

# Command-Line Installation and Upgrade of vCenter Server 6.5

## vCenter Server 6.5

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You can install VMware vCenter Server™ on a virtual machine or physical server that runs Microsoft Windows by using either the GUI or the command-line interface.

The command-line installation process includes downloading the vCenter Server installer, gathering the required data, and using the samples in this technical note to install vCenter Server according to your needs.

This technical note describes how to install, upgrade, and uninstall vCenter Server by using the command-line interface. The technical note provides you with example templates that you can use to install and upgrade vCenter Server.

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**IMPORTANT** VMware support cannot assist with troubleshooting command-line installation or upgrade of vCenter Server. However, vCenter Server systems installed or upgraded by using the command-line interface are fully supported.

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## Overview

By using the command-line interface, you can install vCenter Server with an embedded Platform Services Controller, vCenter Server with an external Platform Services Controller, or an external Platform Services Controller. You can also upgrade an existing vCenter Server 5.5 or 6.0 installation to vCenter Server 6.5. Before the installation or upgrade, you must create a JSON file that contains the installation and configuration parameters. You can either create a JSON file manually or generate a JSON file by running the installer in a special mode using the installation wizard.

When you create the JSON file, populate the necessary data, and start the command-line process, the parameters from the JSON file are passed to the vCenter Server installer. The installer uses the configuration parameters that you provide in the JSON file and installs or upgrades, and configures vCenter Server according to your specifications. The vCenter Server installer runs minimal validation on the configuration parameters.

## vCenter Server Deployment Models

You can install vCenter Server in one of the two deployment models:

- **vCenter Server with an embedded Platform Services Controller**

You install the Platform Services Controller and vCenter Server on the same virtual machine or physical server.

This model is standalone and you cannot use it for replication of vCenter Single Sign-On data.

- **vCenter Server with an external Platform Services Controller**

You install the Platform Services Controller on one virtual machine or physical server and then install vCenter Server on a different virtual machine or physical server.

This model is suitable for larger environments. With this model, you can configure many Platform Services Controller instances to replicate their vCenter Single Sign-On data by joining them to the same vCenter Single Sign-On domain.

For information about the supported architecture and deployment models in vSphere 6.5, see *vSphere Installation and Setup* and *vSphere Upgrade* at <http://www.pubs.vmware.com>.

## Requirements

Your Windows Server must have the latest updates and patches installed.

vCenter Server requires a database to store and organize server data. Each vCenter Server instance must have its own database.

- For environments with up to 20 hosts and 200 virtual machines, you can use the bundled PostgreSQL database that the vCenter Server installer can install and set up for you during the vCenter Server installation.
- Larger environments require a supported external database that uses a data source name (DSN).
- vCenter Server supports Oracle and Microsoft SQL Server databases as external databases.

For information about the vCenter Server installation and upgrade requirements and external database configuration, see *vSphere Installation and Setup* and *vSphere Upgrade* at <http://pubs.vmware.com>.

## General Installation Process

To install vCenter Server by using the command-line interface, you must download the vCenter Server ISO installer, create the JSON configuration file, and run the command-line installation.

### To install vCenter Server with an embedded or an external Platform Services Controller:

- 1 Download the ISO installer file for vCenter Server from the VMware product page at <http://www.vmware.com/products>.  
The installer ISO file name is `VMware-VIM-all-6.5.0-yyyyyy.iso`, where `yyyyyy` is the build number.
- 2 Mount the ISO file to your virtual machine or physical server.
- 3 Create the JSON configuration file for your installation specification.
  - a Create a JSON configuration file and save it to your workspace.  
Copy the templates located at the `vCenter-Server/templates/install` directory of the ISO file. You can also create the file manually or use the command-line interface to generate the file with all of the necessary information and configuration properties. For information, see [“Create a JSON File Manually”](#) on page 3 and [“Generate a JSON File for the Command-Line Installation by Using the GUI”](#) on page 5.
  - b Fill in the JSON configuration file with the required parameters according to your specifications.
  - c Save the JSON configuration file.
- 4 On the virtual machine or physical server where you are installing vCenter Server, open the Windows command prompt.
- 5 Change the directory to the location of the installation executables.  
For example, if the executables are on the D drive, run  
`cd D:`  
`cd vCenter-Server\`
- 6 (Optional) Run a preinstall check.

- 7 To start the vCenter Server installation, run the following command:

```
VMware-vCenter-Server.exe /qr CUSTOM_SETTINGS=path_to_json_file
```

## Preparing JSON Configuration Files

### Create a JSON File Manually

You can create a JSON file manually by using a text editor and modifying the templates located at the vCenter-Server/templates/ directory of the ISO file.

#### To create a JSON file for installation manually:

- 1 Open a text editor and create a JSON file.  
For example, create a JSON file at C:\my-vCenter-Server-installation\.
- 2 Navigate to the vCenter-Server/templates/ directory of the ISO file and open the install or upgrade template in a text editor.
- 3 Copy the template text and paste it in the JSON file.
- 4 Fill in the template with the required parameters.
- 5 Save and close the file.

