

# Deploy ConsoleFlow On-Premise

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## Revision History

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Revision Date	ConsoleFlow Version	Description
08/19/2019	1.6	Use wildcard or non-wildcard in DNS. Use wildcard or non-wildcard in SSL certificate. Added NFS Setup. Updated Quick Setup procedures. Added Update with Quick Setup. Added Quick Setup Diagnostics.
08/10/2020	3.2.7	Removed post-deployment portal customization steps. Updated system requirements.

## Overview

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The ConsoleFlow On-Premise Edition is available as a virtual machine that customers can host on their own servers. The ConsoleFlow software can be downloaded from the Lantronix website, launched on a desktop or server, and used to administer Lantronix devices.

This chapter shows you how to deploy the ConsoleFlow virtual machine, run Quick Setup to initialize network settings, and configure certain on-premise specific settings.

Read this chapter before deploying the ConsoleFlow On-Premise software so that you can plan for and get the necessary information.

## Update DNS Server Entries

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### Fully Qualified Domain Name

ConsoleFlow requires a fully qualified domain name (FQDN) to operate properly. You are required to change the

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FQDN from the default FQDN (demo.lantronix.com).

The FQDN consists of three parts: the hostname, the domain name, and the top level domain. In the default ConsoleFlow server example, the FQDN is:

Hostname	Domain	Top Level Domain
demo	.lantronix	.com

In this context, "demo" is the hostname of the ConsoleFlow server and not part of the domain.

Various services run applications on top of the hostname. For example, the ConsoleFlow application runs on demo.lantronix.com as consoleflow.demo.lantronix.com. The DNS server must be updated with a set of DNS entries to resolve the list of hostnames required by these services. One option to resolve the list of hostnames requires a wildcard DNS entry such as \*.demo.lantronix.com to resolve any FQDN that ends with demo.lantronix.com. The other option is to create separate DNS entries for each hostname that ConsoleFlow needs to be resolved.

The first option is direct DNS entry and the wildcard:

DNS Entry	Example
The direct DNS entry for the FQDN	demo.lantronix.com
The wildcard DNS entry, to match requests for non-existent domain names	*.demo.lantronix.com

The wildcard DNS record is specified using a "\*" as the leftmost part of the FQDN.

The second option is the list of hostnames that need to be resolved:

DNS Entry	Example
The direct DNS entry for the FQDN	demo.lantronix.com
The account DNS entry	account.demo.lantronix.com
The admin DNS entry	admin.demo.lantronix.com
The consoleflow DNS entry	consoleflow.demo.lantronix.com
The mqtt DNS entry	mqtt.demo.lantronix.com
The api DNS entry	api.demo.lantronix.com
The socket-cluster DNS entry	socket-cluster.demo.lantronix.com
The docs DNS entry	docs.demo.lantronix.com

### Example to Update DNS Entries in Windows DNS

This example demonstrates adding the DNS entries in Windows Server 2008 DNS, and will be similar in other

Windows Server versions. This procedure will vary if you are using Linux.

The example uses the following values:

- **ConsoleFlow Hostname:** tsmlcf01
- **ConsoleFlow Domain:** support.int.lantronix.com

The first option is direct DNS entry and the wildcard:

- **Hostname:** tsmlcf01
- **Wildcard for applications:** \*.tsmlcf01

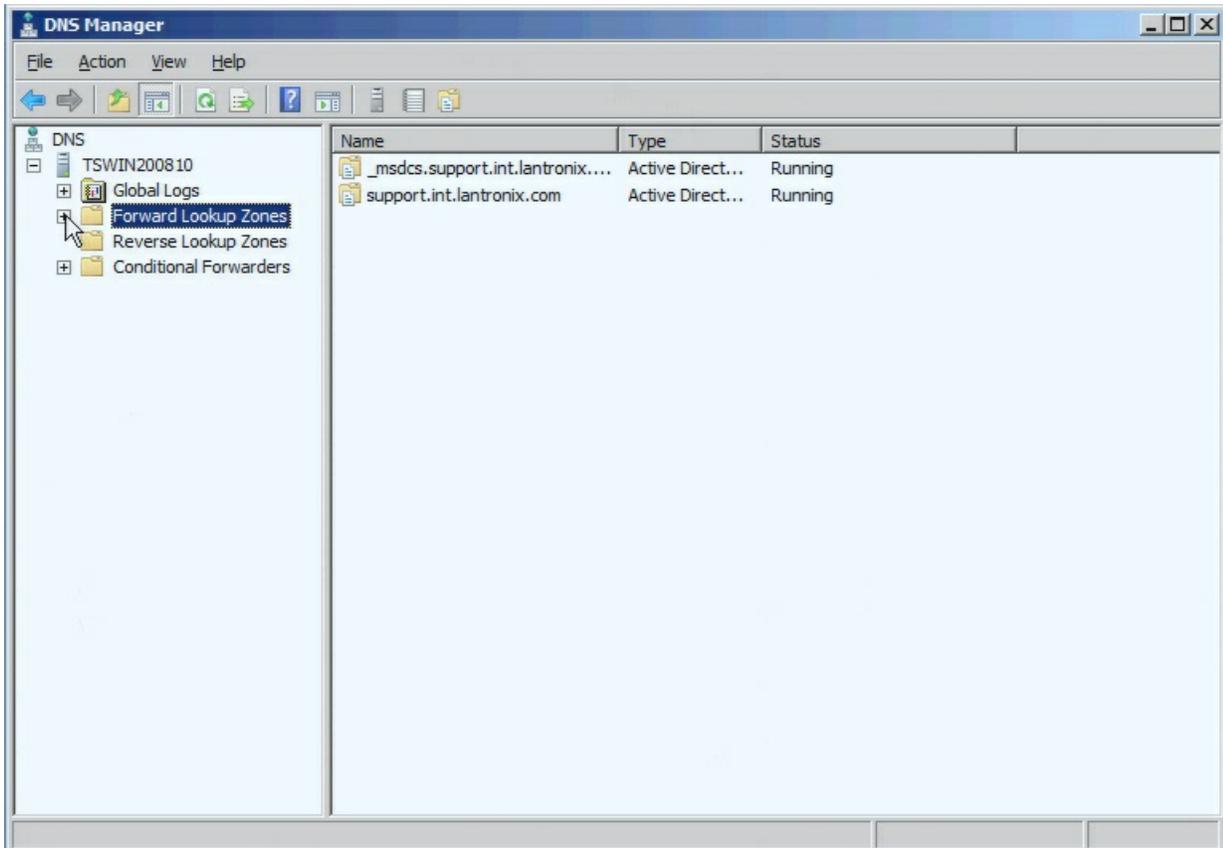
The second option is the list of required hostname entries that need to be resolved:

- **Hostname:** tsmlcf01
- **Account Hostname:** account.tsmlcf01
- **Admin Hostname:** admin.tsmlcf01
- **ConsoleFlow Hostname:** consoleflow.tsmlcf01
- **MQTT Hostname:** mqtt.tsmlcf01
- **API Hostname:** api.tsmlcf01
- **Socket-Cluster Hostname:** socket-cluster.tsmlcf01
- **Docs Hostname:** docs.tsmlcf01

!!!note Steps 1-4 are the same steps for both setup procedures.

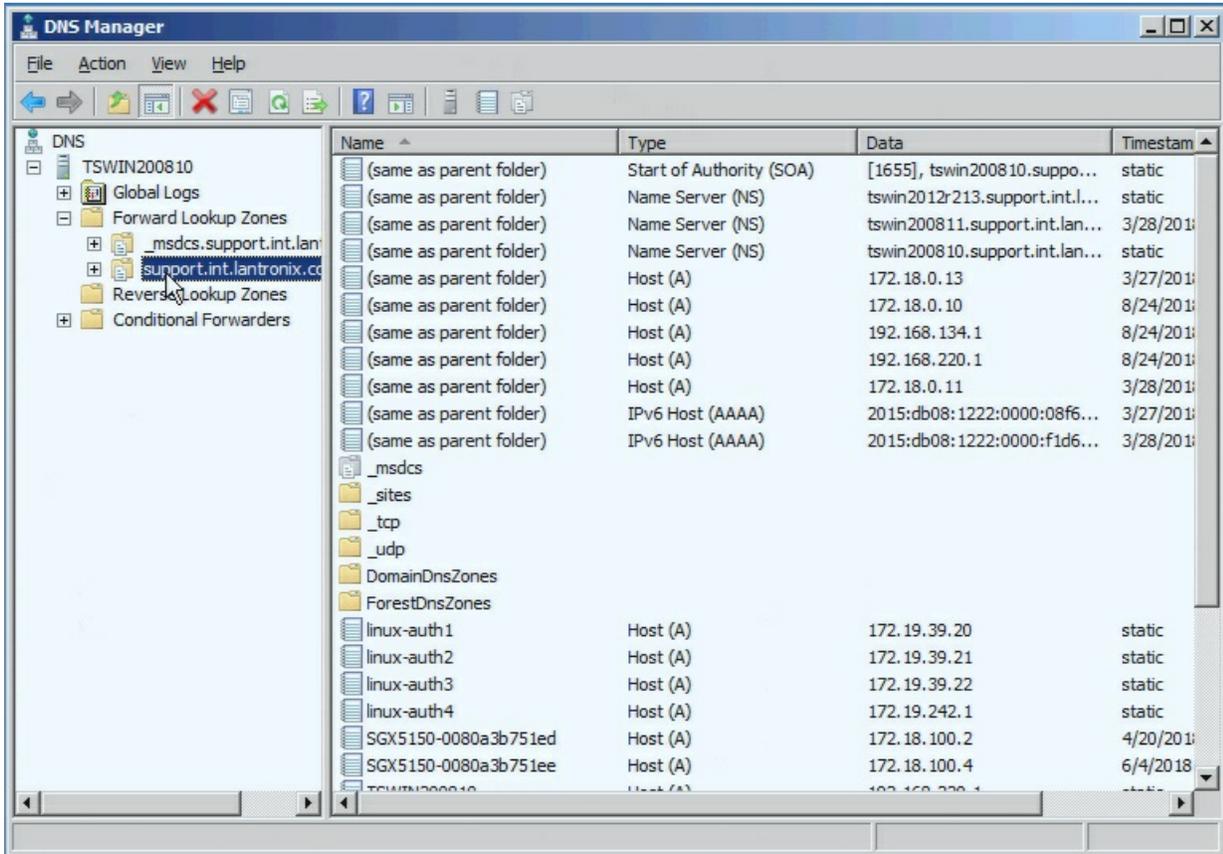
**Step 1: Open the DNS Manager**

- Log onto Windows Server 2008 with domain admin or enterprise admin credentials.
- From the Start menu, select Administrative Tools > DNS.
- Choose the DNS server that you want to edit.
- Expand the Forward Lookup Zones.



