



Server Certification Program Guide 6.x RC

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Table of Contents

<i>Table of Contents</i>	3
Program Overview	4
1.1 Program Goals and Benefits.....	4
1.2 VMware Approved Testing Labs.....	5
1.3 Certification Process Overview	6
1.3.1 Certification Process Flow.....	6
1.2.4 Compatibility vs. Interoperability	8
1.2.5 Program Support.....	8
2. Policies	11
2.1 Products and Versions.....	11
2.2 Obtaining ESX Licenses.....	12
2.3 Certification Lifecycle.....	12
2.4 Recertification.....	12
2.5 Equivalency and Compatibility	13
2.7 Software Policies	14
2.6 Hardware Policies.....	15
Partner Communications	15
Technical Requirements Overview	16
Interoperability Requirements.....	16
Appendix – VMware Pre-Release Material(s) and VMware Development Kit(s).....	16

Program Overview

1.1 Program Goals and Benefits

The Server Certification Program enables server partners to engage with VMware to certify their products with industry leading VMware ESXi hypervisor. Upon successful completion of certification, the products will be listed in the [VMware Compatibility Guides](#). Partners will be provided with a VMware Ready™ logo, which can be used in their marketing and sales efforts of the certified products. The VMware Ready program is discussed in further detail in section 1.1.3.

1.1.1 Program Goals

The goals of this program are as follows:

- Expand the [VMware Compatibility Guides](#) with more partner server offerings for greater customer choice and flexibility
- Provide VMware server partners with up to date product communications on VMware ESXi release dates, certification policies, and product features
- Provide VMware server partners with technical guidance on compatibility of VMware ESXi with the server hardware
- Assist VMware server partners with technical issues which may be blocking certification testing or preventing the server from booting or running VMware ESXi successfully

1.1.2 Program Benefits

The benefits of this program are as follows:

- Posting on the VMware Compatibility Guides upon successful certification
- Use of the VMware Ready™ logo
- Advanced communication on VMware roadmaps and certification policies
- Access to VMware's Partner Central
- Access to VMware Workbench and Certification Test Suites
- Access to VMware's Compatibility Analysis Tool
<http://www.vmware.com/partnercentral>

1.1.3 VMware Ready™ Program

What is VMware Ready?

VMware Ready designates VMware's highest level of endorsement for products created by our established partners. VMware Technology Alliance Partner members can develop their products to meet VMware standards and submit them for test and review. Products that meet VMware Ready requirements will display the VMware Ready logo.

Why Should I Join?

VMware partners who qualify their products for the VMware Ready logo are able to put their Technology Alliance Partner membership into action. By completing qualifications for a product under the VMware Ready program, a partner can enjoy the highest level of benefits under the VMware TAP program.

The VMware Ready program awards a logo and other program benefits for products in specific, well-defined categories that correspond to key areas of VMware technology. Each category has different technical criteria and different strategic goals, and may provide additional specialized benefits above and beyond the benefits available to all VMware Ready products.

For further information please refer to the VMware Ready Program Page: <https://www.vmware.com/partners/tech-alliance/vmware-ready.html>

1.2 VMware Approved Testing Labs

Partners may choose to conduct server certification in-house or engage with one of the VMware Approved Testing Labs (VATL).

Testing labs offer the following services:

- Perform certification testing on behalf of the partner on the hardware shipped from the partner to the labs.
- Remotely perform certification testing on partner's hardware. The equipment can be housed at the partner preferred location and certification tests can be run remotely.
- Engage directly with VMware when there are any issues during certification testing, and help with moving the certification testing forward.
- Submit test results to VMware and communicate the certification results back to the partner.

VATLs have been engaged with VMware to perform certification test and are very knowledgeable of the certification test suite offered by VMware.

The testing labs approved by VMware are:

AppLabs - A CSC Company	
Email	VMW@applabs.com
Address	387S 520 W Suite 100 Lindon, Utah 84042, USA
Phone	+1-801-852-9500
Web	http://www.csc.com/independent testing services

Partners can contact the labs directly to discuss various options for performing certifications and obtain the pricing information.

1.3 Certification Process Overview

Figure 1 shows the certification testing process flow for server products. Each step has a number, which is explained, in the section below the figure.

