



picoNETS NodeAPI v2 API Specification Doc

(NodeAPI Job Management Interface)

Version	Date	Author	Description
1.0	25-Mar-2020	RajeevRK	Initial draft
2.0	29-Apr-2020	RajeevRK, NileshGR	Added debug messages in response, Added Purge Methods
2.1	22-May-2020	RajeevRK, NileshGR	Fixed Path Errors, Harmonised parameter names across calls.

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1. Conventions

- **Client** - API Requestor
- **Server** - API Responder
- **Node** - CDN Node hosting the API Server
- **Status** - Job status code of a jobid.
- All the possible responses are listed under 'Responses' for each method. Typically, only one of them is issued per request.
- All responses are in JSON format.
- All request parameters are mandatory unless explicitly marked as [optional]
- The type of values accepted for a *request* parameter may be seen in the values column like this [**10**|<any number>]. The | symbol means OR. If the parameter is [optional], the implicit default value is shown in blue bold text, as **10** is written in [**10**|<any number>].

2. Authentication and Authorization

Authentication of all requests made to the NodeAPI endpoints is via a shared pair of 64-bit pre-shared APIKeyID + APISecret tokens. Issue of the APIKey + APISecret token pairs will be managed via the proposed picoCDN CoreAPI framework, and there is no mechanism to create/request the token sets via the NodeAPI.

The APIKeyID is required in every request in the *PICOCDN_NODEAPIV2_AUTHKEYID* header, while the associated APISecret token is used as the input key to compute the secure SHA256HMAC hash value for the *PICOCDN_NODEAPIV2_HMAC* parameter. The data used as input to the hash function is dependent on the request method employed, as per the table below.

Method	HASH Data Elements
GET / PUT / DELETE	Complete Request URI, including the leading scheme, host, path, resource and all parameters. Note: all parameters need to be urlencoded where appropriate and the order of elements must be maintained between the Hash calculation and the request submission.
POST	Complete Request URI, including the leading scheme, host, path resource and all parameters, Followed by a newline and the Request Body. Note: the order of elements must be maintained between the Hash calculation and the request submission.

3. Status Codes and Messages

All status codes are 2 character status codes. The below ones are used in this version of the API. Any additional status codes that are introduced in the future can be ignored if encountered on this version of the API.

In addition, a more detailed status can be found in the *status_detail* response field. Historical details about the status transitions of a job throughout its lifetime are available in the optional *debug* response field, which may be restricted based on the APIKeyID used for the request.

- SX** - Success of some kind During Job Execution
- EX** - Error occurred of some kind Prior to Job Execution/Query
- FX** - Error/Failure occurred during Job Execution/Query

Status Code	Description
SS	Job Submission Successful
SR	Job Running
SW	Job Completed Successfully with Warnings/Non-Fatal Failures
SC	Job Completed Successfully
ST	Job without errors Terminated by Client API Request
EP	Bad request - Parse Error or Authentication failure
ER	Error - Job Rejected
EN	Error - Job Not Found
FD	Failed Job - Resource Download Failed

4. Methods

1. jobGetStatus.cgi

Get the status of a previously submitted Job.

Request

Method	URL
GET	nodeapi/v2/jobGetStatus.cgi

Sample URL :

"https://root01.edge01.picocdn.net/nodeapi/v2/jobGetStatus.cgi?nodeapi_jobid=root01.edge01.jobPrewarmStreamVod.2020040826722"

Type	Params	Format	Description
GET	nodeapi_jobid	string	Identifies jobid for which status is requested.

Response

Type	Params	Format	Description
JSON	nodeapi_jobid	string	Identifies the job.
JSON	status	string	Identifies current status of the jobid
JSON	status_detail	string	Contains additional information regarding current status of the jobid
JSON	status_time	unixtime	Time at which status was updated
JSON	submit_time	unixtime	Time at which job was submitted
JSON	debug	string	[optional] Debug Information

Sample Response JSON :

```
{ "nodeapi_jobid": "root01.edge01.jobPrewarmStreamVod.2020040826722", "status": "FD", "status_detail": "failed", "status_time": "1586307278", "submit_time": "1586307277", "debug": "//1586307277/SS/submitted//1586307278/FD/master playlist download failed - 8" }
```

2. jobPrewarmStreamVod.cgi

Initiate a full prewarm activity for a VoD Playlist Resource. Full prewarm includes all child playlists, video/audio bitrates, language audio streams and subtitle streams. This method currently supports HLS .m3u8 and MPEG DASH .mpd manifest types.