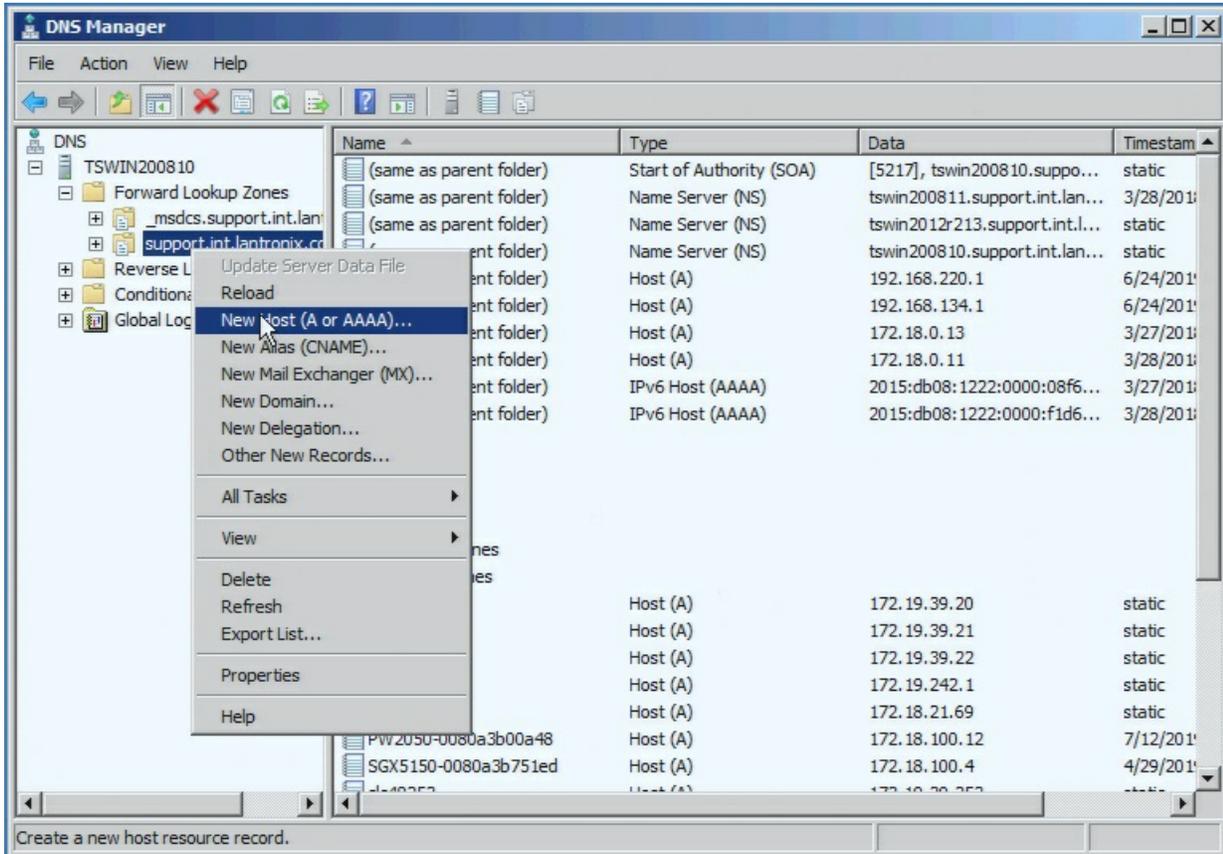
**Step 2: Highlight the domain**

- Select the ConsoleFlow domain to display it in the content window.



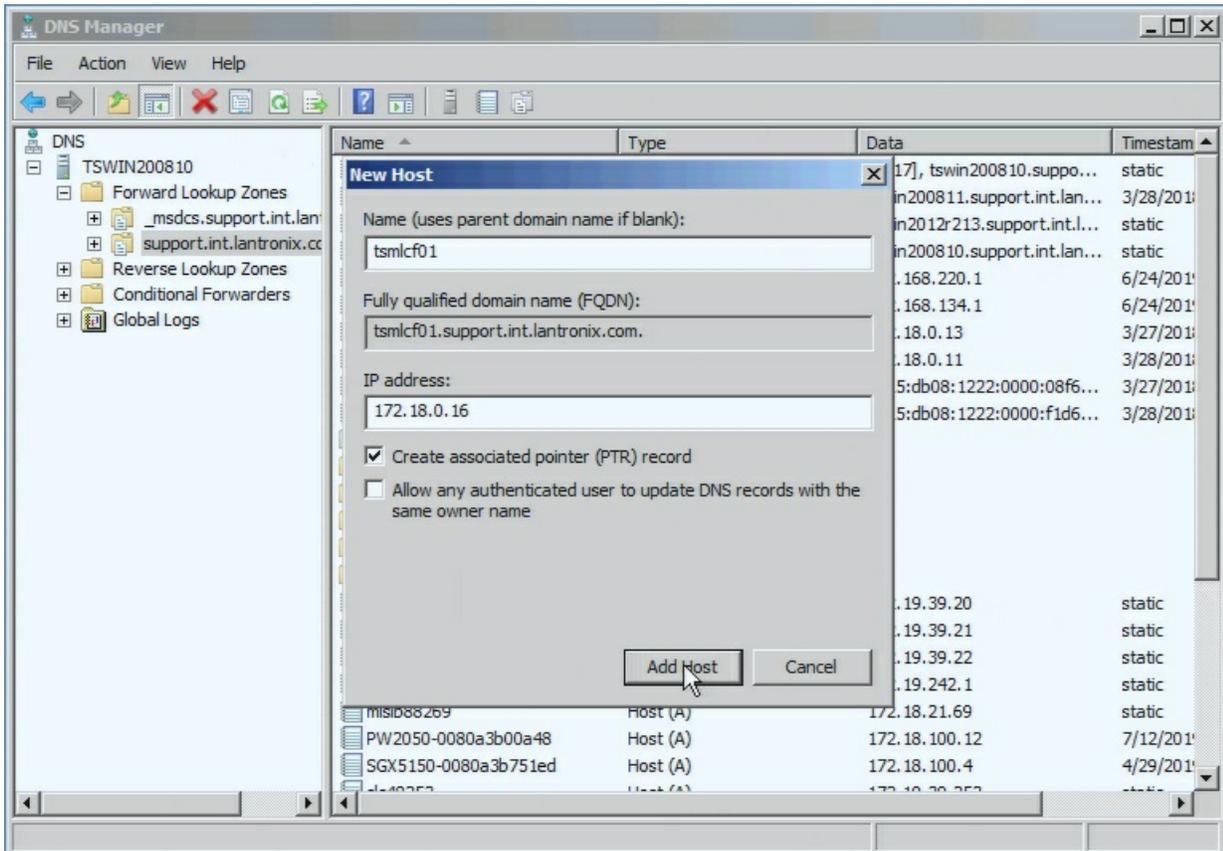
### Step 3: Select New Host

- Select Action > New Host (A or AAAA).



**Step 4: Add the Host**

- Enter the hostname of the ConsoleFlow server. Windows will append the domain.
- Enter the IP address of the ConsoleFlow server.
- Click **Add Host**.