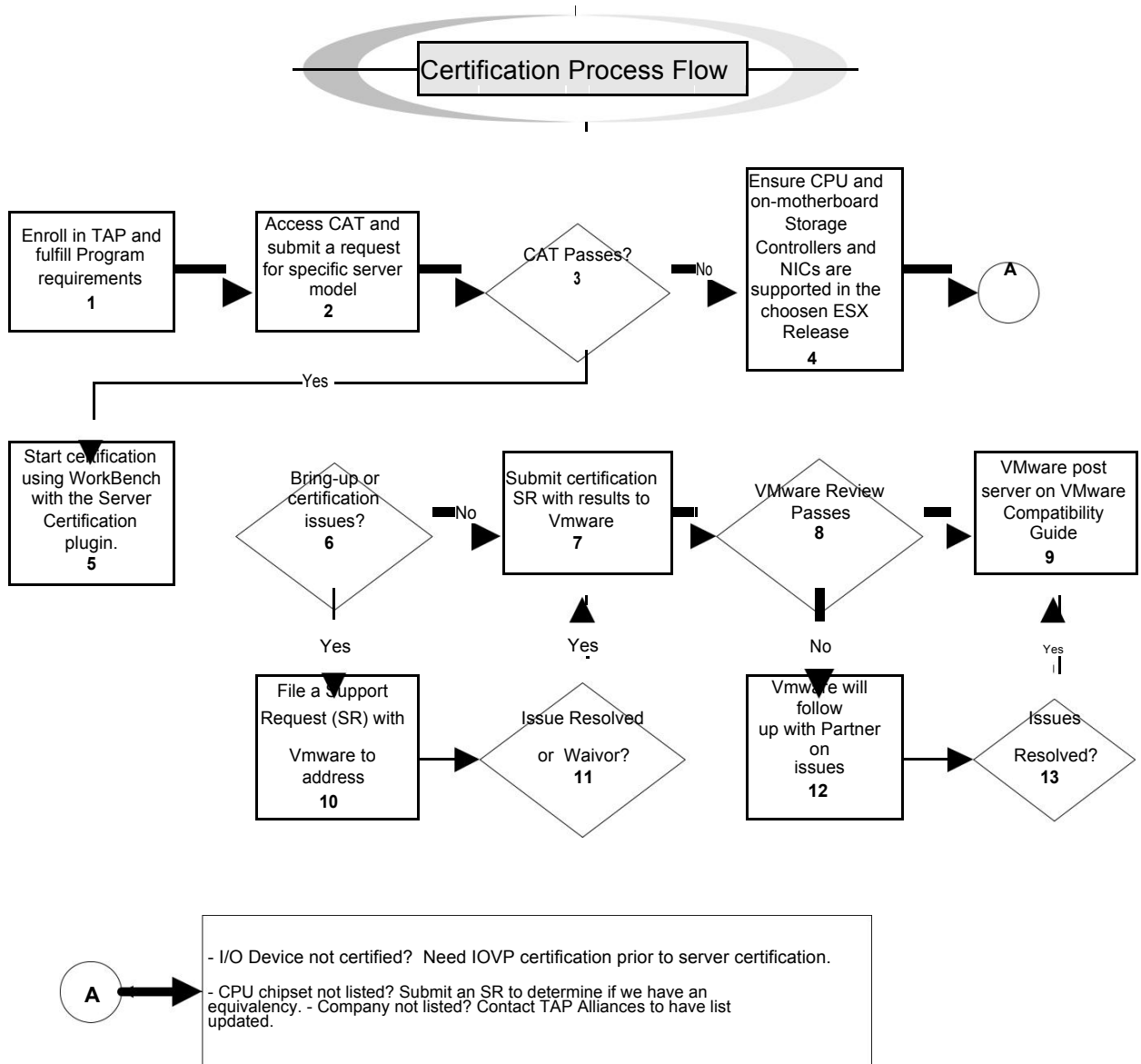


Figure 1: Certification Process Flow

1.3.1 Certification Process Flow

VMware certification requires a service be purchased depending on your needs. Below is a table of the various SKUs associated with the Server program. Products purchased will be added to your account and then decremented when support or certification requests are submitted.

