



Manage cluster software

ONTAP 9.10.1 REST API Documentation

NetApp
April 02, 2024

This PDF was generated from https://docs.netapp.com/us-en/ontap-restapi-9101/ontap/cluster_software_endpoint_overview.html on April 02, 2024. Always check docs.netapp.com for the latest.

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Manage cluster software

Cluster software endpoint overview

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": "sti70-vsimg-ucsl65n",
    "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_state": [
            {
              "worker_node": "node1",
              "status": "failed",
              "attempts": 3,
              "message": "Cannot open the local staging zip file.",
              "code": 2228325
            },
            {
              "worker_node": "node2",
              "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_state": [
      {
        "worker_node": "node1",
        "status": "failed",
        "attempts": 3,
        "message": "Cannot open the local staging zip file.",
        "code": 2228325
      },
      {
        "worker_node": "node2",
        "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-ucsl65n_siteA\"."
    },
    "clusters": [
        {
            "name": "sti70-vsim-ucsl65n_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-ucsl65n"
        }
    }
],
"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-vsimg-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.

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 \"Performing manual checks before an automated
cluster upgrade\" section in the \"Clustered Data ONTAP Upgrade Express
Guide\" 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 \"Performing manual
checks before an automated cluster upgrade\" section in the \"Clustered
Data ONTAP Upgrade Express Guide\" for the remaining validation checks
that need to be performed before update."
  }
}
],
"nodes": [
  {
    "node": "sti70-vsims-ucsl65n",
    "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_state": [
            {
              "worker_node": "node1",
              "status": "failed",
              "attempts": 3,
              "message": "Cannot open the local staging zip file.",

```

```

        "code": 2228325
      },
      {
        "worker_node": "node2",
        "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_state": [
      {
        "worker_node": "node1",
        "status": "failed",
        "attempts": 3,
        "message": "Cannot open the local staging zip file.",
        "code": 2228325
      },
      {
        "worker_node": "node2",
        "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.

```
# 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 \"Performing manual checks before an automated cluster upgrade\" section in the \"Clustered Data ONTAP Upgrade Express

```

```

Guide\" 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 \"Performing manual
checks before an automated cluster upgrade\" section in the \"Clustered
Data ONTAP Upgrade Express Guide\" for the remaining validation checks
that need to be performed before update."
  }
},
"nodes": [
  {
    "node": "sti70-vsimg-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_state": [
            {
              "worker_node": "node1",
              "status": "failed",
              "attempts": 3,
              "message": "Cannot open the local staging zip file.",
              "code": 2228325
            },
            {
              "worker_node": "node2",
              "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_state": [
    {
      "worker_node": "node1",
      "status": "failed",
      "attempts": 3,
      "message": "Cannot open the local staging zip file.",
      "code": 2228325
    },
    {
      "worker_node": "node2",
      "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 \"Performing manual checks before an automated
cluster upgrade\" section in the \"Clustered Data ONTAP Upgrade Express
Guide\" 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 \"Performing manual
checks before an automated cluster upgrade\" section in the \"Clustered
Data ONTAP Upgrade Express Guide\" for the remaining validation checks
that need to be performed before update."
    }
  }
],
"nodes": [
  {
    "node": "sti70-vsims-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_state": [
            {
              "worker_node": "node1",
              "status": "working",
              "attempts": 3,

```

```

        "message": "<message catalog text>",
        "code": 3
    },
    {
        "worker_node": "node2",
        "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_state": [
        {
            "worker_node": "node1",
            "status": "completed",
            "attempts": 1,
            "message": "Error message",
            "code": 0
        },
        {
            "worker_node": "node2",
            "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 \"Performing manual checks before an automated cluster upgrade\" section in the \"Clustered Data ONTAP Upgrade Express Guide\" 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 \"Performing manual
checks before an automated cluster upgrade\" section in the \"Clustered
Data ONTAP Upgrade Express Guide\" for the remaining validation checks
that need to be performed before update."
  }
}
],
"nodes": [
  {
    "node": "sti70-vsims-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_state": [
            {
              "worker_node": "node1",
              "status": "failed",
              "attempts": 3,
              "message": "Cannot open the local staging zip file.",
              "code": 2228325
            },
            {
              "worker_node": "node2",
              "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_state": [
      {
        "worker_node": "node1",
        "status": "failed",
        "attempts": 3,
        "message": "Cannot open the local staging zip file.",
        "code": 2228325
      },
      {
        "worker_node": "node2",
        "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"
  }
}
}

```

Downloading the software package

The following example shows how to download the software/firmware package from an HTTP or FTP server. Provide the `url`, `username`, and `password`, if required, to start the download of the package to the cluster.

