in the hostgroup)
- > Associated services and commands

An example of a Nagios configuration

See:

["Define each StoreWay DPA" page 16](#)

["Define the group of StoreWay DPA machines" page 16](#)

Define the group of StoreWay DPA machines

Define a group of machines "hostgroup" containing all StoreWay DPA by adding the following in `/etc/nagios/hostgroups.cfg` :

```
# StoreWayDPA
define hostgroup{
    hostgroup_name      StoreWayDPA
    aliasBackup         Servers
    contact_groups      backup-admins
    members             StoreWayDPA1, StoreWayDPA2, StoreWayDPA3
}
```

Define each StoreWay DPA

Define the systems which are members of this group in `/etc/nagios/hosts.cfg` :

```
# first StoreWayDPA
define host{
    use                generic-host;      Name of host template to use
    host_name          StoreWayDPA        1
    alias              Backup Server      #1
    address            172.16.5.101
    check_command       check-host-alive
    max_check_attempts 10
    notification_interval 480
    notification_period 24x7
    notification_options d,u,r
}

# second StoreWayDPA
define host{
    use                generic-host;      Name of host template to use
    host_name          StoreWayDPA        2
    alias              Backup Server      #2
    address            172.16.5.102
    check_command       check-host-alive
    max_check_attempts 10
    notification_interval 480
    notification_period 24x7
    notification_options d,u,r
}
...
```

Then define the services you wish to check on the StoreWayDPA and the associated commands:

```
# bytes received
define service{
    use                generic-service;    Name of service template to use
    hostgroup_name      StoreWayDPA
    service_description eth0: bytes received
}
```



```

is_volatile          0
check_period         24x7
max_check_attempts   3
normal_check_interval 5
retry_check_interval  2
contact_groups       linux-admins
notification_interval 240
notification_period   24x7
notification_optionsw, u,c,r
check_command        check_net_eth0_in
}

# bytes sent
define service{
usegeneric-service;      Name of service template to use
hostgroup_name          StoreWayDPA
service_description      eth0: bytes sent
is_volatile             0
check_period            24x7
max_check_attempts      3
normal_check_interval    15
retry_check_interval     2
contact_groups          linux-admins
notification_interval    240
notification_period      24x7
notification_options     w,u,c,r
check_command            check_net_eth0_out
}

# Service definition
define service{
use                      generic-service;   Name of service template to use
hostgroup_name          StoreWayDPA
service_description      StoreWayDPA used backup space
is_volatile             0
check_period            24x7
max_check_attempts      3
normal_check_interval    15
retry_check_interval     1
contact_groups          backup-admins
notification_interval    120
notification_period      24x7
check_commandcheck      StoreWayDPA_backup_used_space
}

# Service definition
define service{
usegeneric-service;      Name of service template to use
hostgroup_name          StoreWayDPA
service_description      StoreWayDPA free space for backup
is_volatile             0
check_period            24x7
max_check_attempts      3
normal_check_interval    5
retry_check_interval     1
contact_groups          backup-admins
notification_interval    120
notification_period      24x7

```

```

check_commandcheck_      StoreWayDPA_backup_free_space
}

/etc/nagios/checkcommands.cfg :
define command
{
    command_name          check_net_eth0_in
    command_line           /usr/lib/nagios/plugins/check_snmp -P 1 -C public -
H $HOSTNAME$ -o ifInOctets.2
}

define command {
    command_name          check_net_eth0_out
    command_line           /usr/lib/nagios/plugins/check_snmp -P 1 -C public -
H $HOSTNAME$ -o ifOutOctets.2
}

define command {
    command_name          check_ StoreWayDPA_backup_used_space
    command_line           /usr/bin/snmpget -v 1 -c public $HOSTNAME$ dpaBck-
UsedSpace.1 -m + StoreWayDPA| sed 's#^ StoreWayDPA::\([^=]*\) = \[^:]*:
\(.*\)\#\\1= \\2 GB#'
}

define command {
    command_name          check_StoreWayDPA_backup_free_space
    command_line           /usr/bin/snmpget -v 1 -c public $HOSTNAME$ dpaBck-
FreeSpace.1 -m + StoreWayDPA| sed 's#^StoreWayDPA::\([^=]*\) = \[^:]*:
\(.*\)\#\\1= \\2 GB#'
}

```

To retrieve traps sent by the StoreWayDPA, you can use the snmptrapd daemon and order it to send a mail for each trap you receive. For this, edit the configuration file snmptrapd.conf (for example : **/etc/snmp/snmptrapd.conf**) as follows :

```

traphandle          SNMPv2-MIB::coldStart /sbin/mailtrap "snmp agent
started"
traphandle          StoreWayDPA::dpaAlarmCriticalBackupEvent /sbin/
mailtrap "critical backup event"
traphandle          StoreWayDPA::dpaAlarmCriticalDiskProblem /sbin/
mailtrap "critical disk problem"
traphandle          StoreWayDPA::dpaAlarmCriticalDriveEvent /sbin/mail-
trap "critical drive event"
traphandle          StoreWayDPA::dpaAlarmCriticalAgentProblem /sbin/
mailtrap "critical agent problem"
traphandle          StoreWayDPA::dpaAlarmCriticalGeneral /sbin/mail-
trap "critical alarm"
traphandle          default /sbin/mailtrap "snmp event"

```

Create a script **/sbin/mailtrap** as follows:

```

#!/bin/sh
subject="$1"
read senderhost
mail -a 'From: snmp admin <xx@xxx.xxx>' -s "$senderhost: $subject" ad-
min@somewhere.com

```

NOTE: If you have followed this example, you will only receive emails for traps when there is a critical severity trap.

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