

Cloudera Runtime 7.3.2

## Encryption reference

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# CLOUDERA

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# Auto-TLS Requirements and Limitations

Reference information for Auto-TLS requirements, limitations, and component support.

## Requirements

- You must install the Cloudera Manager Agent software on the Cloudera Manager Server host.
- You can enable auto-TLS using certificates created and managed by a Cloudera Manager certificate authority (CA), or certificates signed by a trusted public CA or your own internal CA. If you want to use a trusted public CA or your own internal CA, you must obtain all of the host certificates before enabling auto-TLS.

For instructions on obtaining certificates from a CA, see “Manually Configuring TLS Encryption for Cloudera Manager” > “On Each Cluster Host”.

## Component support for Auto-TLS

The following Cloudera services support auto-TLS:

- Atlas
- Cloudera Manager Host Monitor Debug Interface
- Cloudera Manager Service Monitor Debug Interface
- Cruise Control
- HBase
- HDFS Client Configuration
- HDFS NameNode Web UI
- Hive-on-Tez
- HiveServer2
- HttpFS
- Cloudera Data Explorer (Hue) Client
- Cloudera Data Explorer (Hue) Load Balancer
- Cloudera Data Explorer (Hue) Server
- Impala Catalog Server
- Impala Server
- Impala StateStore
- Java Keystore Key Management Server (KMS)
- Kafka Broker Server
- Kafka MirrorMaker
- Knox
- Kudu
- Livy
- Oozie
- Ozone
- Phoenix
- Ranger
- Safenet Luna Hardware Security Modules (HSM) KMS
- Schema Registry
- Solr
- Spark History Server
- Streams Messaging Manager
- Streams Replication Manager
- YARN Web UI

- Zeppelin
- ZooKeeper

For unlisted Cloudera services, you must enable TLS manually. See the applicable component guide for more information.

### Limitations

- It is not possible to rename hostnames of cluster nodes in an Auto-TLS setup.

### Related Information

[Manually Configuring TLS Encryption for Cloudera Manager](#)

## Rotate Auto-TLS Certificate Authority and Host Certificates

Your cluster security requirements may require that you rotate the auto-TLS CA and certificates.

### Using an internal CA (Use case 1)

1. Navigate to Administration Security . Click Rotate Auto-TLS Certificates to launch the wizard.
2. Complete the wizard.

### Using a custom CA (Use case 3)

1. Use the `/cm/commands/addCustomCerts` API command to replace the old certificates with new certificates in CMCA directory for each host. You must run this command for each host separately. An example of a curl command to upload the certificates to Cloudera Manager:

```
curl -u admin:admin -X POST --header 'Content-Type: application/json' --header 'Accept: application/json' -d '{
  "location": "/opt/cloudera/AutoTLS",
  "interpretAsFileNames": true,
  "hostCerts": [ {
    "hostname": "ccycloud-10.vcdp71.root.hwx.site",
    "certificate":
site.pem",
    "key":
site.pem"
  } ]
}' 'https://ccycloud-7.vcdp71.root.hwx.site:7183/api/v41/cm/commands/addCustomCerts'
```

In the example above, the "location" should be omitted if Auto-TLS was enabled or rotated after 7.1, and the file paths should point to files on the Cloudera Manager server host.

2. Use Cloudera Manager API `/hosts/{hostId}/commands/generateHostCerts` to deploy the new certificates to each host. You must run this command for each host separately. An example curl command:

```
curl -u admin:admin -X POST --header 'Content-Type: application/json' --header
'Accept: application/json' -d '{ "sshPort" :
22, "userName" : "root", "password" : "cloudera" }'
```

```
'https://ccycloud-7.vcdp71.root.hwx.site:7183/
api/v41/hosts/250e1bb7-8987-419c-a53f-c852c275d299/commands/generateHost
Certs'
```

where '250e1bb7-8987-419c-a53f-c852c275d299' in the command above is the hostID.



**Note:** Adding a new host in the Cloudera Manager Web UI that matches existing HostCerts entries in the database automatically runs the generateHostCerts step, so it is not necessary to perform it separately with an API call. However, for hosts that already exist in the Web UI, this action is not performed automatically and must be executed manually by running the generateHostCerts API call.



**Note:** If you are using Cloudera Data Services on premises, after performing the certificate rotation, please follow the steps from *Updating TLS certificates*.

An alternate approach to achieve the above is to swap out any expiring or invalid certificates in the locations referenced by the latest generateCmca API call with valid ones. When all hosts are included in the hostCerts list (except for the cmHostCert and Key) and are pointing to valid certificates and keys, the generateCmca API call can be run again. Ensure that the URL is using https:// and port 7183, and that all certificates are using the exact same CA chain (same Intermediate CAs and Root).

### Related Information

[Updating TLS certificates](#)

## Auto-TLS Agent File Locations

The certificates, keystores, and password files generated by auto-TLS are stored in `/var/lib/cloudera-scm-agent/agent-cert` on each Cloudera Manager Agent.

### Filenames

**Table 1: Auto-TLS Agent Files**

Filename	Description
cm-auto-global_cacerts.pem	CA certificate and other trusted certificates in PEM format
cm-auto-global_truststore.jks	CA certificate and other trusted certificates in JKS format
cm-auto-in_cluster_ca_cert.pem	CA certificate in PEM format
cm-auto-in_cluster_truststore.jks	CA certificate in JKS format
cm-auto-host_key_cert_chain.pem	Agent host certificate and private key in PEM format
cm-auto-host_cert_chain.pem	Agent host certificate in PEM format
cm-auto-host_key.pem	Agent host private key in PEM format
cm-auto-host_keystore.jks	Agent host private key in JKS format
cm-auto-host_key.pw	Agent host private key password file