

# Release Notes for Cisco Identity Services Engine, Release 2.4

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## Introduction

Cisco Identity Services Engine (ISE) is a security policy management platform that provides secure access to network resources. Cisco ISE functions as a policy decision point and enables enterprises to ensure compliance, enhance infrastructure security, and streamline service operations. Cisco ISE allows enterprises to gather real-time contextual information from networks, users, and devices. An administrator can then use this information to make proactive governance decisions by creating access control policies for the various network elements, including access switches, wireless LAN controllers (WLCs), Virtual Private Network (VPN) gateways, and data center switches. Cisco ISE acts as the policy manager in the Cisco TrustSec solution and supports TrustSec software-defined segmentation.

The Cisco ISE platform is a comprehensive, next-generation, contextually-based access-control solution. It offers authenticated network access, profiling, posture, Bring Your Own Device (BYOD) onboarding (native supplicant and certificate provisioning), guest management, device administration (TACACS+), and security group access services along with monitoring, reporting, and troubleshooting capabilities on a single physical or virtual appliance.

Cisco ISE is available on two physical appliances with different performance characterizations, and also as software that can be run on a VMware server. You can add more appliances to a deployment for performance, scale, and resiliency.

Cisco ISE has a scalable architecture that supports standalone and distributed deployments, but with centralized configuration and management. It also allows for configuration and management of distinct personas and services, thereby giving you the ability to create and apply services where needed in a network, but still operate the Cisco ISE deployment as a complete and coordinated system.

For more information about the features that are supported in Cisco ISE 2.4, see [Cisco Identity Services Engine Administrator Guide, Release 2.4](#).

## System Requirements

- [Supported Hardware](#)
- [Supported Virtual Environments](#)
- [Supported Browsers](#)
- [Support for Microsoft Active Directory](#)
- [Supported Antivirus and Antimalware Products](#)



**Note**

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For more details on Cisco ISE hardware platforms and installation, see the Cisco Identity Services Engine Hardware Installation Guide, Release 2.4.

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## Supported Hardware

Cisco ISE, Release 2.4, is shipped on the following platforms. After installation, you can configure Cisco ISE with specified component personas (Administration, Policy Service, Monitoring, and pxGrid) on the platforms that are listed in the following table.

**Table 1: Supported Hardware and Personas**

Hardware Platform	Persona	Configuration
Cisco SNS-3515-K9 (small)	Any	See the <a href="#">Cisco Identity Services Engine Hardware Installation Guide</a> for appliance hardware specifications.
Cisco SNS-3595-K9 (large)		
Cisco ISE-VM-K9 (VMware, Linux KVM, Microsoft Hyper-V)		<ul style="list-style-type: none"> <li>• For CPU and memory recommendations, see the “VMware Appliance Sizing Recommendations” section in the <a href="#">Cisco Identity Services Engine Hardware Installation Guide, Release 2.4</a>.</li> <li>• For hard disk size recommendations, see the “Disk Space Requirements” section in the <a href="#">Cisco Identity Services Engine Hardware Installation Guide, Release 2.4</a>.</li> <li>• NIC—1-GB NIC interface required. You can install up to 6 NICs.</li> <li>• Supported virtual machine versions include: <ul style="list-style-type: none"> <li>◦ ESXi 5.x (5.1 U2 and later support RHEL 7), 6.x</li> <li>◦ Microsoft Hyper-V on Microsoft Windows Server 2012 R2 and later</li> <li>◦ KVM on: <ul style="list-style-type: none"> <li>• RHEL 7.0</li> <li>• Ubuntu 14.04 LTS</li> </ul> </li> </ul> </li> </ul> <p><b>Note</b> If you are installing or upgrading Cisco ISE on an ESXi 5.x server, to support RHEL 7 as the Guest OS, update the VMware hardware version to 9 or later. RHEL 7 is supported with VMware hardware Version 9 and later.</p>

**Note**

- Memory allocation of less than 8 GB is not supported for any VM appliance configuration. In the event of a Cisco ISE behavior issue, all users will be required to change allocated memory to at least 8 GB before opening a case with the Cisco Technical Assistance Center.
- Legacy ACS and NAC appliances (including the Cisco ISE 3300 Series) are not supported with Cisco ISE, Release 2.0, and later releases.