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

# The call:
curl -X POST "https://<mgmt-
ip>/api/cluster/software/download?return_timeout=0" -H "accept:
application/json" -H "Content-Type: application/hal+json" -d '{ "url":
"http://server/package", "username": "admin", "password": "*****"}'

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

The call to download the software/firmware package 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 job `state` field 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": "POST /api/cluster/software/download",
  "state": "success",
  "message": "success",
  "code": 0,
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/f587d316-5feb-11e8-b0e0-005056956dfc"
    }
  }
}
```

Checking the progress of the software package being downloaded from an HTTP or FTP server

The following example shows how to retrieve the progress status of the software package being downloaded from a HTTP or FTP server.

```

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

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

# The response:
{
  "state": "running",
  "message": "Package download in progress",
  "code": 10551760,
  "_links": {
    "self": {
      "href": "/api/cluster/software/download"
    }
  }
}

```

HTTPS error codes

The following is a list of possible error codes that can be returned during a package download operation.

ONTAP Error Response Codes

| Error Code | Description |
|------------|--|
| 2228324 | Failed to access the remote zip file on node. |
| 2228325 | Cannot open local staging ZIP file |
| 2228326 | File copy to local staging failed. |
| 2228327 | Firmware file already exists. |
| 2228328 | Firmware update of node failed. |
| 2228329 | Attempt to start worker on node failed |
| 2228330 | Uploaded firmware file is not present. |
| 2228331 | Copy of file from webserver failed. |
| 2228428 | Firmware update completed with errors |
| 2228429 | Firmware update completed. |
| 10551797 | Internal error. Failed to check if file upload is enabled. Contact technical support for assistance. |

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"
      }
    }
  }
}
```

HTTPS error codes

The following is a list of possible error codes that can be returned during a package upload operation.

ONTAP Error Response Codes

| Error Code | Description |
|------------|--|
| 2228324 | Failed to access the remote zip file on node. |
| 2228325 | Cannot open local staging ZIP file |
| 2228326 | File copy to local staging failed. |
| 2228327 | Firmware file already exists. |
| 2228328 | Firmware update of node failed. |
| 2228329 | Attempt to start worker on node failed |
| 2228330 | Uploaded firmware file is not present. |
| 2228331 | Copy of file from webserver failed. |
| 2228428 | Firmware update completed with errors |
| 2228429 | Firmware update completed. |
| 10551797 | Internal error. Failed to check if file upload is enabled. |

| Error Code | Description |
|-------------------|--|
| 10551798 | File upload is disabled. Enable file upload by setting "ApacheUploadEnabled 1" in the web services configuration file or contact technical support for assistance. |
| 10551800 | Internal error. Access permissions restrict file upload. This is likely due to a bad web jail setup. Contact technical support for assistance. |
| 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. |

Retrieving cluster software packages information

The following example shows how to retrieve the ONTAP software packages in a cluster.

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

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

# The response:
{
  "records": [
    {
      "version": "9.7.0",
      "_links": {
        "self": {
          "href": "/api/cluster/software/packages/9.7.0"
        }
      }
    },
    {
      "version": "9.5.0",
      "_links": {
        "self": {
          "href": "/api/cluster/software/packages/9.5.0"
        }
      }
    }
  ],
  "num_records": 2,
  "_links": {
    "self": {
      "href": "/api/cluster/software/packages"
    }
  }
}
```

The following example shows how to retrieve the details of a given cluster software package.

