



Manage cluster NTP keys

ONTAP 9.11.1 REST API reference

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Table of Contents

- Manage cluster NTP keys 1
 - Cluster NTP keys endpoint overview 1
 - Retrieve NTP symmetric authentication keys 1
 - Create an NTP symmetric authentication key entry 6
 - Delete an NTP key 11
 - Retrieve NTP symmetric authentication key details 13
 - Update NTP symmetric authentication key details 16

Manage cluster NTP keys

Cluster NTP keys endpoint overview

Overview

You can configure NTP to use shared private keys between ONTAP and trusted external NTP time servers.

You acquire the keys from the external NTP time servers and individual entries created for each unique key. You can use the `/cluster/ntp/servers` API to associate a key with an external NTP time server used by ONTAP and enable authentication.

Fields used for adding an NTP shared key

The required fields are:

- `id`
- `digest_type`
- `secret_key`

Example

```
# Body
create_ntp_key.txt (body) :
{
  "id": 10,
  "digest_type": "sha1",
  "value": "da39a3ee5e6b4b0d3255bfef95601890afd80709"
}

# Request
curl -X POST "https://<mgmt-ip>/api/cluster/ntp/keys" -d
"@create_ntp_key.txt"
```

Retrieve NTP symmetric authentication keys

GET `/cluster/ntp/keys`

Introduced In: 9.7

Retrieves the collection of NTP symmetric authentication keys known by ONTAP that are uniquely indexed by an identifier.

Related ONTAP commands

- `cluster time-service ntp key show`

Learn more

- [DOC /cluster/ntp/keys](#)

Parameters

Name	Type	In	Required	Description
value	string	query	False	Filter by value
id	integer	query	False	Filter by id <ul style="list-style-type: none">• Max value: 65535• Min value: 1
digest_type	string	query	False	Filter by digest_type
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">• Max value: 120• Min value: 0• Default value: 1

Name	Type	In	Required	Description
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	Number of records.
records	array[ntp_key]	

Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "num_records": 1,
  "records": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "digest_type": "sha1",
    "id": 10,
    "value": "da39a3ee5e6b4b0d3255bfef95601890afd80709"
  }
}
```

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	

ntp_key

Name	Type	Description
_links	_links	
digest_type	string	The type of cryptographic hash used to create and verify the NTP's message authentication code appended to each NTP packet header.
id	integer	NTP symmetric authentication key identifier or index number (ID). This ID is included in the NTP cryptographic hash encoded header.
value	string	<p>A hexadecimal digit string that represents the cryptographic key that is shared with the remote NTP server. The current expected length is 40 characters.</p> <p>Use the cryptographic key and key ID to create a unique hash value used to authenticate the rest of the NTP data.</p>

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.

Create an NTP symmetric authentication key entry

POST `/cluster/ntp/keys`

Introduced In: 9.7

Creates an NTP symmetric authentication key entry including the type of key using an unused identifier or index number (ID).

Required properties

- `id` - Shared symmetric key number (ID).
- `digest_type` - Shared private key cryptographic hash type.
- `value` - Value of shared private key.

Related ONTAP commands

- `cluster time-service ntp key create`

Learn more

- [DOC /cluster/ntp/keys](#)

Parameters

Name	Type	In	Required	Description
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:

Request Body

Name	Type	Description
_links	_links	
digest_type	string	The type of cryptographic hash used to create and verify the NTP's message authentication code appended to each NTP packet header.
id	integer	NTP symmetric authentication key identifier or index number (ID). This ID is included in the NTP cryptographic hash encoded header.
value	string	<p>A hexadecimal digit string that represents the cryptographic key that is shared with the remote NTP server. The current expected length is 40 characters.</p> <p>Use the cryptographic key and key ID to create a unique hash value used to authenticate the rest of the NTP data.</p>

Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "digest_type": "sha1",
  "id": 10,
  "value": "da39a3ee5e6b4b0d3255bfef95601890afd80709"
}
```

Response

Status: 201, Created

Error

Status: Default

ONTAP Error Response Codes

Error Code	Description
2097187	Invalid value for an NTP symmetric authentication key. A SHA1 key must be exactly 40 hexadecimal digits.
2097189	Too many NTP keys have been configured.

