

IBM® Security Access Manager for Enterprise Single  
Sign-On  
Version 8.2.1

*AccessAgent on Virtual Desktop  
Infrastructure Guide*





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**Note**

Before using this information and the product it supports, read the information in "Notices" on page 19.

**Edition notice**

**Note:** This edition applies to version 8.2.1 of IBM Security Access Manager for Enterprise Single Sign-On, (product number 5724-V67) and to all subsequent releases and modifications until otherwise indicated in new editions.

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## About this publication

*IBM Security Access Manager for Enterprise Single Sign-On AccessAgent on Virtual Desktop Infrastructure Guide* provides information about setting up single sign-on support on a Virtual Desktop Infrastructure, and the different user workflows for accessing the virtual desktop.

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## Access to publications and terminology

This section provides:

- A list of publications in the “IBM Security Access Manager for Enterprise Single Sign-On library.”
- Links to “Online publications” on page x.
- A link to the “IBM Terminology website” on page x.

### **IBM® Security Access Manager for Enterprise Single Sign-On library**

The following documents are available in the IBM Security Access Manager for Enterprise Single Sign-On library:

- *IBM Security Access Manager for Enterprise Single Sign-On Quick Start Guide*, CF3T3ML

*IBM Security Access Manager for Enterprise Single Sign-On Quick Start Guide* provides a quick start on the main installation and configuration tasks to deploy and use IBM Security Access Manager for Enterprise Single Sign-On.

- *IBM Security Access Manager for Enterprise Single Sign-On Planning and Deployment Guide*, SC23995206

*IBM Security Access Manager for Enterprise Single Sign-On Planning and Deployment Guide* contains information about planning your deployment and preparing your environment. It provides an overview of the product features and components, the required installation and configuration, and the different deployment scenarios. It also describes how to achieve high availability and disaster recovery. Read this guide before you do any installation or configuration tasks.

- *IBM Security Access Manager for Enterprise Single Sign-On Installation Guide*, GI11930904

*IBM Security Access Manager for Enterprise Single Sign-On Installation Guide* provides detailed procedures on installation, upgrade, or uninstallation of IBM Security Access Manager for Enterprise Single Sign-On.

This guide helps you to install the different product components and their required middleware. It also includes the initial configurations that are required to complete the product deployment. It covers procedures for using virtual appliance, WebSphere® Application Server Base editions, and Network Deployment.

- *IBM Security Access Manager for Enterprise Single Sign-On Configuration Guide*, GC23969204

*IBM Security Access Manager for Enterprise Single Sign-On Configuration Guide* provides information about configuring the IMS Server settings, the AccessAgent user interface, and its behavior.

- *IBM Security Access Manager for Enterprise Single Sign-On Administrator Guide*, SC23995105

This guide is intended for the Administrators. It covers the different Administrator tasks. *IBM Security Access Manager for Enterprise Single Sign-On Administrator Guide* provides procedures for creating and assigning policy templates, editing policy values, generating logs and reports, and backing up the IMS Server and its database. Use this guide together with the *IBM Security Access Manager for Enterprise Single Sign-On Policies Definition Guide*.

- *IBM Security Access Manager for Enterprise Single Sign-On Policies Definition Guide*, SC23969404

*IBM Security Access Manager for Enterprise Single Sign-On Policies Definition Guide* provides detailed descriptions of the different user, machine, and system policies that Administrators can configure in AccessAdmin. Use this guide along with the *IBM Security Access Manager for Enterprise Single Sign-On Administrator Guide*.

- *IBM Security Access Manager for Enterprise Single Sign-On Help Desk Guide*, SC23995304

This guide is intended for Help desk officers. *IBM Security Access Manager for Enterprise Single Sign-On Help Desk Guide* provides Help desk officers information about managing queries and requests from users usually about their authentication factors. Use this guide together with the *IBM Security Access Manager for Enterprise Single Sign-On Policies Definition Guide*.

- *IBM Security Access Manager for Enterprise Single Sign-On User Guide*, SC23995005

This guide is intended for the users. *IBM Security Access Manager for Enterprise Single Sign-On User Guide* provides instructions for using AccessAgent and Web Workplace.

- *IBM Security Access Manager for Enterprise Single Sign-On Troubleshooting and Support Guide*, GC23969303

*IBM Security Access Manager for Enterprise Single Sign-On Troubleshooting and Support Guide* provides information about issues with regards to installation, upgrade, and product usage. This guide covers the known issues and limitations of the product. It helps you determine the symptoms and workaround for the problem. It also provides information about fixes, knowledge bases, and support.

- *IBM Security Access Manager for Enterprise Single Sign-On Error Message Reference Guide*, GC14762402

*IBM Security Access Manager for Enterprise Single Sign-On Error Message Reference Guide* describes all the informational, warning, and error messages that are associated with IBM Security Access Manager for Enterprise Single Sign-On.

- *IBM Security Access Manager for Enterprise Single Sign-On AccessStudio Guide*, SC23995605

*IBM Security Access Manager for Enterprise Single Sign-On AccessStudio Guide* provides information about creating and using AccessProfiles. This guide provides procedures for creating and editing standard and advanced AccessProfiles for different application types. It also covers information about managing authentication services and application objects, and information about other functions and features of AccessStudio.

- *IBM Security Access Manager for Enterprise Single Sign-On AccessProfile Widgets Guide*, SC27444401

*IBM Security Access Manager for Enterprise Single Sign-On AccessProfile Widgets Guide* provides information about creating and using widgets.

- *IBM Security Access Manager for Enterprise Single Sign-On Tivoli® Endpoint Manager Integration Guide, SC27562000*

*IBM Security Access Manager for Enterprise Single Sign-On Tivoli Endpoint Manager Integration Guide* provides information about how to create and deploy Fixlets for AccessAgent installation, upgrade or patch management. It also includes topics about using and customizing the dashboard to view information about AccessAgent deployment on the endpoints.
- *IBM Security Access Manager for Enterprise Single Sign-On Provisioning Integration Guide, SC23995704*

*IBM Security Access Manager for Enterprise Single Sign-On Provisioning Integration Guide* provides information about the different Java™ and SOAP API for provisioning. It also covers procedures for installing and configuring the Provisioning Agent.
- *IBM Security Access Manager for Enterprise Single Sign-On Web API for Credential Management Guide, SC14764601*

*IBM Security Access Manager for Enterprise Single Sign-On Web API for Credential Management Guide* provides information about installing and configuring the Web API for credential management.
- *IBM Security Access Manager for Enterprise Single Sign-On Serial ID SPI Guide, SC14762601*

*IBM Security Access Manager for Enterprise Single Sign-On Serial ID SPI Guide* describes how to integrate any device with serial numbers and use it as a second authentication factor with AccessAgent.
- *IBM Security Access Manager for Enterprise Single Sign-On Epic Integration Guide, SC27562300*

*IBM Security Access Manager for Enterprise Single Sign-On Epic Integration Guide* provides information about the IBM Security Access Manager for Enterprise Single Sign-On and Epic integration, including supported workflows, configurations, and deployment.
- *IBM Security Access Manager for Enterprise Single Sign-On Context Management Integration Guide, SC23995404*

*IBM Security Access Manager for Enterprise Single Sign-On Context Management Integration Guide* provides information about installing, configuring, and testing the Context Management integrated solution in each client workstation.
- *IBM Security Access Manager for Enterprise Single Sign-On AccessAgent on Mobile Guide, SC27562101*

*IBM Security Access Manager for Enterprise Single Sign-On AccessAgent on Mobile Guide* provides information about the deployment and use of single sign-on on mobile devices.
- *IBM Security Access Manager for Enterprise Single Sign-On AccessAgent on Virtual Desktop Infrastructure Guide, SC27562201*

*IBM Security Access Manager for Enterprise Single Sign-On AccessAgent on Virtual Desktop Infrastructure Guide* provides information about setting up single sign-on support on a Virtual Desktop Infrastructure, and the different user workflows for accessing the virtual desktop.
- *IBM Security Access Manager for Enterprise Single Sign-On AccessAgent on Terminal Server and Citrix Server Guide, SC27566801*

*IBM Security Access Manager for Enterprise Single Sign-On AccessAgent on Terminal Server and Citrix Server Guide* provides information about the required configurations and supported workflows in the Terminal and Citrix Servers.

