Modifying storage workloads

Active IQ Unified Manager

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Modifying storage workloads

Modifying storage workloads consists of updating LUNs or file shares with missing parameters, or changing the existing parameters.

This workflow takes the example of updating Performance Service Levels for LUNs and file shares.

The workflow assumes that the LUN or file share has been provisioned with Performance Service Levels.

Modifying file shares

While modifying a file share, you can update the following parameters:

- Capacity or size.
- Online or offline setting.
- Storage Efficiency Policy.
- Performance Service Level.
- Access control list (ACL) settings.
- Export policy settings. You can also delete export policy parameters and revert the default (empty) export policy rules on the file share.

During a single API run, you can update only one parameter.

This procedure describes adding a Performance Service Level to a file share. You can use the same procedure for updating any other file share property.

1. Obtain the CIFS share or NFS file share key of the file share that you want to update. This API queries all the file shares on your data center. Skip this step if you already know the file share key.

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

2. View the details of the file share by running the following API with the file share key that you obtained.

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

   View the details of the file share in the output.

```
"assigned_performance_service_level": {
        "key": null,
        "name": "Unassigned",
        "peak_iops": null,
        "expected_iops": null,
        "_links": {}
      },
```

3. Obtain the key for the Performance Service Level that you want to assign on this file share. Currently no policy is assigned to it.

Category	HTTP verb	Path
Performance Service Levels	GET	`/storage-provider/performance-service-levels`

> You can retrieve the details of the system-defined Performance Service Levels by setting the `system_defined` input parameter to `true`. From the output, obtain the key of the Performance Service Level that you want to apply to the file share.

4. Apply the Performance Service Level on the file share.

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

In the input, you must specify only the parameter that you want to update, along with the file share key. In this case, it is the key of the Performance Service Level.

Sample cURL

```
curl -X POST "https://<hostname>/api/storage-provider/file-shares" -H
"accept: application/json" -H "Authorization: Basic
<Base64EncodedCredentials>" -d
"{
\"performance_service_level\": { \"key\": \"1251e51b-069f-11ea-980d-
fa163e82bbf2\" },
}"
```

The JSON output displays a Job object that you can use to verify the whether the access endpoints on the home and partner nodes have been created successfully.

5. Verify whether the Performance Service Level has been added to the file share by using the Job object key displayed in your output.

Category	HTTP verb	Path
Management Server	GET	`/management-server/jobs/{key}`

If you query by the ID of the Job object, you see whether the file share is updated successfully. In case of a failure, troubleshoot the failure and run the API again. On successful creation, query the file share to see the modified object:

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

View the details of the file share in the output.

```
"assigned_performance_service_level": {
        "key": "1251e51b-069f-11ea-980d-fa163e82bbf2",
        "name": "Value",
        "peak_iops": 75,
        "expected_iops": 75,
        "_links": {
            "self": {
                "href": "/api/storage-provider/performance-service-
levels/1251e51b-069f-11ea-980d-fa163e82bbf2"
            }
        }
```

Updating LUNs

While updating a LUN, you can modify the following parameters:

- Capacity or size
- Online or offline setting
- Storage Efficiency Policy
- Performance Service Level
- LUN map

During a single API run, you can update only one parameter.

This procedure describes adding a Performance Service Level to a LUN. You can use the same procedure for updating any other LUN property.

1. Obtain the LUN key of the LUN that you want to update. This API returns details of all the LUNS in your data center. Skip this step if you already know the LUN key.

Category	HTTP verb	Path
Storage Provider	GET	`/storage-provider/luns`

2. View the details of the LUN by running the following API with the LUN key that you obtained.

Category	HTTP verb	Path
Storage Provider	GET	`/storage-provider/luns/{key}`

View the details of the LUN in the output. You can see that there is no Performance Service Level assigned to this LUN.

Sample JSON output

```
"assigned_performance_service_level": {
      "key": null,
      "name": "Unassigned",
      "peak_iops": null,
      "expected_iops": null,
      "_links": {}
    },
```

3. Obtain the key for the Performance Service Level that you want to assign to the LUN.

Category	HTTP verb	Path
Performance Service Levels	GET	`/storage-provider/performance-service-levels`

You can retrieve the details of the system-defined Performance Service Levels by setting the `system_defined` input parameter to `true`. From the output, obtain the key of the Performance Service Level that you want to apply on the LUN.

4. Apply the Performance Service Level on the LUN.

Category	HTTP verb	Path
Storage Provider	PATCH	`/storage-provider/lun/{key}`

In the input, you must specify only the parameter that you want to update, along with the LUN key. In this case it is the key of the Performance Service Level.

