

# Silverlight Deployment Guide v2

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### Abstract

This guide helps you to plan and carry out a corporate deployment of Silverlight. The guide describes the system requirements and deployment methods, as well as the techniques to maintain and support Silverlight after deployment.



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# Silverlight Deployment Guide

The Silverlight™ Deployment Guide documents the options and processes involved in deploying Silverlight to user's computers that are running Windows® 2000 with Service Pack 4, Microsoft® Windows XP with Service Pack 2 (SP2), Windows Server® 2003, Windows Server 2008, Windows Vista® or later Microsoft Windows operating systems in a network environment. Silverlight also installs on Apple Mac OS X (install files created by Microsoft) and on Linux (via [Novell’s Moonlight](http://www.novell.com/products/desktop/moonlight.html) product), but these deployments are outside of the scope of this document.

To learn more about Silverlight, go to <http://www.microsoft.com/silverlight>.

This guide should be used during the planning phase of your Silverlight deployment project. The information provides key points of guidance for a deployment project. It is not intended as a step-by-step guide, and not all of the steps described in this guide are necessary for deploying Silverlight in every environment.

## Silverlight value proposition

Silverlight delivers the next generation of Microsoft .NET–based media experiences and rich interactive applications for internet browsers.  Silverlight compliments other Microsoft products such as ASP.NET, Windows Server and Windows Media® to deliver unprecedented cross browser, cross platform rich interactive web application experiences. Silverlight architecture is consistent with Web 2.0 paradigms and it enables enterprise web developers to extend their skills and deliver better experiences.

The following are benefits of deploying Silverlight in an enterprise:

* Compatibility with Silverlight-enabled websites
* Ability to offer and consume media as part of the web experience on Windows, Macintosh, and Linux operating systems
* Simple integration with existing Web technologies and assets such as ASP.NET and SharePoint® services
* Better user experience for web application without deployment considerations

For more information on why you should use Silverlight, please visit: <http://www.microsoft.com/silverlight/overview>.

## How to deploy Silverlight

The process of deploying Silverlight to your organization's users' computers is organized in this deployment guide as follows:

| **Step** | **Page** |
| --- | --- |
| Plan the deployment | [Part 1: Preparing for Deployment](#_Part_1:_Preparing) [Planning the Silverlight Deployment](#_Planning_the_Silverlight) details how to plan your deployment processes and strategies.  |
| Test the deployment strategy |  [Setting Up and Administering a Pilot Program](#_Setting_Up_and) describes the testing process for Silverlight deployment. |
| Deploy Silverlight | [Part 2: Deploying Silverlight](#_Part_2:_Deploying)* [Using WSUS to Install Silverlight](#_Using_WSUS_to_1) explains how to deploy Silverlight using Windows Software Update Services (WSUS).
* [Using SCCM to Deploy Silverlight](#_Using_WSUS_to_1) explores methods for using Microsoft System Center Configuration Manager (SCCM) to deploy Silverlight.
* [Using Group Policy to Install Silverlight](#_Using_Group_Policy_1) details the procedures to deploy Silverlight using Group Policy.
* [Manual Install options for Silverlight](#DSDOC_6de5565b_c9fc_41ee_b1c9_35a1bd9872) provides where to obtain and the switches for the installation executable file and how to advertise Silverlight for install.
 |
| Maintain Silverlight in your environment | [Part 3: Maintaining and Supporting Silverlight](#_Part_3:_Maintaining) [Managing Settings Through Group Policy](#DSDOC_e35b8b47_4867_46d5_a46f_0a0b05e1ca) describes how to manage Silverlight in the Active Directory® services environment by using Group Policy. [Keeping Silverlight Updated](#_Registry-based_Silverlight_policy) reviews detecting Silverlight versions, Microsoft Update methods, Silverlight automatic update, and manual methods to deploy updated versions of Silverlight. [Troubleshooting](#DSDOC_BKMK_AutoUpdates457de51b_2af5_48a1) helps you troubleshoot Silverlight installation and other issues you may encounter in your environment. |

# Part 1: Preparing for Deployment

Part 1 of the Silverlight Deployment Guide describes how to deploy Silverlight to your organization. It includes information about planning for the deployment and performing a successful pilot program.