## FIPS Mode Support

Cisco ISE uses embedded Federal Information Processing Standard (FIPS) 140-2-validated cryptographic module, Cisco FIPS Object Module Version 6.0 (Certificate #2505). For details about the FIPS compliance claims, see the [Global Government Certifications](#).

## Supported Virtual Environments

Cisco ISE supports the following virtual environment platforms:

- ESXi 5.x (5.1 U2 and later support RHEL 7), 6.x
- Microsoft Hyper-V on Microsoft Windows Server 2012 R2 and later
- KVM on:
  - RHEL 7.0
  - Ubuntu 14.04 LTS

**Note**

For the installations on Ubuntu, the user must validate the product name reflecting in the output in dmidecode.

Dmidecode utility reads from SMBIOS. If the "system-product" string does not contain "KVM", the readUDI will be unable to determine the type of virtualization and 'validate\_platform\_info()' in ks.cfg will fail, displaying the following error message.

ERROR: UNSUPPORTED HARDWARE DETECTED!

Update the applicable product name (in a string format) on the VM BIOS from the list below:

```
#define KVM _DMI_PRODNAME "KVM"
```

```
#define HyperVstr "Virtual Machine"
```

```
#define VMstr "VMware"
```

```
#define VMstr "VMware"
```

**Note**


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If you are installing or upgrading Cisco ISE on an ESXi 5.x server to support RHEL 7 as the Guest OS, update the VMware hardware version to 9 or later. RHEL 7 is supported with VMware hardware version 9 and later.

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## Supported Browsers

Supported browsers for the Admin portal include:

- Mozilla Firefox version:
  - 52.6 ESR
  - 56 and later
- Google Chrome latest version
- Microsoft Internet Explorer 10.x and 11.x

If you are using Internet Explorer 10.x, enable TLS 1.1 and TLS 1.2, and disable SSL 3.0 and TLS 1.0 (Internet Options > Advanced).

## Support for Microsoft Active Directory

Cisco ISE, Release 2.4, works with Microsoft Active Directory servers 2003, 2003 R2, 2008, 2008 R2, 2012, 2012 R2, and 2016 at all functional levels.

**Note**


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Microsoft has ended support for Windows Server 2003 and 2003 R2. We recommend that you upgrade Windows Server to a supported version.

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Microsoft Active Directory Version 2000 or its functional level is not supported by Cisco ISE.

Cisco ISE 2.4 supports multidomain forest integration with Active Directory infrastructures to support authentication and attribute collection across large enterprise networks. Cisco ISE 2.4 supports up to 50 domain join points.

### Improved User Identification

ISE has improved its ability to identify Active Directory users when a username is not unique. Duplicate usernames are common when using short usernames in a multi-domain AD environment. You can identify users by SAM, CN, or both. ISE uses the attributes that you make available to uniquely identify a user.

To configure which attributes ISE uses to resolve user identity, edit the registry on the server running Active Directory, and update the value of

REGISTRY.Services\lsass\Parameters\Providers\ActiveDirectory\IdentityLookupField

- SAM - to use only the SAM in the query (the default).
- CN - to use only CN in the query.
- CNSAM - to use CN and SAM in the query.

## Supported Antivirus and Antimalware Products

For more information on the products supported by the ISE posture agent, see the Cisco AnyConnect ISE Posture Support Charts at: <https://www.cisco.com/c/en/us/support/security/identity-services-engine/products-device-support-tables-list.html>

## Business Outcomes

Visibility into who and what are on your network along with the ability to segment end-to-end using a software-defined approach are critical requirements of customers who are seeing an explosion of connected devices as well as a perpetual deluge of network breaches across every industry. Which is why Cisco ISE version 2.4 doubles-down on outcomes that realize a secure digital network. It does this through enabling automation, administrative simplification, and net new capabilities.

