

Cisco Crosswork Planning 7.0 Installation Guide

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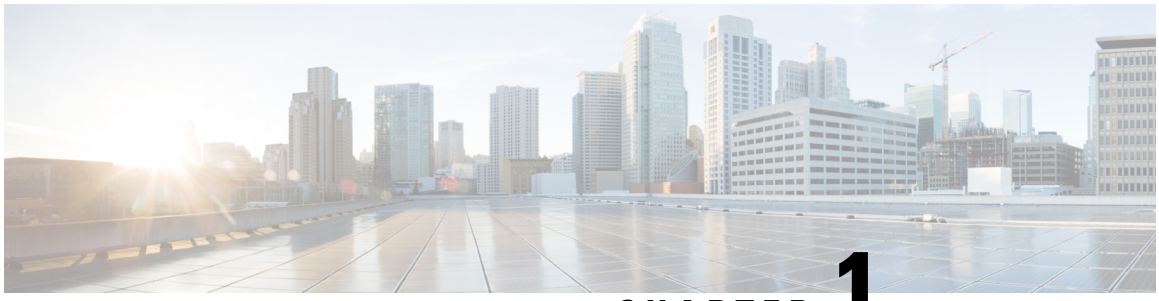
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CHAPTER 1

Overview

This guide explains the requirements and processes to install Cisco Crosswork Planning. For detailed information on how to use the Cisco Crosswork Planning Design and Cisco Crosswork Planning Collector applications, see the *Cisco Crosswork Planning Design 7.0 User Guide* and *Cisco Crosswork Planning 7.0 Collection Setup and Administration*.

This section contains the following topics:

- Audience , on page 1
- Introducing Cisco Crosswork Planning , on page 1
- Cisco Crosswork Planning Applications, on page 2

Audience

This guide is for experienced network users and operators who want to install Cisco Crosswork Planning in their network. This guide assumes that you are familiar with the following:

- Using a Docker container
- Running scripts in Python
- Deploying OVF templates using VMware vCenter
- Deploying using OVF tool

Introducing Cisco Crosswork Planning

Cisco Crosswork Planning runs on the Cisco Crosswork infrastructure and is part of the Cisco Crosswork Network Automation suite of products.

Cisco Crosswork Planning provides tools to create and maintain a model of the current network through the continual monitoring and analysis of the network, and the traffic demands that are placed on it. At a given time, this network model contains all relevant information about a network, including topology, configuration, and traffic information. You can use this information as a basis for analyzing the impact on the network due to changes in traffic demands, paths, node and link failures, network optimizations, or other changes.

Some of the important features of Cisco Crosswork Planning are:

- Traffic engineering and network optimization—Compute TE LSP configuration to meet service level requirements, perform capacity management, and perform local or global optimization to maximize efficiency of deployed network resources.
- Demand engineering—Examine the impact on network traffic flow of adding, removing, or modifying traffic demands on the network.
- Topology and predictive analysis—Observe the impact to network performance of changes in the network topology, which is driven either by design or by network failures.
- TE tunnel programming—Examine the impact of modifying tunnel parameters, such as the tunnel path and reserved bandwidth.
- Class of service (CoS)-aware bandwidth on demand—Examine existing network traffic and demands, and admit a set of service-class-specific demands between routers.

Cisco Crosswork Planning Applications

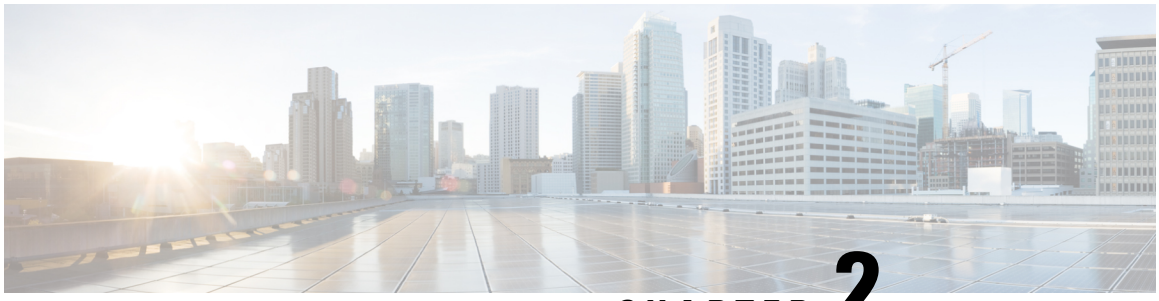
Cisco Crosswork Planning comprises the following two components. These components run independently of each other and you can enable/disable them based on your requirements.

- **Cisco Crosswork Planning Collector**

  Cisco Crosswork Planning Collector consists of a set of services that create, maintain, and archive a model of the current network through continual monitoring and analysis of the network and the traffic demands that are placed on it. For more information on this application, see *Cisco Crosswork Planning 7.0 Collection Setup and Administration*.

- **Cisco Crosswork Planning Design**

  Cisco Crosswork Planning Design is a network design and planning tool that helps network engineers and operators predict growth in their network, simulate failures, and optimize design to meet performance objectives while minimizing cost. For more information on this application, see *Cisco Crosswork Planning Design 7.0 User Guide*.



CHAPTER 2

Installation Requirements

This section contains the following topics:

- Profile Specifications, on page 3
- VMware Settings, on page 4
- Cisco Crosswork Planning VM Requirements, on page 5
- IOS XR Version Support, on page 6
- Supported Web Browsers, on page 7
- Port Requirements, on page 7

Profile Specifications

This table provides an overview of the scale support for various features and the hardware specifications for each profile in Cisco Crosswork Planning.

Table 1: Profile Specifications

Parameters	Profile 1	Profile 2	Profile 3
Scale Support			
Total number of network devices	1000	3000	6000
Total number of interfaces (including virtual interfaces)	40000	100000	200000
Total number of demands	50000	100000	500000
Total number of policies (SR and RSVP)	2000	5000	10000
Total number of VPNs	4 Endpoints per VPN service: 30	4 Endpoints per VPN service: 60	8 Endpoints per VPN service: 60
Hardware Requirements			

Parameters	Profile 1	Profile 2	Profile 3
Number of VMs	1	2	2
CPU	16 vCPU	16 vCPU	24 vCPU
Memory	128 GB	128 GB	256 GB
Disk space	1 TB	1 TB	2 TB



Note There is no provision to tune the resource usage settings for individual services.

VMware Settings

If your vCenter data center does not meet these requirements, the Virtual Machine (VMs) has to be deployed individually. For more information on manual installation, see Install Cisco Crosswork Planning Using the vCenter vSphere UI, on page 17.

- Hypervisor and vCenter supported:
  - VMware vCenter Server 8.0 (U2c or later) and ESXi 8.0 (U2b or later)
  - VMware vCenter Server 7.0 (U3p or later) and ESXi 7.0 (U3p or later)
- The machine where you run the installer must have high speed network connectivity to the vCenter data center where you plan to install Cisco Crosswork Planning.
- Cisco Crosswork Planning VM must be hosted on hardware with Hyper Threading disabled.
- Ensure that profile-driven storage is enabled by the vCenter admin user. Query permissions for the vCenter user at the root level (for all resources) of the vCenter.
- The networks required for the Crosswork Management and Data networks need to be built and configured in the data centers, and must allow low latency L2 communication (latency with RTT <= 10 ms).
- Ensure the user account you use for accessing vCenter has the following privileges:
  - VM (Provisioning): Clone VM on the VM you are cloning.
  - VM (Provisioning): Customize on the VM or VM folder if you are customizing the guest operating system.
  - VM (Inventory): Create from the existing VM on the data center or VM folder.
  - VM (Configuration): Add new disk on the data center or VM folder.
  - Resource: Assign a VM to resource pool on the destination host or resource pool.
  - Datastore: Allocate space on the destination datastore or datastore folder.
  - Network: Assign the network to which the VM will be assigned.

- Profile-driven storage (Query): This permission setting needs to be allowed at the root of the data center tree level.

- We also recommend you to enable vCenter storage control.

Cisco Crosswork Planning VM Requirements

This section explains the resource requirements per VM to deploy Cisco Crosswork Planning.

Table 2: Network Requirements

Requirement	Description
Network Connections	For production deployments, we recommend that you use dual interfaces, one for the Management network and one for the Data network. For optimal performance, the Management and Data networks should use links configured at a minimum of 10 Gbps with a latency of less than 10 milliseconds.
IP Addresses	**Four IPv4 or IPv6 addresses**: A management and data IP address for the Cisco Crosswork Planning node being deployed and two additional IP addresses to be used as the Virtual IP (VIP) address (one for the Management network and one for the Data network). **Note** • Cisco Crosswork Planning does not support dual-stack configurations. Therefore, all addresses for the environment must be either IPv4 or IPv6. • The IP addresses must be able to reach the gateway address for the network, or the installation will fail. • When deploying with IPv6, the installation needs to run on an IPv6 enabled container/VM. • At this time, your IP allocation is permanent and cannot be changed without re-deployment. For more information, contact the Cisco Customer Experience team.
Interfaces	Cisco Crosswork Planning is deployed on a single VM with **two interfaces**. • **No. of NICs**: 2 • **vNIC0**: Management Traffic (for accessing the interactive console and passing the Control/Data information between servers). • **vNIC1**: Device Access Traffic (for device access and data collection).

Requirement	Description
NTP Server	The IPv4 or IPv6 addresses or host names of the NTP server you plan to use. If you want to enter multiple NTP servers, separate them with spaces. These should be the same NTP servers you use to synchronize the Cisco Crosswork Planning VM clock, devices, clients, and servers across your network. Ensure that the NTP servers are reachable on the network before attempting installation. The installation will fail if the servers cannot be reached.
DNS Servers	The IPv4 or IPv6 addresses of the DNS servers you plan to use. These should be the same DNS servers you use to resolve host names across your network. Ensure that the DNS servers are reachable on the network before attempting installation. The installation will fail if the servers cannot be reached.
DNS Search Domain	The search domain you want to use with the DNS servers, for example, cisco.com. You can have only one search domain.
Backup Server	Cisco Crosswork Planning will back up the configuration of the system to an external server using SCP. The SCP server storage requirements will vary slightly but you must have at least 25 GB of storage.
FQDN (Optional)	The installation process supports using either a VIP (Virtual IP address) or an FQDN (Fully Qualified Domain Name) to access the VM. If you choose to use the FQDN, you will need one for the Management and one for the Data network. Cisco Crosswork Planning deployed on a single VM does not support dual-stack configurations. Therefore, all FQDN addresses configured for the deployment environment must be either IPv4 or IPv6. **Note** If you choose to supply the FQDNs during the initial installation, the DNS server must be populated with them before the VM is powered on; otherwise, the installation script will fail to complete the environment setup.