[Planning the Silverlight Deployment](#DSDOC_01d179b2_1040_42a1_82e6_68de558f41) details how to plan your deployment processes and strategies.

[Setting Up and Administering a Pilot Program](#DSDOC_83baf19a_d79b_46fd_b0a8_b8b4616ca2) discusses how to prepare your users for Silverlight through a training program and describes the testing process for Silverlight deployment.

# Planning the Silverlight Deployment

To install Silverlight successfully, you should plan your deployment processes and strategies. This section of the deployment guide contains information about how to evaluate and plan your deployment, including:

|  |  |
| --- | --- |
| 1. Evaluating users' computers for compatibility with Silverlight | [System Requirements for Silverlight](#DSDOC_BKMK_101d179b2_1040_42a1_82e6_68de) |
| 2. Identifying your deployment method | [Select Your Deployment Method](#_Select_your_deployment) |

## System requirements for Silverlight

The table below lists the minimum requirements your computer needs to run Silverlight. Silverlight will install on the 32-bit or 64-bit editions of any version of either Windows 2000 with Service Pack 4 operating systems, Microsoft Windows Server 2003, Microsoft Windows XP with Service Pack 2, Windows Server 2008, and Windows Vista or newer Windows operating systems. Silverlight also installs on Apple Mac OS X (install files created by Microsoft) and on Linux (via [Novell’s moonlight](http://www.novell.com/products/desktop/moonlight.html) product – see [supported platforms](http://mono-project.com/MoonlightSupportedPlatforms)), but these deployments are outside of the scope of this document. Silverlight will not install if the operating system is not supported. Silverlight may install if the minimum requirements (listed below) are not met although the Silverlight functionality will be significantly reduced or possibly non-operational. Silverlight will install in the 32-bit Internet Explorer® process on x64 systems. Most browser plug-ins (including Silverlight, Flash, Java and almost all ActiveX controls) only work in 32-bit browsers currently.

**Compatible Operating Systems and Browsers**

|  |  |  |  |
| --- | --- | --- | --- |
| Operating System | Internet Explorer 7 or 8 | Internet Explorer 6 | Firefox 1.5, 2, 3 |
| Windows Vista, Server 2008, Windows 7 | Yes | - | Yes |
| Windows XP SP2 | Yes | Yes | Yes |
| Windows 2000 SP4+ [all post-SP4 hotfixes, updates, and security updates](http://support.microsoft.com/kb/260910) | - | Yes**\*** | - |
| Windows Server 2003 (excluding IA-64) | Yes | Yes | Yes |

**\*** Only Silverlight 2 or greater

**Minimal Requirements**

|  |  |
| --- | --- |
| Components | Requirement |
| Personal Computer running Windows | X86 or x64 500-megahertz (MHz) or higher processor with support for SSE instruction set and 128-megabytes (MB) of RAM |

For the most up to date compatibility and system requirements as well as system requirements for Macintosh, go to the [Silverlight installation page](http://www.microsoft.com/silverlight/resources/install.aspx) and click on the system requirements link.

## Select your deployment method

 The method you select for your organization's deployment will depend on your existing infrastructure and the requirements you have for software deployment and upgrades. You can automate installations of Silverlight with preselected settings so that no user action is required or you can allow users to see the installation process on the screen. All versions of Silverlight do NOT require a reboot of the computer; only the open internet browsers during installation should be closed and opened for Silverlight functionality to be enabled. The install file executable and Microsoft Update files supports all languages.

Consider the following deployment methods and how you can use them to support your deployment:

**Microsoft Update based methods** are the recommended means to install Silverlight. These methods are preferred over the non-Microsoft Update methods due to the ease and flexibility of upgrade and installation, reporting and auditing capabilities being present.