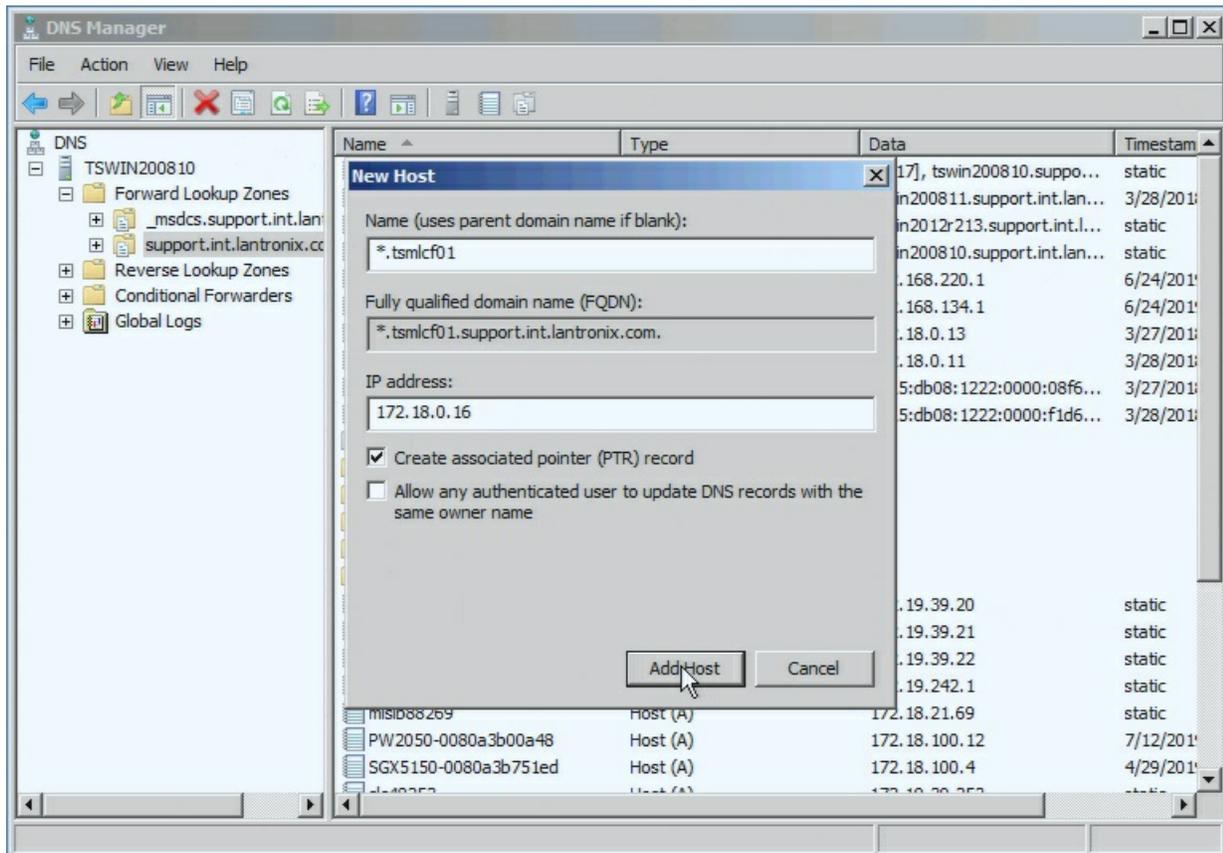
!!!note From here you may either add the [wildcard hostname](#) starting at step 5 or add the [list of hostnames](#) starting at step 6.

## Add the Wildcard Hostname

These steps are used to setup a wildcard hostname instead of specifying each individual hostname for the DNS server.

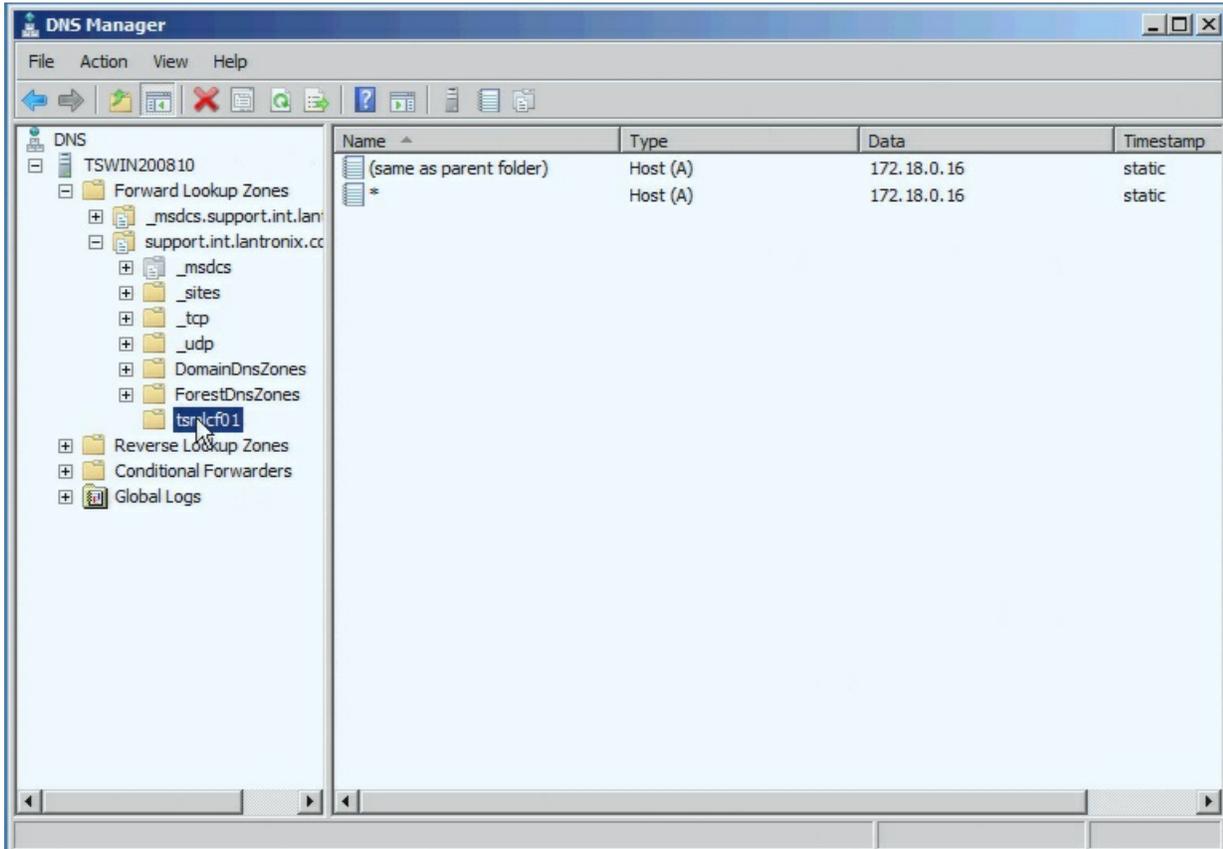
### Step 5: Add the Wildcard Host

- Repeat Steps 3 and 4. This time, use \*.hostname.
- Enter the same IP address as in steps 3 and 4.
- Click **Add Host**.



### Wildcard Result

The host records are placed in a folder under the hostname. The wildcard DNS hostname setup procedure is complete and you do not need to continue onto the next steps of adding the list of required hostnames.

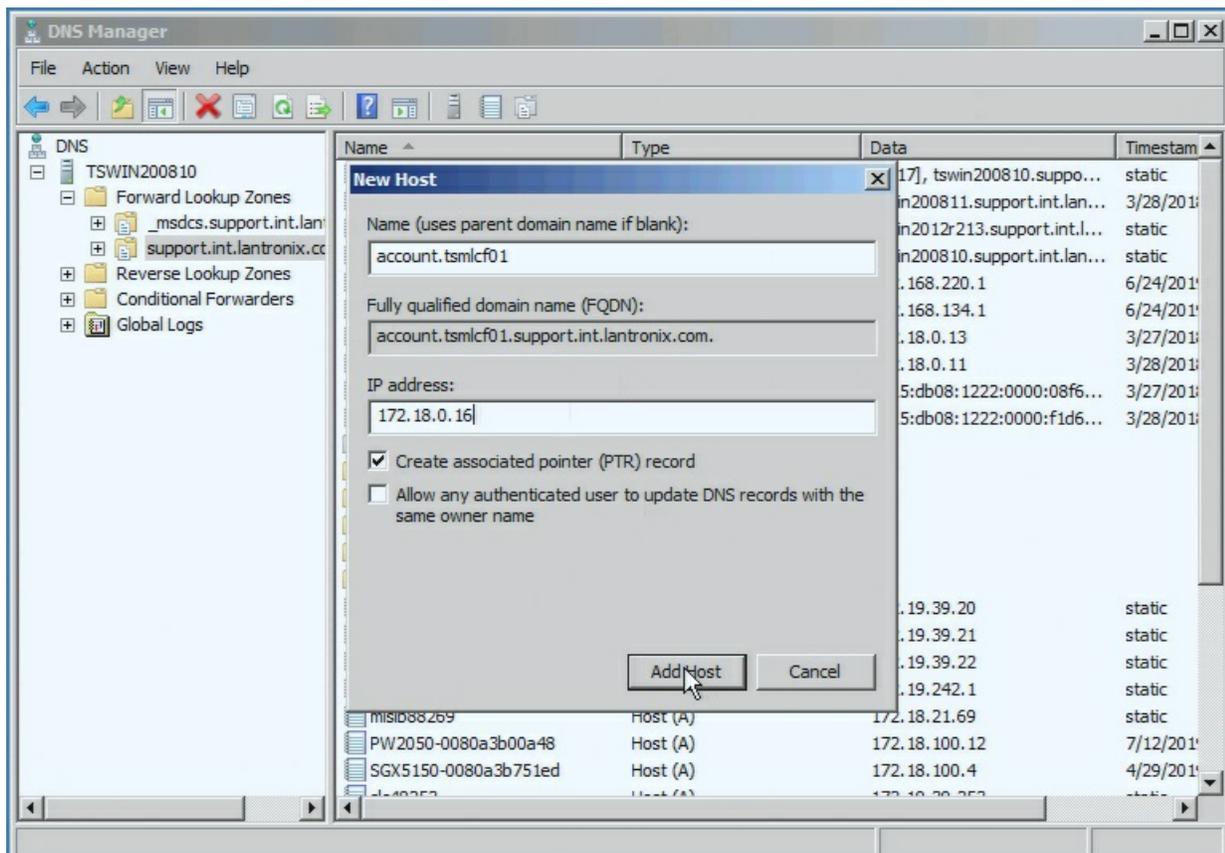


## Add the List of Required Hostnames

These steps are used to add the list of required hostnames to the DNS server. You do not need to continue with the next steps if you have completed the wildcard DNS hostname setup.

