



# **Manage cluster licensing**

## **ONTAP 9.14.1 REST API reference**

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# Manage cluster licensing

## Cluster licensing licenses endpoint overview

### Overview

Licensing allows you to tailor a system to meet an organization's specific needs. You can enable new features by purchasing a license from a NetApp sales associate. After installation of the license, the new feature is available immediately.

This interface manages licenses according to their supported feature. By default, the interface displays packages with installed licenses, but you can also return unlicensed packages.

Each feature has a compliance state that is indicated at the package level. Individual licenses also contain a compliance state indicated in the "licenses" array. The state of the package is determined by analyzing the underlying licenses according to the following criteria:

- Licensing terms
- Cluster state

### Licensing terms

The licensing terms define the conditions under which a package is considered "compliant". Individual licenses are evaluated based on the following:

- Scope
- Time period
- Usage

### Scope

A package can be licensed under the following scopes:

- Site - Permits the feature to be used by any node in any cluster.
- Cluster - Permits the feature to be used by any node in a single specific cluster.
- Node - Permits the authorized node to use the feature. Within a cluster, if you don't supply every node with a valid license, the package state indicates "noncompliant". You must purchase a license for each node in a cluster for the package to be considered "compliant".

### Time period

Some package licenses are only valid for a limited period of time. After a license has expired, the package state changes to "noncompliant". You need to purchase a new license for the package to return to a "compliant" state.

### Usage

Some package licenses have additional terms that need to be maintained to keep a license in compliance. These conditions are defined by the individual license. For example, a license might define the maximum amount of storage that a node can allocate for the license to be "compliant".

## Cluster state

A cluster's state consists of the following:

- Node online status
- Node cluster membership

Some features require that a node be online to display a valid compliance state. If a node cannot be reached or is not known to the cluster, the individual license might indicate an "unknown" state.

---

## Licensing keys

A license is issued in one of the following three formats:

- 28-character key
- NetApp License File Version 1 (NLFv1)
- NetApp License File Version 2 (NLFv2)

### Overview of NLFv1 and NLFv2 License Formats

NLFv1 and NLFv2 licenses are both JSON based files that allow features to be enabled.

The difference between the two formats is that a NLFv2 license allows multiple features to be enabled with a single file. A NLFv1 license is capable of enabling a single feature.

These licenses are identified, in the various methods, as follows:

Format	Identifying Keys
28 Character Key	name / serial_number
NLFv1	name / serial_number
NLFv2	licenses.installed_license / serial_number

The following is an example of a 28-character key:

```
AMEPOSOIKLKGEEDGNDEKSJDEEE
```

The following is an example of an NLFv1 key:

```
{
  "statusResp": {
    "version": "1",
    "serialNumber": "123456789",
    "message": "Success",
    "licenses": {
      "capacity": "1",
      "type": "capacity",
      "licenseProtocol": "FABRICPOOL-TB",
      "package": "FabricPool",
      "licenseScope": "cluster"
    },
    "snStatus": "Active",
    "product": "fabricpool",
    "statusCode": "S007"
  },
  "Signature": "signatureABC"
}
```

The following is an example of an NLFv2 key:

```
{
  "statusResp": {
    "version": "2",
    "serialNumber": "123456789",
    "message": "Success",
    "product": "Sample NLFv2 License",
    "licenses": {
      "capacity": "1",
      "type": "capacity",
      "HostID": "5554444",
      "package": [ "NFS", "CIFS" ],
      "licenseScope": "node"
    },
    "snStatus": "Active",
    "statusCode": "S007"
  },
  "Signature": "signatureABC"
}
```

You can use this API to submit any format to enable features.

## Examples

### Retrieving a collection of licenses organized by package

This example retrieves a collection that contains one entry for each package (filtered to only the 'fabricpool' package).

```

# API
curl -X GET "https://<mgmt-
ip>/api/cluster/licensing/licenses?fields=*&name=fabricpool"

# Response
200 OK

# JSON Body
{
  "records": [
    {
      "name": "fabricpool",
      "scope": "cluster",
      "state": "compliant",
      "description": "FabricPool License",
      "licenses": [
        {
          "owner": "testcluster-1",
          "serial_number": "4149027342",
          "state": "compliant",
          "capacity": {
            "maximum_size": 1099511627776,
            "used_size": 0
          }
        }
      ],
      "_links": {
        "self": {
          "href": "/api/cluster/licensing/licenses/fabricpool"
        }
      }
    }
  ],
  "num_records": 1,
  "_links": {
    "self": {
      "href": "/api/cluster/licensing/licenses/?fields=*&name=fabricpool"
    }
  }
}