Request

Method	URL
POST	nodeapi/v2/jobPrewarmStreamVod.cgi

Sample Postdata (Content-Type : application/x-www-form-urlencoded):

nodeapi_jobpriority=5&nodeapi_joburl=https%3A%2F%2Fdemo.picocdn.net%2Fcontent%2Fmaster_android.m3u8

Type	Params	Format	Description
POST	nodeapi_jobpriority	integer	Identifies job priority [5 <0 - 9>].
POST	nodeapi_joburl	String (urlencoded)	URL of master manifest [.m3u8 / .mpd]

Response

Type	Params	Format	Description
JSON	nodeapi_jobid	string	Identifies the job.
JSON	status	string	Identifies current status of the jobid
JSON	status_detail	string	Contains additional information regarding current status of the jobid
JSON	status_time	unixtime	Time at which status was updated
JSON	submit_time	unixtime	Time at which job was submitted
JSON	debug	string	[optional] Debug Information

Sample Response (Content-Type : text/json) :

```
{"nodeapi_jobid":"root01.edge01.jobPrewarmStreamVod.202004133758", "status":"SS", "status_detail":"submitted", "statustime":"1586777002", "submittime":"1586777002", "debug":"//1586777002/SS/submitted"}
```

3. jobPrewarmStreamLive.cgi

Initiate a full prewarm activity for a Live Playlist Resource. Full prewarm includes all child playlists, video/audio bitrates, language audio streams and subtitle streams. This method currently supports HLS .m3u8 Live manifests only.

Request

Method	URL
POST	nodeapi/v2/jobPrewarmStreamLive.cgi

Sample Postdata (Content-Type : application/x-www-form-urlencoded):

nodeapi_jobpriority=5&nodeapi_joburl=https%3A%2F%2Fdemo.picocdn.net%2Fcontent%2Ffive1.m3u8&nodeapi_jobflags=PlaylistRefreshDelaySeconds=3,PlaylistRefreshMaxFailures=10

Type	Params	Format	Description
POST	nodeapi_jobpriority	integer	Identifies job priority [5 <0 - 9>].
POST	nodeapi_joburl	String (urlencoded)	URL of Live manifest [.m3u8]
POST	nodeapi_jobflags (Optional)	String (urlencoded)	Comma Separated list of jobflags with any optional parameters. [default flag1,flag2=value2,...]

Supported Job Flags

Job Flag	Description
playlist_refresh_delay_sec	Delay in Seconds to wait before looped retrieval of a live stream playlist after download of the last segment.
playlist_refresh_maxfailures	Maximum number of consecutive playlist fetch failures before auto-terminating the Job.

Response

Type	Params	Format	Description
JSON	nodeapi_jobid	string	Identifies the job.
JSON	status	string	Identifies current status of the jobid
JSON	status_detail	string	Contains additional information regarding current status of the jobid

JSON	status_time	unixtime	Time at which status was updated
JSON	submit_time	unixtime	Time at which job was submitted
JSON	debug	string	[optional] Debug Information

Sample Response JSON :

```
{"nodeapi_jobid":"root01.edge01.jobPrewarmStreamLive.202004133758", "status":"SS", "status_detail":"submitted", "status_time":"1586777002",  
"submit_time":"1586777002", "debug":"//1586777002/SS/submitted"}
```


4. jobStopPrewarmStreamLive.cgi

Stop live prewarm of a previously submitted live prewarm job.

Request

Method	URL
GET	nodeapi/v2/jobStopPrewarmStreamLive.cgi

Sample URL :

"https://root01.edge01.picocdn.net/nodeapi/v2/jobStopPrewarmStreamLive.cgi?nodeapi_jobid=root01.jobPrewarmStreamVod.2020040826722"

Type	Params	Format	Description
GET	nodeapi_jobid	string	Identifies jobid to stop prewarming.