Part Number	Product Name	ListPrice
VMW---EE---CERT---LOG	Server Certification Log Review	\$250
EE---CERT---SPT1	Server Certification Support	\$250
VMW---EE---CERT---EQ	Server Certification Equivalency	\$125

1. After you have satisfied the Program Requirements you can participate in the certification process.
2. The first step in the process is the Compatibility Analysis Tool (CAT). This analysis identifies if the candidate hardware can proceed to the certification step or not. You will be asked to detail the technical specification and capability of your hardware and submit this data to VMware.

Compatibility Analysis verifies whether the candidate hardware:

- Meets VMware Minimum Requirements for a specific VMware ESX or VMware ESXi Release
- Includes CPU and I/O devices (on motherboard) that are supported for a specific VMware ESX or VMware ESXi Release
- Has a high probability of passing certification testing

Compatibility Analysis is performed using a web-based tool found on Partner Central. Note: If your company is not listed, then contact TAP Alliances and request they verify your company membership and CAT enablement.

3. Upon submission, the Compatibility Analysis tool will e-mail the results of the analysis and a Certification ID that indicates one of three conditions:
 - **Pass** – your product meets the minimum requirements and certification can proceed
 - **Conditional Pass** – There are restrictions or specific compatibility risks identified with this hardware. You will be notified of these risks, and you may choose to attempt certification.
 - **Fail** – your product is not suitable for certification.

Certification IDs are issued for products that pass or conditionally pass. This ID references your unique product and is required for your certification submission.

4. Failures are usually seen when you enter I/O devices that are not supported in a particular ESX Release. Please see section 1.2.5.1 of this document for further details.
5. At this point you may begin official certification, provided you do not encounter any Bring-up issues. To learn more about the Bring-up issues, please refer to section 1.2.5.2. You may conduct the certification yourself or engage with one of the VATLs to conduct testing on your behalf. If you decide to conduct your own certification, you can download

VMware Workbench from Partner Central. Make sure you are running with the latest version of Workbench and the certification plugins.

6. If any problems arise during certification, you can try to resolve the issue yourself. If you cannot, then please work with VMware to resolve the issue. Please refer to section 1.2.5.3 for further details on certification issue resolution.
7. After you, or a VATL completes certification testing on your product, submit the results to the VMware team for review. If you have Internet access, you can submit certification results directly from within Workbench. Otherwise, you may upload the results of certification by using the Log Submission link on Partner Central. In either case, a Transaction ID is issued upon successful submission of the results. The Partner must then use the Transaction ID from the log submission process to file a Service Request (SR) at the VMware support portal to have the logs reviewed and the product listed in the VMware Compatibility Guides.

If there are any issues encountered during the review, VMware will work with the Partner through the Service Request (SR) to resolve these issues.

8. After the review of the results and logs is completed, VMware will inform the submitter of the result and posting timeframe of the product in the VMware Compatibility Guides. VMware will close the SR when the partner has acknowledged and confirmed the appropriate product listing

1.2.4 Compatibility vs. Interoperability

Certification of your hardware product with VMware ESX and/or VMware ESXi ensures that the hardware is compatible with VMware's industry leading hypervisors. Successful completion of certification testing will result in the listing of the product in the VMware

Compatibility Guides. However, please note that certification does not guarantee interoperability. VMware expects that partners will perform more interoperability testing in-house to ensure that the hardware listed in the VMware Compatibility Guides is also interoperable with VMware ESXi. A few examples of interoperability testing for server hardware are:

- Testing with new DIMMs in the Server
- Testing with maximum memory supported by the Server
- Testing with a different mix of PCI devices that are supported by VMware ESXi
- Testing of hardware components such as power supplies, fans, temperature sensors etc.

If you encounter any issues during interoperability testing, please file a [support request](#) with VMware so we can assist in problem isolation / corrective action.

1.2.5 Program Support

1.2.5.1 Compatibility Analysis Tool (CAT) Support

The Compatibility Analysis Tool is designed to show you all of the CPUs and I/O devices that are supported in a particular ESX release. Select the available I/O devices from the menu: if you explicitly try to enter an I/O device, the **Compatibility Analysis Tool will fail with your hardware**. The feature used to add I/O devices is built into the tool used by VMware to gauge which I/O devices are most requested by partners, which in turn enables support for such devices in upcoming ESX releases.