```

### Retrieving a collection of licenses organized by package - for package cloud

The following example retrieves a collection that contains one entry for each package (filtered to only the 'cloud' package). The cloud package, in this example, is in the enforcement period as the license has expired. The REST GET output displays an additional field 'shutdown\_imminent' to indicate that the system will

shutdown.

```
# API
curl -X GET "https://<mgmt-
ip>/api/cluster/licensing/licenses?fields=*&name=cloud"

# Response
200 OK

# JSON Body
{
  "records": [
    {
      "name": "cloud",
      "scope": "node",
      "state": "noncompliant",
      "description": "Cloud ONTAP License",
      "entitlement": {
        "action": "acquire_license",
        "risk": "unlicensed"
      },
      "licenses": [
        {
          "owner": "test-vsim1",
          "serial_number": "90120130000000000001",
          "active": false,
          "evaluation": true,
          "expiry_time": "2021-10-26T19:57:41Z",
          "shutdown_imminent": true,
          "compliance": {
            "state": "noncompliant"
          }
        }
      ],
      "_links": {
        "self": {
          "href": "/api/cluster/licensing/licenses/cloud"
        }
      }
    }
  ],
  "num_records": 1,
  "_links": {
    "self": {
      "href": "/api/cluster/licensing/licenses/?fields=*&name=cloud"
    }
  }
}
```



```
}  
}
```

## Retrieving a collection of licenses installed with NLFv2

This example retrieves a collection of licenses that were installed by a NLFv2 formatted license.



The license is referenced by the installed license "Core\*Bundle" and the license serial number "4212426890"

```
# API  
curl -X GET "https://<mgmt-  
ip>/api/cluster/licensing/licenses?fields=*&licenses.installed_license=Cor  
e*Bundle&serial_number=4212426890"  
  
# Response  
200 OK  
  
# JSON Body  
{  
  "records": [  
    {  
      "name": "nfs",  
      "scope": "node",  
      "state": "noncompliant",  
      "description": "NFS License",  
      "entitlement": {  
        "action": "acquire_license",  
        "risk": "medium"  
      },  
      "licenses": [  
        {  
          "owner": "test-vsim3",  
          "active": false,  
          "evaluation": false,  
          "compliance": {  
            "state": "unlicensed"  
          }  
        },  
        {  
          "owner": "test-vsim4",  
          "installed_license": "Core Bundle",  
          "host_id": "4212426890",  
          "serial_number": "4212426890",  
          "active": true,  
          "evaluation": false,
```

```

    "compliance": {
      "state": "compliant"
    },
    "capacity": {
      "maximum_size": 10995116277760
    }
  }
],
"_links": {
  "self": {
    "href":
"/api/cluster/licensing/licenses/nfs/?licenses.installed_license=Core*Bundle"
  }
},
{
  "name": "cifs",
  "scope": "node",
  "state": "noncompliant",
  "description": "CIFS License",
  "entitlement": {
    "action": "acquire_license",
    "risk": "medium"
  },
  "licenses": [
    {
      "owner": "test-vsim3",
      "active": false,
      "evaluation": false,
      "compliance": {
        "state": "unlicensed"
      }
    },
    {
      "owner": "test-vsim4",
      "installed_license": "Core Bundle",
      "host_id": "4212426890",
      "serial_number": "4212426890",
      "active": true,
      "evaluation": false,
      "compliance": {
        "state": "compliant"
      },
      "capacity": {
        "maximum_size": 10995116277760
      }
    }
  ]
}

```

```

    }
  }
],
"_links": {
  "self": {
    "href":
"/api/cluster/licensing/licenses/cifs/?licenses.installed_license=Core*Bundle"
  }
}
},
{
  "name": "iscsi",
  "scope": "node",
  "state": "noncompliant",
  "description": "iSCSI License",
  "entitlement": {
    "action": "acquire_license",
    "risk": "medium"
  },
  "licenses": [
    {
      "owner": "test-vsim3",
      "active": false,
      "evaluation": false,
      "compliance": {
        "state": "unlicensed"
      }
    },
    {
      "owner": "test-vsim4",
      "installed_license": "Core Bundle",
      "host_id": "4212426890",
      "serial_number": "4212426890",
      "active": true,
      "evaluation": false,
      "compliance": {
        "state": "compliant"
      },
      "capacity": {
        "maximum_size": 10995116277760
      }
    }
  ],
  "_links": {
    "self": {

