



System Alerting and Monitoring API Reference

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System Alerting and Monitoring API Reference
InterSystems IRIS Data Platform 2024-05-06
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For Support questions about any InterSystems products, contact:

InterSystems Worldwide Response Center (WRC)
Tel: +1-617-621-0700
Tel: +44 (0) 844 854 2917
Email: support@InterSystems.com

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SAM API Overview

This document describes the System Alerting and Monitoring (SAM) APIs, which provide access to SAM configuration settings and details. You may use these APIs to script the initial deployment of SAM.

Note: If you prefer to configure SAM using its web-based user interface, see [System Alerting and Monitoring Guide](#).

The SAM APIs support the standard HTTP request methods and return a JSON response. In a request, the endpoint is preceded by `http://sam-domain-name:port`, where *sam-domain-name* is the DNS name or IP address of the host SAM is running on and *port* is its web server port (8080 by default). Each API entry in this document includes an example request and response.

The following endpoints are available:

- [/api/sam](#) for retrieving general SAM information.
- [/api/sam/admin/cluster](#) for managing SAM clusters.
- [/api/sam/admin/target](#) for managing InterSystems IRIS® data platform instances monitored by SAM.
- [/api/sam/admin/alertrule](#) for viewing and changing cluster alert rules.
- [/api/sam/config/](#) for managing configuration settings.

In addition, every InterSystems IRIS instance includes an API that exposes metrics and alerts from that instance. For more information, see “[Monitoring InterSystems IRIS Using REST API](#)” in the *Monitoring Guide*.

Table 1–1: /api/sam endpoints

Get SAM Manager version	GET /api/sam/version
Get information for all instances	GET /api/sam/target/state/
Get information for a specific instance	GET /api/sam/target/state/{id}
Get alerts	GET /api/sam/alerts/

Table 1–2: /api/sam/admin/cluster endpoints

Create a new cluster	POST /api/sam/admin/cluster
Get information for all clusters	GET /api/sam/admin/cluster/
Get information for a specific cluster	GET /api/sam/admin/cluster/{id}
Update a cluster's information	PUT /api/sam/admin/cluster/{id}
Delete a cluster from SAM	DELETE /api/sam/admin/cluster/{id}

Table 1–3: /api/sam/admin/target endpoints

Add an instance to SAM	POST /api/sam/admin/target
Get clusters of all instances	GET /api/sam/admin/target/
Get cluster of a specific instance	GET /api/sam/admin/target/{id}
Update an instance's information	PUT /api/sam/admin/target/{id}
Delete an instance from SAM	DELETE /api/sam/admin/target/{id}

Table 1–4: /api/sam/admin/alertrule endpoints

Get alert rules for specific cluster	GET /api/sam/admin/alertrule/{clusterid}/
Replace alert rules for specific cluster	PUT /api/sam/admin/alertrule/{clusterid}/

Table 1–5: /api/sam/admin/config/backup endpoints

Get a full backup of the SAM Manager system configuration as a JSON object	GET /api/sam/admin/config/backup/
Import a full SAM Manager system configuration from a JSON object, replacing the current configuration	PUT /api/sam/admin/config/backup/

Table 1–6: /api/sam/config/keepdays endpoints

Get the number of days that SAM stores metrics and alerts	GET /api/sam/admin/config/keepdays
Set number of days for SAM to store metrics and alerts	PUT /api/sam/admin/config/keepdays

/api/sam API Reference

GET /api/sam/version

Get SAM Manager version

Description

Returns the version information for the SAM manager.

Request Example

GET http://localhost:8080/api/sam/version

Response Example

```
{
  "iris": "IRIS for UNIX (Ubuntu Server LTS for x86-64 Containers) 2019.4.0LSAM (Build 162U) Fri Mar 13
  2020 14:30:23 EDT",
  "sam_api": 1
}
```

GET /api/sam/target/state/

Get information for all instances

Description

Reports the system state and metadata for all InterSystems IRIS® data platform instances monitored by SAM.