### Installation Templates

You can use the templates in the vCenter-Server/templates/install directory of the ISO file to create your JSON files. The example templates represent various vCenter Server installation configurations.

**IMPORTANT** Do not copy the JSON templates from the PDF file to avoid JSON format loss. Use the files that are located in the vCenter-Server/templates/install directory of the ISO file.

- To install vCenter Server with an embedded Platform Services Controller and an embedded database, use the template from [Example 1](#).
- To install vCenter Server with an external Platform Services Controller and an external database, use the template from [Example 2](#) for the Platform Services Controller installation and the template from [Example 3](#) for the vCenter Server installation.

#### **Example 1.** Installation Template for vCenter Server with an Embedded Platform Services Controller and an Embedded Database

---

```
{
  "INSTALLDIR"           : "C:\\Program Files\\VMware\\",
  "vmware.data.directory" : "C:\\ProgramData\\VMware\\",
  "deployment.node.type" : "embedded",
  "db.type"              : "embedded",
  "vc.svcuser"           : null,
  "vc.svcuserpassword"   : null,
  "appliance.net.pnid"   : "<enter_dns_fqdn_of_the_system>",
  "appliance.net.ports"  : {
    "rhttpproxy.ext.port1" : 80,
    "rhttpproxy.ext.port2" : 443,
    "syslog.ext.port"       : 514,
    "syslog.ext.tls.port"   : 1514,
    "netdumper.ext.serviceport" : 6500,
    "autodeploy.ext.serviceport" : 6501,
    "autodeploy.ext.managementport" : 6502,
    "vpxd.ext.port1"       : 902,
    "vsphere-client.ext.port1" : 9443
  },
  "vmdir.first-instance" : true,
  "vmdir.domain-name"    : "vsphere.local",
  "vmdir.password"       :
    "<enter_platform_service_controller_administrator_password>",
  "vmdir.site-name"      : "Default-First-Site",
```

```
"ceip_enabled"           : false  
}
```

---

**Example 2.** Installation Template for a Platform Services Controller

---

```

{
  "INSTALLDIR"           : "C:\\Program Files\\VMware\\",
  "vmware.data.directory" : "C:\\ProgramData\\VMware\\",
  "deployment.node.type"  : "infrastructure",
  "appliance.net.pnid"    : "<enter_dns_fqdn_of_the_system>",
  "vmdir.first-instance"  : true,
  "vmdir.domain-name"     : "vsphere.local",
  "vmdir.password"        :
    "<enter_platform_service_controller_administrator_password>",
  "vmdir.site-name"       : "Default-First-Site",
  "ceip_enabled"          : false,
  "appliance.net.ports"   : {
    "rhttpproxy.ext.port1" : 80,
    "rhttpproxy.ext.port2" : 443,
    "syslog.ext.port"       : 514,
    "syslog.ext.tls.port"   : 1514,
    "sts.ext.port1"         : 7444
  }
}

```

---

**Example 3.** Installation Template for vCenter Server with an External Platform Services Controller and an External Database

---

```

{
  "INSTALLDIR"           : "C:\\Program Files\\VMware\\",
  "vmware.data.directory" : "C:\\ProgramData\\VMware\\",
  "deployment.node.type"  : "management",
  "db.type"               : "external",
  "db.dsn"                 : "<enter_vCenterServer_dsn>",
  "db.user"                : "<enter_vCenterServer_database_username>",
  "db.password"           : "<enter_vCenterServer_database_password>",
  "vc.svcuser"            : null,
  "vc.svcuserpassword"    : null,
  "appliance.net.pnid"    : "<enter_dns_fqdn_of_the_system>",
  "appliance.net.ports"   : {
    "rhttpproxy.ext.port1" : 80,
    "rhttpproxy.ext.port2" : 443,
    "syslog.ext.port"       : 514,
    "syslog.ext.tls.port"   : 1514,
    "netdumper.ext.serviceport" : 6500,
    "autodeploy.ext.serviceport" : 6501,
    "autodeploy.ext.managementport" : 6502,
    "vpxd.ext.port1"       : 902,
    "vsphere-client.ext.port1" : 9443
  },
  "system.vm0.hostname"   : "<enter_dns_fqdn_of_the_platform_service_controller>",
  "system.vm0.port"       : "443",
  "vmdir.password"        :
    "<enter_platform_service_controller_administrator_password>",
  "vmdir.domain-name"     : "vsphere.local"
}

```

---

**Generate a JSON File for the Command-Line Installation by Using the GUI**

You can generate a JSON file while you are installing vCenter Server by using the graphical interface, so that you can use the JSON file in future command-line installations. You can also generate the same JSON file by using the graphical interface without installing vCenter Server.