```

```

      "href":
"/api/cluster/licensing/licenses/iscsi/?licenses.installed_license=Core*Bu
ndle"
    }
  },
  {
    "name": "fcp",
    "scope": "node",
    "state": "noncompliant",
    "description": "FCP License",
    "entitlement": {
      "action": "acquire_license",
      "risk": "medium"
    },
    "licenses": [
      {
        "owner": "test-vsim3",
        "active": false,
        "evaluation": false,
        "compliance": {
          "state": "unlicensed"
        }
      },
      {
        "owner": "test-vsim4",
        "installed_license": "Core Bundle",
        "host_id": "4212426890",
        "serial_number": "4212426890",
        "active": true,
        "evaluation": false,
        "compliance": {
          "state": "compliant"
        },
        "capacity": {
          "maximum_size": 10995116277760
        }
      }
    ],
    "_links": {
      "self": {
        "href":
"/api/cluster/licensing/licenses/fcp/?licenses.installed_license=Core*Bund
le"
      }
    }
  }
}

```

```

},
{
  "name": "snaprestore",
  "scope": "node",
  "state": "noncompliant",
  "description": "SnapRestore License",
  "entitlement": {
    "action": "acquire_license",
    "risk": "medium"
  },
  "licenses": [
    {
      "owner": "test-vsim3",
      "active": false,
      "evaluation": false,
      "compliance": {
        "state": "unlicensed"
      }
    },
    {
      "owner": "test-vsim4",
      "installed_license": "Core Bundle",
      "host_id": "4212426890",
      "serial_number": "4212426890",
      "active": true,
      "evaluation": false,
      "compliance": {
        "state": "compliant"
      },
      "capacity": {
        "maximum_size": 10995116277760
      }
    }
  ],
  "_links": {
    "self": {
      "href":
"/api/cluster/licensing/licenses/snaprestore/?licenses.installed_license=Core*Bundle"
    }
  }
},
{
  "name": "flexclone",
  "scope": "node",
  "state": "noncompliant",

```

```

    "description": "FlexClone License",
    "entitlement": {
      "action": "acquire_license",
      "risk": "medium"
    },
    "licenses": [
      {
        "owner": "test-vsim3",
        "active": false,
        "evaluation": false,
        "compliance": {
          "state": "unlicensed"
        }
      },
      {
        "owner": "test-vsim4",
        "installed_license": "Core Bundle",
        "host_id": "4212426890",
        "serial_number": "4212426890",
        "active": true,
        "evaluation": false,
        "compliance": {
          "state": "compliant"
        },
        "capacity": {
          "maximum_size": 10995116277760
        }
      }
    ],
    "_links": {
      "self": {
        "href":
"/api/cluster/licensing/licenses/flexclone/?licenses.installed_license=Core*Bundle"
      }
    }
  },
  {
    "name": "nvme_of",
    "scope": "node",
    "state": "noncompliant",
    "description": "NVMe-oF License",
    "licenses": [
      {
        "owner": "test-vsim3",
        "active": false,

```

```

    "evaluation": false,
    "compliance": {
      "state": "unlicensed"
    }
  },
  {
    "owner": "test-vsim4",
    "installed_license": "Core Bundle",
    "host_id": "4212426890",
    "serial_number": "4212426890",
    "active": true,
    "evaluation": false,
    "compliance": {
      "state": "compliant"
    },
    "capacity": {
      "maximum_size": 10995116277760
    }
  }
],
"_links": {
  "self": {
    "href":
"/api/cluster/licensing/licenses/nvme_of/?licenses.installed_license=Core*
Bundle"
  }
},
{
  "name": "s3",
  "scope": "node",
  "state": "noncompliant",
  "description": "S3 License",
  "entitlement": {
    "action": "acquire_license",
    "risk": "medium"
  }
},
"licenses": [
  {
    "owner": "test-vsim3",
    "active": false,
    "evaluation": false,
    "compliance": {
      "state": "unlicensed"
    }
  }
],

```

```

{
  "owner": "test-vsimg4",
  "installed_license": "Core Bundle",
  "host_id": "4212426890",
  "serial_number": "4212426890",
  "active": true,
  "evaluation": false,
  "compliance": {
    "state": "compliant"
  },
  "capacity": {
    "maximum_size": 10995116277760
  }
}
],
"_links": {
  "self": {
    "href":
"/api/cluster/licensing/licenses/s3/?licenses.installed_license=Core*Bundl
e"
  }
}
],
"num_records": 8,
"_links": {
  "self": {
    "href":
"/api/cluster/licensing/licenses?fields=*&licenses.installed_license=Core*
Bundle&serial_number=4212426890"
  }
}
}
}

```

### Retrieving a collection of installed licenses

This example retrieves a collection containing all packages (except base) that have installed licenses.

```

# API
curl -X GET "https://<mgmt-
ip>/api/cluster/licensing/licenses?fields=*&name=!base"

# Response
200 OK

# JSON Body

