



# Administering ESC Using ETSI API

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## ETSI Performance Reports

ESC allows you to collect the performance information of the VNFs such as metrics and notifications using the performance management job functionality. You must first create a performance management (PM) job. After creating the PM job, you can perform the following tasks:

- Query, delete, or notify performance management jobs
- Read an individual report, or obtain the performance reports
- Configure the threshold of the performance management jobs
- Query, delete or notify the threshold of the performance management jobs
- Manage subscriptions, query, subscribe or terminate subscriptions

## Performance Management Jobs

This section describes the performance management jobs.

### Create Performance Management Job

You must create a performance management job to further query and run reports.

Method Type:

POST

VNFM Endpoint:

`{api_root}/vnfpm/v1/pm_jobs` (Data structure=CreatePmJobRequest)

Request Payload:

```
{
  "objectInstanceIds": ["cc6a34e5-0463-459a-b367-493ba997775f"],
  "criteria": {
    "performanceMetric": ["default"],
    "performanceMetricGroup": ["default"],
    "collectionPeriod": 3600,
    "reportingPeriod": 14400
  }
}
```

**Response Payload:**

```
{
  "id": "13963644-11b0-4302-a13b-26ca3d9eb8f8",
  "objectInstanceIds": ["cc6a34e5-0463-459a-b367-493ba997775f "],
  "criteria": {
    "performanceMetric": ["default"],
    "performanceMetricGroup": ["default"],
    "collectionPeriod": 3600,
    "reportingPeriod": 14400
  },
  "_links": {
    "self": {
      "href":
"http://host:port/vnfpm/v1/pm_jobs/13963644-11b0-4302-a13b-26ca3d9eb8f8"
    },
    "objects": [{
      "href":
"http://host:port/vnflcm/v1/vnf_instances/cc6a34e5-0463-459a-b367-493ba997775f"
    }]
  }
}
```

**Query an Individual Performance Management Job**

The NFVO queries for the individual performance management job.

Method Type:

GET

VNFM Endpoint:

{api\_root}/vnfpm/v1/pm\_jobs/{pmJobId} or GET {api\_root}/vnfpm/v1/pm\_jobs/{pmJobId}

Request Payload:

NA.

Response Payload:

```
{
  "id": "13963644-11b0-4302-a13b-26ca3d9eb8f8",
  "objectInstanceIds": ["cc6a34e5-0463-459a-b367-493ba997775f "],
  "criteria": {
    "performanceMetric": ["default"],
    "performanceMetricGroup": ["default"],
    "collectionPeriod": 3600,
    "reportingPeriod": 14400,
    "reports": [{
      "href": "uri_where_report_can_be_obtained",
      "readyTime": "2018-08-20T06:17:35.081+0000",
      "expiryTime": "2018-10-20T06:17:35.081+0000",
    }]
  }
}
```

```

        "fileSize": "5000"
      }
    ],
    "_links": {
      "self": {
        "href":
"http://host:port/vnfpm/v1/pm_jobs/13963644-11b0-4302-a13b-26ca3d9eb8f8"
      },
      "objects": [{
        "href":
"http://host:port/vnflcm/v1/vnf_instances/cc6a34e5-0463-459a-b367-493ba997775f"
      }]
    }
  }
}

```



**Note** A reports section is added to the response payload (as shown above) only if a report is available.

All the attribute names and the data types referenced from the attribute names in the response payload are supported in the attribute-based filtering.

### Query All Performance Management Jobs

The NFVO gets the list of all the performance management jobs.

Method Type:

GET

VNFM Endpoint:

{api\_root}/vnfpm/v1/pm\_jobs or GET {api\_root}/vnfpm/v1/pm\_jobs

Request Payload:

NA.