**To generate a JSON template file that contains all the necessary parameters:**

- 1 Download the ISO installer file for vCenter Server from the VMware product page at <http://www.vmware.com/products>.  
The installer ISO file name is `VMware-VIM-all-6.5.0-yyyyyy.iso`, where `yyyyyy` is the build number.
- 2 Mount the ISO file to your virtual machine or physical server.
- 3 On the virtual machine or physical server where you are installing vCenter Server, open the Windows command prompt.
- 4 Change the directory to the location of the installation executables.  
For example, if the executables are on the D drive, run  
`cd D:`  
`cd vCenter-Server\`
- 5 Start the vCenter Server installation wizard and export the JSON file, specifying the directory in which the file is to be created.
  - To install vCenter Server and to export a JSON file, run the following command:  
`VMware-vCenter-Server.exe EXPORT_SETTINGS_DIR=export-dir`
  - To use the wizard without installing vCenter Server and to export a JSON file, run the following command:  
`VMware-vCenter-Server.exe PREINSTALLCHECK=1 EXPORT_SETTINGS_DIR=export-dir`
- 6 Select the deployment type and complete the installation wizard.

The installer creates a `settings.json` file with the validated values at the specified location.

**JSON Sample Files for Installing vCenter Server with an Embedded Platform Services Controller**

You can use the following sample JSON files to install vCenter Server with an embedded database or with an external database. You must change the parameters in bold to your specific values.

For information about the parameters and their descriptions, see [“Installation Parameters”](#) on page 9.

**Example 4.** Sample JSON File for Installing vCenter Server with an Embedded Platform Services Controller and an Embedded Database

---

```
{
  "INSTALLDIR"           : "C:\\Program Files\\VMware\\",
  "vmware.data.directory" : "C:\\ProgramData\\VMware\\",
  "deployment.node.type" : "embedded",
  "db.type"              : "embedded",
  "appliance.net.pnid"   : "enter_dns_fqdn_of_the_system",
  "vmdir.first-instance" : true,
  "vmdir.domain-name"    : "vsphere.local",
  "vmdir.password"       : "enter_platform_service_controller_administrator_password",
  "vmdir.site-name"      : "Default-First-Site"
}
```

---

**Example 5.** Sample JSON File for Installing vCenter Server with an Embedded Platform Services Controller and an External Database

---

```
{
  "INSTALLDIR"           : "C:\\Program Files\\VMware\\",
  "vmware.data.directory" : "C:\\ProgramData\\VMware\\",
  "deployment.node.type" : "embedded",
  "db.type"              : "external",
  "db.dsn"                : "my_db_DSN_with_SQL_authentication",
  "db.user"               : "my_db_user",
}
```

---

```

"db.password"           : "my_db_password",
"appliance.net.pnid"    : "enter_dns_fqdn_of_the_system",
"vmdir.first-instance"  : true,
"vmdir.domain-name"    : "vsphere.local",
"vmdir.password"        : "enter_sso_password",
"vmdir.site-name"       : "Default-First-Site"
}

```

---

## JSON Sample Files for Installing vCenter Server with an External Platform Services Controller

You can use the following sample JSON files to install two vCenter Server instances with embedded databases and register them with an external Platform Services Controller. You must first install the Platform Services Controller, and then install the vCenter Server instances in sequence. You must change the parameters in bold to your specific values.

For information about the parameters and their descriptions, see [“Installation Parameters”](#) on page 9.

### Example 6. Sample JSON File for Installing a Platform Services Controller

```

{
  "INSTALLDIR"           : "C:\\Program Files\\VMware\\",
  "vmware.data.directory" : "C:\\ProgramData\\VMware\\",
  "appliance.net.pnid"    : "enter_dns_fqdn_of_the_platform_services_controller",
  "deployment.node.type"  : "infrastructure",
  "vmdir.domain-name"    : "vsphere.local",
  "vmdir.first-instance"  : true,
  "vmdir.password"        : "enter_sso_password",
  "vmdir.site-name"       : "enter_site_name"
}

```

---

### Example 7. Sample JSON File for Installing the First vCenter Server Instance

```

{
  "INSTALLDIR"           : "C:\\Program Files\\VMware\\",
  "vmware.data.directory" : "C:\\ProgramData\\VMware\\",
  "appliance.net.pnid"    : "enter_dns_fqdn_of_the_first_system",
  "deployment.node.type"  : "management",
  "db.type"               : "embedded",
  "system.vm0.hostname"   : "enter_dns_fqdn_of_the_platform_services_controller",
  "system.vm0.port"       : "443",
  "vmdir.domain-name"    : "vsphere.local",
  "vmdir.password"        : "enter_platform_service_controller_administrator_password"
}

```

---

### Example 8. Sample JSON File for Installing the Second vCenter Server Instance by Using All Default Values

```

{
  "appliance.net.pnid"    : "enter_dns_fqdn_of_the_second_system",
  "deployment.node.type"  : "management",
  "db.type"               : "embedded",
  "system.vm0.hostname"   : "enter_dns_fqdn_of_the_platform_services_controller",
  "vmdir.password"        : "enter_platform_service_controller_administrator_password",
}

```

---

## JSON Sample File for Installing Platform Services Controller with HA or Multisite Deployment

You can use the following sample JSON file to install a Platform Services Controller and join it as a replication partner to a vCenter Single Sign-On domain in an existing Platform Services Controller. Two Platform Services Controller instances can replicate their infrastructure data either within the same site or across different sites. To configure two Platform Services Controller instances within one site in HA mode, when installing the second Platform Services Controller, use the same site name as the site name of the first Platform Services Controller. You must change the parameters in bold to your specific values.