```



```

{
  "records": [
    {
      "name": "nfs",
      "scope": "node",
      "state": "compliant",
      "description": "NFS License",
      "entitlement": {
        "action": "none",
        "risk": "low"
      },
      "licenses": [
        {
          "owner": "testcluster-1",
          "serial_number": "1-81-0000000000000004149027492",
          "state": "compliant"
        }
      ],
      "_links": {
        "self": {
          "href": "/api/cluster/licensing/licenses/nfs"
        }
      }
    },
    {
      "name": "cifs",
      "scope": "node",
      "state": "compliant",
      "description": "CIFS License",
      "entitlement": {
        "action": "acquire_license",
        "risk": "medium"
      },
      "licenses": [
        {
          "owner": "testcluster-1",
          "serial_number": "1-81-0000000000000004149027492",
          "state": "compliant"
        }
      ],
      "_links": {
        "self": {
          "href": "/api/cluster/licensing/licenses/cifs"
        }
      }
    }
  ]
}

```

```

],
"num_records": 2,
"_links": {
"self": {
  "href": "/api/cluster/licensing/licenses/?fields=*&name=!base"
}
}
}

```

## Retrieving a collection of unlicensed packages

By default, unlicensed packages are filtered from the collection output. This example shows how to use a query to retrieve unlicensed packages.

```

# API
curl -X GET "https://<mgmt-
ip>/api/cluster/licensing/licenses?name=flexcache&state=unlicensed"

# Response
200 OK

# JSON Body
{
"records": [
  {
    "name": "flexcache",
    "_links": {
      "self": {
        "href": "/api/cluster/licensing/licenses/flexcache"
      }
    }
  }
],
"num_records": 1,
"_links": {
  "self": {
    "href":
"/api/cluster/licensing/licenses?name=flexcache&state=unlicensed"
  }
}
}

```

## Installing a NLF license

This example installs a single NLFv1 license. A NLFv2 license installs using the same procedure.



You must escape all the double quotes and backslash characters of the JSON license before it can be placed in the POST request.

```
# API
curl -X POST "https://<mgmt-ip>/api/cluster/licensing/licenses"

# JSON Body
{
  "keys" : [ "{\"statusResp\":{\"snStatus\": \"Active\", \"licenses\":
  {\"package\": \"FabricPool\", \"capacity\": \"1\", \"licenseProtocol\":
  \"FABRICPOOL-TB\", \"type\": \"capacity\", \"licenseScope\": \"cluster\"},
  \"message\": \"Success\", \"statusCode\": \"S007\", \"version\": \"1\",
  \"product\": \"fabricpool\", \"serialNumber\": \"4149027342\"},
  \"Signature\": \"SignatureABC\"}" ]
}

# Response
201 Created
```

### Installing a 28-character key

This example installs a single 28-character key formatted license.

```
# API
curl -X POST "https://<mgmt-ip>/api/cluster/licensing/licenses"

# JSON Body
{
  "keys" : [ "AAAAAAAAAAAAAAAAAAAAAAAAAAAA" ]
}

# Response
201 Created
```

### Installing multiple licenses with one API call

This example shows how multiple keys can be provided to install multiple features in a single API call.

```
# API
curl -X POST "https://<mgmt-ip>/api/cluster/licensing/licenses"

# JSON Body
{
  "keys" : [ "AAAAAAAAAAAAAAAAAAAAAAAAAAAA",
             "BBBBBBBBBBBBBBBBBBBBBBBBBBBBBB" ]
}

# Response
201 Created
```

### Retrieving information for a specific license package

This example shows how to retrieve information about the specific feature package `fabricpool`.

```

# API
curl -X GET "https://<mgmt-ip>/api/cluster/licensing/licenses/fabricpool"

# Response
200 OK

# JSON Body
{
  "name": "fabricpool",
  "scope": "cluster",
  "state": "compliant",
  "description": "FabricPool License",
  "licenses": [
    {
      "owner": "testcluster-1",
      "serial_number": "123456789",
      "state": "compliant",
      "capacity": {
        "maximum_size": 109951162777600,
        "used_size": 0
      }
    }
  ],
  "_links": {
    "self": {
      "href": "/api/cluster/licensing/licenses/fabricpool/"
    }
  }
}

```

## Deleting a specific license

This example show how to delete a CIFS site license.

```

# API
curl -X DELETE "https://<mgmt-ip>/api/cluster/licensing/licenses/cifs?serial_number=1-80-000011"

# JSON Body
{}

# Response
200 OK

