



Synology DiskStation

MIB Guide

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Introduction

Synology DiskStation Manager (DSM) allows users to monitor the status of their Synology NAS through Network Management Systems (NMS) via Simple Network Management Protocol (SNMP). However, Synology DSM does not provide SNMP trap capability.

This document introduces Management Information Base (MIB) files of Synology NAS. It focuses on which MIB files are supported by DSM, while also describes how Object Identifiers (OIDs) in Synology MIBs are used with your preferred NMS software. Users are encouraged to have experience and knowledge of NMS and SNMP before consulting this document.

Supported MIB Files

DSM supports numerous MIB files that can help users monitor different information on their Synology NAS. Table 1 shows the MIBs supported by DSM.

These MIB files can be separated into two types: general SNMP MIB and Synology MIB. General SNMP MIB files are equipped on NMS clients natively. This document does not explain the OIDs of general SNMP MIB files. If you would like to learn more about OIDs in general SNMP MIB files, please visit [this website](#).

Synology MIB files can provide specific data about a Synology NAS's system, disks, RAID, and connected UPS devices. Please see the "Synology MIB Files" section below for more Synology MIB information.

You can download the Synology MIB file [here](#).

Table 1. General MIB Files Supported by DSM

| MIB | Explanation |
|-------------------------|---|
| DISMAN-EVENT-MIB | For defining event triggers and actions for network management purposes |
| DISMAN-SCHEDULE-MIB | For scheduling SNMP set operations periodically or at specific points in time |
| HOST-RESOURCES-MIB | For use in managing host systems |
| IF-MIB | For describing network interface sub-layers |
| IP-FORWARD-MIB | For the management of CIDR multipath IP Routes |
| IP-MIB | For IP and ICMP management objects |
| IPV6-ICMP-MIB | For entities implementing the ICMPv6 |
| IPV6-MIB | For entities implementing the IPv6 protocol |
| IPV6-TCP-MIB | For entities implementing TCP over IPv6 |
| IPV6-UDP-MIB | For entities implementing UDP over IPv6 |
| NET-SNMP-AGENT-MIB | For monitoring structures for the Net-SNMP agent |
| NET-SNMP-EXTEND-MIB | For scripted extensions for the Net-SNMP agent |
| NET-SNMP-VACM-MIB | Defines Net-SNMP extensions to the standard VACM view table |
| NOTIFICATION-LOG-MIB | For logging SNMP Notifications |
| SNMP-COMMUNITY-MIB | To help support coexistence between SNMPv1, SNMPv2c, and SNMPv3 |
| SNMP-FRAMEWORK-MIB | The SNMP Management Architecture MIB |
| SNMP-MPD-MIB | For Message Processing and Dispatching |
| SNMP-USER-BASED-SM-MIB | For the SNMP User-based Security Model |
| SNMP-VIEW-BASED-ACM-MIB | For the View-based Access Control Model for SNMP |
| SNMPv2-MIB | For SNMP entities |
| SYNOLOGY-DISK-MIB | For Synology disk information (Synology only) |
| SYNOLOGY-EBOX-MIB | For Synology ebox information (Synology only) |
| SYNOLOGY-FLASHCACHE-MIB | For Synology FlashCache information (Synology only) |
| SYNOLOGY-ISCSILUN-MIB | For Synology iSCSI LUN information (Synology only) |
| SYNOLOGY-RAID-MIB | For Synology RAID information (Synology only) |
| SYNOLOGY-SERVICES-MIB | For Synology services information (Synology only) |
| SYNOLOGY-SHA-MIB | For Synology High-Availability information (Synology only) |
| SYNOLOGY-SMART-MIB | For Synology smart information (Synology only) |
| SYNOLOGY-SPACEIO-MIB | For Synology SpaceIO information (Synology only) |
| SYNOLOGY-STORAGEIO-MIB | For Synology StorageIO information (Synology only) |
| SYNOLOGY-SYSTEM-MIB | For Synology system information (Synology only) |
| SYNOLOGY-UPS-MIB | For Synology UPS information (Synology only) |
| TCP-MIB | For managing TCP implementations |
| UCD-DISKIO-MIB | For disk IO statistics |
| UCD-DLMOD-MIB | For dynamic loadable MIB modules |
| UCD-SNMP-MIB | For private UCD SNMP MIB extensions |
| UDP-MIB | For managing UDP implementations |

Synology MIB Files

The following Synology MIB files are provided in DSM. These MIB files are the child-nodes of OID (Object Identifier) 1.3.6.1.4.1.6574. Table 2 shows the exact OID of each MIB. Please note that the MIB files are mutually dependent. Before your NMS can monitor any of the items in these MIB files, please make sure that all of them have been imported together and use SNMPv2c to obtain the complete Synology OID information.

