ONTAP 9.12.1 performance counter mapping

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Overview

This mapping documentation can help you continue meeting your ONTAP performance and monitoring objectives. It provides a list of the performance counter tables accessible through the ONTAP 9.12.1 REST API with a description of every counter. Each table also includes details about how the performance counters are related to the equivalent values available with the earlier ONTAPI API. This mapping information is designed to assist and support the migration of your ONTAP automation code from ONTAPI to the ONTAP REST API. More details about the documentation and how to use it are presented below.

Transition from objects to tables

The ONTAPI API, also referred to as the Zephyr API (ZAPI), is available through the NetApp Network Manageability SDK. ONTAPI presents the ONTAP performance data as a collection of objects each with a set of counter properties. The REST API provides the equivalent data in a table format for a subset of the ONTAPI objects. Navigation begins in the sidebar with a list of the performance counter tables that are accessible through the REST API.

Consistent description of each table

The description of every table is based on a consistent format. After a brief introduction and an indication of the related ONTAPI object, the following sections are included.

- Table row IDs

  Each counter table is accessed through a unique ID. This section provides a list of the one or more ID formats supported for the table.

- Properties

  This section includes the names of the ONTAPI string counters and the equivalent REST property for each.

- Counters

  There is also a mapping from the numeric ONTAPI counters to the equivalent REST counters.

- Content changes

  Any changes from the ONTAPI string counters to the respective REST properties are described here.

- Table aliases

  This section includes a description of any aliases for the aggregated tables.

Searching the documentation

You can search this mapping documentation using the search bar at the top of the page. If you’re interested in a specific property or counter, you should enclose the search term in double quotes. Alternatively, you can download a PDF version of the entire mapping document and search the PDF locally. Click *Available PDFs* at the top left to download the PDF.

Additional resources

There are additional resources available to help as you migrate your automation code to the ONTAP REST API.

- ONTAP 9.12.1 ONTAPI-to-REST mapping
- ONTAP automation: Performance counters

Help us improve the documentation

NetApp is committed to supporting the modernization of your ONTAP applications as you transition to the REST API. You can provide feedback by becoming a GitHub contributor or by sending an email to *doccomments@netapp.com*. Also follow us on Twitter **@NetAppDoc** for notifications about the NetApp documentation.

copy_manager

The ONTAP copy subsystem (OCS) is the ONTAP component that processes copy-offload requests from multiple protocols. It enables a host to offload data transfer between a source and a destination within the storage array. Based on the scope of this transfer, these requests can be processed by one or more of the OCS copy engines. These include the single instance storage clone copy engine (SCE) for intra-volume copies, the byte copy engine (BCE) for inter-volume copies and the SpinNP copy engine (SpinCE) for copying across nodes in a cluster. The copy manager table reports counters that track copy-offload requests processed by the OCS copy engines and related errors.

Classic Object: copy_manager

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{instance_name}:{instance_uuid}	constituent	This represents the construction of a row ID field for a row from a single node.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Name of the constituent Copy Manager row
node_uuid	node.uuid	UUID for the constituent Copy Manager row
instance_name	name	Name of the Copy Manager SVM row
vserver_name	svm.name	Name of the Copy Manager SVM row
vserver_uuid	svm.uuid	UUID for the Copy Manager SVM row

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
copy_reqs	copy_requests	Sum of Copy Requests received by OCM.
abort_reqs	abort_requests	Sum of Abort Requests received by OCM.
status_reqs	status_requests	Sum of Status Requests received by OCM.
copy_notify_reqs	copy_notify_requests	Sum of Copy Notify Requests received by OCM.
copy_revoke_reqs	copy_revoke_requests	Sum of Copy Revoke Requests received by OCM.
intranode_intravol_copy_reqs	intranode_intravol_copy_requests	Sum of Intra-node Intra-volume Copy Requests received.
intranode_intervol_copy_reqs	intranode_intervol_copy_requests	Sum of Intra-node Inter-volume Copy Requests received.
internode_copy_reqs	internode_copy_requests	Sum of Inter-node Copy Requests received.
copy_authchecks	copy_authchecks	Sum of Copy Requests received requesting an authorization check.
KB_copied	KB_copied	Sum of kilo-bytes copied.
KB_hole_punched	KB_hole_punched	Sum of kilo-bytes that were hole-punched.
copy_notify_failures	copy_notify_failures	Sum of Copy Notify failures.
copy_revoke_failures	copy_revoke_failures	Sum of Copy Revoke failures.
copy_authcheck_failures	copy_authcheck_failures	Sum of Copy Authorization failures.
copy_failures	copy_failures	Sum of Copy Request failures.

Classic Numeric Counter	REST Counter	Description
copy_fail_no_resource	copy_fail_no_resource	Sum of copy engine failures for: out of resources.
copy_fail_authfailure	copy_fail_authfailure	Sum of copy engine failures for: authentication failure.
copy_fail_isdir	copy_fail_is_directory	Sum of copy engine failures for: WAFL, is directory.
copy_fail_nospace	copy_fail_no_space	Sum of copy engine failures for: WAFL, no space.
copy_fail_diskquota	copy_fail_disk_quota	Sum of copy engine failures for: WAFL, disk quota.
copy_fail_jukebox	copy_fail_could_grow	Sum of copy engine failures for: WAFL, low space, could grow.
copy_fail_offline	copy_fail_offline	Sum of copy engine failures for: WAFL, is offline.
copy_fail_staleFH	copy_fail_stale_filehandle	Sum of copy engine failures for: WAFL, stale filehandle.
copy_fail_io	copy_fail_io	Sum of copy engine failures for: WAFL, input/output error.
copy_fail_readonly	copy_fail_read_only	Sum of copy engine failures for: WAFL, destination is read only.
copy_fail_dataunrecov	copy_fail_data_unrecoverable	Sum of copy engine failures for: WAFL, data is unrecoverable.
copy_fail_bad_msgparm	copy_fail_bad_msg_parameter	Sum of copy engine failures for: OCM, invalid msg parameter.
copy_fail_vol_moving	copy_fail_volume_moving	Sum of copy engine failures for: WAFL, data is moving.
copy_fail_no_volume	copy_fail_no_volume	Sum of copy engine failures for: WAFL, volume not available.
copy_fail_delayed	copy_fail_delayed	Sum of copy engine failures for: WAFL, request was delayed.

Classic Numeric Counter	REST Counter	Description
copy_fail_must_retry	copy_fail_must_retry	Sum of copy engine failures for: WAFL, retry request encountered.
copy_fail_op_not_permitted	copy_fail_op_not_permitted	Sum of copy engine failures for: WAFL, operation not permitted.
copy_fail_no_access	copy_fail_no_access	Sum of copy engine failures for: WAFL, access error encountered.
copy_fail_virus_detected	copy_fail_virus_detected	Sum of copy engine failures for: WAFL, virus detected.
copy_fail_data_underrun	copy_fail_data_underrun	Sum of copy engine failures for: WAFL, not enough data copied.
copy_fail_data_overrun	copy_fail_data_overrun	Sum of copy engine failures for: WAFL, too much data copied.
copy_fail_locking_issue	copy_fail_locking_issue	Sum of copy engine failures for: WAFL, locking error encountered.
copy_fail_fencing_issue	copy_fail_fencing_issue	Sum of copy engine failures for: WAFL, fencing error encountered.
copy_fail_other	copy_fail_other	Sum of copy engine failures for: WAFL, other WAFL error.
ocs_copy_count_curr	ontap_copy_subsystem_current_copy_count	Current number of copy requests being processed by the ONTAP copy subsystem.
ocs_copy_count_hwm	ontap_copy_subsystem_copy_count_peak	Highest number of concurrent copy requests encountered by the ONTAP copy subsystem.
sce_copy_count_curr	system_continuous_engineering_current_copy_count	Current number of copy requests being processed by the System Continuous Engineering.
sce_copy_count_hwm	system_continuous_engineering_copy_count_peak	Highest number of concurrent copy requests encountered by the System Continuous Engineering.

Classic Numeric Counter	REST Counter	Description
bce_copy_count_curr	block_copy_engine_current_copy_count	Current number of copy requests being processed by the Block Copy Engine.
bce_copy_count_hwm	block_copy_engine_copy_count_peak	Highest number of concurrent copy requests encountered by the Block Copy Engine.
spince_copy_count_curr	spince_current_copy_count	Current number of copy requests being processed by the SpinCE.
spince_copy_count_hwm	spince_copy_count_peak	Highest number of concurrent copy requests encountered by the SpinCE.
bce_copy_reqs	block_copy_engine_copy_requests	Sum of Block Copy Engine Copy Requests received.
sce_copy_reqs	system_continuous_engineering_copy_requests	Sum of Sisclone Copy Engine Copy Requests received.
sce_kb_copied	system_continuous_engineering_KB_copied	Sum of Sisclone Copy Engine KB copied.
bce_kb_copied	block_copy_engine_KB_copied	Sum of Block Copy Engine KB copied.
spince_kb_copied	spince_KB_copied	Sum of Spinnp Copy Engine KB copied.
bce_ops	bce_ops	Number of byte copy engine requests array with respect to size of operation.
bce_time_latency	bce_time_latency	Byte copy engine average latency array with respect to size of operation.
sce_ops	sce_ops	Number of sisclone copy engine requests array with respect to size of operation.
sce_time_latency	sce_time_latency	Sisclone copy engine average latency array with respect to size of operation.

Classic Numeric Counter	REST Counter	Description
spince_ops	spince_ops	Number of spinnp copy engine requests array with respect to size of operation.
spince_time_latency	spince_time_latency	Spinnp copy engine average latency array with respect to size of operation.
copy_latency_hist	copy_latency_histogram	Latency histogram for copy operations
bce_latency_hist	bce_latency_histogram	Latency histogram for byte copy engine copy operations
sce_latency_hist	sce_latency_histogram	Latency histogram for sisclone copy engine copy operations
spince_latency_hist	spince_latency_histogram	Latency histogram for spinnp copy engine copy operations
bce_read_hist	bce_read_histogram	Latency histogram for byte copy engine read operations
bce_write_hist	bce_write_histogram	Latency histogram for byte copy engine write operations
bce_hp_hist	bce_hole_punch_histogram	Latency histogram for byte copy engine hole punch operations
spince_read_hist	spince_read_histogram	Latency histogram for spinnp copy engine read operations
spince_write_hist	spince_write_histogram	Latency histogram for spinnp copy engine write operations
spince_hp_hist	spince_hole_punch_histogram	Latency histogram for spinnp copy engine hole punch operations

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

REST Counter	Description
bce_ops	The labels have changed from bce_ops_512KB to 512KB. Also bce_ops_greater_than_32MB label has changed to >32MB.
bce_time_latency	The labels have changed from bce_latency_512KB to 512KB. Also bce_latency_greater_than_32MB label has changed to >32MB.
sce_ops	The labels have changed from sce_ops_512KB to 512KB. Also sce_ops_greater_than_32MB label has changed to >32MB.
sce_time_latency	The labels have changed from sce_latency_512KB to 512KB. Also sce_latency_greater_than_32MB label has changed to >32MB.
spince_ops	The labels have changed from spince_ops_512KB to 512KB. Also spince_latency_greater_than_32MB label has changed to >32MB.
spince_time_latency	The labels have changed from spince_latency_512KB to 512KB. Also spince_latency_greater_than_32MB label has changed to >32MB.

Table Aliases

This section describes aliases for aggregated tables.

disk

CM table for exporting disk performance counters. The alias name for disk:raid_group is disk_raid_group.

Classic Object: disk

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{instance_name}:{instance_uuid}	constituent	This represents the construction of a row ID field for a row from a single node.
{raid_group}:{raid_group_id}	raid_group	This represents the construction of the row ID field in raid_group combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Node Name
instance_name	name	Name of the disk
unique_id	unique_id	Unique ID of the disk
physical_disk_name	physical_disk_name	Name of the physical disk
raid_name	raid.name	Name of the disk in raid terminology
raid_group	raid_group	Name of the RAID group to which the disk belongs, in raid terminology

Classic String Counter	REST Property	Description
raid_group_id	raid_group_id	ID of the RAID group to which the disk belongs, in raid terminology
raid_type	raid.type	Raid type of this disk
disk_speed	speed	Disk RPM

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
disk_capacity	capacity	Disk capacity in MB
zns_wrio_msg_wait_latency_count	zns_wrio_msg_wait.latency_count	Total number of ZNS disk write I/O message waited per second
zns_wrio_msg_wait_average_latency	zns_wrio_msg_wait.average_latency	The average wait time taken for ZNS disk write I/O message
time_spent_high_priority_queue	time_spent.high_priority_queue	Time spent in high priority queue
time_spent_guaranteed_queue	time_spent.guaranteed_queue	Time spent in guaranteed queue
time_spent_guaranteed_other_queue	time_spent.guaranteed_other_queue	Time spent in guaranteed other queue
time_spent_cscan_high_queue	time_spent.cscan_high_queue	Time spent in cscan high queue
time_spent_cscan_medium_queue	time_spent.cscan_medium_queue	Time spent in cscan medium queue
time_spent_cscan_medium_b_queue	time_spent.cscan_medium_b_queue	Time spent in cscan medium b queue
time_spent_cpio_queue	time_spent.cpio_queue	Time spent in cpio queue
time_spent_deadline_queue	time_spent.deadline_queue	Time spent in deadline queue
time_spent_verify_queue	time_spent.verify_queue	Time spent in verify queue

Classic Numeric Counter	REST Counter	Description
zns_wrio_msg_wait_latency_histogram	zns_wrio_msg_wait.latency_histogram	This histogram provides the wait latency information for ZNS disk write I/O messages in queue
total_transfers	total_transfer_count	Total number of disk operations involving data transfer initiated per second
user_read_chain	user_read_chain	Average number of blocks transferred in each user read operation
user_reads	user_read_count	Number of disk read operations initiated each second for retrieving data or metadata associated with user requests
user_write_chain	user_write_chain	Average number of blocks transferred in each user write operation
user_writes	user_write_count	Number of disk write operations initiated each second for storing data or metadata associated with user requests
user_writes_in_skip_mask	user_writes_in_skip_mask	Number of disk write I/Os that were executed as part of a skip-mask write
user_skip_write_ios	user_skip_write_ios	Number of disk skip-write operations initiated each second for storing data or metadata associated with user requests
cp_read_chain	cp_read_chain	Average number of blocks transferred in each consistency point read operation during a CP
cp_reads	cp_read_count	Number of disk read operations initiated each second for consistency point processing

Classic Numeric Counter	REST Counter	Description
guarenteed_read_chain	guarenteed_read_chain	Average number of blocks transferred in each guaranteed read operation
guaranteed_read_chain	guaranteed_read.chain	Average number of blocks transferred in each guaranteed read operation
guarenteed_reads	guarenteed_reads	Number of disk read operations initiated each second for raid reconstruct or scrubbing activities
guaranteed_reads	guaranteed_reads	Number of disk read operations initiated each second for raid reconstruct or scrubbing activities
guarenteed_write_chain	guarenteed_write_chain	Average number of blocks transferred in each guaranteed write operation
guaranteed_write_chain	guaranteed_write.chain	Average number of blocks transferred in each guaranteed write operation
guarenteed_writes	guarenteed_writes	Number of disk write operations initiated each second for raid reconstruct or scrubbing activities
guaranteed_writes	guaranteed_writes	Number of disk write operations initiated each second for raid reconstruct or scrubbing activities
user_read_latency	user_read_latency	Average latency per block in microseconds for user read operations
user_read_blocks	user_read_block_count	Number of blocks transferred for user read operations per second
read_ops	read_ops	Number of read operations per second

Classic Numeric Counter	REST Counter	Description
split_ops	split_ops	Numbers of operations split into child operations per second
split_child_ops	split_child_ops	Number of child operations resulting from a split operation per second
split_child_gap_ops	split_child_gap_ops	Number of child operations per second resulting from a break in continuity of blocks requested
split_child_hard_gap_ops	split_child_hard_gap_ops	Number of child operations per second resulting from a hard break in continuity of blocks requested
read_data	read_data	Amount of data read per second
user_write_latency	user_write_latency	Average latency per block in microseconds for user write operations
operation_latency	operation_latency	Average latency per operation in microseconds for read and write operations
user_write_blocks	user_write_block_count	Number of blocks transferred for user write operations per second
write_ops	write_ops	Number of write operations per second
write_data	write_data	Amount of data written per second.
skip_blocks	skip_blocks	Number of blocks skipped in skip-mask write operations per second
bit_buckets	bit_buckets	Number of blocks using a bit bucket per second
dummy_buffers	dummy_buffers	Number of blocks using a dummy buffer per second

Classic Numeric Counter	REST Counter	Description
cp_read_latency	cp_read_latency	Average latency per block in microseconds for consistency point read operations
cp_read_blocks	cp_read_blocks	Number of blocks transferred for consistency point read operations per second
total_blocks	total_block_count	Total number of blocks transferred for user operations per second
total_data	total_data	Total throughput for user operations per second
guarenteed_read_latency	guarenteed_read_latency	Average latency per block in microseconds for guaranteed read operations
guaranteed_read_latency	guaranteed_read.latency	Average latency per block in microseconds for guaranteed read operations
guarenteed_read_blocks	guarenteed_read_blocks	Number of blocks transferred for guaranteed read operations per second
guaranteed_read_blocks	guaranteed_read.block_count	Number of blocks transferred for guaranteed read operations per second
guarenteed_write_latency	guarenteed_write_latency	Average latency per block in microseconds for guaranteed write operations
guaranteed_write_latency	guaranteed_write.latency	Average latency per block in microseconds for guaranteed write operations
guarenteed_write_blocks	guarenteed_write_blocks	Number of blocks transferred for guaranteed write operations per second
guaranteed_write_blocks	guaranteed_write.block_count	Number of blocks transferred for guaranteed write operations per second
disk_busy	disk_busy_percent	The utilization percent of the disk

Classic Numeric Counter	REST Counter	Description
base_for_disk_busy	base_for_disk_busy	Time base for disk_busy calculation
io_pending	io_pending	Average number of I/Os issued to the disk for which we have not yet received the response
io_pending_histogram	io_pending_histogram	I/O pending histogram.
io_pending_util	io_pending_util	Average number of I/Os issued to the disk for measuring utilization
cp_io_pending	cp_io_pending	Average number of CP I/Os issued to the disk for which we have not yet received the response
cp_msg_pending	cp_msg_pending	Average number of CP messages issued to the disk for which we have not yet received the response
io_queued	io_queued	Number of I/Os queued to the disk but not yet issued
io_queued_histogram	io_queued_histogram	I/O queued histogram.
dlsched_distant	deadline_scheduler_distant	Number of requests with non-imminent deadlines issued by deadline scheduler.
dlsched_immediate	deadline_scheduler_immediate	Number of requests with imminent deadlines issued by deadline scheduler.
dlsched_distant_bg	deadline_scheduler_distant_background	Number of background requests with distant deadlines issued by deadline scheduler.
dlsched_immediate_bg	deadline_scheduler_immediate_background	Number of background requests with imminent deadlines issued by deadline scheduler.

Classic Numeric Counter	REST Counter	Description
dlsched_max_distant	deadline_scheduler_maximum_distant	Number of non-imminent requests allowed on device by deadline scheduler.
dlsched_max_background	deadline_scheduler_maximum_background	Number of background requests allowed on device by deadline scheduler.
dlsched_qtime	deadline_scheduler_queue_time	Estimate of disk queue time used by deadline scheduler.
dlsched_svctime	deadline_scheduler_service_time	Estimate of disk service time used by deadline scheduler.
dlsched_wait	deadline_scheduler_wait_time	Average deadline scheduler wait time by QoS class.
dlsched_count	deadline_scheduler_count	Count of deadline scheduler messages by QoS class.
disk_io_latency_histogram	disk_io_latency_histogram	Disk I/O latency histogram
read_io_latency_histogram	read_io_latency_histogram	Read I/O latency histogram
write_io_latency_histogram	write_io_latency_histogram	Write I/O latency histogram
share_io_latency_histogram	share_io_latency_histogram	Share Blocks I/O latency histogram
unmap_io_latency_histogram	unmap_io_latency_histogram	Unmap Blocks I/O latency histogram
write_stream_ops	write_stream_ops	Number of write stream operations per second
write_amplification_factor	write_amplification_factor	Average measure of the write amplification factor for SSDs
host_write_blocks	host_write_block_count	Number of blocks written by the host as reported by the SSD
physical_write_blocks	physical_write_block_count	Number of blocks physically written as reported by the SSD
cpio_rates	cp_io_rates	Milliseconds spent at each CP I/O rate

Classic Numeric Counter	REST Counter	Description
medium_errors	medium_error_count	Total medium errors reported for drive
recovered_errors	recovered_error_count	Total recovered errors reported for drive

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
disk:raid_group	disk_raid_group

external_cache

This table provides performance metrics and configuration characteristics for a given WAFL External Cache type, such as Flash Cache or the Predictive Cache Statistics simulator. High-level cache behavior can be monitored using these statistics.

Classic Object: ext_cache_obj

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
usage	usage	Percentage of blocks in external cache currently containing valid data
accesses	accesses	External cache accesses per second
disk_reads_replaced	disk_reads_replaced	Estimated number of disk reads per second replaced by cache
hit	hit.total	Number of WAFL buffers served off the external cache

Classic Numeric Counter	REST Counter	Description
hit_normal_lev0	hit.normal_level_zero	Number of normal level 0 WAFL buffers served off the external cache
hit_metadata_file	hit.metadata_file	Number of metadata file buffers served off the external cache
hit_directory	hit.directory	Number of directory buffers served off the external cache
hit_indirect	hit.indirect	Number of indirect file buffers served off the external cache
miss	miss.total	External cache misses
miss_normal_lev0	miss.normal_level_zero	External cache misses accessing normal level 0 buffers
miss_metadata_file	miss.metadata_file	External cache misses accessing metadata file buffers
miss_directory	miss.directory	External cache misses accessing directory buffers
miss_indirect	miss.indirect	External cache misses accessing indirect file buffers
hit_percent	hit.percent	External cache hit rate
inserts	inserts	Number of WAFL buffers inserted into the external cache
evicts	evicts	Number of blocks evicted from the external cache to make room for new blocks
invalidates	invalidates	Number of blocks invalidated in the external cache

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

fcp

An FCP target port is a hardware endpoint that performs data communications over a physical link using the Fibre Channel Protocol (FCP). This table collects diagnostic and performance information for an FCP target port. The table counters can be used to diagnose link and connectivity issues on the port. These table counters also provide an overview of the ports IO performance. The alias name for fcp:node is fcp_node.

Classic Object: fcp_port

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{node.uuid}	node	This represents the construction of the row ID field in node combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Name of the specified node.
node_uuid	node.uuid	UUID of the specified node.
instance_name	name	Name of this FCP target port.
port_wwpn	port.wwpn	World Wide Port Name (WWPN) of this FCP target port.

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
reset_count	reset_count	Number of physical port resets
active_npiv	active_node_port_id_virtualization	Number of active node port ID virtualization (NPIV) instances on this port
link_down	link.down	Number of times the Fibre Channel link was lost
link_up	link.up	Number of times the Fibre Channel link was established
link_speed	link.speed	Negotiated link speed
queue_high_wm	queue_peak	High watermark of the number of commands processed
itn_create_latency_hist	initiator_target_nexus_create_latency_histogram	Latency histogram for initiator target nexus (ITN) create operations
isr_latency_hist	isr.latency_histogram	Latency histogram for interrupt response time
isr_latency	isr.latency	Average interrupt response time
isr_count	isr.count	Number of interrupt responses
queue_full	queue_full	Number of times a queue full condition occurred.
threshold_full	threshold_full	Number of times the total number of outstanding commands on the port exceeds the threshold supported by this port.
queue_depth_hist	queue_depth_histogram	Queue depth histogram for FCP target ports.
avg_itn_create_latency	average_initiator_target_nexus_create_latency	Average initiator target nexus (ITN) create latency
max_itn_create_latency	maximum_initiator_target_nexus_create_latency	Maximum initiator target nexus (ITN) create latency

Classic Numeric Counter	REST Counter	Description
min_itn_create_latency	minimum_initiator_target_nexus_create_latency	Minimum initiator target nexus (ITN) create latency
total_itn_create_ops	total_initiator_target_nexus_create_ops	Number of initiator target nexus (ITN) create operations
int_count	interrupt_count	Number of interrupts
shared_int_count	shared_interrupt_count	Number of shared interrupts
spurious_int_count	spurious_interrupt_count	Number of spurious interrupts
loss_of_sync	loss_of_sync	Number of times this port lost sync
loss_of_signal	loss_of_signal	Number of times this port lost signal
prim_seq_err	primitive_seq_err	Number of primitive sequence errors
lr_sent_count	lr.sent_count	Number of LR primitives transmitted
lr_received_count	lr.received_count	Number of LR primitives received
nos_received_count	nos_received_count	Number of NOS primitives received
ols_received_count	ols_received_count	Number of OLS primitives received
discarded_frames_count	discarded_frames_count	Number of discarded frames.
polled_intr_count	polled_interrupt.count	Number of polled interrrupts count.
polled_intr_preempted	polled_interrupt.preempted	Number of polled interrrupts preempted.
polled_intr_lost	polled_interrupt.lost	Number of polled interrrupts that could not be accounted for.
polled_intr_yielded	polled_interrupt.yielded	Number of polled interrrupts yielded.
read_ops	read_ops	Number of read operations

Classic Numeric Counter	REST Counter	Description
write_ops	write_ops	Number of write operations
other_ops	other_ops	Number of operations that are not read or write.
total_ops	total_ops	Total number of FCP operations
read_data	read_data	Amount of data read from the storage system
write_data	write_data	Amount of data written to the storage system
total_data	total_data	Amount of FCP traffic to and from the storage system
average_read_latency	average_read_latency	Average latency for read operations
average_write_latency	average_write_latency	Average latency for write operations
average_other_latency	average_other_latency	Average latency for operations other than read and write
nvmf_read_ops	nvmf.read_ops	Number of FC-NVMe read operations
nvmf_write_ops	nvmf.write_ops	Number of FC-NVMe write operations
nvmf_caw_ops	nvmf.caw_ops	Number of FC-NVMe CAW operations
nvmf_other_ops	nvmf.other_ops	Number of NVMF operations that are not read or write.
nvmf_remote_read_ops	nvmf_remote.read_ops	Number of FC-NVMe remote read operations
nvmf_remote_write_ops	nvmf_remote.write_ops	Number of FC-NVMe remote write operations
nvmf_remote_caw_ops	nvmf_remote.caw_ops	Number of FC-NVMe remote CAW operations

Classic Numeric Counter	REST Counter	Description
nvmf_remote_other_ops	nvmf_remote.other_ops	Number of NVMF remote operations that are not read or write.
nvmf_remote_total_ops	nvmf_remote.total_ops	Total number of remote FC-NVMe operations
nvmf_total_ops	nvmf.total_ops	Total number of FC-NVMe operations
nvmf_read_data	nvmf.read_data	Amount of data read from the storage system (FC-NVMe)
nvmf_write_data	nvmf.write_data	Amount of data written to the storage system (FC-NVMe)
nvmf_caw_data	nvmf.caw_data	Amount of CAW data sent to the storage system (FC-NVMe)
nvmf_total_data	nvmf.total_data	Amount of FC-NVMe traffic to and from the storage system
nvmf_remote_read_data	nvmf_remote.read_data	Amount of remote data read from the storage system (FC-NVMe)
nvmf_remote_write_data	nvmf_remote.write_data	Amount of remote data written to the storage system (FC-NVMe)
nvmf_remote_caw_data	nvmf_remote.caw_data	Amount of remote CAW data sent to the storage system (FC-NVMe)
nvmf_remote_total_data	nvmf_remote.total_data	Amount of remote FC-NVMe traffic to and from the storage system
nvmf_avg_read_latency	nvmf.average_read_latency	Average latency for read operations (FC-NVMe)
nvmf_avg_write_latency	nvmf.average_write_latency	Average latency for write operations (FC-NVMe)
nvmf_avg_other_latency	nvmf.average_other_latency	Average latency for operations other than read and write (FC-NVMe)
nvmf_avg_remote_read_latency	nvmf.average_remote_read_latency	Average latency for remote read operations (FC-NVMe)

Classic Numeric Counter	REST Counter	Description
nvmf_avg_remote_write_latency	nvmf.average_remote_write_latency	Average latency for remote write operations (FC-NVMe)
nvmf_avg_remote_other_latency	nvmf.average_remote_other_latency	Average latency for remote operations other than read and write (FC-NVMe)
nvmf_command_slots	nvmf.command_slots	Number of command slots that have been used by initiators logging into this port. This shows the command fan-in on the port.
request_dropped_unknown_vp	request_dropped_unknown_virtual_port	Number of requests dropped because there was no matching virtual port identifier.
link_failure	link_failure	Number of link failures
invalid_transmission_word	invalid.transmission_word	Number of invalid transmission words
invalid_crc	invalid.crc	Number of invalid cyclic redundancy checks (CRC count)
portcfg_flogi_acc	portcfg.fabric_login_accept	Number of fabric login (FLOGI) accept frames received
portcfg_flogi_rjt	portcfg.fabric_login_reject	Number of port configuration changes due to fabric login (FLOGI) link service (LS) reject frames received
portcfg_flogi_timeout	portcfg.fabric_login_timeout	Number of fabric login (FLOGI) timeouts seen during port configuration
portcfg_topology_change	portcfg.topology_change	Number of port configuration changes due to topology changes

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
fcp:node	fcp_node

fcp_lif

An FCP LIF is a logical interface that connects a SVM to a physical FCP port. This table collects diagnostics and performance information for an FCP LIF. The table counters can be used to debug and diagnose connectivity issues with initiators or fabric on a LIF. The table counters can be used to debug and diagnose connectivity issues with initiators or fabric at a LIF level granularity. The alias names for fcp_lif:svm and fcp_lif:port are fcp_lif_svm and fcp_lif_port respectively.