The Compatibility Analysis Tool uses a database in the backend to map CPUs and I/O devices that are supported in a VMware ESX and VMware ESXi release. This database is updated in tandem with the GA availability of a particular ESX Release.

If an IO device on the motherboard fails Compatibility Analysis because it is not supported by ESX, you can substitute it with an option card and deprecate the onboard IO device. For instance, if the SATA controller on the motherboard is the only boot adapter and it is not supported by ESX, you can add an ESX supported SAS controller listed in the VMware Compatibility Guides and proceed with Compatibility Analysis submission. Make sure that you use this optional SAS controller during your certification testing.

1.2.5.2 Bring-up Support

After a server model passes Compatibility Analysis Tool and before starting certification for the particular model, partners must make sure that they can install and run ESX successfully on their hardware. This is known as “Bring-up”. There can be issues with BIOS and/or specific hardware, which may prevent a successful bring-up of ESX on the server. If this happens, then obviously the server cannot be certified despite the fact that it passed Compatibility Analysis. VMware has observed that most of the bring-up issues with Server hardware are related to the BIOS, and can be addressed by fixing the BIOS.

Some of the bring-up issues may also be related to bad hardware. Usually a bring-up issue will cause the ESX/ESXi to panic or will result in a Purple Screen of Death (PSOD) of the vmkernel.

1.2.5.3 Certification Support

If you need help using Workbench for Server certifications, there are a number of venues you can use. Please follow these steps (in the order specified) to solve a specific problem.

1. Refer to the Server Certification Guide. It has details on the configuration required to perform the server certifications and a comprehensive list of Guest Operating Systems (GOS) required for server certifications.
2. Refer to the Server Certification Tests Guide. This guide contains information about the certification test and troubleshooting tips for several of the tests.
3. Refer to the Online Help in Workbench. The Online Help can be accessed by clicking on the Help link on a running Workbench. The Server Certification and Server Certification Tests Guides are available in the Workbench Online Help.
4. Refer to appropriate training videos and slide decks for important tips and tricks. These videos are in the form of WebEx recordings and available on Partner Central.
5. If you need additional help with the Workbench Server Certification, please see the [technical support](#) page on My VMware.
6. If there are any remaining issues, please send email to TAPAlliance@vmware.com.

2. Policies

This section discusses the policies for product versions of ESX and the Server hardware used for certifications.

2.1 Products and Versions

2.1.2 ESX versions

VMware Hardware Certification program is available only for the VMware ESXi product. VMware accepts certification test results that have been conducted with VMware ESXi only. Certification testing may begin with Release Candidate (RC) releases of VMware ESXi to allow product posting on the VMware Compatibility Guides at GA release.

Table 1 shows the ESX versioning mechanism and provides further details on the release naming scheme.

Release Type	Example	Comments
Major	ESX 5.0	Almost always requires a recertification
Minor	ESX 5.1	May or May not require a recertification. Usually does not require a recertification.
Maintenance	ESX 5.0 U1	Does not require a recertification
Patch	ESX 5.0 Patch 01	Does not require a recertification

Table 1: ESX Versioning

Table 2 shows VMware Release Lifecycle naming conventions. It also lists activities partners can perform with intermediate releases. Release communication is sent to all the partners via email with information on how to download the release when it becomes available.

Release Name	Definition	Partner Activities	Release Goals
Beta	Beta Release.	Perform interoperability testing but not certification	Fix problems found by partners and customers
RC	Release Candidate	Perform certification	Enable certification testing so that partner products can be listed on VMware Hardware Compatibility Guides at GA
GA	General Availability	Perform certification and interoperability testing	General availability of ESX to all the partners and customers. Partners can perform interoperability and certification testing.

Table 2: ESX Release Lifecycle

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2.1.3 Server Versions

Servers certified with VMware ESXi must be GA versions of the server hardware and must have the production level version of the BIOS.

2.2 Obtaining ESX Licenses

Partners can contact TAPAlliance@vmware.com to obtain ESX Not For Resale (NFR) licenses or get help with licensing issues. No licensing is required to run Workbench.

