Manage cluster software

REST API reference

NetApp
February 06, 2026

This PDF was generated from https://docs.netapp.com/us-en/ontap-restapi/cluster_software_endpoint_overview.html on February 06, 2026. Always check docs.netapp.com for the latest.

Table of Contents

Manage cluster software . . . 1
- Manage cluster software . . . 1
  - Overview . . . 1
  - Examples . . . 1
- Retrieve the cluster software profile . . . 28
  - Related ONTAP commands . . . 28
  - Learn more . . . 28
  - Parameters . . . 28
  - Response . . . 29
  - Error . . . 34
  - Definitions . . . 35
- Update the cluster software version . . . 43
  - Required properties . . . 43
  - Recommended optional parameters . . . 43
  - Related ONTAP commands . . . 44
  - Learn more . . . 44
  - Parameters . . . 44
  - Request Body . . . 48
  - Response . . . 52
  - Response . . . 52
  - Error . . . 52
  - Definitions . . . 55
- Upload a software or firmware package located on the local file system . . . 64
  - Related ONTAP commands . . . 64
  - Learn more . . . 64
  - Parameters . . . 64
  - Response . . . 65
  - Response . . . 66
  - Error . . . 66
  - Definitions . . . 67

Manage cluster software

Manage cluster software

Overview

You can use the ONTAP cluster software API to retrieve and display relevant information about a software profile, software packages collection, software history collection, and firmware packages collection. This API retrieves the information about all software packages present in the cluster, or a specific software package, or firmware upgrade status.

You can use the POST request to download a software package/firmware from an HTTP or FTP server. The PATCH request provides the option to upgrade the cluster software version. Select the `validate_only` field to validate the package before triggering the update. Set the `version` field to trigger the installation of the package in the cluster. You can pause, resume, or cancel any ongoing software upgrade by selecting `action`. You can use the DELETE request to remove a specific software package present in the cluster.

Examples

Retrieving software profile information

The following example shows how to retrieve software and firmware profile information. You can check the validation results after selecting the `validate_only` field. Upgrade progress information is available after an upgrade has started.

```
# The API:
/api/cluster/software

# The call:
curl -X GET "https://<mgmt-ip>/api/cluster/software?return_timeout=15" -H
"accept: application/hal+json"

# The response:
{
"validation_results": [
 {
   "update_check": "NFS mounts",
   "status": "warning",
   "issue": {
       "message": "Use NFS hard mounts, if possible.",
     }
   ,
   "action": {
       "message": "Use NFS hard mounts, if possible.",
   }
 }
```

```
],
"version": "9.5.0",
"pending_version": "9.6.0",
"nodes": [
  {
    "node": "Node 1",
    "version": "9.5.0",
    "firmware": {
      "cluster_fw_progress": [
        {
          "job": {
            "uuid": "5a21663c-a9a0-11ea-af9a-005056bb44d7",
            "_links": {
              "self": {
                "href": "/api/cluster/jobs/5a21663c-a9a0-11ea-af9a-
005056bb44d7"
              }
            }
          },
          "zip_file_name": "abc.zip",
          "update_type": "automatic_update",
          "update_state": [
            {
              "worker_node": {
                "name": "Node 1",
                "uuid": "fcd40f70-f531-11eb-b235-005056bb3497"
              },
              "status": "failed",
              "attempts": 3,
              "message": "Cannot open the local staging zip file.",
              "code": 2228325
            },
            {
              "worker_node": {
                "name": "Node 2",
                "uuid": "fcd40f70-f531-11eb-b235-005056bb3498"
              },
              "status": "complete",
              "attempts": 3,
              "message": "Success",
              "code": 0
            }
          ]
        },
        {
          "job": {
```

```
            "uuid": "5a21663c-a9a0-11ea-af9a-005056bb44d7",
            "_links": {
              "self": {
                "href": "/api/cluster/jobs/5a21663c-a9a0-11ea-af9a-
005056bb44d7"
              }
            }
          },
          "zip_file_name": "xyz.zip",
          "update_type": "manual_update",
          "update_state": [
            {
              "worker_node": {
                "name": "Node 1",
                "uuid": "fcd40f70-f531-11eb-b235-005056bb3497"
              },
              "status": "failed",
              "attempts": 3,
              "message": "Cannot open the local staging zip file.",
              "code": 2228325
            },
            {
              "worker_node": {
                "name": "Node 2",
                "uuid": "fcd40f70-f531-11eb-b235-005056bb3498"
              },
              "status": "complete",
              "attempts": 3,
              "message": "Success",
              "code": 0
            }
          ]
        }
      ],
      "disk": {
        "num_waiting_download": 0,
        "total_completion_estimate": 0,
        "average_duration_per_disk": 120,
        "update_status": "idle"
      },
      "shelf": {
        "update_status": "idle",
        "in_progress_count": 2
      },
      "dqp": {
        "revision": "20200117",
```

```
        "version": "3.17",
        "file_name": "qual_devices_v2",
        "record_count": {
          "drive": 680,
          "alias": 200,
          "device": 29,
          "system": 3
        }
      },
      "sp_bmc": {
        "fw_type": "SP",
        "image": " primary",
        "status": "installed",
        "is_current": true,
        "running_version": "1.2.3.4",
        "autoupdate": false,
        "last_update_status": "passed",
        "start_time": "2018-05-21T09:53:04+05:30",
        "percent_done": 100,
        "end_time": "2018-05-21T09:53:04+05:30",
        "in_progress": false
      }
    }
  }
],
"metrocluster": {
  "progress_summary": {
          "message": "Update paused by user"
   },
  "progress_details": {
          "message": "Installing software image on cluster \"sti70-vsim-
ucs165n_siteA\"."
   },
  "clusters": [
    {
      "name": "sti70-vsim-ucs165n_siteA",
      "uuid": "720f046c-4b13-11e9-9c34-005056ac5626",
      "estimated_duration": 3480,
      "elapsed_duration": 0,
      "state": "waiting"
    },
  ]
},
"state": "in_progress",
"start_time": "2018-05-21T09:53:04+05:30",
"end_time": "2018-05-21T11:53:04+05:30",
```

```
"estimated_time": 5220,
"elapsed_time": 2140,
"update_details": [
  {
    "phase": "Data ONTAP updates",
    "state": "in_progress",
    "estimated_duration": 4620,
    "elapsed_duration": 29,
    "node": {
      "name": "sti70-vsim-ucs165n"
    }
  }
],
"status_details": [
  {
    "name": "do-download-job",
    "state": "completed",
    "issue": {
            "message": "Image update complete",
            "code": 0
     },
    "start_time": "2018-05-21T09:53:04+05:30",
    "end_time": "2018-05-21T11:53:04+05:30",
    "node": {
      "name": "sti70-vsim-ucs165n"
    }
  }
],
"_links": {
  "self": {
    "href": "/api/cluster/software/"
  }
}
}
```

Upgrading the software version

The following example shows how to upgrade cluster software. Set the `version` field to trigger the installation of the package. You can select the `validate_only` field to validate the package before the installation starts. Setting `skip_warning` as `true` ignores the validation warning before the installation starts. Setting the `action` field performs a `pause`, `resume`, or `cancel' operation on an ongoing upgrade. An upgrade can only be resumed if it is in the paused state. Setting` stabilize_minutes `allows each node a specified amount of time to stabilize after a reboot; the default is 8 minutes. If` show_validation_details` is set to "true", all validation details will be shown in the output.

You can start the upgrade process at the cluster level. There are no options available to start the upgrade for a specific node or HA pair.