### Step 6: Add the Account Host

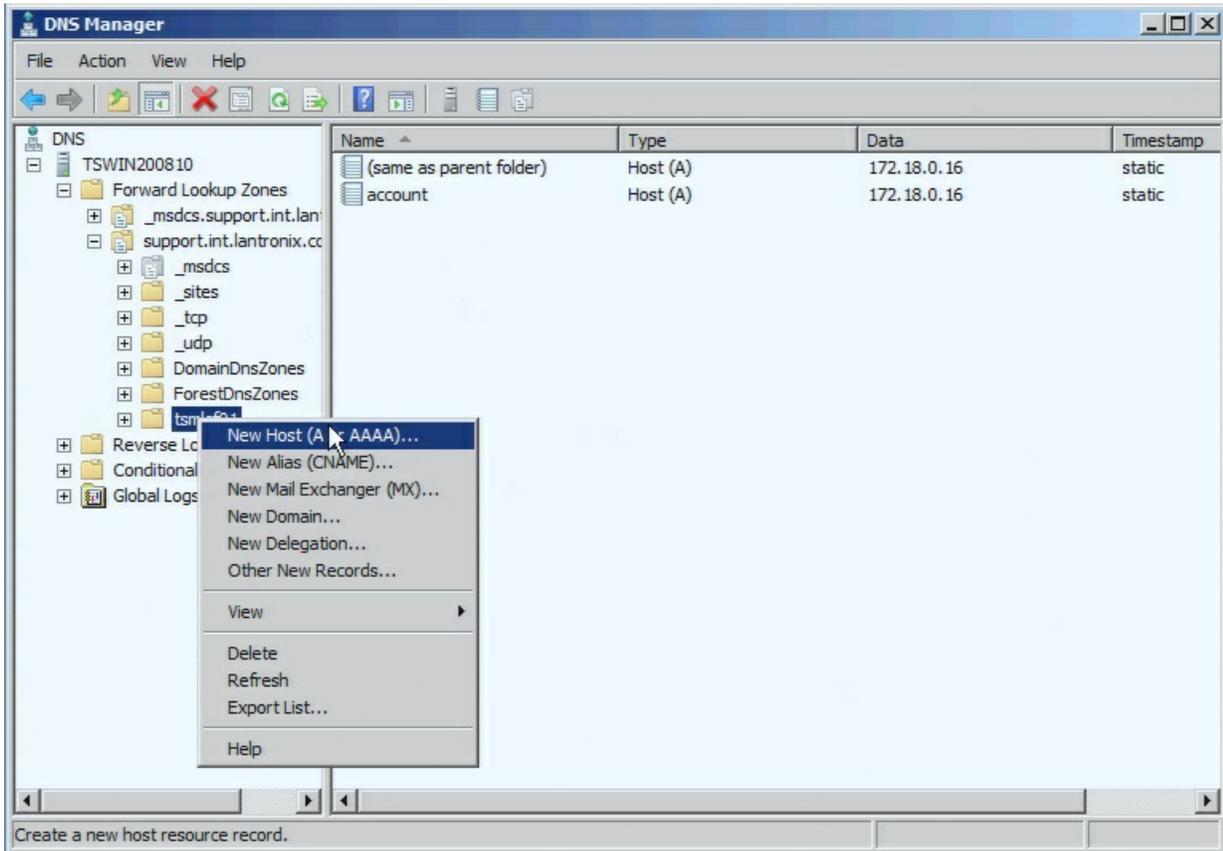
- Repeat Steps 3 and 4. This time, use account.hostname.
- Enter the same IP address as in steps 3 and 4.
- Click **Add Host**.



### Step 7: Select New Host

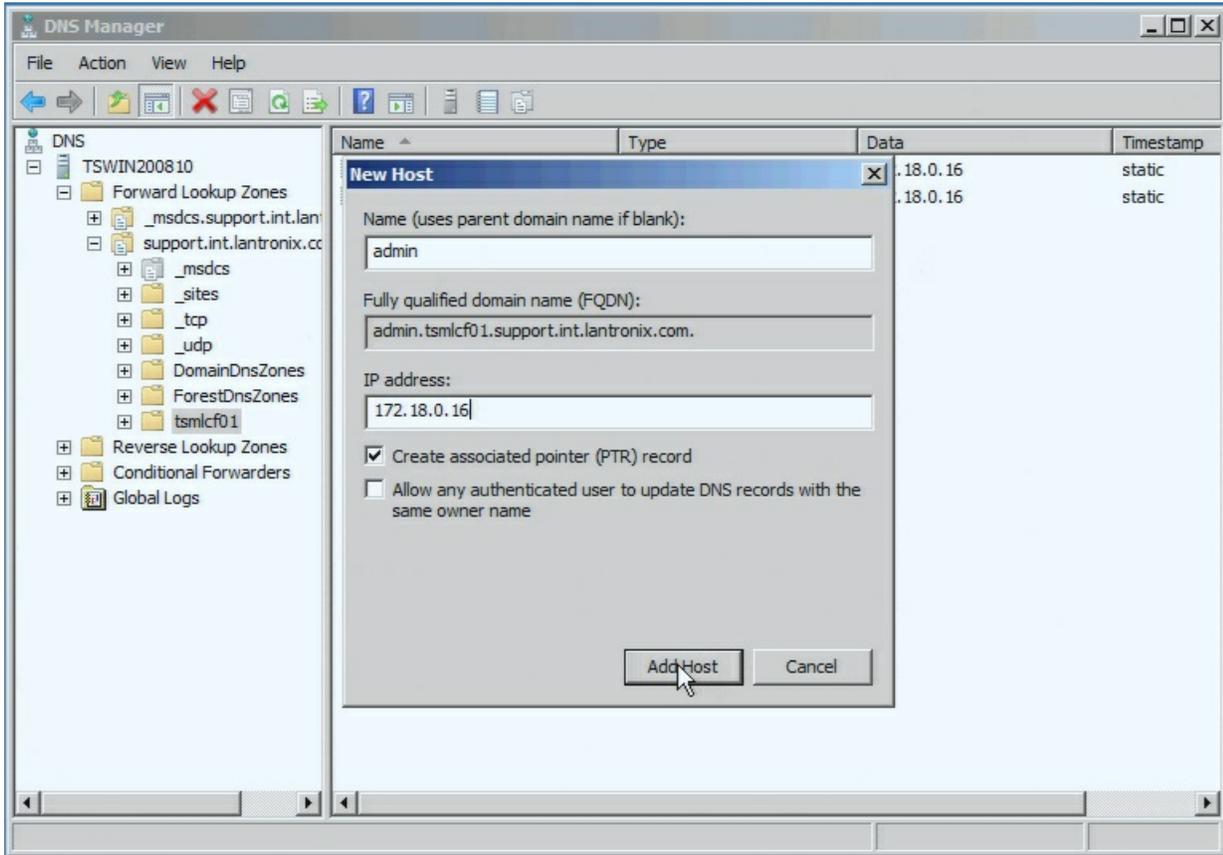
Once the account hostname is added, a new hostname folder will be created.

- From the new hostname folder (tsmlcf01 in our example), Select Action > New Host (A or AAAA).



**Step 8: Add the Admin Host**

- Repeat Step 4. This time, use admin for the hostname.
- Enter the same IP address as in steps 3 and 4.
- Click **Add Host**.



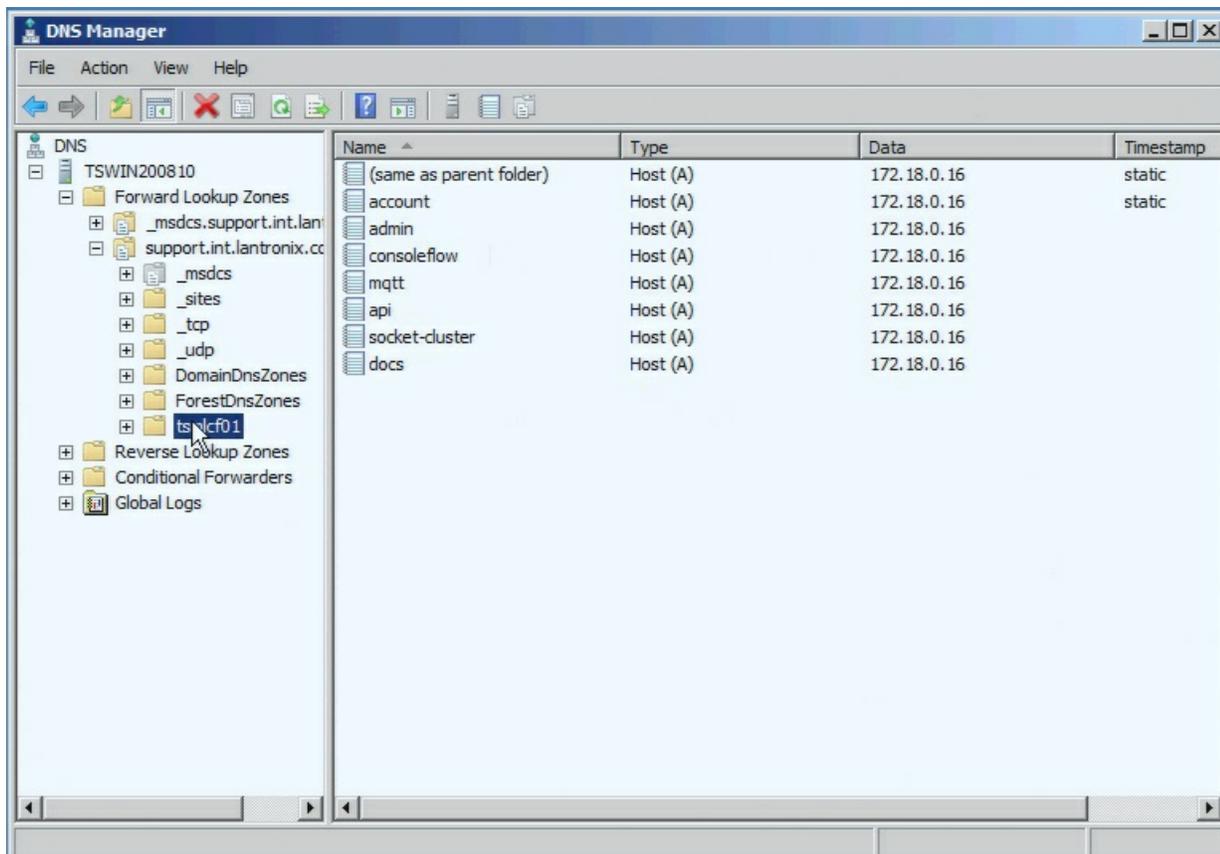
**Step 9: Add the Remaining Host**

- Repeat Steps 7 and 8 for the following hostnames:
  - consoleflow
  - mqtt
  - api
  - socket-cluster
  - docs
- Enter the same IP address as in steps 3 and 4 for each hostname.
- Click **Add Host** for each hostname.