## Online publications

IBM posts product publications when the product is released and when the publications are updated at the following locations:

### **IBM Security Access Manager for Enterprise Single Sign-On library**

The product documentation site ([http://pic.dhe.ibm.com/infocenter/tivihelp/v2r1/index.jsp?topic=/com.ibm.itamesso.doc\\_8.2.1/kc-homepage.html](http://pic.dhe.ibm.com/infocenter/tivihelp/v2r1/index.jsp?topic=/com.ibm.itamesso.doc_8.2.1/kc-homepage.html)) displays the welcome page and navigation for the library.

### **IBM Security Systems Documentation Central**

IBM Security Systems Documentation Central provides an alphabetical list of all IBM Security Systems product libraries and links to the online documentation for specific versions of each product.

### **IBM Publications Center**

IBM Publications Center offers customized search functions to help you find all the IBM publications you need.

## IBM Terminology website

The IBM Terminology website consolidates terminology for product libraries in one location. You can access the Terminology website at <http://www.ibm.com/software/globalization/terminology>.

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## Accessibility

Accessibility features help users with a physical disability, such as restricted mobility or limited vision, to use software products successfully. With this product, you can use assistive technologies to hear and navigate the interface. You can also use the keyboard instead of the mouse to operate all features of the graphical user interface.

For additional information, see "Accessibility features" in the *IBM Security Access Manager for Enterprise Single Sign-On Planning and Deployment Guide*.

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## Technical training

For technical training information, see the following IBM Education website at <http://www.ibm.com/software/tivoli/education>.

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## Support information

IBM Support provides assistance with code-related problems and routine, short duration installation or usage questions. You can directly access the IBM Software Support site at <http://www.ibm.com/software/support/probsub.html>.

*IBM Security Access Manager for Enterprise Single Sign-On Troubleshooting and Support Guide* provides details about:

- What information to collect before contacting IBM Support.
- The various methods for contacting IBM Support.
- How to use IBM Support Assistant.
- Instructions and problem-determination resources to isolate and fix the problem yourself.

**Note:** The **Community and Support** tab on the product information center can provide additional support resources.

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## **Statement of Good Security Practices**

IT system security involves protecting systems and information through prevention, detection and response to improper access from within and outside your enterprise. Improper access can result in information being altered, destroyed, misappropriated or misused or can result in damage to or misuse of your systems, including for use in attacks on others. No IT system or product should be considered completely secure and no single product, service or security measure can be completely effective in preventing improper use or access. IBM systems, products and services are designed to be part of a comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products or services to be most effective. IBM DOES NOT WARRANT THAT ANY SYSTEMS, PRODUCTS OR SERVICES ARE IMMUNE FROM, OR WILL MAKE YOUR ENTERPRISE IMMUNE FROM, THE MALICIOUS OR ILLEGAL CONDUCT OF ANY PARTY.



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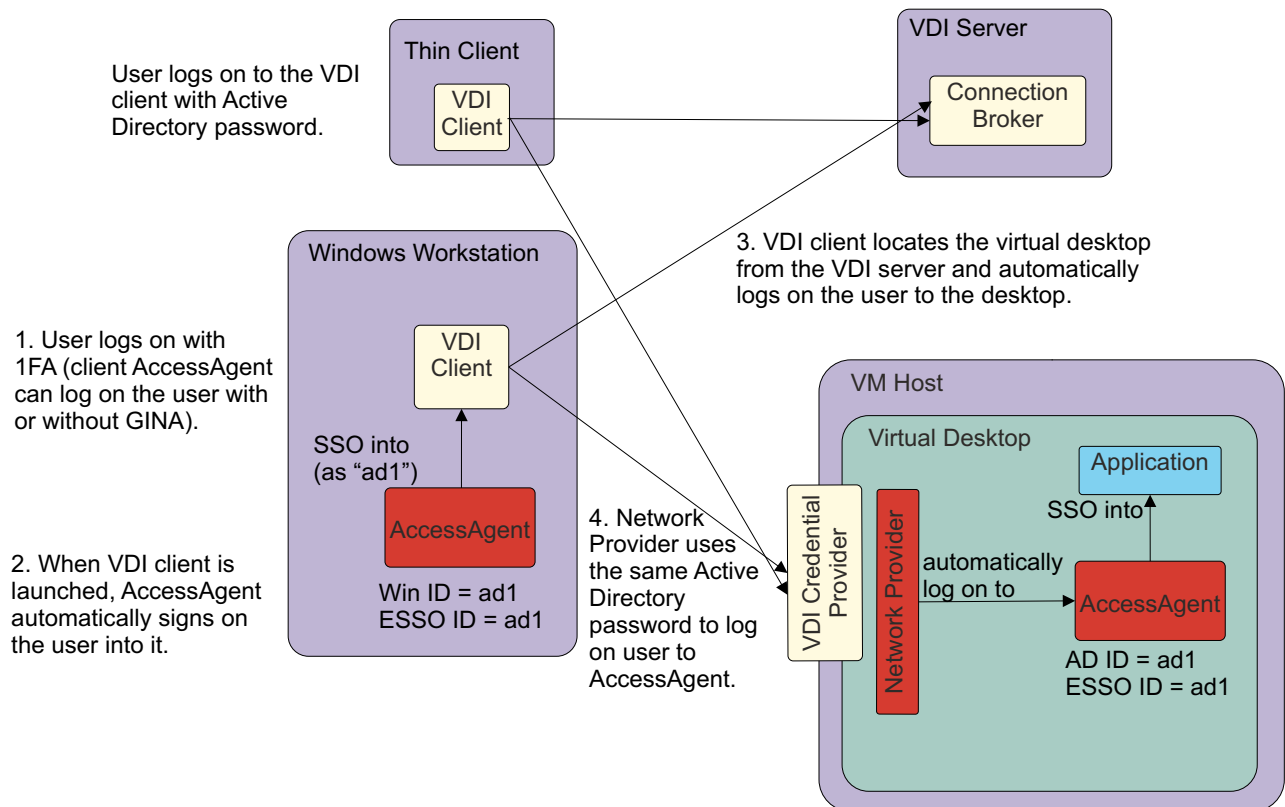
## Chapter 1. Overview

A Virtual Desktop Infrastructure consists of desktop operating systems that are hosted within virtual machines on a centralized server. IBM Security Access Manager for Enterprise Single Sign-On supports single sign-on to virtual desktops and applications on these virtual desktops through AccessAgent.

Users can access the virtual desktops and applications from a desktop PC client or thin client.

### AccessAgent support for Virtual Desktop Infrastructure workflow

The following diagram describes the workflow for Virtual Desktop Infrastructure support.



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## Virtual desktop infrastructure

The Virtual Desktop Infrastructure consists of several components.

The following table lists the different VMware Virtual Desktop Infrastructure and Citrix Virtual Desktop Infrastructure components.