Response Payload:

```

{
  "id": "13963644-11b0-4302-a13b-26ca3d9eb8f8",
  "objectInstanceIds": ["cc6a34e5-0463-459a-b367-493ba997775f "],
  "criteria": {
    "performanceMetric": ["default"],
    "performanceMetricGroup": ["default"],
    "collectionPeriod": 3600,
    "reportingPeriod": 14400,
    "reports": [{
      "href": "uri_where_report_can_be_obtained",
      "readyTime": "2018-08-20T06:17:35.081+0000",
      "expiryTime": "2018-10-20T06:17:35.081+0000",
      "fileSize": "5000"
    }]
  },
  "_links": {
    "self": {
      "href":
"http://host:port/vnfpm/v1/pm_jobs/13963644-11b0-4302-a13b-26ca3d9eb8f8"
    },
    "objects": [{
      "href":
"http://host:port/vnflcm/v1/vnf_instances/cc6a34e5-0463-459a-b367-493ba997775f"
    }]
  }
}

```

```

    }
  }
}

```



**Note** A reports section is added to the response payload (as shown above) only if a report is available.

All the attribute names in the response payload and data types referenced from the attribute names are supported in the attribute-based filtering.

### Delete a Performance Management Job

The NFVO sends a delete request to the existing performance management job.

```
DELETE {api_root}/vnfpm/v1/pm_jobs/{pmJobId}
```

The NFVO is notified using the `PerformanceInformationAvailableNotification` notification.

## Configuring Threshold for Performance Management Job

This section describes how to set the threshold for the performance management jobs.

### Create a Threshold

The NFVO sends a create request to create a threshold for the performance management job.

Method Type:

POST

VNFM Endpoint:

```
{api_root}/vnfpm/v1/thresholds (Datastructure=CreateThresholdRequest)
```

Request Payload:

```

{
  "objectInstanceId": "cc6a34e5-0463-459a-b367-493ba997775f",
  "criteria": {
    "performanceMetric": "default",
    "thresholdType": "SIMPLE",
    "simpleThresholdDetails": {
      "thresholdValue": 0.8,
      "hysteresis": 0.9
    }
  }
}

```

Response Payload:

```

{
  "id": "23f52511-9f72-4797-881b-c0f72e60a052",
  "objectInstanceId": "cc6a34e5-0463-459a-b367-493ba997775f",
  "criteria": {
    "performanceMetric": "default",
    "thresholdType": "SIMPLE",
    "simpleThresholdDetails": {
      "thresholdValue": 0.8,
    }
  }
}

```

```

        "hysteresis": 0.9
      }
    },
    "_links": {
      "self": {
        "href":
"http://host:port/vnfpm/v1/thresholds/23f52511-9f72-4797-881b-c0f72e60a052"
      },
      "object": [{
        "href":
"http://host:port/vnflcm/v1/vnf_instances/cc6a34e5-0463-459a-b367-493ba997775f"
      }]
    }
  }
}

```

### Query an Individual Threshold

The NFVO can query the threshold of a performance management job.

GET

VNFM Endpoint:

```
{api_root}/vnfpm/v1/thresholds/{thresholdId}
```

Request Payload: NA

Response Payload:

```

{
  "id": "23f52511-9f72-4797-881b-c0f72e60a052",
  "objectInstanceId": "cc6a34e5-0463-459a-b367-493ba997775f",
  "criteria": {
    "performanceMetric": "default",
    "thresholdType": "SIMPLE",
    "simpleThresholdDetails": {
      "thresholdValue": 0.8,
      "hysteresis": 0.9
    }
  },
  "_links": {
    "self": {
      "href":
"http://host:port/vnfpm/v1/thresholds/23f52511-9f72-4797-881b-c0f72e60a052"
    },
    "object": [{
      "href":
"http://host:port/vnflcm/v1/vnf_instances/cc6a34e5-0463-459a-b367-493ba997775f"
    }]
  }
}

```




---

**Note** Attribute-based filtering is not possible when specifying a threshold id.

---

### Query All Thresholds

The NFVO can query the threshold of a performance management job.

