



# ETSI NFV MANO Northbound API Overview

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## ETSI NFV MANO Northbound API Overview

The ETSI NFV MANO API (ETSI API) is another programmatic interface to ESC that uses the REST architecture. The ETSI MANO adheres to the standards defined by the European Telecommunications Standards Institute (ETSI), specifically around Management and Orchestration (MANO). The API accepts and returns HTTP messages that contain JavaScript Object Notation (JSON) payloads. The API contains its own datamodel designed around the ETSI MANO specifications that abstract away from the ESC core datamodel.

For information on VNF lifecycle management operations using the REST/NETCONF APIs, see the [Cisco Elastic Services Controller User Guide](#).

*Table 1: ETSI MANO Specifications*

Specification	Version Support	Description
SOL001	v3.3.1	Format and structure for the VNF Descriptor
SOL002	v3.3.1	Defines all interactions over the Ve-Vnfm reference point
SOL003	v3.3.1	Defines all interactions over the Or-Vnfm reference point
SOL004	v3.3.1	Defines the VNFD CSAR package specification
SOL013	v3.3.1	Defines common data structures and payloads, common to all ETSI specifications



**Note** The terminology used in the ETSI-specific sections of the user guide align to the ETSI MANO standards defined in the ETSI documentation. For more information, see the [ETSI website](#).

For an orchestrator to check the versions of the APIs supported by a VNFM, a request can be made to the `/api_versions` endpoints. A version takes the form *MAJOR.MINOR.PATCH*; although only the MAJOR version appears in the URIs presented by the VNFM, the full version indicates the data model that the VNFM has implemented.

The Operations supported are:

- Retrieve all supported versions for the given API
- Retrieve all supported versions for the given API, filtered on the major version

### Retrieve all supported versions :

The request returns the version for the `apiName` supplied, showing the version, whether the version is deprecated, and optionally when the version will be retired.

Method Type:

POST

VNFM endpoint:

```
{apiRoot}/{apiName}/api_versions
```

HTTP Request Headers:

```
Content-Type:application/json
```

Response Body (ETSI data structure: `ApiVersionInformation`)

For example, for `vnffm`:

```
{
  "uriPrefix": "https://localhost:8251/or_vnfm/vnffm"
  "apiVersions" : [
    {
      "version" : "1.0.0",
      "isDeprecated" : true,
      "retirementDate" : "13-Jan-22"
    },
    {
      "version" : "1.3.0",
      "isDeprecated" : false
    }
  ]
}
```

### Retrieve all supported versions for a given major version:

The request returns the version for the `apiName` supplied, showing the version, whether the version is deprecated and optionally when the version retires, filtered by the major version.

Also, the `uriPrefix` is returned which consists of the invoking protocol (http or https), the hostname, port and `apiRoot`. The `apiRoot` will optionally contain a version also (v1 or v2) if the version was specified in the invoking URL.

Method type:

POST

VNFM endpoint:

```
{apiRoot}/{apiName}/{apiMajorVersion}/api_versions
```

HTTP Request Headers:

```
Content-Type:application/json
```

Response Body (ETSI data structure: ApiVersionInformation)

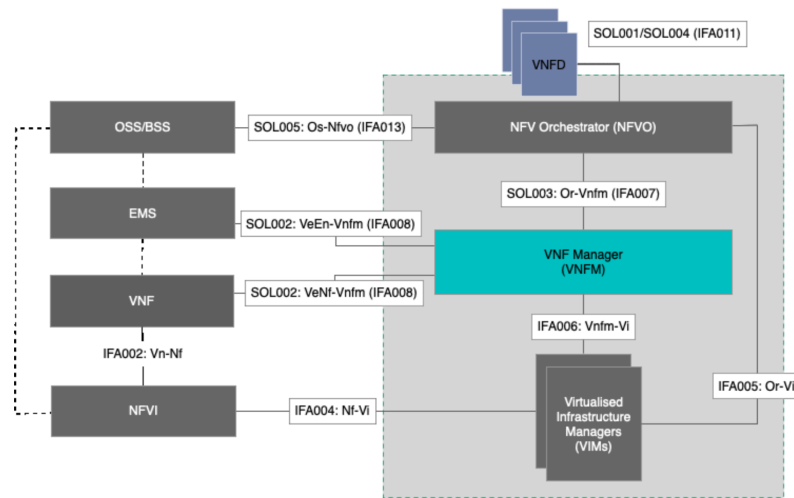
For example, for `vnflcm` and `major version=2`:

```
{
  "uriPrefix": "https://localhost:8251/or_vnfm/vnflcm/v2"
  "apiVersions" : [
    {
      "version" : "2.0.0",
      "isDeprecated" : false
    }
  ]
}
```

The current implementation of the ETSI NFV MANO standards consists of the Or-Vnfm and Ve-Vnfm reference points, which are the interfaces between the NFVO and VNFM, and the EM and the VNFM respectively. Both of these allow for the onboarding of ETSI-compliant CSAR packages, management of virtualized resources, and VNF lifecycle management (LCM) operations.

For more information on Or-Vnfm and Ve-Vnfm reference points, see the *ETSI Group Specification document* on the ETSI website. The figure below represents the NFV MANO architecture for all reference points.

**Figure 1: NFV MANO Architecture with Reference Points**



For information on managing resources, see [Managing Resources](#).