Component	VMware Virtual Desktop Infrastructure	Citrix Virtual Desktop Infrastructure
Client software	<p><b>VMware View Client</b></p> <p>This component is installed on all the computers and thin clients through which you want to access the virtual desktops.</p>	<p><b>Citrix Receiver</b> for Citrix XenDesktop:</p> <p>This component provides users with access to their virtual desktops.</p>
Base image agent	<p><b>VMware View Agent</b></p> <p>This component is installed on all the virtual desktop templates.</p>	<p><b>Virtual Desktop Agent</b> for Citrix XenDesktop version 5.5 and 5.6</p> <p><b>Virtual Delivery Agent</b> for Citrix XenDesktop version 7.0 and 7.1</p> <p>Installed on server or workstation operating systems. The <b>Virtual Desktop Agent</b> enables connections for desktops and applications.</p>
Connection server	<p><b>VMware View Composer</b></p> <p>Use this component to rebalance, recompose, or refresh desktop images regularly.</p>	<p><b>Controller</b> for Citrix XenDesktop version 5.5 and 5.6</p> <p><b>Delivery Controller</b> for Citrix XenDesktop version 7.0 and 7.1</p> <p>This component creates and manages virtual desktops for users.</p>
Administrative console	<p><b>VMware View Administrator</b></p> <p>This component is available on the computer where you installed the VMware View Connection Server.</p>	<p><b>Desktop Studio</b> for Citrix XenDesktop version 5.5 and 5.6</p> <p><b>Studio</b> for Citrix XenDesktop version 7.0 and 7.1</p> <p>The console from which Administrators can install, configure, create, manage virtual desktops, and publish applications.</p>



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## Chapter 2. Configurations and limitations for a Virtual Desktop Infrastructure

Single sign-on on a Virtual Desktop Infrastructure requires configuration. You must know the supported configurations, operating systems, applications, and existing limitations before you proceed with the setup.

### AccessAgent configuration guidelines

The following configuration is supported:

- AccessAgent supports:
  - VMware View versions 4.6, 32-bit and 64-bit and 5.1 64-bit
  - Citrix XenDesktop version 5.5 and 5.6, 32-bit and 64-bit
  - Citrix XenDesktop version 7.0 and 7.1 64-bit
- The virtual desktop base image can be any of the following operating systems:
  - Windows 7 32-bit and 64-bit
  - Windows 8 32-bit and 64-bit (for Citrix XenDesktop version 7.0 and 7.1 only)
- The virtual desktop can connect to the IMS Server.
- The user is registered to IBM Security Access Manager for Enterprise Single Sign-On.
- Active Directory password synchronization is enabled.
- EnNetworkProvider is enabled.
- Personal desktop mode is supported. See *IBM Security Access Manager for Enterprise Single Sign-On Planning and Deployment Guide* for more information.
- Single sign-on and authentication services for applications that are hosted on Citrix Server are supported. See *IBM Security Access Manager for Enterprise Single Sign-On AccessAgent on Terminal Server and Citrix Server Guide*.

To manage your virtual desktops:

- Ensure that you configure the `VDIGroupName` and the `MachineTag` in the registry settings. See Chapter 6, “VDI registry settings,” on page 17.
- Check that the VDI group name that you specified in the registry file is used as the host name for managing the policies in AccessAdmin.
- All computers under the same pool or catalog is shown and managed as one single machine.

To achieve good performance:

- Ensure that you use the correct **Wallet caching option** policy on the machine policy template.
  - For deployments with persistent desktops and a fixed assignment of virtual desktop to user, set the **Wallet caching option** to 2 or always cache.
  - For deployments with nonpersistent desktops, set the **Wallet caching option** to 0 or disallow caching.
  - For deployments with persistent desktops and a random assignment of virtual desktop to user, set the **Wallet caching option** to 0 or disallow caching.
- Ensure that the **Enable cached Wallet security** policy is not enabled.

The **Enable cached Wallet security** policy is used to bind Wallets to physical machines with unique characteristics. This policy is not suitable for the Virtual Desktop Infrastructure with provisioning. This policy cannot be overridden through a registry setting.

- Every *N* weeks, recompose the virtual desktop template after AccessAgent synchronizes with the IMS Server so that the latest system data is cached into the updated base image. Unnecessary data synchronizations are avoided when new virtual desktops are activated. This step is important for non-persistent desktops.
- For deployments with non-persistent desktops:
  - Allocate more server capacity so that AccessAgent can download the user Wallet upon every logon.
  - Run the cached Wallet pruning script to remove expired and duplicated cached Wallets that are more than 30 days old in the IMS Server database.

## Limitations

This supported configuration has the following limitations:

- Second-factor authentication is not supported on the virtual desktop.
- EnGINA and EnCredentialProvider are not supported on the virtual desktop.

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## Chapter 3. Single sign-on setup

The single sign-on setup tasks are different for VMware View and Citrix XenDesktop. Follow the roadmap that corresponds to your Virtual Desktop Infrastructure.

To set up single sign-on support on a Virtual Desktop Infrastructure, Administrators must do the following tasks:

*Table 1. Single sign-on setup*

VMware View	Citrix XenDesktop
<ol style="list-style-type: none"><li>1. Verify the VDI environment.</li><li>2. Create the VDI machine policy template for the base image.</li><li>3. Configure the base image.</li><li>4. Create virtual desktop pools.</li></ol> <p>For complete documentation, see "Creating Desktop Pools" from <a href="http://pubs.vmware.com/view-51/index.jsp?topic=%2Fcom.vmware.ICbase%2FPDF%2Fic_pdf.html">http://pubs.vmware.com/view-51/index.jsp?topic=%2Fcom.vmware.ICbase%2FPDF%2Fic_pdf.html</a>.</p>	<ol style="list-style-type: none"><li>1. Verify the VDI environment.</li><li>2. Create the VDI machine policy template for the base image.</li><li>3. Configure the base image.</li><li>4. Create a machine catalog.</li></ol>
<p>Optional tasks:</p> <ul style="list-style-type: none"><li>• Update the base image after changes on the AccessAgent.</li><li>• Customize AccessProfiles.</li></ul>	<p>Optional tasks:</p> <ul style="list-style-type: none"><li>• Update the base image after changes on the AccessAgent.</li><li>• Customize AccessProfiles.</li></ul>

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### VDI environment verification

An Administrator must verify the VDI environment before the preparation of the base image and the virtual desktops.

#### If you are using VMware View

Prepare the VMware View components. See [http://www.vmware.com/support/pubs/view\\_pubs.html](http://www.vmware.com/support/pubs/view_pubs.html) for the product documentation.

1. Verify that the View Connection Server is running.
2. Verify that the VMware vCenter Server settings and the View Composer Settings are correct.

#### If you are using Citrix XenDesktop

Prepare the Citrix XenDesktop components.

- For Citrix XenDesktop version 5.5 and 5.6, see <http://support.citrix.com/proddocs/topic/xendesktop-rho/cds-install-wrapper-rho.html>
- For Citrix XenDesktop version 7.0 and 7.1, see <http://support.citrix.com/proddocs/topic/xendesktop-7/cds-install-config-intro.html>

Verify that the Citrix XenController is running.

---

## Creating the VDI machine policy template for the base image

Use a machine policy template to apply a set of policies specific for Virtual Desktop Infrastructure support.

### Procedure

1. Log on to AccessAdmin.
2. Select **Machine Policy Templates > New template**.
3. Set the name of the new template to VDI BaseImage MPT.

**Note:** The name is case-sensitive, so **Example** and **example** are two different template names.

4. Specify a criteria to assign a machine policy template. For example: **machine tag**.

**Note:**

- If you use machine tag, assign a name for it. The machine tag name must be the same as the value specified in the VDI\_config.reg file. The default value is vdi\_tag\_example.
  - You can also use other criteria such as IP address, host name, or others. See "Setting machine criteria" in the *IBM Security Access Manager for Enterprise Single Sign-On Administrator Guide*.
5. Enable Network Provider in this machine policy template.
    - a. Navigate to **AccessAgent Policies > Logon/Logoff Policies**.
    - b. Set the value of **Enable Network Provider** to **Yes**.
  6. Click **Add** to save the new settings.
  7. Under **Machine policy template assignments**, select the **VDI BaseImage MPT** template and click the **Up arrow** icon until the **VDI BaseImage MPT** is at the top of the **Machine policy template assignments** list.
  8. Verify that the base image machine name is removed from the IMS Server through AccessAdmin.