For information about the parameters and their descriptions, see [“Installation Parameters”](#) on page 9.

**Example 9.** Sample JSON File for Installing the Second Platform Services Controller and Joining it to the Same or Different Site Name

---

```
{
  "appliance.net.pnid"           :
  "enter_dns_fqdn_of_the_second_platform_services_controller",
  "deployment.node.type"        : "infrastructure",
  "vmdir.domain-name"           : "enter_replication_partner_domain_name",
  "vmdir.first-instance"        : false,
  "vmdir.replication-partner-hostname": "enter_replication_partner_hostname",
  "vmdir.password"              : "enter_replication_partner_sso_password",
  "vmdir.site-name"             : "enter_same_or_different_site_name"
}
```

---

## Installation Parameters

Depending on your installation specification, in the JSON configuration file, you must determine and provide a list of the required parameters and their values.

**Table 1.** Available JSON Installation Parameters

Parameter	Description
<b>Deployment type</b>	
deployment.node.type	<p>Installation type. Possible values:</p> <ul style="list-style-type: none"> <li>■ <b>embedded</b> Use this value to install vCenter Server with an embedded Platform Services Controller.</li> <li>■ <b>infrastructure</b> Use this value to install an external Platform Services Controller.</li> <li>■ <b>management</b> Use this value to install a vCenter Server instance and register it with an existing Platform Services Controller.</li> </ul>
<b>Virtual machine or physical server storage locations</b>	
INSTALLDIR	Installation directory.
vmware.data.directory	<p>VMware common application data directory.</p> <p>This is the folder where the data for your deployment model will be stored.</p>
<b>Virtual machine or physical server parameters</b>	
appliance.net.pnid	<p>IP address or fully qualified domain name (FQDN) of the virtual machine or physical server on which you install vCenter Server or the Platform Services Controller.</p> <p>This is the system name of the machine that will be used for communication between vCenter Server and vCenter Single Sign-On.</p> <p>VMware recommends that you provide an FQDN and that the FQDN or IP address that you provide does not change. The system name cannot be changed after the installation completes. If the system name changes, you must uninstall vCenter Server and install it again.</p>
appliance.net.ports	<p>Consolidated port settings.</p> <p>The vCenter Server system must be able to send data to every managed host and receive data from the vCenter Server services as well as the Platform Services Controller services.</p> <p>If you are not changing the port numbers and accepting the default values, you can omit this parameter. To change a particular port number, for example, the ESXi Dump Collector port number, you must include the following lines in your JSON configuration file:</p> <pre>"appliance.net.ports" : {   "netdumper.ext.serviceport" : <b>your-port-number</b>, }</pre> <p>Ports 88, 389, 636, 2012, 2014, 2020, 7080, 11711, and 11712 are not configurable but must be available for vCenter Server deployments.</p> <p>For the complete list of required ports, see <i>vSphere Installation and Setup</i> at <a href="http://pubs.vmware.com">http://pubs.vmware.com</a>.</p>

Parameter	Description
<b>Database parameters</b>	
db.type	vCenter Server database type. Could be: <ul style="list-style-type: none"> <li>■ <b>embedded</b> vCenter Server uses the embedded PostgreSQL database. This database is suitable for small scale deployments.</li> <li>■ <b>external</b> vCenter Server uses an existing external database.</li> </ul>
db.dsn	vCenter Server database DSN name. Required only for an external database.
db.user	vCenter Server database user. Required only for an external database that uses SQL authentication.
db.password	vCenter Server database password. Required only for an external database that uses SQL authentication.
<b>vCenter Server user account parameters</b>	
vc.svcuser	Custom user account to run the vCenter Server service. Specify only if you are not using Windows Local System account. The user service account that you enter must have the <b>Log on as a service</b> privilege.
vc.svcuserpassword	Password of the custom user account in which the vCenter Server service will run. Omit if you use the Windows Local System account.
<b>vCenter Single Sign-On parameters</b>	
system.vm0.hostname	External Platform Services Controller FQDN or IP address. Required only for vCenter Server with an external Platform Services Controller deployment.
system.vm0.port	External Platform Services Controller HTTPS port. The default port is 443. Required only for vCenter Server with an external Platform Services Controller deployment.
vmdir.domain-name	vCenter Single Sign-On domain name, for example vsphere.local.
vmdir.first-instance	A Boolean value. Specifies whether this is the first Platform Services Controller that you are creating. If you set this parameter to <b>true</b> , the VMware directory instance is the first instance in the domain. If you set this parameter to <b>false</b> , this instance is a replication partner. To join a Platform Services Controller in an existing vCenter Single Sign-On domain, you must enter the system name of the Platform Services Controller containing the vCenter Single Sign-On instance to join and the vCenter Single Sign-On administrator password. You can join an existing vCenter Single Sign-On domain for replication of infrastructure data and high availability.