```
# The API:
/api/cluster/software/packages/{version}

# The call:
curl -X GET "https://<mgmt-ip>/api/cluster/software/packages/9.7.0" -H
"accept: application/hal+json"

# The response:
{
  "version": "9.7.0",
  "create_time": "2018-05-21T10:06:59+05:30",
  "_links": {
    "self": {
      "href": "/api/cluster/software/packages/9.7.0"
    }
  }
}
```

Deleting a cluster software package

The following example shows how to delete a package from the cluster. You need to provide the package version that you want to delete. The software package delete creates a job to perform the delete operation.

```
# The API:
/api/cluster/software/packages/{version}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/cluster/software/packages/9.6.0" -H
"accept: application/hal+json"

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

The call to delete the package 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 job `state` field 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": "DELETE /api/cluster/software/packages/9.6.0",
  "state": "success",
  "message": "success",
  "code": 0,
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/f587d316-5feb-11e8-b0e0-005056956dfc"
    }
  }
}
```

HTTPS error codes

The following is a list of possible error codes that can be returned during a package delete operation.

ONTAP Error Response codes

| Error codes | Description |
|-------------|---|
| 10551315 | Package store is empty |
| 10551322 | Error in retrieving package cleanup status |
| 10551323 | Error in cleaning up package information on a node |
| 10551324 | Error in cleaning up package information on both nodes |
| 10551325 | Package does not exist on the system |
| 10551326 | Error in deleting older package cleanup tasks |
| 10551346 | Package delete failed since a validation is in progress |
| 10551347 | Package delete failed since an update is in progress |

| Error codes | Description |
|-------------|--|
| 10551367 | A package synchronization is in progress |
| 10551388 | Package delete operation timed out |

Retrieving software installation history information

The following example shows how to:

- retrieve the software package installation history information.
- display specific node level software installation history information.
- provide all the attributes by default in response when the self referential link is not present.

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

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

# The response:
{
  "node": {
    "uuid": "58cd3a2b-af63-11e8-8b0d-0050568e7279",
    "name": "sti70-vsimg-ucs165n",
    "_links": {
      "self": {
        "href": "/api/cluster/nodes/58cd3a2b-af63-11e8-8b0d-0050568e7279"
      }
    }
  },
  "start_time": "2018-09-03T16:18:46+05:30",
  "state": "successful",
  "from_version": "9.4.0",
  "to_version": "9.5.0",
  "end_time": "2018-05-21T10:14:51+05:30"
}
```

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. <ul style="list-style-type: none">• Default value: 1• 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. |
| pending_version | string | Version being installed on the system. <ul style="list-style-type: none"> • example: ONTAP_X_1 • readOnly: 1 • Introduced in: 9.6 |
| 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. <ul style="list-style-type: none"> • example: ONTAP_X • Introduced in: 9.6 |

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_states": {
          "attempts": 3,
          "code": 2228325,
          "message": "Cannot open local staging ZIP file
disk_firmware.zip",
          "status": "idle",
          "worker_node": {
            "_links": {
              "self": {
                "href": "/api/resourcelink"
              }
            }
          }
        }
      }
    }
  }
}
```

```

    }
    },
    "name": "node1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  }
},
"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": {
  "autoupdte": "",
  "end_time": "2020-05-17T20:00:00Z",
  "fw_type": "SP",
  "image": "primary",
  "is_current": 1,
  "last_update_state": "passed",
  "percent_done": 100,
  "running_version": "1.2.3.4",
  "start_time": "2020-05-17T20:00:00Z",
  "state": "installed"
}
},
"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": {
    "end_time": "2019-02-02T19:00:00Z",
    "issue": {
      "code": 10551399,
      "message": "Image update complete"
    },
    "name": "initialize",
    "node": {
      "name": "node1"
    },
    "start_time": "2019-02-02T19:00:00Z",
    "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, Error

| Name | Type | Description |
|-------|-------|-------------|
| error | 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. <ul style="list-style-type: none"> • 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_states | array[firmware_update_progress_state] | |
| 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 |
|-------------------|---------|-------------|
| autoupdte | 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 | |

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 | |

software_images

| Name | Type | Description |
|---------|--------|--------------------|
| package | string | Package file name. |

software_node_reference

| Name | Type | Description |
|----------|--------------------------|-------------|
| firmware | firmware | |

| Name | Type | Description |
|-----------------|--|--|
| name | string | Name of the node. |
| software_images | array[software_images] | List of software image information. |
| version | string | ONTAP version of the node. <ul style="list-style-type: none"> • example: ONTAP_X • readOnly: 1 • Introduced in: 9.6 |

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 |

| Name | Type | Description |
|---------|--------|--|
| 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 |

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.

