Managing workloads

Active IQ Unified Manager

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May 05, 2022

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Managing workloads

The APIs described here cover various functions of storage administration, such as viewing storage workloads, creating LUNs and file shares, managing Performance Service Levels and Storage Efficiency Policies, and assigning the policies on storage workloads.

Viewing storage workloads

The APIs listed here enable you to view a consolidated list of storage workloads for all of the ONTAP clusters in your data center. The APIs also provide a summary view of the number of the storage workloads provisioned in your Active IQ Unified Manager environment, and their capacity and performance (IOPS) statistics.

View storage workloads

You can use the following method to view all the storage workloads in all the clusters in your data center. For information about filtering the response based on specific columns, see the API reference documentation available in your Unified Manager instance.

Category	HTTP verb	Path
storage-provider	GET	`/storage-provider/workloads`

View storage workloads summary

You can use the following method to assess the used capacity, available capacity, used IOPS, available IOPS, and number of storage workloads managed by each Performance Service Level. The storage workloads displayed can be for any LUN, NFS file share, or CIFS share. The API provides a storage workloads overview, an overview of the storage workloads provisioned by the Unified Manager, a data center overview, an overview of the total, used, and available space and IOPS in the data center, in terms of the assigned Performance Service Levels. The information received in response to this API is used to populate the dashboard in the Unified Manager UI.

Category	HTTP verb	Path
storage-provider	GET	`/storage-provider/workloads-summary`

Managing access endpoints

You need to create access endpoints or logical interfaces (LIFs), which are required for provisioning Storage Virtual Machines (SVMs), LUNs, and file shares. You can view, create, modify, and delete the access endpoints for the SVMs, LUNs, or file shares in your Active IQ Unified Manager environment.

View access endpoints

You can view a list of the access endpoints in your Unified Manager environment by using the following method. To query a list of access endpoints of a particular SVM, LUN, or file share, you need to enter the unique identifier for the SVM, LUN, or file share. You can also enter the unique access endpoint key to retrieve the details of the particular access endpoint.

Category	HTTP verb	Path

storage-provider	GET	`/storage-provider/access-endpoints`
		
		`/storage-provider/access-endpoints/{key}`

Add access endpoints

You can create custom access endpoints and assign required properties to it. You must enter the details of the access endpoint that you want to create as the input parameters. You can use this API, or the System Manager or ONTAP CLI to create an access endpoint on each node. Both IPv4 and IPv6 addresses are supported for access endpoints creation.

You must configure your SVM with a minimum number of access endpoints per node for successful provisioning of LUNs and file shares. You should configure your SVM with at least two access endpoints per node, one supporting CIFS and/or NFS protocol, another supporting iSCSI or FCP protocol.

Category	HTTP verb	Path
storage-provider	POST	`/storage-provider/access-endpoints`

Delete access endpoints

You can delete a specific access endpoint by using the following method. You need to provide the access endpoint key as an input parameter to delete a particular access endpoint.

Category	HTTP verb	Path
storage-provider	DELETE	`/storage-provider/access-endpoints/{key}`

Modify access endpoints

You can modify an access endpoint and update its properties by using the following method. You need to provide the access endpoint key to modify a particular access endpoint. You also need to enter the property that you want to update, along with its value.

Category	HTTP verb	Path
storage-provider	PATCH	`/storage-provider/access-endpoints/{key}`

Managing Active Directory mapping

You can use the APIs listed here to manage Active Directory mappings on the SVM that are required for provisioning CIFS shares on the SVMs. Active Directory mappings need to be configured for mapping the SVMs with ONTAP.

View Active Directory mappings

You can view the configuration details of the Active Directory mappings for an SVM by using the following method. For viewing the Active Directory mappings on an SVM, you need to enter the SVM key. For querying the details of a particular mapping, you must enter the mapping key.

Category	HTTP verb	Path

storage-provider	GET	`/storage-provider/active-directories-mappings`
		
		`/storage-provider/active-directories-mappings/{key}`

Add Active Directory mapping

You can create Active Directory mappings on an SVM by using the following method. You must enter the mapping details as the input parameters.

Category	HTTP verb	Path
storage-provider	POST	`/storage-provider/active-directories-mappings`

Managing file shares

You can use the `/storage-provider/file-shares` API to view, add, modify, and delete the CIFS and NFS file share volumes in your data center environment.

