

# Configure NTP in ACI Fabric Solution

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## Introduction

This document describes how to configure the Network Time Protocol (NTP) in an Application Centric Infrastructure (ACI) fabric solution.

## Prerequisites

### Requirements

Cisco recommends that you have knowledge of these topics:

- Out-of-Band Management (OOB) on the Fabric
- NTP server

### Components Used

The information in this document is based on these software and hardware versions:

- Application Policy Infrastructure Controller (APIC)
- Nexus 9500
- Nexus 9300

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

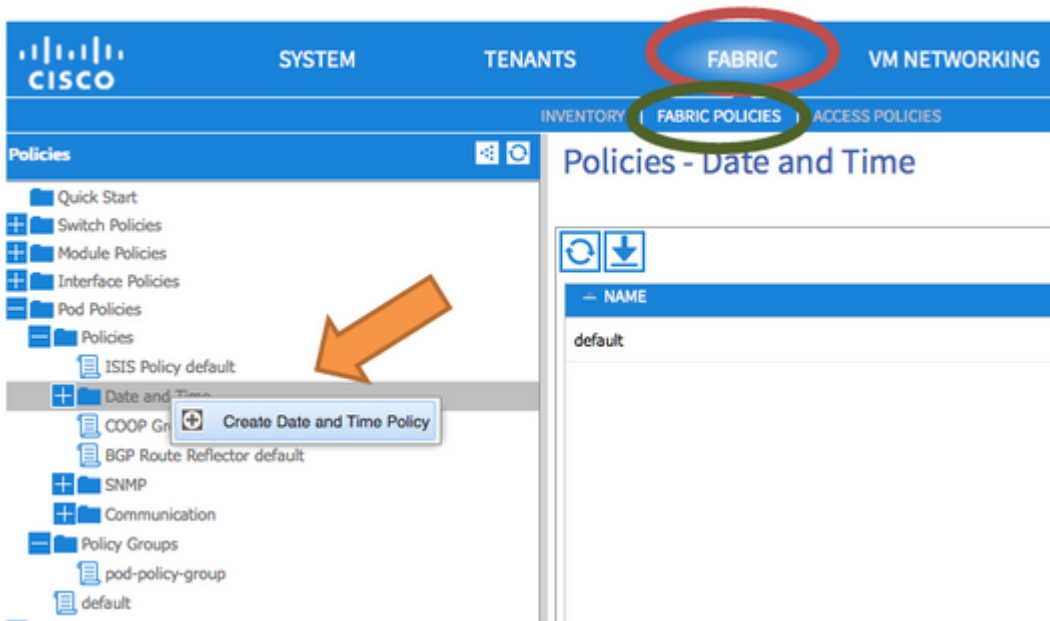
## Configure

Step 1. On the menu bar, navigate to **FABRIC > FABRIC POLICIES**.

In the Navigation pane, perform these actions:

