HealthTracker

HealthTracker is the state-of-the-art version of our monitoring plugins for NetApp and supports Cluster- und 7-Mode. We provide future proof and innovative features, such as rm_ack and a fundamental rewamp of the Collector Architecture, making it even more powerful than before. Furthermore, this version includes additional checks and a number of offerings to monitor metro clusters.

Current planning status of all plugins, listed by bundle. Expected completion of checks that are currently in the planning state is displayed in the *Year-Month* format.

Base Bundle

The Base Bundle includes all the checks needed for base monitoring such as hardware, shelfs, disk status or disk usage of aggregates and volumes. This bundle also includes a snapshot check that provides an overview of active network interfaces.

Check	Status	
	7m	cm
check_netapp7_head monitors the 7m-heads hardware objects (fans, NVRAM, power-supplies and the temperature-sensors)	stable	-
check_netapp_health monitors the system health. Sends an alarm if the system health status is anything other than 'ok'.	stable	stable
check_netapp_spare monitors the status of the spare-low condition (alarms if there is no suitable spare disk available).	stable	stable
Disk checks for failed, offline or unassigned disks on the filer.	stable	stable
Head monitors the heads hardware objects (fans, NVRAM, power-supplies, health-state, temperature-sensors)	-	stable
NetPort checks if the network-interfaces are enabled or not	-	stable
NetPort7m checks if the network-interfaces are enabled or not	stable	-
ShelfEnvironment checks, the shelf-status, power-supplys, temperature, fans, voltage-sensor and current-sensor on the shelves.	stable	stable
Snapshots checks, if the snap-reserve is still sufficient. Thresholds are set in percent; performance-data can be either in percent or absolute (Byte). Additional criteria are the age or name of the snapshot. This can be used for monitoring snapshot-backups and whether they are up to date or not. Also can be used to find snapshots related to a specific application like SNMV and check all volumes for left-over snapshots.	stable	stable
Uptime checks the seconds since last reboot.	-	stable
Usage checks the used space in volumes and aggregates. Thresholds can be set in GB or percent.	stable	stable

Advanced Bundle

The Advanced Bundle includes additional status checks for clusters, aggregates, volumes, LUNs, V-Servers and SnapMirrors/SnapVaults. Furthermore, this bundle contains the necessary tools to verify the redundancy of disk paths, RAIDs and interface groups. We give you the means to react to possible storage shortages ahead of time by monitoring the overcommitments of aggregates as well as providing usage predictions using trend interpolation.

Check	Status	
	7m	cm
AggregateState checks the aggregates-state. Alarms if they are not online (configurable).	stable	stable
check_netapp7_fcpstats monitors the FCP adapters for crc-errors and other values.	stable	-
check_netapp7_snapvault monitors the status and lag-time of Snapvault relations onyl on 7m filers. (Cdot filers are checked with the SnapMirror checks).	stable	-
check_netapp7_vfiler monitors the status of a vFiler (if the vfiler is running and if the network resources are configured)	stable	-
check_netapp_anycli for building checks with simple CLI-commands.	stable	stable
check_netapp_asup monitors the ASUP-log and alarms if failed transmissions or collections were found.	-	beta
check_netapp_cluster checks the status of the high availability service (connected, taken over, takeover failed, ...).	stable	stable
check_netapp_license checks the filer for expiring (demo-)licenses.	stable	stable
check_netapp_nfs-persist checks for non-persistant NFS shares.	-	alpha
check_netapp_process checks for runaway processes on a filer (as shown with the ps command).	-	alpha
check_netapp_quotas monitors quotas on a NetApp-filer (cluster mode only).	-	stable
check_netapp_scrub sends an alarm if the last scrubs timestamp of an aggregate is over a certain age.	stable	stable
check_netapp_takeover sends an alarm if the storage failover facility is disabled or otherwise not active.	-	beta
check_netapp_unused_lun checks for luns which are online but do not have an initiator connected.	-	alpha
DiskCount counts the number of disks matching defineable criteria (disk-type, container (spare, ...), storage-pool). Mostly used to monitor the number of spare-disks of a certain type.	-	stable
DiskPaths Checks if each disk has two paths (A/B, B/A). Deprecated - will be replaced by DiskPaths2	stable	stable

DiskPaths2 Checks if each disk has a given number and pattern of paths (A/B, B/A, ABAB, ABBA, ...).	alpha	alpha
FCPAdapter checks the operational status of all fcp adapters.	-	stable
IfGrp checks if an interface-group has enough links in up-state to still be redundant.	stable	stable
Job checks for failed jobs.	pre-alpha	beta
LunAlignment searches for misaligned luns. Alarms if a certain number of misaligned luns is reached.	-	beta
LunSize checks the unused but allocated blocks inside of a LUN. Notfifys the admin if they exceed a certain number (he may than run an unmap procedure on vmware).	stable	stable
LunState checks the LUN-states. Alarms if they are offline or not mapped to an initiator.	stable	stable
NetInterface checks if a network interfaces current-port is not equal to its home-port (output of the CLI command `network interface show -is-home false`). Can also check it's operational mode (up/down).	-	stable
OvercommitAggr Returns a list of aggregates together with their overcommitment in percent. Overcommitment is the relation between the aggrgates size and the total of all its (thin provisoned) volumes sizes.	stable	stable
Raidstatus alarms, if one of the RAIDs is degraded.	stable	stable
ReportIOPS reports how many iops are consumed by a given tenant.	-	stable
ReportSpace reports how much space in bytes are consumed by a given tenant.	-	stable
ServiceProcessor checks the status of the nodes service-processor and if they are correctly configured (autoupdate, IP-address).	-	stable
ShelfBay checks, the shelf- and disk-port status. Can alarm BYP-status disks.	stable	stable
Sis checks dedup-values (stale-fingerprint-percentage, run-time of last successfull operation).	-	stable
SnapMirrorMetrics checks and logs SnapMirrors (including type Vault): lag-time, last-transfer-duration, last-transfer-size	-	stable
SnapMirrorState checks and logs for SnapMirror (including type Vault): health, mirror-state	-	stable
SnapshotChangeRate calculates and monitors the change-rate (daily data change) of Snapshots in Gigabytes per day.	-	pre-alpha
SnapshotLessVolume searches for volumes which do not have snapshots.	-	stable
StorageUtilization Storage Utilization answers the question, “Am I effectively using the storage capacity available to my applications.	stable	stable