Request Example

GET `http://localhost:8080/api/sam/target/state/`

Table A-1: Parameters

<code>cluster</code>	<i>Optional query parameter.</i> Filters target instances by cluster id.
----------------------	--

This endpoint supports a `cluster` query parameter that filters the results by cluster. For example:

GET `http://localhost:8080/api/sam/target/state/?cluster=2`

Response Example

The response is a JSON array of JSON objects for each configured instance, such as:

```
[
  {
    "instance": "172.16.6.9:80",
    "name": "IRIS_primary",
    "description": "Primary Mirror Member",
    "clustername": "local",
    "id": 1,
    "clusterid": 1,
    "urlPrefix": "/mirror1",
    "dashboardId": "2",
    "state": 0
  },
  {
    "instance": "172.16.6.8:80",
    "name": "IRIS_backup",
    "description": "Backup Mirror Member",
    "clustername": "local",
    "id": "2",
    "clusterid": 1,
    "urlPrefix": "/mirror2",
    "dashboardId": "HTIxx8IVz",
    "state": 1
  }
]
```

Note: The `urlPrefix` and `dashboardId` properties were added in SAM version 2.0.

The possible values for `state` are:

- -1: Unreachable
- 0: OK
- 1: Warning
- 2: Critical

GET /api/sam/target/state/{id}

Get information for a specific instance

Description

Reports the system state and metadata for the target InterSystems IRIS® data platform instance.

Request Example

GET http://localhost:8080/api/sam/target/state/1

Table A-2: Parameters

<i>id</i>	<i>Required path variable.</i> The id of the target instance.
-----------	---

Response Example

```
{
  "name": "IRIS3",
  "description": "Local IRIS3",
  "instance": "172.16.6.9:80",
  "clusterid": 1,
  "clustername": "local",
  "urlPrefix": "/local3",
  "dashboardId": "UBE6j_IVk",
  "state": 0
}
```

Note: The `urlPrefix` and `dashboardId` properties were added in SAM version 2.0.

The possible values for `state` are:

- -1: Unreachable
- 0: OK
- 1: Warning
- 2: Critical

GET /api/sam/alerts/

Get alerts

Description

This method returns all the alerts SAM has collected from Prometheus and InterSystems IRIS® data platform.

Request Example

GET `http://localhost:8080/api/sam/alerts/`

Table A-3: Parameters

<i>cluster</i>	<i>Optional query parameter.</i> Only return alerts from the cluster with the specified id. Cannot be combined with <i>target</i> .
<i>target</i>	<i>Optional query parameter.</i> Only return alerts from the instance with the specified id. Cannot be combined with <i>cluster</i> .
<i>count</i>	<i>Optional query parameter.</i> Only return the specified number of alerts. Returns most recently reported alerts first. Cannot be combined with <i>timestamp</i> or <i>state</i> .
<i>timestamp</i>	<i>Optional query parameter.</i> Only return alerts that were reported after the specified ISO 8601 UTC timestamp. Cannot be combined with <i>count</i> or <i>state</i> .
<i>state</i>	<i>Optional query parameter.</i> Filters alerts that factor into the system state calculation. Cannot be combined with <i>count</i> or <i>timestamp</i> .

This endpoint supports several query parameters to filter the results. For example:

GET `http://localhost:8080/api/sam/alerts/?target=2`

GET `http://localhost:8080/api/sam/alerts/?timestamp=2020-01-07T19:20:21.434Z:`

Response Example

The response is a JSON array of JSON objects for each alert, which contains the alert name, instance, severity, description, first reported timestamp, last reported timestamp and quantity reported. For example:

```
[
  {
    "instance": "172.16.6.9:80",
    "name": "iris_phys_mem_per_cent_used",
    "severity": "warning",
    "instanceid": 1,
    "description": "Warning: iris_phys_mem_per_cent_used = 96 (warning threshold is 90).",
    "quantity": 2,
    "clustername": "test",
    "clusterid": 1,
    "firstreported": "2020-03-16T14:09:51.873Z",
    "lastreported": "2020-03-16T14:13:53.823Z",
  },
  {
    "instance": "172.16.6.9:80",
    "name": "iris_cpu_usage",
    "severity": "critical",
    "instanceid": 1,
  }
]
```

```
    "description": "Critical: iris_cpu_usage = 98 (critical threshold is 95)",  
    "quantity": 3,  
    "clustername": "test",  
    "clusterid": 1,  
    "firstreported": "2020-03-16T14:09:51.873Z",  
    "lastreported": "2020-03-16T14:11:21.872Z"  
  }  
]
```

POST /api/sam/admin/cluster

Create a new cluster

Description

Add this cluster to the %SAM.Cluster table.