Response

Type	Params	Format	Description
JSON	nodeapi_jobid	string	Identifies the job.
JSON	status	string	Identifies status of the job stop request
JSON	status_detail	string	Contains additional information regarding current status of the jobid
JSON	status_time	unixtime	Time at which status was updated
JSON	submit_time	unixtime	Time at which job was submitted
JSON	debug	string	[optional] Debug Information

Sample Response JSON :

```
{
  "nodeapi_jobid": "root01.edge01.jobPrewarmStreamLive.2020040826722",
  "status": "SC",
  "status_detail": "StreamEnd",
  "status_time": "1586308344",
  "submit_time": "1586307277",
  "debug": "//1586307277/SS/submitted//1586308344/ST/StreamEnd"
}
```

5. jobPrewarmStaticResource.cgi

Initiate a prewarm upload activity for a Static Resource. This method currently supports any static resource type for upload and injection into the cache.

Request

Method	URL
PUT	nodeapi/v2/jobPrewarmStaticResource.cgi

Sample URL :

"https://root01.edge01.picocdn.net/nodeapi/v2/jobPrewarmStaticResource.cgi?nodeapi_joburl=https%3A%2F%2Fdemo.picocdn.net%2Fcontent%2Fadvertisement1.mp4&nodeapi_reshash=00b403765178875203f4612995974f986d8cd5f02af3d072997baf85228580e"

Resource File in body data (Content-Type : <as per resource>)

Type	Params	Format	Description
PUT	nodeapi_joburl	String (urlencoded)	URL Location to upload static resource as.
PUT	nodeapi_reshash	string	SHA256SUM Hash of the PUT Body Data

Response

Type	Params	Format	Description
HTTP	HTTP/201	Response code	Response Code identifying a successfully inserted resource in cache
HTTP	HTTP/204	Response code	Response Code identifying a successfully updated resource in cache
HTTP	HTTP/400	Response code	Response Code Identifying a failed validation of the resource hash
HTTP	HTTP/500	Response code	Response Code identifying a request failure

Sample Response (Response Headers) :

HTTP/1.1 201 Created
Content-Location: <Resource URL>

6. jobPurgeStreamVod.cgi

Initiate a full purge activity for a VoD Playlist Resource. Full purge includes all child playlists, video/audio bitrates, language audio streams and subtitle streams. This method currently supports HLS .m3u8 and MPEG DASH .mpd manifest types.

Request

Method	URL
POST	nodeapi/v2/jobPurgeStreamVod.cgi

Sample Postdata (Content-Type : application/x-www-form-urlencoded):

nodeapi_jobpriority=5&nodeapi_joburl=https%3A%2F%2Fdemo.picocdn.net%2Fcontent%2Fmaster_android.m3u8&nodeapi_jobflags=purgetype=delete

Type	Params	Format	Description
POST	nodeapi_jobpriority	integer	Identifies job priority [5 <0 - 9].
POST	nodeapi_joburl	String (urlencoded)	URL of master manifest [.m3u8 / .mpd]
POST	nodeapi_jobflags (Optional)	String (urlencoded)	Comma Separated list of jobflags with any optional parameters. [default flag1,flag2=value2,...]

Supported Job Flags

Job Flag	Description
purge_type	Type of purge to perform. Supported Types : <ol style="list-style-type: none"> 1. invalid - Invalidate all Cache entries for the Manifest and all child resources. Does not delete the resource data. Cache can serve the assets after performing an Origin IMS Request. 2. delete - Delete all Cache entries for the manifest and all child resources. Cache would need to perform a fresh origin request to serve the data again.