UsageTrend checks the time how long ist would last until an aggergate or volume is full, if the trend of the last 48h (configurable) would continue. Checks both bytes and inodes.	stable	stable
VolumeAutosize checks a volumes total-size and alerts when the volume is close to being full relative to the autosize maximum.	stable	stable
VolumeState checks the volume-states. Alarms if they are not online (configurable).	stable	stable
Vserver monitors the admin-state or the operational-status of a Vserver (running, stopped, inconsistent or defunct)	-	stable

Performance Bundle

The Performance Bundle includes all the checks needed for monitoring and trend analysis of performance indicators. NetApp recommends monitoring “per-volume-latency” as a primary indicator for performance bottlenecks - the PerfVolume check makes this possible.

Check	Status	
	7m	**cm**
BadlyPerformingDisks checks all disks in a NetApp system or in a specific raid-group. If a certain number of them performes badly (=has a high utilization) an alarm is send.	stable	stable
BufferCache checks several metrics of the system buffer cache (=system memory) like Buffers being read, Buffers being written, Empty (unused) buffers, Buffers with modified data, Buffers associated with CP IO, ...	stable	stable
FlashCache checks several metrics of the external FlashCache (PAM II) like External cache hit rate, Average latency of read I/Os, Number of wafl buffers served off the external cache,...	stable	stable
LunLatency Checks the 'latency' and 'operations per second' (ops) per LUN. Shows details for total, read, write and other. NetApp recommends monitoring latency as the primary performance indicator.	stable	stable
NVRAM checks data-rates and latency of the NVRAM.	stable	stable
PerfAggregate checks the 'latency', 'transfer-rate' and other performance counters per aggregate. Shows details for total, read, write and other. Also averages and totals over all aggregates of the filer can be measured and monitored, which allows the monitoring of the aggregate-latency and aggretate-transfer-rate on the filer level.	beta	beta
PerfCpu checks one or all processors in a NetApp system for their utilization.	stable	stable
PerfDisk checks all disks in a NetApp system for their utilization (Percentage of time there was at least one outstanding request to the disk). Optional the check can be limited to the disks of a single aggregate.	stable	stable
PerfHostadapter checks and counts rates per host adapter (Fibre Channel, Serial Attached SCSI, and parallel SCSI).	stable	stable

PerfIf checks and counts transfer-rates and errors per network-interface (ifnet). Especially useful for monitoring 10GbE-ports.	stable	stable
PerfLif checks and counts transfer-rates and errors per network-interface (lif) for DataONTAP 8.2.x. or higher.	stable	stable
PerfQtree checks some ops-counters per q-tree (nfs-ops, cifs-ops, ...).	alpha	alpha
PerfSys checks various performance counters of the NetApp-system (mostly operations/second and transfer-rates). Counters supported: net_data_sent, dafs_ops, total_ops, disk_data_written, net_data_recv, cifs_ops, streaming_pkts, http_ops, nfs_ops, fcp_ops, disk_data_read, iscsi_ops	stable	stable
PerfSysNode checks various performance counters of the NetApp-system (mostly operations/second and transfer-rates). Counters supported: net_data_sent, dafs_ops, total_ops, disk_data_written, net_data_recv, cifs_ops, streaming_pkts, http_ops, nfs_ops, fcp_ops, disk_data_read, iscsi_ops. The check evaluates these counters per Node and works only for DataONTAP 8.3 or later.	beta	beta
PerfTcpIp checks CRC errors and packets send/received for both the IP and TCP layer.	-	stable
PerfVolume checks the 'latency' and 'operations per second' (ops) per volume. Shows details for total, read, write and other. NetApp recommends monitoring latency as the primary performance indicator.	stable	stable
Wafl reads WAFL performance-counters like cp_count twice and calculates the rate of CPs per second. Different types of consistency-points (wafl-timer, back-to-back, ...) can be checked. The information gathered from this plugin corresponds to the CPty-column of 'sysstat -x 1'.	stable	stable

MetroCluster Bundle

Checks exclusive for the Metro Cluster: configuration-status, ping-status (icmp, data), cluster-health, node-availability, rdb-health and mirror-status of the cluster-aggregates

Check	Status	
	7m	cm
check_netapp_mc_config checks a metro-clusters mode and configuration state.	-	stable
ClusterPeerHealth checks the health of cluster peer relationships by evaluating several ping- and health-status.	-	stable
MetroClusterVserver sends an alarm if the configuration state of a MetroCluster vserver changes to unhealthy.	-	stable
SyncMirror checks the mirror-status on Metro Cluster aggregates.	stable	stable

Status Descriptions

Status	Description
-	no status
alpha	First versions available for testing. Both program- and documentation-errors are likely. Not recommended for production.
beta	Unstable, but production somehow useable version.
depreciated	No more development.
on_road_map	Planed with a specified release date.
pre-alpha	Developer pre-design, mostly just documentation without code.
stable	Stable, fully tested and documented version.
unsupported	Check must not be offered or distributed any more.