1. Validating the package and verifying the validation results

The following example shows how to validate a cluster software package. You must validate the package before the software upgrade. Set the `validate_only` field to `true` to start the validation. You can check for validation results in the GET /cluster/software endpoint.

```
# The API:
/api/cluster/software

# The call:
curl -X PATCH "https://<mgmt_ip>/api/cluster/software?validate_only=true"
-H "accept: application/json" -H "Content-Type: application/hal+json" -d
'{ "version": "9.5.0"}'

# The response:
{
"job": {
  "uuid": "f587d316-5feb-11e8-b0e0-005056956dfc",
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/f587d316-5feb-11e8-b0e0-005056956dfc"
    }
  }
}
}
```

The call to validate the software cluster version returns the job UUID, including a HAL link to retrieve details about the job. The job object includes a `state` field and a message to indicate the progress of the job. When the job is complete and the application is fully created, the message indicates success and the `state` field of the job is set to `success`.

```
# The API:
/api/cluster/jobs/{uuid}

# The call:
curl -X GET "https://<mgmt-ip>/api/cluster/jobs/f587d316-5feb-11e8-b0e0-
005056956dfc" -H "accept: application/hal+json"

# The response:
{
"uuid": "f587d316-5feb-11e8-b0e0-005056956dfc",
"description": "PATCH /api/cluster/software",
"state": "success",
"message": "success",
"code": 0,
"_links": {
  "self": {
    "href": "/api/cluster/jobs/f587d316-5feb-11e8-b0e0-005056956dfc"
  }
}
}
```

You can check for validation results in the GET /cluster/software endpoint. The following example shows how to check the validation warnings and errors after setting the `validate_only` field to `true`.

```
# The API:
/api/cluster/software

# The call:
curl -X GET "https://<mgmt-ip>/api/cluster/software" -H "accept:
application/hal+json"

# The response:
{
"version": "9.7.0",
"validation_results": [
  {
    "update_check": "High Availability status",
    "status": "error",
    "issue": {
      "message": "Cluster HA is not configured in the cluster. Storage
failover is not enabled on node \"node1\", \"node2\".",
    },
    "action": {
```

```
      "message": "Check cluster HA configuration. Check storage failover
status."
    }
  },
  {
    "update_check": "Manual checks",
    "status": "warning",
    "issue" : {
      "message": "Manual validation checks need to be performed. Refer to
the Upgrade Advisor Plan or the \"What should I verify before I upgrade
with or without Upgrade Advisor\" section in the \"Upgrade ONTAP\"
documentation for the remaining validation checks that need to be
performed before update. Failing to do so can result in an update failure
or an I/O disruption."
    },
    "action": {
      "message": "Refer to the Upgrade Advisor Plan or the \"What should I
verify before I upgrade with or without Upgrade Advisor\" section in the
\"Upgrade ONTAP\" documentation for the remaining validation checks that
need to be performed before update."
    }
  }
],
"nodes": [
  {
    "node": "sti70-vsim-ucs165n",
    "version": "9.5.0",
    "firmware": {
      "cluster_fw_progress": [
        {
          "job": {
            "uuid": "5a21663c-a9a0-11ea-af9a-005056bb44d7",
            "_links": {
              "self": {
                "href": "/api/cluster/jobs/5a21663c-a9a0-11ea-af9a-
005056bb44d7"
              }
            }
          },
          "zip_file_name": "abc.zip",
          "update_type": "automatic_update",
          "update_state": [
            {
              "worker_node": {
                "name": "Node 1",
                "uuid": "fcd40f70-f531-11eb-b235-005056bb3498"
```

```
            },
            "status": "failed",
            "attempts": 3,
            "message": "Cannot open the local staging zip file.",
            "code": 2228325
          },
          {
            "worker_node": {
              "name": "Node 2",
              "uuid": "fcd40f70-f531-11eb-b235-005056bb3498"
            },
            "status": "complete",
            "attempts": 3,
            "message": "Success",
            "code": 0
          }
        ]
      },
      {
        "job": {
          "uuid": "5a21663c-a9a0-11ea-af9a-005056bb44d7",
          "_links": {
            "self": {
              "href": "/api/cluster/jobs/5a21663c-a9a0-11ea-af9a-
005056bb44d7"
            }
          }
        },
        "zip_file_name": "xyz.zip",
        "update_type": "automatic_update",
        "update_state": [
          {
            "worker_node": {
              "name": "Node 1",
              "uuid": "fcd40f70-f531-11eb-b235-005056bb3498"
            },
            "status": "failed",
            "attempts": 3,
            "message": "Cannot open the local staging zip file.",
            "code": 2228325
          },
          {
            "worker_node": {
              "name": "Node 2",
              "uuid": "fcd40f70-f531-11eb-b235-005056bb3498"
            },
```

```
              "status": "complete",
              "attempts": 3,
              "message": "Success",
              "code": 0
            }
          ]
        }
      ],
      "disk": {
        "num_waiting_download": 0,
        "total_completion_estimate": 0,
        "average_duration_per_disk": 120,
        "update_status": "idle"
      },
      "shelf": {
        "update_status": "idle",
        "in_progress_count": 2
      },
      "dqp": {
        "revision": "20200117",
        "version": "3.17",
        "file_name": "qual_devices_v2",
        "record_count": {
          "drive": 680,
          "alias": 200,
          "device": 29,
          "system": 3
        }
      },
      "sp_bmc": {
        "fw_type": "SP",
        "image": " primary",
        "status": "installed",
        "is_current": true,
        "running_version": "1.2.3.4",
        "autoupdate": false,
        "last_update_status": "passed",
        "start_time": "2018-05-21T09:53:04+05:30",
        "percent_done": 100,
        "end_time": "2018-05-21T09:53:04+05:30",
        "in_progress": false
      }
    }
  }
],
"state": "failed",
```

```
"elapsed_duration": 56,
"estimated_duration": 600,
"_links": {
  "self": {
    "href": "/api/cluster/software"
  }
}
}
```

2. Updating the cluster

The following example shows how to initiate a cluster software upgrade. You must validate the package before the software upgrade starts. Set the `skip_warnings` field to `true` to skip validation warnings and start the software package upgrade. You can specify the `stabilize_minutes` value between 1 to 60 minutes. Setting `stabilize_minutes` allows each node a specified amount of time to stabilize after a reboot; the default is 8 minutes. If the value of `show_validation_details` is set to "true", then all validation details will be shown in the output. By default, on non-MetroCluster configurations, nodes at the target release will be skipped over. However, this can be disabled by setting `skip_nodes_at_target_version` to `false`.

it is invalid to set `skip_nodes_at_target_version` to `true` in pause, resume, or cancel actions. `skip_nodes_at_target_version` cannot be set to `true` in MetroCluster configurations.

```
# The API:
/api/cluster/software

# The call:
curl -X PATCH "https://<mgmt_ip>/api/cluster/software?skip_warnings=true"
-H "accept: application/json" -H "Content-Type: application/hal+json" -d
'{ "version": "9.5.0"}'

# The response:
{
"job": {
  "uuid": "f587d316-5feb-11e8-b0e0-005056956dfc",
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/f587d316-5feb-11e8-b0e0-005056956dfc"
    }
  }
}
}
```

The call to update the software cluster version returns the job UUID, including a HAL link to retrieve details about the job. The job object includes a `state` field and a message to indicate the progress of the job. When the job is complete and the application is fully created, the message indicates success and the `state` field of the job is set to `success`.

```
# The API:
/api/cluster/jobs/{uuid}

# The call:
curl -X GET "https://<mgmt-ip>/api/cluster/jobs/f587d316-5feb-11e8-b0e0-
005056956dfc" -H "accept: application/hal+json"

# The response:
{
"uuid": "f587d316-5feb-11e8-b0e0-005056956dfc",
"description": "PATCH /api/cluster/software",
"state": "success",
"message": "success",
"code": 0,
"_links": {
  "self": {
    "href": "/api/cluster/jobs/f587d316-5feb-11e8-b0e0-005056956dfc"
  }
}
}
```