Table 2. OID of Synology MIBs

| OID | Name | File Name | Last updated version |
|-----------------------|-------------------|-----------------------------|----------------------|
| .1.3.6.1.4.1.6574.1 | synoSystem | SYNOLOGY-SYSTEM-MIB.txt | DSM 6.0.2 |
| .1.3.6.1.4.1.6574.2 | synoDisk | SYNOLOGY-DISK-MIB.txt | DSM 6.1.7 |
| .1.3.6.1.4.1.6574.3 | synoRaid | SYNOLOGY-RAID-MIB.txt | DSM 6.1.7 |
| .1.3.6.1.4.1.6574.4 | synoUPS | SYNOLOGY-UPS-MIB.txt | DSM 6.0.1 |
| .1.3.6.1.4.1.6574.5 | synologyDiskSMART | SYNOLOGY-SMART-MIB.txt | DSM 6.0.1 |
| .1.3.6.1.4.1.6574.6 | synologyService | SYNOLOGY-SERVICES-MIB.txt | DSM 6.2.1 |
| .1.3.6.1.4.1.6574.101 | storageIO | SYNOLOGY-STORAGEIO-MIB.txt | DSM 6.1.7 |
| .1.3.6.1.4.1.6574.102 | spaceIO | SYNOLOGY-SPACEIO-MIB.txt | DSM 6.0.1 |
| .1.3.6.1.4.1.6574.103 | flashCache | SYNOLOGY-FLASHCACHE-MIB.txt | DSM 6.2.2 |
| .1.3.6.1.4.1.6574.104 | synologyiSCSILUN | SYNOLOGY-ISCSILUN-MIB.txt | DSM 6.1.7 |
| .1.3.6.1.4.1.6574.105 | synologyEbox | SYNOLOGY-EBOX-MIB | DSM 6.2.1 |
| .1.3.6.1.4.1.6574.106 | synologyHA | SYNOLOGY-SHA-MIB | DSM 6.2.2 |

Synology System MIB

The Synology System MIB displays all system statuses, including temperature and fan status. Users can monitor this MIB for system functionality. Table 3 shows information provided in the System MIB.

Table 3. System MIB

| OID | Name | Type | Status Type | Explanation |
|------|------------------|---------|--|--|
| .1 | systemStatus | Integer | Normal (1) Failed (2) | System partition status |
| .2 | temperature | Integer | - | Temperature of this NAS |
| .3 | powerStatus | Integer | Normal (1) Failed (2) | Returns error if power supplies fail |
| .4.1 | systemFanStatus | Integer | Normal (1) Failed (2) | Returns error if system fan fails |
| .4.2 | cpuFanStatus | Integer | Normal (1) Failed (2) | Returns error if CPU fan fails |
| .5.1 | modelName | String | - | Model name of this NAS |
| .5.2 | serialNumber | String | - | Model serial number |
| .5.3 | version | String | - | The version of DSM |
| .5.4 | upgradeAvailable | Integer | Available (1) Unavailable (2) Connecting (3) Disconnected (4) Others (5) | Checks whether a new version or update of DSM is available |

Synology Disk MIB

The Synology Disk MIB contains several types of information regarding hard drives, including ID, type and so on, as listed in Table 4. This MIB is a table in SNMP. As such, it can increase or decrease in size when disks are inserted or removed. For example, if a disk is inserted, an additional row containing relevant information will emerge. The OID DiskIndex (.1) is reserved for an index of table rows and cannot be accessed. Table 5 describes the contents of each DiskStatus in detail.

Table 4. Disk MIB

| OID | Name | Type | Status Type | Explanation |
|-----|-----------------|---------|-------------|---|
| .1 | diskIndex | Integer | - | Used internally for SNMP table and not accessible |
| .2 | diskID | String | - | Disk name in DSM |
| .3 | diskModel | String | - | Disk model |
| .4 | diskType | String | - | Disk type, e.g. SATA, SSD |
| .5 | diskStatus | Integer | Normal(1) * | Current disk status |
| .6 | diskTemperature | Integer | - | Disk temperature |

* For DiskStatus details, please Table 5

Table 5. DiskStatus Explanation

| Status | Explanation |
|--------------------------|--|
| Normal(1) | The disk is functioning normally |
| Initialized(2) | The disk has system partitions but no data |
| NotInitialized(3) | The disk is not partitioned |
| SystemPartitionFailed(4) | Partitions on the disk are damaged |
| Crashed(5) | The disk is damaged |

Synology RAID MIB

In addition to the disk MIB, Synology also provides an MIB for monitoring RAID status. This MIB is similar to the disk MIB in that rows will appear or disappear to reflect RAID creation and deletion. Table 6 lists the contents of the RAID MIB. Table 7 describes each RAID status in detail.