2.3 Certification Lifecycle

After a hardware model has been certified with a specific VMware ESXi release, it will retain its certification until:

- Recertification is required. Two events can trigger recertification:
 - Significant changes to VMware ESXi in a specific release.
 - Changes to partner's hardware.Both of these cases are discussed further in the next section.
- VMware no longer supports that version of VMware ESXi.
- The partner ceases participation in the Hardware Program.
- The partner requests posting to be removed.

2.4 Recertification

Recertification is required when changes are made to VMware ESXi. Recertification is also required when changes are made to the server hardware.

Recertification triggered by VMware ESXi are typically aligned with major releases of VMware ESXi, but can occasionally occur in minor releases. These triggers are communicated as part of release announcements that are distributed to the partners via email.

Recertification can also be triggered by changes to server hardware after certification. These triggers are tabulated in *Table 3*. Further details on these triggers can be found in the most recent version of the *Server Certification Guide*, located at Partner Central. Partners are expected to run these recertification tests and submit test results to VMware if any of the hardware components listed in *Table 3* change after a server has been posted on the VMware Compatibility Guides. Most recertification tests in Server Certification are labeled as Partial Certifications and may require only a subset of certification tests to be rerun.

Component	Type of Change
BIOS	Different version of the BIOS than already certified
BMC	Differences in IPMI implementation than already certified
New Processor Update	New processor that has not been already certified for the server
Memory Upgrade	Memory configuration of the server changes to support more memory than what was already certified
Device changes (NIC or Storage)	New NIC or Storage devices, different from the ones that were already certified

Table 3: Recertification Triggers for Servers

2.5 Equivalency and Compatibility

Equivalency occurs when a server is determined to be functionally identical to an existing product that is listed in the VMware Compatibility Guides. When equivalency is granted, no certification testing is required. The product is considered equally compliant as an existing product listed in the VMware Compatibility Guides. This determination is made based on the OEM lineage of the *Equivalent* product. Equivalency requests are usually made by the partners when their certified product is resold by another partner with a different brand and/or logo. Partners refer to this as a *logo transfer*.

Compatibility means that the product has not undergone certification testing, but is determined to be either functionally equivalent to, or a low risk configuration of a corresponding product listed in the VMware Compatibility Guides. In this case, no additional testing is required and, the product is listed as *Compatible*.

2.5.1 Claiming Equivalency and Compatibility

Equivalency and *Compatibility* refer to the ability for a partner's hardware to be granted the same certification as hardware previously certified by the hardware manufacturer. Manufacturers may extend a certification granted to their hardware to another vendor where the original vendor:

- a) Has requested or has been requested by the 3rd party for a corresponding Equivalent or Compatible product
- b) Has the mechanics to ensure the 3rd party does not alter the hardware in such a way that it would no longer be considered certified by VMware
- c) Will extend their responsibilities of support and representative hardware to include situations involving the 3rd party hardware
- d) The 3rd party requesting Equivalency and/or Compatibility is required to be a member of VMware's Technical Alliance Program at the Select Level.

Partners can download the Equivalency and Compatibility forms from Partner Central and submit claims using the process defined at <http://partnerweb.vmware.com/cat/server/>

2.5.2 ESX Release Equivalency

VMware often carries forward server support from one VMware ESX and/or VMware ESXi release to another. For example, servers listed in the VMware Compatibility Guides to support ESX 3.0 were carried forward in the Guides to also support ESX 3.5 as there were no significant changes between ESX 3.0 and ESX 3.5 with respect to servers that vouched for a recertification. This mechanism of carrying forward is defined as *ESX Release Equivalency*.

Partners are usually notified in advance of this automatic carry forward and do not have to do anything specific to grant them this support.