You can check the update progress information in the GET /cluster/software endpoint. The following example shows how to check the progress of an update after setting the `skip_warnings` field to `true`. Each node's object also includes information about the firmware update status on the node.

```
# The API:
/api/cluster/software

# The call:
curl -X GET "https://<mgmt-ip>/api/cluster/software" -H "accept:
application/hal+json"

# The response:
{
"version": "9.7.0",
"validation_results": [
  {
    "update_check": "Manual checks",
    "status": "warning",
```

```
    "issue" : {
      "message": "Manual validation checks need to be performed. Refer to
the Upgrade Advisor Plan or the \"What should I verify before I upgrade
with or without Upgrade Advisor\" section in the \"Upgrade ONTAP\"
documentation for the remaining validation checks that need to be
performed before update. Failing to do so can result in an update failure
or an I/O disruption."
    },
    "action": {
      "message": "Refer to the Upgrade Advisor Plan or the \"What should I
verify before I upgrade with or without Upgrade Advisor\" section in the
\"Upgrade ONTAP\" documentation for the remaining validation checks that
need to be performed before update."
    }
  }
],
"nodes": [
  {
    "node": "sti70-vsim-ucs165n",
    "version": "9.5.0",
    "firmware": {
      "cluster_fw_progress": [
        {
          "job": {
            "uuid": "5a21663c-a9a0-11ea-af9a-005056bb44d7",
            "_links": {
              "self": {
                "href": "/api/cluster/jobs/5a21663c-a9a0-11ea-af9a-
005056bb44d7"
              }
            }
          },
          "zip_file_name": "abc.zip",
          "update_type": "automated_update",
          "update_state": [
            {
              "worker_node": {
                "name": "Node 3",
                "uuid": "fcd40f70-f531-11eb-b235-005056bb3497"
              },
              "status": "failed",
              "attempts": 3,
              "message": "Cannot open the local staging zip file.",
              "code": 2228325
            },
            {
```

```
              "worker_node": {
                "name": "Node 4",
                "uuid": "fcd40f70-f531-11eb-b235-005056bb3498"
              },
              "status": "complete",
              "attempts": 3,
              "message": "Success",
              "code": 0
            }
          ]
        },
        {
          "job": {
            "uuid": "5a21663c-a9a0-11ea-af9a-005056bb44d7",
            "_links": {
              "self": {
                "href": "/api/cluster/jobs/5a21663c-a9a0-11ea-af9a-
005056bb44d7"
              }
            }
          },
          "zip_file_name": "xyz.zip",
          "update_type": "automated_update",
          "update_state": [
            {
              "worker_node": {
                "name": "Node 1",
                "uuid": "fcd40f70-f531-11eb-b235-005056bb3497"
              },
              "status": "failed",
              "attempts": 3,
              "message": "Cannot open the local staging zip file.",
              "code": 2228325
            },
            {
              "worker_node": {
                "name": "Node 2",
                "uuid": "fcd40f70-f531-11eb-b235-005056bb3497"
              },
              "status": "complete",
              "attempts": 3,
              "message": "Success",
              "code": 0
            }
          ]
        }
```

```
      ],
      "disk": {
        "num_waiting_download": 0,
        "total_completion_estimate": 0,
        "average_duration_per_disk": 120,
        "update_status": "idle"
      },
      "shelf": {
        "update_status": "idle",
        "in_progress_count": 2
      },
      "dqp": {
        "revision": "20200117",
        "version": "3.17",
        "file_name": "qual_devices_v2",
        "record_count": {
          "drive": 680,
          "alias": 200,
          "device": 29,
          "system": 3
        }
      },
      "sp_bmc": {
        "fw_type": "SP",
        "image": " primary",
        "status": "installed",
        "is_current": true,
        "running_version": "1.2.3.4",
        "autoupdate": false,
        "last_update_status": "passed",
        "start_time": "2018-05-21T09:53:04+05:30",
        "percent_done": 100,
        "end_time": "2018-05-21T09:53:04+05:30",
        "in_progress": false
      }
    }
  }
],
"pending_version": "9.7.0",
"state": "in_progress",
"elapsed_duration": 63,
"estimated_duration": 5220,
"status_details": [
  {
    "name": "do-download-job",
    "status": "running",
```

```
    "issue": {
            "message": "Installing software image.",
            "code": 10551400
     },
    "start_time": "2019-01-14T23:12:14+05:30",
    "end_time": "2019-01-14T23:12:14+05:30",
    "node": {
      "name": "node1"
    }
  },
  {
    "name": "do-download-job",
    "status": "running",
    "issue": {
            "message": "Installing software image.",
            "code": 10551400
    },
    "start_time": "2019-01-14T23:12:14+05:30",
    "end_time": "2019-01-14T23:12:14+05:30",
    "node": {
      "name": "node2"
    }
  }
],
"update_details": [
  {
    "phase": "Data ONTAP updates",
    "status": "in-progress",
    "estimated_duration": 4620,
    "elapsed_duration": 10,
    "node": {
      "name": "node1"
    }
  },
  {
    "phase": "Data ONTAP updates",
    "status": "in-progress",
    "estimated_duration": 4620,
    "elapsed_duration": 10,
    "node": {
      "name": "node2"
    }
  }
],
"_links": {
  "self": {
```

```
    "href": "/api/cluster/software"
  }
}
}
```