IOS XR Version Support

Cisco Crosswork Planning supports the following Cisco IOS XR software versions.

Table 3: IOS XR Version Support

Device	Tested with version
SR-PCE	7.7.2, 7.11.2, 24.1.2, 24.2.1
XRv 9000	7.7.2, 7.11.2, 24.1.2, 24.2.1
ASR 9000	7.7.2, 7.11.2, 24.1.2, 24.2.1
NCS 5500	7.7.2, 7.11.2, 24.1.2, 24.2.1

Device	Tested with version
NCS 540	7.7.2, 7.11.2, 24.1.2, 24.2.1
Cisco 8000 series routers	7.7.2, 7.11.2, 24.1.2, 24.2.1

Supported Web Browsers

The following table lists the supported browser versions for Cisco Crosswork Planning:

Browser	Version
Google Chrome	127 or later
Mozilla Firefox	128 or later

Port Requirements

The following TCP/UDP port numbers need to be allowed through any external firewall or access-list rules deployed by the data center administrator.

Table 4: Internal Ports Used by Cisco Crosswork Planning Deployment

Port	Protocol	Used for
111	TCP/UDP	GlusterFS (port mapper)
279	TCP	Calico BGP (Kubernetes)
500	UDP	IPSec
2379/2380	TCP	Kubernetes etcd
4500	UDP	IPSec
6443	TCP	kube-apiserver (Kubernetes)
9100	TCP	Kubernetes metamonitoring
10250	TCP	kubelet (Kubernetes)
24007	TCP	GlusterFS
30606	TCP	Docker Registry
30742	TCP	WAE Modeling Daemon (WMD)
30744	TCP	OPM/RPC
31210	UDP	NetFlow packets

Port	Protocol	Used for
49152:49370	TCP	GlusterFS

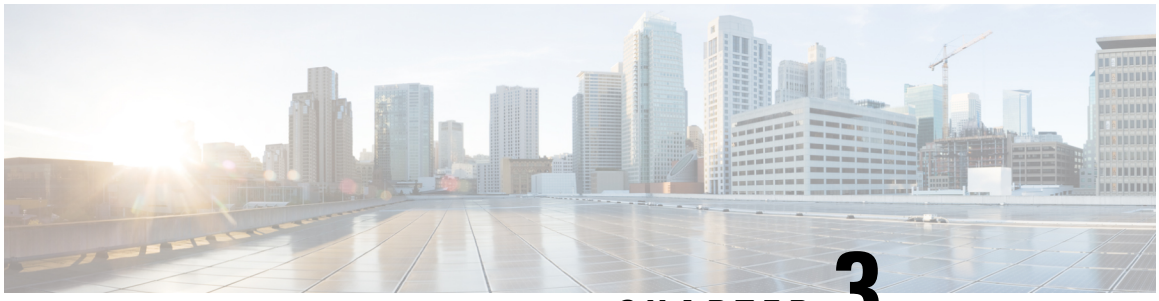
Table 5: Ports Used by Cisco Crosswork Planning Deployment on the Management Network

Port	Protocol	Used for	Direction
30602	TCP	Monitoring the installation (Cisco Crosswork Planning)	Inbound
30603	TCP	Cisco Crosswork Planning Web user interface (NGINX server listens for secure connections on port 443)	Inbound
7	TCP/UDP	Discovering endpoints using ICMP	Outbound
22	TCP	Initiating SSH connections with managed devices	Outbound
22	TCP	Remote SSH connection	Inbound
53	TCP/UDP	Connecting to DNS	Outbound
123	UDP	Network Time Protocol (NTP)	Outbound
830	TCP	Initiating NETCONF	Outbound

Table 6: Ports Used by Cisco Crosswork Planning Deployment on the Device Network

Port	Protocol	Used for	Direction
161	UDP	SNMP Collector	Outbound
30621	TCP	FTP (available on data interface only). The additional ports used for file transfer are 31121 (TCP), 31122 (TCP), and 31123 (TCP). This port is available only when the supported application is installed on Cisco Crosswork and the FTP settings are enabled.	Inbound

Port	Protocol	Used for	Direction
30622	TCP	SFTP (available on data interface only) This port is available only when the supported application is installed on Cisco Crosswork and the SFTP settings are enabled.	Inbound



CHAPTER 3

Install Cisco Crosswork Planning

This chapter explains the processes to install Cisco Crosswork Planning on a single VM or node. In a single VM-based solution, the Cisco Crosswork Platform Infrastructure, Cisco Crosswork Planning infrastructure, and Cisco Crosswork Planning Design and Cisco Crosswork Planning Collector applications are bundled together in a single OVA image. Once you complete the installation procedure, all these components are installed on your machine by default.

- The Cisco Crosswork Platform Infrastructure is a microservices-based platform and is the foundation required for running Crosswork applications.
- Cisco Crosswork Planning Collector provides a set of microservices to create, maintain, and archive a model of the current network.
- Cisco Crosswork Planning Design provides a set of microservices for network planning, designing, and visualization.
- Cisco Crosswork Planning Infrastructure provides a set of microservices to manage Smart Licensing and Archive services.

This section contains the following topics:

- Installation Overview, on page 11
- Installation Parameters, on page 12
- Install Cisco Crosswork Planning Using the vCenter vSphere UI, on page 17
- Install Cisco Crosswork Planning via the OVF Tool, on page 23
- Install Cisco Crosswork Planning Using the Docker Installer Tool, on page 26
- Migrate Collector Configurations, on page 31

Installation Overview

Cisco Crosswork Planning can be installed via:

- vCenter vSphere UI—For details, see Install Cisco Crosswork Planning Using the vCenter vSphere UI, on page 17.
- OVF tool—For details, see Install Cisco Crosswork Planning via the OVF Tool, on page 23.
- Docker installer tool—For details, see Install Cisco Crosswork Planning Using the Docker Installer Tool, on page 26.

Note This method is less recommended compared to using the vCenter UI or the OVF tool for installation.

Installation Parameters

This section explains the important parameters that you must specify while installing Cisco Crosswork Planning. Ensure that you have relevant information to provide for each of the parameters mentioned in the table.

Attention Use the latest template file that comes with the Cisco Crosswork Planning build file.

Table 7: General parameters

Parameter	Description
`Cw_VM_Image`	The name of Crosswork VM image in vCenter. This value is set as an option when running the installer tool and does not need to be set in the template file.
`ClusterIPStack`	The IP stack protocol: IPv4 or IPv6

`vm_sizes`	Create a custom profile as per your requirement. The following two profiles are supported in Cisco Crosswork Planning:
	`vm_sizes = {`
	`  "Small" = {`
	`  vcpus = 16,`
	`  cpu_reservation = 24000,`
	`  memory = 128000`
	`  },`
	`  "Large" = {`
	`  vcpus = 24,`
	`  cpu_reservation = 32000,`
	`  memory = 256000`
	`  }`
	`}`

`vcpus`	The number of virtual CPU instances allocated for virtual machine.
`cpu_reservation`	The guaranteed minimum CPU resource allocation for virtual machine.
`memory`	The amount of memory allocation for virtual machine.
`ManagementVIP`	The Management Virtual IP for the Crosswork VM.

Parameter	Description
`ManagementVIPName`	Name of the Management Virtual IP for the Crosswork VM. This is an optional parameter used to reach Crosswork Management VIP via DNS name. If this parameter is used, the corresponding DNS record must exist in the DNS server.
`ManagementIPNetmask`	The Management IP subnet in dotted decimal format (IPv4 or IPv6).
`ManagementIPGateway`	The Gateway IP on the Management Network (IPv4 or IPv6). The address must be reachable, otherwise the installation will fail.
`DataVIP`	The Data Virtual IP for the Crosswork VM.
`DataVIPName`	Name of the Data Virtual IP for the Crosswork VM. This is an optional parameter used to reach Crosswork Data VIP via DNS name. If this parameter is used, the corresponding DNS record must exist in the DNS server.
`DataIPNetmask`	The Data IP subnet in dotted decimal format (IPv4 or IPv6).
`DataIPGateway`	The Gateway IP on the Data Network (IPv4 or IPv6). The address must be reachable, otherwise the installation will fail.
`DNS`	The IP address of the DNS server (IPv4 or IPv6). The address must be reachable, otherwise the installation will fail.
`DomainName`	The domain name used for the VM.
`K8sServiceNetwork`	The network address for the kubernetes service network. By default, the CIDR range is fixed to '/16'.
`K8sPodNetwork`	The network address for the kubernetes pod network. By default, the CIDR range is fixed to '/16'.
`CWPassword`	Password to log into Cisco Crosswork. Use a strong VM Password (8 characters long, including upper & lower case letters, numbers, and at least one special character). Avoid using passwords similar to dictionary words (for example, "Pa55w0rd!") or relatable words. While they satisfy the criteria, such passwords are weak and will be rejected resulting in failure to setup the VM.
`VMSize`	VM size. You can choose `small` or `large` in accordance with the desired profile. This parameter is required only for deploying via the docker installer tool.
`IsSeed`	Set to "True".
`InitNodeCount`	Set value to 1.
`InitLeaderCount`	Set value to 1.

Parameter	Description
`NTP`	NTP server address or name. The address must be reachable, otherwise the installation will fail.
`SchemaVersion`	The configuration Manifest schema version. This indicates the version of the installer to use with this template. Schema version should map to the version packaged with the sample template in the installer tool on cisco.com. You should always build a new template from the default template provided with the release you are deploying, as template requirements may change from one release to the next.
`ManagerDataFsSize`	Refers to the data disk size for the Crosswork node (in GB). This is an optional parameter and the default value is 450 (valid range is from 450 to 8000), if not explicitly specified. Please use the default value unless recommended otherwise.
`ThinProvisioned`	Set to "false" for production deployments.
`LogFsSize`	Log partition size (in Giga Bytes). Minimum value is 20 GB and Maximum value is 1000 GB. If left blank, the default value (20 GB) is selected.
`BackupMinPercent`	Minimum percentage of the data disk space to be used for the size of the backup partition. The default value is 35 (valid range is from 1 to 80). Please use the default value unless recommended otherwise. **Note** The final backup partition size will be calculated dynamically. This parameter defines the minimum.
`ManagerDataFsSize`	Refers to the data disk size for the Crosswork node (in Giga Bytes). This is an optional parameter and the default value is 485 (valid range is from 485 to 8000), if not explicitly specified. Please use the default value unless recommended otherwise.
`EnableHardReservations`	Determines the enforcement of VM CPU and Memory profile reservations. This is an optional parameter and the default value is `true`, if not explicitly specified. If set as `true`, the VM's resources are provided exclusively. In this state, the installation will fail if there are insufficient CPU cores, memory or CPU cycles. If set as `false` (only set for lab installations), the VM's resources are provided on best efforts. In this state, insufficient CPU cores can impact performance or cause installation failure.

