



Monitor and Upgrade

Keystone

NetApp
June 28, 2024

Table of Contents

- Monitor and Upgrade 1
 - Monitor system health 1
 - Manually upgrade Keystone Collector 6

Monitor and Upgrade

Monitor system health

You can monitor your system health through Keystone Collector services by using any monitoring system that supports HTTP requests.

By default, Keystone health services do not accept connections from any IP other than localhost. The Keystone health endpoint is `/uber/health`, and it listens on all interfaces of the Keystone Collector server on port 7777. On query, an HTTP request status code with a JSON output is returned from the endpoint as a response, describing the status of the Keystone Collector system.

The JSON body provides an overall health status for the `is_healthy` attribute, which is a boolean; and a detailed list of statuses per-component for the `component_details` attribute.

Here is an example:

```
$ curl http://127.0.0.1:7777/uber/health
{"is_healthy": true, "component_details": {"vicmet": "Running", "ks-
collector": "Running", "ks-billing": "Running", "chronyd": "Running"}}
```

These status codes are returned:

- **200**: indicates that all monitored components are healthy
- **503**: indicates that one or more components are unhealthy
- **403**: indicates that the HTTP client querying the health status is not on the *allow* list, which is a list of allowed network CIDRs. For this status, no health information is returned. The *allow* list uses the network CIDR method to control which network devices are allowed to query the Keystone health system. If you receive this error, add your monitoring system to the *allow* list from **Keystone Collector management TUI > Configure > Health Monitoring**.

Linux users, note this known issue:



Issue description: Keystone Collector runs a number of containers as part of the usage metering system. When the Red Hat Enterprise Linux 8.x server is hardened with USA Defense Information Systems Agency (DISA) Security Technical Implementation Guides (STIG) policies, a known issue with `fapolicyd` (File Access Policy Daemon) has been seen intermittently. This issue is identified as [bug 1907870](#).

Workaround: Until resolved by Red Hat Enterprise, NetApp recommends that you work around this issue by putting `fapolicyd` into permissive mode. In `/etc/fapolicyd/fapolicyd.conf`, set the value of `permissive = 1`.

View system logs

You can view Keystone Collector system logs to review system information and perform troubleshooting by using those logs. Keystone Collector uses the host's *journald* logging system, and the system logs can be reviewed through the standard *journalctl* system utility. You can avail the following key services to examine the logs:

- `ks-collector`
- `ks-health`

- ks-autoupdate

The main data collection service *ks-collector* produces logs in JSON format with a `run-id` attribute associated with each scheduled data collection job. The following is an example of a successful job for standard usage data collection:

```
{ "level": "info", "time": "2022-10-31T05:20:01.831Z", "caller": "light-collector/main.go:31", "msg": "initialising light collector with run-id cdf1m0f74cgphgfon8cg", "run-id": "cdf1m0f74cgphgfon8cg" }
{ "level": "info", "time": "2022-10-31T05:20:04.624Z", "caller": "ontap/service.go:215", "msg": "223 volumes collected for cluster a2049dd4-bfcf-11ec-8500-00505695ce60", "run-id": "cdf1m0f74cgphgfon8cg" }

{ "level": "info", "time": "2022-10-31T05:20:18.821Z", "caller": "ontap/service.go:215", "msg": "697 volumes collected for cluster 909cbacc-bfcf-11ec-8500-00505695ce60", "run-id": "cdf1m0f74cgphgfon8cg" }

{ "level": "info", "time": "2022-10-31T05:20:41.598Z", "caller": "ontap/service.go:215", "msg": "7 volumes collected for cluster f7b9a30c-55dc-11ed-9c88-005056b3d66f", "run-id": "cdf1m0f74cgphgfon8cg" }

{ "level": "info", "time": "2022-10-31T05:20:48.247Z", "caller": "ontap/service.go:215", "msg": "24 volumes collected for cluster a9e2dcff-ab21-11ec-8428-00a098ad3ba2", "run-id": "cdf1m0f74cgphgfon8cg" }

{ "level": "info", "time": "2022-10-31T05:20:48.786Z", "caller": "worker/collector.go:75", "msg": "4 clusters collected", "run-id": "cdf1m0f74cgphgfon8cg" }

{ "level": "info", "time": "2022-10-31T05:20:48.839Z", "caller": "reception/reception.go:75", "msg": "Sending file 65a71542-cb4d-bdb2-e9a7-a826be4fdcb7_1667193648.tar.gz type=ontap to reception", "run-id": "cdf1m0f74cgphgfon8cg" }

{ "level": "info", "time": "2022-10-31T05:20:48.840Z", "caller": "reception/reception.go:76", "msg": "File bytes 123425", "run-id": "cdf1m0f74cgphgfon8cg" }

{ "level": "info", "time": "2022-10-31T05:20:51.324Z", "caller": "reception/reception.go:99", "msg": "uploaded usage file to reception with status 201 Created", "run-id": "cdf1m0f74cgphgfon8cg" }
```