```

## Deleting with a query

The following example shows how to delete all NFS licenses specified with the '\*' query.

```
# API
curl -X DELETE "https://<mgmt-
ip>/api/cluster/licensing/licenses/nfs?serial_number=*"

# JSON Body
{}

# Response
200 OK
```

## Deleting all licenses installed with NLFv2

The following example shows how to delete all licenses installed by a NLFv2 formatted license.

```
# API
curl -X DELETE "https://<mgmt-
ip>/api/cluster/licensing/licenses?licenses.installed_license=Core*Bundle&
serial_number=4149026-97-8"

# JSON Body
{
  "num_records": 1,
  "_links": {
    "self": {
      "href":
"/api/cluster/licensing/licenses?licenses.installed_license=Core*Bundle&se
rial_number=4149026-97-8"
    }
  }
}

# Response
200 OK
```

## Retrieve license packages

GET /cluster/licensing/licenses

**Introduced In:** 9.6

Retrieves a collection of license packages.



By default, the GET method only returns licensed packages. You must provide the following query "state=unlicensed" to retrieve unlicensed packages. **Note:** Starting with ONTAP 9.11.1, the GET method no longer returns the Base license record.

## Related ONTAP commands

- `system license show-status`
- `system license show`

## Parameters

Name	Type	In	Required	Description
entitlement.risk	string	query	False	Filter by entitlement.risk <ul style="list-style-type: none"><li>• Introduced in: 9.11</li></ul>
entitlement.action	string	query	False	Filter by entitlement.action <ul style="list-style-type: none"><li>• Introduced in: 9.11</li></ul>
state	string	query	False	Filter by state
scope	string	query	False	Filter by scope
description	string	query	False	Filter by description <ul style="list-style-type: none"><li>• Introduced in: 9.11</li></ul>
name	string	query	False	Filter by name
licenses.expiry_time	string	query	False	Filter by licenses.expiry_time
licenses.compliance.state	string	query	False	Filter by licenses.compliance.state
licenses.serial_number	string	query	False	Filter by licenses.serial_number

Name	Type	In	Required	Description
licenses.shutdown_imminent	boolean	query	False	Filter by licenses.shutdown_imminent  • Introduced in: 9.11
licenses.capacity.maximum_size	integer	query	False	Filter by licenses.capacity.maximum_size
licenses.capacity.used_size	integer	query	False	Filter by licenses.capacity.used_size
licenses.installed_license	string	query	False	Filter by licenses.installed_license  • Introduced in: 9.9
licenses.host_id	string	query	False	Filter by licenses.host_id  • Introduced in: 9.9
licenses.start_time	string	query	False	Filter by licenses.start_time
licenses.active	boolean	query	False	Filter by licenses.active
licenses.owner	string	query	False	Filter by licenses.owner
licenses.evaluation	boolean	query	False	Filter by licenses.evaluation
fields	array[string]	query	False	Specify the fields to return.
max_records	integer	query	False	Limit the number of records returned.



Name	Type	In	Required	Description
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
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: 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	<a href="#">_links</a>	
num_records	integer	Number of records
records	array[ <a href="#">records</a> ]	

## Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "num_records": 1,
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "description": "NFS License",
      "entitlement": {
        "action": "string",
        "risk": "string"
      },
      "keys": [
        "string"
      ],
      "licenses": [
        {
          "capacity": {
            "maximum_size": 0,
            "used_size": 0
          },
          "compliance": {
            "state": "compliant"
          },
          "expiry_time": "2019-03-02 14:00:00 -0500",
          "host_id": "456-44-1234",
          "installed_license": "Core Bundle",
          "owner": "cluster1",
          "serial_number": "123456789",
          "start_time": "2019-02-02 14:00:00 -0500"
        }
      ],
      "name": "NFS",
      "scope": "string",
    }
  ]
}
```