Parameter	Description
`RamDiskSize`	Size of the RAM disk. This parameter is only used for lab installations (value must be at least 2). When a non-zero value is provided for `RamDiskSize`, the `HSDatastore` value is not used.
`SchemaVersion`	The configuration Manifest schema version. This indicates the version of the installer to use with this template. Schema version should map to the version packaged with the sample template in the installer tool on cisco.com. You should always build a new template from the default template provided with the release you are deploying, as template requirements may change from one release to the next.
`LogFsSize`	Log partition size (in Giga Bytes). Minimum value is 20 GB and Maximum value is 1000 GB. If left blank, the default value (20 GB) is selected.
`EnableSkipAutoInstallFeature`	Any pods marked as skip auto install will not be brought up until a dependent application/pod explicitly asks for it. Set to "True".
`EnforcePodReservations`	Enforces minimum resource reservations for the pod. If left blank, the default value ("True") is selected.
`Timezone`	Enter the timezone. Input is a standard IANA time zone (for example, "America/Chicago"). If left blank, the default value (UTC) is selected. This is an optional parameter.
`DefaultApplicationResourceProfile`	Resource profile for application pods. If left blank, resource profile defaults to the deployment's VM profile (recommended option).
`DefaultInfraResourceProfile`	Resource profile for infra pods. If left blank, resource profile defaults to the deployment's VM profile (recommended option).
`IsRunDiagnoticsScriptForCheck`	Used to enable/disable execution of the diagnostic script. The values are "true" (default value) and "false". You are recommended to select the default value.
`IgnoreDiagnoticsCheckFailure`	Used to set the system response in case of a diagnostic check failure. If set to "true" (default value), the diagnostic check is ignored and installation will continue. If set to "false", the installation is terminated. You are recommended to select the default value.

Table 8: VM parameters

Parameter	Description
`VMName`	Name of the VM
`NodeType`	Type of VM. Choose "Hybrid".
`ManagementIPAddress`	The Management IP address of the VM (IPv4 or IPv6).
`DataIPAddress`	The Data IP address of the VM (IPv4 or IPv6).

Table 9: VMware template parameters

Parameter	Description
`VCenterAddress`	The vCenter IP or host name.
`VCenterUser`	The username needed to log into vCenter.
`VCenterPassword`	The password needed to log into vCenter.
`DCname`	The name of the Data Center resource to use. Example: `DCname = "cp"`
`MgmtNetworkName`	The name of the vCenter network to attach to the VM's Management interface. This network must already exist in VMware or the installation will fail.
`DataNetworkName`	The name of the vCenter network to attach to the VM's Data interface. This network must already exist in VMware or the installation will fail. However, if this is a single NIC installation using only the Management interface, then you need to specify `DataNetworkName = ""`.
`HostedCwVMs`	The ID of the VM to be hosted by the ESXi host or resource.
`Host`	The ESXi host, or ONLY the vCenter VM/resource group name where the VM is to be deployed. The primary option is to use the host IP or name (all the hosts should be under the data center). If the hosts are under a VM in the data center, only provide the VM name (all hosts within the VM will be picked up). The subsequent option is to use a resource group. In this case, a full path should be provided. Example: `Host = "Main infrastructure/Resources/00_trial"`
`Datastore`	The datastore name available to be used by this host or resource group. The primary option is to use host IP or name. The subsequent option is to use a resource group. Example: `Datastore = "SDRS-DCNSOL-prodexsi/bru-netapp-01_FC_Prodesx_ds_15"`

Parameter	Description
`HSDatastore`	The high speed datastore available for this host or resource group. If the vCenter server has a separate high-speed datastore, then this should be set to the name of that high-speed data store. If the vCenter server uses only a high-speed datastore, then both Datatore and HSDatastore can be set to the same name. **Note:** The use of high-speed datastore is mandatory for Cisco Crosswork Planning.

Install Cisco Crosswork Planning Using the vCenter vSphere UI

This topic explains how to deploy Cisco Crosswork Planning on a single VM using the vCenter user interface.

This is the recommended method for installing Cisco Crosswork Planning on a single VM.

Procedure

Step 1 Download the latest available Cisco Crosswork Planning image file (*.ova) to your system.

Step 2 With VMware ESXi running, log in to the VMware vSphere Web Client. On the left navigation pane, choose the ESXi host where you want to deploy the VM.

Step 3 In the vSphere UI, go to **Host** > **Configure** > **Networking** > **Virtual Switches** and select the virtual switch for the Management Network that will be used to access the UI of the VM. In the virtual switch, select **Edit** > **Security**, and configure the following DVS port group properties:

- Set **Promiscuous mode** as *Reject*
- Set **MAC address changes** as *Reject*

Confirm the settings and repeat the process for the virtual switch that will be used for the Data Network.

Step 4 Review and confirm that your network settings meet the requirements.

Ensure that the networks that you plan to use for Management network and Data network are connected to the host. Contact your Cisco Experience team for assistance.

Step 5 Choose **Actions** > **Deploy OVF Template**.

Caution
The default VMware vCenter deployment timeout is 15 minutes. If vCenter times out during deployment, the resulting VM will not be bootable. To prevent this, we recommend that you document the choices (such as IP address, gateway, DNS server, etc.) so that you can enter the information quickly and avoid any issues with the VMware configuration.

Step 6 The VMware **Deploy OVF Template** window appears, with the first step, **1 - Select an OVF template**, highlighted. Click **Choose Files** to navigate to the location where you downloaded the OVA image file and select it. Once selected, the file name is displayed in the window.

Step 7 Click **Next**. The **Deploy OVF Template** window is refreshed, with **2 - Select a name and folder** now highlighted. Enter a name and select the respective data center for the Cisco Crosswork Planning VM you are creating.

We recommend that you include the Cisco Crosswork Planning version and build number in the name, for example: Cisco Crosswork Planning 7.0 Build 152.

Step 8 Click **Next**. The **Deploy OVF Template** window is refreshed, with **3 - Select a compute resource** highlighted. Select the host for your Cisco Crosswork Planning VM.

Step 9 Click **Next**. The VMware vCenter Server validates the OVA. Network speed will determine how long validation takes. After the validation is complete, the **Deploy OVF Template** window is refreshed, with **4 - Review details** highlighted.

Step 10 Review the OVF template that you are deploying. Note that this information is gathered from the OVF, and cannot be modified.

Note
Even though the **Product** field displays as "Cisco Crosswork Network Automation", once the installation procedure completes, the product name is displayed as "Cisco Crosswork Planning" in the application UI. The term "Cisco Crosswork Network Automation" is used universally for all the products under Crosswork portfolio.

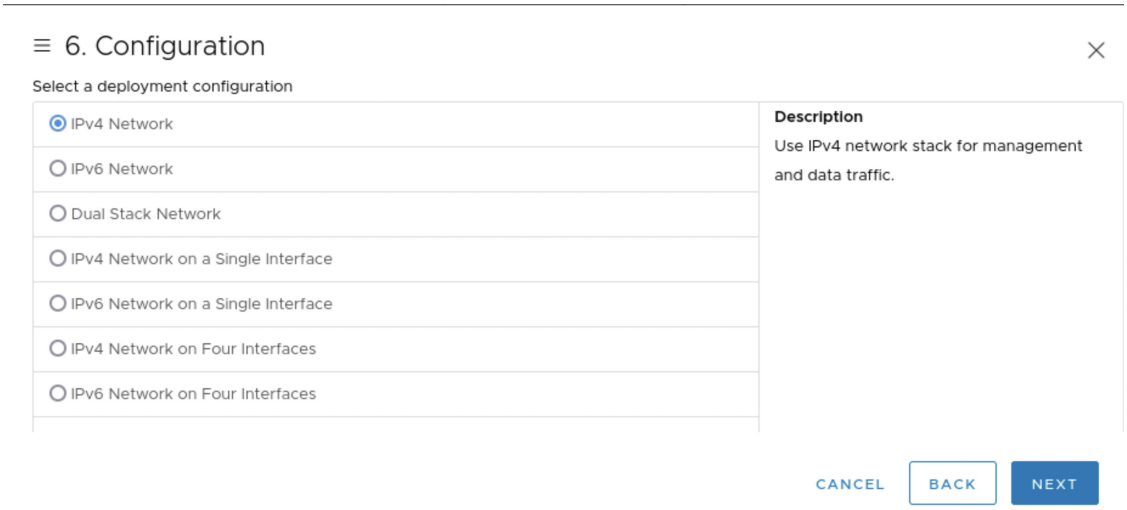
Note
You may see alerts regarding the OVF package containing advanced configuration options and/or about trusted certificates. These are common and you can safely select the "Ignore" option.

Step 11 Click **Next**. The **Deploy OVF Template** window is refreshed, with **5 - License agreements** highlighted. Review the End User License Agreement and if you agree, click the **I accept all license agreements** checkbox. Otherwise, contact your Cisco Experience team for assistance.

Step 12 Click **Next** The **Deploy OVF Template** window is refreshed, with **6 - Configuration** highlighted. Choose the desired deployment configuration.