**Required Hosts Result**

The host records are placed in the folder under the hostname.

The required hostnames have been added to the DNS server. To complete the setup confirm your records look like the result below.



## Get the ConsoleFlow Software

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To purchase a ConsoleFlow license and receive a link to download the ConsoleFlow installation files, contact your [regional Lantronix Sales Representative](#) or go to the [Lantronix Online Store](#).

## On-Premise Minimum Requirements

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- VMware ESXi 6.0, 6.5 or 6.7
- One ConsoleFlow instance per server
- Four 3.0 GHz virtual core or more
- 32 GB RAM (minimum is dependent on usage)
- 256 GB Hardware Hard Disk Storage space
- NFSv4 HDD (SSD recommended) with minimum 20 GB for storing data and configuration
- At least one virtual network interface allocated to the virtual machine

!!! note The OVA file should be deployed using thick provisioning.

## Virtual Machine Requirements

The deployment has been verified on the following versions:

Component	Version Number
<b>VMware ESXi™</b>	6.0, 6.5 or 6.7
<b>OVF Tool</b>	4.2.0, 4.3.0, 4.4.0
<b>vSphere Client</b>	6.0 (used with ESXi 6.0), 6.7
<b>vCenter</b>	6.7

Refer to the [VMware online documentation](#) for instructions on installing and using VMware ESXi, OVF Tool, vSphere Client, and vCenter.

!!! note The overall performance and utilization of your ConsoleFlow virtual appliance may vary based on VMware configuration, resource allocation, and/or sizing planning.

## Install ConsoleFlow

We recommend using the OVF Tool to install the ConsoleFlow VM. The OVF tool method has been verified for VMWare ESXi version 6.5 or 6.7. If you are installing ConsoleFlow on VMWare ESXi version 6.0, you may choose to install using the vSphere Client instead. In this case, see [Install Using vSphere Client](#).

### Install using OVF Tool

#### To deploy the OVA:

1. Download the ConsoleFlow OVA file.
2. From the command line, run the OVF Tool.
3. In the OVF Tool, issue the following command:

```
$ ovftool --noSSLVerify --noImageFiles -ds=datastore1 --maxVirtualHardwareVersion=11 -n=consoleflow-1.0.24 consoleflow-1.0.24.ova vi://username:password@<IP_ADDRESS>/
```

Replace the following options with the appropriate values:

OVF option	Replacement value
datastore1	Target datastore name for vSphere locator.
consoleflow-1.6.2	The target name. Replace with the file name, or another value you choose.
consoleflow-1.6.2.ova	The source locator. Replace with the actual OVA file name.
vi://username:password@<IP_ADDRESS>	The target locator. Enter VMware username and password. Replace with the actual IP address.

Refer to [OVF Tool User's Guide](#) for details on the OVF Tool command line.

This imports the ConsoleFlow OVA. This process may take about 20 minutes to perform initial setup depending on the virtual machine size. When it is finished, the ConsoleFlow virtual machine appears under the node.

#### To power on the virtual machine and access the console:

1. For installations on ESXi 6.0, power on the virtual machine using the vSphere Client.

## Deploy ConsoleFlow On-Premise

The screenshot shows the vSphere Client interface. The main window displays the console of a virtual machine named 'consoleflow-1.0.24-20180816'. The console content includes:

### What is a Virtual Machine?

A virtual machine is a software computer that, like a physical computer, runs an operating system and applications. An operating system installed on a virtual machine is called a guest operating system.

Because every virtual machine is an isolated computing environment, you can use virtual machines as desktop or workstation environments, as testing environments, or to consolidate server applications.

Virtual machines run on hosts. The same host can run many virtual machines.

### Basic Tasks

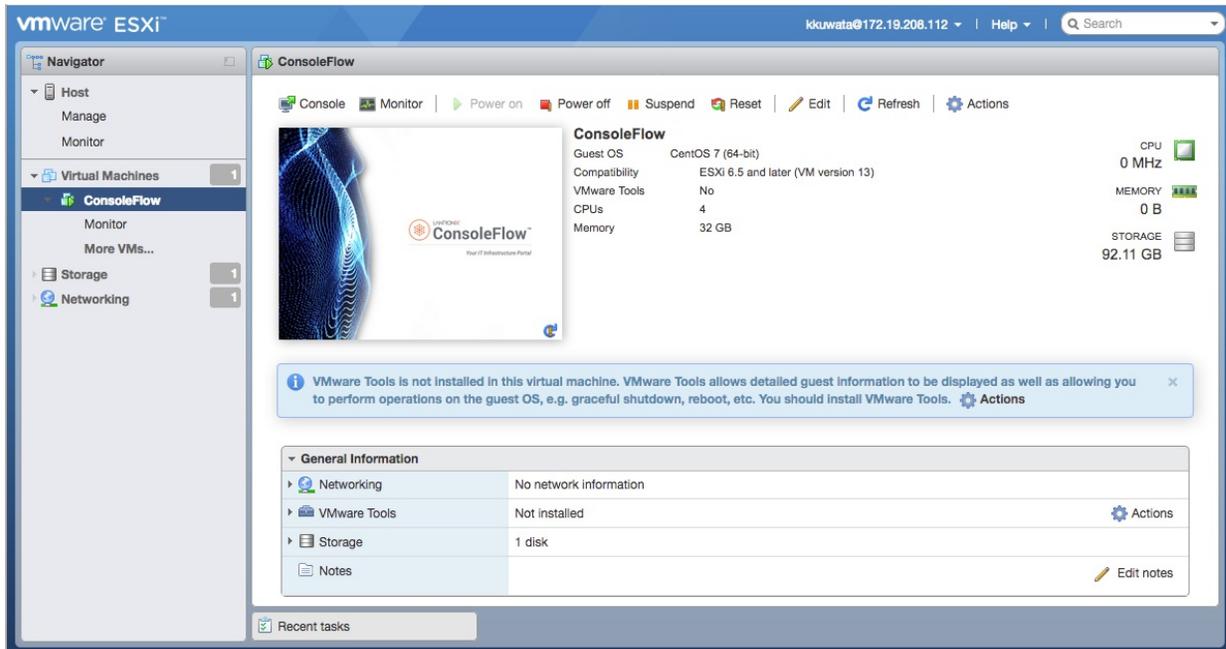
- ▶ Power on the virtual machine
- 🔧 Edit virtual machine settings

The 'Recent Tasks' table at the bottom of the console shows the following data:

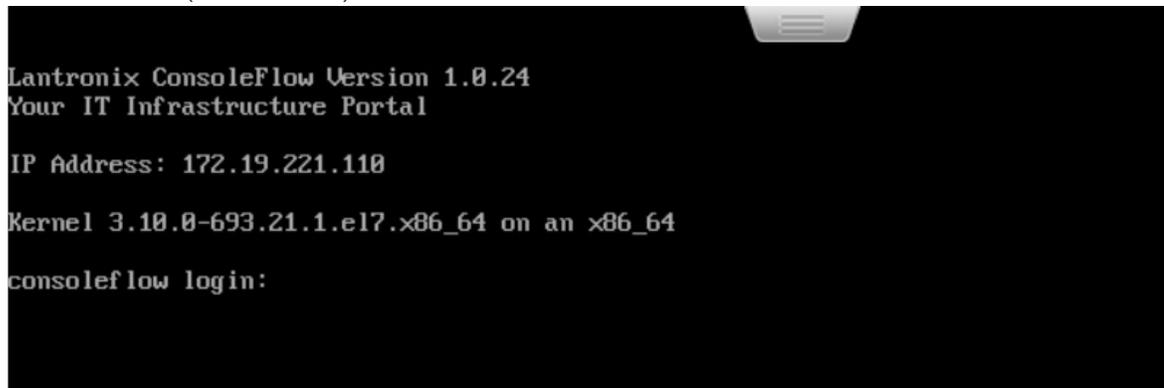
Name	Target	Status	Details	Initiated by	Requested Start Time	Start Time	Completed Time
Power On virtual mach...	consoleflow-1...	Completed		mdavison	8/21/2018 8:24:00 AM	8/21/2018 8:24:00 AM	8/21/2018 8:24:00 AM

2. For installations on ESXi 6.5 or later, power on the virtual machine using the ESXi web client.

## Deploy ConsoleFlow On-Premise



3. In the console window, log into ConsoleFlow. Type the initial system administrator credentials:
  - o Username: sysadmin (case sensitive)
  - o Password: PASS (case sensitive)



### Install using vSphere Client

#### Special note for installation on VMware ESXi 6.0

To install the ConsoleFlow VM on ESXi 6.0 using the vSphere Client, you must convert the OVA file from SHA256 hash to SHA1 hash. ESXi server versions before 6.5.0 do not support OVF/OVA files with a SHA256 hash. VMware provides a tool (OVF Tool) to convert the OVA to SHA1 and allow installation on these older ESXi systems.