Classic Object: fcp_lif

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{svm.name}:{svm.uuid}	svm	This represents the construction of the row ID field in svm combo object, which is a single unique string that identifies a row.
{port.id}:{port.wwpn}	port	This represents the construction of the row ID field in port combo object, which is a single unique string that identifies a row.
{node.name}:{node.uuid}	node	This represents the construction of the row ID field in node combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name
instance_name	name	Name of this logical interface (LIF)
instance_uuid	unique_id	Unique id of this logical interface (LIF)

Classic String Counter	REST Property	Description
vserver_name	svm.name	Name of the SVM that owns this logical interface (LIF)
vserver_uuid	svm.uuid	UUID of the SVM that owns this logical interface (LIF)
port_wwpn	port.wwpn	WWPN for the port
port_id	port.id	ID for the port

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
read_ops	read_ops	Number of read operations
write_ops	write_ops	Number of write operations
other_ops	other_ops	Number of operations that are not read or write.
total_ops	total_ops	Total number of operations.
read_data	read_data	Amount of data read from the storage system
write_data	write_data	Amount of data written to the storage system
total_data	total_data	Amount of FCP traffic to and from the storage system
ls_reject	link_service_reject	Number of link service (LS) requests rejected.
command_sequence_error	command.sequence_error	Number of sequence errors seen for ELS/CT commands
command_sequence_timeout	command.sequence_timeout	Number of sequence timeouts seen for ELS/CT commands

Classic Numeric Counter	REST Counter	Description
command_terminate	command.terminate	Number of terminate requests processed for IO commands
total_logins	total_logins	Total number of logins
total_logouts	total_logouts	Total number of logouts
inits_connected	initiators_connected	Number of initiators that are currently logged in to the logical interface (LIF)
portlogout_disc_timeout	port_logout_disc.timeout	Number of port logouts caused by discovery (DISC) timeouts
portlogout_disc_rjt	port_logout_disc.reject	Number of port logouts caused by rejected discovery (DISC) frames
login_affecting_prli	login_affecting.process_login	Number of login-affecting process login (PRLI) frames received
login_affecting_prlo	login_affecting.process_logout	Number of login-affecting process logout (PRLO) frames received
login_affecting_plogi	login_affecting.port_login	Number of port login (PLOGI) frames received
login_affecting_logo	login_affecting.logout	Number of logout (LOGO) frames received
login_affecting_tprlo	login_affecting.third_party_logout	Number of login-affecting third-party logouts (TPRLOs) received
avg_read_latency	average_read_latency	Average latency for read operations
avg_write_latency	average_write_latency	Average latency for write operations
avg_other_latency	average_other_latency	Average latency for operations other than read and write
avg_latency	average_latency	Average latency for FCP operations

Classic Numeric Counter	REST Counter	Description
read_latency_hist	read_latency_histogram	Latency histogram for read operations
read_cmd_data_proc_latency_hist_8K	read_cmd_data_proc.latency_histogram_8K	Histogram for read command processing and data delivery time for I/O less than/equal to 8K
read_cmd_data_proc_latency_hist_16K	read_cmd_data_proc.latency_histogram_16K	Histogram for read command processing and data delivery time for I/O greater than 8K AND less than/equal to 16K
read_cmd_data_proc_latency_hist_32K	read_cmd_data_proc.latency_histogram_32K	Histogram for read command processing and data delivery time for I/O greater than 16K AND less than/equal to 32K
read_cmd_data_proc_latency_hist_64K	read_cmd_data_proc.latency_histogram_64K	Histogram for read command processing and data delivery time for I/O greater than 32K AND less than/equal to 64K
read_cmd_data_proc_latency_hist_large_IO	read_cmd_data_proc.latency_histogram_large_io	Histogram for read command processing and data delivery time for I/O greater than 64K
write_latency_hist	write_latency_histogram	Latency histogram for write operations
write_cmd_proc_latency_hist_8K	write_cmd_proc.latency_histogram_8K	Histogram for write command processing time for I/O less than/equal to 8K
write_cmd_proc_latency_hist_16K	write_cmd_proc.latency_histogram_16K	Histogram for write command processing time for I/O greater than 8K AND less than/equal to 16K
write_cmd_proc_latency_hist_32K	write_cmd_proc.latency_histogram_32K	Histogram for write command processing time for I/O greater than 16K AND less than/equal to 32K

Classic Numeric Counter	REST Counter	Description
write_cmd_proc_latency_hist_64K	write_cmd_proc.latency_histogram_64K	Histogram for write command processing time for I/O greater than 32K AND less than/equal to 64K
write_cmd_proc_latency_hist_large_IO	write_cmd_proc.latency_histogram_large_io	Histogram for write command processing time for I/O greater than 64K
write_data_consume_latency_hist_8K	write_data_consume.latency_histogram_8K	Histogram for write data consumption time for I/O less than/equal to 8K
write_data_consume_latency_hist_16K	write_data_consume.latency_histogram_16K	Histogram for write data consumption time for I/O greater than 8K AND less than/equal to 16K
write_data_consume_latency_hist_32K	write_data_consume.latency_histogram_32K	Histogram for write data consumption time for I/O greater than 16K AND less than/equal to 32K
write_data_consume_latency_hist_64K	write_data_consume.latency_histogram_64K	Histogram for write data consumption time for I/O greater than 32K AND less than/equal to 64K
write_data_consume_latency_hist_large_IO	write_data_consume.latency_histogram_large_io	Histogram for write data consumption time for I/O greater than 64K
read_size_hist	read_size_histogram	Histogram of read sizes
write_size_hist	write_size_histogram	Histogram of write sizes
request_dropped_no_map	request_dropped.no_map	Number of requests dropped because of no valid initiator target nexus (ITN).
request_dropped_no_resource	request_dropped.no_resource	Number of requests dropped because of lack of driver resources.
request_dropped_no_hw_resource	request_dropped.no_hw_resource	Number of requests dropped because of lack of hardware resources.

Classic Numeric Counter	REST Counter	Description
request_dropped_no_exch_resource	request_dropped.no_exchange_resource	Number of requests dropped because of lack of exchange resources in the firmware.
request_taskfull_no_exch_resource	request_taskfull.no_exchange_resource	Number of requests responded with a taskfull because of lack of exchange resources in the firmware.
request_dropped_not_ready	request_dropped.not_ready	Number of requests dropped because the LIF is not ready.
els_plogi_error	els.port_login_error	Number of times an error was encountered when processing a port login (PLOGI) command
els_flogi_error	els.fabric_login_error	Number of times an error was encountered when processing a fabric login (FLOGI) command
els_fdisc_error	els.fabric_discovery_error	Number of times an error was encountered when processing a fabric discovery (FDISC) command
els_logo_error	els.logout_error	Number of times an error was encountered when processing a logout (LOGO) command
els_echo_error	els.echo_error	Number of times an error was encountered when processing an ECHO command
els_scr_error	els.state_change_register_error	Number of times an error was encountered when processing a state change registration (SCR) command
els_acc_error	els.accept_error	Number of times an error was encountered when processing an ELS ACCEPT command

Classic Numeric Counter	REST Counter	Description
els_edc_error	els.exchange_diag_capability_error	Number of times an error was encountered while processing an Exchange Diagnostic Capabilities (EDC) command
els_rdf_error	els.register_diag_func_error	Number of times an error was encountered while processing a Register Diagnostic Functions (RDF) command
ct_gppn_error	ct.get_physical_port_num_error	Number of times an error was encountered while processing a get physical port number (GPPN) command
ct_giel_error	ct.get_interconnect_element_list_error	Number of times an error was encountered while processing a get interconnect element list (GIEL) command
ct_gdid_error	ct.get_domain_id_error	Number of times an error was encountered while processing a get domain identifier (GDID) command
ct_gpl_error	ct.get_port_list_error	Number of times an error was encountered while processing a get port list (GPL) command
ct_gieln_error	ct.get_interconnect_element_logical_name_error	Number of times an error was encountered while processing a get interconnect element logical name (GIELN) command
ct_gieil_error	ct.get_interconnect_element_info_list_error	Number of times an error was encountered while processing a get interconnect element information list (GIEIL) command
ct_gapnl_error	ct.get_attached_port_name_list_error	Number of times an error was encountered while processing a get attached port name list (GAPNL) command

Classic Numeric Counter	REST Counter	Description
ct_gps_error	ct.get_port_state_error	Number of times an error was encountered while processing a get port state (GPS) command
ct_gfn_error	ct.get_fabric_name_error	Number of times an error was encountered while processing a get fabric name (GFN) command
ct_gfpn_id_error	ct.get_fabric_port_name_id_error	Number of times an error was encountered while processing a get fabric port name (GFPN) command
ct_ga_nxt_error	ct.get_all_next_error	Number of times an error was encountered while processing a get all next (GA_NXT) command
ct_gid_pn_error	ct.get_id_port_num_error	Number of times an error was encountered while processing a get port identifier (GID_PN) command
ct_gpn_id_error	ct.get_port_name_id_error	Number of times an error was encountered while processing a get port name (GPN_ID) command
ct_gid_pt_error	ct.get_id_port_error	Number of times an error was encountered while processing a get port identifiers (GID_PT) command
ct_rft_id_error	ct.register_fc_type_id_error	Number of times an error was encountered while processing a register FC-4 types (RFT_ID) command
ct_rff_id_error	ct.register_fc_feature_id_error	Number of times an error was encountered while processing a register FC-4 features (RFF_ID) command

Classic Numeric Counter	REST Counter	Description
ct_rspn_id_error	ct.register_sym_port_name_id_error	Number of times an error was encountered while processing a register symbolic port name (RSPN_ID) command
ct_rsnn_nn_error	ct.register_sym_node_name_error	Number of times an error was encountered while processing a register symbolic node name (RSNN_NN) command
ct_gazs_error	ct.get_active_zone_set_error	Number of times an error was encountered while processing a get active zone set (GAZS) command
ct_gfez_error	ct.get_fabric_enh_zone_error	Number of times an error was encountered while processing a get fabric enhanced zoning (GFEZ) command
ct_sfez_error	ct.set_fabric_enh_zone_error	Number of times an error was encountered while processing a set fabric enhanced zoning (SFEZ) command
abts_completed	abts.completed	Number of ABTS successfully completed by the driver
abts_drop_cmd_not_found	abts.drop_cmd_not_found	Number of ABTS frames dropped because no associated command was found
abts_drop_itn_not_ready	abts.drop_initiator_target_nexus_not_ready	Number of ABTS frames dropped because no associated ITN was found
abts_drop_no_resource	abts.drop_no_resource	Number of ABTS frames dropped because there were no resources available for processing
abts_nvme_fc_spdk_master_enqueue_failure	abts.nvme_fc_spdk_master_enqueue_failure	Number of NVMe/FC ABTS events that failed to be enqueued to spdk for processing

Classic Numeric Counter	REST Counter	Description
abts_nvme_fc_spdk_master_enqueue_success	abts.nvme_fc_spdk_master_enqueue_success	Number of NVMe/FC ABTS events successfully enqueued to spdk for processing
gs_cmd_retry	gs_cmd_retry	Number of FC-GS commands that were retried
ct_pz_rscn_success	ct.peer_zone_rscn_success	Successful RSCNs initiated due to FC Peer Zone changes
ct_gapz_error	ct.get_active_peer_zone_error	Errors encountered while processing a Get Active Peer Zone (GAPZ) command
ct_aapz_error	ct.add_replace_active_peer_zone_error	Errors encountered while processing an Add/Replace Active Peer Zone (AAPZ) command
ct_rapz_error	ct.remove_active_peer_zone_error	Errors encountered while processing a Remove Active Peer Zone (RAPZ) command

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
fcp_lif:svm	fcp_lif_svm
fcp_lif:port	fcp_lif_port

fcvi

CM table for exporting FCVI counters. These counters track performance and error statistics pertaining to FCVI Interconnect adapter. These counters will be used by Engineering and Support teams to diagnose FCVI adapter issues.

Classic Object: fcvi

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Node name.

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
adapter_reset	adapter_reset	Number of times FCVI adapter was reset.
soft_reset_cnt	soft_reset_count	Number of times soft reset of FCVI adapter got issued.
hard_reset_cnt	hard_reset_count	Number of times hard reset of FCVI adapter got issued.
soft_reset_fail	soft_reset_failures	Number of times soft reset of FCVI adapter failed.
hard_reset_fail	hard_reset_failures	Number of times hard reset of FCVI adapter failed.

Classic Numeric Counter	REST Counter	Description
dma_timeout_reset	dma_timeout_reset	Number of times DMA timed out while resetting FCVI adapter.
cpr_reset_initiated_cnt	cpr_reset.initiated_count	Number of times CPR reset initiated by the FCVI adapter.
cpr_reset_cnt	cpr_reset.count	Number of times CPR reset got issued for FCVI adapter.
cpr_reset_failure_cnt	cpr_reset.failures_count	Number of times CPR reset of FCVI adapter failed.
cpr_reset_cancelled_cnt	cpr_reset.cancelled_count	Number of times CPR reset of FCVI adapter got cancelled.
driver_reinit_skipped_cnt	driver_reinit_skipped_count	Number of times driver re-init was skipped.
fw_error	firmware_internal_error	Number of times FCVI FW detected an unrecoverable internal error.
vi_error	vi_error	Number of times FCVI FW detected error with a VI and transitioned it to error state.
recv_frame_error	received_frame_error	Number of times FCVI FW dropped an incoming frame.
req_xfer_error	request_transfer_error	Number of times FCVI FW detected an error while transferring data from request queue.
resp_xfer_error	response_transfer_error	Number of times FCVI FW detected an error while transferring data to response queue.
no_iu_buf	no_iu_buffers	Number of times incoming connection request was dropped because there were no IU buffers.

Classic Numeric Counter	REST Counter	Description
no_recv_buf	no_received_buffers	Number of times incoming data was dropped because no buffers were allocated.
link_transitions	link_transitions	Number of times physical link transitioned up and down.
dropped_advs	dropped_advertisements	Number of times incoming node advertisement packet got dropped.
spurious_interrupts	spurious_interrupts	Number of times FCVI driver received spurious interrupts.
mbox_timeouts	mailbox.timeouts	Number of times mailbox command timed out.
mbox_failures	mailbox.failures	Number of times mailbox command failed.
create_vi_failure	create_vi_failures	Number of times create VI operation failed.
destroy_vi_failure	destroy_vi_failures	Number of times destroy VI operation failed.
mem_reg_failure	mem_registration_failures	Number of times memory registration operations failed.
send_iu_post_failed	send_iu.post_failures	Number of times send IU buffer post failed.
recv_iu_post_failed	receive_iu.post_failures	Number of times receive IU buffer post failed.
recv_iu_buf_avail	receive_iu.buffers_available	Available receive IU buffer count
els_resp_failed	els.response_failures	Extended link service response fail count
els_resp_passed	els.response_passed	Extended link service response pass count
fcvi_system_adv_recv_cnt	system_advertisement.receive_count	System advertisement receive count

Classic Numeric Counter	REST Counter	Description
fcvi_partner_info_recv_cnt	partner_info_receive_count	Partner info receive count
fcvi_system_adv_drop_cnt	system_advertisement.drop_count	System advertisement drop count
fcvi_ct_iocb_resp_fail_cnt	ct_iocb.response_failures_count	Common transport IOCB response fail count
fcvi_ct_iocb_resp_timeout_cnt	ct_iocb.response_timeout_count	Common transport IOCB response timeout count
fcvi_ct_iocb_fail_cnt	ct_iocb.failures_count	Common transport IOCB fail count
fcvi_adisc_fail_cnt	address_discovery_failures_count	Address discovery fail count
fcvi_login_resp_cnt	login_response.count	Login response count
fcvi_login_resp_fail_cnt	login_response.failures_count	Login response failure count
fcvi_mem_reg_resp_fail_cnt	mem_register_response_failures_count	Memory register response failure count
fcvi_dereg_mem_resp_fail_cnt	deregister_mem.response_failures_count	Memory de-register response failure count
fcvi_mem_reg_resp_cnt	mem_register_response_count	Memory register response count
fcvi_dereg_mem_resp_cnt	deregiter_mem_response_count	Memory de-register response count
fcvi_postiu_buffers_fail_cnt	post_iu.buffers_failures_count	Post IU buffer failed count
fcvi_postiu_invalid_iu_cnt	post_iu.invalid_iu_count	Post IU buffer failed count
fcvi_dereg_mem_fail_cnt	deregister_mem.failures_count	Memory de-register failed count
fcvi_dereg_mem_not_required	deregister_mem.not_required	Number of times memory de-registering was not required
fcvi_postiu_buffers_cnt_mismatch	post_iu.buffers_count_mismatch	Number of times the posted buffer count didn’t match the expected value
fcvi_exec_firm_mbox_fail_cnt	exec_firm_mailbox_failures_count	Number of times firmware execution failed

Classic Numeric Counter	REST Counter	Description
fcvi_set_fw_option_fail_cnt	set_firmware_option_failures_count	Number of times command to set firmware options failed
fcvi_init_fw_fail_cnt	init_firmware_failures_count	Number of times fimrware initialization failed
fcvi_set_param_fail_cnt	set_parameter_failures_count	Number of times command to set parameters failed
fcvi_load_risc_fail_cnt	load_risc_failures_count	Number of times RISC load failed
fcvi_verify_cksum_fail_cnt	verify_checksum_failures_count	Number of times checksum verification failed
fcvi_get_fw_state_cnt	get_firmware_state_count	Number of times get firmware state mailbox command failed.
fcvi_mbox_cmd_pending_cnt	mailbox_cmd_pending_count	Number of pending mailbox commands
fcvi_get_id_list_cnt	get_id_list_count	Number of logged in ports in firmware database
fcvi_nsdb_changed_cnt	name_server_db_changed_count	Number of times name server database changed
fcvi_pdb_changed_cnt	point_db_changed_count	Number of times port database changed
fcvi_rjt_err_cnt	reject_error_count	Link service reject error count
fcvi_fw_err_cnt	firmware_error_count	FW error count
fcvi_frame_err_cnt	frame_error_count	Frame error count
fcvi_invalid_qp_err_cnt	invalid_qp_error_count	Invalid QP error count
fcvi_num_qp_cnt	num_qp_count	QP count
fcvi_create_qp_fail_cnt	create_qp_failures_count	Create QP failure count
fcvi_destroy_qp_fail_cnt	destroy_qp_failures_count	Destroy QP failure count
fcvi_io_failed_cnt	io_failures_count	IO failure count

Classic Numeric Counter	REST Counter	Description
fcvi_num_rmt_device_cnt	num_rmt_device_count	Remote devices count
fcvi_send_link_up_cnt	send_link_up_count	Number of times link up was sent
fcvi_send_rescan_cnt	send_rescan_count	Number of times rescan was done
fcvi_fw_not_rdy_cnt	firmware.not_rdy_count	Firmware-not-ready count
fcvi_gspn_info_len_err	gspn_info_len_error_count	The remote system information length error count on GSPN query
fw_link_failure	firmware.link_failure_count	Firmware reported link failure count
fw_loss_of_sync	firmware.loss_of_sync_count	Firmware reported loss of sync count
fw_loss_of_signal	firmware.loss_of_signal_count	Firmware reported loss of signal count
fw_prim_proto_error	firmware.prim_protocol_error_count	Firmware reported protocol error count
fw_invalid_xmit_words	firmware.invalid_transmit_word_count	Firmware reported invalid transmit word count
fw_invalid_crc	firmware.invalid_crc_count	Firmware reported invalid CRC count
fw_SyStatLipOccurred	firmware.systat.lip0_occurred_count	Firmware reported Lip0 count
fw_SyStatLinkUp	firmware.systat.link_up_count	Firmware reported link-up count
fw_SyStatLinkDwn_LoopInitTO	firmware.systat.link_down_loop_init_to	Firmware reported SyStatLinkDwn_LoopInitTO value
fw_SyStatLinkDwn_LOS	firmware.systat.link_down_los	Firmware reported SyStatLinkDwn_LOS value
fw_SyStatLinkDwn_LossRcvClk	firmware.systat.link_down_loss_received_clk	Firmware reported SyStatLinkDwn_LossRcvClk value
fw_SyStatLinkDwn_NOS_OLS	firmware.systat.link_down_nos_ols	Firmware reported SyStatLinkDwn_NOS_OLS value

Classic Numeric Counter	REST Counter	Description
fw_SyStatLipReset	firmware.systat.lip_reset	Firmware reported SyStatLipReset value
fw_SyStatLipF7Rcvd	firmware.systat.lipf7_received	Firmware reported SyStatLipF7Rcvd value
fw_SyStatLipF8Rcvd	firmware.systat.lipf8_received	Firmware reported SyStatLipF8Rcvd value
fw_SyStatP2P	firmware.systat.p2p	Firmware reported SyStatP2P value
fw_SyStatPortCnfgChg	firmware.systat.port_config_change	Firmware reported SyStatPortCnfgChg value
fw_SyStatLbitDetected	firmware.systat.lbit_detected	Firmware reported SyStatLbitDetected value
fw_SyStatFP2P	firmware.systat.fp2p	Firmware reported SyStatFP2P value
fw_SyStatFL	firmware.systat.fl	Firmware reported SyStatFL value
fw_SyStatPrivateLoop	firmware.systat.private_loop	Firmware reported SyStatPrivateLoop value
fw_SyStatN2N	firmware.systat.n2n	Firmware reported SyStatN2N value
fw_SyStatP2pTimeOut	firmware.systat.p2p_timeout	Firmware reported SyStatP2pTimeOut value
fw_SyStatP2pTimeOut2	firmware.systat.p2p_timeout_2	Firmware reported SyStatP2pTimeOut2 value
fw_SyStatProtocolErr	firmware.systat.protocol_error	Firmware reported SyStatProtocolErr value
fw_SyStatLRInitByISP	firmware.systat.lr_init_by_isp	Firmware reported SyStatLRInitByISP value
fw_SyStatLRRcvd	firmware.systat.lrr_cvd	Firmware reported SyStatLRRcvd value

Classic Numeric Counter	REST Counter	Description
fw_SyTsTOLipCnt	firmware.sy_ts_to_lip_count	Firmware reported SyTsTOLipCnt value
fw_SyStatRspQFull	firmware.systat.response_queue_full	Firmware reported SyStatRspQFull value
fw_SyStatATIOQFull	firmware.systat.atio_queue_full	Firmware reported SyStatATIOQFull value
fw_SyStatDropAE	firmware.systat.drop_ae	Firmware reported SyStatDropAE value
fw_SyStatELSProtoErr	firmware.systat.els_protocol_error	Firmware reported SyStatELSProtoErr value
fw_SyStatOpnFail	firmware.systat.open_failures	Firmware reported SyStatOpnFail value
fw_SyStatTxFrames	firmware.systat.transmit_frames	Firmware reported SyStatTxFrames value
fw_SyStatRxFrames	firmware.systat.receive_frames	Firmware reported SyStatRxFrames value
fw_SyStatDiscardFrames	firmware.systat.discard_frames	Firmware reported SyStatDiscardFrames value
fw_SyStatDropFrmFw	firmware.systat.drop_from_firmware	Firmware reported SyStatDropFrmFw value
fw_SyStatLIPRcvd	firmware.systat.lip_received	Firmware reported SyStatLIPRcvd value
fw_SyStatNOSRcvd	firmware.systat.nos_received	Firmware reported SyStatNOSRcvd value
fw_SyStatOLSRcvd	firmware.systat.ols_received	Firmware reported SyStatOLSRcvd value
cm_num_listeners_cnt	num_listeners_count	Connection Manager: Number of listeners
cm_num_cm_cnt	num_cm_count	Connection Manager: CM count

Classic Numeric Counter	REST Counter	Description
cm_connect_sent_cnt	connect.sent_count	Connection Manager: Connect sent count
cm_connect_failed_cnt	connect.failures_count	Connection Manager: Connect failed count
cm_connect_passed_cnt	connect.passed_count	Connection Manager: Connect success count
cm_connect_recv_cnt	connect.received_count	Connection Manager: Connect receive count
cm_connect_rjct_cnt	connect.reject_count	Connection Manager: Connect reject count
cm_connect_ignored_cnt	connect.ignored_count	Connection Manager: Connect ignore count
cm_discon_sent_cnt	disconnect.sent_count	Connection Manager: Disconnect sent count
cm_discon_passed_cnt	disconnect.passed_count	Connection Manager: Disconnect success count
cm_discon_failed_cnt	disconnect.failures_count	Connection Manager: Disconnect failed count
cm_discon_sent_ignored_cnt	disconnect.sent_ignored_count	Connection Manager: Disconnect sent ignore count
cm_discon_recv_ignored_cnt	disconnect.received_ignored_count	Connection Manager: Disconnect received ignore count
cm_discon_resp_ignored_cnt	disconnect.response_ignored_count	Connection Manager: Disconnect response ignore count
cm_discon_timeout_cnt	disconnect.timeout_count	Connection Manager: Disconnect timeout count
cm_discon_recv_cnt	disconnect.received_count	Connection Manager: Disconnect received count
cm_connecting_error_cnt	connect.connecting_error_count	Connection Manager: Connecting error count

Classic Numeric Counter	REST Counter	Description
cm_msg_alloc_fail_cnt	msg_allocation_failures_count	Connection Manager: Message allocation failure count
cm_connect_cnt	connect.count	Connection Manager: Connection count
cm_connect_timeout_cnt	connect.timeout_count	Connection Manager: Connect timeout count
cm_connect_info_len_err	connect.info_len_error	Connection Manager: Number of times we received an invalid connection info length
cm_connect_error_cnt	connect.connect_error_count	Connection Manager: Connect-error count
cm_ifp_not_found_cnt	ifp_not_found_count	Connection Manager: IFP-not-found count
cm_rmt_ifp_not_found_cnt	rmt_ifp_not_found_count	Connection Manager: Remote IFP-not-found count
drop_adv_cnt	drop_advertisement_count	Connection Manager: Shim layer advertisment-drop count
send_adv_cnt	send_advertisement_count	Connection Manager: Shim layer's advertisment-sent count
recv_adv_cnt	receive_advertisement_count	Connection Manager: Shim layer's advertisement-receive count
num_rmt_ips_cnt	num_rmt_ips_count	Connection Manager: Number of remote IP addresses
rdma_write_ops	rdma.write_ops	Number of RDMA write I/Os issued per second.
rdma_write_throughput	rdma.write_throughput	RDMA write throughput in bytes per second.
rdma_write_avg_latency	rdma.write_average_latency	Average RDMA write I/O latency.
rdma_write_latency_histogram	rdma.write_latency_histogram	Latency of RDMA write operations.

Classic Numeric Counter	REST Counter	Description
rdma_write_size_histogram	rdma.write_size_histogram	Size of I/O operations.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

headroom_aggregate

Display message service time variance and message inter-arrival time variance for aggregates in a node.

Classic Object: resource_headroom_aggr

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name
instance_name	name	This is the name of the headroom_aggregate row.
instance_uuid	uuid	This is the unique identifier for the headroom_aggregate row.

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
service_time	service_time	Disk aggregate service time variance statistics.
interarrival_time	inter_arrival_time	Disk aggregate inter-arrival time variance statistics.
current_utilization	current_utilization	This is the storage aggregate average utilization of all the data disks in the aggregate.

Classic Numeric Counter	REST Counter	Description
current_utilization_total	current_utilization_denominator	This is the denominator value used to compute current utilization.
current_ops	current_ops	Total number of I/Os processed by the aggregate per second.
current_latency	current_latency	This is the storage aggregate average latency per message at the disk level.
optimal_point_utilization	optimal_point.utilization	The utilization component of the optimal point of the latency/utilization curve.
optimal_point_latency	optimal_point.latency	The latency component of the optimal point of the latency/utilization curve.
optimal_point_ops	optimal_point.ops	The ops component of the optimal point derived from the latency/utilzation curve.
optimal_point_confidence_factor	optimal_point.confidence_factor	The confidence factor for the optimal point value based on the observed resource latency and utilization.
optimal_point_samples	optimal_point.samples	The base counter for optimal_point_utilization, optimal_point_latency, optimal_point_confidence_factor, and optimal_point_ops. This is the number of one-minute samples since bootup.
ewma_hourly	ewma.hourly	Hourly exponential weighted moving average.
ewm_std_dev_hourly	ewm_std_dev.hourly	Hourly exponential weighted moving standard deviation based on one-minute average values.
ewma_daily	ewma.daily	Daily exponential weighted moving average.

Classic Numeric Counter	REST Counter	Description
ewm_std_dev_daily	ewm_std_dev.daily	Daily exponential weighted moving standard deviation based on one-minute average values.
ewma_weekly	ewma.weekly	Weekly exponential weighted moving average.
ewm_std_dev_weekly	ewm_std_dev.weekly	Weekly exponential weighted moving standard deviation based on one-minute average values.
ewma_monthly	ewma.monthly	Monthly exponential weighted moving average.
ewm_std_dev_monthly	ewm_std_dev.monthly	Monthly exponential weighted moving standard deviation based on one-minute average values.
current_driver_qtime	current_driver_queue_time	This is the disk driver average queue time for the storage aggregate.
observations_skipped	observations_skipped	The number of observations not processed.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

REST Counter	Description
uuid	This counter now returns only the storage aggregate UUID instead of a combination of the aggregate name and aggregate UUID.

Table Aliases

This section describes aliases for aggregated tables.

headroom_cpu

This table displays message service time variance and message inter-arrival time variance for WAFL, as well as headroom optimal point information for the CPU resource.

Classic Object: resource_headroom_cpu

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name
instance_name	name	This is the name of the headroom_cpu row.
instance_uuid	uuid	UUID for the headroom row. This is the UUID of the node.

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
current_utilization	current_utilization	Average processor utilization across all processors in the system.
current_utilization_total	elapsed_time	Elapsed time since boot.
current_ops	current_ops	Total number of operations per second (also referred to as dblade ops).

Classic Numeric Counter	REST Counter	Description
current_intercluster_ops	current_intercluster_ops	Total number of operations per second going to the partner node.
current_latency	current_latency	Current operation latency of the resource.
service_time	service_time	Average service time for the CPU resource.
optimal_point_utilization	optimal_point.utilization	Utilization component of the optimal point of the latency/utilization curve. This counter can provide an average utilization over a range of time.
optimal_point_latency	optimal_point.latency	Latency component of the optimal point of the latency/utilization curve. This counter can provide an average latency over a range of time.
optimal_point_ops	optimal_point.ops	Ops component of the optimal point derived from the latency/utilization curve. This counter can provide an average ops over a range of time.
optimal_point_confidence_factor	optimal_point.confidence_factor	Confidence factor for the optimal point value based on the observed resource latency and utilization. The possible values are: 0 - unknown, 1 - low, 2 - medium, 3 - high. This counter can provide an average confidence factor over a range of time.
optimal_point_samples	optimal_point.samples	Base counter for optimal_point_utilization, optimal_point_latency, optimal_point_confidence_factor, and optimal_point_ops. This is the number of one-minute samples since bootup.
wafl_hipri_service_time	wafl_high_priority.service_time	WAFL high priority service time variance statistics.

Classic Numeric Counter	REST Counter	Description
wafl_lopri_service_time	wafl_low_priority.service_time	WAFL low priority service time variance statistics.
wafl_cppri_service_time	wafl_cp_priority.service_time	WAFL cp priority service time variance statistics.
wafl_cppro_service_time	wafl_cppro.service_time	WAFL cp promoted priority service time variance statistics.
wafl_hipri_interarrival_time	wafl_high_priority.interarrival_time	WAFL high priority inter-arrival time variance statistics.
wafl_lopri_interarrival_time	wafl_low_priority.interarrival_time	WAFL low priority inter-arrival time variance statistics.
wafl_cppri_interarrival_time	wafl_cp_priority.interarrival_time	WAFL cp priority inter-arrival time variance statistics.
wafl_cppro_interarrival_time	wafl_cppro.interarrival_time	WAFL cp promoted priority inter-arrival time variance statistics.
wafl_mpio_read_service_time	wafl_mpio.read_service_time	WAFL MP I/O successful read service time variance statistics.
ewma_hourly	ewma.hourly	Hourly exponential weighted moving average for current_ops, optimal_point_ops, current_latency, optimal_point_latency, current_utilization, optimal_point_utilization and optimal_point_confidence_factor.
ewm_std_dev_hourly	ewm_std_dev.hourly	Hourly exponential weighted moving standard deviation based on one-minute average values, for current_ops, optimal_point_ops, current_latency, optimal_point_latency, current_utilization and optimal_point_utilization.

Classic Numeric Counter	REST Counter	Description
ewma_daily	ewma.daily	Daily exponential weighted moving average for current_ops, optimal_point_ops, current_latency, optimal_point_latency, current_utilization, optimal_point_utilization and optimal_point_confidence_factor.
ewm_std_dev_daily	ewm_std_dev.daily	Daily exponential weighted moving standard deviation based on one-minute average values, for current_ops, optimal_point_ops, current_latency, optimal_point_latency, current_utilization and optimal_point_utilization.
ewma_weekly	ewma.weekly	Weekly exponential weighted moving average for current_ops, optimal_point_ops, current_latency, optimal_point_latency, current_utilization, optimal_point_utilization and optimal_point_confidence_factor.
ewm_std_dev_weekly	ewm_std_dev.weekly	Weekly exponential weighted moving standard deviation based on one-minute average values, for current_ops, optimal_point_ops, current_latency, optimal_point_latency, current_utilization and optimal_point_utilization.
ewma_monthly	ewma.monthly	Monthly exponential weighted moving average for current_ops, optimal_point_ops, current_latency, optimal_point_latency, current_utilization, optimal_point_utilization and optimal_point_confidence_factor.

Classic Numeric Counter	REST Counter	Description
ewm_std_dev_monthly	ewm_std_dev.monthly	Monthly exponential weighted moving standard deviation based on one-minute average values, for current_ops, optimal_point_ops, current_latency, optimal_point_latency, current_utilization and optimal_point_utilization.
normalized_4k_current_ops	normalized_4k.current_ops	Total number of 4k current ops (normalized).
normalized_4k_optimal_point_ops	normalized_4k.optimal_point_ops	Total number of 4k optimal point ops (normalized).
observations_skipped	observations_skipped	Number of observations not processed.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

host_adapter

The host_adapter table reports activity on the Fibre Channel, Serial Attached SCSI, and parallel SCSI host adapters the storage system uses to connect to disks and tape drives.

Classic Object: hostadapter

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
total_reads	total_read_ops	Total number of reads on a host adapter
total_writes	total_write_ops	Total number of writes on a host adapter
bytes_read	bytes_read	Bytes read through a host adapter
bytes_written	bytes_written	Bytes written through a host adapter
max_link_data_rate	max_link_data_rate	Max link data rate in Kilobytes per second for a host adapter

Classic Numeric Counter	REST Counter	Description
rscn_count	rscn_count	Number of RSCN(s) received by the FC HBA

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

iscsi_lif

CM table for exporting iSCSI LIF performance counters The alias names for iscsi_lif:svm and iscsi_lif:node are iscsi_lif_svm and iscsi_lif_node respectively.