In the case of a post update check failure, the details are available under the heading "post_update_checks" in the GET /cluster/software endpoint. The following example shows how to check the progress of an update after a post update check has failed. Each node's object also includes information about the firmware update status on the node.

```
# The API:
/api/cluster/software

# The call:
curl -X GET "https://<mgmt-ip>/api/cluster/software" -H "accept:
application/hal+json"

# The response:
{
"version": "9.7.0",
"validation_results": [
  {
    "update_check": "Manual checks",
    "status": "warning",
    "issue" : {
      "message": "Manual validation checks need to be performed. Refer to
the Upgrade Advisor Plan or the \"What should I verify before I upgrade
with or without Upgrade Advisor\" section in the \"Upgrade ONTAP\"
documentation for the remaining validation checks that need to be
performed before update. Failing to do so can result in an update failure
or an I/O disruption."
    },
    "action": {
      "message": "Refer to the Upgrade Advisor Plan or the \"What should I
verify before I upgrade with or without Upgrade Advisor\" section in the
\"Upgrade ONTAP\" documentation for the remaining validation checks that
need to be performed before update."
    }
  }
],
"nodes": [
  {
    "node": "sti70-vsim-ucs165n",
    "version": "9.5.0",
```

```
    "firmware": {
      "cluster_fw_progress": [
        {
          "job": {
            "uuid": "5a21663c-a9a0-11ea-af9a-005056bb44d7",
            "_links": {
              "self": {
                "href": "/api/cluster/jobs/5a21663c-a9a0-11ea-af9a-
005056bb44d7"
              }
            }
          },
          "zip_file_name": "abc.zip",
          "update_type": "automated_update",
          "update_state": [
            {
              "worker_node": {
                "name": "Node 1",
                "uuid": "fcd40f70-f531-11eb-b235-005056bb3497"
              },
              "status": "working",
              "attempts": 3,
              "message": "<message catalog text>",
              "code": 3
            },
            {
              "worker_node": {
                "name": "Node 2",
                "uuid": "fcd40f70-f531-11eb-b235-005056bb3497"
              },
              "status": "completed",
              "attempts": 3,
              "message": "Error message",
              "code": 0
            }
          ]
        },
        {
          "job": {
            "uuid": "5a21663c-a9a0-11ea-af9a-005056bb44d7",
            "_links": {
              "self": {
                "href": "/api/cluster/jobs/5a21663c-a9a0-11ea-af9a-
005056bb44d7"
              }
            }
```

```
        },
        "zip_file_name": "xyz.zip",
        "update_type": "automated_update",
        "update_state": [
          {
            "worker_node": {
              "name": "Node 1",
              "uuid": "fcd40f70-f531-11eb-b235-005056bb3497"
            },
            "status": "completed",
            "attempts": 1,
            "message": "Error message",
            "code": 0
          },
          {
            "worker_node": {
              "name": "Node 2",
              "uuid": "fcd40f70-f531-11eb-b235-005056bb3497"
            },
            "status": "completed",
            "attempts": "3",
            "message": "Error message",
            "code": 0
          }
        ]
      }
    ],
    "disk": {
      "num_waiting_download": 0,
      "total_completion_estimate": 0,
      "average_duration_per_disk": 120,
      "update_status": "idle"
    },
    "shelf": {
      "update_status": "idle",
      "in_progress_count": 2
    },
    "dqp": {
      "revision": "20200117",
      "version": "3.17",
      "file_name": "qual_devices_v2",
      "record_count": {
        "drive": 680,
        "alias": 200,
        "device": 29,
        "system": 3
```

```
        }
      },
      "sp_bmc": {
        "fw_type": "SP",
        "image": " primary",
        "status": "installed",
        "is_current": "true",
        "running_version": "1.2.3.4",
        "autoupdate": "false",
        "last_update_status": "passed",
        "start_time": "2018-05-21T09:53:04+05:30",
        "percent_done": 100,
        "end_time": "2018-05-21T09:53:04+05:30",
        "in_progress": "yes"
      }
    }
  }
],
"pending_version": "9.7.0",
"state": "in_progress",
"elapsed_duration": 63,
"estimated_duration": 5220,
"status_details": [
  {
    "name": "do-download-job",
    "status": "completed",
    "issue": {
            "message": "Image update complete.",
            "code": 0
     },
    "start_time": "2019-01-14T23:12:14+05:30",
    "end_time": "2019-01-14T23:12:14+05:30",
    "node": {
      "name": "node1"
    }
  },
  {
    "name": "do-download-job",
    "status": "completed",
    "issue": {
            "message": "Image update complete.",
            "code": 0
    },
    "start_time": "2019-01-14T23:12:14+05:30",
    "end_time": "2019-01-14T23:12:14+05:30",
    "node": {
```

```
      "name": "node2"
    }
  }
],
"update_details": [
  {
    "phase": "Data ONTAP updates",
    "status": "completed",
    "estimated_duration": 4620,
    "elapsed_duration": 3120,
    "node": {
      "name": "node1"
    }
  },
  {
    "phase": "Data ONTAP updates",
    "status": "completed",
    "estimated_duration": 4620,
    "elapsed_duration": 3210,
    "node": {
      "name": "node2"
    }
  },
  {
    "phase": "Post-update checks",
    "status": "paused_on_error",
    "estimated_duration": 600,
    "elapsed_duration": 10,
    "node": {
      "name": "node2"
    }
  }
],
"post_update_checks": [
  {
    "update_check": "Aggregate Health Status",
    "status": "error",
    "issue": {
      "message": "Not all aggregates are online"
    },
    "action": {
      "message": "Ensure all aggregates are online."
    }
  },
  {
    "update_check": "HA Health Status",
```

```
    "status": "error",
    "issue": {
      "message": "Storage failover is not enabled on nodes of the
cluster."
    },
    "action": {
      "message": "Ensure storage failover is enabled on all nodes of the
cluster."
    }
  }
],
"_links": {
  "self": {
    "href": "/api/cluster/software"
  }
}
}
```

3. Pausing, resuming or canceling an upgrade

The following example shows how to `pause` an ongoing cluster software package upgrade. Set the `action` field to `pause`, `resume`, or `cancel` to pause, resume or cancel the upgrade respectively. Not all update operations support these actions. An update can only be resumed if it is in the paused state.

```
# The API:
/api/cluster/software

# The call:
curl -X PATCH "https://<mgmt_ip>/api/cluster/software?action=pause" -H
"accept: application/json" -H "Content-Type: application/hal+json" -d '{
"version": "9.5.0"}'

# The response:
{
"job": {
  "uuid": "f587d316-5feb-11e8-b0e0-005056956dfc",
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/f587d316-5feb-11e8-b0e0-005056956dfc"
    }
  }
}
}
```

The call to update the software cluster version and/or firmware version returns the job UUID, including a HAL link to retrieve details about the job. The job object includes a `state` field and a message to indicate the progress of the job. When the job is complete and the application is fully created, the message indicates success and the `state` field of the job is set to `success`.

```
# The API:
/api/cluster/jobs/{uuid}

# The call:
curl -X GET "https://<mgmt-ip>/api/cluster/jobs/f587d316-5feb-11e8-b0e0-
005056956dfc" -H "accept: application/hal+json"

# The response:
{
"uuid": "f587d316-5feb-11e8-b0e0-005056956dfc",
"description": "PATCH /api/cluster/software",
"state": "success",
"message": "success",
"code": 0,
"_links": {
  "self": {
    "href": "/api/cluster/jobs/f587d316-5feb-11e8-b0e0-005056956dfc"
  }
}
}
```

You can check the progress of the upgrade in the GET /cluster/software endpoint. The following example shows how to check the progress of the pause upgrade state after setting the `action` field to `pause`.

```
# The API:
/api/cluster/software

# The call:
curl -X GET "https://<mgmt-ip>/api/cluster/software" -H "accept:
application/hal+json"

# The response:
{
"version": "9.7.0",
"validation_results": [
  {
    "update_check": "Manual checks",
    "status": "warning",
    "issue" : {
```

```
      "message": "Manual validation checks need to be performed. Refer to
the Upgrade Advisor Plan or the \"What should I verify before I upgrade
with or without Upgrade Advisor\" section in the \"Upgrade ONTAP\"
documentation for the remaining validation checks that need to be
performed before update. Failing to do so can result in an update failure
or an I/O disruption."
    },
    "action": {
      "message": "Refer to the Upgrade Advisor Plan or the \"What should I
verify before I upgrade with or without Upgrade Advisor\" section in the
\"Upgrade ONTAP\" documentation for the remaining validation checks that
need to be performed before update."
    }
  }
],
"nodes": [
  {
    "node": "sti70-vsim-ucs165n",
    "version": "9.5.0",
    "firmware": {
      "cluster_fw_progress": [
        {
          "job": {
            "uuid": "5a21663c-a9a0-11ea-af9a-005056bb44d7",
            "_links": {
              "self": {
                "href": "/api/cluster/jobs/5a21663c-a9a0-11ea-af9a-
005056bb44d7"
              }
            }
          },
          "zip_file_name": "abc.zip",
          "update_type": "automated_update",
          "update_state": [
            {
              "worker_node": {
                "name": "Node 1",
                "uuid": "fcd40f70-f531-11eb-b235-005056bb3497"
              },
              "status": "failed",
              "attempts": 3,
              "message": "Cannot open the local staging zip file.",
              "code": 2228325
            },
            {
              "status": "complete",
```

```
              "attempts": 3,
              "message": "Success",
              "code": 0
            }
          ]
        },
        {
          "job": {
            "uuid": "5a21663c-a9a0-11ea-af9a-005056bb44d7",
            "_links": {
              "self": {
                "href": "/api/cluster/jobs/5a21663c-a9a0-11ea-af9a-
005056bb44d7"
              }
            }
          },
          "zip_file_name": "xyz.zip",
          "update_type": "automated_update",
          "update_state": [
            {
              "worker_node": {
                "name": "Node 1",
                "uuid": "fcd40f70-f531-11eb-b235-005056bb3497"
              },
              "status": "failed",
              "attempts": 3,
              "message": "Cannot open the local staging zip file.",
              "code": 2228325
            },
            {
              "status": "complete",
              "attempts": 3,
              "message": "Success",
              "code": 0
            }
          ]
        }
      ],
      "disk": {
        "num_waiting_download": 0,
        "total_completion_estimate": 0,
        "average_duration_per_disk": 120,
        "update_status": "idle"
      },
      "shelf": {
        "update_status": "idle",
```

```
        "in_progress_count": 2
      },
      "dqp": {
        "revision": "20200117",
        "version": "3.17",
        "file_name": "qual_devices_v2",
        "record_count": {
          "drive": 680,
          "alias": 200,
          "device": 29,
          "system": 3
        }
      },
      "sp_bmc": {
        "fw_type": "SP",
        "image": " primary",
        "status": "installed",
        "is_current": true,
        "running_version": "1.2.3.4",
        "autoupdate": false,
        "last_update_status": "passed",
        "start_time": "2018-05-21T09:53:04+05:30",
        "percent_done": 100,
        "end_time": "2018-05-21T09:53:04+05:30",
        "in_progress": false
      }
    }
  }
],
"pending_version": "9.7.0",
"state": "pause_pending",
"elapsed_duration": 103,
"estimated_duration": 5220,
"status_details": [
  {
    "status": "in-progress",
    "issue": {
            "message": "Installing software image.",
            "code": 10551400
     },
    "start_time": "2019-01-08T02:54:36+05:30",
    "node": {
      "name": "node1"
    }
  },
  {
```

```
    "status": "in-progress",
    "issue": {
            "message": "Installing software image.",
            "code": 10551400
     },
    "start_time": "2019-01-08T02:54:36+05:30",
    "node": {
      "name": "node2"
    }
  }
],
"update_details": [
  {
    "phase": "Pre-update checks",
    "status": "completed",
    "estimated_duration": 600,
    "elapsed_duration": 54,
    "node": {
      "name": "node1"
    }
  },
  {
    "phase": "Data ONTAP updates",
    "status": "pause-pending",
    "estimated_duration": 4620,
    "elapsed_duration": 49,
    "node": {
      "name": "node2"
    }
  },
  {
    "phase": "Data ONTAP updates",
    "status": "pause-pending",
    "estimated_duration": 4620,
    "elapsed_duration": 49
  }
],
"_links": {
  "self": {
    "href": "/api/cluster/software"
  }
}
}
```