Parameter	Description
<code>vmdir.password</code>	<p>vCenter Single Sign-On password.</p> <p>For the first Platform Services Controller instance, this is the administrator account password.</p> <p>For subsequent instances, this is the administrator account password of the replication partner.</p> <p>The password must adhere to the following requirements:</p> <ul style="list-style-type: none"> <li>■ At least 8 characters</li> <li>■ No more than 20 characters</li> <li>■ At least one uppercase character</li> <li>■ At least one lowercase character</li> <li>■ At least one number</li> <li>■ At least one special character</li> <li>■ Only visible lower-ASCII characters</li> </ul>
<code>vmdir.replication-partner-hostname</code>	<p>Host name of the vCenter Single Sign-On replication partner.</p> <p>The host name, which is the IP address or the FQDN, of the Platform Services Controller to use for replication of the vCenter Single Sign-On data.</p> <p>Ignored if this instance is the first instance in the domain.</p>
<code>vmdir.site-name</code>	<p>vCenter Single Sign-On site name.</p> <p>The site name is important if you are using vCenter Single Sign-On in multiple locations.</p> <p>The site name must contain alphanumeric characters. Choose your own name for the vCenter Single Sign-On site. You cannot change the name after installation.</p> <p>Non-ASCII or high-ASCII characters are not supported in site names. Your site name must include alphanumeric characters and a comma (,), period (.), question mark (?), dash (-), underscore (_), plus sign (+) or equal sign (=).</p>
<b>VMware Customer Experience Improvement Program</b>	
<b>parameter</b>	
<code>ceip_enabled</code>	<p>This key describes the enabling option for the VMware's Customer Experience Improvement Program (CEIP). By default we have <code>ceip_enabled:true</code>, which indicates that you are joining CEIP. If you prefer not to participate in the VMware's CEIP for this product, you must disable CEIP by setting <code>ceip_enabled:false</code>. You may join or leave VMware's CEIP for this product at any time.</p>

## Perform a Preinstall Check

The vCenter Server scripted installer provides you with the option to perform a preinstall check before performing the complete installation.

The installer validates the values that you provide and creates a validation report. The installer also creates a status file at the same location that contains the status of the action that you performed.

### To perform a preinstall check:

- 1 Download the ISO installer file for vCenter Server from the VMware product page at <http://www.vmware.com/products>.  
The installer ISO file name is `VMware-VIM-all-6.5.0-yyyyy.iso`, where `yyyyy` is the build number.
- 2 Mount the ISO file to your virtual machine or physical server.
- 3 Prepare the JSON templates for the type of installation that you are performing.
- 4 On the virtual machine or physical server where you are installing vCenter Server, open the Windows command prompt.

- 5 Change the directory to the location of the installation executables.

For example, if the executables are on the D drive, run `cd /d d:\vCenter-Server\`.

- 6 Run the preinstall checker:

```
VMware-vCenter-Server.exe /qr PREINSTALLCHECK=1 CUSTOM_SETTINGS=path_to_json_file
```

The preinstall checker validates all parameters and creates a report file at `%temp%\vim-vcs-precheck-report-65.html` without installing vCenter Server.

## General Upgrade Process

You can upgrade:

- vCenter Server version 5.5 with a vCenter Single Sign-On server on the same virtual machine or physical server (simple install) to vCenter Server 6.5 with an embedded Platform Services Controller.
- vCenter Server version 5.5 with a vCenter Single Sign-On server on a different virtual machine or physical server (custom install) to vCenter Server 6.5 with an external Platform Services Controller.
- vCenter Server version 6.0 with a with an embedded Platform Services Controller to version 6.5.
- vCenter Server version 6.0 with an external Platform Services Controller to version 6.5.

To upgrade vCenter Server by using the command-line interface, you must download the vCenter Server ISO installer, create the JSON configuration file, and run the command-line upgrade.

### To upgrade vCenter Server with an embedded or an external Platform Services Controller:

- 1 Download the ISO installer file for vCenter Server from the VMware product page at <http://www.vmware.com/products>.

The installer ISO file name is `VMware-VIM-all-6.5.0-yyyyy.iso`, where `yyyyy` is the build number.

- 2 Mount the ISO file to your virtual machine or physical server.
- 3 Create the JSON configuration file for your upgrade specification.

- a Create a JSON configuration file and save it to your workspace.

Copy the templates located at the `vCenter-Server/templates/upgrade` directory of the ISO file. You can also create the file manually or use the command-line interface to generate the file with all of the necessary information and configuration properties. For information, see [“Create a JSON File for Upgrade Manually”](#) on page 13 and [“Generate a JSON File for the Command-Line Upgrade by Using the GUI”](#) on page 16.

- b Fill in the JSON configuration file with the required parameters according to your specifications.
- c Save the JSON configuration file.