Classic Object: iscsi_lif

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{svm.name}:{svm.uuid}	svm	This represents the construction of the row ID field in svm combo object, which is a single unique string that identifies a row.
{node.name}:{node.uuid}	node	This represents the construction of the row ID field in node combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name
instance_name	name	Name of this logical interface (LIF) row
instance_uuid	uuid	Unique ID of this logical interface (LIF) row
current_port	current_port	Name of the home port hosting the iSCSI logical interface (LIF)
vserver_name	svm.name	Name of the SVM owning this logical interface (LIF)

Classic String Counter	REST Property	Description
vserver_uuid	svm.uuid	UUID for the SVM owning this logical interface (LIF)

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
cmd_transferred	cmd_transferred	Command transferred by this iSCSI connection
iscsi_read_ops	iscsi_read_ops	iSCSI read operations per second on this logical interface (LIF)
iscsi_write_ops	iscsi_write_ops	iSCSI write operations per second on this logical interface (LIF)
iscsi_other_ops	iscsi_other_ops	iSCSI other operations per second on this logical interface (LIF)
total_ops	total_ops	iSCSI total operations per second on this logical interface (LIF)
scsi_cmd_rcvd	scsi_cmd_received	SCSI command received from iSCSI sessions on this logical interface (LIF)
nop_out_rcvd	nop_out_received	iSCSI nop_out command received from iSCSI sessions on this logical interface (LIF)
taskmgmt_cmd_rcvd	taskmgmt_cmd_received	iSCSI task managment command received from iSCSI sessions on this logical interface (LIF)
login_cmd_rcvd	login_cmd_received	iSCSI login command received from iSCSI sessions on this logical interface (LIF)

Classic Numeric Counter	REST Counter	Description
logout_cmd_rcvd	logout_cmd_received	iSCSI logout command received from iSCSI sessions on this logical interface (LIF)
text_cmd_rcvd	text_cmd_received	iSCSI text command received from iSCSI sessions on this logical interface (LIF)
data_out_rcvd	data_out_received	iSCSI data_out Command received from iSCSI sessions on this logical interface (LIF)
recv_data	received_data	Data received from iSCSI session on this logical interface (LIF)
snack_rcvd	snack_received	iSCSI snack received from iSCSI sessions on this logical interface (LIF)
unknown_pdu_rcvd	unknown_pdu_received	unknown iSCSI pdu received from iSCSI sessions on this logical interface (LIF)
scsi_resp_sent	scsi_response_sent	SCSI Command response sent from iSCSI sessions on this logical interface (LIF)
nop_in_sent	nop_in_sent	iSCSI nop_in response sent from iSCSI sessions on this logical interface (LIF)
taskmgmt_resp_sent	taskmgmt_response_sent	iSCSI task management response sent from iSCSI sessions on this logical interface (LIF)
login_resp_sent	login_response_sent	iSCSI login response sent from iSCSI sessions on this logical interface (LIF)
logout_resp_sent	logout_response_sent	iSCSI logout response sent from iSCSI sessions on this logical interface (LIF)

Classic Numeric Counter	REST Counter	Description
text_resp_sent	text_response_sent	iSCSI text response sent from iSCSI sessions on this logical interface (LIF)
data_in_sent	data_in_sent	iSCSI data_in response sent from iSCSI sessions on this logical interface (LIF)
sent_data	sent_data	Data sent from iSCSI sessions on this logical interface (LIF)
r2t_sent	r2t_sent	iSCSI r2t sent from iSCSI sessions on this logical interface (LIF)
reject_sent	reject_sent	iSCSI reject sent from iSCSI sessions on this logical interface (LIF)
async_msg_sent	async_msg_sent	iSCSI asynchronous message sent from iSCSI sessions on this logical interface (LIF)
data_in_blocks	data_in.blocks	Number of blocks sent from iSCSI sessions on this logical interface (LIF)
data_out_blocks	data_out.blocks	number of blocks received from iSCSI sessions on this logical interface (LIF)
read_data	read_data	Amount of data read from the storage system in bytes
write_data	write_data	Amount of data written to the storage system in bytes
total_data	total_data	Amount of data read/written from/to the storage system in bytes
recv_packet	received_packet	Packets(PDUs) received at the target side
sent_packet	sent_packet	Packets(PDUs) sent from the target side

Classic Numeric Counter	REST Counter	Description
recv_error	received_error	Errors received at the target side from initiator
error_status_cdb	error_status_cdb	Number of CDBs that contain error status from iSCSI sessions on this logical interface (LIF)
success_status_cdb	success_status_cdb	Number of CDBs that contain success status from iSCSI sessions on this logical interface (LIF)
login_failed	login_failed	Number of login failures from iSCSI sessions on this logical interface (LIF)
taskmgmt_failed	taskmgmt_failed	Number of task management failures from iSCSI sessions on this logical interface (LIF)
logout_failed	logout_failed	Number of logout failures from iSCSI sessions on this logical interface (LIF)
text_cmd_failed	text_cmd_failed	Number of text command failures from iSCSI sessions on this logical interface (LIF)
protocol_errors	protocol_errors	Number of protocol errors from iSCSI sessions on this logical interface (LIF)
header_digest_errors	header_digest_errors	Header digest errors from iSCSI sessions on this logical interface (LIF)
data_digest_errors	data_digest_errors	Data digest errors from iSCSI sessions on this logical interface (LIF)
outside_cmd_sn_win_pdus	outside_cmd_sequence_number_window_pdus	The PDUs that are out of command sequence number window from iSCSI sessions on this logical interface (LIF)

Classic Numeric Counter	REST Counter	Description
login_accept	login_accept	Number of logins accepted from iSCSI sessions on this logical interface (LIF)
login_itns	login_itns	Number of logins reported to SCSI-target for ITN creation
login_authentication_errors	login_authentication_errors	Login authentication errors from iSCSI sessions on this logical interface (LIF)
login_authorization_errors	login_authorization_errors	Login authorization errors from iSCSI sessions on this logical interface (LIF)
login_negotiation_errors	login_negotiation_errors	Login negotiation errors from iSCSI sessions on this logical interface (LIF)
login_other_errors	login_other_errors	Other login errors from iSCSI sessions on this logical interface (LIF)
login_redirect	login_redirect	Login redirects from iSCSI sessions on this logical interface (LIF)
logout_normals	logout_normals	Normal logouts from iSCSI sessions on this logical interface (LIF)
logout_others	logout_others	Other logouts from iSCSI sessions on this logical interface (LIF)
avg_read_latency	average_read_latency	Average latency for read operations
avg_write_latency	average_write_latency	Average latency for write operations
avg_other_latency	average_other_latency	Average latency for operations other than read and write (for example, Inquiry, Report LUNs, SCSI Task Management Functions)

Classic Numeric Counter	REST Counter	Description
avg_latency	average_latency	Average latency for iSCSI operations
avg_login_latency	average_login_latency	Average latency for login completions
read_latency_hist	read_latency_histogram	Latency histogram for read operations
write_latency_hist	write_latency_histogram	Latency histogram for write operations
login_latency_hist	login_latency_histogram	Latency histogram for login completions
socket_latency_hist	socket_latency_histogram	Latency histogram for socket wait time receiving a full PDU
cmdproc_latency_hist	cmd_proc_latency_histogram	Latency histogram for command processing within iSCSI before SCSIT submit
cmdsub_latency_hist	cmd_sub_latency_histogram	Latency histogram for SCSIT command submit (from socket PDU recv)
do_pdu_latency_hist	data_out_pdu_latency_histogram	Latency histogram for a single DATA OUT PDU
do_scsit_latency_hist	data_out_scsit_latency_histogram	Latency histogram for time taken in SCSIT for DATA OUT
do_iscsi_latency_hist	data_out_iscsi_latency_histogram	Latency histogram for time taken in iSCSI after SCSIT callback
di_scsit_latency_hist	data_in_scsit_latency_histogram	Latency histogram for time taken in SCSIT for DATA IN
di_iscsi_latency_hist	data_in_iscsi_latency_histogram	Latency histogram for time taken in iSCSI after SCSIT callback
diresp_latency_hist	data_in_response_latency_histogram	Latency histogram for Data IN SCSIT resp after SCSIT submit
outpdu_latency_hist	out_pdu_latency_histogram	Latency histogram for out_pdu fully submitted to socket

Classic Numeric Counter	REST Counter	Description
doresp_latency_hist	data_out_response_latency_histogram	Latency histogram for Data OUT SCSIT response after SCSIT submit
read_size_hist	read_size_histogram	Histogram of read sizes
write_size_hist	write_size_histogram	Histogram of write sizes

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
iscsi_lif:svm	iscsi_lif_svm
iscsi_lif:node	iscsi_lif_node

lif

These counters report activity of logical interfaces (LIFs). The alias name for lif:svm is lif_svm.

Classic Object: lif

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{svm.name}:{svm.id}	svm	This represents the construction of the row ID field in svm combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name
instance_name	name	Name of the logical interface (LIF) row
instance_uuid	unique_id	Unique ID for the logical interface (LIF) row
vserver_name	svm.name	Name of the SVM
current_port	current_port	Physical port hosting this logical interface (LIF)

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
up_time	up_time	Interface up time
recv_data	received_data	Number of bytes received per second
recv_packet	received_packets	Number of packets received per second
recv_errors	received_errors	Number of received Errors per second
sent_data	sent_data	Number of bytes sent per second
sent_packet	sent_packets	Number of packets sent per second
sent_errors	sent_errors	Number of sent errors per second
total_data	total_data	Number of bytes received and sent per second
total_packet	total_packets	Number of packets received and sent per second

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
lif:svm	lif_svm

lun

This table contains LUN-level SAN counters which are shared between 7-mode and C-mode. These counters are available for every mapped logical unit. The alias name for lun:node is lun_node.

Classic Object: lun

Table Row IDs

ID Format	Aggregation Type	Comment
{svm.name}:{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{svm.name}:{instance_name}:{instance_uuid}	constituent	This represents the construction of a row ID field for a row from a single node.
{node.name}:{node.uuid}	node	This represents the construction of the row ID field in node combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Name of the node
vserver_name	svm.name	Name of the vserver owning this logical unit
vserver_uuid	svm.uuid	UUID of the SVM owning this logical unit
instance_uuid	uuid	UUID of the logical unit

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
avg_read_latency	average_read_latency	Average read latency in microseconds for all operations on the LUN
avg_write_latency	average_write_latency	Average write latency in microseconds for all operations on the LUN
avg_xcopy_latency	average_xcopy_latency	Average latency in microseconds for xcopy requests
caw_reqs	caw_requests	Number of compare and write requests
enospc	enospc	Number of operations receiving ENOSPC errors
queue_full	queue_full	Queue full responses
read_align_histo	read_align_histogram	Histogram of WAFL read alignment (number sectors off WAFL block start)
read_data	read_data	Read bytes
read_ops	read_ops	Number of read operations
read_ops_sent	read_ops_sent	Number of outgoing read operations
read_partial_blocks	read_partial_blocks	Percentage of reads whose size is not a multiple of WAFL block size
remote_bytes	remote_bytes	I/O to or from a LUN which is not owned by the storage system handling the I/O.
remote_ops	remote_ops	Number of operations received by a storage system that does not own the LUN targeted by the operations.
unmap_reqs	unmap_requests	Number of unmap command requests

Classic Numeric Counter	REST Counter	Description
write_align_histo	write_align_histogram	Histogram of WAFL write alignment (number of sectors off WAFL block start)
write_data	write_data	Write bytes
write_ops	write_ops	Number of write operations
write_ops_sent	write_ops_sent	Number of outgoing write operations
write_partial_blocks	write_partial_blocks	Percentage of writes whose size is not a multiple of WAFL block size
writesame_reqs	writesame_requests	Number of write same command requests
writesame_unmap_reqs	writesame_unmap_requests	Number of write same commands requests with unmap bit set
xcopy_reqs	xcopy_requests	Total number of xcopy operations on the LUN

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
lun:node	lun_node

namespace

This table contains NVMF Namespace-level counters. These counters are available for every mapped namespace.

Classic Object: namespace

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{instance_name}:{instance_uuid}	constituent	This represents the construction of a row ID field for a row from a single node.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name
instance_name	name	Constituent NVMEoF Namespace
instance_uuid	uuid	Constituent namespace vdisk ID
aggregated_namespace_vdisk_id	aggregated_namespace_vdisk_id	Aggregated namespace vdisk ID
aggregated_namespace_path	aggregated_namespace_path	Aggregated namespace path
vserver_name	svm.name	Name of the SVM owning this namespace
vserver_uuid	svm.uuid	UUID of the SVM owning this namespace

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
wafl_aborts_req	wafl.aborts_requested	Number of WAFL operations that were requested to abort
wafl_aborts_rcv	wafl.aborts_received	Number of WAFL operations that were aborted
wafl_rw_errs	wafl.read_write_op_errors	Number of WAFL read/write/compare operations that returned an error
ana_transition_errs	ana.transition_errors	Number of ANA transition errors returned per second.
ana_inaccess_errs	ana.inaccessible_errors	Number of ANA Inaccessible errors returned per second.
wafl_delete_ops	wafl.delete_ops	Number of WAFL operations that failed after namespace delete/unmap
wafl_test_ops	wafl.test_ops	Number of WAFL operations effected by a test operation
internal_err	internal_errors	Number of non-fatal internal errors
sgl_internal_err	sgl_internal_errors	Number of non-fatal internal errors related to scatter gather list.
create_sge_internal_err	create_sge_internal_errors	Number of non-fatal internal errors related to creation of SGEs using extents
read_ops	read_ops	Number of read operations
write_ops	write_ops	Number of write operations
compare_ops	compare.ops	Number of compare operations
caw_ops	caw_ops	Number of compare and write operations
other_ops	other_ops	Number of other operations
remote_read_ops	remote.read_ops	Number of remote read operations

Classic Numeric Counter	REST Counter	Description
remote_write_ops	remote.write_ops	Number of remote write operations
remote_compare_ops	remote.compare_ops	Number of remote compare operations
remote_caw_ops	remote.caw_ops	Number of remote compare and write operations
remote_other_ops	remote.other_ops	Number of remote other operations
read_data	read_data	Read bytes
write_data	write_data	Write bytes
compare_data	compare.data	Compare bytes
caw_data	caw_data	Compare and Write bytes
total_data	total_data	Total bytes
remote_read_data	remote.read_data	Remote read bytes
remote_write_data	remote.write_data	Remote write bytes
remote_compare_data	remote.compare_data	Remote compare bytes
remote_caw_data	remote.caw_data	Remote compare and Write bytes
remote_total_data	remote.total_data	Total remote bytes
avg_latency	average_latency	Average latency in microseconds for all operations on the Namespace
total_ops	total_ops	Total number of operations on the Namespace
remote_avg_latency	remote.average_latency	Average latency in microseconds for all remote operations on the Namespace
remote_handling_latency	remote.handling_latency	Average total latency in microseconds for all remote operations

Classic Numeric Counter	REST Counter	Description
remote_response_ion_io_poller_latency	remote_response_ion_io_poller_latency	Average time spent in client IO poller queue at ION by remote responses.
remote_wafl_latency	remote.average_wafl_latency	Average WAFL latency for remote operations on NSON.
remote_total_ops	remote.total_ops	Total number of remote operations on the Namespace
read_size_hist	read_size_histogram	Histogram of read sizes
write_size_hist	write_size_histogram	Histogram of write sizes
remote_read_size_hist	remote.read_size_histogram	Histogram of remote read sizes
remote_write_size_hist	remote.write_size_histogram	Histogram of remote write sizes
large_read_ops	large_io.read_ops	Number of read operations with a request size greater than 64k
large_write_ops	large_io.write_ops	Number of write operations with a request size greater than 64k
remote_large_read_ops	remote_large_io.read_ops	Number of remote read operations with a request size greater than 64k
remote_large_write_ops	remote_large_io.write_ops	Number of remote write operations with a request size greater than 64k
large_read_data	large_io.read_data	Read bytes from large IO
large_write_data	large_io.write_data	Write bytes from large IO
remote_large_read_data	remote_large_io.read_data	Remote read bytes from large IO
remote_large_write_data	remote_large_io.write_data	Remote write bytes from large IO
remote_server_r_ops_pending	remote_server.read_ops_pending	Number of remote server read operations pending in WAFL
remote_server_w_ops_pending	remote_server.write_ops_pending	Number of remote server write operations pending in WAFL

Classic Numeric Counter	REST Counter	Description
remote_server_caw_ops_pending	remote_server.caw_ops_pending	Number of remote server caw operations pending in WAFL
remote_server_r_ops_responded	remote_server.read_ops_responded	Number of remote server read operations responsded to client
remote_server_w_ops_responded	remote_server.write_ops_responded	Number of remote server write operations responded to client
remote_server_caw_ops_responded	remote_server_caw.ops_responded	Number of remote server caw operations responded to client
remote_server_cmds_aborted	remote_server.cmds_aborted	Number of remote server commands aborted by client
remote_server_cmds_not_found_on_abort	remote_server.cmds_not_found_on_abort	Number of remote server commands not found while trying to abort
abort_request	abort_request	Number of Abort requests per second.
compare_errs	compare.errors	Number of Compare Errors returned per second.
other_errs	other_errors	Number of Other Errors returned per second.
remote_ana_transition_errs	remote_ana.transition_errors	Number of Remote ANA transition Errors returned per second.
remote_ana_inaccess_errs	remote_ana.inaccessible_errors	Number of Remote ANA Inaccessible Errors returned per second.
remote_abort_request	remote_abort_requests	Number of Remote Aborts requests per second.
remote_compare_errs	remote.compare_errors	Number of Remote Compare Errors returned per second.
remote_other_errs	remote.other_errors	Number of Other Remote Errors returned per second.

Classic Numeric Counter	REST Counter	Description
avg_read_latency	average_read_latency	Average read latency in microseconds for all operations on the Namespace
avg_write_latency	average_write_latency	Average write latency in microseconds for all operations on the Namespace
avg_other_latency	average_other_latency	Average other ops latency in microseconds for all operations on the Namespace
remote_avg_read_latency	remote.average_read_latency	Average remote read latency in microseconds for all operations on the Namespace
remote_avg_write_latency	remote.average_write_latency	Average remote write latency in microseconds for all operations on the Namespace
remote_avg_other_latency	remote.average_other_latency	Average other remote operations latency in microseconds for all operations on the Namespace
read_latency_hist	read_latency_histogram	Latency histogram of read operations
write_latency_hist	write_latency_histogram	Latency histogram of write operations
remote_read_latency_hist	remote.read_latency_histogram	Latency histogram of remote read operations
remote_write_latency_hist	remote.write_latency_histogram	Latency histogram of remote write operations
read_io_align_history	read_io_align_histogram	Histogram of WAFL read alignment for NVMoF
write_io_align_history	write_io_align_histogram	Histogram of WAFL write alignment for NVMoF
partial_write_blocks	partial.write_blocks	Percent of writes whose size is not a multiple of WAFL block size

Classic Numeric Counter	REST Counter	Description
partial_read_blocks	partial.read_blocks	Percent of reads whose size is not a multiple of WAFL block size

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

REST Counter	Description
read_size_histogram	For each of the labels in this histogram, all white spaces have been removed.
write_size_histogram	For each of the labels in this histogram, all white spaces have been removed.
remote.read_size_histogram	For each of the labels in this histogram, all white spaces have been removed.
remote.write_size_histogram	For each of the labels in this histogram, all white spaces have been removed.

Table Aliases

This section describes aliases for aggregated tables.

nfs_v4_diag

The NFSv4_diag object reports low-level diagnostics for the Network File System protocol, version 4. This is the ISOC file-sharing protocol that is predominant on UNIX platforms, used to connect to Network Attached Storage (NAS).

Classic Object: nfsv4_diag

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Name of the node.
instance_name	name	Name of the row.
instance_uuid	uuid	Unique identifier (UUID) for the object.

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
storePool_ClientMax	storepool.client_maximum	Maximum number of client objects.
storePool_ClientAlloc	storepool.client_allocated	Current number of client objects allocated.
storePool_SessionMax	storepool.session_maximum	Maximum number of session objects.

Classic Numeric Counter	REST Counter	Description
storePool_SessionAlloc	storepool.session_allocated	Current number of session objects allocated.
storePool_SessionHolderMax	storepool.session_holder_maximum	Maximum number of session holder objects.
storePool_SessionHolderAlloc	storepool.session_holder_allocated	Current number of session holder objects allocated.
storePool_SessionConnectionHolderAlloc	storepool.session_connection_holder_allocated	Current number of session connection holder objects allocated.
storePool_SessionConnectionHolderMax	storepool.session_connection_holder_maximum	Maximum number of session connection holder objects.
storePool_ConnectionParentSessionReferenceAlloc	storepool.connection_parent_session_reference_allocated	Current number of connection parent session reference objects allocated.
storePool_ConnectionParentSessionReferenceMax	storepool.connection_parent_session_reference_maximum	Maximum number of connection parent session reference objects.
storePool_StringMax	storepool.string_maximum	Maximum number of string objects.
storePool_StringAlloc	storepool.string_allocated	Current number of string objects allocated.
storePool_OwnerMax	storepool.owner_maximum	Maximum number of owner objects.
storePool_OwnerAlloc	storepool.owner_allocated	Current number of owner objects allocated.
storePool_OpenStateMax	storepool.openstate_maximum	Maximum number of open state objects.
storePool_OpenStateAlloc	storepool.openstate_allocated	Current number of open state objects allocated.
storePool_DelegStateMax	storepool.delegation_state_maximum	Maximum number of delegation state objects.
storePool_DelegStateAlloc	storepool.delegation_state_allocated	Current number of delegation state objects allocated.

Classic Numeric Counter	REST Counter	Description
storePool_LockStateMax	storepool.lock_state_maximum	Maximum number of lock state objects.
storePool_LockStateAlloc	storepool.lock_state_allocated	Current number of lock state objects allocated.
storePool_LayoutStateMax	storepool.layout_state_maximum	Maximum number of layout state objects.
storePool_LayoutStateAlloc	storepool.layout_state_allocated	Current number of layout state objects allocated.
storePool_CopyStateMax	storepool.copy_state_maximum	Maximum number of copy state objects.
storePool_CopyStateAlloc	storepool.copy_state_allocated	Current number of copy state objects allocated.
storePool_OpenMax	storepool.open_maximum	Maximum number of share lock objects.
storePool_OpenAlloc	storepool.open_allocated	Current number of share objects allocated.
storePool_DelegMax	storepool.delegation_maximum	Maximum number delegation lock objects.
storePool_DelegAlloc	storepool.delegation_allocated	Current number of delegation lock objects allocated.
storePool_LayoutMax	storepool.layout_maximum	Maximum number of layout objects.
storePool_LayoutAlloc	storepool.layout_allocated	Current number of layout objects allocated.
storepool_lock_layout_max	storepool.lock_layout_maximum	Maximum number of layout lock objects.
storepool_lock_layout_alloc	storepool.lock_layout_allocated	Current number of layout lock objects allocated.
storePool_ByteLockMax	storepool.byte_lock_maximum	Maximum number of byte range lock objects.

Classic Numeric Counter	REST Counter	Description
storePool_ByteLockAlloc	storepool.byte_lock_allocated	Current number of byte range lock objects allocated.
storePool_StateRefHistoryMax	storepool.state_reference_history_maximum	Maximum number of state reference callstack history objects.
storePool_StateRefHistoryAlloc	storepool.state_reference_history_allocated	Current number of state reference callstack history objects allocated.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

nic_common

This table tracks hardware network traffic performance and errors for all supported network interface cards (NIC), such as Intel Niantic, Qlogic, and CNA.

Classic Object: nic_common

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Node name.
node_uuid	node.uuid	Node UUID
nic_type	type	NIC card type, such as ixgbe or qlge
link_current_state	link_current_state	Current link state
link_media_state	link_media_state	Current media state is active or no carrier
link_duplex	link_duplex	Link duplex setting is half or full
link_speed	link_speed	Link speed
link_flowcontrol	link_flowcontrol	Current link flow control state (Transmit or Receive or Both)
rss_enabled	rss_enabled	Indicates whether the interface is enabled for RSS. Value can be on or off

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
nic_ipspace	ipspace	IPSpace of an interface
rx_frames_per_sec	receive_frames_per_sec	Frames received per second
rx_frames	receive_frames	Frames received
rx_bytes_per_sec	receive_bytes_per_sec	Bytes received per second
rx_bytes	receive_bytes	Bytes received
rx_errors_per_min	receive_errors_per_min	Error received per minute
rx_errors	receive_errors	Error received
rx_discards_per_min	receive_discards_per_min	Discarded receiving frames per minute
rx_discards	receive_discards	Discarded receiving frames
rx_total_frames	receive_total_frames	Total frames received
rx_total_bytes	receive_total_bytes	Total bytes received
rx_total_errors	receive_total_errors	Total errors received
rx_total_discards	receive_total_discards	Total queue drop or discard frame received
rx_multi_broadcast	receive_multicast_broadcast	Multicast or broadcast frames received
rx_no_buffers	receive_no_buffers	No receiving buffer available counter
rx_non_primary_uc	receive_non_primary_unicast	Frames with non-primary unicast address received
rx_lro_segments	receive_lro_segments	LRO (Large Receive Offload) segments received

Classic Numeric Counter	REST Counter	Description
rx_lro_bytes	receive_lro_bytes	LRO (Large Receive Offload) bytes received
rx_lro6_segments	receive_lro6_segments	IPv6 frame LRO (Large Receive Offload) segments received
rx_lro6_bytes	receive_lro6_bytes	IPv6 frame LRO (Large Receive Offload) bytes received
rx_mcast_v6_solicit	receive_multicast_v6_solicit	IPv6 multicast received
rx_tag_drop	receive_tag_drop	Dropped frames with tag received
rx_vlan_tag_drop	receive_vlan_tag_drop	Dropped frames with tag on a VLAN received
rx_vlan_untag_drop	receive_vlan_untag_drop	Dropped frames without tag received
rx_vlan_forwards	receive_vlan_forwards	Frames received which are forwarded on the VLAN
rx_vlan_broadcasts	receive_vlan_broadcasts	Frames received which are broadcasted onto a VLAN
rx_vlan_unicasts	receive_vlan_unicasts	Frames received which are unicasted on the VLAN
tx_frames_per_sec	transmit_frames_per_sec	Frames sent per second
tx_frames	transmit_frames	Frames sent
tx_bytes_per_sec	transmit_bytes_per_sec	Bytes sent per second
tx_bytes	transmit_bytes	Bytes sent
tx_errors_per_min	transmit_errors_per_min	Error sent per minute
tx_errors	transmit_errors	Error sent
tx_discards_per_min	transmit_discards_per_min	Discarded frames sent per minute
tx_discards	transmit_discards	Discards frames sent

Classic Numeric Counter	REST Counter	Description
tx_total_frames	transmit_total_frames	Total frames sent
tx_total_bytes	transmit_total_bytes	Total bytes sent
tx_total_errors	transmit_total_errors	Total errors sent
tx_total_discards	transmit_total_discards	Total queue drops on sending
tx_multi_broadcast	transmit_multicast_broadcast	Total multicast/broadcast frames sent
tx_queue_overflows	transmit_queue_overflows	Sending queue overflows counter
tx_no_buffers	transmit_no_buffers	No sending buffers available count
tx_frames_queued	transmit_frames_queued	Sent frames queued
tx_buffer_coalesces	transmit_buffer_coalesces	Sending coalesces buffers
tx_mtus_too_big	transmit_mtus_too_big	Oversized packets sent (MTUs too big)
tx_tso_segments	transmit_tso_segments	TSO (TCP Segmentation Offload) segments sent
tx_tso_bytes	transmit_tso_bytes	TSO (TCP Segmentation Offload) bytes sent
tx_tso6_segments	transmit_tso6_segments	IPv6 frame TSO (TCP Segmentation Offload) segments sent
tx_tso6_bytes	transmit_tso6_bytes	IPv6 frame TSO (TCP Segmentation Offload) bytes sent
tx_mcast_v6_solicit	transmit_multicast_v6_solicit	IPv6 multicast transmitted
hwassist	hwassist	HW offload capability of the interface
tx_ltm_fastp_calls	transmit_ltm_fast_path_calls	LTM (LAN Topology Module) sending fast path call counter
tx_ltm_busy_calls	transmit_ltm_busy_calls	LTM (LAN Topology Module) sending failed or busy call counter

Classic Numeric Counter	REST Counter	Description
tx_ltm_update_calls	transmit_ltm_update_calls	LTM (LAN Topology Module) sending update call counter
tx_ltm_yield_calls	transmit_ltm_yield_calls	LTM (LAN Topology Module) sending yield call counter
tx_ltm_total_calls	transmit_ltm_total_calls	LTM (LAN Topology Module) sending call counter
total_bytes	total_bytes	Bytes received and sent
total_errors	total_errors	Error received and sent
rx_crc_errors	receive_crc_errors	CRC errors detected on received packets
rx_unsupported_op	receive_unsupported_op	Total number of unsupported MAC Control Opcode received in Ethernet MAC control frame format field
rx_length_errors	receive_length_errors	Length errors detected on received packets
rx_runt_frames	receive_runt_frames	Very short frames received
rx_fragment	receive_fragment	Fragmented frames received
rx_long_frames	receive_long_frames	Very long frames received
rx_jabber	receive_jabber	Jabber frames received
rx_illegal_symbol	receive_illegal_symbol	Illegal symbol frames received
rx_error_symbol	receive_error_symbol	Error symbol frames received
rx_alignment_errors	receive_alignment_errors	Alignment errors detected on received packets
rx_bus_overruns	receive_bus_overruns	Bus overruns received
rx_xon	receive_xon	Xon frames received
rx_xoff	receive_xoff	Xoff frames received

Classic Numeric Counter	REST Counter	Description
rx_jumbo	receive_jumbo	Jumbo frames received
tx_hw_errors	transmit_hw_errors	Transmit errors reported by hardware
tx_link_down_drop	transmit_link_down_drop	Transmit packets dropped by hardware because the link was down
tx_cfg_up_down	transmit_config_up_down	Link down state changes
tx_bus_overruns	transmit_bus_overruns	Bus overruns sent
collisions	collisions	Collisions on CSMA interfaces
tx_max_collisions	transmit_max_collisions	Maximum collisions sent
tx_single_collisions	transmit_single_collisions	Single collisions sent
tx_multi_collisions	transmit_multiple_collisions	Multiple collisions sent
tx_late_collisions	transmit_late_collisions	Late collisions sent
tx_xon	transmit_xon	Transmitter on (XON) frames sent
tx_xoff	transmit_xoff	Transmitter Off (XOFF) frames sent
tx_jumbo	transmit_jumbo	Jumbo frames sent
link_up_to_downs	link_up_to_down	Number of link state change from UP to DOWN.
rss_itable_updates	rss_itable_updates	Number of hash table updates
rss_hash_errors	rss_hash_errors	Number of hash errors
rss_num_of_queues_used	rss_num_of_queues_used	Number of queues used in RSS
rss_matrix	rss_matrix	Matrix of RSS queue stats. The distribution of packet processing on each network queue. Each queue will have Transmit/Receive frames/bytes counting and requeue counting

Classic Numeric Counter	REST Counter	Description
rss_cg_stat	rss_cg_stat	RSS receive queue to CG queue mapping

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

nvmf_lif

An NVMe/FC LIF is a logical interface that connects an SVM to a NVMe/FC capable physical port. This table collects diagnostics and performance information for an NVMF LIF. The table counters can be used to debug and diagnose connectivity issues with initiators or fabric on a LIF. The table counters can be used to debug and diagnose connectivity issues with initiators or fabric at a LIF level granularity. The alias names for nvmf_lif:node and nvmf_lif:port are nvmf_lif_node and nvmf_lif_port respectively.