Uploading a software/firmware package

The following example shows how to upload a software package.

```
# The API:
/api/cluster/software/upload

# The call:
curl -ku username:password -F "file=@image.tgz" -X POST "https://<mgmt-
ip>/api/cluster/software/upload?return_timeout=0"

# The response:
{
"job": {
"uuid": "12db53fd-8326-11ea-91eb-005056bb16e5",
"_links": {
    "self": {
    "href": "/api/cluster/jobs/12db53fd-8326-11ea-91eb-005056bb16e5"
    }
 }
}
}
```

Retrieve the cluster software profile

GET `/cluster/software`

Introduced In: 9.6

Retrieves the software profile of a cluster.

Related ONTAP commands

- `cluster image show`
- `cluster image show-update-progress`
- `system node image package show`

Learn more

- DOC /cluster/software

Parameters

Name	Type	In	Required	Description
fields	array[string]	query	False	Specify the fields to return.
return_timeout	integer	query	False	The number of seconds to allow the call to execute before returning. When iterating over a collection, the default is 15 seconds. ONTAP returns earlier if either max records or the end of the collection is reached. • Default value: 15 • Max value: 120 • Min value: 0

Response

```
Status: 200, Ok
```

Name	Type	Description
_links	_links	
action	string	User triggered action to apply to the install operation
elapsed_duration	integer	Elapsed time during the upgrade or validation operation
estimated_duration	integer	Overall estimated time for completion of the upgrade or validation operation.
metrocluster	metrocluster	
nodes	array[software_node_reference]	List of nodes, active versions, and firmware update progressions.

Name	Type	Description
pending_version	string	Version being installed on the system. • example: ONTAP_X_1 • readOnly: 1 • Introduced in: 9.6 • x-nullable: true
post_update_checks	array[software_validation_reference]	List of failed post-update checks' warnings, errors, and advice.
state	string	Operational state of the upgrade
status_details	array[software_status_details_reference]	Display status details.
update_details	array[software_update_details_reference]	Display update progress details.
validation_results	array[software_validation_reference]	List of validation warnings, errors, and advice.
version	string	Version of ONTAP installed and currently active on the system. During PATCH, using the 'validate_only' parameter on the request executes pre-checks, but does not perform the full installation. • example: ONTAP_X • Introduced in: 9.6 • x-nullable: true

Example response


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "action": "pause",
  "elapsed_duration": 2140,
  "estimated_duration": 5220,
  "metrocluster": {
    "clusters": [
      {
        "elapsed_duration": 2140,
        "estimated_duration": 3480,
        "name": "cluster_A",
        "state": "in_progress"
      }
    ],
    "progress_details": {
      "message": "Switchover in progress"
    },
    "progress_summary": {
      "message": "MetroCluster updated successfully."
    }
  },
  "nodes": [
    {
      "firmware": {
        "cluster_fw_progress": [
          {
            "job": {
              "_links": {
                "self": {
                  "href": "/api/resourcelink"
                }
              },
              "uuid": "string"
            },
            "update_state": [
              {
                "attempts": 3,
                "code": 2228325,
                "message": "Cannot open local staging ZIP file
disk_firmware.zip",
```

```
            "status": "string",
            "worker_node": {
              "_links": {
                "self": {
                  "href": "/api/resourcelink"
                }
              },
              "name": "node1",
              "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
            }
          }
        ],
        "update_type": "string",
        "zip_file_name": "disk_firmware.zip"
      }
    ],
    "disk": {
      "average_duration_per_disk": 120,
      "num_waiting_download": 0,
      "total_completion_estimate": 0,
      "update_status": "running"
    },
    "dqp": {
      "file_name": "qual_devices_v3",
      "record_count": {
        "alias": 200,
        "device": 29,
        "drive": 680,
        "system": 3
      },
      "revision": "20200117",
      "version": "3.18"
    },
    "shelf": {
      "in_progress_count": 2,
      "update_status": "running"
    },
    "sp_bmc": {
      "autoupdate": "",
      "end_time": "2020-05-17 20:00:00 +0000",
      "fw_type": "SP",
      "image": "primary",
      "is_current": 1,
      "last_update_state": "passed",
      "percent_done": 100,
      "running_version": "1.2.3.4",
```

```
          "start_time": "2020-05-17 20:00:00 +0000",
          "state": "installed"
        },
        "system_firmware": {
          "boot_media_bios_version": "13.16",
          "boot_media_loader_version": "8.2.0",
          "install_pending": "",
          "running_bios_version": "13.16",
          "running_loader_version": "8.2.0"
        }
      },
      "model": "AFF-A800",
      "name": "node1",
      "software_images": [
        {
          "package": "image.tgz"
        }
      ],
      "version": "ONTAP_X"
    }
  ],
  "pending_version": "ONTAP_X_1",
  "post_update_checks": [
    {
      "action": {
        "message": "Use NFS hard mounts, if possible."
      },
      "issue": {
        "message": "Cluster HA is not configured in the cluster."
      },
      "status": "warning",
      "update_check": "nfs_mounts"
    }
  ],
  "state": "completed",
  "status_details": [
    {
      "action": {
        "message": "string"
      },
      "end_time": "2019-02-02 19:00:00 +0000",
      "issue": {
        "code": 10551399,
        "message": "Image update complete"
      },
      "name": "initialize",
```

```
      "node": {
        "name": "node1"
      },
      "start_time": "2019-02-02 19:00:00 +0000",
      "state": "failed"
    }
  ],
  "update_details": [
    {
      "elapsed_duration": 2100,
      "estimated_duration": 4620,
      "node": {
        "name": "node1"
      },
      "phase": "Post-update checks",
      "state": "failed"
    }
  ],
  "validation_results": [
    {
      "action": {
        "message": "Use NFS hard mounts, if possible."
      },
      "issue": {
        "message": "Cluster HA is not configured in the cluster."
      },
      "status": "warning",
      "update_check": "nfs_mounts"
    }
  ],
  "version": "ONTAP_X"
}
```


Error

```
Status: Default
```

ONTAP Error Response Codes

Error Code	Description
1048576	Error initializing software image information.
1048577	Software image information not initialized.

Also see the table of common errors in the Response body overview section of this documentation.

Name	Type	Description
error	returned_error	

Example error

