



## Administering ESC

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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/vnfp/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": [{
                        "vnfdVersions":
["1.0", "1.1", "1.2"]
                    }
                ]
            }
        ]
    },
    "vnfInstanceNames":
["kaswaczy-TestETSIPmSubscriptionGet-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": [{
                        "vnfdVersions":
["1.0", "1.1", "1.2"]
                    }
                ]
            }
        ]
    },
    "vnfInstanceNames":
["kaswaczy-TestETSIPmSubscriptionGet-114113"]
}
}

```



```

        "vnfInstanceNames":
["kaswaczy-TestETSIPmSubscriptionGet-114113"]
    },
    "_links": {
        "self": {
            "href":
"http://host:port/vnfpm/v1/subscriptions/4fba7dcb-e015-4674-9c50-8cee7059eb92"
        }
    }
}

```

**Note**

- The vnfIds 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}/vnfpm/v1/subscriptions/{subscriptionId}
```

Request Payload: NA

Response Payload:

```

{
    "id": "4fba7dcb-e015-4674-9c50-8cee7059eb91"
    "callbackUri": "http://host:port/notification",
    "filter": {
        "notificationTypes": ["ThresholdCrossedNotification",
"PerformanceInformationAvailableNotification"],
        "vnfInstanceSubscriptionFilter": {
            "vnfIds":
["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-lVDU",
              "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}
```