## New Features in Cisco ISE, Release 2.4

*Table 2: The following table describes the new features in Cisco Identity Services Engine, Release 2.4.*

Feature	Description	Business Outcome
<b>Active Directory Domain Controller Failover Mechanism</b>	The Domain Controller (DC) failover mechanism is managed based on the DC priority list, which determines the order in which the DCs are selected in case of failover. If a DC is offline or not reachable due to some error, its priority is decreased in the priority list. When the DC comes back online, its priority is adjusted accordingly (increased) in the priority list.	Results in higher serviceability as a Network Access Control solution and increases reliability of the Cisco ISE connection to Active Directory deployments.
<b>Kerberos Authentication for the Sponsor Portal</b>	Kerberos SSO is performed inside the secure tunnel after the browser establishes the SSL connection with ISE.  <b>Note</b> Kerberos authentication is NOT supported for the Guest portal.	You can use Kerberos to authenticate a sponsor for access to the sponsor portal.

Feature	Description	Business Outcome
<b>Some Dashlets Removed to Resolve Performance Issues</b>	<p>The following dashlets have been decommissioned to prevent performance issues when displaying large datasets:</p> <ul style="list-style-type: none"> <li>• <b>Context Visibility &gt; Endpoint &gt; Compliance: Status Trend</b></li> <li>• <b>Home &gt; Endpoints &gt; Endpoint</b></li> </ul>	A large number of endpoints caused performance problems with some dashlets.
<b>Cisco ISE Can Pull IoT Device Context and Session Data from Cisco IND</b>	<p>Cisco ISE can profile and display the status of devices attached to a Cisco Industrial Network Director (IND). Cisco Platform Exchange Grid (pxGrid) is used to communicate the endpoint (Internet of Things [IoT]) data between Cisco ISE and Cisco IND. pxGrid is used to receive the context from Cisco IND and query Cisco IND to update endpoint type.</p>	<p>Effective network monitoring and full visibility and control of industrial networks offer:</p> <ul style="list-style-type: none"> <li>• Full visibility and control of automation endpoints, such as controllers, IO devices, and human machine interfaces (HMIs).</li> <li>• Lowered asset management cost and improved operator productivity with Cisco IND and Cisco ISE integration.</li> </ul>
<b>Control Permissions for pxGrid Clients</b>	<p>You can create pxGrid authorization rules for controlling the permissions for the pxGrid clients (under <b>Administration &gt; pxGrid Services &gt; Permissions</b>).</p> <p>Use these rules to control the services that are provided to the clients. You can create different types of groups and map the services provided to clients to these groups. Use the <b>Manage Groups</b> option in the <b>Permissions</b> window to add new groups.</p> <p>You can view the predefined authorization rules that use predefined groups (such as EPS, ANC) on the <b>Permissions</b> window. You can update only the <b>Operations</b> field in the predefined rules.</p>	<p>Better pxGrid backward compatibility:</p> <ul style="list-style-type: none"> <li>• Significantly shortens the integration time with Cisco ISE to collect context information and initiate Adaptive Network Control (ANC) actions through Cisco ISE.</li> <li>• Helps control the services that are provided to the clients.</li> </ul>

Feature	Description	Business Outcome
<b>TrustSec Enhancements</b>		Enhanced IP SGT workflow: <ul style="list-style-type: none"><li>• Improves network device misconfiguration error handling and operational efficiency through Check Status option.</li><li>• Verifies TrustSec configuration on Network Devices.</li><li>• Selectively deploy the IP SGT static mappings.</li><li>• Create IP static mappings with IPv6 addresses.</li><li>• Create mappings for first or all known IP addresses based on DNS FQDN query.</li></ul>



Feature	Description	Business Outcome
	<p>You can select the ISE node from which the configuration changes must be sent to the network device while adding the network device (under <b>Advanced TrustSec Settings</b> section). You can select the PAN or PSN node. If the PSN node that you selected is down, the configuration changes are sent to this device using the PAN.</p> <p>While deploying the IP SGT static mappings, you can select the devices or the device groups to which the selected mappings must be deployed. You can select all the devices if required. You can use the filter option to search for the devices that you want. If you do not select any device, the selected mappings are deployed on all TrustSec devices.</p> <p>You can use the <b>Check Status</b> option to check if different SGTs are assigned to the same IP address for a specific device. You can use this option to find the devices that have conflicting mappings, IP address that is mapped to multiple SGTs, and the SGTs that are assigned to the same IP address. This option can be used even if device groups, FQDN, hostname, or IPv6 addresses are used in the deployment. You must remove the conflicting mappings or modify the scope of deployment before deploying these mappings.</p> <p>Verify TrustSec deployment option in the <b>General TrustSec Settings page</b> helps you to verify whether the latest TrustSec policies are deployed on all the network devices. Alarms are displayed in the <b>Alarms</b> dashlet (under <b>Work Centers &gt; TrustSec &gt; Dashboard</b>), if there are any discrepancies between the policies configured on Cisco ISE and the</p>	