---

## Configuring AccessAgent on the base image

An Administrator must configure AccessAgent on the base image to support single sign-on on a Virtual Desktop Infrastructure.

### Before you begin

- Ensure that you created the VDI BaseImage MPT machine policy template. See "Creating the VDI machine policy template for the base image."
- Complete the "VDI environment verification" on page 5.
- Ensure that the VDI Agent is installed on the virtual machine before AccessAgent.
  - For VMware View: VMware View Agent
  - For Citrix XenDesktop: Virtual Desktop Agent
- Ensure that base image can communicate with VMware View or Citrix XenDesktop server. For example: ping <server name>
- Make a copy or know the location of the following files:
  - AccessAgent installer
  - VDI\_config.reg. See Chapter 6, "VDI registry settings," on page 17 for the content of this file.

- Verify that the base image machine name is removed from the IMS Server through AccessAdmin.

## About this task

All virtual desktops are created from a base image. Different desktop pools use different base image.

This task consists of:

- Pre-configuring and installing AccessAgent.
- Configuring and applying the registry settings.

## Procedure

1. Configure the SetupHlp.ini file in the AccessAgent installer.
  - a. Open the <AccessAgent\_installer>\Config\SetupHlp.ini file with any file editor.
  - b. Set **EnginaEnabled** to 0. Default value is 1.
  - c. Set **EncentuateCredentialProviderEnabled** to 0. Default value is 1.
  - d. Set **DisableWin7CAD** to 0. Default value is 1.
  - e. Ensure that **EncentuateNetworkProviderEnabled** is set to 1. Default value is 1.
  - f. Save the file.
2. Copy the VDI\_config.reg file into the <AccessAgent\_installer>\Reg folder.

### Important:

- Make sure that the **MachineTag** name in this registry file is the same as the machine tag criteria specified in the **VDI BaseImage MPT** machine policy template. See step 4 on page 6 from “Creating the VDI machine policy template for the base image” on page 6.
  - Assign a VDI group name in the registry file. The group name can be your VDI pool name. The VDI group name that you specify in the registry file is used as the host name for managing the policies in AccessAdmin.
3. Install AccessAgent.
    - a. Set the IMS Server location.
    - b. Ensure that the machine Wallet is downloaded.

**Note:** The machine Wallet is not downloaded until you restart the computer.

AccessAgent automatically applies the SetupHlp.ini settings and the registry settings to the base image.

4. Verify that the correct **VDI BaseImage MPT** machine policy template is assigned to the base image.
  - a. Log on to AccessAdmin.
  - b. Search the machine and check the assigned template.
5. Restart the computer.
6. Install the latest fix pack (if any).
7. Log on to the computer through Windows logon with a domain account that is registered with the IMS Server.
8. Verify that you are automatically logged on to AccessAgent with the same domain account you used during the Windows logon.

9. Shut down the computer.
10. Take a snapshot of the virtual machine where you pre-configured and installed AccessAgent.
  - a. Assign a name for the virtual machine snapshot and provide a description for it.
  - b. Click **OK**.
  - c. Ensure that the snapshot is complete before you create a virtual desktop pool.

## Results

AccessAgent is installed and with the required policies configured.

You created the base image to be used for the virtual desktops.

## What to do next

- For VMware View: Create a virtual desktop pool.
- For Citrix XenDesktop: Create a machine catalog.

---

## Creating virtual desktop pools

Create pools of desktops to deliver View desktop access to users. You can choose from automated pool or manual pool.

### Before you begin

Complete the following tasks:

- “VDI environment verification” on page 5.
- “Configuring AccessAgent on the base image” on page 6.

### About this task

This task is intended for Administrators.

Administrators must see "Creating Desktop Pools" and "Entitling Users and Groups" in the [http://pubs.vmware.com/view-51/index.jsp?topic=%2Fcom.vmware.ICbase%2FPDF%2Fic\\_pdf.html](http://pubs.vmware.com/view-51/index.jsp?topic=%2Fcom.vmware.ICbase%2FPDF%2Fic_pdf.html) for the detailed steps and explanations. The following instruction is a high-level procedure for VMware Virtual Desktop Infrastructure.

### Procedure

1. Log on to the VMware View Administrator with a domain user account.
2. Select **Inventory > Pools**.
3. Click **Add** to start the Add Pool wizard.
4. Follow the wizard. Select the settings according to your requirement.
5. When you configure the vCenter settings, select the snapshot of the base image that has the installation of AccessAgent.
6. Follow the wizard. Select the settings according to your requirement.
7. Double-click the desktop pool that you created to view the details and for more configurations.
8. Select the users who can access the desktops in the pool you created.
9. Click **OK**.

## Results

The desktop pool is created and users are assigned to the desktop pool.

Users can start accessing the virtual desktops created from the desktop pool.

---

## Creating a machine catalog

In Citrix XenDesktop, create a Catalog of machines and desktop groups to deliver desktops to users.

### Before you begin

Complete the following tasks:

- “VDI environment verification” on page 5.
- “Configuring AccessAgent on the base image” on page 6.

### About this task

This task is intended for Administrators.

For the detailed steps and explanations, see the following links:

- For Citrix XenDesktop version 5.5 and 5.6, see <http://support.citrix.com/proddocs/topic/xendesktop-rho/cds-create-new-scheme-rho.html>.
- For Citrix XenDesktop version 7.0 and 7.1, see <http://support.citrix.com/proddocs/topic/xendesktop-7/cds-create-new-scheme-rho.html>.

The following instructions is a high-level procedure for Citrix XenDesktop.

### Procedure

1. Log on to Citrix Desktop Studio with a domain user account.
2. Click **Machines > Create Catalog**.
3. Follow the wizard. Select the settings according to your requirement.

#### Note:

- If you select the random desktop option from the Desktop Experience page, the user is assigned to a random machine during logon. Any changes that are made during the session, such as AccessAgent logs, are discarded after the session is closed.
  - If you select the static desktop option, the user is always connected to the same machine during logon. The user can customize the desktop and can store files on the machine.
4. On the Master Image page, select the snapshot of the base image that has the installation of AccessAgent.
  5. Follow the wizard. Select the settings according to your requirement.

## Results

You have a Catalog of machines. To deliver desktops to users from your Catalog, allocate the machines to users by creating desktop groups or delivery groups.

- For Citrix XenDesktop version 5.5 and 5.6, see <http://support.citrix.com/proddocs/topic/xendesktop-rho/cds-create-desktops-t-rho.html>.

- For Citrix XenDesktop version 7.0 and 7.1, see <http://support.citrix.com/proddocs/topic/xendesktop-7/cds-create-desktops-t-rho.html>.

Users can start accessing the virtual desktops created from your Catalog.

---

## Updating the base image after changes on the AccessAgent

Update AccessAgent in the base image to apply a fix pack or change a registry policy.

### About this task

This task is intended for Administrators. For more information about updating user desktops, see <http://support.citrix.com/proddocs/topic/xendesktop-rho/cds-update-master-vm-rho.html>.