Method Type:

GET

VNFM Endpoint:

```
{api_root}/vnfpm/v1/thresholds
```

Request Payload: NA

Response Payload:

```
{
  "id": "23f52511-9f72-4797-881b-c0f72e60a052",
  "objectInstanceId": "cc6a34e5-0463-459a-b367-493ba997775f",
  "criteria": {
    "performanceMetric": "default",
    "thresholdType": "SIMPLE",
    "simpleThresholdDetails": {
      "thresholdValue": 0.8,
      "hysteresis": 0.9
    }
  },
  "_links": {
    "self": {
      "href":
"http://host:port/vnfpm/v1/thresholds/23f52511-9f72-4797-881b-c0f72e60a052"
    },
    "object": [{
      "href":
"http://host:port/vnflcm/v1/vnf_instances/cc6a34e5-0463-459a-b367-493ba997775f"
    }]
  }
}
```




---

**Note** All the attribute names in the response payload and data types referenced from the attribute names are supported in the attribute-based filtering.

---

### Delete a Threshold

The NFVO sends a delete request to delete the threshold configuration of the existing performance management job.

```
DELETE {api_root}/vnfpm/v1/thresholds/{thresholdId}
```

The NFVO receives the `ThresholdCrossedNotification` if ESC crosses a configured threshold.

## Subscribing to Performance Management Job

This section describes subscribing to the performance management jobs.

### Create a Performance Management Subscription

The NFVO can subscribe to the performance management jobs.

Method Type:

POST

## VNFM Endpoint:

```
{api_root}/vnfpm/v1/subscriptions (DataStructure=PmSubscriptionRequest)
```

**Example 1:**

## Request Payload:

```
{
  "callbackUri": "http://host:port/notification",
  "filter": {
    "notificationTypes": ["ThresholdCrossedNotification",
"PerformanceInformationAvailableNotification"],
    "vnfInstanceSubscriptionFilter": {
      "vnfdIds": ["25ec9e1c-ad9e-4613-9280-411920f3649a"],
      "vnfInstanceIds": ["cc6a34e5-0463-459a-b367-493ba997775f"]
    }
  }
}
```

## Response Payload:

```
{
  "id": "4fba7dcb-e015-4674-9c50-8cee7059eb91"
  "callbackUri": "http://host:port/notification",
  "filter": {
    "notificationTypes": ["ThresholdCrossedNotification",
PerformanceInformationAvailableNotification"],
    "vnfInstanceSubscriptionFilter": {
      "vnfdIds": ["25ec9e1c-ad9e-4613-9280-411920f3649a"],
      "vnfInstanceIds":
["cc6a34e5-0463-459a-b367-493ba997775f"]
    }
  },
  "_links": {
    "self": {
      "href":
"http://host:port/vnfpm/v1/subscriptions/4fba7dcb-e015-4674-9c50-8cee7059eb91"
    }
  }
}
```

**Example 2:**

## Request Payload:

```
{
  "callbackUri": "http://host:port/notification",
  "filter": {
    "notificationTypes": ["ThresholdCrossedNotification",
"PerformanceInformationAvailableNotification"],
    "vnfInstanceSubscriptionFilter": {
      "vnfProductsFromProviders": [{
        "vnfProvider": "Cisco",
        "vnfProducts": [{
          "vnfProductName": "vnfd-1VDU",
          "versions": [{
            "vnfSoftwareVersion": "1.3.1",
            "vnfdVersions":
["1.0", "1.1", "1.2"]
          }
        ]
      }
    ]
  }
}
```

```

    }],
    "vnfInstanceNames":
["kaswaczy-TestETSIpSubscriptionGet-114113"]
  }
}

```

**Response Payload:**

```

{
  "id": "4fba7dcb-e015-4674-9c50-8cee7059eb92"
  "callbackUri": "http://host:port/notification",
  "filter": {
    "notificationTypes": ["ThresholdCrossedNotification",
"PerformanceInformationAvailableNotification"],
    "vnfInstanceSubscriptionFilter": {
      "vnfProductsFromProviders": [{
        "vnfProvider": "Cisco",
        "vnfProducts": [{
          "vnfProductName":
"vnfd-1VDU",
          "versions": [{
            "vnfSoftwareVersion": "1.3.1",
            "vnfdVersions": ["1.0", 1.1", 1.2"]
          }
        ]
      }
    ]
  }
},
  "vnfInstanceNames":
["kaswaczy-TestETSIpSubscriptionGet-114113"]
  },
  "_links": {
    "self": {
      "href":
"http://host:port/vnfp/v1/subscriptions/4fba7dcb-e015-4674-9c50-8cee7059eb92"
    }
  }
}