To use this endpoint, you must log in as a user with access to the %SAM.Admin resource.

Request Example

POST `http://localhost:8080/api/sam/admin/cluster`

JSON request packet:

```
{
  "name": "test",
  "description": "A cluster of test instances"
}
```

Note: The cluster name is always saved as lowercase. Any uppercase characters are converted to lowercase.

Response Example

```
{
  "id": 2
}
```

GET /api/sam/admin/cluster/

Get information for all clusters

Description

Get the metadata for all of the defined clusters.

Request Example

GET `http://localhost:8080/api/sam/admin/cluster/`

Response Example

```
[
  {
    "id": 1,
    "name": "production",
    "description": "The main cluster"
  },
  {
    "id": 2,
    "name": "test",
    "description": "A cluster of test instances"
  }
]
```

GET /api/sam/admin/cluster/{id}

Get information for a specific cluster

Description

Get the metadata for this cluster.

Request Example

GET http://localhost:8080/api/sam/admin/cluster/2

Table A-4: Parameters

<i>id</i>	<i>Required path variable.</i> The id of the target cluster.
-----------	--

Response Example

```
{
  "description": "A cluster of test instances",
  "name": "test"
}
```

PUT /api/sam/admin/cluster/{id}

Update a cluster's information

Description

Update the metadata for this cluster in the %SAM.Cluster table.

To use this endpoint, you must log in as a user with access to the %SAM.Admin resource.

Request Example

PUT `http://localhost:8080/api/sam/admin/cluster/{id}`

Table A-5: Parameters

<i>id</i>	<i>Required path variable.</i> The id of the target cluster to update.
-----------	--

Example JSON request packet:

```
{
  "name": "test-new",
  "description": "The test cluster for new features"
}
```

DELETE /api/sam/admin/cluster/{id}

Delete a cluster from SAM

Description

Remove this cluster from the %SAM.Cluster table. This also removes all instances that were associated with the cluster.

To use this endpoint, you must log in as a user with access to the %SAM.Admin resource.

Request Example

```
DELETE http://localhost:8080/api/sam/admin/cluster/6
```

Table A-6: Parameters

<i>id</i>	<i>Required path variable.</i> The id of the target cluster to delete.
-----------	--

POST /api/sam/admin/target

Add an instance to SAM

Description

This method adds the provided InterSystems IRIS® data platform instance to the targets.json file and %SAM.Target table.

To use this endpoint, you must log in as a user with access to the %SAM.Admin resource.

Request Example (SAM 1.0 and 1.1)

POST `http://localhost:8080/api/sam/admin/target`

Example JSON request packet:

```
{
  "name": "IRIS3",
  "description": "Local IRIS3",
  "cluster": 1,
  "instance": "iris:80"
}
```

Request Example (SAM 2.0 and later)

POST `http://localhost:8080/api/sam/admin/target`

Starting with SAM version 2.0, a JSON request packet for SAM 2.0 must also include `dashboardId` and `urlPrefix` properties. If the instance has no URL prefix, specify the value of `urlPrefix` as an empty string (""). For example:

```
{
  "name": "IRIS3",
  "description": "Local IRIS3",
  "cluster": 1,
  "instance": "iris:80",
  "urlPrefix": "/local3",
  "dashboardId": "UBE6j_IVk"
}
```

Response Example

```
{
  "id": 4
}
```

GET /api/sam/admin/target/

Get clusters of all instances

Description

Reports the clusters and metadata for all InterSystems IRIS® data platform instances monitored by SAM.