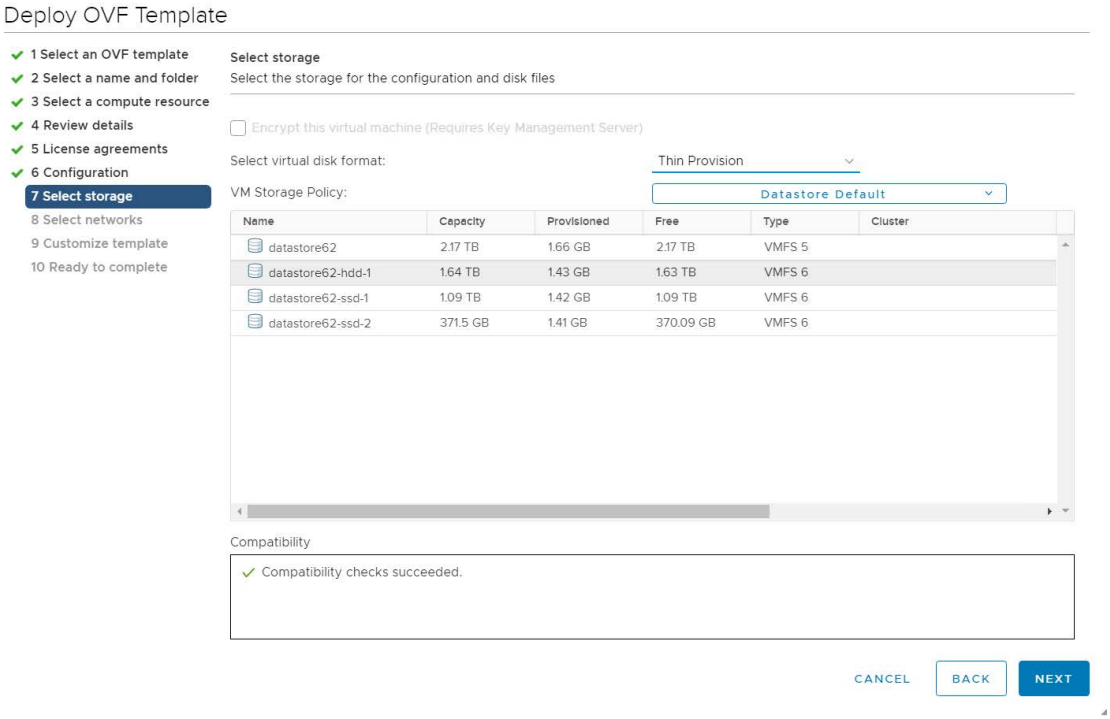
Important
For single VM deployment, the supported configurations are **IPv4 Network** and **IPv6 Network** using two NICs.

Figure 1: Select a deployment configuration



Step 13 Click **Next**. The **Deploy OVF Template** window is refreshed, with **7 - Select Storage** highlighted. Choose the relevant option from the **Select virtual disk format** drop-down list. From the table, choose the datastore you want to use, and review its properties to ensure there is enough available storage.

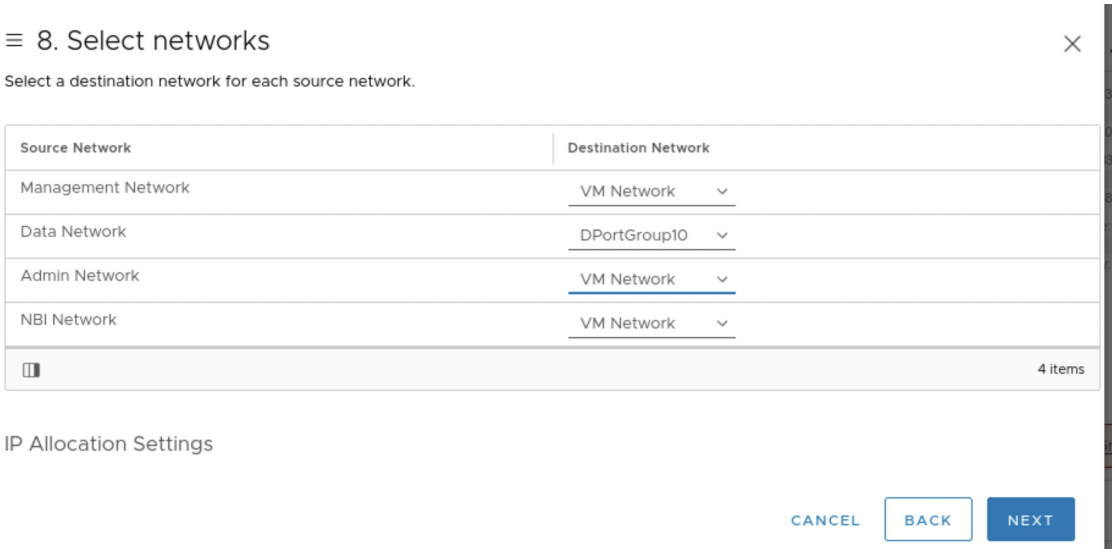
Figure 2: Select Storage



Note
For production deployment, choose the **Thick Provision Eager Zeroed** option because this will preallocate disk space and provide the best performance. For lab purposes, we recommend the **Thin Provision** option because it saves disk space.

Step 14 Click **Next**. The **Deploy OVF Template** window is refreshed, with **8 - Select networks** highlighted. From the **Destination Network** drop-down list, select the proper networks for the Management Network and the Data Network.

Figure 3: Select a deployment configuration



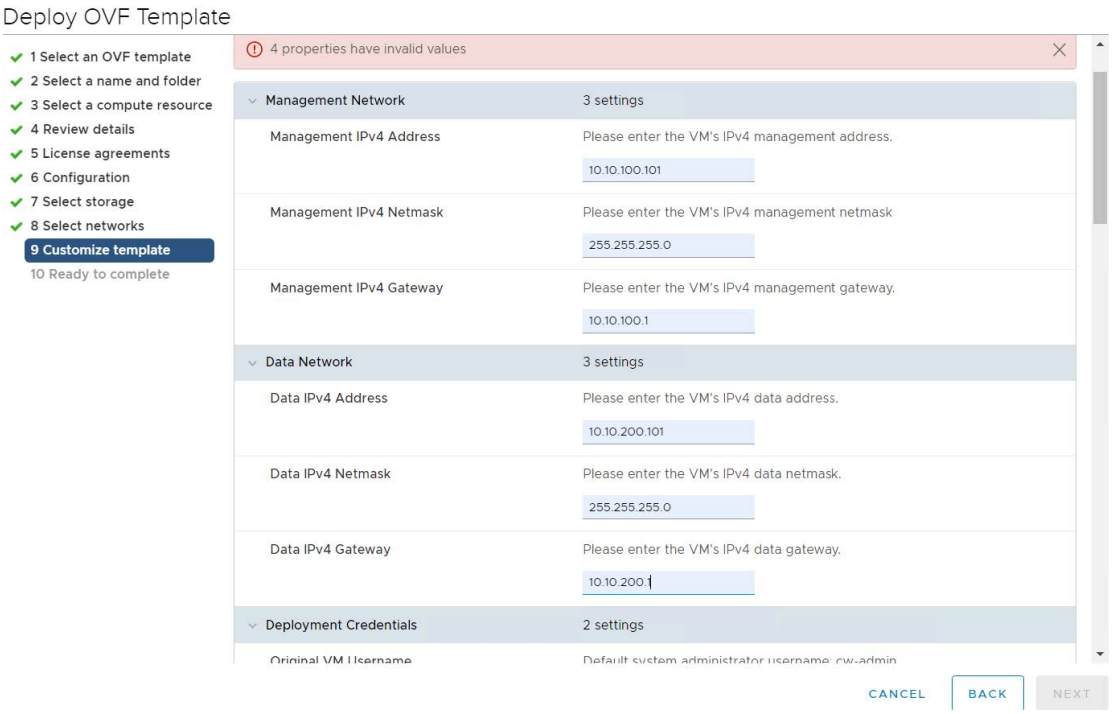
Important
Keep Admin Network and NBI Network at default values.

Step 15 Click **Next**. The **Deploy OVF Template** window is refreshed, with **9 - Customize template** highlighted.

a) Expand the **Management Network** settings. Provide information for the IPv4 or IPv6 deployment (as per your selection).

b) Expand the **Data Network** settings. Provide information for the IPv4 or IPv6 deployment (as per your selection).

Figure 4: Customize template settings

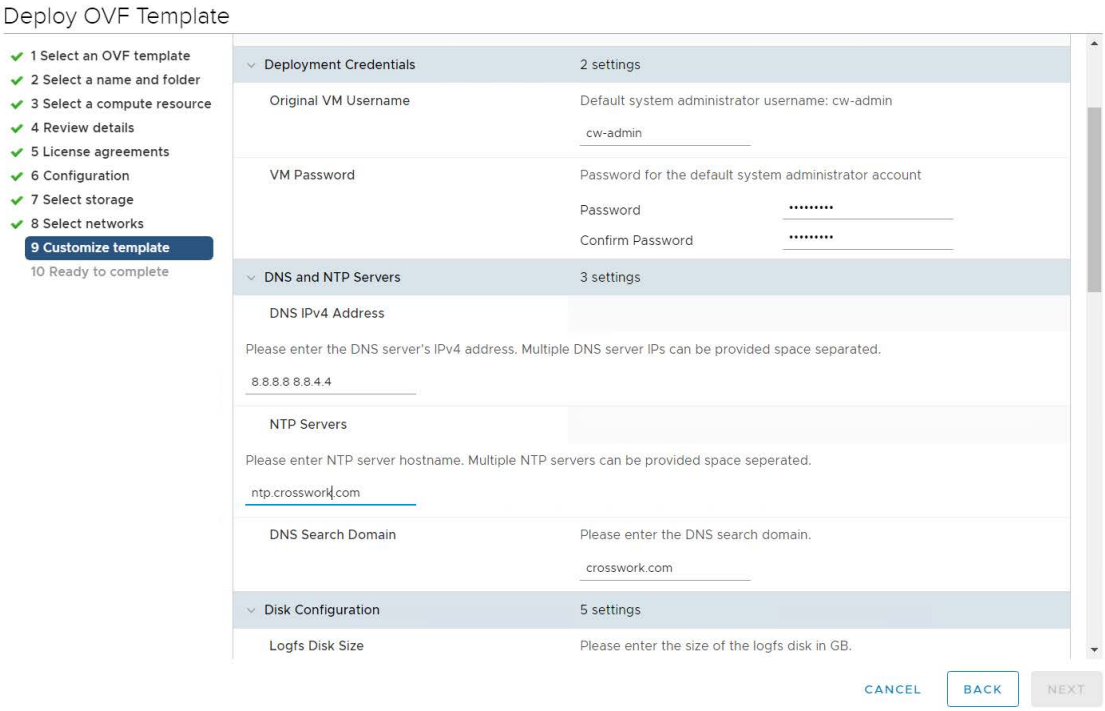


c) Expand the **Deployment Credentials** settings. Enter relevant values for the VM Username and Password.

Note
Avoid using passwords that resemble dictionary words (for example, 'Pa55w0rd!') or easily guessable patterns. While such passwords might meet the initial criteria, they are considered weak and could cause the VM setup to fail without a clear explanation. To ensure a successful installation, use a complex password with a minimum of 8 characters that combines uppercase and lowercase letters, numbers, and special characters in a non-predictable sequence.

d) Expand the **DNS and NTP Servers** settings. According to your deployment configuration (IPv4 or IPv6), the fields that are displayed are different. Provide information in the following three fields:

- **DNS IP Address**: The IP addresses of the DNS servers you want the Cisco Crosswork server to use. Separate multiple IP addresses with spaces.
- **DNS Search Domain**: The name of the DNS search domain.
- **NTP Servers**: The IP addresses or host names of the NTP servers you want to use. Separate multiple IPs or host names with spaces.



