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Configure log levels for OpenShift Container Platform

⊘ **SOLUTION VERIFIED** - Updated Friday at 9:36 PM - English ▾ ()

Environment

- OpenShift Container Platform 3

Issue

- How can I increase OpenShift v3 logging to get more data?
- Where are all the logs for OpenShift 3

Resolution

- OpenShift Service/Pod Logging
- Docker Daemon Logging
- Etcd Logging
- Command Line Logging
- Pod/Container Logs
- OpenShift Builder Logs
- OpenShift Router Logs
- OpenShift Image Registry Logs

OpenShift services/pods Log Level

OCP 3.10 has important changes regarding this section.

Please read this (https://docs.openshift.com/container-
platform/3.10/architecture/infrastructure_components/kubernetes_infrastructure.html#control-
plane-static-pods) and understand which services run as static pod, daemonsets and systemd
services.
Please see the release note (https://docs.openshift.com/container-
platform/3.10/release_notes/ocp_3_10_release_notes.html#ocp-310-important-installation-
changes) instead of this section.
Several pages in our 3.10 documentation include outdated information. This issue is tracked by
the BZ 1614095 (https://bugzilla.redhat.com/show_bug.cgi?id=1614095)

doc bug for missing etcd static pod info (https://bugzilla.redhat.com/show_bug.cgi?id=1640881)
doc bug related to API and controller which run as static pods
(https://bugzilla.redhat.com/show_bug.cgi?id=1640878)
doc bug for running ovs flows from sdn and ovs pods (https://bugzilla.redhat.com/show_bug.cgi?
id=1640883)
doc bug for redirecting master-logs to a file (https://bugzilla.redhat.com/show_bug.cgi?
id=1640884)

Services/Pods Log Level

Environment Files for the master and node services/pods are located here:

```
For OSE 3.0 :

/etc/sysconfig/openshift-master
/etc/sysconfig/openshift-node

For OSE 3.1 -> OCP 3.9 :

/etc/sysconfig/atomic-openshift-master
/etc/sysconfig/atomic-openshift-node

For OSE 3.1-> OCP 3.9 Native Multi-Master Environment:

/etc/sysconfig/atomic-openshift-master-controllers
/etc/sysconfig/atomic-openshift-master-api
/etc/sysconfig/atomic-openshift-node

For OCP 3.10 and later:

/etc/origin/master/master.env #<-- applies to both API and Controllers
/etc/sysconfig/atomic-openshift-node
```

Verbosity levels for OpenShift services can be controlled via the `--loglevel` parameter. For
Openshift pods, via the `DEBUG_LOGLEVEL` variable.

Openshift has five log message severities. Messages with FATAL, ERROR, WARNING and some
INFO severities appear in the logs regardless of the log configuration.

```
0 - Errors and warnings only
2 - Normal information
4 - Debugging-level information
6 - API-level debugging information (request / response)
8 - Body-level API debugging information
```

The `--loglevel` parameter for the services can be set in the `OPTIONS` for the relevant services
environment file within `/etc/sysconfig/`.
The `DEBUG_LOGLEVEL` variable for the pods can be set in the
`/etc/origin/master/master.env`.

For example, to set OpenShift master's log level to debug (this is needed to be executed it in each master in a multi-master environment):

- **Until OCP 3.9**: add or edit this line in `/etc/sysconfig/atomic-openshift-master`:
`OPTIONS='--loglevel=4'` and then restart the service with
`systemctl restart atomic-openshift-master`.
- **Starting with OCP 3.10**: add or edit this variable in `/etc/origin/master/master.env`:
`DEBUG_LOGLEVEL=4` and restart the pods with `master-restart api` and
`master-restart controllers`.