Note: This endpoint returns a subset of the information returned by [GET /api/sam/target/state/](#)

Request Example

```
GET http://localhost:8080/api/sam/admin/target/
```

Response Example

This method returns a JSON array of JSON objects that contain the metadata for all of the configured targets. For example:

```
[
  {
    "id": 1,
    "instance": "172.16.6.9:80",
    "name": "IRIS_primary",
    "description": "Primary Mirror Member",
    "cluster": 1,
    "urlPrefix": "/mirror1",
    "dashboardId": "2"
  },
  {
    "id": 2,
    "instance": "172.16.6.8:80",
    "name": "IRIS_backup",
    "description": "Backup Mirror Member",
    "cluster": 1,
    "urlPrefix": "/mirror2",
    "dashboardId": "HTIxx8IVz"
  }
]
```

Note: The `urlPrefix` and `dashboardId` properties were added in SAM version 2.0.

GET /api/sam/admin/target/{id}

Get cluster of a specific instance

Description

This method returns the cluster and metadata of the target InterSystems IRIS® data platform instance.

Note: This endpoint returns a subset of the information returned by [GET /api/sam/target/state/{id}](#)

Request Example

GET http://localhost:8080/api/sam/admin/target/3

Table A-7: Parameters

<i>id</i>	<i>Required path variable.</i> The id of the target instance.
-----------	---

Response Example

The format of the JSON response body is a simple object with a cluster field. For example:

```
{
  "name": "IRIS3",
  "description": "Local IRIS3",
  "cluster": 1,
  "instance": "iris:80"
  "urlPrefix": "/local3",
  "dashboardId": "UBE6j_IVk"
}
```

Note: The `urlPrefix` and `dashboardId` properties were added in SAM version 2.0.

PUT /api/sam/admin/target/{id}

Update an instance's information

Description

Update the metadata for this target in the %SAM.Target table and targets.json file.

To use this endpoint, you must log in as a user with access to the %SAM.Admin resource.

Request Example

PUT http://localhost:8080/api/sam/admin/target/4

Table A-8: Parameters

<i>id</i>	<i>Required path variable.</i> The id of the target instance to update.
-----------	---

Example JSON Request Packet (SAM 1.0 and 1.1)

```
{
  "instance": "iris:80",
  "name": "IRIS3",
  "description": "Local IRIS3",
  "cluster": 1,
}
```

Example JSON Request Packet (SAM 2.0 and later)

Starting with SAM version 2.0, a JSON request packet for SAM 2.0 must also include `dashboardId` and `urlPrefix` properties. If the instance has no URL prefix, specify the value of `urlPrefix` as an empty string (""). For example:

```
{
  "instance": "iris:80",
  "name": "IRIS3",
  "description": "Local IRIS3",
  "cluster": 1,
  "urlPrefix": "/local3",
  "dashboardId": "HTIxx8IVz"
}
```

DELETE /api/sam/admin/target/{id}

Delete an instance from SAM

Description

This method removes the given target so Prometheus stops scraping from it.

To use this endpoint, you must log in as a user with access to the %SAM.Admin resource.

Request Example

```
DELETE http://localhost:8080/api/sam/admin/target/3
```

Table A-9: Parameters

<i>id</i>	<i>Required path variable.</i> The id of the target instance to delete from SAM.
-----------	--

GET /api/sam/admin/alertrule/{clusterid}/

Get alert rules for specific cluster

Description

This method returns the Prometheus alert settings for the given cluster.

Request Example

GET http://localhost:8080/api/sam/admin/alertrule/1/

Table A-10: Parameters

<i>clusterid</i>	<i>Required path variable.</i> The id of the cluster.
------------------	---

Response Example

```
[
  {
    "alert": "iris_cpu_usage",
    "expr": "iris_cpu_usage{cluster=\"local\"} > 80",
    "labels": {
      "severity": "critical"
    },
    "annotations": {
      "description": "iris_cpu_usage Critical: iris_cpu_usage = {{ $value }} (Critical value is
80)."
    }
  }
]
```

PUT /api/sam/admin/alertrule/{clusterid}/

Replace alert rules for specific cluster

Description

This method replaces the current alert settings for this cluster with the contents of the JSON array in the request body. The JSON request packet mirrors the JSON response packet for the GET /alertrule/:cluster/ endpoint.

To use this endpoint, you must log in as a user with access to the %SAM.Admin resource.