Table 6. RAID MIB

| OID | Name | Type | Status Type | Explanation |
|-----|---------------|-----------|-------------|---|
| .1 | raidIndex | Integer | - | Used internally for SNMP table and not accessible |
| .2 | raidName | String | - | The name of each RAID in DSM |
| .3 | raidStatus | Integer | Normal(1) * | It shows the RAID status right now |
| .4 | raidFreeSize | Counter64 | - | The free size of volume / disk group |
| .5 | raidTotalSize | Counter64 | - | The total size of volume / disk group |

* For RAID status details, please Table 7

Table 7. RAID Status Explanation

| Status | Explanation |
|---|--|
| Normal(1) | RAID is functioning normally |
| Repairing(2) Migrating(3) Expanding(4) Deleting(5) Creating(6) RaidSyncing(7) RaidParityChecking(8) RaidAssembling(9) Canceling(10) | These statuses are shown when RAID is created or deleted |

| Status | Explanation |
|---------------------------------|---|
| Degrade (11) | Degrade is shown when a tolerable failure of disk(s) occurs |
| Crashed (12) | RAID has crashed and is now read-only |
| DataScrubbing (13) | RAID is DataScrubbing |
| RaidDeploying (14) | RAID is deploying Single volume on pool |
| RaidUnDeploying (15) | RAID is not deploying Single volume on pool |
| RaidMountCache (16) | RAID is mounting SSD cache |
| RaidUnmountCache (17) | RAID is not mounting SSD cache |
| RaidExpandingUnfinishedSHR (18) | RAID continue expanding SHR if interrupted |
| RaidConvertSHRToPool (19) | RAID is converting Single volume on SHR to multiple volume on SHR |
| RaidMigrateSHR1ToSHR2 (20) | RAID is migrating SHR1 to SHR2 |
| RaidUnknownStatus (21) | RAID status is not included in the status above |

Synology UPS MIB

The Synology UPS MIB provides the ability to monitor the status of a UPS device connected to the Synology NAS. Please note that the available OIDs of the UPS MIB depend on what information is provided by the UPS device. If a UPS device does not provide data for a certain OID, that OID will not appear in the NMS software. Table 8 shows a partial UPS MIB table only. If you are interested in all OIDs, please refer to the MIB file SYNOLOGY-UPS-MIB.txt.

Table 8. Partial UPS MIB

| OID | Name | Type | Status Type | Explanation |
|---------|-------------------------|--------|-------------|--|
| .1.1 | upsDeviceModel | String | - | UPS device model |
| .1.2 | upsDeviceManufacturer | String | - | UPS device manufacturer |
| .1.3 | upsDeviceSerial | String | - | UPS device serial number |
| .2.1 | upsInfoStatus | String | - | UPS device status |
| .2.6.2 | upsInfoMfrDate | String | - | UPS device manufacturing date |
| .2.12.1 | upsInfoLoadValue | Float | - | Load on UPS device (percent) |
| .3.1.1 | upsBatteryChargeValue | Float | - | Battery charge |
| .3.1.4 | upsBatteryChargeWarning | Float | - | Battery level at which UPS switches to Warning state (percent) |
| .3.12 | upsBatteryType | Float | - | Battery chemistry |

Synology Smart MIB

The Synology SMART MIB provides the SMART information of each disk same as Storage Manager does. Because every disk may have different SMART attributes, one OID records one SMART attribute and has diskSMARTInfoDevName to indicate which disk it belongs to.

Table 9. SMART MIB

| OID | Name | Type | Status Type | Explanation |
|-----|------------------------|---------|-------------|--|
| .1 | diskSMARTInfoIndex | Integer | - | Used internally for SNMP table and not accessible |
| .2 | diskSMARTInfoDevName | String | - | Describes the disk to which this SMART info belongs to |
| .3 | diskSMARTAttrName | String | - | The name of the SMART info attribute, e.g. Raw_Read_Error_Rate |
| .4 | diskSMARTAttrId | Integer | - | SMART attribute ID number |
| .5 | diskSMARTAttrCurrent | Integer | - | SMART attribute current value |
| .6 | diskSMARTAttrWorst | Integer | - | SMART attribute worst value |
| .7 | diskSMARTAttrThreshold | Integer | - | SMART attribute threshold value |
| .8 | diskSMARTAttrRaw | Integer | - | SMART attribute raw value |
| .9 | diskSMARTAttrStatus | String | - | Status of this SMART info |

Synology Services MIB

The Synology Services MIB monitors the number of users logging in via HTTP, CIFS, AFP, FTP, SFTP, TELNET, and SSH.

Table 10. Services MIB

| OID | Name | Type | Status Type | Explanation |
|-----|------------------|---------|-------------|---|
| .1 | serviceInfoIndex | Integer | - | Used internally for services table and not accessible |
| .2 | serviceName | String | - | The name of the service |
| .3 | serviceUsers | Integer | - | The number of users using this service |

Synology StorageIO MIB

The Synology StorageIO MIB has I/O information of disks.

Table 11. StorageIO MIB

| OID | Name | Type | Status Type | Explanation |
|-----|--------------------|-----------|-------------|---|
| .1 | storageIOIndex | Integer | - | Used internally for storageio table and not accessible |
| .2 | storageIODevice | String | - | The name of the device we are counting/checking |
| .3 | storageIONRead | Counter32 | - | The number of bytes read from this device since boot (32 bit VER.) |
| .4 | storageIONWritten | Counter32 | - | The number of bytes written to this device since boot (32 bit VER.) |
| .5 | storageIOReads | Counter32 | - | The number of read accesses from this device since boot |
| .6 | storageIOWrites | Counter32 | - | The number of write accesses to this device since boot |
| .8 | storageIOLA | Integer | - | The load of disk (%) |
| .9 | storageIOLA1 | Integer | - | The 1-minute average load of disk (%) |
| .10 | storageIOLA5 | Integer | - | The 5-minute average load of disk (%) |
| .11 | storageIOLA15 | Integer | - | The-15 minute average load of disk (%) |
| .12 | storageIONReadX | Counter64 | - | The number of bytes read from this device since boot (64 bit VER.) |
| .13 | storageIONWrittenX | Counter64 | - | The number of bytes written to this device since boot (64 bit VER.) |

Synology SpaceIO MIB

The Synology SpaceIO MIB has I/O information of volumes.