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	

ntp_key

Name	Type	Description
_links	_links	
digest_type	string	The type of cryptographic hash used to create and verify the NTP's message authentication code appended to each NTP packet header.
id	integer	NTP symmetric authentication key identifier or index number (ID). This ID is included in the NTP cryptographic hash encoded header.
value	string	<p>A hexadecimal digit string that represents the cryptographic key that is shared with the remote NTP server. The current expected length is 40 characters.</p> <p>Use the cryptographic key and key ID to create a unique hash value used to authenticate the rest of the NTP data.</p>

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.

Delete an NTP key

DELETE /cluster/ntp/keys/{id}

Introduced In: 9.7

Deletes an NTP key.

Related ONTAP commands

- `cluster time-service ntp key delete`

Learn more

- [DOC /cluster/ntp/keys](#)

Parameters

Name	Type	In	Required	Description
id	integer	path	True	Key identifier

Response

Status: 200, Ok

Error

Status: Default

ONTAP Error Response Codes

Error Code	Description
2097186	The key cannot be deleted because it is being used by an NTP server.

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 NTP symmetric authentication key details

GET /cluster/ntp/keys/{id}

Introduced In: 9.7

Retrieves the details of a specific NTP symmetric authentication key by numeric identifier or index (ID).

Related ONTAP commands

- `cluster time-service ntp key show`

Learn more

- [DOC /cluster/ntp/keys](#)

Parameters

Name	Type	In	Required	Description
id	integer	path	True	Key identifier
fields	array[string]	query	False	Specify the fields to return.

Response

Status: 200, Ok

Name	Type	Description
_links	_links	
digest_type	string	The type of cryptographic hash used to create and verify the NTP's message authentication code appended to each NTP packet header.
id	integer	NTP symmetric authentication key identifier or index number (ID). This ID is included in the NTP cryptographic hash encoded header.
value	string	<p>A hexadecimal digit string that represents the cryptographic key that is shared with the remote NTP server. The current expected length is 40 characters.</p> <p>Use the cryptographic key and key ID to create a unique hash value used to authenticate the rest of the NTP data.</p>

Example response

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "digest_type": "sha1",
  "id": 10,
  "value": "da39a3ee5e6b4b0d3255bfef95601890afd80709"
}
```


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.

Update NTP symmetric authentication key details

PATCH `/cluster/ntp/keys/{id}`

Introduced In: 9.7

Updates the details of a specific NTP symmetric authentication key by numeric identifier or index (ID).

Required properties

- `digest_type` - Shared private key cryptographic hash type.
- `value` - Value of shared private key.

Related ONTAP commands

- `cluster time-service ntp key modify`

Learn more

- [DOC /cluster/ntp/keys](#)

Parameters

Name	Type	In	Required	Description
id	integer	path	True	Key identifier

Request Body

Name	Type	Description
_links	_links	
digest_type	string	The type of cryptographic hash used to create and verify the NTP's message authentication code appended to each NTP packet header.
id	integer	NTP symmetric authentication key identifier or index number (ID). This ID is included in the NTP cryptographic hash encoded header.
value	string	<p>A hexadecimal digit string that represents the cryptographic key that is shared with the remote NTP server. The current expected length is 40 characters.</p> <p>Use the cryptographic key and key ID to create a unique hash value used to authenticate the rest of the NTP data.</p>

Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "digest_type": "sha1",
  "id": 10,
  "value": "da39a3ee5e6b4b0d3255bfe95601890afd80709"
}
```

Response

Status: 200, Ok

Error

Status: Default

ONTAP Error Response Codes

Error Code	Description
2097187	An invalid SHA1 key was provided.

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	

ntp_key

Name	Type	Description
_links	_links	
digest_type	string	The type of cryptographic hash used to create and verify the NTP's message authentication code appended to each NTP packet header.
id	integer	NTP symmetric authentication key identifier or index number (ID). This ID is included in the NTP cryptographic hash encoded header.
value	string	<p>A hexadecimal digit string that represents the cryptographic key that is shared with the remote NTP server. The current expected length is 40 characters.</p> <p>Use the cryptographic key and key ID to create a unique hash value used to authenticate the rest of the NTP data.</p>

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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