Note
The DNS and NTP servers must be reachable using the network interfaces you have mapped on the host. Otherwise, the configuration of the VM will fail.

e) The default **Disk Configuration** settings should work for most environments. Change the settings only if you are instructed to by the Cisco Customer Experience team.

f) Expand **Crosswork Configuration** and enter your legal disclaimer text (users will see this text if they log into the CLI).

g) Expand **Crosswork Cluster Configuration**. Provide relevant values for the following fields:

- **VM Type**: Choose **Hybrid**.
- **Cluster Seed node**: Choose **True**.
- **Crosswork Management Cluster Virtual IP**: Enter the Management Virtual IP address and Management Virtual IP DNS name.
- **Crosswork Data Cluster Virtual IP**: Enter the Data Virtual IP address. and the Data Virtual IP DNS name.
- **Initial node count**: Set to 1.
- **Initial leader node count**: Set to 1.
- **Location of VM**: Enter the location of VM.
- **Installation type**: Not applicable to single VM deployment. Do not select any checkbox.
- **Enable Skip Auto Install Feature**: Set to **True**.
- **Ignore Diagnose Failure?**: Use the default value (True).

- **Enable Diagnostics Script Check Run?**: Use the default value (True).
- **Default Application Resource Profile**: Use the default value (Empty).
- **Default Infra Resource Profile**: Use the default value (Empty).
- **Auto Action Manifest Definition**: Use the default value (Empty).

Step 16 Click **Next**. The **Deploy OVF Template** window is refreshed, with **10 - Ready to Complete** highlighted.

Step 17 Review your settings and then click **Finish** if you are ready to begin deployment. Wait for the deployment to finish before continuing. To check the deployment status:

a) Open a VMware vCenter client.
b) In the **Recent Tasks** tab of the host VM, view the status of the **Deploy OVF template** and **Import OVF package** jobs.

Step 18 Once the deployment is completed, right-click on the VM and select **Edit Settings**. The **Edit Settings** dialog box is displayed. Under the **Virtual Hardware** tab, update these attributes based on your profile requirement.

- **CPU:** change to **16** (for small profile) or **24** (for large profile)
- **Memory:** change to **128 GB** (for small profile) or **256 GB** (for large profile)

Click **OK** to save the changes.

Step 19 Power on the Cisco Crosswork Planning VM. To power on, expand the host's entry, click the Cisco Crosswork Planning VM, and then choose **Actions** > **Power** > **Power On**.

The time taken to create the VM can vary based on the size of your deployment profile and the performance characteristics of your hardware.

Install Cisco Crosswork Planning via the OVF Tool

This topic explains how to deploy Cisco Crosswork Planning on a single VM using the OVF tool. You must modify the list of mandatory and optional parameters in the script as per your requirements and run the OVF tool.

Note The file names mentioned in this topic are sample names and may differ from the actual file names on *cisco.com*.

Follow these steps to log in to the Cisco Crosswork Planning VM from SSH:

Before you begin

- In your vCenter data center, go to **Host** > **Configure** > **Networking** > **Virtual Switches** and select the virtual switch. In the virtual switch, select **Edit** > **Security**, and ensure that the following DVS port group properties are as shown:
  - Set **Promiscuous mode** as Reject
  - Set **MAC address changes** as Reject

Confirm the settings and repeat the process for each virtual switch used by Cisco Crosswork Planning.

- Ensure you are using the OVF tool version 4.4 or higher.

Procedure

Step 1 On the machine where you have the OVF tool installed, use the following command to confirm that you have OVF tool version 4.4:

```
ovftool --version
```

Step 2 Create the script file (see example below) and provide relevant information as per your target environment (such as IP addresses, gateway, netmask, password, and VCENTER_PATH, etc.).

Note
The file names mentioned in this topic are sample names and may differ from the actual file names on cisco.com.

```
cat cp_install.sh
#!/usr/bin/env bash
Host="X.X.X.X"
DM="thick"
DS="DS36"
Deployment="cw_ipv4"
DNSv4="10.10.0.99"
NTP="ntp.cisco.com"
Timezone="US/Pacific"
EnforcePodReservations="True"
EnableSkipAutoInstallFeature="True"
Domain="cisco.com"
Disclaimer="ACCESS IS MONITORED"
VM_NAME="cp"
DataNetwork="DataNet"
ManagementNetwork="MgmtNet"
DataIPv4Address="x.x.x.x"
DataIPv4Gateway="x.x.x.x"
DataIPv4Netmask="x.x.x.x"
ManagementIPv4Address="x.x.x.x"
ManagementIPv4Gateway="x.x.x.x"
ManagementIPv4Netmask="x.x.x.x"
K8sServiceNetworkV4="10.75.0.0"
K8sPodNetworkV4="10.225.0.0"
Password="CLI Password"
Username="cw-admin"
ManagementVIP="x.x.x.x"
DataVIP="x.x.x.x"
VMType="Hybrid"
IsSeed="True"
InitNodeCount="1"
InitMasterCount="1"

CP_OVA_PATH=$1

VCENTER_LOGIN="Administrator%40vsphere%2Elocal:Password%40123%21@x.x.x.x"
VCENTER_PATH="DC1/host"

ovftool --version
ovftool --acceptAllEulas --skipManifestCheck --X:injectOvfEnv -ds=$DS \
--numberOfCpus:"*"=24 --viCpuResource=:32000: \
--memorySize:"*"=256000 --viMemoryResource=:256000: \
```

```
--diskMode=$DM --overwrite --powerOffTarget --powerOn --noSSLVerify \
--allowExtraConfig \
--deploymentOption=$Deployment \
--prop:"DNSv4=${DNSv4}" \
--prop:"NTP=${NTP}" \
--prop:"Timezone=${Timezone}" \
--prop:"EnforcePodReservations=${EnforcePodReservations}" \
--prop:"EnableSkipAutoInstallFeature=${EnableSkipAutoInstallFeature}" \
--prop:"Domain=${Domain}" \
--prop:"Disclaimer=${Disclaimer}" \
--name=$VM_NAME \
--net:"Data Network=${DataNetwork}" \
--net:"Management Network=${ManagementNetwork}" \
--prop:"DataIPv4Address=${DataIPv4Address}" \
--prop:"DataIPv4Gateway=${DataIPv4Gateway}" \
--prop:"DataIPv4Netmask=${DataIPv4Netmask}" \
--prop:"ManagementIPv4Address=${ManagementIPv4Address}" \
--prop:"ManagementIPv4Gateway=${ManagementIPv4Gateway}" \
--prop:"ManagementIPv4Netmask=${ManagementIPv4Netmask}" \
--prop:"K8sServiceNetworkV4=${K8sServiceNetworkV4}" \
--prop:"K8sPodNetworkV4=${K8sPodNetworkV4}" \
--prop:"CWPassword=${Password}" \
--prop:"CWUsername=${Username}" \
--prop:"ManagementVIP=${ManagementVIP}" \
--prop:"DataVIP=${DataVIP}" \
--prop:"VMType=${VMType}" \
--prop:"IsSeed=${IsSeed}" \
--prop:"InitNodeCount=${InitNodeCount}" \
--prop:"InitMasterCount=${InitMasterCount}" \
$CP_OVA_PATH \
vi://$VCENTER_LOGIN/$VCENTER_PATH/$Host
```

Note
The recommended CPU parameters for Small and Large profiles are as follows:

- Small profile:

  ```
  --numberOfCpus:"*"=16 --viCpuResource=:24000: \
  --memorySize:"*"=128000 --viMemoryResource=:128000: \
  ```

- Large profile:

  ```
  --numberOfCpus:"*"=24 --viCpuResource=:32000: \
  --memorySize:"*"=256000 --viMemoryResource=:256000: \
  ```

Step 3 Download the OVA and install scripts from cisco.com. For the purpose of these instructions, we use the file name as **signed-cw-na-planning-7.0.0-904-release-240215**.

Use the following command to extract the files from the tar bundle:

```
tar -xvzf signed-cw-na-planning-7.0.0-904-release-240215.ova
```

The OVA is extracted:

```
cp]# ls -al
-rw-r--r--   1 root root 15416145920 Mar 28 11:12 signed-cw-na-planning-7.0.0-904-release-
240215.ova
-rwxr-xr-x   1 root root        2324 Apr  2 14:06 cp_install.sh
```

Step 4 Use the following command to make the scripts executable:

```
chmod +x {filename}
```

For example:

```
chmod +x cp_install.sh
```

Step 5 Execute the script with the OVA file name as parameter:

```
cp]# ./cp_install.sh signed-cw-na-planning-7.0.0-904-release-240215.ova
VMware ovftool 4.4.0 (build-16360108)
Opening OVA source: signed-cw-na-planning-7.0.0-904-release-240215.ova
<Removed some output >
Completed successfully
```

The time taken to create the VM can vary based on the size of your deployment profile and the performance characteristics of your hardware.

Install Cisco Crosswork Planning Using the Docker Installer Tool

This section explains the procedure to install Cisco Crosswork Planning on a single VM using the docker installer tool. This method is less recommended compared to using the vCenter UI or the OVF tool for installation.

Before you begin

- Make sure that your environment meets all the vCenter requirements specified in VMware Settings, on page 4.
- The edited template in the `/data` directory contains sensitive information (VM passwords and the vCenter password). The operator needs to manage access to this content. Store the templates used for your install in a secure environment or edit them to remove the passwords.
- The `install.log`, `install_tf.log`, and `.tfstate` files will be created during the install and stored in the `/data` directory. If you encounter any trouble with the installation, provide these files to the Cisco Customer Experience team when opening a case.
- The install script is safe to run multiple times. Upon error, input parameters can be corrected and re-run. You must remove the `install.log`, `install_tf.log`, and `tfstate` files before each re-run. Running the installer tool multiple times may result in the deletion and re-creation of VMs.
- In case you are using the same installer tool for multiple Cisco Crosswork Planning installations, it is important to run the tool from different local directories, allowing for the deployment state files to be independent. The simplest way for doing so is to create a local directory for each deployment on the host machine and map each one to the container accordingly.
- Docker version 19 or higher is required while using the installer tool. For more information on Docker, see https://docs.docker.com/get-docker/.
- To change the install parameters or to correct the parameters following the installation errors, it is important to distinguish whether the installation has managed to deploy the VM or not. Deployed VM is evidenced by the output of the installer similar to:

  ```
  vsphere_virtual_machine.crosswork-IPv4-vm["1"]: Creation complete after 2m50s
  [id=4214a520-c53f-f29c-80b3-25916e6c297f]
  ```

Known limitations:

- The vCenter host VMs defined must use the same network names (vSwitch) across all hosts in the data center.
- The vCenter storage folders or datastores organized under a virtual folder structure, are not supported currently. Ensure that the datastores referenced are not grouped under a folder.