Table 12. SpaceIO MIB

| OID | Name | Type | Status Type | Explanation |
|-----|---------------|-----------|-------------|--|
| .1 | spaceIOIndex | Integer | - | Used internally for spaceIO table and not accessible |
| .2 | spaceIODevice | String | - | The name of the device this volume mounted on |
| .3 | spaceIONRead | Counter32 | - | The number of bytes read from this volume since boot (32 bit VER.) |

| OID | Name | Type | Status Type | Explanation |
|-----|------------------|-----------|-------------|---|
| .4 | spaceIONWritten | Counter32 | - | The number of bytes written to this volume since boot (32 bit VER.) |
| .5 | spaceIOReads | Counter32 | - | The number of read accesses from this volume since boot |
| .6 | spaceIOWrites | Counter32 | - | The number of write accesses to this volume since boot |
| .8 | spaceIOLA | Integer | - | The load of disk in the volume (%) |
| .9 | spaceIOLA1 | Integer | - | The 1 minute average load of disk in the volume (%) |
| .10 | spaceIOLA5 | Integer | - | The 5 minute average load of disk in the volume (%) |
| .11 | spaceIOLA15 | Integer | - | The 15 minute average load of disk in the volume (%) |
| .12 | spaceIONReadX | Counter64 | - | The number of bytes read from this volume since boot (64 bit VER.) |
| .13 | spaceIONWrittenX | Counter64 | - | The number of bytes written to this volume since boot (64 bit VER.) |

Synology FlashCache MIB

The Synology FlashCache MIB monitors the resource usage of SSD cache. The collection frequency is 5 seconds.

Note: The MIB is only suitable for the model which support SSD cache. Otherwise, it will return zero value for each OID path.

Table 13. FlashCache MIB

| OID | Name | Type | Status Type | Explanation |
|-----|------------------------|-----------|-------------|--|
| .1 | flashCacheIndex | Integer | - | Reference index for each observed device |
| .2 | flashCacheSSDDevice | String | - | The SSD device name on flashcache we are counting/checking |
| .3 | flashCacheSpaceDev | String | - | The space device name on flashcache we are counting/checking |
| .4 | flashCacheReadHits | Integer | - | The number of reads on flashcache |
| .5 | flashCacheWriteHits | Counter64 | - | The number of writes on flashcache |
| .6 | flashCacheDiskRead | Counter64 | - | The number of reads on disk |
| .7 | flashCacheDiskWrite | Counter64 | - | The number of writes on disk |
| .8 | flashCacheTotalRead | Counter64 | - | The number of reads on volume with flashcache |
| .9 | flashCacheTotalWrite | Counter64 | - | The number of writes on volume with flashcache |
| .10 | flashCacheReadHitRate | Integer | - | The read hit rate of flashcache (%) |
| .11 | flashCacheWriteHitRate | Integer | - | The write hit rate of flashcache (%) |
| .12 | flashCacheReadSeqSkip | Counter64 | - | The number of skipped sequential reads on flashcache |
| .13 | flashCacheWriteSeqSkip | Counter64 | - | The number of skipped sequential reads on flashcache |
| .14 | flashCacheWriteMissSsd | Counter64 | - | The number of data writes to SSD for the first time |
| .15 | flashCacheSsdUuid | String | - | The SSD UUID on flashcache we are counting/checking |

Synology iSCSI LUN MIB

The Synology iSCSI LUN MIB can list all the loaded LUNs and show their running information. If a LUN has been created but not loaded (e.g. when linked to a target), it will not appear in this list. The throughput value may be over int32 range, so we use two i to record it.