The following is an example of a successful job for optional performance data collection:

```
{"level":"info","time":"2022-10-31T05:20:51.324Z","caller":"sql/service.go:28","msg":"initialising MySQL service at 10.128.114.214"}

{"level":"info","time":"2022-10-31T05:20:51.324Z","caller":"sql/service.go:55","msg":"Opening MySQL db connection at server 10.128.114.214"}

{"level":"info","time":"2022-10-31T05:20:51.324Z","caller":"sql/service.go:39","msg":"Creating MySQL db config object"}

{"level":"info","time":"2022-10-31T05:20:51.324Z","caller":"sla_reporting/service.go:69","msg":"initialising SLA service"}

{"level":"info","time":"2022-10-31T05:20:51.324Z","caller":"sla_reporting/service.go:71","msg":"SLA service successfully initialised"}

{"level":"info","time":"2022-10-31T05:20:51.324Z","caller":"worker/collector.go:217","msg":"Performance data would be collected for timerange: 2022-10-31T10:24:52~2022-10-31T10:29:52"}

{"level":"info","time":"2022-10-31T05:21:31.385Z","caller":"worker/collector.go:244","msg":"New file generated: 65a71542-cb4d-bdb2-e9a7-a826be4fdb7_1667193651.tar.gz"}

{"level":"info","time":"2022-10-31T05:21:31.385Z","caller":"reception/reception.go:75","msg":"Sending file 65a71542-cb4d-bdb2-e9a7-a826be4fdb7_1667193651.tar.gz type=ontap-perf to reception","run-id":"cdf1m0f74cgphgfon8cg"}

{"level":"info","time":"2022-10-31T05:21:31.386Z","caller":"reception/reception.go:76","msg":"File bytes 17767","run-id":"cdf1m0f74cgphgfon8cg"}

{"level":"info","time":"2022-10-31T05:21:33.025Z","caller":"reception/reception.go:99","msg":"uploaded usage file to reception with status 201 Created","run-id":"cdf1m0f74cgphgfon8cg"}

{"level":"info","time":"2022-10-31T05:21:33.025Z","caller":"light-collector/main.go:88","msg":"exiting","run-id":"cdf1m0f74cgphgfon8cg"}
```

Generate and collect support bundles

The Keystone Collector TUI enables you to generate support bundles and add them to service requests for resolving support issues. Follow this procedure:

Steps

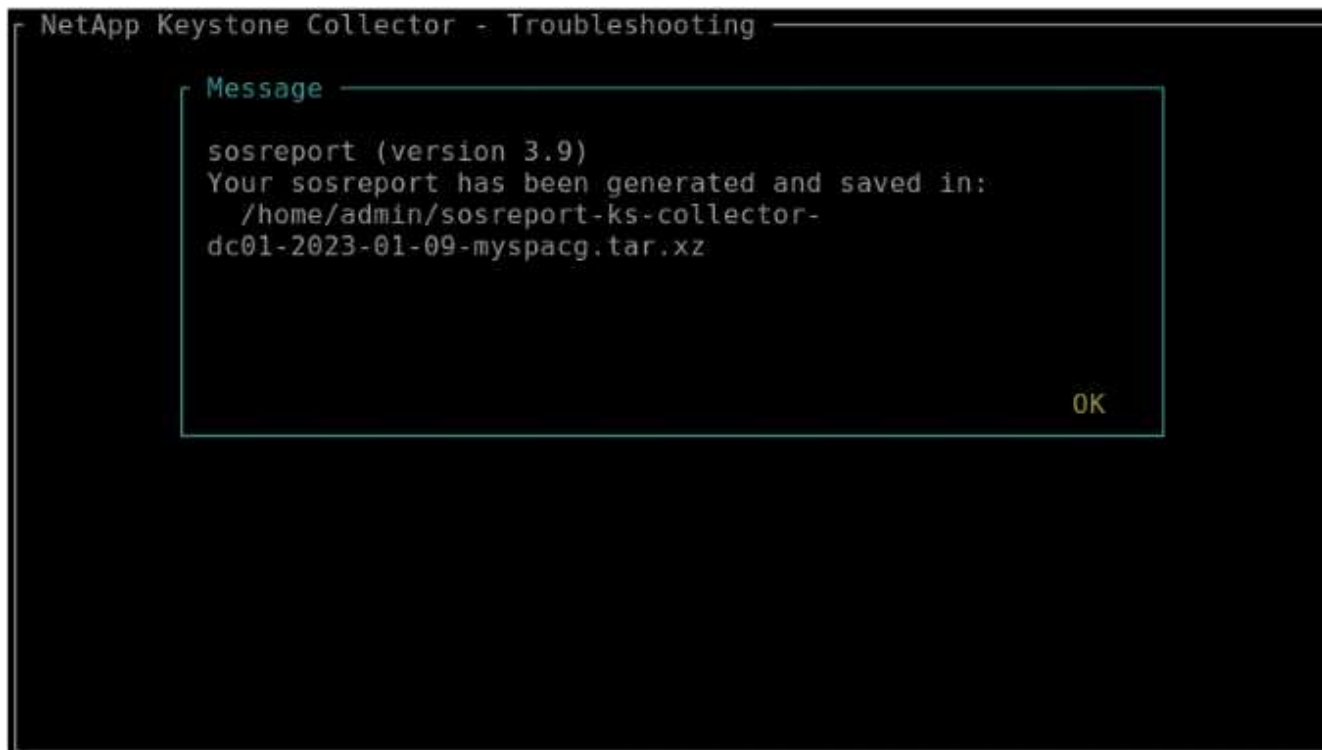
1. Start the Keystone Collector management TUI utility:

```
$ keystone-collector-tui
```