- 4 On the virtual machine or physical server where you are upgrading vCenter Server, open the Windows command prompt.

- 5 Change the directory to the location of the installation executables.

For example, if the executables are on the D drive, run

```
cd D:
cd vCenter-Server\
```

- 6 (Optional) Run a precheck before upgrading.
- 7 To start the vCenter Server upgrade, run the following command:

```
VMware-vCenter-Server.exe /qr CUSTOM_SETTINGS=path_to_json_file
```

## JSON Files for Upgrade

You can create a JSON file manually. You can also generate a JSON file by using the command-line installer. You can then fill in the required parameters and start the installation.

### Create a JSON File for Upgrade Manually

You can create a JSON file manually by using a text editor and modify the basic upgrade templates in [“Upgrade Templates”](#) on page 13.

#### To create a JSON file for upgrade manually:

- 1 Open a text editor and create a JSON file.  
For example, create a JSON file at `C:\my-vCenter-Server-installation\`.
- 2 Copy the sample template text from the `\vCenter-Server\templates\upgrade` folder of the ISO and paste it in the JSON file.
- 3 Fill in the template with the required parameters.
- 4 Save and close the file.

### Upgrade Templates

You can use the following templates to create your JSON files manually for vCenter Server upgrade configurations.

#### Upgrade Templates for vCenter Server 5.5

- To upgrade vCenter Server 5.5 with an embedded or external database to vCenter Server v6.5 with an embedded Platform Services Controller, use the template from [Example 10](#).
- To upgrade a vCenter Single Sign-On 5.5 to a standalone Platform Services Controller 6.5, use the template from [Example 11](#).
- To upgrade vCenter Server 5.5 with an embedded or external database connected to an external vCenter Single Sign-On to vCenter Server 6.5 with an external Platform Services Controller, use the template from [Example 12](#).

**Example 10.** Sample JSON file for upgrading vCenter Server 5.5 with an embedded or external database to vCenter Server 6.5 with an embedded Platform Services Controller

---

```
{
  "INSTALLDIR"           : "C:\\Program Files\\VMware\\",
  "vmware.data.directory" : "C:\\ProgramData\\VMware\\",
  "upgrade.import.directory" : "C:\\ProgramData\\VMware\\vCenterServer\\export\\",
  "vc.svcuser"           : null,
  "vc.svcuserpassword"   : null,
  "vmdir.password"       : "<enter_platform_service_controller_password>",
  "vc.5x.username"       : "Administrator@vsphere.local",
  "vc.5x.password"       : "<enter_vc5x_administrator_password"
  "ceip_enabled"         : false
}
```

---

**Example 11.** Sample JSON file for upgrading a vCenter Single Sign On 5.5 instance to a standalone Platform Services Controller 6.5 instance

---

```
{
  "INSTALLDIR"           : "C:\\Program Files\\VMware\\",
  "vmware.data.directory" : "C:\\ProgramData\\VMware\\",
  "upgrade.import.directory" : "C:\\ProgramData\\VMware\\vCenterServer\\export\\",
  "vmdir.password"       : "<enter_platform_service_controller_administrator_password>",
  "ceip_enabled"         : false,
  "appliance.net.ports"  : {
    "rhttpproxy.ext.port1" : 80,
    "rhttpproxy.ext.port2" : 443,
    "syslog.ext.port"       : 514,
    "syslog.ext.tls.port"   : 1514
  }
}
```

---

**Example 12.** Sample JSON file for upgrading vCenter Server 5.5 with an embedded or external database connected to an external vCenter Single Sign-On to vCenter Server 6.5 with an external Platform Services Controller

---

```
{
  "INSTALLDIR"           : "C:\\Program Files\\VMware\\",
  "vmware.data.directory" : "C:\\ProgramData\\VMware\\",
  "upgrade.import.directory" : "C:\\ProgramData\\VMware\\vCenterServer\\export\\",
  "vc.svcuser"           : null,
  "vc.svcuserpassword"   : null,
  "vc.5x.username"       : "Administrator@vsphere.local",
  "vc.5x.password"       : "<enter_vc5x_administrator_password>",
  "system.vm0.port"      : "443",
  "vmdir.password"       : "<enter_platform_service_controller_administrator_password>",
  "appliance.net.ports"  : {
    "syslog.ext.port"       : 514,
    "syslog.ext.tls.port"   : 1514
  }
}
```

---

**Upgrade Templates for vCenter Server 6.0**

- To upgrade vCenter Server 6.0 with an embedded or external database to vCenter Server 6.5 with an embedded Platform Services Controller, use the template from [Example 13](#).
- To upgrade a Platform Services Controller to a standalone Platform Services Controller, use the template from [Example 14](#).
- To upgrade vCenter Server 6.0 with an embedded or external database connected to an external Platform Services Controller to vCenter Server 6.5 with an external Platform Services Controller, use the template from [Example 15](#).