Table 14. iSCSI LUN MIB

| OID | Name | Type | Status Type | Explanation |
|-----|-----------------------------|---------|-------------|--|
| .1 | iSCSILUNInfoIndex | Integer | - | Used internally for iSCSI LUN table and not accessible |
| .2 | iSCSILUNUUID | String | - | LUN uuid |
| .3 | iSCSILUNName | String | - | LUN name |
| .4 | iSCSILUNThroughputReadHigh | Integer | - | The higher 32 bit of read throughput |
| .5 | iSCSILUNThroughputReadLow | Integer | - | The lower 32 bit of read throughput |
| .6 | iSCSILUNThroughputWriteHigh | Integer | - | The higher 32 bit of write throughput |
| .7 | iSCSILUNThroughputWriteLow | Integer | - | The lower 32 bit of write throughput |
| .8 | iSCSILUNIoOpsRead | Integer | - | LUN read iops |
| .9 | iSCSILUNIoOpsWrite | Integer | - | LUN write iops |
| .10 | iSCSILUNDiskLatencyRead | Integer | - | LUN read disk latency |
| .11 | iSCSILUNDiskLatencyWrite | Integer | - | LUN write disk latency |
| .12 | iSCSILUNNetworkLatencyTx | Integer | - | LUN network tx latency |
| .13 | iSCSILUNNetworkLatencyRx | Integer | - | LUN network rx latency |
| .14 | iSCSILUNIoSizeRead | Integer | - | LUN read average i/o size |
| .15 | iSCSILUNIoSizeWrite | Integer | - | LUN write average i/o size |
| .16 | iSCSILUNQueueDepth | Integer | - | Number of iSCSI commands in LUN queue |
| .17 | iSCSILUNType | String | - | LUN type (advanced lun, block lun, etc.) |

Synology Ebox MIB

The Synology Ebox MIB provides the power status of expansion unit connected to Synology NAS. Table 14 shows the information provided in ebox MIB. Table 15 describes the content of each eboxPower and eboxRedundantPower status in detail.

Table 15. Ebox MIB

| OID | Name | Type | Status Type | Explanation |
|-----|--------------------|---------|--------------|---|
| .1 | eboxIndex | Integer | - | Expansion unit Index |
| .2 | eboxModel | String | - | Expansion unit model |
| .3 | eboxPower | Integer | Normal (1) * | Power status of expansion unit |
| .4 | eboxRedundantPower | Integer | Normal (1) * | Redundant power status of expansion unit (if the ebox has no redundant power interface, this OID will not appear) |

* For eboxPower and eboxRedundantPower details, please see Table 15.

Table 16. Ebox Power and Redundant Power Status Explanation

| Status | Explanation |
|-------------------|----------------------------|
| Normal (1) | The power supplies well |
| Poor (2) | The power supplies badly |
| Disconnection (3) | The power is not connected |

Synology SHA MIB

The Synology SHA MIB provides basic cluster information and monitors cluster status and heartbeat status.

Table 17. SHA MIB

| OID | Name | Type | Status Type | Explanation |
|-----|---------------------|---------|-----------------------|--|
| .1 | activeNodeName | String | - | Hostname of active server |
| .2 | passiveNodeName | String | - | Hostname of passive server |
| .3 | clusterAutoFailover | Integer | true (1) false (2) | Whether cluster can failover once something went wrong |
| .4 | clusterName | String | - | Hostname of High-Availability cluster |
| .5 | clusterStatus | Integer | * | Status of High-Availability cluster |
| .6 | heartbeatStatus | Integer | * | Status of heartbeat connection |
| .7 | heartbeatTxRate | Integer | - | Transfer speed of heartbeat in kilo-byte-per-second |
| .8 | heartbeatLatency | Integer | - | Heartbeat latency in microseconds (10 ⁻⁶ seconds) |

* For clusterStatus details, please see Table 17-1.

* For heartbeatStatus details, please see Table 17-2.

Table 17-1. Cluster Status Explanation

| Status | Explanation |
|----------------|---|
| normal (0) | The High-Availability cluster is healthy |
| warning (1) | The High-Availability cluster has something went wrong. Action should be taken to resume High-Availability feature. Please refer to High-Availability Manager for more details. |
| critical (2) | The High-Availability cluster is in danger, and should be resolved as soon as possible. Please refer to High-Availability Manager for more details. |
| upgrading (3) | The High-Availability cluster is upgrading. |
| processing (4) | The High-Availability cluster is undergoing some operation. |

Table 17-2. Heartbeat Status Explanation

| Status | Explanation |
|------------------|---|
| normal (0) | The heartbeat connection is normal. |
| abnormal (1) | Some information about heartbeat is not available. |
| disconnected (2) | The High-Availability cluster loses connection to passive server through heartbeat interface, or it is currently in split-brain mode. |
| empty (3) | The High-Availability cluster has no passive server. |

Useful OIDs

Although there are many native MIB files supported by Synology, user may be interested in specific information about the Synology NAS, such as CPU, memory and so on. The tables below list the native OIDs related to load, CPU, memory, network and disk for gathering useful device's data easily.

Table 18. CPU-Related OID

| OID | Name | Explanation |
|----------------------------|-------------|--|
| .1.3.6.1.4.1.2021.10.1.5.1 | laLoadInt.1 | System load average within the last 1 minute |
| .1.3.6.1.4.1.2021.10.1.5.2 | laLoadInt.2 | System load average within the last 5 minutes |
| .1.3.6.1.4.1.2021.10.1.5.3 | laLoadInt.3 | System load average within the last 15 minutes |
| .1.3.6.1.4.1.2021.11.9.0 | ssCpuUser | The percentage of CPU time spent processing user-level code |
| .1.3.6.1.4.1.2021.11.10.0 | ssCpuSystem | The percentage of CPU time spent processing system-level code, calculated over the last minute |
| .1.3.6.1.4.1.2021.11.11.0 | ssCpuIdle | The percentage of processor time spent idle, calculated over the last minute |