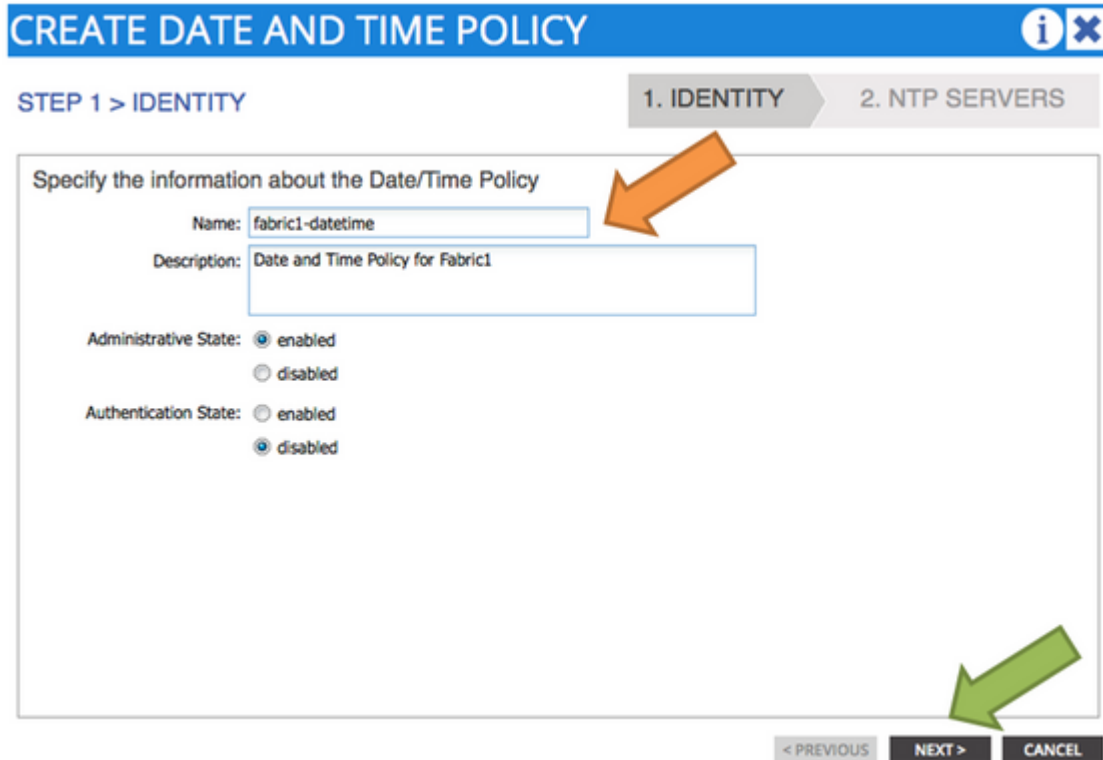
- Expand **Pod Policies**
- Expand **Policies**
- Choose **Date and Time**

Step 2. Right click and choose **Create Date and Time Policy** as shown in the image.



Step 3. In the **CREATE DATE AND TIME POLICY** Wizard and **STEP 1 > IDENTITY**, enter these details:

- Enter **Name**.
- Enter **Description**.
- Choose Administrative State (enabled).
- Choose Authentication State (disabled).
- Click **NEXT** as shown in the image.



Step 4. **STEP 2 > NTP SERVERS**

- Specify the NTP servers to be used in this policy.
- Click + in order to add the NTP Servers.
- In the **Create Providers** Wizard, perform these actions:

- Enter **Name** (which is Hostname or IP Address).
- Enter **Description**.
- Check the **Preferred** Box.
- Minimum Polling Interval (**4**)
- Maximum Polling Interval (**6**)
- Select Management EPG (**default (Out-of-Band)**)
- Click **OK** as shown in the image.

**CREATE DATE AND TIME POLICY**

STEP 2 > NTP SERVERS

1. IDENTITY → 2. NTP SE

Specify the NTP servers to be used in this policy

| Host Name/IP Address | Preferred | Minimum Polling Interval | Maximum Polling Interval | Management EPG |
|----------------------|-----------|--------------------------|--------------------------|----------------|
|                      |           |                          |                          |                |

**CREATE PROVIDERS**

Specify the information about the NTP Server

Name: 172.16.129.235

Description: NTP server for Fabric 1

Preferred:

Minimum Polling Interval: 4

Maximum Polling Interval: 6

Management EPG: default (Out-of-Band)

OK

Step 5. Click **FINISH**.

- In the Policies pane, navigate to **Fabric > Fabric Policies > Pod Policies > Policies > Date and Time**, choose **DATE/TIME Format** and perform these actions:
  - Choose **Time Zone**
  - Choose Display Format (**local**)
  - Choose Offset State (**enabled**)
  - Click **SUBMIT** as shown in the image.