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 |
|----------------------------|---------|-------|----------|---|
| <code>skip_warnings</code> | boolean | query | False | Ignore warnings and proceed with the install. |

| Name | Type | In | Required | Description |
|-------------------|---------|-------|----------|---|
| action | string | query | False | <p>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 <code>success</code> or <code>failure</code>.</p> <ul style="list-style-type: none"> enum: ["pause", "resume", "cancel"] |
| stabilize_minutes | integer | query | False | <p>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.</p> <ul style="list-style-type: none"> Introduced in: 9.8 |
| estimate_only | boolean | query | False | <p>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.</p> <ul style="list-style-type: none"> Introduced in: 9.9 |

| Name | Type | In | Required | Description |
|-----------------|---------|-------|----------|---|
| force_rolling | boolean | query | False | <p>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.</p> <ul style="list-style-type: none"> • Introduced in: 9.9 |
| nodes_to_update | string | query | False | <p>A comma separated list of node names to be updated. The nodes must be a part of a HA Pair. The default is all nodes.</p> <ul style="list-style-type: none"> • Introduced in: 9.9 |
| pause_after | string | query | False | <p>The pause after specified tasks option. When ANDU is paused user interaction is required to resume the update. The default is none.</p> <ul style="list-style-type: none"> • Introduced in: 9.9 • enum: ["none", "takeover_giveback", "all"] |

| Name | Type | In | Required | Description |
|----------------|---------|-------|----------|--|
| return_timeout | integer | query | False | <p>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.</p> <ul style="list-style-type: none"> • Default value: 1 • Max value: 120 • Min value: 0 |
| validate_only | boolean | query | False | <p>Validate the operation and its parameters, without actually performing the operation.</p> |

Request Body

| Name | Type | Description |
|--------|------------------------|---|
| _links | _links | |
| action | string | User triggered action to apply to the install operation |

| Name | Type | Description |
|--------------------|--|---|
| 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. <ul style="list-style-type: none"> • example: ONTAP_X_1 • readOnly: 1 • Introduced in: 9.6 |
| 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. <ul style="list-style-type: none"> • example: ONTAP_X • Introduced in: 9.6 |

Example request

```
{
  "_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_states": {
          "attempts": 3,
          "code": 2228325,
          "message": "Cannot open local staging ZIP file
disk_firmware.zip",
          "status": "idle",
          "worker_node": {
            "_links": {
              "self": {
                "href": "/api/resourcelink"
              }
            }
          }
        }
      }
    }
  }
}
```

```

    }
    },
    "name": "node1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  }
},
"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": {
  "autoupdte": "",
  "end_time": "2020-05-17T20:00:00Z",
  "fw_type": "SP",
  "image": "primary",
  "is_current": 1,
  "last_update_state": "passed",
  "percent_done": 100,
  "running_version": "1.2.3.4",
  "start_time": "2020-05-17T20:00:00Z",
  "state": "installed"
}
},
"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": {
    "end_time": "2019-02-02T19:00:00Z",
    "issue": {
      "code": 10551399,
      "message": "Image update complete"
    },
    "name": "initialize",
    "node": {
      "name": "node1"
    },
    "start_time": "2019-02-02T19:00:00Z",
    "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: 202, Accepted

| Name | Type | Description |
|------|----------|-------------|
| job | job_link | |

Example response