- VMware knowledge base article describing how to convert the OVA at: <https://kb.vmware.com/s/article/2151537>
- Download the OVF Tool from the VMware website: <https://www.vmware.com/support/developer/ovf/>

### Install from vCenter GUI

#### Special note for deploying from vCenter 6.7 GUI

The /consoleflow-x.x.x-vcenter-gui/ folder contains the ConsoleFlow VMDK, OVF, and md5 checksum files.

1. In the ConsoleFlow download directory, go to /consoleflow-x.x.x-vcenter-gui/ folder and download the files in that folder.
2. Deploy the ConsoleFlow VM. Next, complete the following steps in vCenter GUI.
3. Edit Setting.
4. Click the SCSI controller 0.
5. Click Change Type.
6. Click VMWare Paravirtual.
7. Click OK.

**Note:** If you use a deployment method other than by using vCenter, you can use the OVA file.

## Quick Setup Utility

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Quick Setup allows you to access the command line to enter network and basic settings so that you can configure the ConsoleFlow software using your network. You must run Quick Setup to change the network settings after you load the virtual machine.

### Network Setup

The ConsoleFlow software must have a unique IP address on your network. The ConsoleFlow software receives an IP address in one of the following ways:

**DHCP (automatic):** The network port obtains its IP address via a DHCP server on the network that the network port is connected to. The first time you power on the ConsoleFlow software, the network port tries to obtain its IP address using DHCP.

**Static IP (manual):** You manually configure a static IP address to ConsoleFlow. Select this option if you do not want ConsoleFlow to obtain an IP address by means of DHCP, or if it cannot do so. The static IP address must be within a valid range and unique to your network.

### Required Network Information

Before you run Quick Setup, obtain the following details from your network administrator:

- If you assign a static IP address, get the following information:
  - IP address
  - Subnet mask
  - Gateway IP address
  - DNS IP address
- If the IP address is assigned by DHCP, you will need only the DNS IP address.
- FQDN and SSL certificates. Request a valid wildcard SSL certificate or SAN SSL certificate to secure all the subdomains on the domain or to secure a specific set of subdomains for the services that ConsoleFlow runs.
- Network File System (NFS) Server IP address and mount point.

### File System Storage

ConsoleFlow On-Premise software may be configured with external NFS or local file system. We strongly recommend that ConsoleFlow is installed with NFS rather than the local file system. An external NFS is the only option to back up data periodically and restore it if devices or configuration are deleted.

!!! important External NFS is required to be able to upgrade ConsoleFlow On-Premise software.

### External NFS Setup

The external NFS server needs to be configured with a set of shared/exported directories and a NFS-specific `/etc/exports` file (share file). The directories and share file are requirements for ConsoleFlow to store persistent data properly during updates on NFS. NFS is also used for the normal file system storage.

#### NFS shared directories

Run the sample bash script to create the NFS shared directories:

```
#!/bin/bash
shareDir="/var/nfs/"
projectDir="mystique-core/"
directories=(
'elasticsearch-1/data'
'content-1'
'postgresql-1/data'
'redis-1/data'
'secure-storage-service-1'
'influxdb-1'
)
for dir in ${directories[@]}; do
mkdir -p ${shareDir}${projectDir}${dir}
chown nfsnobody:nfsnobody ${shareDir}${projectDir}${dir}
chmod 2777 ${shareDir}${projectDir}${dir}
done
```

Each shared directory needs to have the following configurations set and each shared directory listed in the share file

needs to have the following NFS parameters:

- rw: Readable and Writable, `chmod 2777 ...` in the script sets read and write capabilities for all users in the shared directories.
- sync: (default, but should be specified in share file)
- no\_subtree\_check: (default, but should be specified in share file)

For each of the shared directories the owner must be `nfsnobody`. This is done with the command `chown nfsnobody:nfsnobody ...` in the script.

### NFS /etc/exports file (share file)

The `/etc/exports` file must specify the IP address or the subnet of the ConsoleFlow system.

Examples of a ConsoleFlow system with the IP address of `192.0.2.101`:

- Specific IP Address - `/var/nfs/mystique-core/elasticsearch-1/data 192.0.2.101`
- Entire Subnet Example - `/var/nfs/mystique-core/elasticsearch-1/data 192.0.2.0/24`

The following example shows an example `/etc/exports` file (share file). Note that the directories listed in the example are required.

```
/var/nfs/mystique-core/elasticsearch-1/data 192.0.2.0/24(rw, sync, no_subtree_check)
/var/nfs/mystique-core/content-1 192.0.2.0/24(rw, sync, no_subtree_check)
/var/nfs/mystique-core/postgresql-1/data 192.0.2.0/24(rw, sync, no_subtree_check)
/var/nfs/mystique-core/redis-1/data 192.0.2.0/24(rw, sync, no_subtree_check)
/var/nfs/mystique-core/secure-storage-service-1 192.0.2.0/24(rw, sync, no_subtree_check)
/var/nfs/mystique-core/influxdb-1 192.0.2.0/24(rw, sync, no_subtree_check)
```

## Creating a Self-Signed SSL Certificate

An SSL certificate is required during the setup of ConsoleFlow and used to secure communication between the client and ConsoleFlow server. Self-signed SSL certificates are primarily used for testing and we recommend obtaining a SSL certificate from a Certificate Authority (CA). The certificate must include SAN (Subject Alternative Name) section which allows multiple subdomains to be protected by a single certificate. A SAN certificate may also be called a Unified Communication Certificate (or UCC), a multi-domain certificate, or an Exchange certificate.

You may create a [wildcard SSL certificate](#) or a [SAN SSL certificate](#). Wildcard SSL certificates are used to secure all the subdomains on the domain; while a SAN SSL certificate with only specified subdomains is used to secure only the required subdomains.

### Self-Signed Wildcard SSL Certificate Example

The following example creates a self-signed wildcard SSL certificate for `*.example.com`, assuming your domain name is `example.com`.

1. Create a configuration file for your wildcard domain with a Subject Alternative Name, replacing fields `C` through `DNS.2` with your information.

Example `wildcard.example.com.cnf` file (configuration file):

```
[req]
```

```
distinguished_name = req_distinguished_name
x509_extensions = v3_req
prompt = no
[req_distinguished_name]

C = US # Country Name (2 letter code)
ST = California # State or Province Name (full name)
L = Irvine # Locality Name (eg, city)
O = Lantronix, Inc. # Organization Name (eg, company)
OU = Engineering # Organizational Unit
CN = *.example.com
emailAddress = admin@example.com
[v3_req]
subjectAltName = @alt_names
[alt_names]
DNS.1 = *.example.com
DNS.2 = example.com
```

2. Open a terminal with OpenSSL capabilities and create wildcard SSL key and wildcard SSL certificate using the configuration file with the correctly specified fields.

```
openssl req -x509 -nodes -days 360 -newkey rsa:2048 -keyout wildcard.example.com.key -out
wildcard.example.com.crt -config wildcard.example.com.cnf -sha256
```

3. View the SSL certificate to see the contents of the certificate and ensure proper creation inside your command prompt.

```
openssl x509 -text -noout -in wildcard.example.com.crt
```

4. You can install the generated SSL certificate on Windows by adding it to the Trusted CA list. The Trusted CA list can be accessed through the browser:
  - o In Chrome save the certificate by left clicking the "Not Secure" message in the address bar and selecting "certificate" from the drop down. You will then install the certificate by following the prompts. It is expected that you will see the error `NET::ERR_CERT_AUTHORITY_INVALID` in Chrome before adding your SSL certificate to the Trusted CA list.
  - o In Windows Explorer drag and drop the certificate onto the web page and then follow the prompts to install the certificate.
  - o You can also manage your certificates with the Certificate Manager in Windows. Run `certmgr.msc` from the Windows toolbar to view Certificate Manager.

!!!note If you see the error `NET::ERR_CERT_COMMON_NAME_INVALID` in Chrome you are likely missing SAN.

### Self-Signed SAN Specific Subdomains SSL Certificate Example

Assuming your domain name is example.com, the following example creates a self-signed SAN SSL certificate for:

- example.com
- account.example.com
- admin.example.com

- consoleflow.example.com
- mqtt.example.com
- api.example.com
- socket-cluster.example.com
- docs.example.com

To create the certificate:

1. Create a configuration file for your domain with a Subject Alternative Name, replacing fields `C` through `DNS.8` with your information.