Feature	Description	Business Outcome
	<p>network device. The following alarms are displayed in the <b>TrustSec</b> dashboard:</p> <ul style="list-style-type: none"> <li>• An alarm with an Info icon is displayed whenever the verification process is started or completed.</li> <li>• An alarm with an Info icon is displayed if the verification process is cancelled due to a new deployment request.</li> <li>• If the verification process resulted in an error (for instance, failed to open SSH connection with the network device, or the network device is unavailable), or if there is any discrepancy between the policies configured on Cisco ISE and the network device, an alarm with a Warning icon is displayed for each of these network devices.</li> </ul> <p>The Verify Deployment option is also available on the following pages:</p> <ul style="list-style-type: none"> <li>• <b>Work Centers &gt; TrustSec &gt; Components &gt; Security Groups</b></li> <li>• <b>Work Centers &gt; TrustSec &gt; Components &gt; Security Group ACLs</b></li> <li>• <b>Work Centers &gt; TrustSec &gt; TrustSec Policy &gt; Egress Policy &gt; Matrix</b></li> <li>• <b>Work Centers &gt; TrustSec &gt; TrustSec Policy &gt; Egress Policy &gt; Source Tree</b></li> <li>• <b>Work Centers &gt; TrustSec &gt; TrustSec Policy &gt; Egress Policy &gt; Destination Tree</b></li> </ul>	

Feature	Description	Business Outcome
	<p>Check the <b>Automatic Verification After Every Deploy</b> check box if you want Cisco ISE to verify the updates on all the network devices after every deployment. When the deployment process is complete, the verification process is started after the time that you specify in the <b>Time after Deploy Process</b> field. The current verification process is cancelled if a new deployment request is received during the waiting period or when the verification is in progress. Click <b>Verify Now</b> to start the verification process immediately.</p> <p>IPv6 addresses can be used in IP SGT static mappings. These mappings can be propagated using SSH or SXP to specific network devices or network device groups.</p> <p>If FQDN and hostnames are used, Cisco ISE looks for the corresponding IP addresses in the PAN and PSN nodes while deploying the mappings and checking the deployment status. You can use the IP SGT Static Mapping of Hostnames option in the General TrustSec Settings window to specify the number of mappings created for the IP addresses returned by the DNS query. You can select one of the following options:</p> <ul style="list-style-type: none"> <li>• Create mappings for all IP addresses returned by DNS query</li> <li>• Create mappings only for the first IPv4 address and the first IPv6 address returned by DNS query</li> </ul>	

Feature	Description	Business Outcome
<b>IPv6 Support Expanded</b>	IPv6 addresses are now supported for RADIUS configurations. The IP Address field in the <b>Administration &gt; Network Resources &gt; Network Devices</b> page and the <b>Host IP</b> field in the <b>Administration &gt; Network Resources &gt; External RADIUS Server</b> page now support both IPv4 and IPv6 addresses for RADIUS configurations.	Additional support for IPv6 addressing: <ul style="list-style-type: none"> <li>• Allows you to migrate your network to IPv6-based networks. You can migrate to IPv6 addressing if you have fragmented networks or have exhausted IPv4 addresses.</li> <li>• Facilitates more efficient routing, packet processing, security, and simplified network configuration.</li> </ul>
<b>Large Virtual Machine for Monitoring Persona</b>	Cisco ISE introduces a large VM for Monitoring nodes. Starting from Release 2.4, the large VM is required for any deployment that handles greater than 500,000 sessions. <b>Note</b> This form factor is available only as a VM in Release 2.4 and above, and requires a large VM license.	Deploying Monitoring persona on a large VM offers the following advantages: <ul style="list-style-type: none"> <li>• Supports greater than 500,000 sessions and is scalable</li> <li>• Improved performance in terms of faster response to live log queries and report completion</li> </ul>