Pulling OpenShift service/pod logs

OpenShift 3.0 -> 3.9 utilizes `journald`.
OpenShift 3.10+ utilizes `journald` and pod's logs

```
For OSE 3.0 :
# journalctl -u atomic-openshift-master

For OSE 3.1 -> OCP 3.9 :
# journalctl -u atomic-openshift-master
# journalctl -u atomic-openshift-node

For OSE 3.1-> OCP 3.9 Native Multi-Master Environment:
# journalctl -u atomic-openshift-master-api
# journalctl -u atomic-openshift-master-controllers
# journalctl -u atomic-openshift-node

For OCP 3.10 and later:
# /usr/local/bin/master-logs api api
# /usr/local/bin/master-logs controllers controllers
# journalctl -u atomic-openshift-node
```

Note that the `master-logs` script will pull logging from the master service running on the local node. You will need to execute the `master-logs` script on each master to pull each service's logs in a multi-master environment. A playbook is available here that will pull API and Controllers logging from each master: Gathering OpenShift master logs in 3.10 and later (https://access.redhat.com/articles/3663751).

- With Debug logging the journald rate limiter most likely will suppress logs, to make sure all logs are captured configure journald with the following.

```
# vi /etc/systemd/journald.conf
RateLimitInterval=1s
RateLimitBurst=10000

# systemctl restart systemd-journald
```

Docker Log level

To change the docker daemon log levels add the parameter `--log-level` for the `OPTIONS`
variable in dockers service environment file located in `/etc/sysconfig/docker`.

The available log levels are:

```
debug
info
warn
error
fatal
```

For example in `/etc/sysconfig/docker` to set log level equal to debug:

```
OPTIONS='--insecure-registry=172.30.0.0/16 --selinux-enabled --log-level=debug'
```

Alternatively Docker can run in debug mode by passing the `--debug=true` option.

```
OPTIONS='--insecure-registry=172.30.0.0/16 --selinux-enabled --debug=true'
```

After making changes the docker service will have to be restarted with
`systemctl restart docker`.

Etcd Log level

Changing the log level for etcd can be done without restarting the service. The best way to set the
log level for etcd is to make an api call.

Set debug logging:

```
# source  /etc/etcd/etcd.conf
# curl --cert $ETCD_PEER_CERT_FILE --key $ETCD_PEER_KEY_FILE --cacert $ETCD_CA_FILE
$ETCD_ADVERTISE_CLIENT_URLS/config/local/log -XPUT -d '{"Level":"DEBUG"}'
```

Set logging back to info

```
# curl --cert $ETCD_PEER_CERT_FILE --key $ETCD_PEER_KEY_FILE --cacert $ETCD_CA_FILE
$ETCD_ADVERTISE_CLIENT_URLS/config/local/log -XPUT -d '{"Level":"INFO"}'
```

Client command line log level

The Command Line Interface (CLI) commands `oc` and `oadm` also accept a `loglevel` option that
can help obtain additional details of what's happening during command invocation. Setting this
value between 6 and 8 will provide extensive logging, including the API requests being sent
(loglevel 6), their headers (loglevel 7) and the responses received (loglevel 8):

```
$ oc whoami --loglevel=8
```
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OpenShift Pod/Container Logs

Container logs can be viewed using the OpenShift cli.

```
 oc logs <pod_name>
```

Add option "-p" print the logs for the previous instance of the container in a pod if it exists.
Add option "-f" to stream the logs

Logs are saved to the nodes disk where the container/pod is running and is located at:
`/var/lib/docker/containers/$CONTAINER_ID/$CONTAINER_ID-json.log`

To set limits on the containers log size see the Knowledge Solution here
(https://access.redhat.com/solutions/2334181)

OpenShift Builder Pod Logs

Viewing logs for a build in OpenShift can be viewed with `oc logs bc/myapp`

You can adjust the verbosity of a build's logs by specifying a `BUILD_LOGLEVEL` environment
variable in the buildConfig's strategy, for example:

```
{
  "sourceStrategy": {
    ...
    "env": [
      {
        "name": "BUILD_LOGLEVEL",
        "value": "5"
      }
    ]
  }
}
```