Sample cURL

```
curl -X PATCH "https://<hostname>/api/storage-provider/luns/7d5a59b3-
953a-11e8-8857-00a098dcc959" -H "accept: application/json" -H "Content-
Type: application/json" H "Authorization: Basic
<Base64EncodedCredentials>" -d
"{ \"performance_service_level\": { \"key\": \"1251e51b-069f-11ea-980d-
fa163e82bbf2\" }"
```

The JSON output displays a Job object key that you can use to verify the LUN that you updated.

5. View the details of the LUN by running the following API with the LUN key that you obtained.

Category	HTTP verb	Path
Storage Provider	GET	`/storage-provider/luns/{key}`

View the details of the LUN in the output. You can see that the Performance Service Level is assigned to this LUN.

Sample JSON output

```
     "assigned_performance_service_level": {
        "key": "1251e51b-069f-11ea-980d-fa163e82bbf2",
        "name": "Value",
        "peak_iops": 75,
        "expected_iops": 75,
        "_links": {
            "self": {
                "href": "/api/storage-provider/performance-service-
levels/1251e51b-069f-11ea-980d-fa163e82bbf2"
            }
```

Modifying an NFS file share to support CIFS

You can modify an NFS file share to support CIFS protocol. During file share creation, it is possible to specify both access control list (ACL) parameters and export policy rules for the same file share. However, if you want to enable CIFS on the same volume where you created an NFS file share, you can update the ACL parameters on that file share to support CIFS.

Before you begin

1. An NFS file share must have been created with only the export policy details. For information, see *Managing file shares* and *Modifying storage workloads*.

2. You must have the file share key to run this operation. For information about viewing file share details and retrieving the file share key by using the Job ID, see *Provisioning CIFS and NFS file shares*.

About this task

This is applicable for an NFS file share that you created by adding only export policy rules and not ACL parameters. You modify the NFS file share to include the ACL parameters.

Steps

1. On the NFS file share, perform a `PATCH` operation with the ACL details for allowing CIFS access.

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

Sample cURL

Based on the access privileges you assign to the user group, as displayed in the following sample, an ACL is created and assigned to the file share.

```
{
  "access_control": {
    "acl": [
      {
        "permission": "read",
        "user_or_group": "everyone"
      }
    ],
    "active_directory_mapping": {
      "key": "3b648c1b-d965-03b7-20da-61b791a6263c"
    }
```

Sample JSON output

The operation returns the Job ID of the Job that runs the update.

2. Verify whether the parameters have been added correctly by querying the file share details for the same file share.

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

Sample JSON output

```
"access_control": {
        "acl": [
            {
                "user_or_group": "everyone",
                "permission": "read"
            }
        ],
        "export_policy": {
            "id": 1460288880641,
            "key": "7d5a59b3-953a-11e8-8857-
00a098dcc959:type=export_policy,uuid=1460288880641",
            "name": "default",
            "rules": [
                {
                    "anonymous_user": "65534",
                    "clients": [
                        {
                            "match": "0.0.0.0/0"
                        }
                    ],
                    "index": 1,
                    "protocols": [
                        "nfs3",
                        "nfs4"
                    ],
                    "ro_rule": [
                        "sys"
                    ],
                    "rw_rule": [
                        "sys"
                    ],
                    "superuser": [
                        "none"
                    ]
                },
                {
                    "anonymous_user": "65534",
                    "clients": [
                        {
                            "match": "0.0.0.0/0"
                        }
                    ],
                    "index": 2,
                    "protocols": [
                        "cifs"
                    ],
```

```
                    "ro_rule": [
                        "ntlm"
                    ],
                    "rw_rule": [
                        "ntlm"
                    ],
                    "superuser": [
                        "none"
                    ]
                }
            ],
            "_links": {
                "self": {
                    "href": "/api/datacenter/protocols/nfs/export-
policies/7d5a59b3-953a-11e8-8857-
00a098dcc959:type=export_policy,uuid=1460288880641"
                }
            }
        }
    },
    "_links": {
        "self": {
            "href": "/api/storage-provider/file-shares/7d5a59b3-953a-
11e8-8857-00a098dcc959:type=volume,uuid=e581c23a-1037-11ea-ac5a-
00a098dcc6b6"
        }
    }
```


You can see the ACL assigned along with the export policy to the same file share.

Modifying workloads to upgrade QoS to AQoS

Active IQ Unified Manager provides support for both traditional QoS and Adaptive QoS (AQoS) that are associated with the storage workloads managed by Unified Manager.

If you upgrade your ONTAP clusters from 9.1 to 9.3 (for file shares) and 9.4 (for LUNs) you can upgrade the traditional QoS of the respective workloads managed by Unified Manager to AQoS.

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