### Procedure

1. Log on to the virtual machine you used for the base image.
2. Update AccessAgent in the base image. You can update AccessAgent by:
  - Applying the latest AccessAgent fix pack.
  - Updating the registry policies. See Chapter 6, “VDI registry settings,” on page 17 for the configurable policies.
3. Wait for AccessAgent to synchronize with any changes in the system policies and AccessProfiles.
4. Take a snapshot of the virtual machine where you applied the fix pack.
5. If you are using VMware View, do the following tasks:
  - a. Log on to the VMware View Administrator.
  - b. Select the desktop pool.
  - c. Open VMware View Composer.
  - d. Click **Recompose** to apply the new versions of the base image to all users or a subset of the linked clones.
6. If you are using Citrix XenDesktop, do the following tasks:
  - a. Log on to the Citrix Desktop Studio.
  - b. Click **Machines**.
  - c. Select your Catalog.
  - d. Click **Update machine**.

---

## Single sign-on AccessProfiles for VDI portal

Use an AccessProfile to automatically log on the user to the VDI portal.

The AccessProfile can be used if there is an AccessAgent installed in the client computer. The AccessProfile is used with AccessAgent to single sign-on the user to the VDI portal. The AccessProfile uses automatic authentication service. You can customize this profile to use domain authentication service.

*Table 2. AccessProfiles*

AccessProfile for	File name
VMware View	VMwareViewClient.eas
Citrix XenDesktop version 5.5 and 5.6	XenDesktopWebAccess.eas



Table 2. AccessProfiles (continued)

AccessProfile for	File name
Citrix XenDesktop version 7.0 and 7.1	XenDesktop7-Receiver4_1.eas

**Important:** If you are using Citrix XenDesktop, update the XenDesktopWebAccess.eas profile. Edit the site signature to match the actual Citrix Web Access URL. See the *IBM Security Access Manager for Enterprise Single Sign-On AccessStudio Guide* for the procedure.



---

## Chapter 4. User workflows for accessing the virtual desktop

Users can log on to a virtual desktop from a computer with AccessAgent or from a thin client.

The following topics describe the differences between these workflows.

- “Access to the virtual desktop from client computer with AccessAgent installed”
- “Access to the virtual desktop from client computer without AccessAgent” on page 14

---

### Access to the virtual desktop from client computer with AccessAgent installed

If users use a local computer with an installed AccessAgent, they can automatically log on to the virtual machine and on the selected virtual desktop.

#### Access through VMware View

1. Verify that you installed these components on the client computer:
  - VMware View Client
  - AccessAgent
2. Ensure that you have a VMware View AccessProfile.
3. On your local computer, log on to AccessAgent.
4. Open the VMware View Client.
5. Specify the **Connection Server** IP address or host name.
6. Click **Connect**. The Log On window is displayed.
7. Select the virtual desktop that you want to use.
8. Click **Connect**.

#### Access through Citrix XenDesktop

1. Verify that you installed these components on the client computer:
  - Citrix Receiver
  - AccessAgent (optional)
2. Ensure that you have a Citrix XenDesktop AccessProfile.
3. Ensure that you installed the Citrix plug-in. Otherwise, you are prompted to install the plug-in when you log on to Citrix Web Access.
4. Open Citrix Web Access. For example: `https://<DeliveryController_name>\Citrix\StoreWeb`.
5. For Citrix XenDesktop version 5.5 and 5.6, select the virtual desktop or desktop group.
6. For Citrix XenDesktop version 7.0 and 7.1, access the applications that are delivered by virtual desktop by doing the following tasks:
  - a. Verify that AccessAgent is installed on the Citrix Receiver.
  - b. Log on to the Citrix Receiver.

**Note:** If AccessAgent is installed, you are automatically logged on to the Citrix Receiver.

- c. Select the application that is delivered by virtual desktop.

## Results

You are connected to the selected virtual desktop. The application that is delivered by the virtual desktop is displayed on the client computer.

You are automatically logged on to AccessAgent in the virtual desktop. The AccessAgent icon from the virtual machine is added to your local system tray. If AccessAgent is installed on your local computer, two AccessAgent icons are displayed on your local system tray.

You can single sign-on to applications in the virtual desktop.

---

## Access to the virtual desktop from client computer without AccessAgent

Users can access a virtual desktop from a thin client or from a local computer without an installed AccessAgent. In this scenario, users are not automatically logged on to the virtual machine.

### Access through VMware View

1. Verify that you have a VMware View Client installed.
2. Open the VMware View Client.
3. Specify the **Connection Server** IP address or host name.
4. Click **Connect**. The Log On window is displayed.
5. Enter your domain user account password.
6. Click **Login**.
7. Select the virtual desktop to be used.
8. Click **Connect**.

### Access through Citrix XenDesktop

1. Verify that you have a Citrix Online Plug-in or Citrix Receiver installed.
2. Ensure that you installed the Citrix plug-in. Otherwise, you are prompted to install the plug-in when you log on to Citrix Web Access.
3. Open Citrix Web Access. For example: `https://<DeliveryController_name>\Citrix\StoreWeb`.
4. Log on with your user name and password.
5. Select the virtual desktop or desktop group.

## Results

You are connected to the selected virtual desktop.

You are automatically logged on to AccessAgent in the virtual desktop.

You can single sign-on to applications in the virtual desktop.

---

## Chapter 5. Troubleshooting virtual desktop issues

You might encounter issues when you log on to Windows in the virtual desktop. Misconfiguration can cause these issues.

### Misconfiguration issues

**Issue 1: Logon to Windows succeeded. Log on to AccessAgent with EnNetworkProvider failed.**

**Symptom:**

When the user logs on to the virtual desktop, VMware View Client automatically logs on the user to Windows. However, the user is not automatically logged on to AccessAgent.

**Cause:** Any of these factors can cause this issue:

- Active Directory password synchronization is not enabled.
- The **VDI BaseImage MPT** machine policy template is not applied in the base image.
- The required registry settings are not applied in the base image. See Chapter 6, “VDI registry settings,” on page 17.
- The virtual machine cannot connect to the IMS Server and there is no cached Wallet.

**Solution**

- Verify that the Active Directory password synchronization is enabled.
- Verify that EnNetworkProvider is enabled in the **VDI BaseImage MPT** machine policy template and that this template is applied to the base image and virtual desktops. See “Creating the VDI machine policy template for the base image” on page 6.
- Make sure that the **VDI BaseImage MPT** machine policy template is at the **top** of the Machine Policy template assignments list. See step 7 on page 6 from “Creating the VDI machine policy template for the base image” on page 6.
- Verify that automatic logon succeeds in the base image.
- The virtual machine can connect to the IMS Server.

**Issue 2: Logon to Windows failed. ESSO GINA or ESSO Credential Provider is displayed.**

**Symptom:**

When user logs on to the virtual desktop through VMware View Client, the user is not automatically logged on to Windows. The user is prompted with the ESSO GINA or ESSO Credential Provider.

**Cause:**

The required AccessAgent installer settings are not configured before AccessAgent is installed in the base image.

**Solution:**

1. Uninstall AccessAgent from the base image.

2. Reconfigure the base image.

**Important:** Ensure that the **EnginaEnabled** and **EncentuateCredentialProviderEnabled** settings in the AccessAgent installer are set to 0.

3. Log on to the VMware View Administrator.
4. Select the desktop pool.
5. Open VMware View Composer.
6. Click **Recompose** to apply the new versions of the base image to all users or a subset of the linked clones.

### **Issue 3: Logon to Windows failed. Microsoft Credential Provider is displayed.**

#### **Symptom:**

When user logs on to the virtual desktop through VMware View Client, the user is not automatically logged on. The user is prompted with the Microsoft Credential Provider. This issue occurs only in Windows 7.

#### **Cause:**

The **DisableWin7CAD** setting in the AccessAgent installer is not configured correctly.