1. Windows Server Update Services (WSUS) enables administrators to deploy and manage the updates for Silverlight to computers running Windows 2000 with Service Pack 4 operating systems, Microsoft Windows Server 2003, Microsoft Windows XP with Service Pack 2, Windows Server® 2008, and Windows Vista® or newer Windows operating systems. WSUS is provided at no charge and ideal for all sizes of organizations with Microsoft clients. This option is covered in detail in this guide under [Using WSUS to deploy Silverlight](#_Using_WSUS_to_1).
2. System Center Configuration Manager (SCCM) using WSUS comprehensively assesses, deploys, and updates servers, client computers, and devices—across physical, virtual, distributed, and mobile environments. SCCM is designed for larger organizations and will allow greater flexibility in customizing deployments of Silverlight. The [Using SCCM to Deploy Silverlight](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#_Using_SCCM_to) in this guide provides additional resources for the installation method for Silverlight which utilizes SCCM’s built-in software update management capabilities in conjunction with integration of WSUS.
3. Systems Management Server (SMS) or System Center Essentials (SCE) have the capability to install Silverlight via the Microsoft Update based method, but are not covered in detail in this guide. The SCCM deployment information covered in this guide is very similar to the SCE deployment of Silverlight. For more information about SMS deployment of Silverlight using a Microsoft based update method, see the [SMS 2003 Inventory Tool for Microsoft Updates page](https://www.microsoft.com/technet/sms/2003/downloads/tools/msupdates.mspx).
4. Microsoft Update clients without WSUS or SCCM can automatically install Silverlight 2 or later by having the client set to automatically download and install “important” updates through the Microsoft Update service over the internet. This option will not be covered in this document due to the lack of control for enterprises to deploy, but worth mentioning as a supported means to install or update Silverlight. For more information, please read the [Windows update using Vista](http://www.microsoft.com/windows/downloads/windowsupdate/learn/windowsvista.mspx) webpage.

Non-Microsoft Update based methods are provided as additional deployment methods if the Microsoft Update methods cannot be utilized for some reason. All of these methods involve some variation of installing the Silverlight executable as opposed to the installation files which come from Microsoft Update.

1. System Center Configuration Manager (SCCM) or Systems Management Server (SMS) have the capability to install Silverlight via creating custom distribution packages utilizing the Silverlight executable file found on the public download site.
2. Group Policy can deploy Silverlight for tests to a smaller number of machines in organizations which do not have more advanced deployment software such as WSUS or SCCM. Group policy allows flexibility to distribute Silverlight to individual or groups of users and computers as well as specific OUs. For more information about incorporating group policy in your deployment process, see [Using Group Policy to Install Silverlight](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#_Using_Group_Policy) in this deployment guide.
3. Manual Install Options may be useful for companies who do not have an Active Directory, WSUS, SMS, or SCCM infrastructure and utilize a separate means for software or patch distribution in the company or desire to deploy Silverlight to Apple clients. The [Manual Install Options section](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#DSDOC_6de5565b_c9fc_41ee_b1c9_35a1bd9872) in this document provides information on how to obtain the executable, installation switches, and how to advertise Silverlight for install in your environment.

# Setting Up and Administering a Pilot Program

Before you deploy Silverlight to your users, test your installation of Silverlight in a lab, and then conduct the pilot program with a limited number of participants to refine your deployment configurations and strategies. This process will help you validate your deployment plan and ensure that you are ready for full-scale deployment.

## Conducting Lab Testing

Install Silverlight on the lab computers in the same way that you plan to install Silverlight on your users' computers. In some cases, this might mean setting up the network installation location on the server and then installing Silverlight on the lab computers from the server.

Automating your installation is an important step in reducing the cost of migration. You can choose to run the installation process from start to finish without user intervention. You can also install Silverlight from the server so that you do not need to configure individual computers. Complete any automation work in the lab before you conduct the pilot program.

After you install Silverlight on the lab computers, verify that the software runs correctly by visiting the website <http://www.microsoft.com/silverlight/>. The site will transition to an animation that notifies you that Silverlight was installed correctly.