The screenshot shows the Cisco Fabric Manager interface. The top navigation bar includes 'SYSTEM', 'TENANTS', 'FABRIC', and 'VM NETWORKING'. Below this, there are sub-tabs for 'INVENTORY', 'FABRIC POLICIES', and 'ACCESS POLICIES'. The 'FABRIC POLICIES' tab is active, and the 'Date/Time Format' policy is selected. The left-hand navigation pane shows a tree structure of policies, with 'Date/Time Format' highlighted by an orange arrow. The main content area displays the 'PROPERTIES' for the 'Date/Time Format' policy, including fields for 'Time Zone' (set to 'UTC(-08:00) America/Metlakatia'), 'Display Format' (set to 'local'), and 'Offset State' (set to 'enabled').

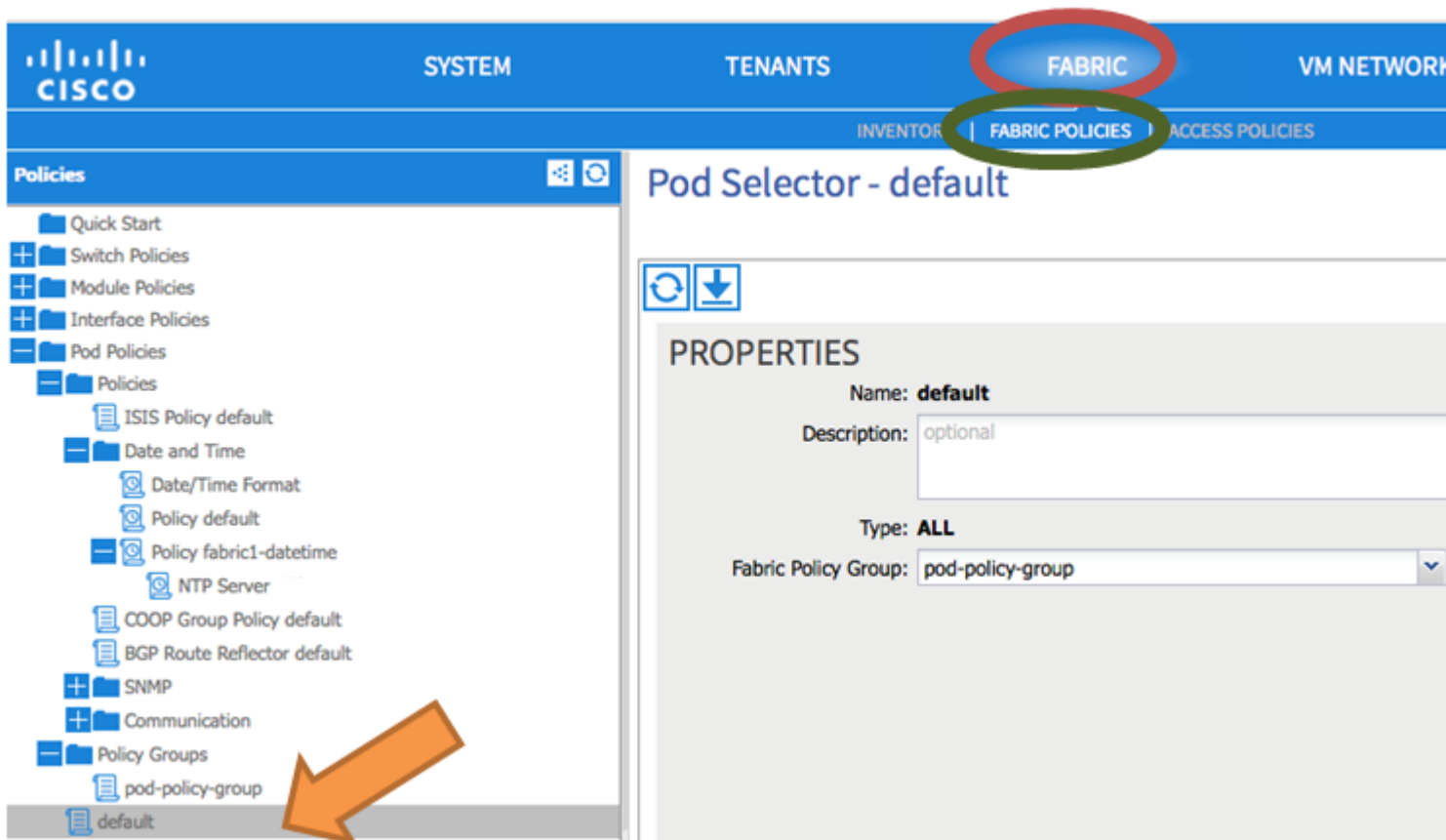
Step 6. Update your POD Policy group in order to use your Date Time Policy, as shown in the image.