#### **Solution:**

On the base image:

1. Open the Local Security Policy Console.
  - a. Click the **Start** menu.
  - b. Type Local Security Policy.
  - c. Press **Enter**.
2. Expand the **Local Policies**.
3. Click **Security Options**.
4. Double-click **Interactive logon: Do not require CTRL+ALT+DEL**.
5. Select **Disabled**.
6. Click **OK**.
7. Log on to the VMware View Administrator.
8. Select the desktop pool.
9. Open VMware View Composer.
10. Click **Recompose** to apply the new versions of the base image to all users or a subset of the linked clones.

---

## Chapter 6. VDI registry settings

Ensure that you apply the required registry settings to support Virtual Desktop Infrastructure.

### Required registry settings

See the following settings that are required for Virtual Desktop Infrastructure support:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\ISAM ESSO\DeploymentOptions]
"VDIGroupName"="vdi_pool_example"
"MachineTag"="vdi_tag_example"
```





---

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## Glossary

This glossary includes terms and definitions for IBM Security Access Manager for Enterprise Single Sign-On.

The following cross-references are used in this glossary:

- See refers you from a term to a preferred synonym, or from an acronym or abbreviation to the defined full form.
- See also refers you to a related or contrasting term.

To view glossaries for other IBM products, go to [www.ibm.com/software/globalization/terminology](http://www.ibm.com/software/globalization/terminology) (opens in new window).

---

### A

#### **account data**

The logon information required to verify an authentication service. It can be the user name, password, and the authentication service which the logon information is stored.

#### **account data bag**

A data structure that holds user credentials in memory while single sign-on is performed on an application.

#### **account data item**

The user credentials required for logon.

#### **account data item template**

A template that defines the properties of an account data item.

#### **account data template**

A template that defines the format of account data to be stored for credentials captured using a specific AccessProfile.

**action** In profiling, an act that can be performed in response to a trigger. For example, automatic filling of user name and password details as soon as a sign-on window displays.

#### **Active Directory (AD)**

A hierarchical directory service that enables centralized, secure management

of an entire network, which is a central component of the Microsoft Windows platform.

#### **Active Directory credential**

The Active Directory user name and password.

#### **Active Directory password synchronization**

An IBM Security Access Manager for Enterprise Single Sign-On feature that synchronizes the ISAM ESSO password with the Active Directory password.

#### **active radio frequency identification (active RFID)**

A second authentication factor and presence detector. See also radio frequency identification.

#### **active RFID**

See active radio frequency identification.

**AD** See Active Directory.

#### **administrator**

A person responsible for administrative tasks such as access authorization and content management. Administrators can also grant levels of authority to users.

**API** See application programming interface.

#### **application**

A system that provides the user interface for reading or entering the authentication credentials.

#### **application policy**

A collection of policies and attributes governing access to applications.

#### **application programming interface (API)**

An interface that allows an application program that is written in a high-level language to use specific data or functions of the operating system or another program.

**audit** A process that logs the user, Administrator, and Helpdesk activities.

#### **authentication factor**

The device, biometrics, or secrets required as a credentials for validating digital identities. Examples of authentication

factors are passwords, smart card, RFID, biometrics, and one-time password tokens.

**authentication service**

A service that verifies the validity of an account; applications authenticate against their own user store or against a corporate directory.

**authorization code**

An alphanumeric code generated for administrative functions, such as password resets or two-factor authentication bypass.

**auto-capture**

A process that allows a system to collect and reuse user credentials for different applications. These credentials are captured when the user enters information for the first time, and then stored and secured for future use.

**automatic sign-on**

A feature where users can log on to the sign-on automation system and the system logs on the user to all other applications.

---

**B**

**base distinguished name**

A name that indicates the starting point for searches in the directory server.

**base image**

A template for a virtual desktop.

**bidirectional language**

A language that uses a script, such as Arabic and Hebrew, whose general flow of text proceeds horizontally from right to left, but numbers, English, and other left-to-right language text are written from left to right.

**bind distinguished name**

A name that specifies the credentials for the application server to use when connecting to a directory service. The distinguished name uniquely identifies an entry in a directory.

**biometrics**

The identification of a user based on a physical characteristic of the user, such as a fingerprint, iris, face, voice, or handwriting.

---

**C**

**CA** See certificate authority.

**CAPI** See cryptographic application programming interface.

**Card Serial Number (CSN)**

A unique data item that identifies a hybrid smart card. It has no relation to the certificates installed in the smart card

**CCOW**

See Clinical Context Object Workgroup.

**cell**

A group of managed processes that are federated to the same deployment manager and can include high-availability core groups.

**certificate**

In computer security, a digital document that binds a public key to the identity of the certificate owner, thereby enabling the certificate owner to be authenticated. A certificate is issued by a certificate authority and is digitally signed by that authority. See also certificate authority.

**certificate authority (CA)**

A trusted third-party organization or company that issues the digital certificates. The certificate authority typically verifies the identity of the individuals who are granted the unique certificate. See also certificate.

**CLI** See command-line interface.

**Clinical Context Object Workgroup (CCOW)**

A vendor independent standard, for the interchange of information between clinical applications in the healthcare industry.

**cluster**

A group of application servers that collaborate for the purposes of workload balancing and failover.

**command-line interface (CLI)**

A computer interface in which the input and output are text based.

**credential**

Information acquired during authentication that describes a user, group associations, or other security-related identity attributes, and that is used to perform services such as authorization, auditing, or delegation. For example, a



user ID and password are credentials that allow access to network and system resources.

**cryptographic application programming interface (CAPI)**

An application programming interface that provides services to enable developers to secure applications using cryptography. It is a set of dynamically-linked libraries that provides an abstraction layer which isolates programmers from the code used to encrypt the data.

**cryptographic service provider (CSP)**

A feature of the i5/OS™ operating system that provides APIs. The CCA Cryptographic Service Provider enables a user to run functions on the 4758 Coprocessor.

**CSN** See Card Serial Number.

**CSP** See cryptographic service provider.

---

**D**

**dashboard**

An interface that integrates data from a variety of sources and provides a unified display of relevant and in-context information.

**database server**

A software program that uses a database manager to provide database services to other software programs or computers.

**data source**

The means by which an application accesses data from a database.

**deployment manager**

A server that manages and configures operations for a logical group or cell of other servers.

**deployment manager profile**

A WebSphere Application Server runtime environment that manages operations for a logical group, or cell, of other servers.

**deprovision**

To remove a service or component. For example, to deprovision an account means to delete an account from a resource. See also provision.

**desktop pool**

A collection of virtual desktops of similar

configuration intended to be used by a designated group of users.

**directory**

A file that contains the names and controlling information for objects or other directories.

**directory service**

A directory of names, profile information, and machine addresses of every user and resource on the network. It manages user accounts and network permissions. When a user name is sent, it returns the attributes of that individual, which might include a telephone number, as well as an email address. Directory services use highly specialized databases that are typically hierarchical in design and provide fast lookups.

**disaster recovery**

The process of restoring a database, system, policies after a partial or complete site failure that was caused by a catastrophic event such as an earthquake or fire. Typically, disaster recovery requires a full backup at another location.

**disaster recovery site**

A secondary location for the production environment in case of a disaster.

**distinguished name (DN)**

The name that uniquely identifies an entry in a directory. A distinguished name is made up of attribute:value pairs, separated by commas. For example, CN=person name and C=country or region.

**DLL** See dynamic link library.

**DN** See distinguished name.

**DNS** See domain name server.

**domain name server (DNS)**

A server program that supplies name-to-address conversion by mapping domain names to IP addresses.

**dynamic link library (DLL)**

A file containing executable code and data bound to a program at load time or run time, rather than during linking. The code and data in a DLL can be shared by several applications simultaneously.