```
{
  "error": {
    "arguments": [
      {
        "code": "string",
        "message": "string"
      }
    ],
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

software_mcc_reference

Name	Type	Description
elapsed_duration	integer	Elapsed duration of update time (in seconds) of MetroCluster.
estimated_duration	integer	Estimated duration of update time (in seconds) of MetroCluster.
name	string	Name of the site in MetroCluster.
state		Upgrade state of MetroCluster.

progress_details

Name	Type	Description
message	string	MetroCluster update progress details.

progress_summary

Name	Type	Description
message	string	MetroCluster update progress summary.

metrocluster

Name	Type	Description
clusters	array[software_mcc_reference]	List of MetroCluster sites, statuses, and active ONTAP versions. • readOnly: 1 • Introduced in: 9.6
progress_details	progress_details	
progress_summary	progress_summary	

job_link

Name	Type	Description
_links	_links	
uuid	string	The UUID of the asynchronous job that is triggered by a POST, PATCH, or DELETE operation.

worker_node

Name	Type	Description
_links	_links	
name	string	
uuid	string	

firmware_update_progress_state

Name	Type	Description
attempts	integer	
code	integer	Code corresponding to the status message.
message	string	Error message returned when a cluster firmware update job fails.
status	string	
worker_node	worker_node	

firmware_update_progress

Name	Type	Description
job	job_link	

Name	Type	Description
update_state	array[firmware_update_progress_state]	
update_type	string	Specifies the type of update.
zip_file_name	string	

firmware_disk

Name	Type	Description
average_duration_per_disk	integer	Average firmware update duration per disk (in seconds).
num_waiting_download	integer	The number of disks waiting to download the firmware update.
total_completion_estimate	integer	Estimated firmware update duration to completion (in minutes).
update_status		Status of the background disk firmware update.

firmware_dqp_record_count

Name	Type	Description
alias	integer	Alias record count
device	integer	Device record count
drive	integer	Drive record count
system	integer	System record count

firmware_dqp

Name	Type	Description
file_name	string	Firmware file name
record_count	firmware_dqp_record_count	
revision	string	Firmware revision
version	string	Firmware version

firmware_shelf

Name	Type	Description
in_progress_count	integer	
update_status		Status of the shelf firmware update.

firmware_sp_bmc

Name	Type	Description
autoupdate	boolean	
end_time	string	
fw_type	string	
image	string	
in_progress	boolean	
is_current	boolean	
last_update_state	string	
percent_done	integer	
running_version	string	
start_time	string	
state	string	

system_firmware

Name	Type	Description
boot_media_bios_version	string	BIOS version that is currently staged on the boot media of the node.
boot_media_loader_version	string	LOADER version that is currently staged on the boot media of the node.
install_pending	boolean	Flag that indicates if the system firmware install is pending. A true value suggests that a node reboot or cluster upgrade is required for completing installation.
running_bios_version	string	BIOS version that is currently installed on the node.

Name	Type	Description
running_loader_version	string	LOADER version that is currently installed on the node.

firmware

Name	Type	Description
cluster_fw_progress	array[firmware_update_progress]	
disk	firmware_disk	
dqp	firmware_dqp	
shelf	firmware_shelf	
sp_bmc	firmware_sp_bmc	
system_firmware	system_firmware	

software_images

Name	Type	Description
package	string	Package file name.

software_node_reference

Name	Type	Description
firmware	firmware	
model	string	Model number of the node.
name	string	Name of the node.
software_images	array[software_images]	List of software image information.
version	string	ONTAP version of the node. • example: ONTAP_X • readOnly: 1 • Introduced in: 9.6 • x-nullable: true

action

Name	Type	Description
message	string	Specifies the corrective action to take to resolve an error.

issue

Name	Type	Description
message	string	Details of the error or warning encountered by the update checks.

software_validation_reference

Name	Type	Description
action	action	
issue	issue	
status	string	Status of the update check.
update_check	string	Name of the update check.

action

Name	Type	Description
code	integer	Error code corresponding the status error
message	string	Corrective action to be taken to resolve the status error.

issue

Name	Type	Description
code	integer	Error code corresponding to update status
message	string	Update status details

node

Name	Type	Description
name	string	Name of the node to be retrieved for status details.

software_status_details_reference

Name	Type	Description
action	action	
end_time	string	End time for each status phase.
issue	issue	
name	string	Name of the phase to be retrieved for status details.
node	node	
start_time	string	Start time for each status phase.
state	string	Status of the phase

node

Name	Type	Description
name	string	Name of the node to be retrieved for update details.

software_update_details_reference

Name	Type	Description
elapsed_duration	integer	Elapsed duration for each update phase
estimated_duration	integer	Estimated duration for each update phase
node	node	
phase	string	Phase details
state	string	State of the update phase

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

returned_error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Update the cluster software version

PATCH `/cluster/software`

Introduced In: 9.6

Updates the cluster software version. Important note:

- Setting 'version' triggers the package installation.
- To validate the package for installation but not perform the installation, use the `validate_only` field on the request.

Required properties

- `version` - Software version to be installed on the cluster.

Recommended optional parameters

- `validate_only` - Required to validate a software package before an upgrade.
- `skip_warnings` - Used to skip validation warnings when starting a software upgrade.
- `action` - Used to pause, resume, or cancel an ongoing software upgrade.
- `stabilize_minutes` - Specifies a custom value between 1 to 60 minutes that allows each node a specified amount of time to stabilize after a reboot; the default is 8 minutes.
- `estimate_only` - Estimates the time duration; does not perform any update.
- `nodes_to_update` - Specifies a subset of the cluster's nodes for update.

- `show_validation_details` - If the value is set to true, then all validation details will be shown in the output.
- `skip_nodes_at_target_version` - If the value is set to true, then nodes already at the target version will not be upgraded. Defaults to true in non-MetroCluster configurations. Setting this option to false will force all the selected nodes of the cluster to undergo upgrade.

Related ONTAP commands

- `cluster image validate`
- `cluster image update`
- `cluster image pause-update`
- `cluster image resume-update`
- `cluster image cancel-update`

Learn more

- DOC /cluster/software

Parameters

Name	Type	In	Required	Description
skip_warnings	boolean	query	False	Ignore warnings and proceed with the install.
action	string	query	False	Requests an upgrade to pause, resume, or cancel. Note that not all upgrades support these actions. An upgrade can only be resumed if it is in the paused state. When a request to cancel an upgrade is successful, the upgrade state changes to either `success` or `failure`. • enum: ["pause", "resume", "cancel"]

Name	Type	In	Required	Description
stabilize_minutes	integer	query	False	Sets a custom value between 1 to 60 minutes for the upgrade, allowing each node a specified amount of time to stabilize after a reboot. • Introduced in: 9.8
estimate_only	boolean	query	False	Generates an estimate of the time required for the overall update operation for the specified package. No update is performed when this option is used. The default is false. • Introduced in: 9.9
force_rolling	boolean	query	False	Forces a rolling upgrade on the cluster. This option is not applicable for a single-node cluster and for a two-node MetroCluster. The default is false. • Introduced in: 9.9

Name	Type	In	Required	Description
nodes_to_update	string	query	False	A comma separated list of node names that are to be updated. The nodes must be a part of an HA pair. The default is all nodes. If the nodes_to_update parameter is an empty string, the upgrade errors out and does not proceed. • Introduced in: 9.9
show_validation_details	boolean	query	False	If the value is set to true, then all validation details will be shown in the output. • Introduced in: 9.11

Name	Type	In	Required	Description
skip_nodes_at_target_version	boolean	query	False	Defaults to true in non-MetroCluster configurations. When set to true, nodes already at the target version will not be upgraded. Setting this field to false will force nodes at the target version to undergo upgrade including migrating LIFs, performing takeover/giveback, and rebooting. It's invalid to set this option to true when the action field is set. It's an invalid option until effective cluster version is 9_16_0. • Introduced in: 9.16
pause_after	string	query	False	The pause after specified tasks option. When ANDU is paused user interaction is required to resume the update. The default is none. • Introduced in: 9.9 • enum: ["none", "takeover_giveback", "all"]

Name	Type	In	Required	Description
return_timeout	integer	query	False	The number of seconds to allow the call to execute before returning. When doing a POST, PATCH, or DELETE operation on a single record, the default is 0 seconds. This means that if an asynchronous operation is started, the server immediately returns HTTP code 202 (Accepted) along with a link to the job. If a non-zero value is specified for POST, PATCH, or DELETE operations, ONTAP waits that length of time to see if the job completes so it can return something other than 202. • Default value: 0 • Max value: 120 • Min value: 0
validate_only	boolean	query	False	Validate the operation and its parameters, without actually performing the operation.