```

**Note**

- The vnfdIds and vnfProductsFromProviders attributes are mutually exclusive. Only one of them can be provided in a single create request.
- The vnfInstanceIds and vnfInstanceNames attributes are mutually exclusive. Only one of them can be provided in a single create request.
- If the specified callbackUri and filter precisely matches an existing subscription, the create subscription operation will fail with an error message stating duplicate subscriptions are not allowed.

**Query an Individual Performance Management Subscription**

Method Type:

GET

VNFM Endpoint:

```
{api_root}/vnfp/v1/subscriptions/{subscriptionId}
```



Request Payload: NA

Response Payload:

```
{
  "id": "4fba7dcb-e015-4674-9c50-8cee7059eb91"
  "callbackUri": "http://host:port/notification",
  "filter": {
    "notificationTypes": ["ThresholdCrossedNotification",
"PerformanceInformationAvailableNotification"],
    "vnfInstanceSubscriptionFilter": {
      "vnfdIds":
["25ec9e1c-ad9e-4613-9280-411920f3649a"],
      "vnfInstanceIds":
["cc6a34e5-0463-459a-b367-493ba997775f"]
    },
    "_links": {
      "self": {
        "href":
"http://host:port/vnfpm/v1/subscriptions/4fba7dcb-e015-4674-9c50-8cee7059eb91"
      }
    }
  }
}
```



**Note** Attribute-based filtering is not possible when specifying a subscription id.

### Query all Performance Management Subscriptions

Method Type:

GET

{api\_root}/vnfpm/v1/subscriptions

Request Payload: NA

Response Payload:

```
{
  "_embedded": {
    "pmSubscriptions": [{
      "id":
"4fba7dcb-e015-4674-9c50-8cee7059eb91"
      "callbackUri": "http://host:port/notification",
      "filter": {
        "notificationTypes":
["ThresholdCrossedNotification", "PerformanceInformationAvailableNotification"],
        "vnfInstanceSubscriptionFilter": {
          "vnfdIds":
["25ec9e1c-ad9e-4613-9280-411920f3649a"],
          "vnfInstanceIds": ["cc6a34e5-0463-459a-b367-493ba997775f"]
        },
        "_links": {
          "self": {
            "href":
```

```

"http://host:port/vnfpm/v1/subscriptions/4fba7dcb-e015-4674-9c50-8cee7059eb91"
    },
    {
      "id":
"4fba7dcb-e015-4674-9c50-8cee7059eb92" "callbackUri": "http://host:port/notification",
      "filter": {
        "notificationTypes":
["ThresholdCrossedNotification", "PerformanceInformationAvailableNotification"],
      "vnfInstanceSubscriptionFilter": {
        "vnfProductsFromProviders": [{
          "vnfProvider": "Cisco",
          "vnfProducts": [{
            "vnfProductName": "vnfd-1VDU",
            "versions": [{
              "vnfSoftwareVersion": "1.3.1",
              "vnfdVersions": ["1.0", "1.1", "1.2"]
            }]
          }]
        }
      },
      "vnfInstanceNames": ["kaswaczy-TestETSIPmSubscriptionGet-114113"]
    },
    "_links": {
      "self": {
        "href":
"http://host:port/vnfpm/v1/subscriptions/4fba7dcb-e015-4674-9c50-8cee7059eb92"
      }
    }
  ]
}

```



**Note** All attribute names and data types referenced in the response payload are supported in attribute-based filtering of the parameters.

### Terminate a Performance Management Subscription

The NFVO can terminate a subscription.

```
DELETE {api_root}/vnfpm/v1/subscriptions/{subscriptionId}
```