

Tungsten Cluster Master Class

Intermediate: Using the API

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Topics

In this short course, we will discuss:

- What the API is
- Enabling the API
- Accessing the API
- Examples
- API possibilities

The API

- Public, RESTful API
 - APIv2 added in v7.0.0
 - APIv8 added in v8.0.0 (simpler, reduced number of entry points)
- Key Foundations:
 - Security first:
 - Mandatory user/password at installation (optional in APIv2)
 - Localhost only by default, SSL enabled by default
 - Per-Layer API – each component has it's own entry points
 - Per-host instances – passwords stored securely on each node
 - Read-only information through GET calls
 - Creation of resources through POST calls (use PUT calls with APIv2)
 - Updates with PUT calls
 - Deletions through DELETE calls (use PUT calls with APIv2)
- Extensive documentation online at docs.continuent.com, full developer docs are also available

Enabling the API credentials

- Within your tungsten.ini configuration:
 - `rest-api-admin-user`
 - `rest-api-admin-password`
- Mandatory in v8, optional in v7
- Additional users can be created using the `createAdminUser` API call through curl or tapi

Enabling the API

Enabled by default, to disable or explicitly enable:

- `rest-apis=true|false`

or

- `replicator-rest-api=true|false`
- `manager-rest-api=true|false`
- `connector-rest-api=true|false`

Enabling the API

Change the listening address:

- `rest-api-address=0.0.0.0`

or

- `replicator-rest-api-address=0.0.0.0`
- `manager-rest-api-address=0.0.0.0`
- `connector-rest-api-address=0.0.0.0`

Enabling the API

Enforce authentication (true by default):

- `rest-api-authentication=true|false`

or

- `replicator-rest-api-authentication=true|false`
- `manager-rest-api-authentication=true|false`
- `connector-rest-api-authentication=true|false`

Enabling the API

Enable SSL (true by default):

- `rest-api-ssl=true|false`

or

- `replicator-rest-api-ssl=true|false`
- `manager-rest-api-ssl=true|false`
- `connector-rest-api-ssl=true|false`

Enabling the API

Changing API Ports (values shown are the defaults):

- `replicator-rest-port=8097`
- `manager-rest-api-port=8090`
- `connector-rest-api-port=8096`

Accessing the API

- `curl`
 - Simplest method via CLI
- `tapi`
 - Wrapper for curl commands
 - Simple to use
 - Fully functional for APIv2, not all functions will work in APIv8
 - Specify `--apiver 8` on calls
- PostMan
 - Most popular GUI tools

curl Examples

```
shell> curl -k --request GET 'https://127.0.0.1:8096/api/v2/ping'
```

```
{ "payloadType":"PingPayload",  
  "payloadVersion":"1",  
  "payload":{  
    "message":"Ping test",  
    "date":"Mon Mar 10 10:12:18 UTC 2025",  
    "hostName":"gilmbp-8.local",  
    "pid":16743,  
    "jvmUptime":152513  
  }  
}
```

curl Examples

```
shell> curl -k --request GET 'https://127.0.0.1:8097/api/v8/replicator/services'
```

```
{
  "payloadType": "ServicesPayload",
  "payloadVersion": "1",
  "payload": [
    {
      "serviceType": "local",
      "appliedLastSeqno": 28,
      "relativeLatency": 1.001,
      "role": "master",
      "appliedLatency": 1.138,
      "masterConnectUri": "thls://localhost:/",
      "started": true,
      "state": "ONLINE",
      "serviceName": "west"
    }
  ]
}
```

curl Examples

```
shell> curl -k --request PUT 'https://127.0.0.1:8097/api/v8/replicator/online'
```

```
{  
  "payloadType": "TaskPayload",  
  "payloadVersion": "1",  
  "payload": {  
    "taskId": "ecaed8a7-5b57-4a76-a1a5-a2de14d9cc79",  
    "state": "in_progress",  
    "operation": "OnlineTask"  
  }  
}
```

tapi Examples

```
shell> tapi -R replicator/services --apiver 8
[
  {
    "state" : "ONLINE",
    "role" : "slave",
    "serviceName" : "alpha",
    "serviceType" : "local",
    "relativeLatency" : 904.068,
    "appliedLatency" : 0.948,
    "appliedLastSeqno" : 1,
    "started" : true,
    "masterConnectUri" : "th1://db1:2112/"
  }
]
```

Connector API

- View Connector status
- Change operational states (offline / online etc.)
- Change configuration:
 - Change proxy methods/modes
 - Change timeout settings
- Manage in-memory user.map entries

Manager API

- View
 - manager status
 - Topology information
- Create/modify data sources
- Create full cluster configurations
- Change datasource states
- Initiate switches and failovers

Replicator API

- View status of replicator services
- Take services offline/online
- Reset services
- Initiate backups/restores
- Change replicator roles
- View THL info/index information
- Enable THL compression/encryption

Summary

What we learnt in this course:

- What the API is
- How to enable the API
- Accessing the API
- Viewed some examples
- Discussed various actions that can be taken using the API

Thank you for listening

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