```
    "state": "compliant"
  }
]
```

## Error

Status: Default, Error

Name	Type	Description
error	<a href="#">returned_error</a>	

### 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	<a href="#">href</a>	
self	<a href="#">href</a>	

\_links

Name	Type	Description
self	<a href="#">href</a>	

entitlement

Name	Type	Description
action	string	Entitlement action to be taken to mitigate the risk
risk	string	Entitlement risk of the package

capacity

Name	Type	Description
maximum_size	integer	Licensed capacity size (in bytes) that can be used.
used_size	integer	Capacity that is currently used (in bytes).

compliance

Name	Type	Description
state	string	Compliance state of the license.

licenses

Name	Type	Description
active	boolean	A flag indicating whether the license is currently being enforced.
capacity	<a href="#">capacity</a>	
compliance	<a href="#">compliance</a>	
evaluation	boolean	A flag indicating whether the license is in evaluation mode.
expiry_time	string	Date and time when the license expires.
host_id	string	A string that associates the license with a node or cluster.
installed_license	string	Name of license that enabled the feature.
owner	string	Cluster, node or license manager that owns the license.
serial_number	string	Serial number of the license.
shutdown_imminent	boolean	<p>A flag indicating whether the Cloud ONTAP system is going to shutdown as the Cloud platform license has already expired.</p> <ul style="list-style-type: none"> <li>• readOnly: 1</li> <li>• Introduced in: 9.11</li> <li>• x-nullable: true</li> </ul>
start_time	string	Date and time when the license starts.

#### records

Name	Type	Description
_links	<a href="#">_links</a>	
description	string	License description
entitlement	<a href="#">entitlement</a>	
keys	array[string]	

Name	Type	Description
licenses	array[ <a href="#">licenses</a> ]	Installed licenses of the package.
name	string	Name of the license.
scope	string	Scope of the license.
state	string	Summary state of package based on all installed licenses.

error\_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

returned\_error

Name	Type	Description
arguments	array[ <a href="#">error_arguments</a> ]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

## Install one or more feature licenses

POST `/cluster/licensing/licenses`

**Introduced In:** 9.6

Installs one or more feature licenses.

### Required properties

- `keys` - Array containing a list of NLF or 28-character license keys.

## Related ONTAP commands

- `system license add`

## Parameters

Name	Type	In	Required	Description
return_records	boolean	query	False	The default is false. If set to true, the records are returned. <ul style="list-style-type: none"><li>• Default value:</li></ul>

## Request Body

Name	Type	Description
_links	<a href="#">_links</a>	
description	string	License description
entitlement	<a href="#">entitlement</a>	
keys	array[string]	
licenses	array[ <a href="#">licenses</a> ]	Installed licenses of the package.
name	string	Name of the license.
scope	string	Scope of the license.
state	string	Summary state of package based on all installed licenses.

## Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "description": "NFS License",
  "entitlement": {
    "action": "string",
    "risk": "string"
  },
  "keys": [
    "string"
  ],
  "licenses": [
    {
      "capacity": {
        "maximum_size": 0,
        "used_size": 0
      },
      "compliance": {
        "state": "compliant"
      },
      "expiry_time": "2019-03-02 14:00:00 -0500",
      "host_id": "456-44-1234",
      "installed_license": "Core Bundle",
      "owner": "cluster1",
      "serial_number": "123456789",
      "start_time": "2019-02-02 14:00:00 -0500"
    }
  ],
  "name": "NFS",
  "scope": "string",
  "state": "compliant"
}
```

## Response

Status: 201, Created



Name	Type	Description
_links	<a href="#">_links</a>	
num_records	integer	Number of records
records	array[ <a href="#">records</a> ]	

## Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "num_records": 1,
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "description": "NFS License",
      "entitlement": {
        "action": "string",
        "risk": "string"
      },
      "keys": [
        "string"
      ],
      "licenses": [
        {
          "capacity": {
            "maximum_size": 0,
            "used_size": 0
          },
          "compliance": {
            "state": "compliant"
          },
          "expiry_time": "2019-03-02 14:00:00 -0500",
          "host_id": "456-44-1234",
          "installed_license": "Core Bundle",
          "owner": "cluster1",
          "serial_number": "123456789",
          "start_time": "2019-02-02 14:00:00 -0500"
        }
      ],
      "name": "NFS",
      "scope": "string",
    }
  ]
}
```