---

## E

### enterprise directory

A directory of user accounts that define IBM Security Access Manager for Enterprise Single Sign-On users. It validates user credentials during sign-up and logon, if the password is synchronized with the enterprise directory password. An example of an enterprise directory is Active Directory.

### enterprise single sign-on (ESSO)

A mechanism that allows users to log on to all applications deployed in the enterprise by entering a user ID and other credentials, such as a password.

**ESSO** See enterprise single sign-on.

### event code

A code that represents a specific event that is tracked and logged into the audit log tables.

---

## F

### failover

An automatic operation that switches to a redundant or standby system or node in the event of a software, hardware, or network interruption.

### fast user switching

A feature that allows users to switch between user accounts on a single workstation without quitting and logging out of applications.

### Federal Information Processing Standard (FIPS)

A standard produced by the National Institute of Standards and Technology when national and international standards are nonexistent or inadequate to satisfy the U.S. government requirements.

**FIPS** See Federal Information Processing Standard.

### fix pack

A cumulative collection of fixes that is released between scheduled refresh packs, manufacturing refreshes, or releases. A fix pack updates the system to a specific maintenance level.

### FQDN

See fully qualified domain name.

### fully qualified domain name (FQDN)

In Internet communications, the name of a host system that includes all of the subnames of the domain name. An example of a fully qualified domain name is rchland.vnet.ibm.com. See also host name.

---

## G

**GINA** See graphical identification and authentication.

**GPO** See group policy object.

### graphical identification and authentication (GINA)

A dynamic link library that provides a user interface that is tightly integrated with authentication factors and provides password resets and second factor bypass options.

### group policy object (GPO)

A collection of group policy settings. Group policy objects are the documents created by the group policy snap-in. Group policy objects are stored at the domain level, and they affect users and computers contained in sites, domains, and organizational units.

---

## H

**HA** See high availability.

### high availability (HA)

The ability of IT services to withstand all outages and continue providing processing capability according to some predefined service level. Covered outages include both planned events, such as maintenance and backups, and unplanned events, such as software failures, hardware failures, power failures, and disasters.

### host name

In Internet communication, the name given to a computer. The host name might be a fully qualified domain name such as mycomputer.city.company.com, or it might be a specific subname such as mycomputer. See also fully qualified domain name, IP address.

### hot key

A key sequence used to shift operations



between different applications or between different functions of an application.

**hybrid smart card**

An ISO-7816 compliant smart card which contains a public key cryptography chip and an RFID chip. The cryptographic chip is accessible through contact interface. The RFID chip is accessible through contactless (RF) interface.

---

**I**

**interactive graphical mode**

A series of panels that prompts for information to complete the installation.

**IP address**

A unique address for a device or logical unit on a network that uses the Internet Protocol standard. See also host name.

---

**J**

**Java Management Extensions (JMX)**

A means of doing management of and through Java technology. JMX is a universal, open extension of the Java programming language for management that can be deployed across all industries, wherever management is needed.

**Java runtime environment (JRE)**

A subset of a Java developer kit that contains the core executable programs and files that constitute the standard Java platform. The JRE includes the Java virtual machine (JVM), core classes, and supporting files.

**Java virtual machine (JVM)**

A software implementation of a processor that runs compiled Java code (applets and applications).

**JMX** See Java Management Extensions.

**JRE** See Java runtime environment.

**JVM** See Java virtual machine.

---

**K**

**keystore**

In security, a file or a hardware cryptographic card where identities and private keys are stored, for authentication

and encryption purposes. Some keystores also contain trusted or public keys. See also truststore.

---

**L**

**LDAP** See Lightweight Directory Access Protocol.

**Lightweight Directory Access Protocol (LDAP)**

An open protocol that uses TCP/IP to provide access to directories that support an X.500 model. An LDAP can be used to locate people, organizations, and other resources in an Internet or intranet directory.

**lightweight mode**

A Server AccessAgent mode. Running in lightweight mode reduces the memory footprint of AccessAgent on a Terminal or Citrix Server and improves the single sign-on startup duration.

**linked clone**

A copy of a virtual machine that shares virtual disks with the parent virtual machine in an ongoing manner.

**load balancing**

The monitoring of application servers and management of the workload on servers. If one server exceeds its workload, requests are forwarded to another server with more capacity.

**lookup user**

A user who is authenticated in the Enterprise Directory and searches for other users. IBM Security Access Manager for Enterprise Single Sign-On uses the lookup user to retrieve user attributes from the Active Directory or LDAP enterprise repository.

---

**M**

**managed node**

A node that is federated to a deployment manager and contains a node agent and can contain managed servers. See also node.

**mobile authentication**

An authentication factor which allows mobile users to sign-on securely to corporate resources from anywhere on the network.

---

## N

### **network deployment**

The deployment of an IMS™ Server on a WebSphere Application Server cluster.

**node** A logical group of managed servers. See also managed node.

### **node agent**

An administrative agent that manages all application servers on a node and represents the node in the management cell.

---

## O

### **one-time password (OTP)**

A one-use password that is generated for an authentication event, and is sometimes communicated between the client and the server through a secure channel.

**OTP** See one-time password.

### **OTP token**

A small, highly portable hardware device that the owner carries to authorize access to digital systems and physical assets, or both.

---

## P

### **password aging**

A security feature by which the superuser can specify how often users must change their passwords.

### **password complexity policy**

A policy that specifies the minimum and maximum length of the password, the minimum number of numeric and alphabetic characters, and whether to allow mixed uppercase and lowercase characters.

### **personal identification number (PIN)**

In Cryptographic Support, a unique number assigned by an organization to an individual and used as proof of identity. PINs are commonly assigned by financial institutions to their customers.

**PIN** See personal identification number.

### **pinnable state**

A state from an AccessProfile widget that

can be combined to the main AccessProfile to reuse the AccessProfile widget function.

**PKCS** See Public Key Cryptography Standards.

### **policy template**

A predefined policy form that helps users define a policy by providing the fixed policy elements that cannot be changed and the variable policy elements that can be changed.

**portal** A single, secure point of access to diverse information, applications, and people that can be customized and personalized.

### **presence detector**

A device that, when fixed to a computer, detects when a person moves away from it. This device eliminates manually locking the computer upon leaving it for a short time.

### **primary authentication factor**

The IBM Security Access Manager for Enterprise Single Sign-On password or directory server credentials.

### **private key**

In computer security, the secret half of a cryptographic key pair that is used with a public key algorithm. The private key is known only to its owner. Private keys are typically used to digitally sign data and to decrypt data that has been encrypted with the corresponding public key.

### **provision**

To provide, deploy, and track a service, component, application, or resource. See also deprovision.

### **provisioning API**

An interface that allows IBM Security Access Manager for Enterprise Single Sign-On to integrate with user provisioning systems.

### **provisioning bridge**

An automatic IMS Server credential distribution process with third party provisioning systems that uses API libraries with a SOAP connection.

### **provisioning system**

A system that provides identity lifecycle management for application users in enterprises and manages their credentials.

**Public Key Cryptography Standards (PKCS)**

A set of industry-standard protocols used for secure information exchange on the Internet. Domino® Certificate Authority and Server Certificate Administration applications can accept certificates in PKCS format.

**published application**

An application installed on Citrix XenApp server that can be accessed from Citrix ICA Clients.

**published desktop**

A Citrix XenApp feature where users have remote access to a full Windows desktop from any device, anywhere, at any time.

---

**R****radio frequency identification (RFID)**

An automatic identification and data capture technology that identifies unique items and transmits data using radio waves. See also active radio frequency identification.

**RADIUS**

See remote authentication dial-in user service.

**random password**

An arbitrarily generated password used to increase authentication security between clients and servers.

**RDP** See remote desktop protocol.

**registry**

A repository that contains access and configuration information for users, systems, and software.

**registry hive**

In Windows systems, the structure of the data stored in the registry.