Classic Object: nvmf_fc_lif

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{instance_name}:{instance_uuid}	constituent	This represents the construction of a row ID field for a row from a single node.
{port_id}:{port_wwpn}	port	This represents the construction of the row ID field in port combo object, which is a single unique string that identifies a row.
{node.name}:{node.uuid}	node	This represents the construction of the row ID field in node combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Node name
node_uuid	node.uuid	Node UUID
instance_name	name	Name of this logical interface (LIF)
instance_uuid	uuid	UUID of this logical interface (LIF)

Classic String Counter	REST Property	Description
aggregated_lif_uuid	aggregated_lif_uuid	Aggregated NVMF logical interface row ID
aggregated_lif_name	aggregated_lif_name	Aggregated NVME LIF name
vserver_name	svm.name	Name of the SVM (formerly referred to as a Vserver) that owns this logical interface (LIF)
vserver_uuid	svm.uuid	UUID of the SVM (formerly referred to as a Vserver) that owns this logical interface (LIF)
port_wwpn	port_wwpn	WWPN for the port
port_id	port_id	ID for the port

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
read_ops	read_ops	Number of read operations
write_ops	write_ops	Number of write operations
compare_ops	compare_ops	Number of compare operations
caw_ops	caw_ops	Number of compare and write operations
other_ops	other_ops	Number of operations that are not read, write, compare or compare-and-write.
total_ops	total_ops	Total number of operations.
remote_read_ops	remote_read_ops	Number of remote read operations
remote_write_ops	remote_write_ops	Number of remote write operations

Classic Numeric Counter	REST Counter	Description
remote_compare_ops	remote_compare_ops	Number of remote compare operations
remote_caw_ops	remote_caw_ops	Number of remote compare and write operations
remote_other_ops	remote_other_ops	Number of remote operations that are not read, write, compare or compare-and- write.
remote_total_ops	remote_total_ops	Total number of remote operations.
read_data	read_data	Amount of data read from the storage system
write_data	write_data	Amount of data written to the storage system
compare_data	compare_data	Amount of data compared in the storage system
caw_data	caw_data	Amount of data compared and written to in the storage system
total_data	total_data	Amount of NVMF traffic to and from the storage system
remote_read_data	remote_read_data	Amount of remote data read from the storage system
remote_write_data	remote_write_data	Amount of remote data written to the storage system
remote_compare_data	remote_compare_data	Amount of remote data compared in the storage system
remote_caw_data	remote_caw_data	Amount of remote data compared and written to in the storage system
remote_total_data	remote_total_data	Amount of NVMF remote traffic to and from the storage system
avg_read_latency	average_read_latency	Average latency for read operations

Classic Numeric Counter	REST Counter	Description
avg_write_latency	average_write_latency	Average latency for write operations
avg_other_latency	average_other_latency	Average latency for operations other than read, write, compare or compare-and- write.
avg_latency	average_latency	Average latency for NVMF operations
remote_avg_read_latency	remote_average_read_latency	Average latency for remote read operations
remote_avg_write_latency	remote_average_write_latency	Average latency for remote write operations
remote_avg_other_latency	remote_average_other_latency	Average latency for operations other than read, write, compare or compare-and- write.
remote_avg_latency	remote_average_latency	Average latency for NVMF remote operations
read_latency_hist	read_latency_histogram	Latency histogram for read operations
remote_read_latency_hist	remote_read_latency_histogram	Latency histogram for remote read operations
pend_q_hist	pending_queue_histogram	Latency histogram when IOs are placed in pending queue
driver_read_latency_hist	driver_read_latency_histogram	Driver latency histogram for read operations. Records the time spent in the protocol stack for read operations.
storage_read_latency_hist	storage_read_latency_histogram	Storage latency histogram for read operations. Records the time spent in storage for read operations.
write_latency_hist	write_latency_histogram	Latency histogram for write operations

Classic Numeric Counter	REST Counter	Description
remote_write_latency_hist	remote_write_latency_histogram	Latency histogram for remote write operations
driver_write_latency_hist	driver_write_latency_histogram	Driver latency histogram for write operations. Records the time spent in the protocol stack for write operations.
storage_write_latency_hist	storage_write_latency_histogram	Storage latency histogram for write operations. Records the time spent in storage for write operations.
fabric_latency_hist	fabric_latency_histogram	Fabric latency histogram for write operations. Records the time spent in the fabric after sending a transfer-ready to get WRITE data.
read_size_hist	read_size_histogram	Histogram of read sizes
write_size_hist	write_size_histogram	Histogram of write sizes
remote_read_size_hist	remote_read_size_histogram	Histogram of remote read sizes
remote_write_size_hist	remote_write_size_histogram	Histogram of remote write sizes
read_cmd_proc_latency_hist_8K	read_cmd_processing_latency_histogram_8K	Histogram for read command processing and data delivery time for I/O less than/equal to 8K.
read_cmd_proc_latency_hist_16K	read_cmd_processing_latency_histogram_16K	Histogram for read command processing and data delivery time for I/O greater than 8K AND less than/equal to 16K.
read_cmd_proc_latency_hist_32K	read_cmd_processing_latency_histogram_32K	Histogram for read command processing and data delivery time for I/O greater than 16K AND less than/equal to 32K.

Classic Numeric Counter	REST Counter	Description
read_cmd_proc_latency_hist_64K	read_cmd_processing_latency_histogram_64K	Histogram for read command processing and data delivery time for I/O greater than 32K AND less than/equal to 64K.
read_cmd_proc_latency_hist_large_io	read_cmd_processing_latency_histogram_large_io	Histogram for read command processing and data delivery time for I/O greater than 64K.
remote_read_cmd_proc_latency_hist_8K	remote_read_cmd_processing_latency_histogram_8K	Histogram for remote read command processing and data delivery time for I/O less than/equal to 8K.
remote_read_cmd_proc_latency_hist_16K	remote_read_cmd_processing_latency_histogram_16K	Histogram for remote read command processing and data delivery time for I/O greater than 8K AND less than/equal to 16K.
remote_read_cmd_proc_latency_hist_32K	remote_read_cmd_processing_latency_histogram_32K	Histogram for remote read command processing and data delivery time for I/O greater than 16K AND less than/equal to 32K.
remote_read_cmd_proc_latency_hist_64K	remote_read_cmd_processing_latency_histogram_64K	Histogram for remote read command processing and data delivery time for I/O greater than 32K AND less than/equal to 64K.
remote_read_cmd_proc_latency_hist_large_io	remote_read_cmd_processing_latency_histogram_large_io	Histogram for remote remote read command processing and data delivery time for I/O greater than 64K.
write_cmd_proc_latency_hist_8K	write_cmd_processing_latency_histogram_8K	Histogram for write command processing and data delivery time for I/O less than/equal to 8K.

Classic Numeric Counter	REST Counter	Description
write_cmd_proc_latency_hist_16K	write_cmd_processing_latency_histogram_16K	Histogram for write command processing and data delivery time for I/O greater than 8K AND less than/equal to 16K.
write_cmd_proc_latency_hist_32K	write_cmd_processing_latency_histogram_32K	Histogram for write command processing and data delivery time for I/O greater than 16K AND less than/equal to 32K.
write_cmd_proc_latency_hist_64K	write_cmd_processing_latency_histogram_64K	Histogram for write command processing and data delivery time for I/O greater than 32K AND less than/equal to 64K.
write_cmd_proc_latency_hist_large_io	write_cmd_processing_latency_histogram_large_io	Histogram for write command processing and data delivery time for I/O greater than 64K.
remote_write_cmd_proc_latency_hist_8K	remote_write_cmd_processing_latency_histogram_8K	Histogram for remote write command processing and data delivery time for I/O less than/equal to 8K.
remote_write_cmd_proc_latency_hist_16K	remote_write_cmd_processing_latency_histogram_16K	Histogram for remote write command processing and data delivery time for I/O greater than 8K AND less than/equal to 16K.
remote_write_cmd_proc_latency_hist_32K	remote_write_cmd_processing_latency_histogram_32K	Histogram for remote write command processing and data delivery time for I/O greater than 16K AND less than/equal to 32K.
remote_write_cmd_proc_latency_hist_64K	remote_write_cmd_processing_latency_histogram_64K	Histogram for remote write command processing and data delivery time for I/O greater than 32K AND less than/equal to 64K.

Classic Numeric Counter	REST Counter	Description
remote_write_cmd_proc_latency_hist_large_io	remote_write_cmd_processing_latency_histogram_large_io	Histogram for remote write command processing and data delivery time for I/O greater than 64K.
write_data_consume_latency_hist_8K	write_data_consume_latency_histogram_8K	Histogram for write data consumption time for I/O less than/equal to 8K.
write_data_consume_latency_hist_16K	write_data_consume_latency_histogram_16K	Histogram for write data consumption time for I/O greater than 8K AND less than/equal to 16K.
write_data_consume_latency_hist_32K	write_data_consume_latency_histogram_32K	Histogram for write data consumption time for I/O greater than 16K AND less than/equal to 32K.
write_data_consume_latency_hist_64K	write_data_consume_latency_histogram_64K	Histogram for write data consumption time for I/O greater than 32K AND less than/equal to 64K.
write_data_consume_latency_hist_large_io	write_data_consume_latency_histogram_large_io	Histogram for write data consumption time for I/O greater than 64K.
remote_write_data_consume_latency_hist_8K	remote_write_data_consume_latency_histogram_8K	Histogram for remote write data consumption time for I/O less than/equal to 8K. It includes remote transport latency and remote WAFL latency.
remote_write_data_consume_latency_hist_16K	remote_write_data_consume_latency_histogram_16K	Histogram for remote write data consumption time for I/O greater than 8K AND less than/equal to 16K. It includes remote transport latency and remote WAFL latency.

Classic Numeric Counter	REST Counter	Description
remote_write_data_consume_latency_hist_32K	remote_write_data_consume_latency_histogram_32K	Histogram for remote write data consumption time for I/O greater than 16K AND less than/equal to 32K. It includes remote transport latency and remote WAFL latency.
remote_write_data_consume_latency_hist_64K	remote_write_data_consume_latency_histogram_64K	Histogram for remote write data consumption time for I/O greater than 32K AND less than/equal to 64K. It includes remote transport latency and remote WAFL latency.
remote_write_data_consume_latency_hist_large_io	remote_write_data_consume_latency_histogram_large_io	Histogram for remote write data consumption time for I/O greater than 64K. It includes remote transport latency and remote WAFL latency.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
nvmf_lif:port	nvmf_lif_port
nvmf_lif:node	nvmf_lif_node

object_store_client_op

CM table for exporting object store operation statistics. Object store operations are HTTP operations sent over TCP to manage objects on any object store.

Classic Object: object_store_client_op

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
stats	stats	Counter that indicates the number of object store operations sent, and their success and failure counts for particular handle and particular object store commands.
ops	ops	Counter that indicates the number of object store operations in total for particular handle and particular object store commands. This counter acts as a base counter for average_latency.

Classic Numeric Counter	REST Counter	Description
average_latency	average_latency	Average latencies executed during various phases of command execution. The execution_start latency represents the average time taken to start executing an operation. The request_prepare latency represents the average time taken to prepare the complete request that needs to be sent to the server. The send latency represents the average time taken to send requests to the server. The execution_start_to_send_complete represents the average time taken to send a request since its execution started. The execution_start_to_first_byte_received latency represents the average time taken to receive the first byte of a response since the command's execution started. These counters can be used to identify performance bottlenecks within the object store client module. This counter contains average latency for a particular handle and a particular object store command.
throughput_bytes	throughput_bytes	Counter that indicates the throughput for the corresponding object store command in bytes per second.
throughput_ops	throughput_ops	Counter that indicates the throughput for commands in operations per second.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

REST Counter	Description
ops	The counter labels have changed. All of the dashes '-' in the labels were changed to underscores '_'.
average_latency	The counter labels have changed. All of the dashes '-' in the labels were changed to underscores '_'.

Table Aliases

This section describes aliases for aggregated tables.

path

The Counter Manager table for exporting path performance counters.

Classic Object: path

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
debounce_count	debounce_count	Total number of times a device has entered into debounce period.
login_attempt_count	login_attempt_count	Total number of PLOGI attempts to the device.
read_iops	read_iops	The number of I/O read operations sent from the initiator port to the indicated target port.
write_iops	write_iops	The number of I/O write operations sent from the initiator port to the indicated target port.

Classic Numeric Counter	REST Counter	Description
total_iops	total_iops	The number of total read/write I/O operations sent from the initiator port to the indicated target port.
read_latency	read_latency	The average latency of I/O read operations sent from this controller to the indicated target port.
write_latency	write_latency	The average latency of I/O write operations sent from this controller to the indicated target port.
total_latency	average_latency	The average latency of I/O read and write operations sent from this controller to the indicated target port.
average_read_service_time	average_read_service_time	The average time taken to process a read operation on the indicated target port by the indicated initiator port. This is the sum of time waiting to be transmitted and latency.
average_write_service_time	average_write_service_time	The average time taken to process a write operation on the indicated target port by the indicated initiator port. This is the sum of time waiting to be transmitted and latency.
average_service_time	average_service_time	The average time taken to process a read or write operation on the indicated target port by the indicated initiator port. This is the sum of time waiting to be transmitted and latency.
read_data	read_data	The average read throughput in kilobytes per second read from the indicated target port by the controller.

Classic Numeric Counter	REST Counter	Description
write_data	write_data	The average write throughput in kilobytes per second written to the indicated target port by the controller.
total_data	total_data	The average throughput in kilobytes per second read and written from/to the indicated target port by the controller.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

processor

The processor table exports performance counters for the central processing units of the system. The alias name for processor:node is processor_node.

Classic Object: processor

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}	node	This represents the construction of the row ID field in node combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Name of the node
node_uuid	node.uuid	UUID for the node

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
processor_busy	busy_percent	Percentage of elapsed time that the processor is executing non-idle processes
processor_elapsed_time	elapsed_time	Wall-clock time since boot used for calculating processor utilization
sk_switches	sk_switches	Number of sk switches per second

Classic Numeric Counter	REST Counter	Description
hard_switches	hard_switches	Number of context switches per second
domain_switches	domain_switches	Number of domain switches per second
cp_rupts	cp_interrupts	Number of CP interrupts per second
noncp_rupts	non_cp_interrupts	Number of non-CP interrupts per second
ipi_rupts	ipi_interrupts	Number of IPI interrupts per second
grab_kahuna	grab_kahuna	Number of grab kahuna domain per second
grab_kahuna_time	grab_kahuna_time_percent	Grab kahuna domain time percentage
suspend_domain	suspend_domain	Number of context switches per second
suspend_domain_time	suspend_domain_time_percent	Suspend domain time percentage
cp_rupt_time	cp_interrupt_time_percent	CP interrupt time percentage
noncp_rupt_time	non_cp_interrupt_time_percent	Non-CP interrupt time percentage
domain_busy	domain_busy_percent	Array of processor time in percentage spent in various domains
freebsd_cp_time	freebsd_cp_time	FreeBSD CP time array

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

REST Counter	Description
domain_busy_percent	The counter labels have changed. The only label to change was hostOS. It changed from hostOS to hostos.
freebsd_cp_time	The counter labels have changed. The old counter labels were USER, NICE, SYS, INTR, IDLE. The new counter labels are user, nice, system, interrupt_request, idle.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
processor:node	processor_node

qos

A workload represents work being done on behalf of an application or system process. The QoS Counter Manager table reports information such as operations per second, a breakdown of where read operations are going, the inter-arrival time of operation request messages, working set size information, operation latency per workload, and deferred workload information. These statistics illustrate system performance with given workloads. The alias name for qos:policy_group is qos_policy_group.

Classic Object: workload

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{instance_name}:{instance_uuid}	constituent	This represents the construction of a row ID field for a row from a single node.
{policy_group_name}:{policy_group_uuid}	policy_group	This represents the construction of the row ID field in policy_group combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name
instance_name	name	Name of the constituent workload.
instance_uuid	uuid	Unique identifier (UUID) for the workload. While the workload name may change, the UUID will be invariant.
policy_group_name	policy_group_name	This is the name of the policy group containing this workload.

Classic String Counter	REST Property	Description
policy_group_uuid	policy_group_uuid	This is the UUID of the policy group containing this workload.

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
ops	ops	Workload operations executed per second.
read_io_type	read_io_type_percent	This is the percentage of read requests served from various components (such as buffer cache, ext_cache, disk, etc.).
read_io_type_base	read_io_type_base	This is the total number of WAFL read requests. It is used as a base counter (or denominator) for the read_io_type_percent counter, to compute the percentage of reads by various WAFL components.
sequential_reads	sequential_reads_percent	This is the percentage of reads, performed on behalf of the workload, that were sequential.
sequential_reads_base	sequential_reads_base	This is the total number of reads, performed on behalf of the workload. It is used as a base counter (or denominator) for the sequential_reads_percent counter to compute the percentage of sequential reads.
sequential_writes	sequential_writes_percent	This is the percentage of writes, performed on behalf of the workload, that were sequential. This counter is only available on platforms with more than 4GB of NVRAM.

Classic Numeric Counter	REST Counter	Description
sequential_writes_base	sequential_writes_base	This is the total number of writes, performed on behalf of the workload. This is used as a base counter (or denominator) for the sequential_writes_percent counter to compute the percentage of sequential writes.
latency	latency	This is the average response time for requests that were initiated by the workload.
total_data	total_data	This is the total amount of data read/written per second from/to the filer by the workload.
read_ops	read_ops	This is the rate of this workload's read operations that completed during the measurement interval.
write_ops	write_ops	This is the workload's write operations that completed during the measurement interval; measured per second.
other_ops	other_ops	This is the rate of this workload's other operations that completed during the measurement interval.
read_data	read_data	This is the amount of data read per second from the filer by the workload.
write_data	write_data	This is the amount of data written per second to the filer by the workload.
read_latency	read_latency	This is the average response time for read requests that were initiated by the workload.

Classic Numeric Counter	REST Counter	Description
write_latency	write_latency	This is the average response time for write requests that were initiated by the workload.
concurrency	concurrency	This is the average number of concurrent requests for the workload.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
qos:policy_group	qos_policy_group

qos_detail

The qos_detail Counter Manager table that provides service center-based statistical information. Note: This table returns a very large number of instances. Querying by instance name and using wild cards may improve response times.

Classic Object: workload_detail

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name
resource_name	resource.name	Name of the associated resource.

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
visits	visits	The number of visits that the workload made to the service center; measured in visits per second.
service_time	service_time	The workload’s average service time per visit to the service center.
wait_time	wait_time	The workload’s average wait time per visit to the service center.

Classic Numeric Counter	REST Counter	Description
in_latency_path	in_latency_path	Determines whether or not service center-based statistics are in the latency path.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

qos_detail_volume

The qos_detail_volume Counter Manager table provides service center-based statistical information for all volumes. Service centers are resource elements that contribute to the latency of a request. This table provides information on the breakdown of a volume's response time such as the number of visits, service time and wait time across service centers. Note: This table returns a very large number of rows.

Classic Object: workload_detail_volume

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name
resource_name	resource_name	Name of the associated resource.

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
visits	visits	The number of visits that the workload made to the service center; measured in visits per second.
service_time	service_time	The workload's average service time per visit to the service center.
wait_time	wait_time	The workload's average wait time per visit to the service center.

Classic Numeric Counter	REST Counter	Description
in_latency_path	in_latency_path	Determines whether or not service center-based statistics are in the latency path.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

qos_volume

The workload_volume table provides workload statistics on a per volume basis. Workload information at a file or LUN level are not shown by this table (See the workload table). This table provides information such as operations per second, a breakdown of where read operations are going, the interarrival time of operation request messages, working set size information, operation latency per workload, and deferred workload information.

Classic Object: workload_volume

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{instance_name}:{instance_uuid}	constituent	This represents the construction of a row ID field for a row from a single node.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name
instance_name	name	This is the name of the constituent workload row.
instance_uuid	uuid	This is the unique identifier for the qos_volume row. While the qos_volume name may change, the UUID will not change.

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
latency	latency	This is the average response time for requests that were initiated by the workload.
ops	ops	This field is the workload's rate of operations that completed during the measurement interval; measured per second.
read_data	read_data	This is the amount of data read per second from the filer by the workload.
read_io_type	read_io_type_percent	This is the percentage of read requests served from various components (such as buffer cache, ext_cache, disk, etc.).
read_io_type_base	read_io_type_base	This is the total number of WAFL read requests. It is used as a base counter (or denominator) for the read_io_types counter, to compute the percentage of reads by various WAFL components.
read_latency	read_latency	This is the average response time for read requests that were initiated by the workload.
read_ops	read_ops	This is the rate of this workload's read operations that completed during the measurement interval.
sequential_reads	sequential_reads_percent	This is the percentage of reads, performed on behalf of the workload, that were sequential.

Classic Numeric Counter	REST Counter	Description
sequential_reads_base	sequential_reads_base	This is the total number of reads, performed on behalf of the workload. It is used as a base counter (or denominator) for the sequential_reads_percent counter to compute the percentage of sequential reads.
sequential_writes_percent	sequential_writes_percent	This is the percentage of writes, performed on behalf of the workload, that were sequential. This counter is only available on platforms with more than 4GB of NVRAM.
sequential_writes_base	sequential_writes_base	This is the total number of writes, performed on behalf of the workload. This is used as a base counter (or denominator) for the sequential_writes_percent counter to compute the percentage of sequential writes.
total_data	total_data	This is the total amount of data read/written per second from/to the filer by the workload.
write_data	write_data	This is the amount of data written per second to the filer by the workload.
write_latency	write_latency	This is the average response time for write requests that were initiated by the workload.
write_ops	write_ops	This is the workload's write operations that completed during the measurement interval; measured per second.
concurrency	concurrency	This is the average number of concurrent requests for the workload.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

qtree

CM table for exporting qtree performance counters

Classic Object: qtree

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{instance_name}:{instance_uuid}	constituent	This represents the construction of a row ID field for a row from a single node.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name
vserver_name	svm.name	SVM name
parent_vol	parent_volume.name	Name of the parent volume
constituent_parent_vol	parent_constituent_volume.name	Name of the FlexGroup constituent or FlexVol that handled the Ops

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
nfs_ops	nfs_ops	Number of NFS operations per second to the qtree
cifs_ops	cifs_ops	Number of CIFS operations per second to the qtree

Classic Numeric Counter	REST Counter	Description
css_ops	css_ops	Number of CSS operations per second to the qtree
internal_ops	internal_ops	Number of internal operations generated by activites such as snapmirror and backup per second to the qtree
total_ops	total_ops	Summation of NFS ops, CIFS ops, CSS ops and internal ops

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

svm_cifs

The svm_cifs table reports activity of the Common Internet File System Protocol subsystem. This is the Microsoft file-sharing protocol that evolved from the Server Message Block(SMB) application layer network protocol to connect PCs to Network Attached Storage(NAS) devices. This table supports SVM specific activity for SMB, SMB2, and SMB3 revisions of the CIFS protocol. The alias name for svm_cifs:node is svm_cifs_node.

Classic Object: cifs

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{instance_name}:{instance_uuid}	constituent	This represents the construction of a row ID field for a row from a single node.
{node.name}:{node.uuid}	node	This represents the construction of the row ID field in node combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Node name
node_uuid	node.uuid	Node UUID
instance_name	name	Name of the CIFS instance
vserver_name	svm.name	SVM name
vserver_id	svm.id	SVM ID

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
cifs_ops	total_ops	Total number of CIFS operations
cifs_op_count	op_count	Array of select CIFS operation counts
cifs_op_pct	op_percent	Array of select CIFS operation counts as a percentage of total CIFS operations
cifs_latency	latency	Average latency for CIFS operations
cifs_latency_base	latency_base	Total observed CIFS operations to be used as a base counter for CIFS average latency calculation
cifs_latency_hist	cifs_latency_histogram	Histogram of latency for CIFS operations
cifs_read_ops	total_read_ops	Total number of CIFS read operations
cifs_write_ops	total_write_ops	Total number of CIFS write operations
cifs_read_latency	average_read_latency	Average latency for CIFS read operations
cifs_write_latency	average_write_latency	Average latency for CIFS write operations
cifs_read_latency_hist	read_latency_histogram	Histogram of latency for CIFS read operations
cifs_write_latency_hist	write_latency_histogram	Histogram of latency for CIFS write operations
cifs_read_size_histo	read_size_histogram	Histogram of CIFS read sizes
cifs_write_size_histo	write_size_histogram	Histogram of CIFS write sizes

Classic Numeric Counter	REST Counter	Description
read_data	read_data	Rate of CIFS read data transfers per second.
write_data	write_data	Rate of CIFS write data transfers per second.
total_data	total_data	Rate of total CIFS data transfers per second.
commands_outstanding	commands_outstanding	Number of SMB and SMB2 commands in process
change_notifications_outstanding	change_notifications_outstanding	Number of active change notifications over SMB and SMB2
connections	connections	Number of connections
outstanding_auth_requests	outstanding_auth_requests	Number of outstanding authentication requests
established_sessions	established_sessions	Number of established SMB and SMB2 sessions
signed_sessions	signed_sessions	Number of signed SMB and SMB2 sessions.
connected_shares	connected_shares	Number of SMB and SMB2 share connections
open_files	open_files	Number of open files over SMB and SMB2
active_searches	active_searches	Number of active searches over SMB and SMB2
max_commands_outstanding	max_commands_outstanding	Maximum number of SMB and SMB2 commands in process at one time
max_change_notifications_outstanding	max_change_notifications_outstanding	Maximum number of SMB and SMB2 change notifications pending at one time
max_connections	max_connections	Maximum number of connections achieved

Classic Numeric Counter	REST Counter	Description
max_outstanding_auth_requests	max_outstanding_auth_requests	Maximum number of outstanding authentication requests
max_established_sessions	max_established_sessions	Maximum number of established SMB and SMB2 sessions achieved
max_connected_shares	max_connected_shares	Maximum number of SMB and SMB2 share connections achieved
max_open_files	max_open_files	Maximum number of open files over SMB and SMB2 achieved
max_active_searches	max_active_searches	Maximum number of active searches over SMB and SMB2 achieved
max_sessions_per_connection	max_sessions_per_connection	Maximum number of SMB or SMB2 sessions multiplexed over a single connection
max_shares_per_session	max_shares_per_session	Maximum number of share connections achieved within a single SMB or SMB2 session
max_open_files_per_share	max_open_files_per_share	Maximum number of open files achieved over a single share connection within a single SMB or SMB2 session
handle_lease_ignored	handle_lease_ignored	Number of times a request for a handle lease was ignored because too many had been granted to a single session.
max_searches_per_session	max_searches_per_session	Maximum number of directory searches achieved over a single SMB or SMB2 session
max_same_tree_connect_per_session	max_same_tree_connections_per_session	Maximum number of CIFS tree connects achieved over the same share within a single CIFS session. This counter will be set only when shares within a single CIFS session exceeds the max_same_tree_connections_per_session configured value.

Classic Numeric Counter	REST Counter	Description
max_same_user_session_per_conn	max_same_user_sessions_per_connection	Maximum number of CIFS sessions achieved by the same user within a single TCP connection. This counter will be set only when total number of session on a CIFS connection exceeds the max_same_user_sessions_per_connection configured value.
max_opens_same_file_per_tree	max_opens_same_file_per_tree	Maximum number of existing opens achieved on the same file within a single CIFS tree. This counter will be set only when number of opens on a CIFS tree exceeds the max_opens_same_file_per_tree configured value.
max_watches_set_per_tree	max_watches_set_per_tree	Maximum number of watches, also known as 'change notifies,' achieved within a single CIFS tree. This counter will be set only when number of watches on a CIFS tree exceeds the max_watches_set_per_tree configured value.
auth_reject_too_many	auth_reject_too_many	Authentication refused after too many requests were made in rapid succession
open_reject_too_many	open_reject_too_many	Open refused after too many requests were made by the same user to the same file
session_reject_too_many	session_reject_too_many	Session refused after too many session requests for the same user for the same client
watch_reject_too_many	watch_reject_too_many	Watch request, also known as 'change notify,' refused after too many watch requests

Classic Numeric Counter	REST Counter	Description
tree_connect_reject_too_many	tree_connect_reject_too_many	Tree connect request rejected after too many connects to same share on session
duplicate_session_disconnected	duplicate_session_disconnected	Detected and terminated a duplicate session
connection_idle_close	connection_idle_close	Detected and terminated an idle connection
session_idle_close	session_idle_close	Detected and terminated an idle session
conn_could_not_close_without_waiting	connections_could_not_close_without_waiting	Number of connections could not be closed right away
conn_closed_internally_unexpected	connections_closed_internally_unexpected	Number of connections closed unexpectedly because of internal error
conn_hung_cnt	hung_connections_count	Number of connections hung while closing
non_unicode_client_rejected	non_unicode_client_rejected	Rejected a connection attempt from a client that does not support Unicode
node_referral_local	node_referral.local	Number of clients that connected using a LIF hosted by the same node that hosts the share root. Normally local access provides optimal performance.
node_referral_remote	node_referral.remote	Number of clients that connected using a LIF hosted by a node different from the node that hosts the share root. Remote access may result in degraded performance.