Request Example

PUT http://localhost:8080/api/sam/admin/alertrule/{clusterid}/

Table A-11: Parameters

<i>clusterid</i>	<i>Required path variable.</i> The id of the cluster.
------------------	---

Example Prometheus alert rule object:

```
[
  {
    "alert": "iris_cpu_usage",
    "expr": "iris_cpu_usage{cluster=\"local\"} > 0",
    "labels": {
      "severity": "critical"
    },
    "annotations": {
      "description": "iris_cpu_usage Critical: iris_cpu_usage = {{ $value }} (Critical value is
0)."
    }
  }
]
```

Response Example

A successful request returns a status 200 OK.

GET /api/sam/admin/config/backup

Get a full backup of the SAM Manager system configuration as a JSON object

Description

This method generates a full backup of the SAM Manager system configuration and exports that configuration as a JSON object. This JSON object can be used to import the system configuration into another SAM deployment [using the SAM web portal](#) or using a [PUT /api/sam/admin/config/backup](#) API request.

To use this endpoint, you must log in as a user with access to the %SAM.Admin resource.

Request Example

GET <http://localhost:8080/api/sam/admin/config/backup>

Response Example

```
{
  "clusters": [
    {
      "name": "local",
      "description": "my local cluster",
      "targets": [
        {
          "instance": "172.16.6.6:80",
          "name": "IRIS3",
          "description": "IRIS3",
          "urlPrefix": "",
          "dashboardId": "2"
        }
      ],
      "alertrules": [
        {
          "alert": "test",
          "annotations": {
            "description": "iris_system_alerts is {{ $value }}"
          },
          "expr": "iris_system_alerts{cluster=\"local\"} > 50",
          "labels": {
            "severity": "critical"
          }
        }
      ]
    }
  ],
  "KeepDays": 2,
  "grafanadb": "base64 encoded sqlite3 .dump content"
}
```

PUT /api/sam/admin/config/backup

Import a full SAM Manager system configuration from a JSON object, replacing the current configuration

Description

This method replaces the current SAM Manager system configuration with the configuration specified by the JSON packet provided.

To use this endpoint, you must log in as a user with access to the %SAM.Admin resource.

Request Example

PUT `http://localhost:8080/api/sam/admin/config/backup`

The packet provided must have the same schema as the one returned by [GET /api/sam/admin/config/backup](#) or by exporting a system configuration [using the SAM web portal](#). For example:

```
{
  "clusters": [
    {
      "name": "local",
      "description": "my local cluster",
      "targets": [
        {
          "instance": "172.16.6.6:80",
          "name": "IRIS3",
          "description": "IRIS3",
          "urlPrefix": "",
          "dashboardId": "2"
        }
      ],
      "alertrules": [
        {
          "alert": "test",
          "annotations": {
            "description": "iris_system_alerts is {{ $value }}"
          },
          "expr": "iris_system_alerts{cluster=\"local\"} > 50",
          "labels": {
            "severity": "critical"
          }
        }
      ]
    }
  ],
  "KeepDays": 2,
  "grafanadb": "base64 encoded sqlite3 .dump content"
}
```

You must specify a `urlPrefix` for each target instance. If the target does not include a `urlPrefix`, you must specify an empty string (""), as above. `KeepDays` must have a value between 1 and 30 inclusive.

Response Example

If the request packet is incorrectly formatted, the request will fail with a status code of 422 Unprocessable Entity.

GET /api/sam/admin/config/keepdays

Get the number of days that SAM stores metrics and alerts

Description

This method gets the current value of the KeepDays configuration property.

Request Example

GET `http://localhost:8080/api/sam/admin/config/keepdays`

Response Example

```
{
  "KeepDays": 2
}
```

PUT /api/sam/admin/config/keepdays

Set number of days for SAM to store metrics and alerts

Description

This method replaces the current value of the KeepDays configuration property with the one provided.

To use this endpoint, you must log in as a user with access to the %SAM.Admin resource.

Request Example

```
PUT http://localhost:8080/api/sam/admin/config/keepdays
```

The packet provided must have the same schema as the one returned by GET /api/sam/admin/config/keepdays, for example:

```
{  
  "KeepDays": 30  
}
```

KeepDays must have a value between 1 and 30 inclusive.

Response Example

If the request packet is incorrectly formatted, the request will fail with a status code of 422 Unprocessable Entity.