Example `example.com.cnf` file (configuration file):

```
[req]
distinguished_name = req_distinguished_name
x509_extensions = v3_req
prompt = no # No interactive prompt
[req_distinguished_name]

C = US # Country Name (2 letter code)
ST = California # State or Province Name (full name)
L = Irvine # Locality Name (eg, city)
O = Lantronix, Inc. # Organization Name (eg, company)
OU = Engineering # Organizational Unit
CN = example.com # Common Name (e.g. server FQDN or YOUR name)
emailAddress = admin@example.com
[v3_req]
subjectAltName = @alt_names
[alt_names]
DNS.1 = example.com
DNS.2 = account.example.com
DNS.3 = admin.example.com
DNS.4 = api.example.com
DNS.5 = consoleflow.example.com
DNS.6 = docs.example.com
DNS.7 = mqtt.example.com
DNS.8 = socket-cluster.example.com
```

2. Open a terminal with OpenSSL capabilities and create SSL key and SSL certificate using the configuration file with the correctly specified fields.

```
openssl req -x509 -nodes -days 360 -newkey rsa:2048 -keyout example.com.key -out
example.com.crt -config example.com.cnf -sha256
```

3. View the SSL certificate to see the contents of the certificate and ensure proper creation inside your terminal.

```
openssl x509 -text -noout -in example.com.crt
```

4. You can install the generated SSL certificate on Windows by adding it to the Trusted CA list. The Trusted CA list can be accessed through the browser:

- In Chrome save the certificate by left clicking the "Not Secure" message in the address bar and selecting "certificate" from the drop down. You will then install the certificate by following the prompts. It is expected that you will see the error `NET::ERR_CERT_AUTHORITY_INVALID` in Chrome before adding your SSL certificate to the Trusted CA list.
- In Windows Explorer drag and drop the certificate onto the web page and then follow the prompts to install the certificate.
- You can also manage your certificates with the Certificate Manager in Windows. Run `certmgr.msc` from the Windows toolbar to view Certificate Manager.

!!!note If you see the error `NET::ERR_CERT_COMMON_NAME_INVALID` in Chrome you are likely missing SAN.

## Run Quick Setup

You will run through Quick Setup a number of times to make the necessary configurations.

Follow these guidelines to run Quick Setup:

1. Use Quick Setup from the console window or from SSH. Make note of the following:
  - To set network configuration, use the console because the connection will be lost when you change network settings.
  - To upload the SSL certificate, use SSH because the console window does not support copy/paste.
2. Run Quick Setup **in the specified sequence** listed below. Make note of the following:
  - First change the network settings and reboot the system.
  - Each time you run through Quick Setup, changes take effect immediately.
  - You may skip other changes if you want to use the default or current settings.
3. Follow the prompts on the Quick Setup screen. At each prompt, type **y** to change the setting, or type **n** to skip the setting and retain the current value.

See [Quick Setup Fields](#) for descriptions of the settings.

### Sequence 1: Network and basic settings

1. Start the ConsoleFlow virtual machine and access the console to log in.
2. Follow the prompts on the screen.
3. Change the following settings:
  - **Change password: (y/n)** - Type **y**, then type the new password. See Change Password in the [Quick Setup fields](#) table for password requirements.
  - **Change network settings: (y/n)** - Type **y**, and then type **1** for DHCP or **2** for Static IP. If you select static IP, enter the IP address, the Subnet mask, and the Gateway IP address all in dotted quad notation.
  - **Enter DNS:** Type the DNS server IP address.
  - **Change timezone: (y/n)** - Type **y**, and then set the correct time zone. See the [Time Zone](#) table for timezone values.
  - **Change time: (y/n)** - Type **y**, then enter the date and time in YYYY-MM-DD HH:MM:SS format. When you set date/time, NTP will be disabled.

Skip the remaining settings. You may set them in the later sequences as needed for your specific deployment.

The system reboots after you change the network settings.

```
Lantronix ConsoleFlow Version 1.6.2
Your IT Infrastructure Portal

IP Address: 172.19.208.215

Kernel 3.10.0-957.1.3.el7.x86_64 on an x86_64

consoleflow login: sysadmin
Password:
Target Version: 1.6.2 (20190805000000)
System is factory default state.
Please configure the networking settings.
Change network settings: (y/n) y
  Network Settings
-----
Configure ethernet, current configuration is static (172.19.208.215)
  (1) Obtain IP Address from DHCP
  (2) Static IP Address
Enter 1-2 [2]: 2
Enter IP Address [172.19.208.215]: 172.19.226.90
Enter Subnet Mask []: 255.255.0.0
Enter Gateway IP Address [172.19.0.1]: 172.19.0.1
Enter DNS [10.167.90.1]: 10.167.90.1
Network settings done
Changing network settings...
You may lose your connection if you are connecting via SSH.
After network changes are applied, the system will reboot.
Network settings change successful
Reconfiguring...
-
```

## Sequence 2: SSL Certificate, FQDN, and NFS storage location

**You must open an SSH session to upload the SSL certificate, as the console does not support copy/paste.**

The default certificate authenticates the default FQDN (demo.lantronix.com). If you change the FQDN, you must upload a new SSL certificate.

Obtain a valid SSL certificate. You can create a [self-signed SSL certificate](#) for the purposes of testing and initial setup. The SSL certificate must include the hostname of the ConsoleFlow server. Using the default example, the ConsoleFlow server's hostname is "demo" and the domain is "lantronix.com".

ConsoleFlow supports NFS version 4. You will need to know the IP address of the NFS server and the mount point.

1. Open an SSH connection to access the Quick Setup screen again and log in.
2. Follow the prompts in Quick Setup to upload the SSL certificate and change the FQDN.
3. Upload the SSL certificate:
  - **View and Upload SSL certificate: (y/n)** - Type **y**, then **y** again, and then copy and paste the certificate. Enter a '.' (period) on a blank line to terminate the entry. Do the same with the CA and the key.
4. Change the FQDN:

- **Change FQDN: (y/n)** - Type **y** and then type the domain name that you want to use.
5. Change the NFS location:
- **Transfer persistent data to a new external NFS location: (y/n)** - type **y** and then enter the NFS server IP address and the mount point. The prompt will be **Change NFS storage location: (y/n)** and must be run in a third sequence when updating from ConsoleFlow version 1.4 and earlier of Quick Setup.

!!! note Changing the NFS location will remove existing data from the destination. We strongly recommend taking a snapshot before you proceed.

Once you complete Quick Setup, the changes are applied and take effect immediately.

### Update with Quick Setup

You can update the ConsoleFlow software to a newer version by installing the new VM and running Quick Setup. To update to a newer version you must be only one release behind. For example, to update to ConsoleFlow version 1.6 your ConsoleFlow version must be 1.5. To update to ConsoleFlow 1.6 from 1.4, you must first update to 1.5 and then update to 1.6. When updating, you are required to take a VM snapshot in case you need to revert to a previous version if the upgrade fails.

An external NFS stores existing data from ConsoleFlow during software updates. However, when updating from ConsoleFlow version 1.4 or lower, system data is not persistent between updates. System data contains the system admin password and network configurations like the ConsoleFlow server IP address, Subnet mask, Gateway IP, FQDN, and SSL certificate. System data also contains system time information like date, time, and timezone.

To update ConsoleFlow to a newer version, make sure you have taken a snapshot and have setup NFS before continuing:

1. Install the new ConsoleFlow VM. Details about VM installation can be found [here](#).
  - If your version before the update was ConsoleFlow 1.4 or earlier you must configure the system data before continuing. To do so follow sequence 1 and 2 in the first time [Quick Setup](#) guide until step 5 of sequence 2.
2. Enter Quick Setup and follow the prompts until **Use existing NFS storage location: (y/n)** where you type **y** to use your currently mounted NFS. This option will appear during updates.
  - You also have the option to **Transfer persistent data to a new external NFS location: (y/n)**. Which allows you to migrate your persistent data to a new NFS location.
3. You will then perform the persistent data update when the prompt **Update system from the previous version: (y/n)** appears, then type **y** to finish the system update and Quick Setup.

### Run Diagnostics with Quick Setup

Quick Setup can be used to check system diagnostics of the ConsoleFlow server. Some of these diagnostics include: Date/Time, Current Connections, Uptime, Memory Usage, Disk Usage, and other system diagnostics that pertain to your specific deployment.

To run diagnostics command:

1. Connect either to ConsoleFlow by either the VM or SSH. We recommend using SSH as the diagnostic output can be large.

2. Follow the prompts until you reach **Run Diag?: (y/n)** and type **y**.
3. Then a warning will appear:

```
_> *Running diagnostics may take some time.
```

We recommend to run this from SSH since results may include large output.  
If you select this option, we are not going to apply other changes.\*\_

4. Followed by the prompt **Proceed with running diagnostics: (y/n)**, type **y** to finish running both Quick Setup and Diagnostics.

!!!note Any changes made during the execution of Quick Setup will not be applied if **Run Diag** is selected.

### Quick Setup Fields

The following table describes the settings in Quick Setup.

Script	Description
<b>Change Password</b>	Allows you to change the system administrator password. We recommend that you immediately change the initial password the first time that you log in. Passwords must contain at least 1 of each type of character: lowercase, uppercase, numeric, and special characters. Special characters are any non-alphanumeric character that is not a whitespace character (whitespace characters include tab, newline, and space). Passwords also have a minimum length of 6 characters and a maximum length of 20 characters. Default: PASS
<b>Configure Network Settings</b>	Select one of the following: <1> <b>Obtain IP Address from DHCP:</b> The unit will acquire the IP address and gateway from the DHCP server. (The DHCP server may provide the gateway, depending on its setup.) DHCP is the default setting. <2> <b>Static IP Address:</b> Requires you to assign a static IP address manually. The network administrator should provide the IP address, subnet mask, default gateway IP address and DNS IP address.
<b>IP Address (if specifying static IP)</b>	An IP address that will be unique and valid on your network and in the same subnet as your PC. There is no default. If you selected DHCP, this prompt does not display. <i>Enter all IP addresses in dot quad notation.</i>
<b>Subnet Mask (if specifying static IP)</b>	The subnet mask specifies the network segment on which the ConsoleFlow software resides. There is no default. If you selected DHCP, this prompt does not display.
<b>Gateway IP Address</b>	IP address of the router for this network. If you selected DHCP, this prompt does not display.