Classic Numeric Counter	REST Counter	Description
node_referral_issued	node_referral.issued	Number of clients that were issued a referral to the share root's node after the client connected using a LIF hosted by a node different from the share root's node.
node_referral_not_possible	node_referral.not_possible	Number of clients that were not issued a referral to the node hosting the share root after connecting using a LIF hosted by a node different from the share root's node. No active data LIF for the share root's node was found
reconnection_requests_total	reconnection_requests.total	Number of clients who issued a CIFS reconnect request
reconnection_requests_failed	reconnection_requests.failed	Number of CIFS reconnect requests which failed
persistent_opens	persistent_opens	Number of CIFS persistent open requests made by clients
durable_opens	durable_opens	Number of CIFS durable open requests made by clients
optimized_smb2_opens	optimized_smb2_opens	Number of SMB2 open requests which used SPINNP_LOOKUP instead of SPINNP_OPEN
lock_reconstruction	lock_reconstruction	Number of times lock reconstruction status has been encountered while processing CIFS requests from clients
server_side_close_conn	server_side_close_connection	Number of times a decision has been made to initiate server-side closure of a client connection
continuously_available_connections	continuously_available_connections	Number of connections from CA-capable clients to continuously available shares

Classic Numeric Counter	REST Counter	Description
privileged_lock_test_req	privileged_lock.test_requests	Number of Lock Test requests from the client
privileged_lock_req	privileged_lock.requests	Number of Lock Requests from the client
nbt_session_requests	nbt_session.requests	Number of NetBIOS session requests
nbt_session_keepalives	nbt_session.keep_alives	Number of NetBIOS session keep-alives
nameserver_query_requests	name_server.query_requests	Number of incoming nameserver query requests
nameserver_query_request_matches	name_server.query_request_matches	Number of incoming nameserver query requests that matched
nameserver_registration_requests	name_server.registration_requests	Number of incoming nameserver registration requests
nameserver_registration_request_matches	name_server.registration_request_matches	Number of incoming nameserver registration requests that matched
path_based_ops	path_based_ops	Number of SMB and SMB2 path-based commands
avg_directory_depth	average_directory_depth	Average number of directories crossed by SMB and SMB2 path-based commands
max_directory_depth	max_directory_depth	Maximum number of directories crossed by SMB and SMB2 path-based commands
avg_junction_depth	average_junction_depth	Average number of junctions crossed by SMB and SMB2 path-based commands
max_junction_depth	max_junction_depth	Maximum number of junctions crossed by SMB and SMB2 path-based commands
path_cache_entries	path_cache.entries	Number of entries in the path cache

Classic Numeric Counter	REST Counter	Description
path_cache_max_entries	path_cache.max_entries	Maximum number of entries in the path cache
path_cache_requests	path_cache.requests	Number of path cache requests
path_cache_hits	path_cache.hits	Number of path cache hits
path_cache_misses	path_cache.misses	Number of path cache misses
path_cache_latency	path_cache.average_latency	Average latency for a path cache request (hit or miss)
path_cache_hit_latency	path_cache.average_hit_latency	Average latency for a path cache hit
path_cache_hit_latency_histogram	path_cache.hit_latency_histogram	Latency histogram for path cache hits
path_cache_miss_latency	path_cache.average_miss_latency	Average latency for a path cache miss
path_cache_miss_latency_histogram	path_cache.miss_latency_histogram	Latency histogram for path cache misses
file_handle_cache_entries	file_handle_cache.entries	Number of entries in the file handle cache
file_handle_cache_max_entries	file_handle.cache_max_entries	Maximum number of entries in the file handle cache
file_handle_cache_requests	file_handle_cache.requests	Number of file handle cache requests
file_handle_cache_hits	file_handle_cache.hits	Number of file handle cache hits
file_handle_cache_misses	file_handle_cache.misses	Number of file handle cache misses
file_handle_cache_latency	file_handle_cache.average_latency	Average latency for a file handle cache request (hit or miss)
file_handle_cache_hit_latency	file_handle_cache.average_hit_latency	Average latency for a file handle cache hit

Classic Numeric Counter	REST Counter	Description
file_handle_cache_hit_latency_histogram	file_handle_cache.hit_latency_histogram	Latency histogram for file handle cache hits
file_handle_cache_miss_latency	file_handle_cache.average_miss_latency	Average latency for a file handle cache miss
file_handle_cache_miss_latency_histogram	file_handle_cache.miss_latency_histogram	Latency histogram for file handle cache misses
flow_control_connections	flow_control.connections	Total number of connections that have been placed into flow control
flow_control_back_to_back	flow_control.back_to_back	Total number of connections that have been released from flow control only to be put back into flow control before they get a chance to run
flow_control_max_queue_depth	flow_control.max_queue_depth	Maximum queue depth for flow control connection queues
flow_control_latency_hist	flow_control.latency_histogram	Histogram of flow control caused latency for CIFS connections
flexgroup_lookup_redrive	flexgroup_lookup.redrive	Total number of times a CIFS lookup has been redirected by the FlexGroup layer
flexgroup_open_redrive	flexgroup_open.redrive	Total number of times a CIFS file or directory open or creation has been redirected by the FlexGroup layer
flexgroup_lookup_multiple_redrive	flexgroup_lookup.multiple_redrive	Total number of times a single CIFS lookup operation has been redirected multiple times in a row
flexgroup_open_multiple_redrive	flexgroup_open.multiple_redrive	Total number of times a single CIFS file or directory open or creation operation has been redirected multiple times in a row
flexgroup_msid_cache_hit	flexgroup_msid_cache.hits	Total number of times we have found a FlexGroup target MSID in the CIFS MSID path cache

Classic Numeric Counter	REST Counter	Description
flexgroup_msid_cache_max_entries	flexgroup_msid_cache.max_entries	Maximum number of entries stored in any CIFS MSID path cache
flexgroup_msid_cache_max_depth	flexgroup_msid_cache.max_depth	Maximum path depth stored in any CIFS MSID path cache
component_cache	component_cache	Array of component cache stats
branchcache_hash_fetch_fail	branch_cache.hash_fetch_fail	Total number of times a request to fetch hash data failed. These are failures when attempting to read existing hash data. It does not include attempts to fetch hash data that has not yet been generated.
branchcache_missing_hash_bytes	branch_cache.missing_hash_bytes	Total number of bytes of data that had to be read by the client because the hash for that content was not available on the server.
branchcache_hash_fetch_ok	branch_cache.hash_fetch_ok	Total number of times a request to fetch hash data succeeded.
branchcache_hash_sent_bytes	branch_cache.hash_sent_bytes	Total number of bytes sent to clients requesting hashes.
copyoffload_directcopy_read_request	copyoffload_directcopy_read_request	Total number of Copy Offload Direct-Copy Read requests.
ioctl_fsctl_set_zero_data_unaligned_request	ioctl_fsctl_set_zero_data_unaligned_request	Total number of FSCTL_SET_ZERO_DATA requests not aligned to block-boundaries.
sd_max_ace_count	security_descriptor.max_ace_count	Maximum number of ACEs received in a security descriptor.
sd_max_ace_size	security_descriptor.max_ace_size	Maximum size of ACEs received in a security descriptor.
cred_max_user_claims	credential.max_user_claims	Maximum size of user claims in CIFS credentials

Classic Numeric Counter	REST Counter	Description
cred_max_device_claims	credential.max_device_claims	Maximum size of device claims in CIFS credentials
cred_max_device_groups	credential.max_device_groups	Maximum number of groups a device is a member of.
cred_build_req	credential.build_requests	Number of SpinNp Credential Build Requests for CIFS.
cred_avg_win_groups	credential.average_win_groups	Average number of windows groups any user is a member of.
cred_max_win_groups	credential.max_win_groups	Maximum number of windows groups any user is a member of.
cred_avg_unix_groups	credential.average_unix_groups	Average number of UNIX groups any user is a member of.
cred_max_unix_groups	credential.max_unix_groups	Maximum number of UNIX groups any user is a member of.
cred_avg_total_groups	credential.average_total_groups	Average number of total groups any user is a member of.
cred_max_total_groups	credential.max_total_groups	Maximum number of total groups any user is a member of.
cred_max_size_bytes	credential.max_size	Maximum size (in bytes) of the SpinNp credential for any CIFS user.
cred_avg_size_bytes	credential.average_size	Average size (in bytes) of the SpinNp credential for any CIFS user.
smb1_connections_count	smb1_connections_count	Number of SMB1 connections.
total_smb1_connections_count	total_smb1_connections_count	Total number of SMB1 connections.
smb2_connections_count	smb2_connections_count	Number of SMB2.0 connections.
encrypted_sessions	encrypted_sessions	Number of encrypted SMB3 sessions.

Classic Numeric Counter	REST Counter	Description
encrypted_share_connections	encrypted_share_connections	Number of encrypted share connections. This is the number of encrypted shares on which a tree connect has happened.
rejected_unencrypted_sessions	rejected_unencrypted_sessions	Number of session setups rejected due to the lack of client encryption capability.
rejected_unencrypted_shares	rejected_unencrypted_shares	Number of share mappings rejected due to the lack of client encryption capability.
total_smb2_connections_count	total_smb2_connections_count	Total number of SMB2.0 connections.
smb2_1_connections_count	smb2_1_connections_count	Number of SMB2.1 connections.
total_smb2_1_connections_count	total_smb2_1_connections_count	Total number of SMB2.1 connections.
smb3_connections_count	smb3_connections_count	Number of SMB3 connections.
total_smb3_connections_count	total_smb3_connections_count	Total number of SMB3 connections.
smb3_1_connections_count	smb3_1_connections_count	Number of SMB3.1 connections.
total_smb3_1_connections_count	total_smb3_1_connections_count	Total number of SMB3.1 connections.
extended_dfs_referral_reqs	extended_dfs_referral_reqs	Total number of extended DFS referrals (FSCTL_DFS_GET_REFERRALS_EX requests).
no_version_negotiated	no_version_negotiated_requests	Total number of negotiate requests that were dropped because no mutually supported SMB version is found.
widelink_request	widelink_requests	Total number of widelink encountered while resolving symlinks.

Classic Numeric Counter	REST Counter	Description
homedir_share_request	homedir_share_requests	Total number of Tree Connect requests for a home directory share.
export_policy_request	export_policy_requests	Total number of requests using an export policy.
access_based_enumeration	access_based_enumeration_requests	Total number of requests using Access Based Enumeration.
optimized_smb2_open	optimized_smb2_open_requests	Total number of optimized SMB2 open requests.
null_user_session	null_user_sessions	Total number of NULL or Anonymous user sessions.
guest_user_session	guest_user_sessions	Total number of Guest user sessions.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

REST Counter	Description
op_count	For each of the new labels in this array, the values have been changed to be lower case and any other non-alphanumeric characters have been replaced by an underscore.
op_percent	For each of the new labels in this array, the values have been changed to be lower case and any other non-alphanumeric characters have been replaced by an underscore.
component_cache	For each of the new labels in this array, the values have been changed to be lower case and white spaces have been replaced by underscores.

REST Counter	Description
security_descriptor.max_ace_count	For each of the new labels in this array, the values have been changed to be lower case and white spaces have been replaced by underscores.
security_descriptor.max_ace_size	For each of the new labels in this array, the values have been changed to be lower case and white spaces have been replaced by underscores.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
svm_cifs:node	svm_cifs_node

svm_nfs_v3

The svm_nfs_v3 table reports activity for the Network File System protocol, version 3. This is the Sun file-sharing protocol that is predominant on UNIX platforms, used to connect to Network Attached Storage (NAS). The alias name for svm_nfs_v3:node is svm_nfs_v3_node.

Classic Object: nfsv3

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{instance_name}:{instance_uuid}	constituent	This represents the construction of a row ID field for a row from a single node.
{node.name}:{node.uuid}	node	This represents the construction of the row ID field in node combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Name of the node
instance_name	name	Constituent SVM name
vserver_id	svm.id	Vserver ID
vserver_name	svm.name	Name of SVM

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
null_success	null.success	Number of successful Null procedure requests. A null procedure does nothing. It is used for testing and timing.
null_error	null.error	Number of erroneous Null procedure requests. A null procedure does nothing. It is used for testing and timing.
null_total	null.total	Total number of Null procedure requests. It is the total of null success and null error requests.
null_percent	null.percent	Percentage of Null procedure requests.
null_avg_latency	null.average_latency	Average latency of Null procedure requests.
getattr_success	getattr.success	Number of successful GetAttr procedure requests. The GetAttr procedure retrieves the attributes for a specified file system object. Successful returns have a NFS3_OK status.
getattr_error	getattr.error	Number of erroneous GetAttr procedure requests. The GetAttr procedure retrieves the attributes for a specified file system object.
getattr_total	getattr.total	Total number of Getattr procedure requests. It is the total number of getattr success and getattr error requests.
getattr_percent	getattr.percent	Percentage of GetAttr procedure requests. This counter shows how often GetAttr requests happen out of all NFSv3 requests.

Classic Numeric Counter	REST Counter	Description
getattr_avg_latency	getattr.average_latency	Average latency of GetAttr procedure requests. This counter keeps track of the average response time of GetAttr requests.
setattr_success	setattr.success	Number of successful SetAttr procedure requests. The SetAttr procedure changes one or more of the attributes of a file system object on the server.
setattr_error	setattr.error	Number of erroneous SetAttr procedure requests. The SetAttr procedure changes one or more of the attributes of a file system object on the server.
setattr_total	setattr.total	Total number of Setattr procedure requests. It is the total number of Setattr success and setattr error requests.
setattr_percent	setattr.percent	Percentage of Setattr procedure requests. The counter shows how often SetAttr requests happen out of all NFSv3 requests.
setattr_avg_latency	setattr.average_latency	Average latency of SetAttr procedure requests. The counter keeps track of the average response time of SetAttr requests.
lookup_success	lookup.success	Number of successful LookUp procedure requests. The LookUp procedure searches a directory for a specific name and returns the file handle for the corresponding file system object.

Classic Numeric Counter	REST Counter	Description
lookup_error	lookup.error	Number of erroneous LookUp procedure requests. The LookUp procedure searches a directory for a specific name and returns the file handle for the corresponding file system object.
lookup_total	lookup.total	Total number of Lookup procedure requests. It is the total number of lookup success and lookup error requests.
lookup_percent	lookup.percent	Percentage of LookUp procedure requests. This counter shows how often LookUp requests happen out of all NFSv3 requests.
lookup_avg_latency	lookup.average_latency	Average latency of LookUp procedure requests. This shows the average time it takes for the LookUp operation to reply to the request.
access_success	access.success	Number of successful Access procedure requests. The Access procedure determines the access rights that a user has with respect to a file system object.
access_error	access.error	Number of erroneous Access procedure requests. The Access procedure determines the access rights that a user has with respect to a file system object.
access_total	access.total	Total number of Access procedure requests. It is the total number of access success and access error requests.
access_percent	access.percent	Percentage of Access procedure requests. This counter shows how often Access requests happen out of all NFSv3 requests.

Classic Numeric Counter	REST Counter	Description
access_avg_latency	access.average_latency	Average latency of Access procedure requests. The counter keeps track of the average response time of Access requests.
read_symlink_success	read_symlink.success	Number of successful ReadSymlink procedure requests. The ReadSymLink procedure reads the data associated with a symbolic link. A symbolic link is a file system object that points to another file system object.
read_symlink_error	read_symlink.error	Number of erroneous ReadSymlink procedure requests. The ReadSymLink procedure reads the data associated with a symbolic link. A symbolic link is a file system object that points to another file system object.
read_symlink_total	read_symlink.total	Total number of ReadSymLink procedure requests. It is the total number of read symlink success and read symlink error requests.
read_symlink_percent	read_symlink.percent	Percentage of ReadSymLink procedure requests. This counter shows how often ReadSymLink requests happen out of all NFSv3 requests.
read_symlink_avg_latency	read_symlink.average_latency	Average latency of ReadSymLink procedure requests. The counter keeps track of the average response time of ReadSymLink requests.
read_success	read.success	Number of successful Read procedure requests. The Read procedure reads data from a file.

Classic Numeric Counter	REST Counter	Description
read_error	read.error	Number of erroneous Read procedure requests. The Read procedure reads data from a file.
read_total	read.total	Total number Read of procedure requests. It is the total number of read success and read error requests.
read_percent	read.percent	Percentage of Read procedure requests. This counter shows how often Read requests happen out of all NFSv3 requests.
read_avg_latency	read.average_latency	Average latency of Read procedure requests. The counter keeps track of the average response time of Read requests.
write_success	write.success	Number of successful Write procedure requests. The Write procedure writes data to a file.
write_error	write.error	Number of erroneous Write procedure requests. The Write procedure writes data to a file.
write_total	write.total	Total number of Write procedure requests. It is the total number of write success and write error requests.
write_percent	write.percent	Percentage of Write procedure requests. This counter shows how often Write requests happen out of all NFSv3 requests.
write_avg_latency	write.average_latency	Average latency of Write procedure requests. The counter keeps track of the average response time of Write requests.

Classic Numeric Counter	REST Counter	Description
create_success	create.success	Number of successful Create procedure requests. The Create procedure creates a regular file.
create_error	create.error	Number of erroneous Create procedure requests. The Create procedure creates a regular file.
create_total	create.total	Total number Create of procedure requests. It is the total number of create success and create error requests.
create_percent	create.percent	Percentage of Create procedure requests. This counter shows how often Create requests happen out of all NFSv3 requests.
create_avg_latency	create.average_latency	Average latency of Create procedure requests. The counter keeps track of the average response time of Create requests.
mkdir_success	mkdir.success	Number of successful MkDir procedure requests. The MkDir procedure creates a new subdirectory.
mkdir_error	mkdir.error	Number of erroneous MkDir procedure requests. The MkDir procedure creates a new subdirectory.
mkdir_total	mkdir.total	Total number MkDir of procedure requests. It is the total number of MkDir success and MkDir error requests.
mkdir_percent	mkdir.percent	Percentage of MkDir procedure requests. This counter shows how often MkDir requests happen out of all NFSv3 requests.

Classic Numeric Counter	REST Counter	Description
mkdir_avg_latency	mkdir.average_latency	Average latency of MkDir procedure requests. The counter keeps track of the average response time of MkDir requests.
symlink_success	symlink.success	Number of successful SymLink procedure requests. The SymLink procedure creates a symbolic link. A symbolic link is a file system object that points to another file system object.
symlink_error	symlink.error	Number of erroneous SymLink procedure requests. The SymLink procedure creates a symbolic link. A symbolic link is a file system object that points to another file system object.
symlink_total	symlink.total	Total number SymLink of procedure requests. It is the total number of SymLink success and create SymLink requests.
symlink_percent	symlink.percent	Percentage of Symlink procedure requests. This counter shows how often Symlink requests happen out of all NFSv3 requests.
symlink_avg_latency	symlink.average_latency	Average latency of SymLink procedure requests. The counter keeps track of the average response time of SymLink requests.
mknod_success	mknod.success	Number of successful MkNod procedure requests. The MkNod procedure creates a special file that can be device files or named pipes.

Classic Numeric Counter	REST Counter	Description
mknod_error	mknod.error	Number of erroneous MkNod procedure requests. The MkNod procedure creates a special file that can be device files or named pipes.
mknod_total	mknod.total	Total number MkNod of procedure requests. It is the total number of MkNod success and MkNod error requests.
mknod_percent	mknod.percent	Percentage of MkNod procedure requests. This counter shows how often MkNod requests happen out of all NFSv3 requests.
mknod_avg_latency	mknod.average_latency	Average latency of MkNod procedure requests. The counter keeps track of the average response time of MkNod requests.
remove_success	remove.success	Number of successful Remove procedure requests. The Remove procedure deletes an entry from a directory.
remove_error	remove.error	Number of erroneous Remove procedure requests. The Remove procedure deletes an entry from a directory.
remove_total	remove.total	Total number Remove of procedure requests. It is the total number of Remove success and Remove error requests.
remove_percent	remove.percent	Percentage of Remove procedure requests. This counter shows how often Remove requests happen out of all NFSv3 requests.

Classic Numeric Counter	REST Counter	Description
remove_avg_latency	remove.average_latency	Average latency of Remove procedure requests. The counter keeps track of the average response time of Remove requests.
rmdir_success	rmdir.success	Number of successful RmDir procedure requests. The RmDir procedure deletes a subdirectory from a directory.
rmdir_error	rmdir.error	Number of erroneous RmDir procedure requests. The RmDir procedure deletes a subdirectory from a directory.
rmdir_total	rmdir.total	Total number RmDir of procedure requests. It is the total number of RmDir success and RmDir error requests.
rmdir_percent	rmdir.percent	Percentage of RmDir procedure requests. This counter shows how often RmDir requests happen out of all NFSv3 requests.
rmdir_avg_latency	rmdir.average_latency	Average latency of RmDir procedure requests. The counter keeps track of the average response time of RmDir requests.
rename_success	rename.success	Number of successful Rename procedure requests. The Rename procedure renames the file.
rename_error	rename.error	Number of erroneous Rename procedure requests. The Rename procedure renames the file.
rename_total	rename.total	Total number Rename of procedure requests. It is the total number of Rename success and Rename error requests.

Classic Numeric Counter	REST Counter	Description
rename_percent	rename.percent	Percentage of Rename procedure requests. This counter shows how often Rename requests happen out of all NFSv3 requests.
rename_avg_latency	rename.average_latency	Average latency of Rename procedure requests. The counter keeps track of the average response time of Rename requests.
link_success	link.success	Number of successful Link procedure requests. The Link procedure creates a hard link. A hard link is a directory entry that associates a name with a file on a file system.
link_error	link.error	Number of erroneous Link procedure requests. The Link procedure creates a hard link. A hard link is a directory entry that associates a name with a file on a file system.
link_total	link.total	Total number Link of procedure requests. It is the total number of Link success and Link error requests.
link_percent	link.percent	Percentage of Link procedure requests. This counter shows how often Link requests happen out of all NFSv3 requests.
link_avg_latency	link.average_latency	Average latency of Link procedure requests. The counter keeps track of the average response time of Link requests.

Classic Numeric Counter	REST Counter	Description
readdir_success	readdir.success	Number of successful ReadDir procedure requests. The ReadDir retrieves a variable number of entries from a directory and returns the name of file identifier for each.
readdir_error	readdir.error	Number of erroneous ReadDir procedure requests. The ReadDir retrieves a variable number of entries from a directory and returns the name of file identifier for each.
readdir_total	readdir.total	Total number ReadDir of procedure requests. It is the total number of ReadDir success and ReadDir error requests.
readdir_percent	readdir.percent	Percentage of ReadDir procedure requests. This counter shows how often ReadDir requests happen out of all NFSv3 requests.
readdir_avg_latency	readdir.average_latency	Average latency of ReadDir procedure requests. The counter keeps track of the average response time of ReadDir requests.
readdirplus_success	readdirplus.success	Number of successful ReadDirPlus procedure requests. The ReadDirPlus retrieves a variable number of entries from a file system directory and returns complete information about each.
readdirplus_error	readdirplus.error	Number of erroneous ReadDirPlus procedure requests. The ReadDirPlus retrieves a variable number of entries from a file system directory and returns complete information about each.

Classic Numeric Counter	REST Counter	Description
readdirplus_total	readdirplus.total	Total number ReadDirPlus of procedure requests. It is the total number of ReadDirPlus success and ReadDirPlus error requests.
readdirplus_percent	readdirplus.percent	Percentage of ReadDirPlus procedure requests. This counter shows how often ReadDirPlus requests happen out of all NFSv3 requests.
readdirplus_avg_latency	readdirplus.average_latency	Average latency of ReadDirPlus procedure requests. The counter keeps track of the average response time of ReadDirPlus requests.
fsstat_success	fsstat.success	Number of successful FsStat procedure requests. The FsStat procedure retrieves volatile file system state information.
fsstat_error	fsstat.error	Number of erroneous FsStat procedure requests. The FsStat procedure retrieves volatile file system state information.
fsstat_total	fsstat.total	Total number FSStat of procedure requests. It is the total number of FSStat success and FSStat error requests.
fsstat_percent	fsstat.percent	Percentage of FSStat procedure requests. This counter shows how often FSStat requests happen out of all NFSv3 requests.
fsstat_avg_latency	fsstat.average_latency	Average latency of FSStat procedure requests. The counter keeps track of the average response time of FSStat requests.

Classic Numeric Counter	REST Counter	Description
fsinfo_success	fsinfo.success	Number of successful FsInfo procedure requests. The FsInfo procedure retrieves nonvolatile file system state information and provides general information about the NFS version 3 protocol server implementation
fsinfo_error	fsinfo.error	Number of erroneous FsInfo procedure requests. The FsInfo procedure retrieves nonvolatile file system state information and provides general information about the NFS version 3 protocol server implementation
fsinfo_total	fsinfo.total	Total number FSInfo of procedure requests. It is the total number of FSInfo success and FSInfo error requests.
fsinfo_percent	fsinfo.percent	Percentage of FsInfo procedure requests. This counter shows how often FsInfo requests happen out of all NFSv3 requests.
fsinfo_avg_latency	fsinfo.average_latency	Average latency of FSInfo procedure requests. The counter keeps track of the average response time of FSInfo requests.
pathconf_success	pathconf.success	Number of successful PathConf procedure requests. The PathConf retrieves the pathconf information for a file or directory.
pathconf_error	pathconf.error	Number of erroneous PathConf procedure requests. The PathConf retrieves the pathconf information for a file or directory.

Classic Numeric Counter	REST Counter	Description
pathconf_total	pathconf.total	Total number PathConf of procedure requests. It is the total number of PathConf success and PathConf error requests.
pathconf_percent	pathconf.percent	Percentage of PathConf procedure requests. This counter shows how often PathConf requests happen out of all NFSv3 requests.
pathconf_avg_latency	pathconf.average_latency	Average latency of PathConf procedure requests. The counter keeps track of the average response time of PathConf requests.
commit_success	commit.success	Number of successful Commit procedure requests. The Commit procedure forces or flushes data to stable storage that was previously written with a Write procedure call with stable field set to UNSTABLE.
commit_error	commit.error	Number of erroneous Commit procedure requests. The Commit procedure forces or flushes data to stable storage that was previously written with a Write procedure call with stable field set to UNSTABLE.
commit_total	commit.total	Total number of Commit procedure requests. It is the total number of Commit success and Commit error requests.
commit_percent	commit.percent	Percentage of Commit procedure requests. This counter shows how often Commit requests happen out of all NFSv3 requests.

Classic Numeric Counter	REST Counter	Description
commit_avg_latency	commit.average_latency	Average latency of Commit procedure requests. The counter keeps track of the average response time of Commit requests.
nfsv3_ops	ops	Total number of NFSv3 procedure requests per second.
null_latency_hist	null_latency_histogram	Histogram of latency for Null operations.
getattr_latency_hist	getattr_latency_histogram	Histogram of latency for Getattr operations.
setattr_latency_hist	setattr_latency_histogram	Histogram of latency for Setattr operations.
lookup_latency_hist	lookup_latency_histogram	Histogram of latency for LookUp operations.
access_latency_hist	access_latency_histogram	Histogram of latency for Access operations.
readlink_latency_hist	readlink_latency_histogram	Histogram of latency for ReadLink operations.
read_latency_hist	read_latency_histogram	Histogram of latency for Read operations.
write_latency_hist	write_latency_histogram	Histogram of latency for Write operations.
create_latency_hist	create_latency_histogram	Histogram of latency for Create operations.
mkdir_latency_hist	mkdir_latency_histogram	Histogram of latency for Mkdir operations.
symlink_latency_hist	symlink_latency_histogram	Histogram of latency for SymLink operations.
mknod_latency_hist	mknod_latency_histogram	Histogram of latency for Mknod operations.

Classic Numeric Counter	REST Counter	Description
remove_latency_hist	remove_latency_histogram	Histogram of latency for Remove operations.
rmdir_latency_hist	rmdir_latency_histogram	Histogram of latency for Rmdir operations.
rename_latency_hist	rename_latency_histogram	Histogram of latency for Rename operations.
link_latency_hist	link_latency_histogram	Histogram of latency for Link operations.
readdir_latency_hist	readdir_latency_histogram	Histogram of latency for Readdir operations.
readdirplus_latency_hist	readdir_plus_latency_histogram	Histogram of latency for Readdirplus operations.
fsstat_latency_hist	fsstat_latency_histogram	Histogram of latency for Fsstat operations.
fsinfo_latency_hist	fsinfo_latency_histogram	Histogram of latency for Fsinfo operations.
pathconf_latency_hist	pathconf_latency_histogram	Histogram of latency for Pathconf operations.
comit_latency_hist	commit_latency_histogram	Histogram of latency for Commit operations.
nfsv3_latency_hist	latency_histogram	Histogram of latency for NFSv3 operations.
nfsv3_read_size_histo	read_size_histogram	Histogram of NFSv3 Read size.
nfsv3_write_size_histo	write_size_histogram	Histogram of NFSv3 Write size.
nfsv3_read_throughput	read_throughput	Rate of NFSv3 read data transfers per second.
nfsv3_write_throughput	write_throughput	Rate of NFSv3 write data transfers per second.
nfsv3_throughput	throughput	Rate of NFSv3 data transfers per second.

Classic Numeric Counter	REST Counter	Description
nfsv3_dnfs_ops	oracle_direct_nfs_ops	Rate of NFSv3 operations per second served to clients utilizing Oracle Direct NFS
nfsv3_hadoop_ops	hadoop_ops	Rate of NFSv3 operations per second served to clients utilizing Hadoop NFS
readdir_postop_error	readdir.postop_error	Number of failed Postop ReadDir procedures. Postop ReadDir errors are failures in the response of the request.
readdirplus_postop_error	readdirplus.postop_error	Number of failed Postop ReadDirPlus procedures. Postop ReadDirPlus errors are failures in the response of the request.
raidprop_error	raid_error	Number of times RAID errors encountered in NFSv3 path.
nfsv3_read_ops	read_ops	Total observed NFSv3 read operations per second.
nfsv3_write_ops	write_ops	Total observed NFSv3 write operations per second.
latency	latency	Average latency of NFSv3 requests. This counter keeps track of the average response time of NFSv3 requests.
nfsv3_fileop_max_latency	fileop_max_latency	Maximum latency of NFSv3 requests. This counter keeps track of the maximum response time of NFSv3 requests at any point in time.
total_ops	total_ops	Total number of NFSv3 requests per sec
free_pass_ops	free_pass_ops	This counter keeps track of the number of NFSv3 requests which have asked to bypass COP HWM

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
svm_nfs_v3:node	svm_nfs_v3_node

svm_nfs_v4

The svm_nfs_v4 table reports activity for the Network File System protocol, version 4. This is the ISOC file-sharing protocol that is predominant on UNIX platforms, used to connect to Network Attached Storage (NAS). The alias name for svm_nfs_v4:node is svm_nfs_v4_node.

Classic Object: nfsv4

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{instance_name}:{instance_uuid}	constituent	This represents the construction of a row ID field for a row from a single node.
{node.name}:{node.uuid}	node	This represents the construction of the row ID field in node combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Node name
instance_name	name	Constituent SVM Name
vserver_id	svm.id	SVM ID
vserver_name	svm.name	SVM Name

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
null_success	null.success	Number of successful NULL procedures
null_error	null.error	Number of failed NULL procedures
null_total	null.total	Total number of NULL procedures
null_percent	null.percent	Percentage of NULL procedures
null_avg_latency	null.average_latency	Average Latency of NULL procedures
compound_success	compound.success	Number of successful COMPOUND procedures
compound_error	compound.error	Number of failed COMPOUND procedures
compound_total	compound.total	Total number of COMPOUND procedures
compound_percent	compound.percent	Percentage of COMPOUND procedures
compound_avg_latency	compound.average_latency	Average Latency of COMPOUND procedures
access_success	access_success	Number of successful ACCESS procedures
access_error	access.error	Number of failed ACCESS procedures
access_total	access.total	Total number of ACCESS procedures
access_percent	access.percent	Percentage of ACCESS procedures
access_avg_latency	access.average_latency	Average latency of ACCESS procedures
close_success	close.success	Number of successful CLOSE procedures

Classic Numeric Counter	REST Counter	Description
close_error	close.error	Number of failed CLOSE procedures
close_total	close.total	Total number of CLOSE procedures
close_percent	close.percent	Percentage of CLOSE procedures
close_avg_latency	close.average_latency	Average latency of CLOSE procedures
commit_success	commit.success	Number of successful COMMIT procedures
commit_error	commit.error	Number of failed COMMIT procedures
commit_total	commit.total	Total number of COMMIT procedures
commit_percent	commit.percent	Percentage of COMMIT procedures
commit_avg_latency	commit.average_latency	Average latency of COMMIT procedures
create_success	create.success	Number of successful CREATE procedures
create_error	create.error	Number of failed CREATE procedures
create_total	create.total	Total number of CREATE procedures
create_percent	create.percent	Percentage of CREATE procedures
create_avg_latency	create.average_latency	Average latency of CREATE procedures
delegpurge_success	delegpurge.success	Number of successful DELEGPURGE procedures
delegpurge_error	delegpurge.error	Number of failed DELEGPURGE procedures

Classic Numeric Counter	REST Counter	Description
delegpurge_total	delegpurge.total	Total number of DELEGPURGE procedures
delegpurge_percent	delegpurge.percent	Percentage of DELEGPURGE procedures
delegpurge_avg_latency	delegpurge.average_latency	Average latency of DELEGPURGE procedures
delegreturn_success	delegreturn.success	Number of successful DELEGRETURN procedures
delegreturn_error	delegreturn.error	Number of failed DELEGRETURN procedures
delegreturn_total	delegreturn.total	Total number of DELEGRETURN procedures
delegreturn_percent	delegreturn.percent	Percentage of DELEGRETURN procedures
delegreturn_avg_latency	delegreturn.average_latency	Average latency of DELEGRETURN procedures
getattr_success	getattr.success	Number of successful GETATTR procedures
getattr_error	getattr.error	Number of failed GETATTR procedures
getattr_total	getattr.total	Total number of GETATTR procedures
getattr_percent	getattr.percent	Percentage of GETATTR procedures
getattr_avg_latency	getattr.average_latency	Average latency of GETATTR procedures
getfh_success	getfh.success	Number of successful GETFH procedures
getfh_error	getfh.error	Number of failed GETFH procedures

Classic Numeric Counter	REST Counter	Description
getfh_total	getfh.total	Total number of GETFH procedures
getfh_percent	getfh.percent	Percentage of GETFH procedures
getfh_avg_latency	getfh.average_latency	Average latency of GETFH procedures
link_success	link.success	Number of successful LINK procedures
link_error	link.error	Number of failed LINK procedures
link_total	link.total	Total number of LINK procedures
link_percent	link.percent	Percentage of LINK procedures
link_avg_latency	link.average_latency	Average latency of LINK procedures
lock_success	lock.success	Number of successful LOCK procedures
lock_error	lock.error	Number of failed LOCK procedures
lock_total	lock.total	Total number of LOCK procedures
lock_percent	lock.percent	Percentage of LOCK procedures
lock_avg_latency	lock.average_latency	Average latency of LOCK procedures
lockt_success	lockt.success	Number of successful LOCKT procedures
lockt_error	lockt.error	Number of failed LOCKT procedures
lockt_total	lockt.total	Total number of LOCKT procedures
lockt_percent	lockt.percent	Percentage of LOCKT procedures
lockt_avg_latency	lockt.average_latency	Average latency of LOCKT procedures

Classic Numeric Counter	REST Counter	Description
locku_success	locku.success	Number of successful LOCKU procedures
locku_error	locku.error	Number of failed LOCKU procedures
locku_total	locku.total	Total number of LOCKU procedures
locku_percent	locku.percent	Percentage of LOCKU procedures
locku_avg_latency	locku.average_latency	Average latency of LOCKU procedures
lookup_success	lookup.success	Number of successful LOOKUP procedures
lookup_error	lookup.error	Number of failed LOOKUP procedures
lookup_total	lookup.total	Total number of LOOKUP procedures
lookup_percent	lookup.percent	Percentage of LOOKUP procedures
lookup_avg_latency	lookup.average_latency	Average latency of LOOKUP procedures
lookupp_success	lookupp.success	Number of successful LOOKUPP procedures
lookupp_error	lookupp.error	Number of failed LOOKUPP procedures
lookupp_total	lookupp.total	Total number of LOOKUPP procedures
lookupp_percent	lookupp.percent	Percentage of LOOKUPP procedures
lookupp_avg_latency	lookupp.average_latency	Average latency of LOOKUPP procedures