Table 19. Memory-Related OID

| OID | Name | Explanation |
|--------------------------|--------------|--|
| .1.3.6.1.4.1.2021.4.3.0 | memTotalSwap | The total amount of swap space configured for this host |
| .1.3.6.1.4.1.2021.4.4.0 | memAvailSwap | The amount of swap space currently unused or available |
| .1.3.6.1.4.1.2021.4.5.0 | memTotalReal | The total amount of real/physical memory |
| .1.3.6.1.4.1.2021.4.6.0 | memAvailReal | The amount of real/physical memory currently unused or available |
| .1.3.6.1.4.1.2021.4.11.0 | memTotalFree | The total amount of memory free or available for use on this host (This value typically covers both real memory and swap space or virtual memory.) |
| .1.3.6.1.4.1.2021.4.13.0 | memShared | The total amount of real or virtual memory currently allocated for use as shared memory |
| .1.3.6.1.4.1.2021.4.14.0 | memBuffer | The total amount of real or virtual memory currently allocated for use as memory buffers |
| .1.3.6.1.4.1.2021.4.15.0 | memCached | The total amount of real or virtual memory currently allocated for use as cached memory |

Table 20. Network-Related OID

| OID | Name | Explanation |
|--------------------------|--------------|---|
| .1.3.6.1.2.1.31.1.1.1.1 | ifName | The textual name of the interface |
| .1.3.6.1.2.1.31.1.1.1.6 | ifHCInOctets | The total number of octets received on the interface |
| .1.3.6.1.2.1.31.1.1.1.10 | ifHCOctets | The total number of octets transmitted out of the interface |

Table 21. Disk-Related OID

| OID | Name | Explanation |
|--------------------------------|--------------------------|---|
| .1.3.6.1.2.1.25.2.3.1.3 | hrStorageDescr | A description of the type and instance of the storage described by this entry |
| .1.3.6.1.2.1.25.2.3.1.4 | hrStorageAllocationUnits | The size, in bytes, of the data objects allocated from this pool |
| .1.3.6.1.2.1.25.2.3.1.5 | hrStorageSize | The size of the storage represented by this entry, in units of hrStorageAllocationUnits |
| .1.3.6.1.2.1.25.2.3.1.6 | hrStorageUsed | The amount of the storage represented by this entry |
| .1.3.6.1.4.1.2021.13.15.1.1.2 | diskIODevice | The name of the device we are counting/checking |
| .1.3.6.1.4.1.2021.13.15.1.1.12 | diskIONReadX | The number of bytes read from this device since boot |
| .1.3.6.1.4.1.2021.13.15.1.1.13 | diskIONWrittenX | The number of bytes written to this device since boot |
| .1.3.6.1.4.1.6574.2 | synoDisk | For Synology disk information (Synology only) |

Table 22. System-Related OID

| OID | Name | Explanation |
|---------------------|------------|---|
| .1.3.6.1.4.1.6574.1 | synoSystem | For Synology system information (Synology only) |

Table 23. Disk-Related OID

| OID | Name | Explanation |
|---------------------|----------|---|
| .1.3.6.1.4.1.6574.2 | synoDisk | For Synology disk information (Synology only) |

Table 24. RAID-Related OID

| OID | Name | Explanation |
|---------------------|----------|---|
| .1.3.6.1.4.1.6574.3 | synoRaid | For Synology RAID information (Synology only) |

Table 25. UPS-Related OID

| OID | Name | Explanation |
|---------------------|---------|--|
| .1.3.6.1.4.1.6574.4 | synoUPS | For Synology UPS information (Synology only) |

Monitor Specific OIDs

In any NMS, particular MIB files are needed in order to capture data through SNMP. Users need to import all MIB files to ensure that the NMS can resolve specific OIDs. Once imported, data can be captured by setting up the NMS. Although the means of operating different kinds of NMS may vary, the process of OID monitoring is similar. The overall procedure is as follows.

1. Import MIB file into NMS.
2. Set up the NMS to monitor specific OIDs.

The following guide demonstrates the usage of PRTG (a type of NMS) including how to import MIB files and set up monitoring for the provided OIDs. For further help regarding PRTG, please consult PRTG documentation, as the following is only intended to be a brief description of OID monitoring.

Import MIB Files

As PRTG cannot import MIB files directly, Paessler MIB Importer is required to convert MIB files into the PRTG format:

1. Download Paessler MIB Importer from <http://www.paessler.com/tools/mibimporter> and install it on your computer.
2. Go to **Import > MIB Files**.
3. Choose **all the Synology MIB file together** and click **Open File**.

All MIB files (cf. Table 2) must be imported together as they are mutually dependent and Paessler MIB Importer cannot load them individually. If the import is successful, a window as shown in Figure 1 should appear. Detailed information is shown in Figure 2.