```

    "state": "compliant"
  }
]
}

```

## Headers

Name	Description	Type
Location	Useful for tracking the resource location	string

## Error

Status: Default

## ONTAP Error Response Codes

Error Code	Description
1115117	Generic licensing error
1115122	No cluster serial number found
1115124	No node serial number found
1115130	No license code was provided
1115131	Installation of the license failed
1115132	License already exists on system
1115134	Serial number does not belong to node
1115141	License data is invalid
1115142	License signature is invalid
1115143	Internal error applying the requested license
1115152	License does not apply to the platform
1115154	Unable to retrieve cluster ID
1115155	Invalid cluster ID found
1115159	License is not in an acceptable format
1115160	License has already expired
1115164	Minimum ONTAP version requirements not met
1115165	Minimum ONTAP version requirements are not met for license type enabled
1115166	Minimum ONTAP version requirements are not met for license protocol SEC-COMP-BNDL-ENBLD

Error Code	Description
1115179	FlexCache is not supported on this system
1115180	FlexCache is not supported on cloud systems
1115407	Capacity pool licenses cannot be installed directly
1115427	License is incompatible with capacity pools licensing mode
1115562	One or more errors occurred when installing a NLFv2 license
1115563	Package details and serial number of license contained within the NLFv2 failure
1115564	Package cannot be deleted individually as it is part of a bundle
1115565	NLFv2 install failed as the license serial number is already in use
1115616	Package details and serial number of license included in the install conflict
1115617	NLFv2 license install failed with summary of conflicting licenses
1115618	NLFv2 license install failed as a license with newer timestamp already exists
5375355	The cluster has more nodes than are supported by All SAN Array.
5375366	The cluster has one or more nodes that do not support All SAN Array.
66846818	Failed to interpret FlexCache license information
66846821	FlexCache is not supported on cloud systems
66846822	Invalid FlexCache capacity information provided
655294464	Failed to extract license contents
655294465	License key is invalid
655294466	Serial number is invalid
655294467	Version number is invalid
655294468	Expired license
655294469	License does not apply to the platform
655294470	License does not apply to the product

Also see the table of common errors in the [Response body](#) overview section of this documentation.

Name	Type	Description
errors	array[ <a href="#">returned_error</a> ]	

### Example error

```
{
  "errors": [
    {
      "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	<a href="#">href</a>	

entitlement

Name	Type	Description
action	string	Entitlement action to be taken to mitigate the risk
risk	string	Entitlement risk of the package

capacity

Name	Type	Description
maximum_size	integer	Licensed capacity size (in bytes) that can be used.
used_size	integer	Capacity that is currently used (in bytes).

compliance

Name	Type	Description
state	string	Compliance state of the license.

licenses

Name	Type	Description
active	boolean	A flag indicating whether the license is currently being enforced.
capacity	<a href="#">capacity</a>	
compliance	<a href="#">compliance</a>	

Name	Type	Description
evaluation	boolean	A flag indicating whether the license is in evaluation mode.
expiry_time	string	Date and time when the license expires.
host_id	string	A string that associates the license with a node or cluster.
installed_license	string	Name of license that enabled the feature.
owner	string	Cluster, node or license manager that owns the license.
serial_number	string	Serial number of the license.
shutdown_imminent	boolean	<p>A flag indicating whether the Cloud ONTAP system is going to shutdown as the Cloud platform license has already expired.</p> <ul style="list-style-type: none"> <li>• readOnly: 1</li> <li>• Introduced in: 9.11</li> <li>• x-nullable: true</li> </ul>
start_time	string	Date and time when the license starts.

#### license\_package

Name	Type	Description
_links	<a href="#">_links</a>	
description	string	License description
entitlement	<a href="#">entitlement</a>	
keys	array[string]	
licenses	array[ <a href="#">licenses</a> ]	Installed licenses of the package.
name	string	Name of the license.
scope	string	Scope of the license.

Name	Type	Description
state	string	Summary state of package based on all installed licenses.

`_links`

Name	Type	Description
next	<a href="#">href</a>	
self	<a href="#">href</a>	

records

Name	Type	Description
<code>_links</code>	<a href="#">_links</a>	
description	string	License description
entitlement	<a href="#">entitlement</a>	
keys	array[string]	
licenses	array[ <a href="#">licenses</a> ]	Installed licenses of the package.
name	string	Name of the license.
scope	string	Scope of the license.
state	string	Summary state of package based on all installed licenses.

error\_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

returned\_error

Name	Type	Description
arguments	array[ <a href="#">error_arguments</a> ]	Message arguments
code	string	Error code



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

## Delete a license

DELETE /cluster/licensing/licenses/{name}

**Introduced In:** 9.6

Deletes a license.

### Related ONTAP commands

- `system license delete`

### Parameters

Name	Type	In	Required	Description
name	string	path	True	Name of the license package to delete.
serial_number	string	query	True	Serial number of the license to delete.

### Response

Status: 200, Ok

### Error

Status: Default

#### ONTAP Error Response Codes

Error Code	Description
525028	Error during volume limit check, cannot remove license
525029	Current volume use will exceed limits if license is removed

Error Code	Description
1115137	Cluster license requires a base license to be installed
1115144	Cloud licenses cannot be deleted
1115178	A tier license that is still in use cannot be deleted
1115213	License is still in use and cannot be removed
1115406	Capacity pool licenses cannot be deleted
1115564	Package is part of a NLFv2 license and cannot be removed individually
66846823	A FlexCache license that is still in use cannot be deleted

Also see the table of common errors in the [Response body](#) overview section of this documentation.