Before provisioning the file share volumes, ensure that the SVM has been created and provisioned with the supported protocols. If you are assigning Performance Service Levels (PSLs) or Storage Efficiency Policies (SEPs), while provisioning, the PSLs or SEPs should be created before creating the file shares.

View file shares

You can use the following method to view the file share volumes available in your Unified Manager environment. When you have added an ONTAP cluster as a datasource on Active IQ Unified Manager, the

storage workloads for those clusters are automatically added to your Unified Manager instance. This API retrieves the file shares automatically and manually added to your Unified Manager instance. You can view the details of a specific file share by running this API with the file share key.

Category	HTTP verb	Path

storage-provider	GET	`/storage-provider/file-shares`
		
		`/storage-provider/file-shares/{key}`

Add file shares

You can use the following method to add CIFS and NFS file shares in your SVM. You must enter the details of the file share that you want to create, as the input parameters. You cannot use this API for adding FlexGroup volumes.

Category	HTTP verb	Path
storage-provider	POST	`/storage-provider/file-shares`

Depending on whether the access control list (ACL) parameters or the export policy parameters are provided, CIFS shares or NFS file shares are created. If you do not provide the values for the ACL parameters, CIFS shares are not created, and NFS shares are created by default, providing access to all.

Creating data-protection volumes: When you add file shares to your SVM, the type of the volume that is mounted, by default, is `rw` (read-write). For creating data-protection (DP) volumes, specify `dp` as the value for the `type` parameter.

Delete file shares

You can use the following method to delete a specific file share. You need to enter the file share key as an input parameter to delete a particular file share.

Category	HTTP verb	Path
storage-provider	DELETE	`/storage-provider/file-shares/{key}`

Modify file shares

You can use the following method to modify a file share and update its properties.

You need to provide the file share key to modify a particular file share. Additionally, you need to enter the property that you want to update, along with its value.

Note that you can update only one property at a single invocation of this API. For multiple updates, you need to run this API as many times.

Category	HTTP verb	Path
storage-provider	PATCH	`/storage-provider/file-shares/{key}`

Managing LUNs

You can use the `/storage-provider/luns` API to view, add, modify, and delete the LUNs in your data center environment.

Before provisioning the LUNs, ensure that the SVM has been created and provisioned with the supported protocols. If you are assigning Performance Service Levels (PSLs) or Storage Efficiency Policies (SEPs), while provisioning, the PSLs or SEPs should be created before creating the LUN.

View LUNs

You can use the following method to view the LUNs in your Unified Manager environment. When you have added an ONTAP cluster as a datasource on Active IQ Unified Manager, the storage workloads for those clusters are automatically added to your Unified Manager instance. This API retrieves all the LUNs automatically and manually added to your Unified Manager instance. You can view the details of a specific LUN by running this API with the LUN key.

Category	HTTP verb	Path

storage-provider	GET	`/storage-provider/luns`
		
		`/storage-provider/luns/{key}`

Add LUNs

You can use the following method to add LUNs to your SVMs.

Category	HTTP verb	Path
storage-provider	POST	`/storage-provider/luns`

In your cURL request, if you provide a value for the optional parameter volume_name_tag in the input, then that value is used while naming the volume during the LUN creation. This tag enables searching the volume easily. If you provide the volume key in the request, the tagging is skipped.

Delete LUNs

You can use the following method to delete a specific LUN. You need to provide the LUN key to delete a

particular LUN.

If you have created a volume in ONTAP and then provisioned LUNs through Unified Manager on that volume, when you delete all of the LUNs by using this API, the volume also gets deleted from the ONTAP cluster.

Category	HTTP verb	Path
storage-provider	DELETE	`/storage-provider/luns/{key}`

Modify LUNs

You can use the following method to modify a LUN and update its properties. You need to provide the LUN key to modify a particular LUN. You also need to enter the LUN property that you want to update, along with its value. For updating LUN arrays by using this API, you should review the recommendations in “Recommendations for using the APIs”.

You can update only one property at a single invocation of this API. For multiple updates, you need to run this API as many times.

Category	HTTP verb	Path
storage-provider	PATCH	`/storage-provider/luns/{key}`

Managing Performance Service Levels

You can view, create, modify, and delete Performance Service Levels by using the storage provider APIs for on your Active IQ Unified Manager.

View Performance Service Levels

You can use the following method to view the Performance Service Levels for assigning them to storage workloads. The API lists all of the system-defined and user-created Performance Service Levels, and retrieves the attributes of all of the Performance Service Levels. If you want to query a specific Performance Service Level, you need to enter the unique ID of the Performance Service Level to retrieve its details.