```
{
  "job": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "uuid": "string"
  }
}
```

Error

Status: Default, Error

| Name | Type | Description |
|-------|-------|-------------|
| error | 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. <ul style="list-style-type: none"> • 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_states | array[firmware_update_progress_state] | |
| 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 |
|-------------------|---------|-------------|
| autoupdte | 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 | |

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 | |

software_images

| Name | Type | Description |
|---------|--------|--------------------|
| package | string | Package file name. |

software_node_reference

| Name | Type | Description |
|----------|--------------------------|-------------|
| firmware | firmware | |

| Name | Type | Description |
|-----------------|--|--|
| name | string | Name of the node. |
| software_images | array[software_images] | List of software image information. |
| version | string | ONTAP version of the node. <ul style="list-style-type: none"> • example: ONTAP_X • readOnly: 1 • Introduced in: 9.6 |

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 |

| Name | Type | Description |
|---------|--------|--|
| 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 |
|--------------------|--|--|
| _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. |
| pending_version | string | Version being installed on the system. <ul style="list-style-type: none"> • example: ONTAP_X_1 • readOnly: 1 • Introduced in: 9.6 |
| 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. |

| Name | Type | Description |
|--------------------|--|---|
| update_details | array[software_update_details_ref reference] | Display update progress details. |
| validation_results | array[software_validation_referen ce] | 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. <ul style="list-style-type: none"> • example: ONTAP_X • Introduced in: 9.6 |

error_arguments

| Name | Type | Description |
|---------|--------|------------------|
| code | string | Argument code |
| message | string | Message argument |

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. |

Retrieve the software or firmware download status

GET /cluster/software/download

Introduced In: 9.7

Retrieves the software or firmware download status.

Related ONTAP commands

- `cluster image package check-download-progress`

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. <ul style="list-style-type: none">• Default value: 1• Max value: 120• Min value: 0 |

Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---------|---------|--------------------------------------|
| code | integer | Code corresponds to download message |
| message | string | Download progress details |
| state | string | Download status of the package |

Example response

```
{
  "code": 10551496,
  "message": "Package download in progress",
  "state": "success"
}
```

Error

Status: Default, Error

| Name | Type | Description |
|-------|-------|-------------|
| error | error | |

Example error

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

Definitions

See Definitions

error_arguments

| Name | Type | Description |
|---------|--------|------------------|
| code | string | Argument code |
| message | string | Message argument |

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. |

Download a software or firmware package

POST `/cluster/software/download`

Introduced In: 9.6

Downloads a software or firmware package from the server.

Required properties

- `url` - URL location of the software package

Recommended optional parameters

- `username` - Username of HTTPS/FTP server
- `password` - Password of HTTPS/FTP server

Related ONTAP commands

- `cluster image package get`

Learn more

- [DOC /cluster/software](#)

Parameters

| Name | Type | In | Required | Description |
|----------------|---------|-------|----------|--|
| return_timeout | integer | query | False | <p>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.</p> <ul style="list-style-type: none">• Default value: 1• Max value: 120• Min value: 0 |

Request Body

| Name | Type | Description |
|----------|--------|---|
| password | string | Password for download |
| url | string | HTTP or FTP URL of the package through a server |
| username | string | Username for download |

Example request

```
{
  "password": "admin_password",
  "url": "http://server/package",
  "username": "admin"
}
```

Response

Status: 202, Accepted

| Name | Type | Description |
|------|----------|-------------|
| job | job_link | |

Example response