 Although installing Silverlight should not cause any disruption to your web applications, you may desire to test internal or external Web sites that are critical to the business which will be accessed using the browser Silverlight is installed on. During the testing process, maintain a record of all issues. These records will help you design solutions to correct the issues you encountered. Then verify each solution by using the same testing process in the lab. If you run into problems, see [Troubleshooting](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#DSDOC_082495d9_84c1_474b_a6c0_e11c4c3459) in Part 3 of this deployment guide. This section provides information about commonly reported issues and solution strategies.

## Planning the pilot program

After you test the deployment process in the lab, plan your pilot program. This program provides a scaled-down version of the final deployment. The goal of the pilot program is to further test and refine deployment strategies and configurations in everyday use among a limited group of users.

To plan the pilot program, complete the following tasks:

 Select appropriate pilot group participants, and prepare them for the pilot program. Select groups that represent the diversity of your computer users. If your organization includes large user groups or groups with various computing environments or requirements, you might need to select several pilot groups.

 Create a document or database to track your progress and record issues that might require further action.

# Part 2: Deploying Silverlight

After planning and testing, the final step in the deployment process is rolling out your installation of Silverlight to your users. Part 2 of the Silverlight Deployment Guide describes the processes that are used to deploy Silverlight.

[Using WSUS to Install Silverlight](#_Using_WSUS_to_1) explains how to deploy Silverlight using Windows Software Update Services (WSUS) 3.0.

[Using SCCM with WSUS to Deploy Silverlight](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#_Using_SMS_to) explores a method for using Microsoft System Center Configuration Manager (SCCM) 2007 to deploy Silverlight with or without WSUS integration.

[Using Group Policy to Install Silverlight](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#_Using_Group_Policy_1) explores methods for using group policy to deploy Silverlight.

[Manual Install options for Silverlight](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#DSDOC_6de5565b_c9fc_41ee_b1c9_35a1bd9872) provides basic information about the file selection and installation switches to assist deployments in an environment not using any methods mentioned above.

# Using WSUS to Install Silverlight

Using WSUS 3.0 SP1 enables administrators to deploy and manage the updates for Silverlight to computers running Windows 2000 with Service Pack 4 operating systems, Microsoft Windows Server 2003, Microsoft Windows XP with Service Pack 2, Windows Server® 2008, and Windows Vista® or later Windows operating systems through the Microsoft Update client. WSUS is free to install and ideal for all sizes of organizations with Microsoft clients. WSUS 2.0 SP1 is the earliest version supported for the install of Silverlight using WSUS.

The sections below explain the installation steps to deploy Silverlight using WSUS. They were performed on WSUS 3.0 SP1 and should be followed sequentially. The sections below assume an existing WSUS infrastructure has been properly implemented. For more information on setting up, configuring, and operating a WSUS server environment visit the [WSUS homepage](http://go.microsoft.com/fwlink/?LinkId=45140) which contains the following helpful resources:
[Step-by-Step Guide to Getting Started with Microsoft Windows Server Update Services 3.0 SP1](http://www.microsoft.com/downloads/info.aspx?na=47&p=2&SrcDisplayLang=en&SrcCategoryId=&SrcFamilyId=66d250fa-670f-4a49-95ec-2ffda7691f55&u=details.aspx%3ffamilyid%3dC8FA2FD1-72F6-4F19-A1B0-F689DAE14BE6%26displaylang%3den)

[Deploying Microsoft Windows Server Update Services 3.0 SP1](http://www.microsoft.com/downloads/info.aspx?na=47&p=1&SrcDisplayLang=en&SrcCategoryId=&SrcFamilyId=66d250fa-670f-4a49-95ec-2ffda7691f55&u=details.aspx%3ffamilyid%3d208E93D1-E1CD-4F38-AD1E-D993E05657C9%26displaylang%3den)

[Microsoft Windows Server Update Services 3.0 SP1 Operations Guide](http://www.microsoft.com/downloads/info.aspx?na=47&p=3&SrcDisplayLang=en&SrcCategoryId=&SrcFamilyId=208e93d1-e1cd-4f38-ad1e-d993e05657c9&u=details.aspx%3ffamilyid%3d66D250FA-670F-4A49-95EC-2FFDA7691F55%26displaylang%3den)

Additionally, you may desire to force a detection update on all of your Microsoft update clients instead of waiting for the default poll interval by [utilizing the script](http://msmvps.com/blogs/athif/archive/2006/05/09/94089.aspx) written by a Microsoft MVP. Use at your own support and risk.