Classic Numeric Counter	REST Counter	Description
nverify_success	nverify.success	Number of successful NVERIFY procedures
nverify_error	nverify.error	Number of failed NVERIFY procedures
nverify_total	nverify.total	Total number of NVERIFY procedures
nverify_percent	nverify.percent	Percentage of NVERIFY procedures
nverify_avg_latency	nverify.average_latency	Average latency of NVERIFY procedures
open_success	open.success	Number of successful OPEN procedures
open_error	open.error	Number of failed OPEN procedures
open_total	open.total	Total number of OPEN procedures
open_percent	open.percent	Percentage of OPEN procedures
open_avg_latency	open.average_latency	Average latency of OPEN procedures
openattr_success	openattr.success	Number of successful OPENATTR procedures
openattr_error	openattr.error	Number of failed OPENATTR procedures
openattr_total	openattr.total	Total number of OPENATTR procedures
openattr_percent	openattr.percent	Percentage of OPENATTR procedures
openattr_avg_latency	openattr.average_latency	Average latency of OPENATTR procedures
open_confirm_success	open_confirm.success	Number of successful OPEN_CONFIRM procedures

Classic Numeric Counter	REST Counter	Description
open_confirm_error	open_confirm.error	Number of failed OPEN_CONFIRM procedures
open_confirm_total	open_confirm.total	Total number of OPEN_CONFIRM procedures
open_confirm_percent	open_confirm.percent	Percentage of OPEN_CONFIRM procedures
open_confirm_avg_latency	open_confirm.average_latency	Average latency of OPEN_CONFIRM procedures
open_downgrade_success	open_downgrade.success	Number of successful OPEN_DOWNGRADE procedures
open_downgrade_error	open_downgrade.error	Number of failed OPEN_DOWNGRADE procedures
open_downgrade_total	open_downgrade.total	Total number of OPEN_DOWNGRADE procedures
open_downgrade_percent	open_downgrade.percent	Percentage of OPEN_DOWNGRADE procedures
open_downgrade_avg_latency	open_downgrade.average_latency	Average latency of OPEN_DOWNGRADE procedures
putfh_success	putfh.success	Number of successful PUTFH procedures
putfh_error	putfh.error	Number of failed PUTFH procedures
putfh_total	putfh.total	Total number of PUTFH procedures
putfh_percent	putfh.percent	Percentage of PUTFH procedures
putfh_avg_latency	putfh.average_latency	Average latency of PUTFH procedures
putpubfh_success	putpubfh.success	Number of successful PUTPUBFH procedures
putpubfh_error	putpubfh.error	Number of failed PUTPUBFH procedures

Classic Numeric Counter	REST Counter	Description
putpubfh_total	putpubfh.total	Total number of PUTPUBFH procedures
putpubfh_percent	putpubfh.percent	Percentage of PUTPUBFH procedures
putpubfh_avg_latency	putpubfh.average_latency	Average latency of PUTPUBFH procedures
putrootfh_success	putrootfh.success	Number of successful PUTROOTFH procedures
putrootfh_error	putrootfh.error	Number of failed PUTROOTFH procedures
putrootfh_total	putrootfh.total	Total number of PUTROOTFH procedures
putrootfh_percent	putrootfh.percent	Percentage of PUTROOTFH procedures
putrootfh_avg_latency	putrootfh.average_latency	Average latency of PUTROOTFH procedures
read_success	read.success	Number of successful READ procedures
read_error	read.error	Number of failed READ procedures
read_total	read.total	Total number of READ procedures
read_percent	read.percent	Percentage of READ procedures
read_avg_latency	read.average_latency	Average latency of READ procedures
readdir_success	readdir.success	Number of successful READDIR procedures
readdir_error	readdir.error	Number of failed READDIR procedures
readdir_total	readdir.total	Total number of READDIR procedures

Classic Numeric Counter	REST Counter	Description
readdir_percent	readdir.percent	Percentage of READDIR procedures
readdir_avg_latency	readdir.average_latency	Average latency of READDIR procedures
readlink_success	readlink.success	Number of successful READLINK procedures
readlink_error	readlink.error	Number of failed READLINK procedures
readlink_total	readlink.total	Total number of READLINK procedures
readlink_percent	readlink.percent	Percentage of READLINK procedures
readlink_avg_latency	readlink.average_latency	Average latency of READLINK procedures
remove_success	remove.success	Number of successful REMOVE procedures
remove_error	remove.error	Number of failed REMOVE procedures
remove_total	remove.total	Total number of REMOVE procedures
remove_percent	remove.percent	Percentage of REMOVE procedures
remove_avg_latency	remove.average_latency	Average latency of REMOVE procedures
rename_success	rename.success	Number of successful RENAME procedures
rename_error	rename.error	Number of failed RENAME procedures
rename_total	rename.total	Total number of RENAME procedures

Classic Numeric Counter	REST Counter	Description
rename_percent	rename.percent	Percentage of RENAME procedures
rename_avg_latency	rename.average_latency	Average latency of RENAME procedures
renew_success	renew.success	Number of successful RENEW procedures
renew_error	renew.error	Number of failed RENEW procedures
renew_total	renew.total	Total number of RENEW procedures
renew_percent	renew.percent	Percentage of RENEW procedures
renew_avg_latency	renew.average_latency	Average latency of RENEW procedures
restorefh_success	restorefh.success	Number of successful RESTOREFH procedures
restorefh_error	restorefh.error	Number of failed RESTOREFH procedures
restorefh_total	restorefh.total	Total number of RESTOREFH procedures
restorefh_percent	restorefh.percent	Percentage of RESTOREFH procedures
restorefh_avg_latency	restorefh.average_latency	Average latency of RESTOREFH procedures
savefh_success	savefh.success	Number of successful SAVEFH procedures
savefh_error	savefh.error	Number of failed SAVEFH procedures
savefh_total	savefh.total	Total number of SAVEFH procedures
savefh_percent	savefh.percent	Percentage of SAVEFH procedures

Classic Numeric Counter	REST Counter	Description
savefh_avg_latency	savefh.average_latency	Average latency of SAVEFH procedures
secinfo_success	secinfo.success	Number of successful SECINFO procedures
secinfo_error	secinfo.error	Number of failed SECINFO procedures
secinfo_total	secinfo.total	Total number of SECINFO procedures
secinfo_percent	secinfo.percent	Percentage of SECINFO procedures
secinfo_avg_latency	secinfo.average_latency	Average latency of SECINFO procedures
setattr_success	setattr.success	Number of successful SETATTR procedures
setattr_error	setattr.error	Number of failed SETATTR procedures
setattr_total	setattr.total	Total number of SETATTR procedures
setattr_percent	setattr.percent	Percentage of SETATTR procedures
setattr_avg_latency	setattr.average_latency	Average latency of SETATTR procedures
setclientid_success	setclientid.success	Number of successful SETCLIENTID procedures
setclientid_error	setclientid.error	Number of failed SETCLIENTID procedures
setclientid_total	setclientid.total	Total number of SETCLIENTID procedures
setclientid_percent	setclientid.percent	Percentage of SETCLIENTID procedures

Classic Numeric Counter	REST Counter	Description
setclientid_avg_latency	setclientid.average_latency	Average latency of SETCLIENTID procedures
setclientid_confirm_success	setclientid_confirm.success	Number of successful SETCLIENTID_CONFIRM procedures
setclientid_confirm_error	setclientid_confirm.error	Number of failed SETCLIENTID_CONFIRM procedures
setclientid_confirm_total	setclientid_confirm.total	Total number of SETCLIENTID_CONFIRM procedures
setclientid_confirm_percent	setclientid_confirm.percent	Percentage of SETCLIENTID_CONFIRM procedures
setclientid_confirm_avg_latency	setclientid_confirm.average_latency	Average latency of SETCLIENTID_CONFIRM procedures
verify_success	verify.success	Number of successful VERIFY procedures
verify_error	verify.error	Number of failed VERIFY procedures
verify_total	verify.total	Total number of VERIFY procedures
verify_percent	verify.percent	Percentage of VERIFY procedures
verify_avg_latency	verify.average_latency	Average latency of VERIFY procedures
write_success	write.success	Number of successful WRITE procedures
write_error	write.error	Number of failed WRITE procedures
write_total	write.total	Total number of WRITE procedures
write_percent	write.percent	Percentage of WRITE procedures

Classic Numeric Counter	REST Counter	Description
write_avg_latency	write.average_latency	Average Latency of WRITE procedures
release_lock_owner_success	release_lock_owner.success	Number of successful RELEASE_LOCKOWNER procedures
release_lock_owner_error	release_lock_owner.error	Number of failed RELEASE_LOCKOWNER procedures
release_lock_owner_total	release_lock_owner.total	Total number of RELEASE_LOCKOWNER procedures
release_lock_owner_percent	release_lock_owner.percent	Percentage of RELEASE_LOCKOWNER procedures
release_lock_owner_avg_latency	release_lock_owner.average_latency	Average Latency of RELEASE_LOCKOWNER procedures
nfsv4_ops	ops	Total number of NFSv4 procedures per second.
getattr_latency_hist	getattr_latency_histogram	Histogram of latency for GETATTR procedures
lookup_latency_hist	lookup_latency_histogram	Histogram of latency for LOOKUP procedures
access_latency_hist	access_latency_histogram	Histogram of latency for ACCESS procedures
read_latency_hist	read_latency_histogram	Histogram of latency for READ procedures
write_latency_hist	write_latency_histogram	Histogram of latency for WRITE procedures
remove_latency_hist	remove_latency_histogram	Histogram of latency for REMOVE procedures
nfs4_latency_hist	total.latency_histogram	Histogram of latency for NFSv4 procedures

Classic Numeric Counter	REST Counter	Description
nfs4_read_size_histo	total.read_size_histogram	Histogram of NFSv4 Read size
nfs4_write_size_histo	total.write_size_histogram	Histogram of NFSv4 Write size
nfs4_read_throughput	total.read_throughput	NFSv4 read data transfers
nfs4_write_throughput	total.write_throughput	NFSv4 write data transfers
nfs4_throughput	total.throughput	NFSv4 data transfers
latency	latency	Average latency of NFSv4 requests. This counter keeps track of the average response time of NFSv4 requests.
total_ops	total_ops	Total number of NFSv4 requests per second.
nfsv4_fileop_max_latency	fileop_max_latency	Maximum latency of NFSv4 requests. This counter keeps track of the maximum response time of NFSv4 requests at any point in time.
nfscbmgr_user_req_canceled	callback_manager.user_req_canceled	Number of times NFS4 Callback Manager user canceled after scheduling to send.
nfscbmgr_user_rsrc_cleaned	callback_manager.user_rsrc_cleaned	Number of times NFS4 Callback Manager user cleaned before sending.
nfscbmgr_user_rsrc_denied	callback_manager.user_rsrc_denied	Number of times NFS4 Callback Manager denied contexts.
nfscbmgr_user_req_ok	callback_manager.user_req_ok	Number of times NFS4 Callback Manager gave contexts.
nfscbmgr_user_req	callback_manager.user_req	Number of times NFS4 Callback Manager users asked for context.
nfscbmgr_rep_timedout	callback_manager.reply_timeout	Number of times NFS4 Callback Manager reply timed out.
callback_manager.recieved	callback_manager.recieved	Number of times NFS4 Callback Manager recieved.

Classic Numeric Counter	REST Counter	Description
nfscbmgr_send	callback_manager.send	Number of times NFS4 Callback Manager send request.
nfscbmgr_inuse_ctx	callback_manager.inuse_context	Number of times NFS4 Callback Manager inuse context.
nfscbmgr_free_ctx	callback_manager.free_context	Number of times NFS4 Callback Manager free context.
nfscbmgr_latency_hist	callback_manager.latency_histogram	NFS Callback Manager latency bin.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
svm_nfs_v4:node	svm_nfs_v4_node

svm_nfs_v41

The svm_nfs_v41 table reports activity for the Network File System protocol, version 4.1 or later. This is the file-sharing protocol that implements Parallel NFS (pNFS), used to connect to Network Attached Storage (NAS). The alias name for svm_nfs_v41:node is svm_nfs_v41_node.

Classic Object: nfsv4_1

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{instance_name}:{instance_uuid}	constituent	This represents the construction of a row ID field for a row from a single node.
{node.name}:{node.uuid}	node	This represents the construction of the row ID field in node combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Node name
instance_name	name	Constituent SVM name
svm.id	svm.id	SVM ID
svm.name	svm.name	SVM Name

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
null_success	null.success	Number of successful NFSv4.1 NULL procedures.
null_error	null.error	Number of failed NFSv4.1 NULL procedures.
null_total	null.total	Total number of NFSv4.1 NULL procedures.
null_percent	null.percent	Percentage of NFSv4.1 NULL procedures.
null_avg_latency	null.average_latency	Average latency of NFSv4.1 NULL procedures.
compound_success	compound.success	The number of successful NFSv4.1 COMPOUND procedures.
compound_error	compound.error	The number of failed NFSv4.1 COMPOUND procedures.
compound_total	compound.total	Total number of NFSv4.1 COMPOUND procedures.
compound_percent	compound.percent	Percentage of NFSv4.1 COMPOUND procedures.
compound_avg_latency	compound.average_latency	Average latency of NFSv4.1 COMPOUND procedures.
access_success	access.success	Number of successful NFSv4.1 ACCESS operations.
access_error	access.error	Number of failed NFSv4.1 ACCESS operations.
access_total	access.total	Total number of NFSv4.1 ACCESS operations.
access_percent	access.percent	Percentage of NFSv4.1 ACCESS operations.
access_avg_latency	access.average_latency	Average latency of NFSv4.1 ACCESS operations.

Classic Numeric Counter	REST Counter	Description
close_success	close.success	The number of successful NFSv4.1 CLOSE operations.
close_error	close.error	The number of failed NFSv4.1 CLOSE operations.
close_total	close.total	Total number of NFSv4.1 CLOSE operations.
close_percent	close.percent	Percentage of NFSv4.1 CLOSE operations.
close_avg_latency	close.average_latency	Average latency of NFSv4.1 CLOSE operations.
commit_success	commit.success	The number of successful NFSv4.1 COMMIT operations.
commit_error	commit.error	The number of failed NFSv4.1 COMMIT operations.
commit_total	commit.total	Total number of NFSv4.1 COMMIT operations.
commit_percent	commit.percent	Percentage of NFSv4.1 COMMIT operations.
commit_avg_latency	commit.average_latency	Average latency of NFSv4.1 COMMIT operations.
create_success	create.success	The number of successful NFSv4.1 CREATE operations.
create_error	create.error	The number of failed NFSv4.1 CREATE operations.
create_total	create.total	Total number of NFSv4.1 CREATE operations.
create_percent	create.percent	Percentage of NFSv4.1 CREATE operations.
create_avg_latency	create.average_latency	Average latency of NFSv4.1 CREATE operations.

Classic Numeric Counter	REST Counter	Description
delegpurge_success	delegpurge.success	The number of successful NFSv4.1 DELEGPURGE operations.
delegpurge_error	delegpurge.error	The number of failed NFSv4.1 DELEGPURGE operations.
delegpurge_total	delegpurge.total	Total number of NFSv4.1 DELEGPURGE operations.
delegpurge_percent	delegpurge.percent	Percentage of NFSv4.1 DELEGPURGE operations.
delegpurge_avg_latency	delegpurge.average_latency	Average latency of NFSv4.1 DELEGPURGE operations.
delegreturn_success	delegreturn.success	The number of successful NFSv4.1 DELEGRETURN operations.
delegreturn_error	delegreturn.error	The number of failed NFSv4.1 DELEGRETURN operations.
delegreturn_total	delegreturn.total	Total number of NFSv4.1 DELEGRETURN operations.
delegreturn_percent	delegreturn.percent	Percentage of NFSv4.1 DELEGRETURN operations.
delegreturn_avg_latency	delegreturn.average_latency	Average latency of NFSv4.1 DELEGRETURN operations.
getattr_success	getattr.success	The number of successful NFSv4.1 GETATTR operations.
getattr_error	getattr.error	The number of failed NFSv4.1 GETATTR operations.
getattr_total	getattr.total	Total number of NFSv4.1 GETATTR operations.
getattr_percent	getattr.percent	Percentage of NFSv4.1 GETATTR operations.
getattr_avg_latency	getattr.average_latency	Average latency of NFSv4.1 GETATTR operations.

Classic Numeric Counter	REST Counter	Description
getfh_success	getfh.success	The number of successful NFSv4.1 GETFH operations.
getfh_error	getfh.error	The number of failed NFSv4.1 GETFH operations.
getfh_total	getfh.total	Total number of NFSv4.1 GETFH operations.
getfh_percent	getfh.percent	Percentage of NFSv4.1 GETFH operations.
getfh_avg_latency	getfh.average_latency	Average latency of NFSv4.1 GETFH operations.
link_success	link.success	The number of successful NFSv4.1 LINK operations.
link_error	link.error	The number of failed NFSv4.1 LINK operations.
link_total	link.total	Total number of NFSv4.1 LINK operations.
link_percent	link.percent	Percentage of NFSv4.1 LINK operations.
link_avg_latency	link.average_latency	Average latency of NFSv4.1 LINK operations.
lock_success	lock.success	The number of successful NFSv4.1 LOCK operations.
lock_error	lock.error	The number of failed NFSv4.1 LOCK operations.
lock_total	lock.total	Total number of NFSv4.1 LOCK operations.
lock_percent	lock.percent	Percentage of NFSv4.1 LOCK operations.
lock_avg_latency	lock.average_latency	Average latency of NFSv4.1 LOCK operations.

Classic Numeric Counter	REST Counter	Description
lockt_success	lockt.success	The number of successful NFSv4.1 LOCKT operations.
lockt_error	lockt.error	The number of failed NFSv4.1 LOCKT operations.
lockt_total	lockt.total	Total number of NFSv4.1 LOCKT operations.
lockt_percent	lockt.percent	Percentage of NFSv4.1 LOCKT operations.
lockt_avg_latency	lockt.average_latency	Average latency of NFSv4.1 LOCKT operations.
locku_success	locku.success	The number of successful NFSv4.1 LOCKU operations.
locku_error	locku.error	The number of failed NFSv4.1 LOCKU operations.
locku_total	locku.total	Total number of NFSv4.1 LOCKU operations.
locku_percent	locku.percent	Percentage of NFSv4.1 LOCKU operations.
locku_avg_latency	locku.average_latency	Average latency of NFSv4.1 LOCKU operations.
lookup_success	lookup.success	The number of successful NFSv4.1 LOOKUP operations.
lookup_error	lookup.error	The number of failed NFSv4.1 LOOKUP operations.
lookup_total	lookup.total	Total number of NFSv4.1 LOOKUP operations.
lookup_percent	lookup.percent	Percentage of NFSv4.1 LOOKUP operations.
lookup_avg_latency	lookup.average_latency	Average latency of NFSv4.1 LOOKUP operations.

Classic Numeric Counter	REST Counter	Description
lookupp_success	lookupp.success	The number of successful NFSv4.1 LOOKUPP operations.
lookupp_error	lookupp.error	The number of failed NFSv4.1 LOOKUPP operations.
lookupp_total	lookupp.total	Total number of NFSv4.1 LOOKUPP operations.
lookupp_percent	lookupp.percent	Percentage of NFSv4.1 LOOKUPP operations.
lookupp_avg_latency	lookupp.average_latency	Average latency of NFSv4.1 LOOKUPP operations.
nverify_success	nverify.success	The number of successful NFSv4.1 NVERIFY operations.
nverify_error	nverify.error	The number of failed NFSv4.1 NVERIFY operations.
nverify_total	nverify.total	Total number of NFSv4.1 NVERIFY operations.
nverify_percent	nverify.percent	Percentage of NFSv4.1 NVERIFY operations.
nverify_avg_latency	nverify.average_latency	Average latency of NFSv4.1 NVERIFY operations.
open_success	open.success	The number of successful NFSv4.1 OPEN operations.
open_error	open.error	The number of failed NFSv4.1 OPEN operations.
open_total	open.total	Total number of NFSv4.1 OPEN operations.
open_percent	open.percent	Percentage of NFSv4.1 OPEN operations.
open_avg_latency	open.average_latency	Average latency of NFSv4.1 OPEN operations.

Classic Numeric Counter	REST Counter	Description
openattr_success	openattr.success	The number of successful NFSv4.1 OPENATTR operations.
openattr_error	openattr.error	The number of failed NFSv4.1 OPENATTR operations.
openattr_total	openattr.total	Total number of NFSv4.1 OPENATTR operations.
openattr_percent	openattr.percent	Percentage of NFSv4.1 OPENATTR operations.
openattr_avg_latency	openattr.average_latency	Average latency of NFSv4.1 OPENATTR operations.
open_downgrade_success	open_downgrade.success	Number of successful NFSv4.1 OPEN_DOWNGRADE operations.
open_downgrade_error	open_downgrade.error	The number of failed NFSv4.1 OPEN_DOWNGRADE operations.
open_downgrade_total	open_downgrade.total	Total number of NFSv4.1 OPEN_DOWNGRADE operations.
open_downgrade_percent	open_downgrade.percent	Percentage of NFSv4.1 OPEN_DOWNGRADE operations.
open_downgrade_avg_latency	open_downgrade.average_latency	Average latency of NFSv4.1 OPEN_DOWNGRADE operations.
putfh_success	putfh.success	The number of successful NFSv4.1 PUTFH operations.
putfh_error	putfh.error	The number of failed NFSv4.1 PUTFH operations.
putfh_total	putfh.total	Total number of NFSv4.1 PUTFH operations.
putfh_percent	putfh.percent	Percentage of NFSv4.1 PUTFH operations.
putfh_avg_latency	putfh.average_latency	The number of successful NFSv4.1 PUTPUBFH operations.

Classic Numeric Counter	REST Counter	Description
putpubfh_success	putpubfh.success	The number of successful NFSv4.1 PUTPUBFH operations.
putpubfh_error	putpubfh.error	The number of failed NFSv4.1 PUTPUBFH operations.
putpubfh_total	putpubfh.total	Total number of NFSv4.1 PUTPUBFH operations.
putpubfh_percent	putpubfh.percent	Percentage of NFSv4.1 PUTPUBFH operations.
putpubfh_avg_latency	putpubfh.average_latency	Average latency of NFSv4.1 PUTPUBFH operations.
putrootfh_success	putrootfh.success	The number of successful NFSv4.1 PUTROOTFH operations.
putrootfh_error	putrootfh.error	The number of failed NFSv4.1 PUTROOTFH operations.
putrootfh_total	putrootfh.total	Total number of NFSv4.1 PUTROOTFH operations.
putrootfh_percent	putrootfh.percent	Percentage of NFSv4.1 PUTROOTFH operations.
putrootfh_avg_latency	putrootfh.average_latency	Average latency of NFSv4.1 PUTROOTFH operations.
read_success	read.success	The number of successful NFSv4.1 READ operations.
read_error	read.error	The number of failed NFSv4.1 READ operations.
read_total	read.total	Total number of NFSv4.1 READ operations.
read_percent	read.percent	Percentage of NFSv4.1 READ operations.
read_avg_latency	read.average_latency	Average latency of NFSv4.1 READ operations.

Classic Numeric Counter	REST Counter	Description
readdir_success	readdir.success	The number of successful NFSv4.1 READDIR operations.
readdir_error	readdir.error	The number of failed NFSv4.1 READDIR operations.
readdir_total	readdir.total	Total number of NFSv4.1 READDIR operations.
readdir_percent	readdir.percent	Percentage of NFSv4.1 READDIR operations.
readdir_avg_latency	readdir.average_latency	Average latency of NFSv4.1 READDIR operations.
readlink_success	readlink.success	The number of successful NFSv4.1 READLINK operations.
readlink_error	readlink.error	The number of failed NFSv4.1 READLINK operations.
readlink_total	readlink.total	Total number of NFSv4.1 READLINK operations.
readlink_percent	readlink.percent	Percentage of NFSv4.1 READLINK operations.
readlink_avg_latency	readlink.average_latency	Average latency of NFSv4.1 READLINK operations.
remove_success	remove.success	The number of successful NFSv4.1 REMOVE operations.
remove_error	remove.error	Number of failed NFSv4.1 REMOVE operations.
remove_total	remove.total	Total number of NFSv4.1 REMOVE operations.
remove_percent	remove.percent	Percentage of NFSv4.1 REMOVE operations.
remove_avg_latency	remove.average_latency	Average latency of NFSv4.1 REMOVE operations.

Classic Numeric Counter	REST Counter	Description
rename_success	rename.success	The number of successful NFSv4.1 RENAME operations.
rename_error	rename.error	The number of failed NFSv4.1 RENAME operations.
rename_total	rename.total	Total number of NFSv4.1 RENAME operations.
rename_percent	rename.percent	Percentage of NFSv4.1 RENAME operations.
rename_avg_latency	rename.average_latency	Average latency of NFSv4.1 RENAME operations.
restorefh_success	restorefh.success	The number of successful NFSv4.1 RESTOREFH operations.
restorefh_error	restorefh.error	The number of failed NFSv4.1 RESTOREFH operations.
restorefh_total	restorefh.total	Total number of NFSv4.1 RESTOREFH operations.
restorefh_percent	restorefh.percent	Percentage of NFSv4.1 RESTOREFH operations.
restorefh_avg_latency	restorefh.average_latency	Average latency of NFSv4.1 RESTOREFH operations.
savefh_success	savefh.success	The number of successful NFSv4.1 SAVEFH operations.
savefh_error	savefh.error	The number of failed NFSv4.1 SAVEFH operations.
savefh_total	savefh.total	Total number of NFSv4.1 SAVEFH operations.
savefh_percent	savefh.percent	Percentage of NFSv4.1 SAVEFH operations.
savefh_avg_latency	savefh.average_latency	Average latency of NFSv4.1 SAVEFH operations.

Classic Numeric Counter	REST Counter	Description
secinfo_success	secinfo.success	The number of successful NFSv4.1 SECINFO operations.
secinfo_error	secinfo.error	The number of failed NFSv4.1 SECINFO operations.
secinfo_total	secinfo.total	Total number of NFSv4.1 SECINFO operations.
secinfo_percent	secinfo.percent	Percentage of NFSv4.1 SECINFO operations.
secinfo_avg_latency	secinfo.average_latency	Average latency of NFSv4.1 SECINFO operations.
setattr_success	setattr.success	The number of successful NFSv4.1 SETATTR operations.
setattr_error	setattr.error	The number of failed NFSv4.1 SETATTR operations.
setattr_total	setattr.total	Total number of NFSv4.1 SETATTR operations.
setattr_percent	setattr.percent	Percentage of NFSv4.1 SETATTR operations.
setattr_avg_latency	setattr.average_latency	Average latency of NFSv4.1 SETATTR operations.
verify_success	verify.success	The number of successful NFSv4.1 VERIFY operations.
verify_error	verify.error	The number of failed NFSv4.1 VERIFY operations.
verify_total	verify.total	Total number of NFSv4.1 VERIFY operations.
verify_percent	verify.percent	Percentage of NFSv4.1 VERIFY operations.
verify_avg_latency	verify.average_latency	Average latency of NFSv4.1 VERIFY operations.

Classic Numeric Counter	REST Counter	Description
write_success	write.success	The number of successful NFSv4.1 WRITE operations.
write_error	write.error	The number of failed NFSv4.1 WRITE operations.
write_total	write.total	Total number of NFSv4.1 WRITE operations.
write_percent	write.percent	Percentage of NFSv4.1 WRITE operations.
write_avg_latency	write.average_latency	Average latency of NFSv4.1 WRITE operations.
backchannel_ctl_success	backchannel_ctl.success	The number of successful NFSv4.1 BACKCHANNEL_CTL operations.
backchannel_ctl_error	backchannel_ctl.error	The number of failed NFSv4.1 BACKCHANNEL_CTL operations.
backchannel_ctl_total	backchannel_ctl.total	Total number of NFSv4.1 BACKCHANNEL_CTL operations.
backchannel_ctl_percent	backchannel_ctl.percent	Percentage of NFSv4.1 BACKCHANNEL_CTL operations.
backchannel_ctl_avg_latency	backchannel_ctl.average_latency	Average latency of NFSv4.1 BACKCHANNEL_CTL operations.
bind_conn_to_session_success	bind_connections_to_session.success	The number of successful NFSv4.1 BIND_CONN_TO_SESSION operations.
bind_conn_to_session_error	bind_connections_to_session.error	The number of failed NFSv4.1 BIND_CONN_TO_SESSION operations.
bind_conn_to_session_total	bind_connections_to_session.total	Total number of NFSv4.1 BIND_CONN_TO_SESSION operations.
bind_conn_to_session_percent	bind_connections_to_session.percent	Percentage of NFSv4.1 BIND_CONN_TO_SESSION operations.

Classic Numeric Counter	REST Counter	Description
bind_conn_to_session_avg_latency	bind_connections_to_session.average_latency	Average latency of NFSv4.1 BIND_CONN_TO_SESSION operations.
exchange_id_success	exchange_id.success	The number of successful NFSv4.1 EXCHANGE_ID operations.
exchange_id_error	exchange_id.error	The number of failed NFSv4.1 EXCHANGE_ID operations.
exchange_id_total	exchange_id.total	Total number of NFSv4.1 EXCHANGE_ID operations.
exchange_id_percent	exchange_id.percent	Percentage of NFSv4.1 EXCHANGE_ID operations.
exchange_id_avg_latency	exchange_id.average_latency	Average latency of NFSv4.1 EXCHANGE_ID operations.
create_session_success	create_session.success	The number of successful NFSv4.1 CREATE_SESSION operations.
create_session_error	create_session.error	The number of failed NFSv4.1 CREATE_SESSION operations.
create_session_total	create_session.total	Total number of NFSv4.1 CREATE_SESSION operations.
create_session_percent	create_session.percent	Percentage of NFSv4.1 CREATE_SESSION operations.
create_session_avg_latency	create_session.average_latency	Average latency of NFSv4.1 CREATE_SESSION operations.
destroy_session_success	destroy_session.success	The number of successful NFSv4.1 DESTROY_SESSION operations.
destroy_session_error	destroy_session.error	The number of failed NFSv4.1 DESTROY_SESSION operations.
destroy_session_total	destroy_session.total	Total number of NFSv4.1 DESTROY_SESSION operations.
destroy_session_percent	destroy_session.percent	Percentage of NFSv4.1 DESTROY_SESSION operations.

Classic Numeric Counter	REST Counter	Description
destroy_session_avg_latency	destroy_session.average_latency	Average latency of NFSv4.1 DESTROY_SESSION operations.
free_stateid_success	free_stateid.success	The number of successful NFSv4.1 FREE_STATEID operations.
free_stateid_error	free_stateid.error	The number of failed NFSv4.1 FREE_STATEID operations.
free_stateid_total	free_stateid.total	Total number of NFSv4.1 FREE_STATEID operations.
free_stateid_percent	free_stateid.percent	Percentage of NFSv4.1 FREE_STATEID operations.
free_stateid_avg_latency	free_stateid.average_latency	Average latency of NFSv4.1 FREE_STATEID operations.
get_dir_delegation_success	get_dir_delegation.success	The number of successful NFSv4.1 GET_DIR_DELEGATION operations.
get_dir_delegation_error	get_dir_delegation.error	The number of failed NFSv4.1 GET_DIR_DELEGATION operations.
get_dir_delegation_total	get_dir_delegation.total	Total number of NFSv4.1 GET_DIR_DELEGATION operations.
get_dir_delegation_percent	get_dir_delegation_percent	Percentage of NFSv4.1 GET_DIR_DELEGATION operations.
get_dir_delegation_avg_latency	get_dir_delegation.average_latency	Average latency of NFSv4.1 GET_DIR_DELEGATION operations.
getdeviceinfo_success	getdeviceinfo.success	The number of successful NFSv4.1 GETDEVICEINFO operations.
getdeviceinfo_error	getdeviceinfo.error	The number of failed NFSv4.1 GETDEVICEINFO operations.
getdeviceinfo_total	getdeviceinfo.total	Total number of NFSv4.1 GETDEVICEINFO operations.