## Deploy ConsoleFlow On-Premise

<b>DNS</b>	IP address of the DNS server to use for this network.
<b>Time Zone</b>	Time zone. You should initially set the time zone to ensure the value on the server is correct. Time Zone values can be found in the <a href="#">time zone table</a> . Default: America/Los_Angeles.
<b>Date/Time</b>	Date and time in YYYY-MM-DD HH:MM:SS format. You should initially set the date and time to ensure the value on the server is correct.
<b>FQDN</b>	The fully qualified domain name (FQDN) specifies the complete domain name of a specific computer or host. Change this value if you do not want to use the default FQDN. If you change the FQDN, upload the SSL certificate for the appropriate FQDN. Default: demo.lantronix.com.
<b>Upload SSL certificate</b>	The SSL certificate for the FQDN. The default certificate validates the default FQDN.
<b>NFS Storage Location</b>	Network File System (NFS) v4 is supported for external storage. Enter the NFS server IP address and the mount point (path). <b>Note:</b> NFS must be used over the local file system in order to upgrade ConsoleFlow.

## Additional Information

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### Default On-Premise Project Admin Account

The ConsoleFlow VM quick setup process creates a default Project Admin account. After deploying the ConsoleFlow on-premise software, the Project Admin portal may be used to manually assign devices to the project or to complete other project configuration operations.

To log into the MACH10 Project Admin portal, refer to the following details:

URL based on the FQDN configured during Quick Setup.

- **Default Project Admin URL:** <https://demo.lantronix.com>
- **On-Premise Project Admin URL:** <https://<newFQDN>>

Project Admin portal default username and password:

- **username:** cf-project-admin
- **password:** Lantronix123

### Create ConsoleFlow Account

After deploying the ConsoleFlow on-premise software, you will need to create a ConsoleFlow Account for your organization, which will allow you to invite your organization's users to join and access ConsoleFlow services. To log in, users will be required to enter the organization name and then be directed to log in using the authentication method selected by the administrator.

1. Go to the ConsoleFlow URL ([consoleflow.<newFQDN>](https://consoleflow.<newFQDN>)).
2. Click **Create Account**.
3. Enter the following details: first name, last name, email address, username, password, retype password, and organization name.
4. Click **Create Account**.
5. Click **Log-in** to log into ConsoleFlow.

### Time Zones

Time zone data is used during the [Quick Setup](#) process of ConsoleFlow. You will select a continent and region and combine them by inserting a forward slash between the two strings. For example, `Africa/Cairo` or `America/Argentina/San_Juan`.

Continent	Regions		
Africa	Abidjan	Accra	Addis_Ababa
	Algiers	Asmara	Bamako
	Bangui	Banjul	Bissau

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	Blantyre	Brazzaville	Bujumbura
	Cairo	Casablanca	Ceuta
	Conakry	Dakar	Dar_es_Salaam
	Djibouti	Douala	El_Aaiun
	Freetown	Gaborone	Harare
	Johannesburg	Juba	Kampala
	Khartoum	Kigali	Kinshasa
	Lagos	Libreville	Lome
	Luanda	Lubumbashi	Lusaka
	Malabo	Maputo	Maseru
	Mbabane	Mogadishu	Monrovia
	Nairobi	Ndjamena	Niamey
	Nouakchott	Ouagadougou	Porto-Novo
	Sao_Tome	Tripoli	Tunis
	Windhoek		
America	Adak	Anchorage	Anguilla
	Antigua	Araguaina	Argentina/Buenos_Aires
	Argentina/Catamarca	Argentina/Cordoba	Argentina/Jujuy
	Argentina/La_Rioja	Argentina/Mendoza	Argentina/Rio_Gallegos
	Argentina/Salta	Argentina/San_Juan	Argentina/San_Luis
	Argentina/Tucuman	Argentina/Ushuaia	Aruba
	Asuncion	Atikokan	Bahia
	Bahia_Banderas	Barbados	Belem
	Belize	Blanc-Sablon	Boa_Vista
	Bogota	Boise	Cambridge_Bay

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	Campo_Grande	Cancun	Caracas
	Cayenne	Cayman	Chicago
	Chihuahua	Costa_Rica	Creston
	Cuiaba	Curacao	Danmarkshavn
	Dawson	Dawson_Creek	Denver
	Detroit	Dominica	Edmonton
	Eirunepe	El_Salvador	Fort_Nelson
	Fortaleza	Glace_Bay	Godthab
	Goose_Bay	Grand_Turk	Grenada
	Guadeloupe	Guatemala	Guayaquil
	Guyana	Halifax	Havana
	Hermosillo	Indiana/Indianapolis	Indiana/Knox
	Indiana/Marengo	Indiana/Petersburg	Indiana/Tell_City
	Indiana/Vevay	Indiana/Vincennes	Indiana/Winamac
	Inuvik	Iqaluit	Jamaica
	Juneau	Kentucky/Louisville	Kentucky/Monticello
	Kralendijk	La_Paz	Lima
	Los_Angeles	Lower_Princes	Maceio
	Managua	Manaus	Marigot
	Martinique	Matamoros	Mazatlan
	Menominee	Merida	Metlakatla
	Mexico_City	Miquelon	Moncton
	Monterrey	Montevideo	Montserrat
	Nassau	New_York	Nipigon
	Nome	Noronha	North_Dakota/Beulah

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	North_Dakota/Center	North_Dakota/New_Salem	Ojinaga
	Panama	Pangnirtung	Paramaribo
	Phoenix	Port-au-Prince	Port_of_Spain
	Porto_Velho	Puerto_Rico	Punta_Arenas
	Rainy_River	Rankin_Inlet	Recife
	Regina	Resolute	Rio_Branco
	Santarem	Santiago	Santo_Domingo
	Sao_Paulo	Scoresbysund	Sitka
	St_Barthelemy	St_Johns	St_Kitts
	St_Lucia	St_Thomas	St_Vincent
	Swift_Current	Tegucigalpa	Thule
	Thunder_Bay	Tijuana	Toronto
	Tortola	Vancouver	Whitehorse
	Winnipeg	Yakutat	Yellowknife
Antarctica	Casey	Davis	DumontDUrville
	Macquarie	Mawson	McMurdo
	Palmer	Rothera	Syowa
	Troll	Vostok	
Arctic	Longyearbyen		
Asia	Aden	Almaty	Amman
	Anadyr	Aqtau	Aqtobe
	Ashgabat	Atyrau	Baghdad
	Bahrain	Baku	Bangkok
	Barnaul	Beirut	Bishkek
	Brunei	Chita	Choibalsan

## Deploy ConsoleFlow On-Premise

	Colombo	Damascus	Dhaka
	Dili	Dubai	Dushanbe
	Famagusta	Gaza	Hebron
	Ho_Chi_Minh	Hong_Kong	Hovd
	Irkutsk	Jakarta	Jayapura
	Jerusalem	Kabul	Kamchatka
	Karachi	Kathmandu	Khandyga
	Kolkata	Krasnoyarsk	Kuala_Lumpur
	Kuching	Kuwait	Macau
	Magadan	Makassar	Manila
	Muscat	Nicosia	Novokuznetsk
	Novosibirsk	Omsk	Oral
	Phnom_Penh	Pontianak	Pyongyang
	Qatar	Qyzylorda	Riyadh
	Sakhalin	Samarkand	Seoul
	Shanghai	Singapore	Srednekolymsk
	Taipei	Tashkent	Tbilisi
	Tehran	Thimphu	Tokyo
	Tomsk	Ulaanbaatar	Urumqi
	Ust-Nera	Vientiane	Vladivostok
	Yakutsk	Yangon	Yekaterinburg
	Yerevan		
Atlantic	Azores	Bermuda	Canary
	Cape_Verde	Faroe	Madeira
	Reykjavik	South_Georgia	St_Helena

## Deploy ConsoleFlow On-Premise

	Stanley		
Australia	Adelaide	Brisbane	Broken_Hill
	Currie	Darwin	Eucla
	Hobart	Lindeman	Lord_Howe
	Melbourne	Perth	Sydney
Europe	Amsterdam	Andorra	Astrakhan
	Athens	Belgrade	Berlin
	Bratislava	Brussels	Bucharest
	Budapest	Busingen	Chisinau
	Copenhagen	Dublin	Gibraltar
	Guernsey	Helsinki	Isle_of_Man
	Istanbul	Jersey	Kaliningrad
	Kiev	Kirov	Lisbon
	Ljubljana	London	Luxembourg
	Madrid	Malta	Mariehamn
	Minsk	Monaco	Moscow
	Oslo	Paris	Podgorica
	Prague	Riga	Rome
	Samara	San_Marino	Sarajevo
	Saratov	Simferopol	Skopje
	Sofia	Stockholm	Tallinn
	Tirane	Ulyanovsk	Uzhgorod
	Vaduz	Vatican	Vienna
	Vilnius	Volgograd	Warsaw
	Zagreb	Zaporozhye	Zurich

## Deploy ConsoleFlow On-Premise

Indian	Antananarivo	Chagos	Christmas
	Cocos	Comoro	Kerguelen
	Mahe	Maldives	Mauritius
	Mayotte	Reunion	
Pacific	Apia	Auckland	Bougainville
	Chatham	Chuuk	Easter
	Efate	Enderbury	Fakaofu
	Fiji	Funafuti	Galapagos
	Gambier	Guadalcanal	Guam
	Honolulu	Kiritimati	Kosrae
	Kwajalein	Majuro	Marquesas
	Midway	Nauru	Niue
	Norfolk	Noumea	Pago_Pago
	Palau	Pitcairn	Pohnpei
	Port_Moresby	Rarotonga	Saipan
	Tahiti	Tarawa	Tongatapu
	Wake	Wallis	
UTC			