Feature	Description	Business Outcome
<b>Posture Enhancements</b>		Improved security alerts and enforcement: <ul style="list-style-type: none"><li data-bbox="1198 373 1495 590">• Provides admin users with more flexible options for educating end users about posture condition failures including grace-period-specific messaging scenarios.</li><li data-bbox="1198 615 1516 800">• Helps effective management of some posture checks and remediations that require additional privileges and prompts the user for such privileges.</li></ul>

Feature	Description	Business Outcome
	<ul style="list-style-type: none"> <li data-bbox="776 306 1101 495">• Grace Period for Noncompliant Devices— Cisco ISE provides an option to configure grace time for devices that become noncompliant.  Cisco ISE caches the results of posture assessment for a configurable amount of time. If a device is found to be noncompliant, Cisco ISE looks for the previously known good state in its cache and provides grace time for the device, during which the device is granted access to the network. You can configure the grace time period in minutes, hours, or days (up to a maximum of 30 days).  The Posture Assessment by Endpoint report is updated and displays a Grace Compliant status for an endpoint that is currently not compliant, but is under the grace period.</li> <li data-bbox="776 1245 1101 1398">• Posture Rescan—AnyConnect users now have the option to manually restart posture at any point of time.</li> <li data-bbox="776 1423 1101 1633">• AnyConnect Stealth Mode Notifications—Several new failure notifications are added for AnyConnect stealth mode deployment to help users identify issues with their VPN connection.</li> <li data-bbox="776 1659 1101 1848">• Disabling UAC Prompt on Windows—You can choose to disable the User Access Control (UAC) prompts on Windows endpoints from the AnyConnect posture profile.</li> </ul>	

Feature	Description	Business Outcome
	<p><b>Note</b> By default, this value is set to No while configuring the Anyconnect Profile. When you change it to Yes, the UAC prompts are disabled and the Windows users no longer receive these prompts.</p> <p>If you want to enable the UAC prompt again, you should change this setting to No in the Anyconnect Profile. This setting takes effect only when the Windows endpoint is restarted.</p> <ul style="list-style-type: none"> <li>• New URL for Downloading Client Provisioning and Posture Updates—The client provisioning and posture feed URL has changed.</li> </ul> <p>The new URL is:</p> <p><a href="https://s3.amazonaws.com/ise-posture-artifacts/ise/posture-update.xml">https://s3.amazonaws.com/ise-posture-artifacts/ise/posture-update.xml</a></p> <ul style="list-style-type: none"> <li>• File Condition Enhancements—A new operator, <b>within</b>, is introduced under <b>File Condition</b> to check for the changes in a file within a certain period of time.</li> <li>• Certificate Attributes in Client Provisioning and Posture Policies—Certificate attributes are now available in the client provisioning and posture policy pages.</li> </ul>	

Feature	Description	Business Outcome
<p><b>Profiler Enhancements</b></p>	<ul style="list-style-type: none"> <li>• Added 512 new profile policies from vendors, including ADtranz, AudioCode, Barracuda, BlackBerry, Brother, Hewlett Packard, Lexmark, NetApp, Samsung, and Xerox.</li> <li>• Added additional conditions to 189 profile policies to support additional probes. For example, DHCP conditions are added to Xerox devices such that customers who do not want to profile Xerox devices based on SNMP, can profile Xerox devices using DHCP.</li> <li>• Reorganized profiles into families for better identification of new devices. For example, HP-LaserJet-4350 was previously profiled directly under HP-Device. It is now profiled under HP-LaserJet, which in turn is profiled under HP-Device. When Hewlett Packard introduces a new Hewlett Packard LaserJet printer model, Cisco ISE will classify the new model as HP-LaserJet, and not as HP-Device until a new profile policy for that exact LaserJet printer model is added.</li> </ul>	<p>Effective classification of devices:</p> <ul style="list-style-type: none"> <li>• Helps you gain visibility of previously unknown devices, such as Xerox printers or Vista link printers with improved profiler efficacy.</li> </ul>
<p><b>Syslog Enhancements</b></p>	<p>The Syslog architecture has been updated to be more reliable. A new process, ISE RabbitMQ, manages syslog content delivery.</p>	<p>Better consolidation of logs: Prior to these changes in the architecture, sometimes the logging problems caused the Cisco ISE node to hang. Now, a logging problem just causes the logging service to restart.</p>