Classic Numeric Counter	REST Counter	Description
getdeviceinfo_percent	getdeviceinfo.percent	Percentage of NFSv4.1 GETDEVICEINFO operations.
getdeviceinfo_avg_latency	getdeviceinfo.average_latency	Average latency of NFSv4.1 GETDEVICEINFO operations.
getdevicelist_success	getdevicelist.success	The number of successful NFSv4.1 GETDEVICELIST operations.
getdevicelist_error	getdevicelist.error	The number of failed NFSv4.1 GETDEVICELIST operations.
getdevicelist_total	getdevicelist.total	Total number of NFSv4.1 GETDEVICELIST operations.
getdevicelist_percent	getdevicelist.percent	Percentage of NFSv4.1 GETDEVICELIST operations.
getdevicelist_avg_latency	getdevicelist.average_latency	Average latency of NFSv4.1 GETDEVICELIST operations.
layoutcommit_success	layoutcommit.success	The number of successful NFSv4.1 LAYOUTCOMMIT operations.
layoutcommit_error	layoutcommit.error	The number of failed NFSv4.1 LAYOUTCOMMIT operations.
layoutcommit_total	layoutcommit.total	Total number of NFSv4.1 LAYOUTCOMMIT operations.
layoutcommit_percent	layoutcommit.percent	Percentage of NFSv4.1 LAYOUTCOMMIT operations.
layoutcommit_avg_latency	layoutcommit.average_latency	Average latency of NFSv4.1 LAYOUTCOMMIT operations.
layoutget_success	layoutget.success	The number of successful NFSv4.1 LAYOUTGET operations.
layoutget_error	layoutget.error	The number of failed NFSv4.1 LAYOUTGET operations.
layoutget_total	layoutget.total	Total number of NFSv4.1 LAYOUTGET operations.

Classic Numeric Counter	REST Counter	Description
layoutget_percent	layoutget.percent	Percentage of NFSv4.1 LAYOUTGET operations.
layoutget_avg_latency	layoutget.average_latency	Average latency of NFSv4.1 LAYOUTGET operations.
layoutreturn_success	layoutreturn.success	The number of successful NFSv4.1 LAYOUTRETURN operations.
layoutreturn_error	layoutreturn.error	The number of failed NFSv4.1 LAYOUTRETURN operations.
layoutreturn_total	layoutreturn.total	Total number of NFSv4.1 LAYOUTRETURN operations.
layoutreturn_percent	layoutreturn.percent	Percentage of NFSv4.1 LAYOUTRETURN operations.
layoutreturn_avg_latency	layoutreturn.average_latency	Average latency of NFSv4.1 LAYOUTRETURN operations.
secinfo_no_name_success	secinfo_no_name.success	The number of successful NFSv4.1 SECINFO_NO_NAME operations.
secinfo_no_name_error	secinfo_no_name.error	The number of failed NFSv4.1 SECINFO_NO_NAME operations.
secinfo_no_name_total	secinfo_no_name.total	Total number of NFSv4.1 SECINFO_NO_NAME operations.
secinfo_no_name_percent	secinfo_no_name.percent	Percentage of NFSv4.1 SECINFO_NO_NAME operations.
secinfo_no_name_avg_latency	secinfo_no_name.average_latency	Average latency of NFSv4.1 SECINFO_NO_NAME operations.
sequence_success	sequence.success	The number of successful NFSv4.1 SEQUENCE operations.
sequence_error	sequence.error	The number of failed NFSv4.1 SEQUENCE operations.
sequence_total	sequence.total	Total number of NFSv4.1 SEQUENCE operations.

Classic Numeric Counter	REST Counter	Description
sequence_percent	sequence.percent	Percentage of NFSv4.1 SEQUENCE operations.
sequence_avg_latency	sequence.average_latency	Average latency of NFSv4.1 SEQUENCE operations.
set_ssv_success	set_ssv.success	The number of successful NFSv4.1 SET_SSV operations.
set_ssv_error	set_ssv.error	The number of failed NFSv4.1 SET_SSV operations.
set_ssv_total	set_ssv.total	Total number of NFSv4.1 SET_SSV operations.
set_ssv_percent	set_ssv.percent	Percentage of NFSv4.1 SET_SSV operations.
set_ssv_avg_latency	set_ssv.average_latency	Average latency of NFSv4.1 SET_SSV operations.
test_stateid_success	test_stateid.success	The number of successful NFSv4.1 TEST_STATEID operations.
test_stateid_error	test_stateid.error	The number of failed NFSv4.1 TEST_STATEID operations.
test_stateid_total	test_stateid.total	Total number of NFSv4.1 TEST_STATEID operations.
test_stateid_percent	test_stateid.percent	Percentage of NFSv4.1 TEST_STATEID operations.
test_stateid_avg_latency	test_stateid.average_latency	Average latency of NFSv4.1 TEST_STATEID operations.
want_delegation_success	want_delegation.success	The number of successful NFSv4.1 WANT_DELEGATION operations.
want_delegation_error	want_delegation.error	The number of failed NFSv4.1 WANT_DELEGATION operations.
want_delegation_total	want_delegation.total	Total number of NFSv4.1 WANT_DELEGATION operations.

Classic Numeric Counter	REST Counter	Description
want_delegation_percent	want_delegation.percent	Percentage of NFSv4.1 WANT_DELEGATION operations.
want_delegation_avg_latency	want_delegation.average_latency	Average latency of NFSv4.1 WANT_DELEGATION operations.
destroy_clientid_success	destroy_clientid.success	The number of successful NFSv4.1 DESTROY_CLIENTID operations.
destroy_clientid_error	destroy_clientid.error	The number of failed NFSv4.1 DESTROY_CLIENTID operations.
destroy_clientid_total	destroy_clientid.total	Total number of NFSv4.1 DESTROY_CLIENTID operations.
destroy_clientid_percent	destroy_clientid.percent	Percentage of NFSv4.1 DESTROY_CLIENTID operations.
destroy_clientid_avg_latency	destroy_clientid.average_latency	Average latency of NFSv4.1 DESTROY_CLIENTID operations.
reclaim_complete_success	reclaim_complete.success	The number of successful NFSv4.1 RECLAIM_COMPLETE operations.
reclaim_complete_error	reclaim_complete.error	The number of failed NFSv4.1 RECLAIM_COMPLETE operations.
reclaim_complete_total	reclaim_complete.total	Total number of NFSv4.1 RECLAIM_COMPLETE operations.
reclaim_complete_percent	reclaim_complete.percent	Percentage of NFSv4.1 RECLAIM_COMPLETE operations.
reclaim_complete_avg_latency	reclaim_complete.average_latency	Average latency of NFSv4.1 RECLAIM_COMPLETE operations.
nfsv4_1_ops	ops	Total number of NFSv4.1 operations per second.
getattr_latency_hist	getattr_latency_histogram	Histogram of latency for GETATTR operations.
lookup_latency_hist	lookup_latency_histogram	Histogram of latency for LOOKUP operations.

Classic Numeric Counter	REST Counter	Description
access_latency_hist	access_latency_histogram	Histogram of latency for ACCESS operations.
read_latency_hist	read_latency_histogram	Histogram of latency for READ operations.
write_latency_hist	write_latency_histogram	Histogram of latency for WRITE operations.
remove_latency_hist	remove_latency_histogram	Histogram of latency for REMOVE operations.
nfs41_latency_hist	total.latency_histogram	Histogram of latency for NFSv4.1 operations.
nfs41_read_size_histo	total.read_size_histogram	Histogram of NFSv4.1 read sizes.
nfs41_write_size_histo	total.write_size_histogram	Histogram of NFSv4.1 write sizes.
nfs41_read_throughput	total.read_throughput	NFSv4.1 read data transfers.
nfs41_write_throughput	total.write_throughput	NFSv4.1 write data transfers.
nfs41_throughput	total.throughput	NFSv4.1 data transfers.
latency	latency	Average latency of NFSv4.1 requests. This counter keeps track of the average response time of NFSv4.1 requests.
total_ops	total_ops	Total number of NFSv4.1 requests per second.
v42_create_session	v42.create_session	Number of successful NFSv4.2 CREATE_SESSION requests per second
v42_total_ops	v42.total_ops	Number of NFSv4.2 requests per second
nfsv41_fileop_max_latency	fileop_max_latency	Maximum latency of NFSv4.1 requests. This counter keeps track of the maximum response time of NFSv4.1 requests at any point in time.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
svm_nfs_v41:node	svm_nfs_v41_node

svm_nfs_v42

The svm_nfs_v42 table reports activity for the Network File System protocol, version 4.2. This is the file-sharing protocol that implements Parallel NFS (pNFS), used to connect to Network Attached Storage (NAS). The alias name for svm_nfs_v42:node is svm_nfs_v42_node.

Classic Object: nfsv4_2

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{instance_name}:{instance_uuid}	constituent	This represents the construction of a row ID field for a row from a single node.
{node.name}:{node.uuid}	node	This represents the construction of the row ID field in node combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Node name
instance_name	name	Constituent SVM name
svm.id	svm.id	SVM ID
svm.name	svm.name	SVM Name

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
null_total	null.total	Total number of NFSv4.2 NULL procedures.
null_avg_latency	null.average_latency	Average latency of NFSv4.2 NULL procedures.
access_total	access.total	Total number of NFSv4.2 ACCESS operations.
access_avg_latency	access.average_latency	Average latency of NFSv4.2 ACCESS operations.
close_total	close.total	Total number of NFSv4.2 CLOSE operations.
close_avg_latency	close.average_latency	Average latency of NFSv4.2 CLOSE operations.
commit_total	commit.total	Total number of NFSv4.2 COMMIT operations.
commit_avg_latency	commit.average_latency	Average latency of NFSv4.2 COMMIT operations.
create_total	create.total	Total number of NFSv4.2 CREATE operations.
create_avg_latency	create.average_latency	Average latency of NFSv4.2 CREATE operations.
delegpurge_total	delegpurge.total	Total number of NFSv4.2 DELEGPURGE operations.
delegpurge_avg_latency	delegpurge.average_latency	Average latency of NFSv4.2 DELEGPURGE operations.
delegreturn_total	delegreturn.total	Total number of NFSv4.2 DELEGRETURN operations.
delegreturn_avg_latency	delegreturn.average_latency	Average latency of NFSv4.2 DELEGRETURN operations.
getattr_total	getattr.total	Total number of NFSv4.2 GETATTR operations.

Classic Numeric Counter	REST Counter	Description
getattr_avg_latency	getattr.average_latency	Average latency of NFSv4.2 GETATTR operations.
getfh_total	getfh.total	Total number of NFSv4.2 GETFH operations.
getfh_avg_latency	getfh.average_latency	Average latency of NFSv4.2 GETFH operations.
link_total	link.total	Total number of NFSv4.2 LINK operations.
link_avg_latency	link.average_latency	Average latency of NFSv4.2 LINK operations.
lock_total	lock.total	Total number of NFSv4.2 LOCK operations.
lock_avg_latency	lock.average_latency	Average latency of NFSv4.2 LOCK operations.
lockt_total	lockt.total	Total number of NFSv4.2 LOCKT operations.
lockt_avg_latency	lockt.average_latency	Average latency of NFSv4.2 LOCKT operations.
locku_total	locku.total	Total number of NFSv4.2 LOCKU operations.
locku_avg_latency	locku.average_latency	Average latency of NFSv4.2 LOCKU operations.
lookup_total	lookup.total	Total number of NFSv4.2 LOOKUP operations.
lookup_avg_latency	lookup.average_latency	Average latency of NFSv4.2 LOOKUP operations.
lookupp_total	lookupp.total	Total number of NFSv4.2 LOOKUPP operations.
lookupp_avg_latency	lookupp.average_latency	Average latency of NFSv4.2 LOOKUPP operations.

Classic Numeric Counter	REST Counter	Description
nverify_total	nverify.total	Total number of NFSv4.2 NVERIFY operations.
nverify_avg_latency	nverify.average_latency	Average latency of NFSv4.2 NVERIFY operations.
open_total	open.total	Total number of NFSv4.2 OPEN operations.
open_avg_latency	open.average_latency	Average latency of NFSv4.2 OPEN operations.
openattr_total	openattr.total	Total number of NFSv4.2 OPENATTR operations.
openattr_avg_latency	openattr.average_latency	Average latency of NFSv4.2 OPENATTR operations.
open_downgrade_total	open_downgrade.total	Total number of NFSv4.2 OPEN_DOWNGRADE operations.
open_downgrade_avg_latency	open_downgrade.average_latency	Average latency of NFSv4.2 OPEN_DOWNGRADE operations.
putfh_total	putfh.total	Total number of NFSv4.2 PUTFH operations.
putfh_avg_latency	putfh.average_latency	Average latency of NFSv4.2 PUTFH operations.
putpubfh_total	putpubfh.total	Total number of NFSv4.2 PUTPUBFH operations.
putpubfh_avg_latency	putpubfh.average_latency	Average latency of NFSv4.2 PUTPUBFH operations.
putrootfh_total	putrootfh.total	Total number of NFSv4.2 PUTROOTFH operations.
putrootfh_avg_latency	putrootfh.average_latency	Average latency of NFSv4.2 PUTROOTFH operations.
read_total	read.total	Total number of NFSv4.2 READ operations.

Classic Numeric Counter	REST Counter	Description
read_avg_latency	read.average_latency	Average latency of NFSv4.2 READ operations.
readdir_total	readdir.total	Total number of NFSv4.2 READDIR operations.
readdir_avg_latency	readdir.average_latency	Average latency of NFSv4.2 READDIR operations.
readlink_total	readlink.total	Total number of NFSv4.2 READLINK operations.
readlink_avg_latency	readlink.average_latency	Average latency of NFSv4.2 READLINK operations.
remove_total	remove.total	Total number of NFSv4.2 REMOVE operations.
remove_avg_latency	remove.average_latency	Average latency of NFSv4.2 REMOVE operations.
rename_total	rename.total	Total number of NFSv4.2 RENAME operations.
rename_avg_latency	rename.average_latency	Average latency of NFSv4.2 RENAME operations.
restorefh_total	restorefh.total	Total number of NFSv4.2 RESTOREFH operations.
restorefh_avg_latency	restorefh.average_latency	Average latency of NFSv4.2 RESTOREFH operations.
savefh_total	savefh.total	Total number of NFSv4.2 SAVEFH operations.
savefh_avg_latency	savefh.average_latency	Average latency of NFSv4.2 SAVEFH operations.
secinfo_total	secinfo.total	Total number of NFSv4.2 SECINFO operations.
secinfo_avg_latency	secinfo.average_latency	Average latency of NFSv4.2 SECINFO operations.

Classic Numeric Counter	REST Counter	Description
setattr_total	setattr.total	Total number of NFSv4.2 SETATTR operations.
setattr_avg_latency	setattr.average_latency	Average latency of NFSv4.2 SETATTR operations.
verify_total	verify.total	Total number of NFSv4.2 VERIFY operations.
verify_avg_latency	verify.average_latency	Average latency of NFSv4.2 VERIFY operations.
write_total	write.total	Total number of NFSv4.2 WRITE operations.
write_avg_latency	write.average_latency	Average latency of NFSv4.2 WRITE operations.
backchannel_ctl_total	backchannel_ctl.total	Total number of NFSv4.2 BACKCHANNEL_CTL operations.
backchannel_ctl_avg_latency	backchannel_ctl.average_latency	Average latency of NFSv4.2 BACKCHANNEL_CTL operations.
bind_conn_to_session_total	bind_conn_to_session.total	Total number of NFSv4.2 BIND_CONN_TO_SESSION operations.
bind_conn_to_session_avg_latency	bind_conn_to_session.average_latency	Average latency of NFSv4.2 BIND_CONN_TO_SESSION operations.
exchange_id_total	exchange_id.total	Total number of NFSv4.2 EXCHANGE_ID operations.
exchange_id_avg_latency	exchange_id.average_latency	Average latency of NFSv4.2 EXCHANGE_ID operations.
create_session_total	create_session.total	Total number of NFSv4.2 CREATE_SESSION operations.
create_session_avg_latency	create_session.average_latency	Average latency of NFSv4.2 CREATE_SESSION operations.
destroy_session_total	destroy_session.total	Total number of NFSv4.2 DESTROY_SESSION operations.

Classic Numeric Counter	REST Counter	Description
destroy_session_avg_latency	destroy_session.average_latency	Average latency of NFSv4.2 DESTROY_SESSION operations.
free_stateid_total	free_stateid.total	Total number of NFSv4.2 FREE_STATEID operations.
free_stateid_avg_latency	free_stateid.average_latency	Average latency of NFSv4.2 FREE_STATEID operations.
get_dir_delegation_total	get_dir_delegation.total	Total number of NFSv4.2 GET_DIR_DELEGATION operations.
get_dir_delegation_avg_latency	get_dir_delegation.average_latency	Average latency of NFSv4.2 GET_DIR_DELEGATION operations.
getdeviceinfo_total	getdeviceinfo.total	Total number of NFSv4.2 GETDEVICEINFO operations.
getdeviceinfo_avg_latency	getdeviceinfo.average_latency	Average latency of NFSv4.2 GETDEVICEINFO operations.
getdevicelist_total	getdevicelist.total	Total number of NFSv4.2 GETDEVICELIST operations.
getdevicelist_avg_latency	getdevicelist.average_latency	Average latency of NFSv4.2 GETDEVICELIST operations.
layoutcommit_total	layoutcommit.total	Total number of NFSv4.2 LAYOUTCOMMIT operations.
layoutcommit_avg_latency	layoutcommit.average_latency	Average latency of NFSv4.2 LAYOUTCOMMIT operations.
layoutget_total	layoutget.total	Total number of NFSv4.2 LAYOUTGET operations.
layoutget_avg_latency	layoutget.average_latency	Average latency of NFSv4.2 LAYOUTGET operations.
layoutreturn_total	layoutreturn.total	Total number of NFSv4.2 LAYOUTRETURN operations.
layoutreturn_avg_latency	layoutreturn.average_latency	Average latency of NFSv4.2 LAYOUTRETURN operations.

Classic Numeric Counter	REST Counter	Description
secinfo_no_name_total	secinfo_no_name.total	Total number of NFSv4.2 SECINFO_NO_NAME operations.
secinfo_no_name_avg_latency	secinfo_no_name.average_latency	Average latency of NFSv4.2 SECINFO_NO_NAME operations.
sequence_total	sequence.total	Total number of NFSv4.2 SEQUENCE operations.
sequence_avg_latency	sequence.average_latency	Average latency of NFSv4.2 SEQUENCE operations.
set_ssv_total	set_ssv.total	Total number of NFSv4.2 SET_SSV operations.
set_ssv_avg_latency	set_ssv.average_latency	Average latency of NFSv4.2 SET_SSV operations.
test_stateid_total	test_stateid.total	Total number of NFSv4.2 TEST_STATEID operations.
test_stateid_avg_latency	test_stateid.average_latency	Average latency of NFSv4.2 TEST_STATEID operations.
want_delegation_total	want_delegation.total	Total number of NFSv4.2 WANT_DELEGATION operations.
want_delegation_avg_latency	want_delegation.average_latency	Average latency of NFSv4.2 WANT_DELEGATION operations.
destroy_clientid_total	destroy_clientid.total	Total number of NFSv4.2 DESTROY_CLIENTID operations.
destroy_clientid_avg_latency	destroy_clientid.average_latency	Average latency of NFSv4.2 DESTROY_CLIENTID operations.
reclaim_complete_total	reclaim_complete.total	Total number of NFSv4.2 RECLAIM_complete operations.
reclaim_complete_avg_latency	reclaim_complete.average_latency	Average latency of NFSv4.2 RECLAIM_complete operations.
nfs42_read_throughput	total.read_throughput	NFSv4.2 read data transfers.
nfs42_write_throughput	total.write_throughput	NFSv4.2 write data transfers.

Classic Numeric Counter	REST Counter	Description
nfs42_throughput	total.throughput	NFSv4.2 data transfers.
latency	latency	Average latency of nfsv42 requests. This counter keeps track of the average response time of nfsv42 requests.
total_ops	total_ops	Total number of nfsv42 requests per sec.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
svm_nfs_v42:node	svm_nfs_v42_node

system

The System table reports general system activity. This includes global throughput for the main services, I/O latency, and CPU activity. The alias name for system:node is system_node.

Classic Object: system

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{instance_name}:{instance_uuid}	constituent	This represents the construction of a row ID field for a row from a single node.
{node.name}:{node.uuid}	node	This represents the construction of the row ID field in node combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Node name
instance_name	name	This is the name of the system instance.
instance_uuid	uuid	This is the uuid of the system instance.
system_model	system_model	Name of the system model
ontap_version	ontap_version	ONTAP version
compile_flags	compile_flags	ONTAP compile flags
serial_no	serial_no	System serial number

Classic String Counter	REST Property	Description
system_id	system_id	System ID
hostname	hostname	Hostname

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
memory	memory	Total memory in megabytes (MB)
nfs_ops	nfs_ops	Number of NFS operations per second
cifs_ops	cifs_ops	Number of CIFS operations per second
fcp_ops	fcp_ops	Number of FCP operations per second
iscsi_ops	iscsi_ops	Number of iSCSI operations per second
nvme_fc_ops	nvme_fc_ops	NVMe/FC operations per second
nvme_tcp_ops	nvme_tcp_ops	NVMe/TCP operations per second
nvme_roce_ops	nvme_roce_ops	NVMe/RoCE operations per second
net_data_recv	network_data_received	Number of network kilobytes (KB) received per second
net_data_sent	network_data_sent	Number of network kilobytes (KB) sent per second
fcp_data_recv	fcp_data_received	Number of FCP kilobytes (KB) received per second
fcp_data_sent	fcp_data_sent	Number of FCP kilobytes (KB) sent per second

Classic Numeric Counter	REST Counter	Description
iscsi_data_received	iscsi_data_received	iSCSI kilobytes (KB) received per second
iscsi_data_sent	iscsi_data_sent	iSCSI kilobytes (KB) sent per second
nvme_fc_data_received	nvme_fc_data_received	NVMe/FC kilobytes (KB) received per second
nvme_fc_data_sent	nvme_fc_data_sent	NVMe/FC kilobytes (KB) sent per second
nvme_tcp_data_received	nvme_tcp_data_received	NVMe/TCP kilobytes (KB) received per second
nvme_tcp_data_sent	nvme_tcp_data_sent	NVMe/TCP kilobytes (KB) sent per second
nvme_roce_data_received	nvme_roce_data_received	NVMe/RoCE kilobytes (KB) received per second
nvme_roce_data_sent	nvme_roce_data_sent	NVMe/RoCE kilobytes (KB) sent per second
partner_data_received	partner_data_received	SCSI Partner kilobytes (KB) received per second
partner_data_sent	partner_data_sent	SCSI Partner kilobytes (KB) sent per second
sys_read_data	sys_read_data	Network and FCP kilobytes (KB) received per second
sys_write_data	sys_write_data	Network and FCP kilobytes (KB) sent per second
sys_total_data	sys_total_data	Network and FCP kilobytes (KB) received and sent per second
disk_data_read	disk_data_read	Number of disk kilobytes (KB) read per second
disk_data_written	disk_data_written	Number of disk kilobytes (KB) written per second

Classic Numeric Counter	REST Counter	Description
hdd_data_read	hdd_data_read	Number of HDD Disk kilobytes (KB) read per second
hdd_data_written	hdd_data_written	Number of HDD kilobytes (KB) written per second
ssd_data_read	ssd_data_read	Number of SSD Disk kilobytes (KB) read per second
ssd_data_written	ssd_data_written	Number of SSD Disk kilobytes (KB) written per second
tape_data_read	tape_data_read	Tape bytes read per millisecond
tape_data_written	tape_data_written	Tape bytes written per millisecond
read_ops	read_ops	Read operations per second
write_ops	write_ops	Write operations per second
other_ops	other_ops	All other operations per second
total_ops	total_ops	Total number of operations per second
read_latency	read_latency	Average latency for all read operations in the system in microseconds
write_latency	write_latency	Average latency for all write operations in the system in microseconds
other_latency	other_latency	Average latency for all other operations in the system in microseconds
total_latency	total_latency	Average latency for all operations in the system in microseconds
read_data	read_data	Read throughput
write_data	write_data	Write throughput
other_data	other_data	Other throughput

Classic Numeric Counter	REST Counter	Description
total_data	total_data	Total throughput in bytes
cpu_busy	cpu_busy	System CPU resource utilization. Returns a computed percentage for the default CPU field. Basically computes a 'cpu usage summary' value which indicates how 'busy' the system is based upon the most heavily utilized domain. The idea is to determine the amount of available CPU until we’re limited by either a domain maxing out OR we exhaust all available idle CPU cycles, whichever occurs first.
cpu_elapsed_time	cpu_elapsed_time	Elapsed time since boot
avg_processor_busy	average_processor_busy_percent	Average processor utilization across all processors in the system
total_processor_busy	total_processor_busy	Total processor utilization of all processors in the system
total_processor_busy_time	total_processor_busy_time	Total processor time of all processors in the system
num_processors	num_processors	Number of active processors in the system
interrupt_time	interrupt_time	Processor interrupt time
interrupt	interrupt	Processor interrupt rate percentage
interrupt_num	interrupt_num	Processor interrupt number
time_per_interrupt	time_per_interrupt	Processor time per interrupt
non_interrupt_time	non_interrupt_time	Processor non-interrupt time
non_interrupt	non_interrupt	Processor non-interrupt rate percentage
idle_time	idle_time	Processor idle time

Classic Numeric Counter	REST Counter	Description
idle	idle	Processor idle rate percentage
cp_time	cp_time	Processor time in CP
cp	cp	CP time rate
interrupt_in_cp_time	interrupt_in_cp_time	Processor interrupt in CP time
interrupt_in_cp	interrupt_in_cp	Processor interrupt rate percentage
interrupt_num_in_cp	interrupt_num_in_cp	Number of processor interrupts in CP
time_per_interrupt_in_cp	time_per_interrupt_in_cp	Processor time per interrupt in CP
processor_plevel_time	processor_plevel_time	Processor plevel rate percentage
processor_plevel	processor_plevel	Processor plevel rate percentage
domain_busy	domain_busy	Array of processor time in percentage spent in various domains
sk_switches	sk_switches	Number of sk switches per second
hard_switches	hard_switches	Number of context switches per second
domain_shared	domain_shared	Array of processor time in percentage spent in various shared domains
dswitchto_cnt	dswitchto_cnt	Array of processor time in percentage spent in domain switch
intr_cnt	intr_cnt	Array of interrupt count per second
intr_cnt_msec	intr_cnt_msec	Millisecond interrupt count per second
intr_cnt_ipi	intr_cnt_ipi	IPI interrupt count per second
intr_cnt_total	intr_cnt_total	Total interrupt count per second

Classic Numeric Counter	REST Counter	Description
time	time	Time in seconds since the Epoch (00:00:00 UTC January 1 1970)
uptime	uptime	Time in seconds that the system has been up
wafliron	wafliron	Wafliron counters

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
system:node	system_node

token_manager

A token represents the abstraction of data and is associated with a point-in-time (PIT) copy. A token is created by the SAN or SMB protocols by using protocol commands. Token Manager creates and copies tokens as requested by hosts for token-based copy-offload requests. In token-based copy-offload requests, the host sends an OFFLOAD READ command with the offsets to the source file or LUN. Token Manager creates a PIT copy of the offsets using sis-clone from source to PIT file and generates a token. This token is given to the host. The host then sends this token with the offsets to the destination file or LUN using an OFFLOAD WRITE cmd. Token Manager decodes the token, finds the data represented by the token and copies from the PIT file to the destination file or LUN. This completes a single token-based copy-offload request. This counter manager table tracks the number of token-based copy-offload requests received (both OFFLOAD READ and OFFLOAD WRITE), their sizes and their latencies. It also tracks various kind of errors that could have happened during token-based copy-offload requests.

Classic Object: token_manager

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
token_create_bytes	token_create.bytes	Total number of bytes for which tokens are created.

Classic Numeric Counter	REST Counter	Description
token_copy_bytes	token_copy.bytes	Total number of bytes copied.
token_zero_bytes	token_zero.bytes	Total number of bytes zeroed.
token_create_success	token_create.successes	Number of successful token create requests.
token_create_failure	token_create.failures	Number of failed token create requests.
token_copy_success	token_copy.successes	Number of successful token copy requests.
token_copy_failure	token_copy.failures	Number of failed token copy requests.
token_zero_success	token_zero.successes	Number of successful token zero requests.
token_zero_failure	token_zero.failures	Number of failed token zero requests.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

Table Aliases

This section describes aliases for aggregated tables.

volume

Counter Manager table for exporting volume performance counters. The alias names for volume:node and volume:svm are volume_node and volume_svm respectively.

Classic Object: volume

Table Row IDs

ID Format	Aggregation Type	Comment
{svm.name}:{instance_name}:{instance_uuid}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.
{node.name}:{node.uuid}	node	This represents the construction of the row ID field in node combo object, which is a single unique string that identifies a row.
{svm.name}:{svm.uuid}	svm	This represents the construction of the row ID field in svm combo object, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Name of the Node
node_uuid	node.uuid	UUID for the node
instance_name	name	This is the name of the volume counter row
instance_uuid	uuid	DSID/MSID of this volume row
vserver_name	svm.name	Name of the Copy Manager SVM row
vserver_uuid	svm.uuid	UUID for the Copy Manager SVM row

Classic String Counter	REST Property	Description
parent_aggr	parent_aggregate	The name of the aggregate hosting this volume

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
read_data	bytes_read	Bytes read per second
write_data	bytes_written	Bytes written per second
read_ops	total_read_ops	Number of read operations per second from the volume
write_ops	total_write_ops	Number of write operations per second to the volume
other_ops	total_other_ops	Number of other operations per second to the volume
total_ops	total_ops	Number of operations per second serviced by the volume
read_latency	read_latency	Average latency in microseconds for the WAFL filesystem to process read request to the volume; not including request processing or network communication time
write_latency	write_latency	Average latency in microseconds for the WAFL filesystem to process write request to the volume; not including request processing or network communication time
other_latency	other_latency	Average latency in microseconds for the WAFL filesystem to process other operations to the volume; not including request processing or network communication time

Classic Numeric Counter	REST Counter	Description
avg_latency	average_latency	Average latency in microseconds for the WAFL filesystem to process all the operations on the volume; not including request processing or network communication time
cifs_read_data	cifs.read_data	Bytes read per second via CIFS
cifs_read_latency	cifs.read_latency	Average time for the WAFL filesystem to process CIFS read requests to the volume; not including CIFS protocol request processing or network communication time which will also be included in client observed CIFS request latency
cifs_read_ops	cifs.read_ops	Number of CIFS read operations per second from the volume
cifs_write_data	cifs.write_data	Bytes written per second via CIFS
cifs_write_latency	cifs.write_latency	Average time for the WAFL filesystem to process CIFS write requests to the volume; not including CIFS protocol request processing or network communication time which will also be included in client observed CIFS request latency
cifs_write_ops	cifs.write_ops	Number of CIFS write operations per second to the volume
cifs_other_latency	cifs.other_latency	Average time for the WAFL filesystem to process other CIFS operations to the volume; not including CIFS protocol request processing or network communication time which will also be included in client observed CIFS request latency

Classic Numeric Counter	REST Counter	Description
cifs_other_ops	cifs.other_ops	Number of other CIFS operations per second to the volume
nfs_read_data	nfs.read_data	Bytes read per second via NFS
nfs_read_latency	nfs.read_latency	Average time for the WAFL filesystem to process NFS protocol read requests to the volume; not including NFS protocol request processing or network communication time which will also be included in client observed NFS request latency
nfs_read_ops	nfs.read_ops	Number of NFS read operations per second from the volume
nfs_write_data	nfs.write_data	Bytes written per second via NFS
nfs_write_latency	nfs.write_latency	Average time for the WAFL filesystem to process NFS protocol write requests to the volume; not including NFS protocol request processing or network communication time, which will also be included in client observed NFS request latency
nfs_write_ops	nfs.write_ops	Number of NFS write operations per second to the volume
nfs_other_latency	nfs.other_latency	Average time for the WAFL filesystem to process other NFS operations to the volume; not including NFS protocol request processing or network communication time which will also be included in client observed NFS request latency
nfs_other_ops	nfs.other_ops	Number of other NFS operations per second to the volume

Classic Numeric Counter	REST Counter	Description
iscsi_read_data	iscsi.read_data	Bytes read per second via block protocol
iscsi_read_latency	iscsi.read_latency	Average time for the WAFL filesystem to process iSCSI protocol read operations to the volume; not including iSCSI protocol request processing or network communication time which will also be included in client observed iSCSI protocol request latency
iscsi_read_ops	iscsi.read_ops	Number of block protocol read operations per second from the volume
iscsi_write_data	iscsi.write_data	Bytes written per second via block protocol
iscsi_write_latency	iscsi.write_latency	Average time for the WAFL filesystem to process iSCSI protocol write operations to the volume; not including iSCSI protocol request processing or network communication time which will also be included in client observed iSCSI request latency
iscsi_write_ops	iscsi.write_ops	Number of block protocol write operations per second to the volume
iscsi_other_latency	iscsi.other_latency	Average time for the WAFL filesystem to process other iSCSI protocol operations to the volume; not including iSCSI protocol request processing or network communication time which will also be included in client observed iSCSI protocol request latency

Classic Numeric Counter	REST Counter	Description
iscsi_other_ops	iscsi.other_ops	Number of other block protocol operations per second to the volume
fcp_read_data	fcp.read_data	Bytes read per second via block protocol
fcp_read_latency	fcp.read_latency	Average time for the WAFL filesystem to process FCP protocol read operations to the volume; not including FCP protocol request processing or network communication time which will also be included in client observed FCP protocol request latency
fcp_read_ops	fcp.read_ops	Number of block protocol read operations per second from the volume
fcp_write_data	fcp.write_data	Bytes written per second via block protocol
fcp_write_latency	fcp.write_latency	Average time for the WAFL filesystem to process FCP protocol write operations to the volume; not including FCP protocol request processing or network communication time which will also be included in client observed FCP protocol request latency
fcp_write_ops	fcp.write_ops	Number of block protocol write operations per second to the volume

Classic Numeric Counter	REST Counter	Description
fcp_other_latency	fcp.other_latency	Average time for the WAFL filesystem to process other FCP protocol operations to the volume; not including FCP protocol request processing or network communication time which will also be included in client observed FCP protocol request latency
fcp_other_ops	fcp.other_ops	Number of other block protocol operations per second to the volume
nfs_protocol_read_latency	nfs.read_latency_histogram	Latency histograms for read requests from the NFS protocol to the volume in the WAFL filesystem.
nfs_protocol_write_histo	nfs.write_histogram	Write granularity histogram for write requests from NFS to the volume in the WAFL filesystem.
nfs_protocol_misaligned_writes	nfs.misaligned_writes_histogram	Mis-aligned writes for specific sized write requests from NFS to the volume in the WAFL filesystem. The mis-alignment is reported only for sizes which are a power of 2.
nfs_protocol_write_latency	nfs.write_latency_histogram	Latency histograms for write requests from the NFS protocol to the volume in the WAFL filesystem.
nfs_getattr_latency	nfs.getattr_latency	Average time for the WAFL filesystem to process NFS protocol getattr requests to the volume; not including NFS protocol request processing or network communication time which will also be included in client observed NFS request latency.