Request Body

Name	Type	Description
action	string	User triggered action to apply to the install operation
elapsed_duration	integer	Elapsed time during the upgrade or validation operation

Name	Type	Description
estimated_duration	integer	Overall estimated time for completion of the upgrade or validation operation.
metrocluster	metrocluster	
nodes	array[software_node_reference]	List of nodes, active versions, and firmware update progressions.
pending_version	string	Version being installed on the system. • example: ONTAP_X_1 • readOnly: 1 • Introduced in: 9.6 • x-nullable: true
post_update_checks	array[software_validation_reference]	List of failed post-update checks' warnings, errors, and advice.
state	string	Operational state of the upgrade
status_details	array[software_status_details_reference]	Display status details.
update_details	array[software_update_details_reference]	Display update progress details.
validation_results	array[software_validation_reference]	List of validation warnings, errors, and advice.
version	string	Version of ONTAP installed and currently active on the system. During PATCH, using the 'validate_only' parameter on the request executes pre-checks, but does not perform the full installation. • example: ONTAP_X • Introduced in: 9.6 • x-nullable: true

Example request


```
{
  "action": "pause",
  "elapsed_duration": 2140,
  "estimated_duration": 5220,
  "metrocluster": {
    "clusters": [
      {
        "elapsed_duration": 2140,
        "estimated_duration": 3480,
        "name": "cluster_A",
        "state": "in_progress"
      }
    ],
    "progress_details": {
      "message": "Switchover in progress"
    },
    "progress_summary": {
      "message": "MetroCluster updated successfully."
    }
  },
  "nodes": [
    {
      "model": "AFF-A800",
      "name": "node1",
      "software_images": [
        {
          "package": "image.tgz"
        }
      ],
      "version": "ONTAP_X"
    }
  ],
  "pending_version": "ONTAP_X_1",
  "post_update_checks": [
    {
      "action": {
        "message": "Use NFS hard mounts, if possible."
      },
      "issue": {
        "message": "Cluster HA is not configured in the cluster."
      },
      "status": "warning",
      "update_check": "nfs_mounts"
    }
```

```
  ],
  "state": "completed",
  "status_details": [
    {
      "action": {
        "message": "string"
      },
      "end_time": "2019-02-02 19:00:00 +0000",
      "issue": {
        "code": 10551399,
        "message": "Image update complete"
      },
      "name": "initialize",
      "node": {
        "name": "node1"
      },
      "start_time": "2019-02-02 19:00:00 +0000",
      "state": "failed"
    }
  ],
  "update_details": [
    {
      "elapsed_duration": 2100,
      "estimated_duration": 4620,
      "node": {
        "name": "node1"
      },
      "phase": "Post-update checks",
      "state": "failed"
    }
  ],
  "validation_results": [
    {
      "action": {
        "message": "Use NFS hard mounts, if possible."
      },
      "issue": {
        "message": "Cluster HA is not configured in the cluster."
      },
      "status": "warning",
      "update_check": "nfs_mounts"
    }
  ],
  "version": "ONTAP_X"
}
```

Response

```
Status: 200, Ok
```

Name	Type	Description
job	job_link	

Example response

```
{
  "job": {
    "uuid": "string"
  }
}
```

Response

```
Status: 202, Accepted
```

Error

```
Status: Default
```

ONTAP Error Response Codes

Error Code	Description
2424933	An internal error occurred while checking MetroCluster information.
2424998	An internal error occurred while checking MetroCluster configuration.
2425737	An internal error occurred while checking MetroCluster information.
10551297	Failed to find an update in progress.
10551298	Internal error while attempting to pause the upgrade operation.
10551300	There is no update in progress to be paused.
10551303	The operation is invalid while the update is not in the paused state.

Error Code	Description
10551304	An internal error occurred while canceling the current update operation.
10551306	A cancel operation is not possible at this time.
10551315	Failed to find the package in the package repository.
10551319	An internal error occurred while preparing for the update.
10551320	Failed to create task on master update manager node.
10551325	The required package version is not present in RDB.
10551353	Internal error occurred while running the ANDU pre-validation checks.
10551354	Invalid operation while the package is being deleted.
10551357	The operation is invalid while a previous update is still in progress.
10551368	The list of nodes should contain HA pairs only.
10551391	An internal error occurred while performing the upgrade operation.
10551395	ANDU validation check resulted in warnings.
10551396	ANDU validation checks failed.
10551434	The options are invalid for a resume operation.
10551524	The upgrade operation is in the running state, pause the operation before attempting to cancel.
10551558	Cluster configuration is not supported.
10551564	Batch mode upgrade is not supported for MetroCluster configurations.
10551565	Failed to contact the MetroCluster partner cluster, check the MetroCluster configuration then try again.
10551566	Validation is not complete on the partner MetroCluster cluster.
10551567	The required package is not available on the partner MetroCluster cluster.
10551572	Internal error while checking the update status from RDB. Ensure that cluster is healthy and retry the operation.
10551573	The running update is not in paused state on the MetroCluster partner cluster, so it cannot be resumed.
10551574	The running update is not in the paused state on the MetroCluster partner cluster, so it cannot be canceled.
10551592	The nodes selection option is not supported for MetroCluster configurations.

Error Code	Description
10551599	Double-hop package is missing.
10551602	A double-hop upgrade is not supported.
10551606	An option selected requires a higher effective cluster version.
10551643	Operation invalid while controller replacement is in progress.
10551656	Invalid operation while ANDU validation checks are in progress.
10551718	Invalid operation before running validation checks.
10551719	ANDU validation results are too old.
10551720	ANDU validation checks have failed with errors on both clusters in a MetroCluster config.
10551724	ANDU validation checks were run on a different version from the requested operation.
10551837	An internal error occurred while generating the AutoSupport prior to starting ANDU.
10551840	An internal error occurred while generating the AutoSupport prior to starting ANDU.
10551841	An internal error occurred while generating the AutoSupport prior to starting ANDU.
10551854	All specified nodes are already running the specified package version.
10551859	Failed to access the package repository and its backup copy.
10551872	Package version is not mentioned.
10551897	All nodes are already running the requested version.
10551898	Failed to get nodes-to-update list.
10551899	skip_nodes_at_target_version cannot be specified in a validate_only, pause, resume, or cancel operations.
10551900	skip_nodes_at_target_version cannot be set to true in MetroCluster configurations.
10551901	skip_nodes_at_target_version conflicts with another specified field.
10551902	Failed to determine if the cluster is configured for MetroCluster.
10551908	skip_nodes_at_target_version is not a valid option until effective cluster version is 9_16_0.
10551910	The operation is invalid while in the current upgrade state.

Error Code	Description
13303864	SnapMirror operation is in progress, retry later.

Also see the table of common errors in the Response body overview section of this documentation.