2. Go to **Troubleshooting > Generate Support Bundle**.



3. When generated, the location where the bundle is saved is displayed. Use FTP, SFTP, or SCP to connect to the location and download the log file to a local system.



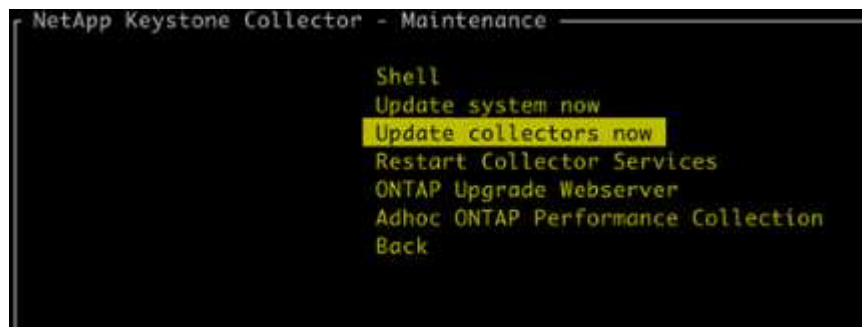
4. When the file is downloaded, you can attach it to the Keystone ServiceNow support ticket. For information about raising tickets, see [Generating service requests](#).

Manually upgrade Keystone Collector

The auto-update feature in Keystone Collector is enabled by default, which automatically upgrades the Keystone Collector software with every new release. You can, however, disable this feature and manually upgrade the software.

Steps

1. Start the Keystone Collector management TUI utility:
`$ keystone-collector-tui`
2. On the maintenance screen, selecting the **Update collectors now** option.



Alternately, run these commands to upgrade the version:

For CentOS:


```
sudo yum clean metadata && sudo yum install keystone-collector
```

```
[admin@rhel8-serge-dev ~]$ sudo yum clean metadata && sudo yum install keystone-collector
Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered with an entitlement server. You can use subscription-manager to register.

Cache was expired
0 files removed
Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered with an entitlement server. You can use subscription-manager to register.

Netapp Keystone                               8.4 kB/s | 11 kB    00:01
Red Hat Enterprise Linux 8 - BaseOS           33 MB/s | 2.4 MB   00:00
Red Hat Enterprise Linux 8 - AppStream        57 MB/s | 7.5 MB   00:00
Package keystone-collector-1.3.0-1.noarch is already installed.
Dependencies resolved.
=====
Package                Architecture      Version           Size              Repository
=====
Upgrading:
keystone-collector     noarch            1.3.2-1           411 M             keystone
=====
Transaction Summary
=====
Upgrade 1 Package

Total download size: 411 M
Is this ok [y/N]: y
Downloading Packages:
keystone-collector-1.3.2-1.noarch.rpm        8.3 MB/s | 411 MB   00:49
-----
Total                                         8.3 MB/s | 411 MB   00:49
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing                :                               1/1
  Running scriptlet: keystone-collector-1.3.2-1.noarch 1/1
  Running scriptlet: keystone-collector-1.3.2-1.noarch 1/2
  Upgrading              : keystone-collector-1.3.2-1.noarch 1/2
  Running scriptlet: keystone-collector-1.3.2-1.noarch 1/2
*****
*                               *
* Keystone Collector package installation complete! *
* Run command 'keystone-collector-tui' to configure . *
*                               *
*****
  Running scriptlet: keystone-collector-1.3.0-1.noarch 2/2
  Cleanup              : keystone-collector-1.3.0-1.noarch 2/2
  Running scriptlet: keystone-collector-1.3.0-1.noarch 2/2
  Verifying             : keystone-collector-1.3.2-1.noarch 1/2
  Verifying             : keystone-collector-1.3.0-1.noarch 2/2
Installed products updated.

Upgraded:
keystone-collector-1.3.2-1.noarch

Complete!
[admin@rhel8-serge-dev ~]$ rpm -q keystone-collector
keystone-collector-1.3.2-1.noarch
```

For Debian:

```
sudo apt-get update && sudo apt-get upgrade keystone-collector
```

- Restart Keystone Collector management TUI, you can see the latest version on the upper left portion of the home screen.

Alternately, run these commands to view the latest version:

For CentOS:

```
rpm -q keystone-collector
```

For Debian:

```
dpkg -l | grep keystone-collector
```

Copyright information

Copyright © 2024 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

Trademark information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.