Name	Type	Description
error	<a href="#">returned_error</a>	

### 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

### returned\_error

Name	Type	Description
arguments	array[ <a href="#">error_arguments</a> ]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

## Retrieve a license package

GET /cluster/licensing/licenses/{name}

Introduced In: 9.6

Retrieves a specific license package.



By default, the GET method only returns licensed packages. You must provide the following query "state=unlicensed" to retrieve unlicensed packages.

## Related ONTAP commands

- `system license show`
- `system license show-status`

## Parameters

Name	Type	In	Required	Description
name	string	path	True	Name of the license package.

Name	Type	In	Required	Description
entitlement.risk	string	query	False	Filter by entitlement.risk  • Introduced in: 9.11
entitlement.action	string	query	False	Filter by entitlement.action  • Introduced in: 9.11
state	string	query	False	Filter by state
scope	string	query	False	Filter by scope
description	string	query	False	Filter by description  • Introduced in: 9.11
licenses.expiry_time	string	query	False	Filter by licenses.expiry_time
licenses.compliance.state	string	query	False	Filter by licenses.compliance.state
licenses.serial_number	string	query	False	Filter by licenses.serial_number
licenses.shutdown_imminent	boolean	query	False	Filter by licenses.shutdown_imminent  • Introduced in: 9.11
licenses.capacity.maximum_size	integer	query	False	Filter by licenses.capacity.maximum_size
licenses.capacity.used_size	integer	query	False	Filter by licenses.capacity.used_size

Name	Type	In	Required	Description
licenses.installed_license	string	query	False	Filter by licenses.installed_license  • Introduced in: 9.9
licenses.host_id	string	query	False	Filter by licenses.host_id  • Introduced in: 9.9
licenses.start_time	string	query	False	Filter by licenses.start_time
licenses.active	boolean	query	False	Filter by licenses.active
licenses.owner	string	query	False	Filter by licenses.owner
licenses.evaluation	boolean	query	False	Filter by licenses.evaluation
fields	array[string]	query	False	Specify the fields to return.

## Response

Status: 200, Ok

Name	Type	Description
_links	<a href="#">_links</a>	
description	string	License description
entitlement	<a href="#">entitlement</a>	
keys	array[string]	
licenses	array[ <a href="#">licenses</a> ]	Installed licenses of the package.
name	string	Name of the license.

Name	Type	Description
scope	string	Scope of the license.
state	string	Summary state of package based on all installed licenses.

### Example response

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "description": "NFS License",
  "entitlement": {
    "action": "string",
    "risk": "string"
  },
  "keys": [
    "string"
  ],
  "licenses": [
    {
      "capacity": {
        "maximum_size": 0,
        "used_size": 0
      },
      "compliance": {
        "state": "compliant"
      },
      "expiry_time": "2019-03-02 14:00:00 -0500",
      "host_id": "456-44-1234",
      "installed_license": "Core Bundle",
      "owner": "cluster1",
      "serial_number": "123456789",
      "start_time": "2019-02-02 14:00:00 -0500"
    }
  ],
  "name": "NFS",
  "scope": "string",
  "state": "compliant"
}
```

## Error

Status: Default, Error

Name	Type	Description
error	<a href="#">returned_error</a>	

### 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	<a href="#">href</a>	

entitlement

Name	Type	Description
action	string	Entitlement action to be taken to mitigate the risk
risk	string	Entitlement risk of the package

capacity

Name	Type	Description
maximum_size	integer	Licensed capacity size (in bytes) that can be used.
used_size	integer	Capacity that is currently used (in bytes).

compliance

Name	Type	Description
state	string	Compliance state of the license.

licenses

Name	Type	Description
active	boolean	A flag indicating whether the license is currently being enforced.
capacity	<a href="#">capacity</a>	
compliance	<a href="#">compliance</a>	



Name	Type	Description
evaluation	boolean	A flag indicating whether the license is in evaluation mode.
expiry_time	string	Date and time when the license expires.
host_id	string	A string that associates the license with a node or cluster.
installed_license	string	Name of license that enabled the feature.
owner	string	Cluster, node or license manager that owns the license.
serial_number	string	Serial number of the license.
shutdown_imminent	boolean	<p>A flag indicating whether the Cloud ONTAP system is going to shutdown as the Cloud platform license has already expired.</p> <ul style="list-style-type: none"> <li>• readOnly: 1</li> <li>• Introduced in: 9.11</li> <li>• x-nullable: true</li> </ul>
start_time	string	Date and time when the license starts.

#### error\_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

#### returned\_error

Name	Type	Description
arguments	array[ <a href="#">error_arguments</a> ]	Message arguments
code	string	Error code

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

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