Procedure

Step 1 In your Docker capable machine, create a directory where you will store everything you will use during this installation.

Note
If you are using a Mac, ensure that the directory name is in lower case.

Step 2 Download the installer bundle (.tar.gz file) and the OVA file from cisco.com to the directory you created previously. For the purpose of these instructions, we will use the file name as **signed-cw-na-planning-installer-7.0.0-85-release700-240823.tar.gz** and **signed-cw-na-planning-7.0.0-85-release700-240823.ova**.

Attention
The file names mentioned in this topic are sample names and may differ from the actual file names on *cisco.com*.

Step 3 Use the following command to unzip the installer bundle:

```
tar -xvf signed-cw-na-planning-installer-7.0.0-85-release700-240823.tar.gz
```

The contents of the installer bundle is unzipped to a new directory (for example, `signed-cw-na-planning-installer-7.0.0-85-release700`). This new directory will contain the installer image (**cw-na-planning-installer-7.0.0-85-release700-240823.tar.gz**) and files necessary to validate the image.

Step 4 Review the contents of the README file to understand everything that is in the package and how it will be validated in the following steps.

Step 5 Use the following command to verify the signature of the installer image:

Note
Use `python --version` to find out the version of python on your machine.

If you are using Python 2.x, use the following command to validate the file:

```
python cisco_x509_verify_release.py -e <.cer file> -i <.tar.gz file> -s <.tar.gz.signature
 file> -v dgst -sha512
```

If you are using Python 3.x, use the following command to validate the file:

```
python3 cisco_x509_verify_release.py3 -e <.cer file> -i <.tar.gz file> -s <.tar.gz.signature
file> -v dgst -sha512
```

Note
If you do not have Python installed, go to python.org and download the version of Python that is appropriate for your work station.

Step 6 Use the following command to load the installer image file into your Docker environment.

```
docker load -i <.tar.gz file>
```

For example:

```
docker load -i cw-na-planning-installer-7.0.0-85-release700-240823.tar.gz
```

Step 7 Run the `docker image list` or `docker images` command to get the "image ID" (which is needed in the next step).

For example:

```
docker images
```

The result will be similar to the following: (section we will need is underlined for clarity)

```
My Machine% docker images
REPOSITORY                          TAG                                                IMAGE ID
   CREATED        SIZE
dockerhub.cisco.com/cw-installer  cw-na-planning-7.0.0-85-release700-240823  316c53341bde      7
days ago     280MB
```

Note
Pay attention to the "CREATED" time stamp in the table presented when you run `docker images`, as you might have other images present from the installation of prior releases. If you wish to remove these, the `docker image rm {image id}` command can be used.

Step 8 Launch the Docker container using the following command:

```
docker run --rm -it -v `pwd`:/data {image id of the installer container}
```

To run the image loaded in our example, use the following command:

```
docker run --rm -it -v `pwd`:/data 316c53341bde
```

Note

- You do not have to enter that full value. In this case, `docker run --rm -it -v `pwd`:/data 316` was adequate. Docker requires enough of the image ID to uniquely identify the image you want to use for the installation.
- In the above command, we are using the backtick (`). Do not use the single quote or apostrophe (') as the meaning to the shell is very different. By using the backtick (recommended), the template file and OVA will be stored in the directory where you are on your local disk when you run the commands, instead of inside the container.
- When deploying a IPv6 setup, the installer needs to run on an IPv6 enabled container/VM. This requires additionally configuring the Docker daemon before running the installer, using the following method:
  - **Linux hosts (ONLY)**: Run the Docker container in host networking mode by adding the "–network host" flag to the Docker run command line.

    ```
    docker run --network host <remainder of docker run options>
    ```

- CentOS/RHEL hosts, by default, enforce a strict SELinux policy which does not allow the installer container to read from or write to the mounted data volume. On such hosts, run the Docker volume command with the Z option as shown below:

  ```
  docker run --rm -it -v `pwd`:/data:Z <remainder of docker options>
  ```

Note
The Docker command provided will use the current directory to read the template and the ova files, and to write the log files used during the install. If you encounter either of the following errors you should move the files to a directory where the path is in lowercase (all lowercase, no spaces or other special characters). Then navigate to that directory and rerun the installer.

Error 1:

```
% docker run --rm -it -v `pwd`:/data 316
docker: invalid reference format: repository name must be lowercase.
See 'docker run --help'
```

Error 2:

```
docker: Error response from daemon: Mounts denied: approving /Users/Desktop: file does not exist
ERRO[0000] error waiting for container: context canceled
```

Step 9 Navigate to the directory with the VMware template.

`cd /opt/installer/deployments/7.0.0/vcentre`

Step 10 Copy the template file found under `/opt/installer/deployments/7.0.0/vcentre/deployment_template_tfvars` to the `/data` folder using a different name.

For example, `cp deployment_template_tfvars /data/deployment.tfvars`

For the rest of this procedure, we will use `deployment.tfvars` in all the examples.

Step 11 Edit the template file located in the `/data` directory in a text editor, to match your planned deployment (for reference, see Sample Manifest Template, on page 30). The <sample manifest template> includes an example that you can reference for proper formatting. The example is more compact due to the removal of descriptive comments.

Step 12 From the `/opt/installer` directory, run the installer.

```
./cw-installer.sh install -m /data/<template file name> -o /data/<.ova file>
```

For example:

```
./cw-installer.sh install -m /data/deployment.tfvars -o
/data/cw-na-planning-7.0.0-85-release700-240823.ova
```

Step 13 Read, and then enter "yes" if you accept the End User License Agreement (EULA). Otherwise, exit the installer and contact your Cisco representative.

Step 14 Enter "yes" when prompted to confirm the operation.

Note
It is not uncommon to see some warnings like the following during the install:

```
Warning: Line 119: No space left for device '8' on parent controller '3'.
Warning: Line 114: Unable to parse 'enableMPTSupport' for attribute 'key' on element 'Config'.
```

If the install process proceeds to a successful conclusion (see sample output below), these warnings can be ignored.

Sample output:

```
cw_vms = <sensitive>
INFO: Copying day 0 state inventory to CW
INFO: Waiting for deployment status server to startup on 10.90.147.66.
Elapsed time 0s, retrying in 30s
Crosswork deployment status available at http://{VIP}:30602/d/NK1bwVxGk/crosswork-
deployment-readiness?orgId=1&refresh=10s&theme=dark
Once deployment is complete login to Crosswork via: https://{VIP}:30603/#/logincontroller
INFO: Cw Installer operation complete.
```

Note
If the installation fails, open a case with Cisco and provide the .log files that were created in the /data directory (and the local directory where you launched the installer Docker container), to Cisco for review. The two most common reasons for the install to fail are: (a) password that is not adequately complex, and (b) errors in the template file. If the

installer fails for any errors in the template (for example, mistyped IP address), correct the error and rerun the install script.

Sample Manifest Template

This section presents the manifest template example for deploying Cisco Crosswork Planning on a single VM.



Note Ensure that the vm_sizes parameter is set in accordance with your deployment profile. The following two profiles are supported in Cisco Crosswork Planning:

```
vm_sizes = {
  "Small" = {
    vcpus = 16,
    cpu_reservation = 24000,
    memory = 128000
  },
  "Large" = {
    vcpus = 24,
    cpu_reservation = 32000,
    memory = 256000
  }
}
```

```
Cw_VM_Image = "cw-na-planning-7.0.0-39-release700-240806"  # Line added automatically by
installer.
ClusterIPStack = "IPv4"
ManagementVIP = "172.20.118.86"
ManagementIPNetmask = "255.255.255.0"
ManagementIPGateway = "172.20.118.1"
DataVIP = "172.20.118.87"
DataIPNetmask = "255.255.255.0"
DataIPGateway = "172.20.118.1"
DNS = "172.24.97.250"
DomainName = "cisco.com"
CWPassword = "*****!"
VMSize = "Small"
NTP = "ntp.esl.cisco.com"
Timezone = "Asia/Calcutta"
DefaultApplicationResourceProfile = "small"
EnableSkipAutoInstallFeature = "True"
# VM size definitions
vm_sizes = {
    "Small" = {
        vcpus = 16,
        cpu_reservation = 32000,
        memory = 128000
    }
}
EnforcePodReservations = "False"
ThinProvisioned = "true"
ManagerDataFsSize = "2000"
BackupMinPercent = "5"
SchemaVersion = "7.0.0"

CwVMs = {
```

```
    "0" = {
        VMName = "vm1",
        ManagementIPAddress = "172.20.118.88",
        DataIPAddress = "172.20.118.89",
        NodeType = "Hybrid"
    }
}

VCentreDC = {
    VCentreAddress = "172.20.118.84",
    VCentreUser = "<your-username>",
    VCentrePassword = "******",
    DCname = "cp",
    MgmtNetworkName = "VM Network",
    DataNetworkName = "cwdata-group",
    VMs = [
        {
            HostedCwVMs = ["0"],
            Host = "172.20.118.81",
            Datastore = "datastore1 (2)",
            HSDatastore = "datastore1 (2)"
        }
    ]
}
SchemaVersion = "7.0.0"
```

Migrate Collector Configurations

In Cisco Crosswork Planning, you can migrate the collector configurations from Cisco WAE 7.5.x/7.6.x, as well as from one Cisco Crosswork Planning instance to the other.

Note When using collectors that have file upload options, ensure to upload the correct files after importing the collector configuration. This is necessary because, after importing the configuration, the server restores only the file name and not the actual file. If the correct file is not used, then the collection fails.

Migrate Collector Configuration from Cisco WAE

Follow these steps to migrate the collector configurations from Cisco WAE 7.5.x/7.6.x to Cisco Crosswork Planning.

Before you begin

- Download the upgrade script from Cisco Software Download page.