Feature	Description	Business Outcome
<b>Endpoint API Enhancements for Mobile Device Management (MDM) Attributes</b>	MDM attributes are made available through the endpoints API to enable additional synchronization capability between Cisco ISE and a third-party MDM server.	Helps customers to better integrate third party systems with ISE and provide better user experience for end users using mobile devices that are managed by an MDM server.
<b>Support for Two Shared Secrets Per IP for RADIUS NAD Clients</b>	You can specify two shared secrets (keys) to be used by the network device and Cisco ISE. You can configure the shared secrets in the RADIUS authentication settings section for a NAD in the <b>Administration &gt; Network Resources &gt; Network Devices</b> page in Cisco ISE.	Replace Shared Secrets on network devices: You can now replace shared secrets on network devices independently without Cisco ISE. Changing a RADIUS secret is now simplified and allows you to enter a new shared secret.
<b>Support for Sending Separate SNMP CoA Packets</b>	You can check the Send SNMP COA Separate Request check box in the <b>Administration &gt; Network Resources &gt; Network Device Profiles &gt; Change of Authorization (CoA)</b> page to send the SNMP CoA packets to the NAD as two packets.	Increased compatibility with devices: Provides support for older Cisco and third party NADs that mandate the sending of SNMP CoA packets as two packets (for the shutdown and no shutdown interface configuration commands).

## New Features and Functionalities in 2.x Releases

For more information on all features and functionality in ISE 2.x releases, see the [Cisco ISE Release Notes](#).

## Licensing Changes

### Device Administration Licenses

For Cisco ISE 2.3 and earlier versions, a perpetual Device Administration license is required per deployment, regardless of the number of device administration nodes in the deployment. Starting from Cisco ISE 2.4, the number of Device Administration licenses must be equal to the number of device administration nodes (PSNs configured for device administration service) in a deployment.

If you are currently using a Device Administration license and plan to upgrade to Release 2.4, TACACS+ features will be supported for 50 Device Administration nodes in Release 2.4.

If you install a PAK generated from a new PID, Device Administration license count is displayed as per the quantity available in the PAK file. You can add multiple Device Administration licenses to your deployment based on the number of Device Administration nodes that you require. Evaluation license supports one Device Administration node.

### Licenses for VM nodes

Cisco ISE is also sold as a virtual appliance. For Release 2.4, it is recommended that you install appropriate VM licenses for the VM nodes in your deployment. You must install the VM licenses based on the number of VM nodes and each VM node's resources such as CPU and memory. Otherwise, you will receive warnings and notifications to procure and install the VM license keys in Release 2.4, however, the services are not interrupted.

VM licenses are offered under three categories—Small, Medium, and Large. For instance, if you are using 3595 equivalent VM node with 8 cores and 64 GB RAM, you might need a Medium category VM license, if you want to replicate the same capabilities on the VM. You can install multiple VM licenses based on the number of VMs and their resources as per your deployment requirements.

VM licenses are Infrastructure licenses, therefore, you can install VM licenses irrespective of the endpoint licenses available in your deployment. You can install a VM license even if you have not installed any Evaluation, Base, Plus, or Apex license in your deployment. However, in order to use the features enabled by the Base, Plus, or Apex licenses, you must install the appropriate licenses.

After installing or upgrading to Release 2.4, if there is any mismatch between the number of deployed VM nodes and installed VM licenses, alarms are displayed in the Alarms dashlet for every 14 days. Alarms are also displayed if there are any changes in the VM node's resources or whenever a VM node is registered or deregistered.

VM licenses are perpetual licenses. VM licensing changes are displayed every time you log in to the Cisco ISE GUI, until you check the "Do not show this message again" check box in the notification popup.

If you are planning to upgrade to Release 2.4, contact [ise-vm-license@cisco.com](mailto:ise-vm-license@cisco.com) for sales orders that include VM purchase to procure one medium VM license for each VM previously purchased.

The following table shows how the VM resources are categorized:

VM Category	RAM Range	Number of CPU Cores
Small	0 to 16 GB	up to 6 cores
Medium	greater than 16 GB to 64GB	7 or 8 cores
Large	greater than 64GB	greater than 8 cores

For more information about the licenses, see the "Cisco ISE Licenses" chapter in the [Cisco Identity Services Engine Administrator Guide, Release 2.4](#).