Response

Type	Params	Format	Description
JSON	nodeapi_jobid	string	Identifies the job.
JSON	status	string	Identifies current status of the jobid
JSON	status_detail	string	Contains additional information regarding current status of the jobid
JSON	status_time	unixtime	Time at which status was updated
JSON	submit_time	unixtime	Time at which job was submitted
JSON	debug	string	[optional] Debug Information

Sample Response JSON :

```
{"nodeapi_jobid":"root01.edge01.jobPrewarmStreamLive.202004133758", "status":"SC", "status_detail":"deleted", "status_time":"1586777002", "submit_time":"1586777002", "debug":"//1586777002/SC/deleted"}
```

7. jobPurgeStaticResource.cgi

Initiate a purge activity for a Static Resource. This method currently supports any static resource type for invalidation or removal from the cache.

Request

Method	URL
POST	nodeapi/v2/jobPurgeStaticResource.cgi

Sample Postdata (Content-Type : application/x-www-form-urlencoded):

nodeapi_jobpriority=5&nodeapi_joburl=https%3A%2F%2Fdemo.picocdn.net%2Fcontent%2Fadvertisement.mp4&nodeapi_jobflags=purgetype=delete

Type	Params	Format	Description
POST	nodeapi_joburl	String (urlencoded)	URL of resource to purge
POST	nodeapi_jobflags (Optional)	String (urlencoded)	Comma Separated list of jobflags with any optional parameters. [default flag1,flag2=value2,...]

Supported Job Flags

Job Flag	Description
purge_type	Type of purge to perform. Supported Types : 3. invalid - Invalidate all Cache entries for the Manifest and all child resources. Does not delete the resource data. Cache can serve the assets after performing an Origin IMS Request. 4. delete - Delete all Cache entries for the manifest and all child resources. Cache would need to perform a fresh origin request to serve the data again.

Response

Type	Params	Format	Description
JSON	nodeapi_jobid	string	Identifies the job.
JSON	status	string	Identifies current status of the jobid
JSON	status_detail	string	Contains additional information regarding current status of the jobid

JSON	status_time	unixtime	Time at which status was updated
JSON	submit_time	unixtime	Time at which job was submitted
JSON	debug	string	[optional] Debug Information

Sample Response JSON :

```
{"nodeapi_jobid":"root01.edge01.jobPrewarmStreamLive.202004133758", "status":"SC", "status_detail":"deleted", "status_time":"1586777002",  
"submit_time":"1586777002", "debug":"//1586777002/SC/deleted"}
```

8. jobPurgeStaticPath.cgi

Initiate a purge activity for all Static Resources below a specified basepath. This method currently supports any static resource type for invalidation or removal from the cache.

Request

Method	URL
POST	nodeapi/v2/jobPurgeStaticPath.cgi

Sample Postdata (Content-Type : application/x-www-form-urlencoded):

nodeapi_jobpriority=5&nodeapi_joburl=https%3A%2F%2Fdemo.picocdn.net%2Fcontent%2F&nodeapi_jobflags=purgetype=delete

Type	Params	Format	Description
POST	nodeapi_joburl	String (urlencoded)	Basepath URL to purge [must end in /]
POST	nodeapi_jobflags (Optional)	String (urlencoded)	Comma Separated list of jobflags with any optional parameters. [default flag1,flag2=value2,...]

Supported Job Flags

Job Flag	Description
purge_type	Type of purge to perform. Supported Types : 5. invalid - Invalidate all Cache entries for the Manifest and all child resources. Does not delete the resource data. Cache can serve the assets after performing an Origin IMS Request. 6. delete - Delete all Cache entries for the manifest and all child resources. Cache would need to perform a fresh origin request to serve the data again.

Response

Type	Params	Format	Description
JSON	nodeapi_jobid	string	Identifies the job.
JSON	status	string	Identifies current status of the jobid
JSON	status_detail	string	Contains additional information regarding current status of the jobid
JSON	status_time	unixtime	Time at which status was updated

JSON	submit_time	unixtime	Time at which job was submitted
JSON	debug	string	[optional] Debug Information

Sample Response JSON :

```
{"nodeapi_jobid":"root01.edge01.jobPrewarmStreamLive.202004133758", "status":"SC", "status_detail":"deleted", "status_time":"1586777002",  
"submit_time":"1586777002", "debug":"//1586777002/SC/deleted"}
```