## Verify configuration relevant to Silverlight

This section enables WSUS to download the Silverlight product and appropriate update classifications.

Feature packs are a required classification to initially install Silverlight, while Update Rollups function to update existing versions of Silverlight. Follow the steps below to verify you have the proper configuration:

Open up the WSUS console from the available Administrative Tools and click on the **Options** section. Click on the “Products and Classifications” tab.

On the Products tab, check both Silverlight boxes

On the Classifications tab, check Feature Packs and Update Rollups

Click OK to save and exit.

## Synchronize server

This section downloads the Silverlight updates to the WSUS server. If you did not need to make any WSUS configuration changes as mentioned above, then the updates should already be present on your WSUS server. The exception would be if you have “Download update files to this server only when updates are approved” checked under **Options** – “Update Files and Languages” in the WSUS admin console. In this case, you will need to ensure synchronization has completed after the approval to ensure the update will be deployed.

To synchronize WSUS and download Silverlight, you can rely on your automated synch schedule or force synchronization by opening the WSUS console, right-clicking on **Synchronizations,** and choosing “Synchronize Now”.

## Approve Silverlight Install

This section approves Silverlight to be installed in the WSUS environment. Once the updates are approved, the Microsoft Update clients will poll the WSUS server and behave the way as specified via group policy. For more information about configuring a WSUS server, see the [WSUS overview](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#_Overview) in this document.

Follow these steps to approve Silverlight to be installed in the environment:

Click on **Updates** and then “All Updates” in the WSUS administrative console

From the Approval drop down box, select “Any Except Declined”

From the Status drop down box, select “Any”

Click on Refresh

In the action pane on the right under **Update**, click “Group By” and check “Classification”

Under the “Feature Packs” classification section, find “Microsoft Silverlight…” and highlight the newest installation. Click on Approve and select which computer group(s) you desire Silverlight to be installed on and then click OK to save.

The newest installation can be determined by viewing the details pane after highlighting. The table in [Detecting Versions](#_Detecting_Versions) has a list of the versions of Silverlight and corresponding KB article numbers.

Under the “Update Rollups” classification section, find “Update for Microsoft Silverlight…” and highlight the newest installation. Click on Approve and select which computer group(s) you desire Silverlight to be updated on and then click OK to save.

Approving the feature pack is required for the initial deployment of Silverlight, but if any older version of Silverlight is already present on a machine, the newest feature pack will not upgrade the Silverlight version. Update Rollups are identical to Feature Packs, except they function to update existing versions of Silverlight.



## Verify Install of Silverlight

After the Microsoft clients have gone through their scheduled automatic update refresh cycle, detected, and installed the Silverlight update, you will probably want to verify Silverlight was installed properly. To accomplish this with WSUS, simply follow these steps from inside the WSUS admin console:

Click on **Updates** and then “All Updates”

Find and the versions of Silverlight you approved to be installed as mentioned in the above steps

Right-click the version of Silverlight and choose **Status Report**

On the first page of the report it will list a pie chart with the clients where the install failed, what clients still need the update, and what clients have Silverlight installed or where it is not applicable.

On the second page of the report it will give a detailed breakdown of the specific clients listed in the chart from the previous step.

# Using SCCM to Deploy Silverlight

Using Microsoft System Center Configuration Manager (SCCM) to automate your deployment can help eliminate desktop visits and human error by electronically distributing your Silverlight package over the network from a central location to users' computers. You can choose the group of users' computers on which you want to automatically install the package and the dates and times when you want the installation to occur. This flexibility can help you avoid network congestion and ensure that the deployment occurs after users have had sufficient time to receive training and prepare for the installation.

SCCM installs the Silverlight software without requiring user interaction (silent install), and it can install the software with administrative credentials even if a user without administrative credentials is logged on by running in the context of the SYSTEM account. Users do not need to log on to servers or computers to perform updates. This makes SCCM ideal for off-hours distribution or distribution to security-enabled servers. SCCM provides status reports so that you know when the software has been successfully installed.