Procedure

Step 1 If you have not backed up the configuration, use the following steps to back up and migrate it to a configuration compatible with Cisco Crosswork Planning:

a) Log in to the machine where Cisco WAE 7.x is installed.

b) Enter the following command:

```
# ./wae_upgrade --export --install-dir <WAE_7.x_INSTALL_DIR> --cfg-dir
<dir_to_save_exported_config>

Where:
      --install-dir   indicates the directory where 7.x WAE is installed.
      --cfg-dir       indicates the folder where the backup of 7.x configuration
                      must reside. The migrated configurations are saved as
                      wae_networks.cfg in the provided directory.
```

Step 2 If you already have the backed-up configuration, use the following steps to convert the file into a format compatible with Cisco Crosswork Planning:

a) Log in to the machine where the Cisco WAE 7.x configuration is backed up.

b) Enter the following command:

```
# ./wae_upgrade --migrate --cfg-dir <dir_containing_7.x_config>

Where:
      --cfg-dir       indicates the folder where the 7.x configuation is backed up.
                      This configuration will be migrated to Cisco Crosswork Planning
                      compatible configuration. The migrated configurations are saved as
                      wae_networks.cfg in the provided directory.
```

Step 3 Import the migrated configurations (wae_networks.cfg) using the following steps:

Note
Before migration, ensure that configurations are backed up using the upgrade scripts. Otherwise, the migration will fail.

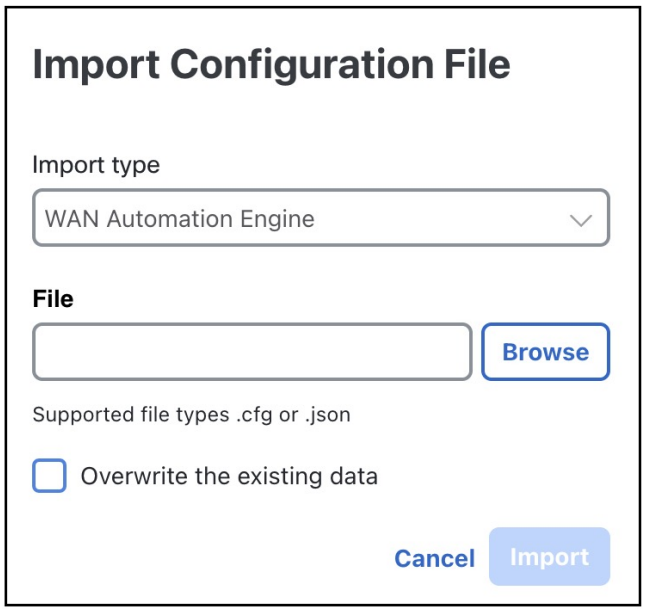
a) Log in to the Cisco Crosswork Planning UI.

b) From the main menu, choose **Collector** > **Migration**.

c) Click **Actions** and choose **Configuration migration**.

The Import configuration file window appears.

Figure 5: Import Configuration File Window



d) From the **Import type** drop-down, choose **WAN Automation Engine**.
e) Click **Browse** and select the **wae_networks.cfg** file.
f) (Optional) If you want to overwrite the existing collector configuration, check the **Overwrite the existing data** check box.
g) Click **Import** to import the collector configuration file.

You can monitor status of the import in the Migration page (**Collector** > **Migration**). Once the import is successful, the **Import status** column displays the status of the task as **Success**.

Note After migrating from Cisco WAE to Cisco Crosswork Planning, the Telnet and SSH settings are not preserved. You need to manually verify and update these settings, if required.

Configurations Excluded During Migration

There are several configurations which are NOT migrated while moving from Cisco WAE to Cisco Crosswork Planning. For details, see the *"Configurations Excluded During Migration"* section in the *Cisco Crosswork Planning 7.0 Collection Setup and Administration*.

Migrate Collector Configuration between Cisco Crosswork Planning Instances

Note If you are using the SR-PCE collector in your configurations, ensure to update the **SR-PCE host** and **Backup SR-PCE host** fields manually after migration. This is necessary because, these fields are not updated while migrating the collector configurations between Cisco Crosswork Planning instances.

Follow these steps to migrate the collector configuration from one Cisco Crosswork Planning instance (source) to the other (target).

Procedure

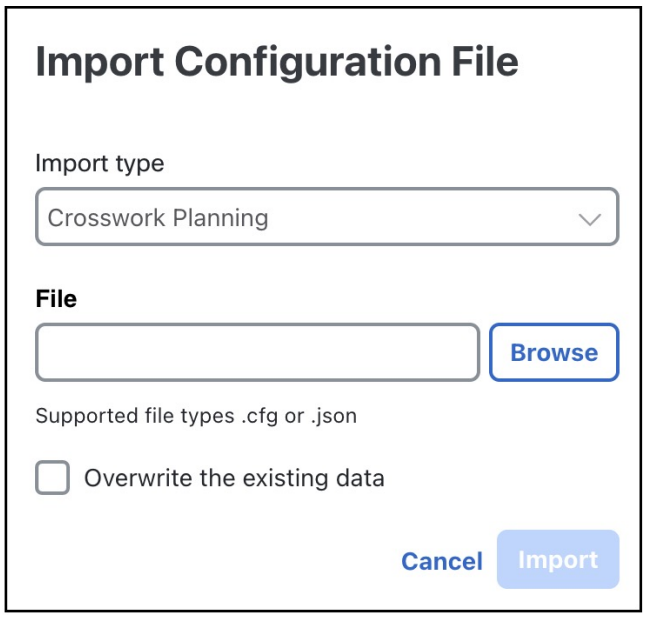
Step 1 Download the collector configuration file from the source machine you want to migrate the configuration from:
a) Log into the Cisco Crosswork Planning instance from which you want to migrate the configuration.
b) From the main menu, choose **Collector** > **Migration**.
c) Click **Actions** and choose **Configuration backup**.

The collector configuration file is downloaded to your local machine.

Step 2 Import the collector configuration file to the target machine where you want to migrate it to:
a) Log into the Cisco Crosswork Planning instance to which you want to migrate the configuration.
b) From the main menu, choose **Collector** > **Migration**.
c) Click **Actions** and choose **Configuration migration**.

The Import configuration file window appears.

Figure 6: Import Configuration File Window

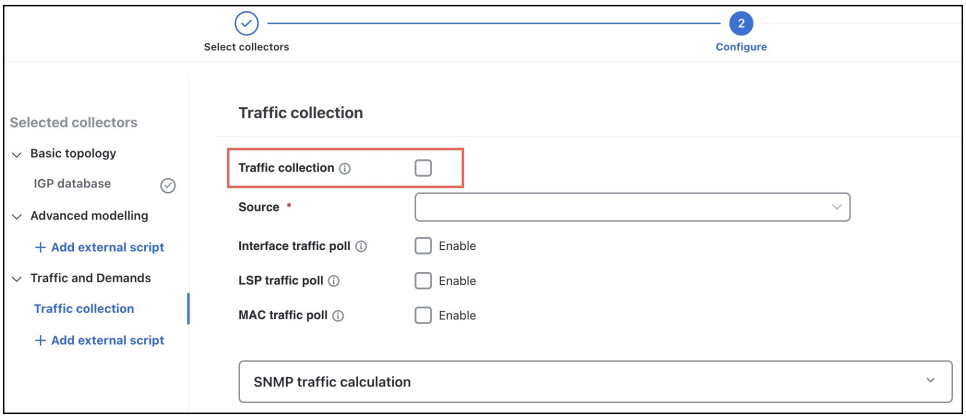


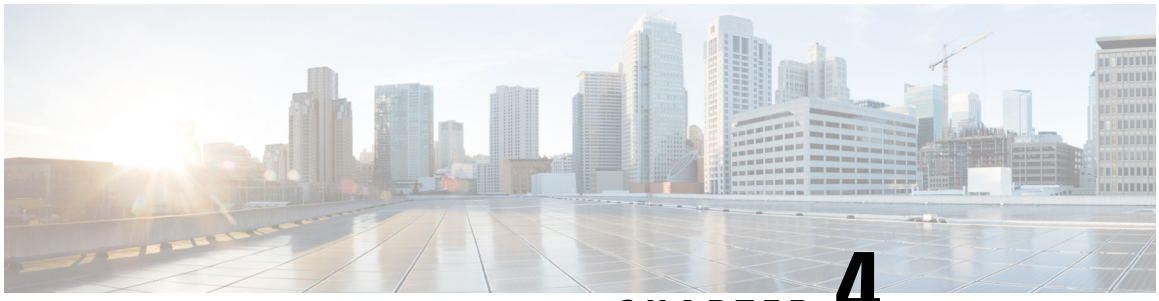
d) From the **Import type** drop-down, choose **Crosswork planning**.
e) Click **Browse** and select the collector configuration file that you downloaded in the Step 1 (c).
f) (Optional) If you want to overwrite the existing collector configuration, check the **Overwrite the existing data** check box.
g) Click **Import** to import the collector configuration file.

You can monitor status of the import in the Migration page (**Collector** > **Migration**). Once the import is successful, the **Import status** column displays the status of the task as **Success**.

Note In case of traffic collection, if the traffic poller agent status is displayed as down on the Agent page after migration, even though traffic collection has run successfully, follow these steps on the Collections (**Collector** > **Collections**) page:

1. Select **Edit collection** for the collection corresponding to the agent.
2. In the Traffic collection configuration page, uncheck the **Traffic collection** check box and save the configuration.
3. Re-enable the **Traffic collection** checkbox and save the configuration again.





CHAPTER 4

Next Steps

The following topics describe the next steps you perform to get started with Cisco Crosswork Planning. You access the Cisco Crosswork Planning UI to perform operations. For detailed information, see the *Cisco Crosswork Planning Design 7.0 User Guide* and *Cisco Crosswork Planning 7.0 Collection Setup and Administration*.

- Log in to Cisco Crosswork Planning UI, on page 37
- Install Smart License, on page 38
- Network Model Creation, on page 38

Log in to Cisco Crosswork Planning UI

After installing Cisco Crosswork Planning, you can access the Cisco Crosswork Planning UI by using the following steps.

Cisco Crosswork Planning is a browser-based application. For the supported browser versions, see Supported Web Browsers, on page 7.

Procedure

Step 1 Open a web browser and enter:

```
https://<Crosswork Management Network Virtual IP (IPv4)>:30603/
```

When you access Cisco Crosswork Planning from your browser for the first time, some browsers display a warning that the site is untrusted. When this happens, follow the prompts to add a security exception and download the self-signed certificate from the server. After you do this, the browser accepts the Cisco Crosswork Planning server as a trusted site in all subsequent logins.