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

software_mcc_reference

Name	Type	Description
elapsed_duration	integer	Elapsed duration of update time (in seconds) of MetroCluster.
estimated_duration	integer	Estimated duration of update time (in seconds) of MetroCluster.
name	string	Name of the site in MetroCluster.
state		Upgrade state of MetroCluster.

progress_details

Name	Type	Description
message	string	MetroCluster update progress details.

progress_summary

Name	Type	Description
message	string	MetroCluster update progress summary.

metrocluster

Name	Type	Description
clusters	array[software_mcc_reference]	List of MetroCluster sites, statuses, and active ONTAP versions. • readOnly: 1 • Introduced in: 9.6
progress_details	progress_details	

Name	Type	Description
progress_summary	progress_summary	

job_link

Name	Type	Description
uuid	string	The UUID of the asynchronous job that is triggered by a POST, PATCH, or DELETE operation.

worker_node

Name	Type	Description
name	string	
uuid	string	

firmware_update_progress_state

Name	Type	Description
attempts	integer	
code	integer	Code corresponding to the status message.
message	string	Error message returned when a cluster firmware update job fails.
status	string	
worker_node	worker_node	

firmware_update_progress

Name	Type	Description
job	job_link	
update_state	array[firmware_update_progress_state]	
update_type	string	Specifies the type of update.
zip_file_name	string	

firmware_disk

Name	Type	Description
average_duration_per_disk	integer	Average firmware update duration per disk (in seconds).
num_waiting_download	integer	The number of disks waiting to download the firmware update.
total_completion_estimate	integer	Estimated firmware update duration to completion (in minutes).
update_status		Status of the background disk firmware update.

firmware_dqp_record_count

Name	Type	Description
alias	integer	Alias record count
device	integer	Device record count
drive	integer	Drive record count
system	integer	System record count

firmware_dqp

Name	Type	Description
file_name	string	Firmware file name
revision	string	Firmware revision
version	string	Firmware version

firmware_shelf

Name	Type	Description
in_progress_count	integer	
update_status		Status of the shelf firmware update.

firmware_sp_bmc

Name	Type	Description
autoupdate	boolean	
end_time	string	
fw_type	string	
image	string	
in_progress	boolean	
is_current	boolean	
last_update_state	string	
percent_done	integer	
running_version	string	
start_time	string	
state	string	

system_firmware

Name	Type	Description
boot_media_bios_version	string	BIOS version that is currently staged on the boot media of the node.
boot_media_loader_version	string	LOADER version that is currently staged on the boot media of the node.
install_pending	boolean	Flag that indicates if the system firmware install is pending. A true value suggests that a node reboot or cluster upgrade is required for completing installation.
running_bios_version	string	BIOS version that is currently installed on the node.
running_loader_version	string	LOADER version that is currently installed on the node.

firmware

Name	Type	Description
cluster_fw_progress	array[firmware_update_progress]	

software_images

Name	Type	Description
package	string	Package file name.

software_node_reference

Name	Type	Description
model	string	Model number of the node.
name	string	Name of the node.
software_images	array[software_images]	List of software image information.
version	string	ONTAP version of the node. • example: ONTAP_X • readOnly: 1 • Introduced in: 9.6 • x-nullable: true

action

Name	Type	Description
message	string	Specifies the corrective action to take to resolve an error.

issue

Name	Type	Description
message	string	Details of the error or warning encountered by the update checks.

software_validation_reference

Name	Type	Description
action	action	
issue	issue	
status	string	Status of the update check.
update_check	string	Name of the update check.

action

Name	Type	Description
code	integer	Error code corresponding the status error
message	string	Corrective action to be taken to resolve the status error.

issue

Name	Type	Description
code	integer	Error code corresponding to update status
message	string	Update status details

node

Name	Type	Description
name	string	Name of the node to be retrieved for status details.

software_status_details_reference

Name	Type	Description
action	action	
end_time	string	End time for each status phase.
issue	issue	
name	string	Name of the phase to be retrieved for status details.
node	node	
start_time	string	Start time for each status phase.
state	string	Status of the phase

node

Name	Type	Description
name	string	Name of the node to be retrieved for update details.

software_update_details_reference

Name	Type	Description
elapsed_duration	integer	Elapsed duration for each update phase
estimated_duration	integer	Estimated duration for each update phase
node	node	
phase	string	Phase details
state	string	State of the update phase

software_reference

Name	Type	Description
action	string	User triggered action to apply to the install operation
elapsed_duration	integer	Elapsed time during the upgrade or validation operation
estimated_duration	integer	Overall estimated time for completion of the upgrade or validation operation.
metrocluster	metrocluster	
nodes	array[software_node_reference]	List of nodes, active versions, and firmware update progressions.
pending_version	string	Version being installed on the system. • example: ONTAP_X_1 • readOnly: 1 • Introduced in: 9.6 • x-nullable: true

Name	Type	Description
post_update_checks	array[software_validation_reference]	List of failed post-update checks' warnings, errors, and advice.
state	string	Operational state of the upgrade
status_details	array[software_status_details_reference]	Display status details.
update_details	array[software_update_details_reference]	Display update progress details.
validation_results	array[software_validation_reference]	List of validation warnings, errors, and advice.
version	string	Version of ONTAP installed and currently active on the system. During PATCH, using the 'validate_only' parameter on the request executes pre-checks, but does not perform the full installation. • example: ONTAP_X • Introduced in: 9.6 • x-nullable: true

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

returned_error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Upload a software or firmware package located on the local file system

POST `/cluster/software/upload`

Introduced In: 9.8

Uploads a software or firmware package located on the local filesystem.

Related ONTAP commands

- `cluster image package get`

Learn more

- DOC /cluster/software

Parameters

Name	Type	In	Required	Description
file	file	formData	False	Info specification
return_records	boolean	query	False	The default is false. If set to true, the records are returned. • Default value:

Name	Type	In	Required	Description
return_timeout	integer	query	False	The number of seconds to allow the call to execute before returning. When doing a POST, PATCH, or DELETE operation on a single record, the default is 0 seconds. This means that if an asynchronous operation is started, the server immediately returns HTTP code 202 (Accepted) along with a link to the job. If a non-zero value is specified for POST, PATCH, or DELETE operations, ONTAP waits that length of time to see if the job completes so it can return something other than 202. • Default value: 0 • Max value: 120 • Min value: 0

Response

```
Status: 202, Accepted
```

Name	Type	Description
job	job_link	

Example response


```
{
  "job": {
    "uuid": "string"
  }
}
```


Response

```
Status: 201, Created
```

Error

```
Status: Default
```

ONTAP Error Response Codes

Error Code	Description
10551359	Internal error. Failed to process the package after download completed. Try uploading the file again or contact technical support for assistance.
10551373	Operation took longer than the maximum 1 hour time limit.
10551391	Internal error. Contact technical support for assistance.
10551392	Internal error. Contact technical support for assistance.
10551496	Firmware file already exists.
10551797	Internal error. Failed to check if file upload is enabled.
10551798	File upload is disabled. Enable file upload by setting "ApacheUploadEnabled 1" in the web services configuration file or contact technical support for assistance.
10551799	The requested filename exceeds the max path length. Rename using a shorter name.
10551800	Internal error. Access permissions restrict file upload. This is likely due to a bad web jail setup. Contact technical support for assistance.

Error Code	Description
10551801	Internal error. A read/write error occurred when uploading this file. Contact technical support for assistance
10551802	An invalid argument was supplied to create a file handle. Try uploading the file again or contact technical support for assistance.
10551803	An unknown error occurred. Retry file upload operation again or contact technical support for assistance.
10551804	Internal error. There is not sufficient space in the file upload directory to upload this file. Contact technical support for assistance.
10551805	Internal error in JAIL setup. Contact technical support for assistance.
10551806	Internal error. Failed to write to file in the webjail directory. Contact technical support for assistance.
10551807	The request must only contain a single file. More than one file per request is not supported.
10551808	The request must be of type multipart/form-data.
10551892	Package upload failed due to an unhealthy node. Restore the node to a healthy state, then retry the operation.

Also see the table of common errors in the Response body overview section of this documentation.

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

job_link

Name	Type	Description
uuid	string	The UUID of the asynchronous job that is triggered by a POST, PATCH, or DELETE operation.

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

returned_error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Copyright information

Copyright © 2026 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

Trademark information

NETAPP, the NETAPP logo, and the marks listed at http://www.netapp.com/TM are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.