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* [Getting Started](https://docs.projectcalico.org/v2.5/getting-started)
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* [Version (v2.5)](https://docs.projectcalico.org/v2.5/usage/configuration/as-service)

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[calicoctl](https://docs.projectcalico.org/v2.5/usage/configuration/as-service#nav-calicoctl)

[**Calico and Systemd**](https://docs.projectcalico.org/v2.5/usage/configuration/as-service)

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Running Calico Node Container as a Service

This guide explains how to run Calico as a system process or service, with a focus on running in a Dockerized deployment. We include examples for Systemd, but the commands can be applied to other init daemons such as upstart as well.

Running the Calico Node Container as a Service

This section describes how to run the Calico node as a Docker container in Systemd. Included here is an EnvironmentFile that defines the Environment variables for Calico and a sample systemd service file that uses the environment file and starts the Calico node image as a service.

calico.env - the EnvironmentFile:

ETCD\_ENDPOINTS=http://localhost:2379

ETCD\_CA\_FILE=""

ETCD\_CERT\_FILE=""

ETCD\_KEY\_FILE=""

CALICO\_NODENAME=""

CALICO\_NO\_DEFAULT\_POOLS=""

CALICO\_IP=""

CALICO\_IP6=""

CALICO\_AS=""

CALICO\_LIBNETWORK\_ENABLED=true

CALICO\_NETWORKING\_BACKEND=bird

Be sure to update this environment file as necessary, such as modifying ETCD\_ENDPOINTS to point at the correct etcd cluster endpoints.

Note: The ETCD\_CA\_FILE, ETCD\_CERT\_FILE, and ETCD\_KEY\_FILE environment variables are required when using Etcd with SSL/TLS. The values here are standard values for a non-SSL version of Etcd, but you can use this template to define your SSL values if desired.

If CALICO\_NODENAME is blank, the compute server hostname will be used to identify the Calico node.

If CALICO\_IP or CALICO\_IP6 are left blank, Calico will use the currently configured values for the next hop IP addresses for this node - these can be configured through the node resource. If no next hop addresses have been configured, Calico will automatically determine an IPv4 next hop address by querying the host interfaces (and it will configure this value in the node resource). You may set CALICO\_IP to autodetect to force auto-detection of IP address every time the node starts. If you set IP addresses through these environments it will reconfigure any values currently set through the node resource.

If CALICO\_AS is left blank, Calico will use the currently configured value for the AS Number for the node BGP client - this can be configured through the node resource. If no value is set, Calico will inherit the AS Number from the global default value. If you set a value through this environment it will reconfigure any value currently set through the node resource.

The CALICO\_NETWORKING\_BACKEND defaults to use Bird as the routing daemon. This may also be set to gobgp (to use gobgp as the routing daemon, but note that this does not support IP in IP), or none (if routing is handled by an alternative mechanism).

Systemd Service Example

calico-node.service - the Systemd service:

[Unit]

Description=calico-node

After=docker.service

Requires=docker.service

[Service]

EnvironmentFile=/etc/calico/calico.env

ExecStartPre=-/usr/bin/docker rm -f calico-node

ExecStart=/usr/bin/docker run --net=host --privileged \

--name=calico-node \

-e NODENAME=${CALICO\_NODENAME} \

-e IP=${CALICO\_IP} \

-e IP6=${CALICO\_IP6} \

-e CALICO\_NETWORKING\_BACKEND=${CALICO\_NETWORKING\_BACKEND} \

-e AS=${CALICO\_AS} \

-e NO\_DEFAULT\_POOLS=${CALICO\_NO\_DEFAULT\_POOLS} \

-e CALICO\_LIBNETWORK\_ENABLED=${CALICO\_LIBNETWORK\_ENABLED} \

-e ETCD\_ENDPOINTS=${ETCD\_ENDPOINTS} \

-e ETCD\_CA\_CERT\_FILE=${ETCD\_CA\_CERT\_FILE} \

-e ETCD\_CERT\_FILE=${ETCD\_CERT\_FILE} \

-e ETCD\_KEY\_FILE=${ETCD\_KEY\_FILE} \

-v /var/log/calico:/var/log/calico \

-v /run/docker/plugins:/run/docker/plugins \

-v /lib/modules:/lib/modules \

-v /var/run/calico:/var/run/calico \

quay.io/calico/node:v2.5.1

ExecStop=-/usr/bin/docker stop calico-node

[Install]

WantedBy=multi-user.target

The Systemd service above does the following on start:

* Confirm docker is installed under the [Unit] section
* Get environment variables from the environment file above
* Remove existing calico-node container (if it exists)
* Start calico/node

The script will also stop the calico-node container when the service is stopped.

**Note**: Depending on how you’ve installed Docker, the name of the Docker service under the [Unit] section may be different (such as docker-engine.service). Be sure to check this before starting the service.

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