Classic Numeric Counter	REST Counter	Description
nfs_protocol_getattr_latency	nfs.getattr_latency_histogram	Latency histograms for getattr requests from the NFS protocol to the volume in the WAFL filesystem.
nfs_getattr_ops	nfs.getattr_ops	Number of NFS getattr per second to the volume.
nfs_setattr_ops	nfs.setattr_ops	Number of NFS setattr requests per second to the volume.
nfs_setattr_latency	nfs.setattr_latency	Average time for the WAFL filesystem to process NFS protocol setattr requests to the volume.
nfs_protocol_setattr_latency	nfs.setattr_latency_histogram	Latency histograms for setattr requests from the NFS protocol to the volume in the WAFL filesystem.
nfs_lookup_latency	nfs.lookup_latency	Average time for the WAFL filesystem to process NFS protocol lookup requests to the volume; not including NFS protocol request processing or network communication time which will also be included in client observed NFS request latency.
nfs_protocol_lookup_latency	nfs.lookup_latency_histogram	Latency histograms for lookup requests from the NFS protocol to the volume in the WAFL filesystem.
nfs_lookup_ops	nfs.lookup_ops	Number of NFS lookups per second to the volume.

Classic Numeric Counter	REST Counter	Description
nfs_access_latency	nfs.access_latency	Average time for the WAFL filesystem to process NFS protocol access requests to the volume; not including NFS protocol request processing or network communication time which will also be included in client observed NFS request latency.
nfs_protocol_access_latency	nfs.access_latency_histogram	Latency histograms for access requests from the NFS protocol to the volume in the WAFL filesystem.
nfs_access_ops	nfs.access_ops	Number of NFS accesses per second to the volume.
nfs_punch_hole_data	nfs.punch_hole_data	Bytes hole-punched per second via NFS to the volume.
nfs_punch_hole_ops	nfs.punch_hole_ops	Number of NFS hole-punch requests per second to the volume.
nfs_punch_hole_latency	nfs.punch_hole_latency	Average time for the WAFL filesystem to process NFS protocol hole-punch requests to the volume.
nfs_protocol_punch_hole_histo	nfs.punch_hole_histogram	Granularity histogram for hole-punch requests from NFS to the volume in the WAFL filesystem.
nfs_protocol_punch_hole_latency	nfs.punch_hole_latency_histogram	Latency histograms for hole-punch requests from the NFS protocol to the volume in the WAFL filesystem.
nfs_protocol_other_latency	nfs.other_latency_histogram	Latency histograms for other requests from the NFS protocol to the volume in the WAFL filesystem.
nfs_total_ops	nfs.total_ops	Number of total NFS operations per second to the volume.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

REST Counter	Description
nfs.write_histogram	For each of the labels in this histogram, all white spaces have been removed.
nfs.misaligned_writes_histogram	For each of the labels in this histogram, whitespace is changed to "_" and uppercase letters were changed to lowercase letters.
nfs.punch_hole_histogram	For each of the labels in this histogram, all white spaces have been removed.

Table Aliases

This section describes aliases for aggregated tables.

Classic Object	Alias
volume:node	volume_node
volume:svm	volume_svm

wafl

Counter Manager object for exporting WAFL performance counters

Classic Object: wafl

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	Node Name
instance_name	name	Name of this instance

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
avg_non_wafl_msg_latency	average_non_wafl_msg_latency	Average turnaround time for non-WAFL messages in milliseconds.
avg_wafl_msg_latency	average_msg_latency	Average turnaround time for WAFL messages in milliseconds.
avg_wafl_repl_msg_latency	average_replication_msg_latency	Average turnaround time for replication WAFL messages in milliseconds.
wafl_msg_total	msg_total	Total number of WAFL messages per second.
wafl_repl_msg_total	replication_msg_total	Total number of replication WAFL messages per second.

Classic Numeric Counter	REST Counter	Description
non_wafl_msg_total	non_wafl_msg_total	Total number of non-WAFL messages per second.
cp_count	cp_count	Array of counts of different types of Consistency Points (CP).
cp_phase_times	cp_phase_times	Array of percentage time spent in different phases of Consistency Point (CP).
read_io_type	read_io_type	Percentage of reads served from buffer cache, external cache, or disk.
read_io_type_base	read_io_type_base	Total number of WAFL reads. Base for read_io_types.
total_cp_msecs	total_cp_msecs	Milliseconds spent in Consistency Point (CP).
total_cp_util	total_cp_util	Percentage of time spent in a Consistency Point (CP).
cpu_elapsed_time	cpu_elapsed_time	Elapsed time since boot.
wafl_memory_used	memory_used	The current WAFL memory used in the system.
wafl_memory_free	memory_free	The current WAFL memory available in the system.
wafl_reads_from_cache	reads_from_cache	WAFL reads from cache.
wafl_reads_from_cloud	reads_from_cloud	WAFL reads from cloud storage.
wafl_reads_from_cloud_s2c_bin	reads_from_cloud_s2c_bin	WAFL reads from cloud storage via s2c bin.
wafl_reads_from_disk	reads_from_disk	WAFL reads from disk.
wafl_reads_from_ext_cache	reads_from_external_cache	WAFL reads from external cache.
wafl_reads_from_fc_miss	reads_from_fc_miss	WAFL reads from remote volume for fc_miss.

Classic Numeric Counter	REST Counter	Description
wafl_reads_from_pmem	reads_from_persistent_memory	WAFL reads from persistent memory.
wafl_reads_from_ssd	reads_from_ssd	WAFL reads from SSD.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

REST Counter	Description
cp_count	Two things were changed about the naming of these array labels: 1. All of the spaces and hyphens were converted to underscores. 2. All of the letters were converted to lowercase.
cp_phase_times	The only difference in the naming for the array labels is that all of the letters were converted to lowercase.

Table Aliases

This section describes aliases for aggregated tables.

wafl_comp_aggr_vol_bin

CM object for exporting Composit Aggregate bin volume statistics.

Classic Object: wafl_comp_aggr_vol_bin

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name
comp_aggr_name	aggregate.name	Name of the Composite Aggregate.
vserver_name	svm.name	Name of the SVM that owns this volume
vserver_uuid	svm.uuid	UUID for the SVM that owns this volume
vol_name	volume.name	Name of the FlexVol volume.
vol_uuid	volume.uuid	UUID of the FlexVol volume.
bin_uuid	bin.uuid	UUID of this bin.
object_store_name	cloud_target.name	Name of the object store configuration
object_store_uuid	cloud_target.uuid	UUID of the object store configuration.

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
bin_id	bin.id	Bin ID (0..7)
config_id	config_id	Config ID of the object store
cloud_bin_space	cloud_bin_space	Cloud bin capacity counters.
cloud_bin_operation	cloud_bin_op	Cloud bin operation counters.
cloud_bin_op_size	cloud_bin_op_size	Cloud bin operation sizes in bytes.
cloud_bin_op_latency_average	cloud_bin_op_latency_average	Cloud bin operation latency average in milliseconds.
bin_error_io_timedout	error_io_timedout	Number of cloud I/Os that are timed out.
bin_tlog_reads	transfer_log_reads	Total reads from transfer log.
bin_reads	reads	Total number of blocks read.
bin_ra_reads	readahead_reads	Total number of blocks read via readahead.
bin_client_proto_reads	client_protocol_reads	Total number of blocks read via client protocols.
bin_repl_proto_reads	replication_protocol_reads	Total number of blocks read via replication protocol.
bin_other_proto_reads	other_protocol_reads	Total number of blocks read via other protocols.
bin_read_requests	read_requests	Total number of cloud IO read requests.
bin_client_read_requests	client_read_requests	Total number of cloud IO read requests via client protocols.
bin_error_op_expired_before_io	error_operations_expired_before_io	Number of operations expired before cloud I/Os are issued.
bin_error_op_soon_expire_before_io	error_operations_soon_expire_before_io	Number of operations that will expire before cloud I/Os are issued.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

REST Counter	Description
cloud_bin_op	Two things were changed about the naming of these array labels: 1. All of the spaces and hyphens were converted to underscores. 2. All of the letters were converted to lowercase.
cloud_bin_op_size	Two things were changed about the naming of these array labels: 1. All of the spaces and hyphens were converted to underscores. 2. All of the letters were converted to lowercase.
cloud_bin_op_latency_average	Two things were changed about the naming of these array labels: 1. All of the spaces and hyphens were converted to underscores. 2. All of the letters were converted to lowercase.

Table Aliases

This section describes aliases for aggregated tables.

wafl_hya_per_aggregate

CM object for exporting Flash Pool per-aggregate statistics.

Classic Object: wafl_hya_per_aggr

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name
hya_aggr_name	hya_aggregate_name	Name of the Flash Pool.
vol_name	volume.name	Name of the volume.
vserver_name	svm.name	Name of the SVM owning this volume

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
ssd_total	ssd_total	Total SSD blocks.
ssd_total_used	ssd_total_used	Total SSD blocks used.
ssd_available	ssd_available	Total SSD blocks available.
ssd_direct_allocated	ssd_direct_allocated	Total SSD blocks direct allocated.
ssd_read_cached	ssd_read_cached	Total read cached SSD blocks.

Classic Numeric Counter	REST Counter	Description
ssd_write_cached	ssd_write_cached	Total write cached SSD blocks.
hya_read_hit_latency_hist	hya_read_hit_latency_histogram	Flash Pool RAID I/O read latency with cache hit.
hya_read_hit_latency_count	hya_read_hit_latency_count	Total read hit latency samples collected.
hya_read_hit_latency_average	hya_read_hit_latency_average	Average of RAID I/O latency on read hit.
hya_read_miss_latency_hist	hya_read_miss_latency_histogram	Flash Pool RAID I/O read latency with a cache miss.
hya_read_miss_latency_count	hya_read_miss_latency_count	Total read miss latency samples collected.
hya_read_miss_latency_average	hya_read_miss_latency_average	Average read miss latency.
hya_write_ssd_latency_hist	hya_write_ssd_latency_histogram	Flash Pool raidio write latency to SSD.
hya_write_ssd_latency_count	hya_write_ssd_latency_count	Total write SSD latency samples collected.
hya_write_ssd_latency_average	hya_write_ssd_latency_average	Average of RAID I/O latency on write to SSD.
hya_write_hdd_latency_hist	hya_write_hdd_latency_histogram	Flash Pool raidio write latency to HDD.
hya_write_hdd_latency_count	hya_write_hdd_latency_count	Total write HDD latency samples collected.
hya_write_hdd_latency_average	hya_write_hdd_latency_average	Average write latency to HDD.
read_ops_replaced	read_ops_replaced	Number of HDD read operations replaced by SSD reads per second.
read_ops_total	read_ops_total	Number of non-Flash Pool metafile read operations per second.
read_ops_replaced_percent	read_ops_replaced_percent	Percentage of HDD read operations replace by SSD.

Classic Numeric Counter	REST Counter	Description
read_ops_blks_total	read_ops_blocks_total	Number of non-Flash Pool metafile blocks read operations per second.
read_blks_replaced_percent	read_blocks_replaced_percent	Percentage of HDD block reads replaced by SSD.
write_blks_replaced	write_blocks_replaced	Number of HDD write blocks replaced by SSD writes per second.
wc_write_blks_total	wc_write_blocks_total	Number of write-cache blocks written per second.
wc_write_blks_replaced_percent	wc_write_blocks_replaced_percent	Percentage of write-cache block written getting overwritten (to SSD or HDD).
est_write_blks_total	estimated_write_blocks_total	Estimated number of HDD blocks written per second on a non-Flash Pool.
hdd_write_blks	hdd_write_blocks	Total HDD blocks written.
write_blks_compensate	write_blocks_compensate	Number of write blocks compensation for operation saved calculation.
evict_destage_raw	evict_destage_raw	Raw write-cache destaged block count.
write_blks_replaced_percent	write_blocks_replaced_percent	Percentage of blocks overwritten to write-cache among all disk writes.
read_rc_nra_hit_type	read_rc_nra_hit_type	Block types of non-read-ahead read hits to read cache.
read_rc_nra_hit_blks_rate	read_rc_nra_hit_blocks_rate	Number of blocks of non-read-ahead read hits to read cache.
read_rc_ra_hit_type	read_rc_ra_hit_type	Block types of read-ahead read hits to read cache.
read_rc_ra_hit_blks_rate	read_rc_ra_hit_blocks_rate	Number of blocks of read-ahead read hits to read cache.

Classic Numeric Counter	REST Counter	Description
read_wc_nra_hit_type	read_wc_nra_hit_type	Block types of non-read-ahead read hits to write cache.
read_wc_nra_hit_blks_rate	read_wc_nra_hit_blocks_rate	Number of blocks of non-read-ahead read hits to write cache.
read_wc_ra_hit_type	read_wc_ra_hit_type	Block types of read-ahead read hits to write cache.
read_wc_ra_hit_blks_rate	read_wc_ra_hit_blocks_rate	Number of blocks of read-ahead read hits to write cache.
read_miss_type	read_miss_type	Block types of read misses.
read_miss_blks_rate	read_miss_blocks_rate	Number of block misses in SSD cache.
evict_cool	evict_cool	Number of temperature decrements done.
evict_cool_temp	evict_cool_temperature	Number of temperature decrements done per temperature.
evict_destage	evict_destage	Number of temperature decrements result in a block destage.
evict_destage_rate	evict_destage_rate	Number of block destage per second.
evict_remove	evict_remove	Number of temperature decrements that result in a block free.
evict_remove_rate	evict_remove_rate	Number of block free per second.
evict_skip_map	evict_skip_map	Number of eviction blocks skipped for map conflict.
evict_skip_hit	evict_skip_hit	Number of eviction blocks skipped due to pending hit update.
evict_skip_bad	evict_skip_bad	Number of eviction blocks skipped due to corruption in the cachemap entry.

Classic Numeric Counter	REST Counter	Description
evict_reasons	evict_reasons	Reasons for eviction running or not.
hhu_chunk_alloc	hhu_chunk_allocations	Number of allocations of buffers containing HyA hit update records.
hhu_chunk_applied	hhu_chunk_applied	Number of buffers containing hit update records applied to aggregates.
hhu_chunk_empty	hhu_chunk_empty	Number of buffers containing hit update records freed after all records removed.
hhu_chunk_enospace	hhu_chunk_enospace	Number of buffers containing hit update records after ssd is full.
hhu_chunk_purged	hhu_chunk_purged	Number of buffers containing hit update records purged without applying.
hhu_vbn_added	hhu_vbn_added	Count of hit update records added.
hhu_vbn_added_lo_ret	hhu_vbn_added_lo_retention	Count of hit update records added for low cache retention priority volumes.
hhu_vbn_added_hi_ret	hhu_vbn_added_hi_retention	Count of hit update records added for high cache retention priority volumes.
hhu_range_clear	hhu_range_clear	Count of hit update records removed due to eviction.
hhu_nomem	hhu_no_memory	Count of hit update records removed due to no memory.
hhu_susp_mem_alloc	hhu_suspended_memory_allocation	Count of hit update suspended due to memory allocation.
hhu_susp_load_active	hhu_suspended_load_active	Count of hit update suspended due to load active.
hhu_susp_load_ttmap	hhu_suspended_load_ttmap	Count of hit update suspended due to Type and Temperature Map (TTMap) load.

Classic Numeric Counter	REST Counter	Description
hhu_susp_cow_ttmap	hhu_suspended_cow_ttmap	Count of hit update suspended due to ttmap cow.
hhu_susp_dirty_ttmap	hhu_suspended_dirty_ttmap	Count of hit update suspended due to Type and Temperature Map (TTMap) dirty.
hhu_susp_yield	hhu_suspended_yield	Count of hit update suspend yield.
hhu_susp_in_cp	hhu_suspended_in_cp	Count of hit update suspended in CP.
hhu_mod_skipped	hhu_mod_skipped	Count of hit update skipped due to modified buffer.
hhu_chunk_alloc_pool	hhu_chunk_allocation_pool	Allocated memory chunks for tracking the read hits from free pool.
hhu_chunk_free_pool	hhu_chunk_free_pool	Freed memory chunks for tracking the read hits to free pool.
hhu_msgpool_grown	hhu_msgpool_grown	Number of times hit update apply msgpool grew.
hhu_msgpool_shrunk	hhu_msgpool_shrunk	Number of times hit update apply msgpool shrunk.
read_cache_ins_type	read_cache_inserts_type	Block types of cache inserts.
read_cache_ins_blk_total	read_cache_insert_block_total	Cache insert block count.
read_cache_ins_rate	read_cache_insert_rate	Cache insert rate blocks/sec.
cache_rej_type	cache_reject_type	Block types of rejected cache inserts.
cache_reject_nospace	cache_reject_no_space	Cache insertion rejects because there is no space.
cache_rej_reason_dist	cache_reject_reason_distribution	Flash Pool cache insert reject reason distribution.
cache_rej_reason_public_dist	cache_reject_reason_public_distribution	Flash Pool cache insert reject reason public distribution.

Classic Numeric Counter	REST Counter	Description
random_cache_dirty	random_non_mbuf_cache_dirty	Number of non-mbuf random cache dirties.
random_mbuf_cache_dirty	random_mbuf_cache_dirty	Number of mbuf random cache dirties.
blkr_rejected_cached_on_ssd	blkr_rejected_cached_on_ssd	Total HDD blocks that were not relocated because they were SSD cached.
blkr_rejected_ssd_rgs	blkr_rejected_ssd_rgs	Total number of times SSD rgs were skipped during blkr or CSC.
ssd_cache_freed	ssd_cache_freed	Number of cached SSD blocks freed.
ttmap_refs_saturated	ttmap_references_saturated	Number of references of cached block that do not result in the increase of reference count of Type and Temperature Map (TTMap) due to limited bits.
dropped_hit_updates	dropped_hit_updates	Number of references of cached blocks that happen before the hit update scanner reaches it from last time the reference happens. This results in a dropped reference count.
wc_write_blks	wc_write_blocks	Block types of write-cached block.
direct_write_blks	direct_write_blocks	Block types of writes of directly allocated SSD blocks.
direct_read_blks	direct_read_blocks	Block types of reads of directly allocated SSD blocks.
direct_read_ra_blks	direct_read_ra_blocks	Block types of read-aheads of directly allocated SSD blocks.
wc_l0_flag	wc_l0_flag	Write-caching L0s flagged for WS.
wc_seq	wc_seq	Write-caching L0s deemed sequential.

Classic Numeric Counter	REST Counter	Description
wc_wafe_sees_seq	wc_wafe_deflagged	Write-caching WAFE deflagged.
wc_blks_ow_to_ssd	wc_blocks_overwrite_to_ssd	Write-caching overwrite to SSD.
wc_blks_ow_to_hdd	wc_blocks_overwrite_to_hdd	Write-caching overwrite blocks to HDD.
blkr_ssd_read_io	blkr_ssd_read_io	Number of block relocation (blkr) SSD read I/Os.
blkr_ssd_read_blks	blkr_ssd_read_blocks	Number of block relocation (blkr) SSD read blocks.
cachemap_partition_blks	cachemap_partition_blocks	Number of HDD blocks per cachemap partition.
cachemap_partition_count	cachemap_partition_count	Number of cachemap partitions.
hitupdate_complete_scans	hitupdate_complete_scans	Number of hitupdate complete scans.
hitupdate_ttmap_bufs_dirtied	hitupdate_ttmap_buffers_dirtied	Number of Type and Temperature Map (TTMap) buffers dirtied by the hitupdate scanner.
hitupdate_steps	hitupdate_steps	Number of hitupdate scan steps.
hitupdate_starts	hitupdate_starts	Number of hitupdate scan message starts.
hitupdate_suspends	hitupdate_suspends	Number of times hitupdate scan msg suspended voluntarily.
hitupdate_active_bits_seen	hitupdate_active_bits_seen	Number of active flags the hitupdate scanner processed.
hitupdate_ra_blk_attempts	hitupdate_ra_block_attempts	Number of blocks the hitupdate scanner attempted to read ahead.
hitupdate_blks_accessed	hitupdate_blocks_accessed	Number of blocks the hitupdate scanner accessed.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

REST Counter	Description
hya_read_hit_latency_histogram	The labels have changed from "0 - <1ms" to "0_to_<1ms".
hya_read_miss_latency_histogram	The labels have changed from "0 - <1ms" to "0_to_<1ms".
hya_write_ssd_latency_histogram	The labels have changed from "0 - <1ms" to "0_to_<1ms".
hya_write_hdd_latency_histogram	The labels have changed from "0 - <1ms" to "0_to_<1ms".
read_rc_nra_hit_type	For each of the new labels in this array, the values have been changed to be lower case and any other non alpha-numeric characters have been replaced by an underscore.
read_rc_ra_hit_type	For each of the new labels in this array, the values have been changed to be lower case and any other non alpha-numeric characters have been replaced by an underscore.
read_wc_nra_hit_type	For each of the new labels in this array, the values have been changed to be lower case and any other non alpha-numeric characters have been replaced by an underscore.
read_wc_ra_hit_type	For each of the new labels in this array, the values have been changed to be lower case and any other non alpha-numeric characters have been replaced by an underscore.
read_miss_type	For each of the new labels in this array, the values have been changed to be lower case and any other non alpha-numeric characters have been replaced by an underscore.

REST Counter	Description
evict_cool_temperature	The labels have changed from "2→1" to "1_to_2".
evict_reasons	The labels have changed from "maint mode" to "maintenance_mode".
read_cache_inserts_type	For each of the new labels in this array, the values have been changed to be lower case and any other non alpha-numeric characters have been replaced by an underscore.
cache_reject_type	For each of the new labels in this array, the values have been changed to be lower case and any other non alpha-numeric characters have been replaced by an underscore.
cache_reject_reason_distribution	The labels have changed from "buf_needs_iron" to "buffer_needs_iron".
cache_reject_reason_public_distribution	The labels have changed from "buf_needs_iron" to "buffer_needs_iron".
wc_write_blocks	For each of the new labels in this array, the values have been changed to be lower case and any other non alpha-numeric characters have been replaced by an underscore.

Table Aliases

This section describes aliases for aggregated tables.

wafl_hya_sizer

This table is for exporting Automated Working-set Analyzer (AWA) statistics. AWA is an ONTAP capability that estimates the Flash Pool cache size and estimates the cache hit rates across reads and writes. Detailed statistic values of an AWA instance enabled on a specific aggregate are available here.

Classic Object: wafl_hya_sizer

Table Row IDs

ID Format	Aggregation Type	Comment
{instance_name}	(not applicable)	This represents the construction of the row ID field, which is a single unique string that identifies a row.

Properties

This section describes the mapping between classic (ONTAPI) string counter names and REST property names.

Classic String Counter	REST Property	Description
node_name	node.name	System node name
aggr_name	aggregate.name	Name of the aggregate.

Counters

This section describes the mapping between classic (ONTAPI) numeric counter names and REST counter names.

Classic Numeric Counter	REST Counter	Description
version	version	Automated Working-set Analyzer (AWA) version.
start_time	start_time	Start time in milliseconds.
current_time	current_time	Current time based on ONTAP internal clock in milliseconds (sk_msecs).
start_cp_count	start_cp_count	CP (Consistency Point) count when the sizer is enabled.

Classic Numeric Counter	REST Counter	Description
rstart_time	relative_start_time	Relative start time of the scoped interval in milliseconds.
rstart_cp_count	relative_start_cp_count	CP (Consistency Point) count when the sizer is started relative to the beginning of scoped intervals.
total_intervals	total_intervals	Total number of intervals since the sizer was enabled including the current one.
overwrite_cp_delta	overwrite_cp_delta	The histogram of CP (Consistency Point) count delta between overwrites.
hash_max_unique	hash_max_unique	Aggregate space max_unique for hashing.
hash_sampling_factor	hash_sampling_factor	Aggregate space hash sampling factor.
target_pcache_mb	target_pcache_mb	Configured target pseudo cache memory in megabytes.
pcache_mem	pcache_memory	Derived memory size during configuration.
target_sampling_factor	target_sampling_factor	Configured target sampling factor.
derived_sampling_factor	derived_sampling_factor	Derived sampling factor.
pcache_no_of_entries	pcache_number_of_entries	Derived number of pseudo cache entries which is the same as the number of cached blocks.
incore_intervals	incore_intervals	Total incore intervals.
interval_msec	interval_msec	Interval length in milliseconds.
num_disks	number_disks	Number of disks.

Classic Numeric Counter	REST Counter	Description
sync_with_stats_zero	sync_with_stats_zero	If the value is one, the Automated Working-set Analyzer (AWA) interval resets when wafl statistics are reset (by wafl_stats_zero command).
enable_rc_after_write	enable_rc_after_write	If the value is one, the option of Read-cache After Write is enabled.
vvol_stats	vvol_stats	Collect per-volume statistics.
debug_level	debug_level	Debug Level.
scope_interval	scope_interval	Number of intervals of the sliding window scope.
scope_phaseout	scope_phase_out	If the value is 1, AWA phases out old accumulations from the histograms.
cache_mode	cache_mode	Automated Working-set Analyzer (AWA) cache mode: normal, read-cache only, write- cache only, always cache.
interval_info	interval_info	Interval Information.
lookup_type_mismatch	lookup_type_mismatch	Number of type mismatches when lookup finds an entry.
entry_matched	entry_matched	Number of pseudo cache entry lookup attempts. For random-hash-sampled cases, this is the number of lookup/insert attempts. For statically sampled case, this is the number of lookups that falls into sampled disks.
entry_sampled	entry_sampled	Number of pseudo cache hashed Volume Block Number (VBN) sampled based on sampling factor.

Classic Numeric Counter	REST Counter	Description
wc_flagged	wc_flagged	Number of buffers flagged for write-caching after check for random write at buffer-dirty time.
can_wc_dirty	can_wc_dirty	Number of buffers that can be write-cached at write-allocation time.
cant_wc_dirty	cant_wc_dirty	Number of buffers that cannot be write-cached at write-allocation time.
wc_overwrite	wc_overwrite	Number of write-cached blocks being overwritten.
long_chain	long_chain	Number of reads with buffer count long enough to go to hard disk drives (HDD) directly.
wc_ins_for_destage	wc_ins_for_destage	Number of Automated Working-set Analyzer (AWA) write-cached block inserts for actual destages on a Flash Pool aggregate.
rc_after_write	rc_after_write	Number of buffers flagged for read cache after write.
cache_rej_reason_dist_FP	cache_reject_reason_dist_fp	Automated Working-set Analyzer (AWA) pseudo cache insert reject reason distribution for Floating Point (FP) cache inserts. This array is a table with fields corresponding to the reject reasons defined by enum type hya_cache_rej_reasons_t.

Classic Numeric Counter	REST Counter	Description
cache_rej_reason_dist	cache_reject_reason_dist	Automated Working-set Analyzer (AWA) pseudo cache insert reject reason distribution not for FP aggregate cache inserts. This array is a table with fields corresponding to the reject reasons defined by enum type hya_cache_rej_reasons_t.
aggrwide_regular_stats	aggregate_wide_regular_stats	Automated Working-set Analyzer (AWA) aggregate-wide regular statistics for the most recent number of intervals. The number of intervals that are considered recent is defined by CM_WAFL_HYAS_INT_DIS_CNT. This array is a table with fields corresponding to the enum type hya_regular_stat_type_t.
aggrwide_cache_stats	aggregate_wide_cache_stats	Automated Working-set Analyzer (AWA) aggregate-wide cache statistics for the most recent number of intervals. The number of intervals that are considered as recent is defined as CM_WAFL_HYAS_INT_DIS_CNT. This array is a table with fields corresponding to enum type hyas_cache_stat_type_t.
aggrwide_cache_interarrival_stats	aggregate_wide_cache_interarrival_stats	Automated Working-set Analyzer (AWA) aggregate-wide interarrival distribution for intervals up to CM_WAFL_HYAS_INT_DIS_CNT. This array is a table with fields corresponding to the enum type of hya_cache_ia_stat_type_t.

Classic Numeric Counter	REST Counter	Description
regular_stats	regular_stats	Automated Working-set Analyzer (AWA) per-interval regular statistics for the most recent number of intervals. The number of intervals defined as recent is CM_WAFL_HYAS_INT_DIS_CNT. This array is a table with fields corresponding to the enum type of hyas_regular_stat_type_t.
cache_stats	cache_stats	Automated Working-set Analyzer (AWA) per-interval pseudo cache statistics for the most recent intervals. The number of intervals defined as recent is CM_WAFL_HYAS_INT_DIS_CNT. This array is a table with fields corresponding to the enum type of hyas_cache_stat_type_t.
cache_interarrival_stats	cache_interarrival_stats	Automated Working-set Analyzer (AWA) pseudo cache interarrival distribution for intervals up to CM_WAFL_HYAS_INT_DIS_CNT. This array is a table with fields corresponding to the enum type of hya_cache_ia_stat_type_t.

Property/Counter Content Changes

This section describes any output value differences between the classic (ONTAPI) string counter and the respective REST property. It also describes array label name changes between classic array counters and respective REST array counters.

REST Counter	Description
aggregate_wide_regular_stats	The labels have changed from "Free overwrite" to "free_overwrite".
aggregate_wide_cache_stats	The labels have changed from "rd_rc_L0_interval" to "rd_rc_l0_interval".

REST Counter	Description
regular_stats	The labels have changed from "Free overwrite" to "free_overwrite".
cache_stats	The labels have changed from "rd_rc_L0_interval" to "rd_rc_l0_interval".

Table Aliases

This section describes aliases for aggregated tables.

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