See available log levels and descriptions above

OpenShift Router

To set log level for OpenShift router process running in this pod add `--loglevel=4` to the
container args for the router. For the change to take effect the router will need to be
restarted/redeployed.

```
- Increase Logging CUSTOMER(https://access.redhat.com/)
# oc patch dc -n dePORTALouter -p '[{"op": "add", "path":
"/spec/template/spec/containers/0/args", "value":["--loglevel=4"]}]' --type=json

- Remove Logging change
# oc patch dc -n default router -p '[{"op": "remove", "path":
"/spec/template/spec/containers/0/args", "value":["--loglevel=4"]}]' --type=json
```

With the 3.3 OpenShift Router or greater logging for http requests can be configured to send to a remote rsyslog.

```
# oc set env dc/router ROUTER_SYSLOG_ADDRESS=127.0.0.1 ROUTER_LOG_LEVEL=debug
```

See documentation (https://docs.openshift.com/container-platform/3.10/admin_guide/router.html#viewing-logs) for more information regarding setting these variables in the router.
- Capturing http requests in the logs for haproxy via `oc logs` for the OpenShift router is currently being looked at in RFE#1438482 (https://bugzilla.redhat.com/show_bug.cgi?id=1438482)

Starting with OCP 3.11 Router, it's possible to create a syslog container in the Router pod to capture the http requests logs.

```
# oc adm router myrouter --extended-logging
# oc set env dc/myrouter ROUTER_LOG_LEVEL=debug
# oc logs -f myrouter-x-yyyyy -c syslog
```

See OCP 3.11 release notes - Router Enhancements (https://docs.openshift.com/container-platform/3.11/release_notes/ocp_3_11_release_notes.html#ocp-311-haproxy-enhancements) for more information about the enhancements in the router.

OpenShift Image Registry

To set the log level on the internal docker-registry deployment, follow the steps in this related solution (https://access.redhat.com/solutions/2313681)

Product(s)   Red Hat OpenShift Container Platform (/taxonomy/products/openshift)

Component   docker (/taxonomy/components/docker)   kubernetes (/taxonomy/components/kubernetes)

Category   Troubleshoot (/category/troubleshoot)

Tags   docker (/taxonomy/tags/docker)   kubernetes (/taxonomy/tags/kubernetes)   logging (/tags/logging)
openshift (/tags/openshift)   troubleshooting (/tags/troubleshooting)

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6 Comments

SB

(/user/2236173)

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4 January 2017 8:50 AM (https://access.redhat.com/solutions/2216951#comment-1134831)

Stav Bernaz (/user/2236173)

OpenShift service Log Level should be a little more explained, as to the translation between the English levels and the number levels.. 0 == ? 5 == ?

what is Debug level and what is Error level as integer (for configuration)

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6 February 2017 9:52 AM (https://access.redhat.com/solutions/2216951#comment-1144421)

Zhenxing Tang (/user/15377001) 🏅 Administrator

You may refer to KCS https://access.redhat.com/solutions/2209351.

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24 October 2018 10:53 AM (https://access.redhat.com/solutions/2216951#comment-1367551)

Nick Strugnell (/user/1043503)

We need some instructions on how to enable debugging and API verbosity in a fully containerised 3.10 and 3.11 deployment. That doesn't seem to be covered here.

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RB

(/user/9385123)
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24 October 2018 5:02 PM (https://access.redhat.com/solutions/2216951#comment-1367691)

Robert Bost (/user/9385123)

Hi Nick,

This page has been updated with steps for 3.10+.

Thanks, Robert

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NS

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25 October 2018 7:57 AM (https://access.redhat.com/solutions/2216951#comment-1368001)

Nick Strugnell (/user/1043503)

Thanks! Speedy service!

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(/user/15246191)
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21 December 2018 2:50 PM (https://access.redhat.com/solutions/2216951#comment-1408851)

Renato Puccini (/user/15246191)

After changing those parameters, a restart should be made. To reload master configuration changes, restart master services running in control plane static pods using the master-restart command:

master-restart api master-restart controllers

please see -> https://docs.openshift.com/container-
platform/3.10/install_config/master_node_configuration.html#master-node-config-
restart-services

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