Category	HTTP verb	Path

storage-provider	GET	`/storage-provider/performance-service-levels`
		
		`/storage-provider/performance-service-levels/{key}`

Add Performance Service Levels

You can use the following method to create custom Performance Service Levels and assign them to your storage workloads if the system-defined Performance Service Levels do not meet the required service level objectives (SLOs) for the storage workloads. Enter the details for the Performance Service Level that you want to create. For the IOPS properties, ensure that you enter valid range of values.

Category	HTTP verb	Path
storage-provider	POST	`/storage-provider/performance-service-levels`

Delete Performance Service Levels

You can use the following method to delete a specific Performance Service Level. You cannot delete a Performance Service Level if it is assigned to a workload, or if it is the only available Performance Service Level. You need to provide the unique ID of the Performance Service Level as an input parameter to delete a particular Performance Service Level.

Category	HTTP verb	Path
storage-provider	DELETE	`/storage-provider/performance-service-levels/{key}`

Modify Performance Service Levels

You can use the following method to modify a Performance Service Level and update its properties. You cannot modify a Performance Service Level that is system-defined or is assigned to a workload. You need to provide the unique ID of the to modify a particular Performance Service Level. You must also enter the IOPS property that you want to update, along with a valid value.

Category	HTTP verb	Path
storage-provider	PATCH	`/storage-provider/performance-service-levels/{key}`

Viewing aggregate capabilities based on Performance Service Levels

You can use the following method to query the aggregate capabilities based on Performance Service Levels. This API returns the list of aggregates available in your data center and indicates the capabilities in terms of the Performance Service Levels that can be supported in those aggregates. While provisioning workloads on a volume, you can view the capability of an aggregate to support a particular Performance Service Level, and provision workloads based on that capability. Your ability to specify the aggregate is available only when you are provisioning a workload by using APIs. This functionality is not available on the Unified Manager web UI.

Category	HTTP verb	Path

storage-provider	GET	`/storage-provider/aggregate-capabilities`
		
		`/storage-provider/aggregate-capabilities/{key}`

Managing Storage Efficiency Policies

You can view, create, modify, and delete Storage Efficiency Policies by using the storage provider APIs.

Note the following points:

- It is not mandatory to assign a Storage Efficiency Policy while creating a workload on Unified Manager.
- You cannot unassign a Storage Efficiency Policy from a workload after a policy is assigned to it.
- If a workload has some storage settings specified on ONTAP volumes, such as deduplication and compression, those settings can be overwritten by the settings specified in the Storage Efficiency Policy that you apply when you add the storage workloads on Unified Manager.

View Storage Efficiency Policies

You can use the following method to view the Storage Efficiency Policies before assigning them to storage workloads. This API lists all of the system-defined and user-created Storage Efficiency Policies, and retrieves the attributes of all of the Storage Efficiency Policies. If you want to query a specific Storage Efficiency Policy, you need to enter the unique ID of the policy to retrieve its details.

Category	HTTP verb	Path

storage-provider	GET	`/storage-provider/storage-efficiency-policies`
		
		`/storage-provider/storage-efficiency-policies/{key}`

Add Storage Efficiency Policies

You can use the following method to create custom Storage Efficiency Policies, and assign them to your storage workloads if the system-defined policies do not meet the provisioning requirements for your storage workloads. Enter the details of the Storage Efficiency Policy that you want to create, as input parameters.

Category	HTTP verb	Path
storage-provider	POST	`/storage-provider/storage-efficiency-policies`

Delete Storage Efficiency Policies

You can use the following method to delete a specific Storage Efficiency Policy. You cannot delete a Storage Efficiency Policy if it is assigned to a workload, or if it is the only available Storage Efficiency Policy. You need to provide the unique ID of the Storage Efficiency Policy as an input parameter to delete a particular Storage Efficiency Policy.

Category	HTTP verb	Path
storage-provider	DELETE	`/storage-provider/storage-efficiency-policies/{key}`

Modify Storage Efficiency Policies

You can use the following method to modify a Storage Efficiency Policy and update its properties. You cannot modify a Storage Efficiency Policy that is system-defined or is assigned to a workload. You need to provide the unique ID of the Storage Efficiency Policy to modify a particular Storage Efficiency Policy. Additionally, you need to provide the property that you want to update, along with its value.

Category	HTTP verb	Path
storage-provider	PATCH	`/storage-provider/storage-efficiency-policies/{key}`