## Upgrade Information

- [Upgrading to Release 2.4](#)
- [Upgrade Packages](#)
- [License Information](#)
- [Upgrade Procedure](#)

### Upgrading to Release 2.4

You can directly upgrade to Release 2.4 from the following Cisco ISE releases:

- 2.0
- 2.0.1
- 2.1
- 2.2
- 2.3

If you are on a version earlier than Cisco ISE, Release 2.0, you must first upgrade to one of the releases listed above and then upgrade to Release 2.4.

You can upgrade to Release 2.4 from the GUI or the CLI.

### Supported Operating System for Virtual Machines

Release 2.4 supports Red Hat Enterprise Linux (RHEL) 7.0.

If you are upgrading Cisco ISE nodes on a VMware VM, after you upgrade, ensure that you change the guest operating system to Red Hat Enterprise Linux (RHEL) 7. To do this, you must power down the VM, change the guest operating system to RHEL 7, and power on the VM after the change.

## Upgrade Packages

Available upgrade packages, and the platforms they support, can be found on the [Cisco ISE Software Download](#) web site.

## License Information

For licensing information, refer to the **Cisco ISE Licenses** chapter in the Cisco Identity Services Administrator Guide, Release 2.4.

## Upgrade Procedure

Pre-requisites

- The Upgrade Readiness Tool (URT) should be run prior to an ISE software upgrade in order to detect and fix any data upgrade issues. Most upgrade failures occur because of data upgrade issues and the URT is designed to validate the data before the actual upgrade. The URT will report and try to fix the issues, wherever possible. The URT is a separate download in the Cisco ISE Download Software Center.
- Cisco recommends that you install all relevant patches before beginning the upgrade.

Do not begin the upgrade until you have read the Cisco Identity Services Engine Upgrade Guide, Release 2.4.

## Configuration Information

Pre-requisites

- Provided the relevant Cisco ISE license fee(s).
- The latest patches are installed.
- Verified that the Cisco ISE software capability is active.

- Reviewed the Release Notes for Cisco Identity Services Engine, Release 2.4.

Refer to the following to get started with configuring ISE:

- [Getting started with ISE](#)
- Videos on the [Cisco ISE Channel on YouTube](#)
- [ISE Design and Integration Guides](#)
- Cisco Identity Services Engine Administrator Guide, Release 2.4

## Monitoring and Troubleshooting Information

For information on monitoring and troubleshooting the system, refer to the Monitoring and Troubleshooting Cisco ISE section in the Cisco Identify Services Administrator Guide, Release 2.4.

## Ordering Information

For detailed Cisco ISE ordering and solution sales information, consult the following:

- [Cisco Identity Services Engine Ordering Guide](#)
- [Cisco Sales Connect](#)
- [ISE Instant Demo](#)
- [ISE Sales Training](#)
- [Other ISE Demos & PoVs](#) (includes YouTube and dCloud demos, dCloud PoVs, and Onsite/Lab PoVs)
- [Selling ISE](#)
  - [Selling ISE EN Generalist](#)
  - [Selling ISE for Security](#)
- [Selling ISE Questions?](#)

## Cisco ISE Integration with Other Cisco Products

### SDA and DNA

You can manage and automate your network - including policy and access - from a single dashboard with [Cisco DNA Center](#). DNA Center is a holistic, end-to-end network management platform for the [Network. Intuitive](#). Integrating ISE allows the DNA Center to define and enact policy to control access across the network, all from a unified interface. Cisco ISE 2.3 is a required integration component for the DNA Center, along with [APIC-EM](#) and the [Network Data Platform](#), which all make up the [Software-Defined Access](#) solution.

Also refer to the [What's New in ISE 2.4?](#) web site and to the [ISE Policy User Interface Walkthrough](#) YouTube video.

## Migration Information

For information on migrating from ACS to ISE, refer to the Cisco Identity Services Engine, Release 2.4 Migration Tool Guide.

## Caveats

This section describes open severity 1 and 2 caveats and select severity 3 caveats. The “Open Caveats” sections list open caveats that apply to the current release and may apply to previous releases. A caveat that is open for a prior release and is still unresolved applies to all future releases until it is resolved. The bug IDs are sorted alphanumerically. The Caveats section includes the bug ID and a short description of the bug. For details on the symptoms, conditions, and workaround for a specific caveat, you must use the Bug Search Tool.