**Example 13.** [Example 13](#) Sample JSON file for upgrading a vCenter Server 6.0 with an embedded or external database to vCenter Server 6.5 with an embedded Platform Services Controller

---

```
{
  "vmdir.password" : "<enter_platform_service_controller_administrator_password>",
  "ceip_enabled"   : false
}
```

---

**Example 14.** Sample JSON file for upgrading a Platform Services Controller 6.0 instance to an external (standalone) Platform Services Controller 6.5 instance

---

```
{
  "vmdir.password" : "<enter_platform_service_controller_administrator_password>",
  "ceip_enabled"   : false
}
```

---

```
}
```

---

**Example 15.** Sample JSON file for upgrading vCenter Server 6.0 with an embedded or external database connected to an external Platform Services Controller to vCenter Server 6.5 with an external Platform Services Controller

---

```
{  
  "vmdir.password" : "enter_platform_service_controller_password"  
}
```

---

## Upgrade Parameters

Depending on your specification, in the JSON configuration file, you must determine and provide a list of the required parameters and their values.

**Table 2.** Available JSON Installation Parameters

Parameter	Description
<b>Deployment type</b>	
<code>deployment.node.type</code>	<p>Deployment type. Possible values:</p> <ul style="list-style-type: none"> <li>■ <b>embedded</b> Use this value to upgrade vCenter Server with an embedded Platform Services Controller.</li> <li>■ <b>infrastructure</b> Use this value to upgrade to an external Platform Services Controller.</li> <li>■ <b>management</b> Use this value to upgrade a vCenter Server instance with an external vCenter Single Sign-On or Platform Services Controller.</li> </ul>
<b>Virtual machine or physical server storage locations</b>	
<code>INSTALLDIR</code>	Installation directory.
<code>vmware.data.directory</code>	<p>VMware common application data directory.</p> <p>This is the folder where the data for your deployment model will be stored.</p>
<b>Virtual machine or physical server parameters</b>	
<code>appliance.net.pnid</code>	<p>IP address or fully qualified domain name (FQDN) of the virtual machine or physical server on which you install vCenter Server or the Platform Services Controller.</p> <p>This is the system name of the machine that will be used for communication between vCenter Server and vCenter Single Sign-On or Platform Services Controller.</p> <p>VMware recommends that you provide an FQDN and that the FQDN or IP address that you provide does not change. The system name cannot be changed after the installation completes. If the system name changes, you must uninstall vCenter Server and install it again.</p>
<code>appliance.net.ports</code>	<p>Consolidated port settings.</p> <p>The vCenter Server system must be able to send data to every managed host and receive data from the vCenter Server services as well as the Platform Services Controller services.</p> <p>If you are not changing the port numbers and accepting the default values, you can omit this parameter. To change a particular port number, for example, the ESXi Dump Collector port number, you must include the following lines in your JSON configuration file:</p> <pre>"appliance.net.ports" : {   "netdumper.ext.serviceport" : <b>your-port-number</b>, }</pre> <p>Ports 88, 389, 636, 2012, 2014, 2020, 7080, 11711, and 11712 are not configurable but must be available for vCenter Server deployments.</p> <p>For the complete list of required ports, see <i>vSphere Installation and Setup</i> at <a href="http://pubs.vmware.com">http://pubs.vmware.com</a>.</p>

Parameter	Description
<b>Database parameters</b>	
db.type	vCenter Server database type. Could be: <ul style="list-style-type: none"> <li>■ <b>embedded</b> vCenter Server uses the embedded PostgreSQL database. This database is suitable for small scale deployments.</li> <li>■ <b>external</b> vCenter Server uses an existing external database.</li> </ul>
db.dsn	vCenter Server database DSN name. Required only for an external database.
db.user	vCenter Server database user. Required only for an external database that uses SQL authentication.
db.password	vCenter Server database password. Required only for an external database that uses SQL authentication.
<b>vCenter Server user account parameters</b>	
vc.svcuser	Custom user account to run the vCenter Server service. Specify only if you are not using Windows Local System account. The user service account that you enter must have the <b>Log on as a service</b> privilege.
vc.svcuserpassword	Password of the custom user account in which the vCenter Server service will run. Omit if you use the Windows Local System account.
<b>vCenter Single Sign-On or Platform Services Controller parameters</b>	
system.vm0.hostname	External Platform Services Controller FQDN or IP address. Required only for vCenter Server with an external Platform Services Controller deployment.
system.vm0.port	External Platform Services Controller HTTPS port. The default port is 443. Required only for vCenter Server with an external Platform Services Controller deployment.
vmdir.domain-name	vCenter Single Sign-On domain name, for example vsphere.local.
vmdir.first-instance	A Boolean value. Specifies whether this is the first Platform Services Controller that you are creating. If you set this parameter to <b>true</b> , the VMware directory instance is the first instance in the domain. If you set this parameter to <b>false</b> , this instance is a replication partner. To join a Platform Services Controller in an existing vCenter Single Sign-On domain, you must enter the system name of the Platform Services Controller containing the vCenter Single Sign-On instance to join and the vCenter Single Sign-On administrator password. You can join an existing vCenter Single Sign-On domain for replication of infrastructure data and high availability.