## Deployment with WSUS or Exe

Part of the general process flow with SCCM is to create a package and then deploy the package. The creation of the package can utilize the Silverlight executable or the Microsoft updates for Silverlight if SCCM is integrated with WSUS. SCCM with WSUS is recommended for creating the Silverlight package due to the ease of tracking and upgrades to Silverlight as well as the ability to not have to configure installation switches. For the use of either of these methods, the [version table](#_Detecting_Versions) in this document contains the KB article, version number, update ID, revision number, and relative size of each revision of Silverlight released to assist in the deployment.

Additional information for deployments of Silverlight where SCCM uses WSUS:

* WSUS is utilized by SCCM only to synchronize the catalog of updates available from Microsoft Update. SCCM does not utilize WSUS to download or deploy the updates; therefore you will need to choose to download the Silverlight updates listed when you create a package.
* Ensure to enable Silverlight being updated in the WSUS Catalog by going to the following location in the SCCM console: Site Management - <site name> - Site Settings – Component configuration – Software Update Point Component **properties** and on the products tab checking Silverlight.
* The updates are visible in the SCCM console: navigate to Computer Management - Software Updates – Update Repository – Feature Packs *AND* Update Rollups – Silverlight. Feature packs would be used for the installation of Silverlight on clients who do not have Silverlight installed at all and Update rollups will upgrade existing versions of Silverlight.

## Resources

The technical documentation for all aspects of SCCM can be found at the TechNet [Configuration Manager 2007 Library](http://technet.microsoft.com/library/bb735860.aspx). For more information on setting up, configuring, and operating a WSUS server environment visit the [WSUS homepage](http://go.microsoft.com/fwlink/?LinkId=45140) for helpful resources. Also, see the following resources for configuring WSUS with SCCM:

* TechNet Magazine – [New Software Update Management Tools](http://technet.microsoft.com/en-us/magazine/2007.10.updates.aspx)
* Troubleshooting SCCM issues? Consider utilizing the [TechNet SCCM support forum](http://forums.microsoft.com/TechNet/default.aspx?ForumGroupID=488&SiteID=17)

Below are a couple of basic checks to help ensure the integration between WSUS and SCCM is functioning properly:

* The WSUS server is properly synchronizing from the internet.
See the [Synchronize Server](#_Synchronize_server) section in this document for specific steps.
* The SCCM server is properly synchronizing with the WSUS server.
From the SCCM console, go to System Status – Site Status - <site name> - Component Status. For the SMS\_WSUS\_SYNC\_MANAGER component, verify the status is OK and view the messages to ensure a recent synchronization has occurred.

To initiate a manual WSUS synchronization, click on Computer Management – Software Updates – Update Repository, and click on “Run Synchronization” in the action pane.

# Using Group Policy to Install Silverlight

Although group policy can be utilized to deploy Silverlight, the Microsoft Update based methods (SCCM and WSUS) described in this document are preferred due to the ease of upgrade and installation and better reporting and scale. Group policy is ideal to deploy Silverlight for tests to a smaller number of machines in organizations which do not have more advanced deployment software such as WSUS or SCCM. Group policy allows flexibility to distribute Silverlight to individual or groups of users and computers as well as specific OUs.

The native group policy software installation extension leverages the Windows Installer service that is part of the Windows operating system. Based on your instructions, Windows Installer installs, repairs, and removes software in .msi files. The Silverlight Setup file is an executable (.exe) file. Therefore, the native group policy deployment method is not compatible without using a third-party .msi packaging tool. Although this method can be used, support for this method would be limited due to the third-party tool and the method not being tested by Microsoft. However, another option is to setup a script to install the Silverlight executable utilizing group policy which is described in detail below.

For more information about the Software Installation extension of Group Policy, see <http://go.microsoft.com/fwlink/?LinkId=83294>.