```
{
  "job": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "uuid": "string"
  }
}
```

Error

Status: Default, Error

| Name | Type | Description |
|-------|-------|-------------|
| error | error | |

Example error

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

Definitions

See Definitions

software_package_download

| Name | Type | Description |
|----------|--------|---|
| password | string | Password for download |
| url | string | HTTP or FTP URL of the package through a server |
| username | string | Username for download |

href

| Name | Type | Description |
|------|--------|-------------|
| href | string | |

_links

| Name | Type | Description |
|------|----------------------|-------------|
| self | href | |

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. |

error_arguments

| Name | Type | Description |
|---------|--------|------------------|
| code | string | Argument code |
| message | string | Message argument |

error

| Name | Type | Description |
|-----------|--|-------------------|
| arguments | array[error_arguments] | Message arguments |

| Name | Type | Description |
|---------|--------|---|
| code | string | Error code |
| message | string | Error message |
| target | string | The target parameter that caused the error. |

Retrieve the software installation request history details

GET `/cluster/software/history`

Introduced In: 9.6

Retrieves the history details for software installation requests.

Related ONTAP commands

- `cluster image show-update-history`

Learn more

- [DOC /cluster/software](#)

Parameters

| Name | Type | In | Required | Description |
|--------------|--------|-------|----------|--|
| from_version | string | query | False | Filter by from_version • Introduced in: 9.7 |
| end_time | string | query | False | Filter by end_time • Introduced in: 9.7 |
| state | string | query | False | Filter by state • Introduced in: 9.7 |

| Name | Type | In | Required | Description |
|----------------|---------------|-------|----------|---|
| start_time | string | query | False | Filter by start_time • Introduced in: 9.7 |
| node.uuid | string | query | False | Filter by node.uuid • Introduced in: 9.7 |
| node.name | string | query | False | Filter by node.name • Introduced in: 9.7 |
| to_version | string | query | False | Filter by to_version • Introduced in: 9.7 |
| fields | array[string] | query | False | Specify the fields to return. |
| max_records | integer | query | False | Limit the number of records returned. |
| return_records | boolean | query | False | The default is true for GET calls. When set to false, only the number of records is returned. • Default value: 1 |

| Name | Type | In | Required | Description |
|----------------|---------------|-------|----------|--|
| return_timeout | integer | query | False | <p>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.</p> <ul style="list-style-type: none"> • Default value: 1 • Max value: 120 • Min value: 0 |
| order_by | array[string] | query | False | Order results by specified fields and optional [asc |

Response

Status: 200, Ok

| Name | Type | Description |
|-------------|---|-------------|
| _links | _links | |
| num_records | integer | |
| records | array[software_history] | |

Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": {
    "end_time": "2019-02-02T20:00:00Z",
    "from_version": "ONTAP_X1",
    "node": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "node1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "start_time": "2019-02-02T19:00:00Z",
    "state": "successful",
    "to_version": "ONTAP_X2"
  }
}
```

Error

Status: Default, Error

| Name | Type | Description |
|-------|-------|-------------|
| error | 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 |
|------|----------------------|-------------|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|------|----------------------|-------------|
| self | href | |

node

| Name | Type | Description |
|--------|------------------------|-------------|
| _links | _links | |
| name | string | |
| uuid | string | |

software_history

| Name | Type | Description |
|--------------|----------------------|---|
| end_time | string | Completion time of this installation request. |
| from_version | string | Previous version of node <ul style="list-style-type: none">• example: ONTAP_X1• readOnly: 1• Introduced in: 9.7 |
| node | node | |
| start_time | string | Start time of this installation request. |
| state | string | Status of this installation request. |

| Name | Type | Description |
|------------|--------|--|
| to_version | string | Updated version of node <ul style="list-style-type: none"> • example: ONTAP_X2 • readOnly: 1 • Introduced in: 9.7 |

error_arguments

| Name | Type | Description |
|---------|--------|------------------|
| code | string | Argument code |
| message | string | Message argument |

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. |

Retrieve cluster software packages

GET `/cluster/software/packages`

Introduced In: 9.6

Retrieves the software packages for a cluster.

Related ONTAP commands

- `cluster image package show-repository`

Learn more

- [DOC /cluster/software](#)

Parameters

| Name | Type | In | Required | Description |
|----------------|---------------|-------|----------|---|
| version | string | query | False | Filter by version <ul style="list-style-type: none">• Introduced in: 9.7 |
| create_time | string | query | False | Filter by create_time <ul style="list-style-type: none">• Introduced in: 9.7 |
| fields | array[string] | query | False | Specify the fields to return. |
| max_records | integer | query | False | Limit the number of records returned. |
| return_records | boolean | query | False | The default is true for GET calls. When set to false, only the number of records is returned. <ul style="list-style-type: none">• Default value: 1 |
| 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. <ul style="list-style-type: none">• Default value: 1• Max value: 120• Min value: 0 |
| order_by | array[string] | query | False | Order results by specified fields and optional [asc |

Response

Status: 200, Ok

| Name | Type | Description |
|--------------------------|--|-------------|
| <code>_links</code> | <code>_links</code> | |
| <code>num_records</code> | integer | |
| <code>records</code> | array[<code>software_package</code>] | |

Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "create_time": "2019-02-04T19:00:00Z",
    "version": "ONTAP_X"
  }
}
```

Error

Status: Default, Error

| Name | Type | Description |
|--------------------|--------------------|-------------|
| <code>error</code> | <code>error</code> | |

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 |
|------|----------------------|-------------|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|------|----------------------|-------------|
| self | href | |

software_package

| Name | Type | Description |
|-------------|------------------------|---|
| _links | _links | |
| create_time | string | Indicates when this package was loaded |
| version | string | Version of this package <ul style="list-style-type: none">• example: ONTAP_X• readOnly: 1• Introduced in: 9.6 |

error_arguments

| Name | Type | Description |
|---------|--------|------------------|
| code | string | Argument code |
| message | string | Message argument |

error

| Name | Type | Description |
|-----------|--|-------------------|
| arguments | array[error_arguments] | Message arguments |

| Name | Type | Description |
|---------|--------|---|
| code | string | Error code |
| message | string | Error message |
| target | string | The target parameter that caused the error. |

Delete a software package from the cluster

DELETE /cluster/software/packages/{version}

Introduced In: 9.6

Deletes a software package from the cluster. The delete operation fails if the package is currently installed.

Related ONTAP commands

- `cluster image package delete`

Learn more

- [DOC /cluster/software](#)

Parameters

| Name | Type | In | Required | Description |
|---------|--------|------|----------|-------------|
| version | string | path | True | |

| Name | Type | In | Required | Description |
|----------------|---------|-------|----------|--|
| return_timeout | integer | query | False | <p>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.</p> <ul style="list-style-type: none"> • Default value: 1 • Max value: 120 • Min value: 0 |

Response

Status: 202, Accepted

Error

Status: Default

ONTAP error response codes

| Error codes | Description |
|-------------|------------------------|
| 10551315 | Package store is empty |

| Error codes | Description |
|-------------|---|
| 10551322 | Error in retrieving package cleanup status |
| 10551323 | Error in cleaning up package information on a node |
| 10551324 | Error in cleaning up package information on multiple nodes |
| 10551325 | Package does not exist on the system |
| 10551326 | Error in deleting older package cleanup tasks. Clean up images from the store and retry |
| 10551346 | Package delete failed since a validation is in progress |
| 10551347 | Package delete failed since an update is in progress |
| 10551367 | A package synchronization is in progress |
| 10551388 | Package delete operation timed out |

| Name | Type | Description |
|-------|-------|-------------|
| error | error | |

Example error

```

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

```

Definitions

See Definitions

error_arguments

| Name | Type | Description |
|---------|--------|------------------|
| code | string | Argument code |
| message | string | Message argument |

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. |

Retrieve the software package information

GET /cluster/software/packages/{version}

Introduced In: 9.6

Retrieves the software package information.

Related ONTAP commands

- `cluster image package show-repository`

Learn more

- [DOC /cluster/software](#)

Parameters

| Name | Type | In | Required | Description |
|---------|---------------|-------|----------|-------------------------------|
| version | string | path | True | |
| fields | array[string] | query | False | Specify the fields to return. |

Response

Status: 200, Ok

| Name | Type | Description |
|------------------------|------------------------|---|
| _links | _links | |
| create_time | string | Indicates when this package was loaded |
| version | string | Version of this package <ul style="list-style-type: none">• example: ONTAP_X• readOnly: 1• Introduced in: 9.6 |

Example response

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "create_time": "2019-02-04T19:00:00Z",
  "version": "ONTAP_X"
}
```

Error

Status: Default, Error

| Name | Type | Description |
|-------|-----------------------|-------------|
| error | 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 | |

error_arguments

| Name | Type | Description |
|---------|--------|------------------|
| code | string | Argument code |
| message | string | Message argument |

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 | <p>The default is false. If set to true, the records are returned.</p> <ul style="list-style-type: none">• Default value: |
| return_timeout | integer | query | False | <p>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.</p> <ul style="list-style-type: none">• Default value: 1• Max value: 120• Min value: 0 |

Response

Status: 202, Accepted

| Name | Type | Description |
|------|--------------------------|-------------|
| job | job_link | |

Example response

```
{
  "job": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "uuid": "string"
  }
}
```

Error

Status: Default, Error

| Name | Type | Description |
|-------|-----------------------|-------------|
| error | 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 | |

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. |

error_arguments

| Name | Type | Description |
|---------|--------|------------------|
| code | string | Argument code |
| message | string | Message argument |

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. |

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