The screenshot shows the Cisco Fabric Manager interface. The top navigation bar includes 'SYSTEM', 'TENANTS', 'FABRIC', and 'VM NETWORKING'. Below this, there are sub-tabs for 'INVENTORY', 'FABRIC POLICIES', and 'ACCESS POLICIES'. The 'FABRIC POLICIES' tab is active, and the 'pod-policy-group' policy is selected. The left-hand navigation pane shows a tree structure of policies, with 'pod-policy-group' highlighted by an orange arrow. The main content area displays the 'PROPERTIES' for the 'pod-policy-group' policy, including fields for 'Name' (set to 'pod-policy-group'), 'Description' (set to 'optional'), and several policy selection fields: 'Date Time Policy' (set to 'fabric1-datetime'), 'ISIS Policy' (set to 'select or type to pre-pr'), 'COOP Group Policy' (set to 'select or type to pre-pr'), 'BGP Route Reflector Policy' (set to 'default'), 'Communication Policy' (set to 'select or type to pre-pr'), and 'SNMP Policy' (set to 'select or type to pre-pr').

Step 7. Assign New Policy Group as the DEFAULTFabric Policy Group.

- In the pane, navigate to **Fabric > Fabric Policies > Pod Policies**, choose **default** and in the **Pod Selector - default** work pane, perform these actions:

- Enter **Description**.
- Choose **pod-policy-group** as the Fabric Policy Group and as shown in the image.



## Verify

Use this section in order to confirm that your configuration works properly.

From switches:

```
<#root>
```

```
fabric1-leaf1# show ntp peers
```

```
-----
Peer IP Address          Serv/Peer
-----
172.16.129.235          Server (configured)
```

```
fabric1-leaf1# show ntp peer-status
```

```
Total peers : 1
```

```
* - selected for sync
```

```
, + - peer mode(active),
- - peer mode(passive), = - polled in client mode
remote          local          st  poll  reach delay  vrf
```

```
*172.16.129.235
      0.0.0.0          3   16   37   0.00134 management
```

```
fabric1-leaf1# show ntp statistics peer ipaddr
```

```
172.16.129.235
```

```
remote host:          172.16.129.235
local interface:      Unresolved
time last received:   2s
time until next send: 14s
reachability change:  408s
packets sent:         30
packets received:     30
bad authentication:   0
bogus origin:         0
duplicate:            0
bad dispersion:       0
bad reference time:   0
candidate order:      6
fabric1-leaf1#
```

From APIC:

```
<#root>
```

```
admin@apic1:~> cat /etc/ntp.conf
OPTIONS="-u ntp:ntp -p /var/run/ntpd.pid"

# Permit time synchronization with our time source, but do not
# permit the source to query or modify the service on this system.
restrict default kod nomodify notrap nopeer noquery
restrict -6 default kod nomodify notrap nopeer noquery

# Permit all access over the loopback interface. This could
# be tightened as well, but to do so would effect some of
# the administrative functions.
#restrict default ignore
restrict 127.0.0.1
#restrict -6 ::1

keysdir /etc/ntp/
keys /etc/ntp/keys

server 172.16.129.235 prefer minpoll 4 maxpoll 6
```

```
admin@apic1:~> ntpstat
```

```
synchronised
```

to NTP server (172.16.129.235) at stratum 4  
time correct to within 268 ms  
polling server every 16 s

## **Troubleshoot**

There is currently no specific information available to troubleshoot this configuration.