Step 2 The Cisco Crosswork Planning browser-based user interface displays the login window. Enter your username and password. The default administrator user name and password is **admin**. This account is created automatically at installation. The initial password for this account must be changed during installation verification. Cisco strongly recommends that you keep the default administrator credential secure, and never use it for routine logins. Instead, create new user roles with appropriate privileges and assign new users to those roles. At least one of the users you create should be assigned the "administrator" role.

Step 3 Click **Login**.

Install Smart License

A license is required to use all the features in Cisco Crosswork Planning. If you have questions about obtaining a license, contact your Cisco support representative or system administrator.

Cisco Crosswork Planning supports Smart Licensing, which enables you to monitor Cisco Crosswork Planning software licenses and endpoint license consumption easily and efficiently through a simple registration and license consumption reporting process instead of having to install node-locked license files. Details of all licenses that you have purchased are maintained in a centralized database called the Cisco Smart Software Manager (CSSM). For more information, refer to the Cisco Smart Licensing Overview on Cisco.com.

To install Smart Licensing, follow the steps outlined in the *"Workflow: Smart Licensing Configuration"* section in the *"Manage Licenses"* chapter of the *Cisco Crosswork Planning 7.0 Collection Setup and Administration*.

Network Model Creation

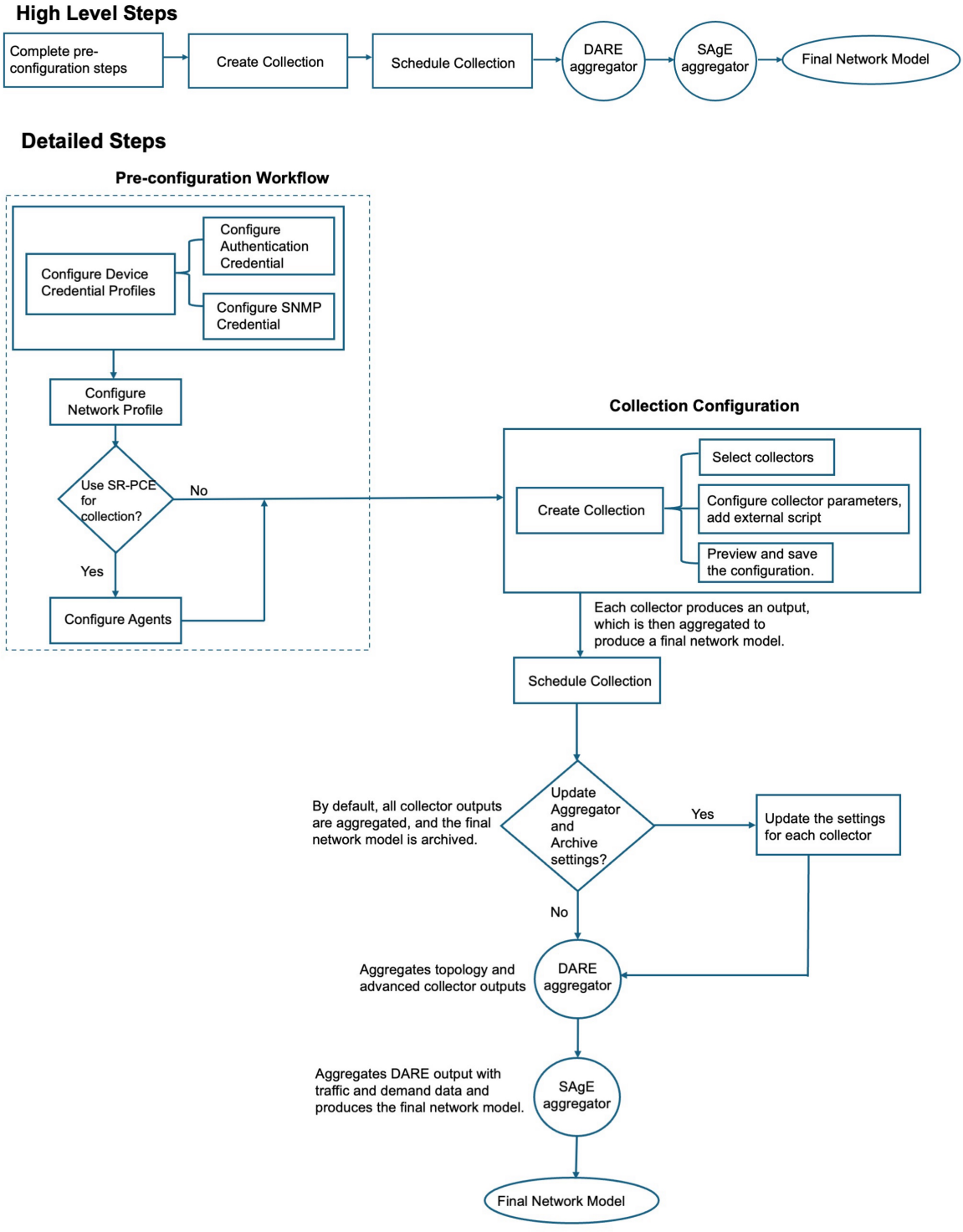
The Cisco Crosswork Planning UI provides an easy-to-use interface that hides the complexity of creating a model building chain for a network. It combines the configuration of multiple data collectors under one network (collection) and can produce a single plan file that contains the consolidated data.

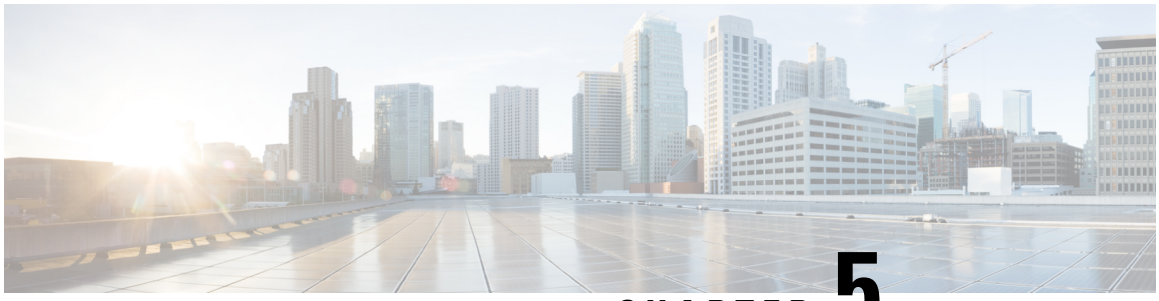
Use the Cisco Crosswork Planning UI for device and network access configuration, network model creation, user management, agent configuration, and so on.

The following is a high-level description of tasks that are necessary to build a network model. For more detailed information, see the *Cisco Crosswork Planning 7.0 Collection Setup and Administration*.

1. Configure device auth groups, SNMP groups, and network profile access.
2. (Optional) Configure agents. This step is required only for collecting SR-PCE or NetFlow information.
3. Configure the collections (basic and advanced collections).
4. Schedule when to run collections.
5. (Optional) Manage the aggregation and archive of network model as per your requirement.
6. View or download the plan files in the Cisco Crosswork Planning Design application.

Figure 7: Network Model Creation Workflow





CHAPTER 5

Uninstall Cisco Crosswork Planning

This section contains the following topics:

- Delete the VM using the vSphere UI, on page 41
- Uninstall Cisco Crosswork Planning Applications, on page 41

Delete the VM using the vSphere UI

Follow these steps to delete a Cisco Crosswork Planning VM from vCenter.

Note Be aware that this procedure deletes all your app data.

Procedure

Step 1 Log into the VMware vSphere Web Client.

Step 2 In the **Navigator** pane, right-click the app VM that you want to remove and choose **Power** > **Power Off**.

Step 3 Once the VM is powered off, right-click the VM again and choose **Delete from Disk**.

The VM is deleted.

Uninstall Cisco Crosswork Planning Applications

This procedure describes how to uninstall a Cisco Crosswork Planning application from the UI. The **Uninstall** option removes the application, application-specific menus, and associated data.

Caution Do not uninstall **Crosswork Platform Infrastructure** and **Crosswork Planning Infra**, as this will disrupt the product's functionality. You can only uninstall the Design and Collector applications.

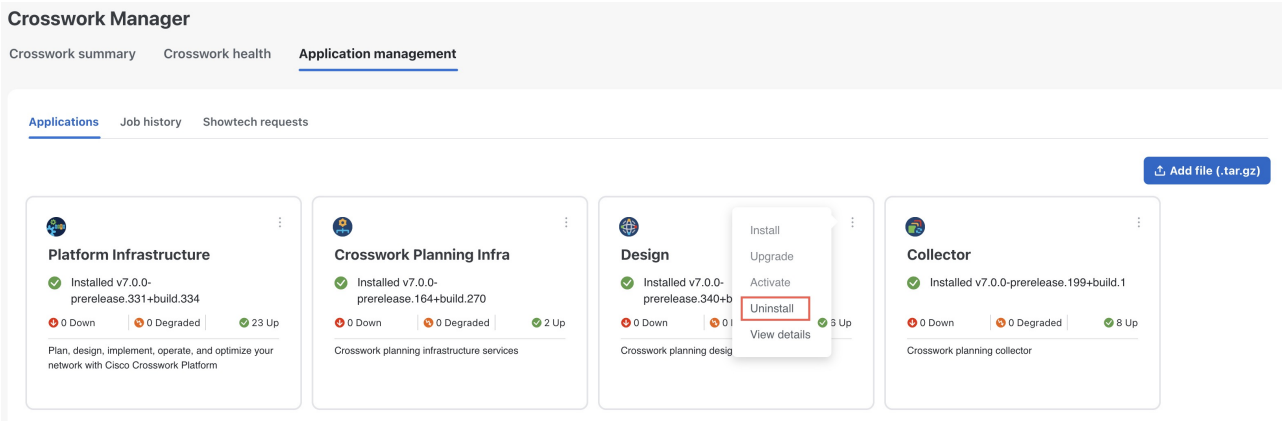
Procedure

Step 1 From the main menu, choose **Administration** > **Crosswork Manager**, and select the **Application Management** tab.

The Crosswork Platform Infrastructure and any Cisco Crosswork Planning applications that were added during installation are displayed here as tiles.

Step 2 Click ⋮ on the application tile that you want to uninstall, and select the **Uninstall** option.

Figure 8: Uninstall Applications



Step 3 Click **Uninstall** to confirm when prompted.

The selected application is uninstalled and the application tile is modified to reflect the same.

You can also view the progress of uninstallation in the Job History window (**Application Management** > **Job History**). If the uninstall fails, you can reattempt using the relevant options in the Job History window.

Note
The uninstall operation does not remove the application file (CAPP) from the repository. The CAPP file will remain visible in the Crosswork UI, in case you want to install the application in future.