Parameter	Description
<code>vmdir.password</code>	<p>vCenter Single Sign-On password.</p> <p>For the first Platform Services Controller instance, this is the administrator account password.</p> <p>For subsequent instances, this is the administrator account password of the replication partner.</p> <p>The password must adhere to the following requirements:</p> <ul style="list-style-type: none"> <li>■ At least 8 characters</li> <li>■ No more than 20 characters</li> <li>■ At least one uppercase character</li> <li>■ At least one lowercase character</li> <li>■ At least one number</li> <li>■ At least one special character</li> <li>■ Only visible lower-ASCII characters</li> </ul>
<code>vmdir.replication-partner-hostname</code>	<p>Host name of the vCenter Single Sign-On replication partner.</p> <p>The host name, which is the IP address or the FQDN, of the Platform Services Controller to use for replication of the vCenter Single Sign-On data.</p> <p>Ignored if this instance is the first instance in the domain.</p>
<code>vmdir.site-name</code>	<p>vCenter Single Sign-On site name.</p> <p>The site name is important if you are using vCenter Single Sign-On in multiple locations.</p> <p>The site name must contain alphanumeric characters. Choose your own name for the vCenter Single Sign-On site. You cannot change the name after installation.</p> <p>Non-ASCII or high-ASCII characters are not supported in site names. Your site name must include alphanumeric characters and a comma (,), period (.), question mark (?), dash (-), underscore (_), plus sign (+) or equal sign (=).</p>
<b>VMware Customer Experience Improvement Program</b>	
<b>parameter</b>	
<code>ceip_enabled</code>	<p>This key describes the enabling option for the VMware's Customer Experience Improvement Program (CEIP). By default we have <code>ceip_enabled: false</code>, which indicates that you are not joining CEIP. If you prefer to participate in the VMware's CEIP for this product, you must enable CEIP by setting <code>ceip_enabled: true</code>. You may join or leave VMware's CEIP for this product at any time.</p>

## Perform a Precheck Before Upgrade

The vCenter Server scripted installer provides you with the option to perform a preinstall check before performing the complete installation.

The installer validates the values that you provide and creates a validation report. The installer also creates a status file at the same location that contains the status of the action that you performed.

### To perform a preinstall check:

- 1 Download the ISO installer file for vCenter Server from the VMware product page at <http://www.vmware.com/products>.  
The installer ISO file name is `VMware-VIM-all-6.5.0-yyyyyy.iso`, where `yyyyyy` is the build number.
- 2 Mount the ISO file to your virtual machine or physical server.
- 3 Prepare the JSON templates for the type of upgrade that you are performing.
- 4 On the virtual machine or physical server where you are upgrading vCenter Server, open the Windows command prompt.

- 5 Change the directory to the location of the installation executables.

For example, if the executables are on the D drive, run

```
cd D:
cd vCenter-Server\
```

- 6 Run the preinstall checker:

```
VMware-vCenter-Server.exe /qr PREINSTALLCHECK=1 CUSTOM_SETTINGS=path_to_json_file
```

The preinstall checker validates all parameters and creates a report file at `%temp%\vim-vcs-precheck-report.html` without upgrading vCenter Server.

## Troubleshooting

To troubleshoot the upgrade you can first review the deployment status file. If you need more information, check the log files.

### Deployment Status File

The vCenter Server installer generates a `vc-install.txt` file in the `%temp%` directory. This file provides the status of the installation based on the requested action. The `vc-install.txt` file contains the result of the action that could be successful, canceled, or failed, as well as information about the installation type and the system on which you install vCenter Server.

For failed installations, the status file points you to the location of the log files.

### Log Files

The log files are stored in the `%temp%` directory. You can see the list of the most common log files:

- `vim-vcs-precheck-report.html`  
Provides the report on the executed preinstall checks.
- `vc-install.txt`  
Provides installation overview and the result of the action.
- `vim-vcs-msi.log`  
Contains the logs for the vCenter Server parent installer MSI – `VMware-vCenter-Server.msi.vminst.log`  
Contains custom action logs.
- `pkgmgr-comp-msi.log`  
Contains the child MSI installer logs.

## Uninstall vCenter Server

You can uninstall vCenter Server if you no longer need it. If your vCenter Server uses the embedded PostgreSQL database and you uninstall vCenter Server, the embedded database is also deleted.

Unattended removal of vCenter Server for Windows can be performed using the installer executable. To perform an unattended removal, you must have access to the installer executable.

### To uninstall vCenter Server by using the command-line installer:

- 1 On the virtual machine or physical server on which vCenter Server is installed, open the Windows command prompt.
- 2 Run the following command:

```
VMware-vCenter-Server.exe /qr REMOVE="ALL" SSO_PASSWORD="enter_sso_password"
```

---

If you have comments about this documentation, submit your feedback to: [docfeedback@vmware.com](mailto:docfeedback@vmware.com)

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