Figure 1. Import MIB: Successful

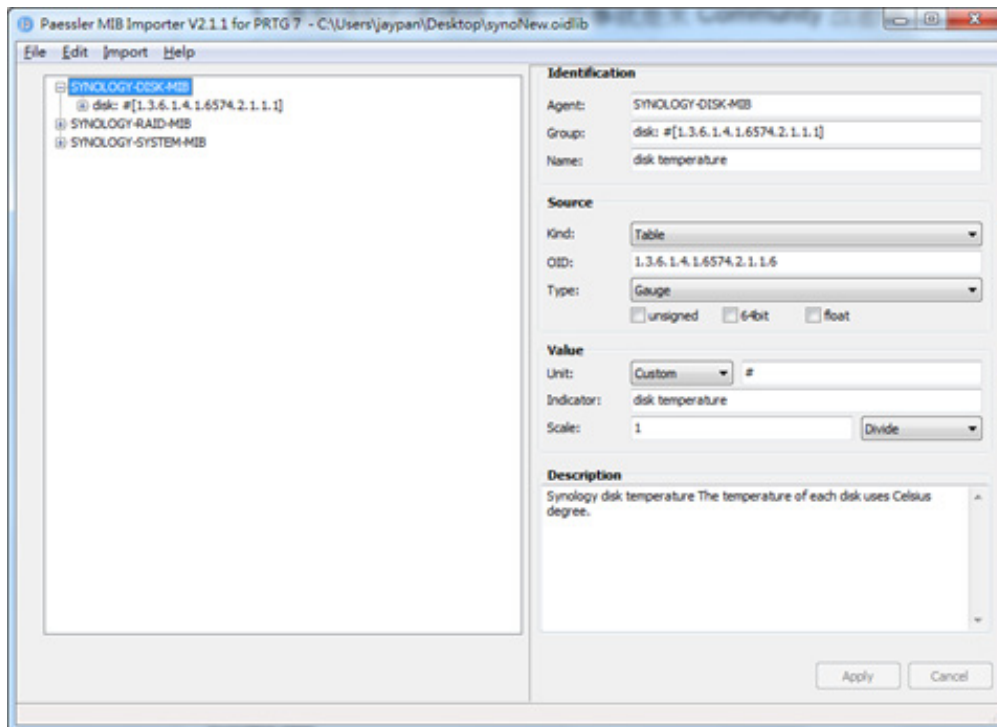


Figure 2. Detailed Information on MIB

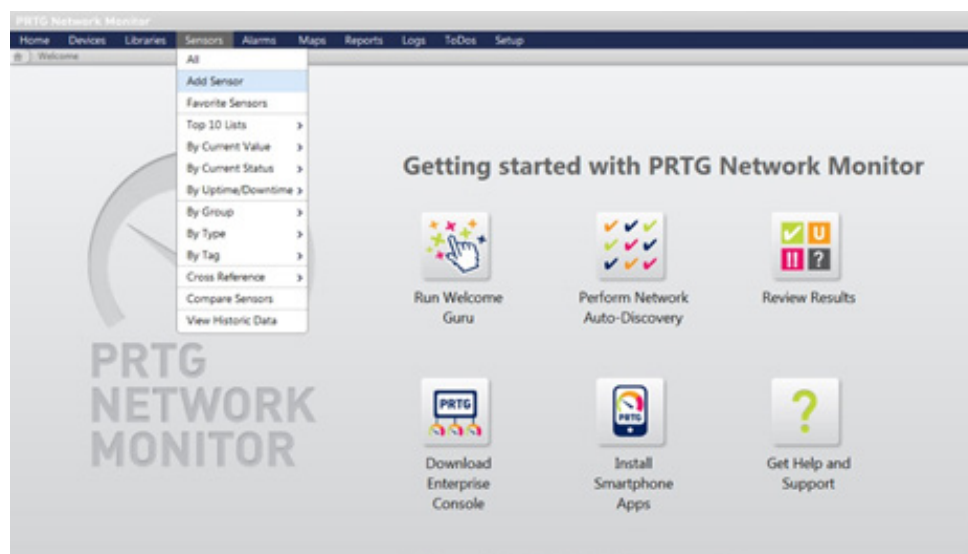
4. Go to File > Save As to export to the PRTG-supported format.

A PRTG-supported library containing the MIB information will then be generated.

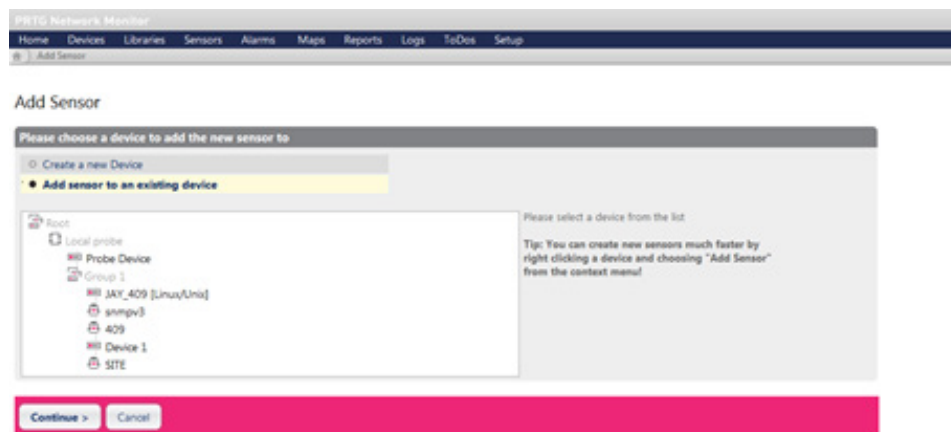
Set up the NMS

The PRTG-supported library containing the MIB files in question should be placed into the folder: “snmplibs”. Once this has been done, specific OIDs can be set up for monitoring in PRTG. This guide assumes that your Synology NAS has already been added to the devices list and focuses only on how to add OIDs for monitoring.