Cisco Bug Search Tool (BST), the online successor to Bug Toolkit, is designed to improve effectiveness in network risk management and device troubleshooting. You can search for bugs based on product, release, and keyword, and aggregates key data such as bug details, product, and version. For more details on the tool, see the help page located at <http://www.cisco.com/web/applicat/cbsshelp/help.html>.

## Known Limitations

### High Memory Utilization

Cisco ISE Version 1.3 and later use RHEL, version 6. You may experience high memory utilization after installing or upgrading to Cisco ISE Version 1.3 or later. However, this does not negatively impact Cisco ISE performance and there are no alarms that are triggered. In case, if the memory usage is consistently above 90% or if there is any performance impact, you can contact Cisco TAC for troubleshooting.

### Diffie-Hellman Minimum Key Length

Connection to LDAPS server might fail if the Diffie-Hellman minimum key length configured on the LDAPS server is less than 1000.

### ECDSA Certificates

Elliptic Curve Digital Signature Algorithm (ECDSA) certificates that are used for EAP authentication are supported only for the endpoints with Android Version 6.x and later.

Cisco ISE supports ECDSA certificates with key lengths of 256 and 384 only. You can select the key length in the **Administration > System > Certificates > Certificate Management > System Certificates** window.



#### Note

Apple iOS is not supported if you use ECDSA as a system certificate. ECDSA certificates are supported only for Android 6.x and Android 7.x.

### Cisco Temporal Agent

We recommend that you run the Cisco Temporal Agent within two minutes of downloading the agent from the Client Provisioning Portal. Otherwise, the `Posture Failed Due to Server Issues` error message is displayed.

## Cisco ISE, Release 2.4, Open Caveats

The following table lists the open caveats in Release 2.4.

**Table 3: Cisco ISE, Release 2.4, Open Caveats**

Caveat	Description
<a href="#">CSCvi36111</a>	NAS IP Address Tooltip is duplicated for ipv6.
<a href="#">CSCvi41578</a>	Portal redirection is not supported in Chrome 65 for Win10.
<a href="#">CSCvi48276</a>	AMP Adapter is connected even after deregistering/deauthorizing from AMP cloud.
<a href="#">CSCvi48298</a>	Policy Hit count value gets nullified while creating new policies in a specific case.
<a href="#">CSCvi50979</a>	Machine change password interval should be configurable from advance tuning parameter (Kerberos SSO).
<a href="#">CSCvh07648</a>	Restore/Upgrade fails when authorization policy has an MDM server condition but the respective server is disabled.
<a href="#">CSCvi69286</a>	Dashboard > Search : Endpoint details screen does not work in Internet Explorer.

## Cisco ISE, Release 2.4, Resolved Caveats



**Note** Cisco ISE 2.4 has parity with Cisco ISE 2.0 Patch 6, 2.0.1 Patch 5, 2.1 Patch 6, 2.2 Patch 6, and 2.3 Patch 2

The following table lists the resolved caveats in Release 2.4.

**Table 4: Cisco ISE, Release 2.4, Resolved Caveats**

Caveat	Description
<a href="#">CSCvd38467</a>	BYOD does not work on Apple iOS 10.3.x.
<a href="#">CSCvf29467</a>	Editing multiple client provisioning policies simulataneously hides the results column.
<a href="#">CSCvf33475</a>	Simultaneuos configuration and operational backup on same browser is very slow.
<a href="#">CSCvi45925</a>	Newly created dashboard not visible in 2.4 342 build.

<a href="#">CSCvf28877</a>	ISE 2.3 TACACS+ : Unable to add commands to Command Set while editing.
<a href="#">CSCvf32298</a>	ISE 2.3 Sponsor Portal: There is a delay of one minute between the update of the username table and the counter.
<a href="#">CSCvf32394</a>	ISE 2.3 Self-registered guest portal of SMS provider-Global default is always re-selected when other attributes are changed.
<a href="#">CSCvf34216</a>	ISE 2.3: Unable to select Work Center Menu - Guest Access Identity Group upon opening detailed report.

## Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see [What's New in Cisco Product Documentation](#).

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the [What's New in Cisco Product Documentation RSS feed](#). RSS feeds are a free service.





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