2.6 Compatibility Guides Posting Policies

VMware will post the server hardware in the appropriate VMware Compatibility Guides after reviewing the certification submissions. Policies related to posting are as follows:

- VMware uses footnotes and KB articles to document known product incompatibilities. If an incompatibility is severe enough that it is deemed not supportable or would reflect poorly on ESX as a quality issue, then the product will not be posted on the HCL until a technical fix can be provided (by VMware or the Partner).
- VMware will determine if a known incompatibility is sufficient to footnote or block an HCL posting
- End customer issues with specific hardware can lead to product footnoting or removal from the HCL
- VMware will remove products from the HCL upon partner request
- In the spirit of joint support VMware will not post support for products beyond what has been certified
- It is expected that partners will not post support for products beyond what has passed certification

2.7 Software Policies

VMware Hardware Certification program requires testing with a standard installation of VMware ESX or VMware ESXi and with no special configuration or modification. If a specific patch or special configuration option is required for your product to pass, then an exception may be made at the discretion of VMware. Please send an e-mail to TAPAlliance@vmware.com explaining this special configuration. VMware will work

with you via email to understand this special configuration, and grant you an exception, if deemed appropriate.

After completion of certification, the product will be listed on the HCL with an appropriate footnote which explains the exception. If the exception involves certifying with a patch release of VMware ESX or VMware ESXi, then the patch version will be mentioned in the footnote. If the exception involves certifying with a special configuration on the server, then the partner has to provide VMware with a URL pointing to their Support website, and the product will be listed with a footnote pointing to this URL.

2.6 Hardware Policies

The VMware Hardware Certification program requires testing with production level hardware and a production level version of the BIOS. Certified models may not be altered in such a way that a regression in the certification tests or criteria occurs. Vendors are expected to notify VMware of any significant differences between hardware releases that could require recertification. If recertification is required, a Compatibility Analysis submission must be requested. Please refer to section 2.5 for further details about which hardware changes can result in a recertification.

Partner Communications

VMware communicates with the partners via an email alias maintained by VMware. If you want to get added to this alias, please send an email to TAPAlliance@vmware.com with the following information:

- Company Name
- Last Name
- First Name
- E-mail Address
- Job Title
- Business Phone
- Mobile Phone
- Fax Number
- Company Address
- Company URL

Table 4 lists various types of communications that are sent out to partners, along with the frequency and contents of these communications.

Communication Type	Frequency	Contents
ESX Release Updates	As needed basis	Provides Release dates for upcoming ESX releases
ESX Release Announcements	As needed basis	Provides Release announcements with pointers on how to get the ESX release bits
Certification Policy Updates	As needed basis	Provides any certification policy updates e.g. new CPU support, new driver support etc.
Certification Tools Updates	As needed basis	Provides updates on availability of Workbench and the certification test suites with pointers on how to get the release bits

Table 4: Partner Communications

Technical Requirements Overview

Interoperability Requirements

A server to be certified with a specific version of VMware ESXi must have:

1. A released version of the BIOS. If the BIOS needs any special settings, those will be documented in the VMware Compatibility Guides.
2. AMD or Intel x86 CPU supported in the specific VMware ESXi release.
3. Ethernet Controller supported in the specific VMware ESXi release
4. Storage Controller supported in the specific VMware ESXi release

You can check if a specific CPU or I/O device is supported in a particular VMware ESX release by using the Compatibility Analysis Tool as discussed in section 1.2.5.1 If a specific I/O device on the motherboard is not supported, then you can add a supported optional I/O device to the server configuration and perform certification with this I/O device. This requires that you ship the server model with this optional I/O device populated.

Note 1: VMware Compatibility Guides for specific VMware ESXi releases can be located at <http://www.vmware.com/resources/compatibility/search.php>

1. The Systems Compatibility Guide lists all the supported Servers along with CPUs for these server models for specific VMware ESXi releases.
2. The I/O Compatibility Guide lists all the I/O devices along with the Linux version of the drivers that are ported to VMware ESXi releases.

Note 2: SCSI disk drives are supported for installing ESX and storing virtual machines

Note 3: SATA disk drives behind SAS controllers are supported. However storage of virtual machines on SATA disks is **not** supported. You can only install ESX on a SATA disk.

Appendix – VMware Pre-Release Material(s) and VMware Development Kit(s)

Under this Program, VMware may provide to Partner the VMware Pre-Release Material(s) or VMware Development Kit(s) listed below. Partner's use of the VMware Pre-Release Material(s) or VMware Development Kit(s) is subject to the terms and conditions of the Program Agreement.

VMware Pre-Release Material(s):

- VMware vSphere 5.x, 6.x
- VMware vCenter Server 5.x, 6.x
- VMware Workbench 2.x, 3.x
- VMware Workbench 3.x