**remote authentication dial-in user service (RADIUS)**

An authentication and accounting system that uses access servers to provide centralized management of access to large networks.

**remote desktop protocol (RDP)**

A protocol that facilitates remote display and input over network connections for Windows-based server applications. RDP

supports different network topologies and multiple connections.

**replication**

The process of maintaining a defined set of data in more than one location. Replication involves copying designated changes for one location (a source) to another (a target) and synchronizing the data in both locations.

**revoke**

To remove a privilege or an authority from an authorization identifier.

**RFID** See radio frequency identification.

**root CA**

See root certificate authority.

**root certificate authority (root CA)**

The certificate authority at the top of the hierarchy of authorities by which the identity of a certificate holder can be verified.

---

**S**

**scope** A reference to the applicability of a policy, at the system, user, or machine level.

**secret question**

A question whose answer is known only to the user. A secret question is used as a security feature to verify the identity of a user.

**secure remote access**

The solution that provides web browser-based single sign-on to all applications from outside the firewall.

**Secure Sockets Layer (SSL)**

A security protocol that provides communication privacy. With SSL, client/server applications can communicate in a way that is designed to prevent eavesdropping, tampering, and message forgery.

**Secure Sockets Layer virtual private network (SSL VPN)**

A form of VPN that can be used with a standard web browser.

**Security Token Service (STS)**

A web service that is used for issuing and exchanging security tokens.

**security trust service chain**

A group of module instances that are

configured for use together. Each module instance in the chain is called in turn to perform a specific function as part of the overall processing of a request.

**serial ID service provider interface**

A programmatic interface intended for integrating AccessAgent with third-party Serial ID devices used for two-factor authentication.

**serial number**

A unique number embedded in the IBM Security Access Manager for Enterprise Single Sign-On keys, which is unique to each key and cannot be changed.

**server locator**

A locator that groups a related set of web applications that require authentication by the same authentication service. In AccessStudio, server locators identify the authentication service with which an application screen is associated.

**service provider interface (SPI)**

An interface through which vendors can integrate any device with serial numbers with IBM Security Access Manager for Enterprise Single Sign-On and use the device as a second factor in AccessAgent.

**signature**

In profiling, unique identification information for any application, window, or field.

**sign-on automation**

A technology that works with application user interfaces to automate the sign-on process for users.

**sign up**

To request a resource.

**silent mode**

A method for installing or uninstalling a product component from the command line with no GUI display. When using silent mode, you specify the data required by the installation or uninstallation program directly on the command line or in a file (called an option file or response file).

**Simple Mail Transfer Protocol (SMTP)**

An Internet application protocol for transferring mail among users of the Internet.

**single sign-on (SSO)**

An authentication process in which a user can access more than one system or application by entering a single user ID and password.

**smart card**

An intelligent token that is embedded with an integrated circuit chip that provides memory capacity and computational capabilities.

**smart card middleware**

Software that acts as an interface between smart card applications and the smart card hardware. Typically the software consists of libraries that implement PKCS#11 and CAPI interfaces to smart cards.

**SMTP** See Simple Mail Transfer Protocol.

**snapshot**

A captured state, data, and hardware configuration of a running virtual machine.

**SOAP** A lightweight, XML-based protocol for exchanging information in a decentralized, distributed environment. SOAP can be used to query and return information and invoke services across the Internet. See also web service.

**SPI** See service provider interface.

**SSL** See Secure Sockets Layer.

**SSL VPN**

See Secure Sockets Layer virtual private network.

**SSO** See single sign-on.

**stand-alone deployment**

A deployment where the IMS Server is deployed on an independent WebSphere Application Server profile.

**stand-alone server**

A fully operational server that is managed independently of all other servers, using its own administrative console.

**strong authentication**

A solution that uses multifactor authentication devices to prevent unauthorized access to confidential corporate information and IT networks, both inside and outside the corporate perimeter.

**strong digital identity**

An online persona that is difficult to impersonate, possibly secured by private keys on a smart card.

**STS** See Security Token Service.

**system modal message**

A system dialog box that is typically used to display important messages. When a system modal message is displayed, nothing else can be selected on the screen until the message is closed.

---

**T****terminal emulator**

A program that allows a device such as a microcomputer or personal computer to enter and receive data from a computer system as if it were a particular type of attached terminal.

**terminal type (tty)**

A generic device driver for a text display. A tty typically performs input and output on a character-by-character basis.

**thin client**

A client that has little or no installed software but has access to software that is managed and delivered by network servers that are attached to it. A thin client is an alternative to a full-function client such as a workstation.

**transparent screen lock**

An feature that, when enabled, permits users to lock their desktop screens but still see the contents of their desktop.

**trigger**

In profiling, an event that causes transitions between states in a states engine, such as, the loading of a web page or the appearance of a window on the desktop.

**trust service chain**

A chain of modules that operate in different modes such as validate, map, and issue truststore.

**truststore**

In security, a storage object, either a file or a hardware cryptographic card, where public keys are stored in the form of trusted certificates, for authentication purposes in web transactions. In some applications, these trusted certificates are

moved into the application keystore to be stored with the private keys. See also keystore.

**tty** See terminal type.

**two-factor authentication**

The use of two factors to authenticate a user. For example, the use of password and an RFID card to log on to AccessAgent.

---

**U****uniform resource identifier**

A compact string of characters for identifying an abstract or physical resource.

**user credential**

Information acquired during authentication that describes a user, group associations, or other security-related identity attributes, and that is used to perform services such as authorization, auditing, or delegation. For example, a user ID and password are credentials that allow access to network and system resources.

**user deprovisioning**

The process of removing a user account from IBM Security Access Manager for Enterprise Single Sign-On.

**user provisioning**

The process of signing up a user to use IBM Security Access Manager for Enterprise Single Sign-On.

---

**V**

**VB** See Visual Basic.

**virtual appliance**

A virtual machine image with a specific application purpose that is deployed to virtualization platforms.

**virtual channel connector**

A connector that is used in a terminal services environment. The virtual channel connector establishes a virtual communication channel to manage the remote sessions between the Client AccessAgent component and the Server AccessAgent.

**virtual desktop**

A user interface in a virtualized environment, stored on a remote server.

**virtual desktop infrastructure**

An infrastructure that consists of desktop operating systems hosted within virtual machines on a centralized server.

**Virtual Member Manager (VMM)**

A WebSphere Application Server component that provides applications with a secure facility to access basic organizational entity data such as people, logon accounts, and security roles.

**virtual private network (VPN)**

An extension of a company intranet over the existing framework of either a public or private network. A VPN ensures that the data that is sent between the two endpoints of its connection remains secure.

**Visual Basic (VB)**

An event-driven programming language and integrated development environment (IDE) from Microsoft.

**VMM** See Virtual Member Manager.

**VPN** See virtual private network.

**web service**

A self-contained, self-describing modular application that can be published, discovered, and invoked over a network using standard network protocols. Typically, XML is used to tag the data, SOAP is used to transfer the data, WSDL is used for describing the services available, and UDDI is used for listing what services are available. See also SOAP.

**WS-Trust**

A web services security specification that defines a framework for trust models to establish trust between web services.

---

**W**

**wallet** A secured data store of access credentials of a user and related information, which includes user IDs, passwords, certificates, encryption keys.

**wallet caching**

The process during single sign-on for an application whereby AccessAgent retrieves the logon credentials from the user credential wallet. The user credential wallet is downloaded on the user machine and stored securely on the IMS Server.

**wallet manager**

The IBM Security Access Manager for Enterprise Single Sign-On GUI component that lets users manage application credentials in the personal identity wallet.

**web server**

A software program that is capable of servicing Hypertext Transfer Protocol (HTTP) requests.



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