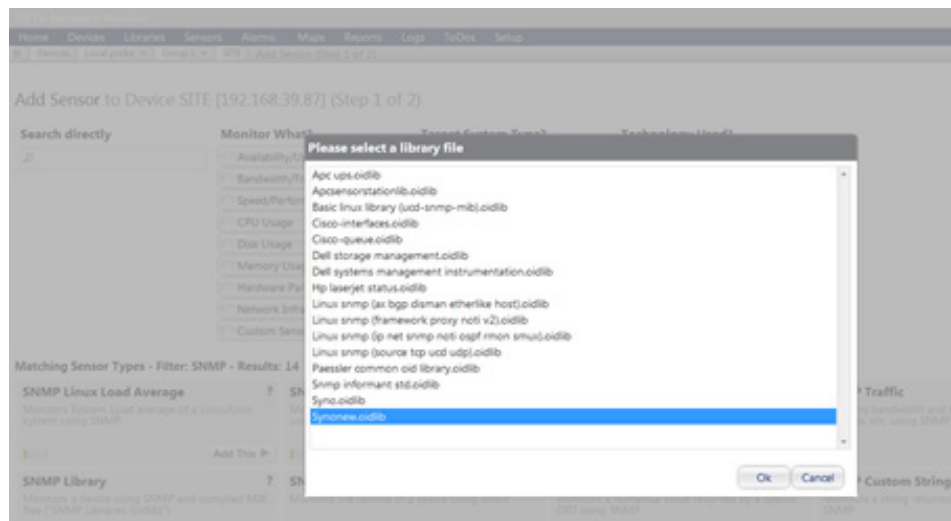
1. **Enter** the PRTG Network Monitor.
2. Go to **Sensors > Add Sensor**.



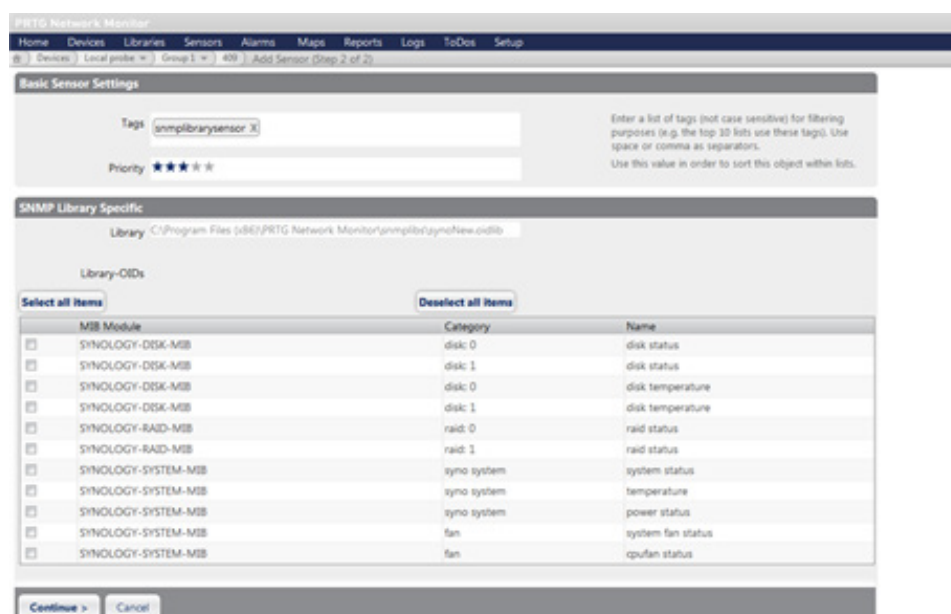
3. Click **Add sensor to an existing device** and choose a device.



4. Choose **SNMP Library** and the library exported in the previous section.



5. Select items for monitoring.



Document Revision History

This table describes the revisions made to Synology NAS MIB Guide.

Table 26. Document Revision History

| Date | Note |
|------------|---|
| 2012-07-19 | Document created |
| 2013-10-29 | Modified OID name and added UPS MIB |
| 2013-11-04 | Added more MIBs and useful OID |
| 2016-10-31 | Added more MIBs |
| 2018-06-30 | Added Ebox MIB Added useful OIDs in RAID MIB |
| 2018-12-18 | Added FlashCache MIB |
| 2018-12-24 | Added SHA MIB |