## Group Policy Scripts Extension Overview

The Group Policy infrastructure includes a Scripts extension that consists of the following components:

* A Microsoft Management Console (MMC) server-side extension of the Group Policy Object Editor MMC snap-in that is used for administering and configuring scripts. The administrator uses the scripts extension to specify scripts policy settings in a Group Policy object (GPO), and then links the GPO to the site, domain, or organizational unit to which the administrator wants to assign the scripts.

The Group Policy Object Editor snap-in includes two extensions for script deployment:

* + **Scripts (Startup/Shutdown).** Administrators use this extension to specify scripts that run when the computer starts up or shuts down. These scripts run as Local System. **Scripts (Startup/Shutdown)** is located under the **Computer Configuration\Windows Settings** node of Group Policy Object Editor.
	+ **Scripts (Logon/Logoff).** Administrators use this extension to specify scripts that run when the user logs on or logs off the computer. These scripts run as User, not as Administrator. **Scripts (Logon/Logoff)** is located under the User **Configuration\Windows Settings** node of Group Policy Object Editor.
* A client-side extension, which is a dynamic-link library (DLL) on the client computer that interacts with the Group Policy infrastructure and implements Group Policy scripts on the client computer. A separate process called Userinit.exe runs the scripts.

For more information about Group Policy Scripts extensions, see the [Scripts Extension Technical Reference](http://go.microsoft.com/fwlink/?LinkId=83122) of the Windows Server 2003 Group Policy Technical Reference on the Microsoft TechNet Web site. For information about Windows Script Host, see [Windows Script Host](http://go.microsoft.com/fwlink/?LinkId=83247) on the MSDN Web site.

|  |
| --- |
| http://technet2.microsoft.com/library/gallery/templates/MNP2.Common/images/important.gif **Important:**Group Policy provides the ability to affect configurations across hundreds and even thousands of computers in an organization. Therefore, it is critical that you rigorously test all new Group Policy configurations or deployments in a *non-production environment* before you move them into your production environment. For detailed information about staging Group Policy deployments, see [Staging Group Policy Deployments](http://technet2.microsoft.com/WindowsServer/en/library/e5288e42-62b8-4f9e-a665-95b6e02389a31033.mspx) in the *Designing a Managed Environment* book of the *Microsoft Windows Server 2003 Deployment Kit*.By default, the system lets combined sets of scripts run for up to 600 seconds (10 minutes) *only*. Administrators can use a policy setting to adjust this interval to ensure the startup script completes running. The **Maximum wait time for Group Policy scripts** policy setting specifies how long the system waits for scripts applied by Group Policy to run. This setting limits the total time allowed for all logon, startup, and shutdown scripts applied by Group Policy to finish running. As with any Group Policy deployment, you must fully test your startup scripts in a staging environment before deploying them to your production environment. Testing will help you determine the value to use for the **Maximum wait time for Group Policy scripts** policy for your particular network environment. Setting this value too low may cause the install to terminate prematurely. There are factors that may affect this value, such as network speed, client computer hardware, and other scripts running on the client computer. By fully testing this policy setting you can determine the appropriate value to use for your specific environment. The **Maximum wait time for Group Policy scripts** policy setting is available in the **Computer Configuration\Administrative Templates\System\Scripts** folder in Group Policy Object Editor. For information about configuring this policy setting, see [Specifying maximum time for startup scripts to run](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#_Specifying_maximum_time). |

## Assigning computer startup scripts

Startup scripts run as Local System and have the full rights required to run as Local System.

|  |
| --- |
| http://technet2.microsoft.com/library/gallery/templates/MNP2.Common/images/note.gif**Note:**The following procedures assume you have already installed GPMC. You can download GPMC from the Microsoft Download Center site. See [Download Group Policy Management Console (GPMC)](http://go.microsoft.com/fwlink/?LinkId=58541) for more information. If you are using Windows Vista or Server 2008, GPMC is integrated into the operating system.You must be logged on as a member of the Domain Administrators security group, the Enterprise Administrators security group, or the Group Policy Creator Owners security group to complete these procedures. |

The following sections provide a sample script and instructions for installing Silverlight.

Sample Script Requirements:

* The target computer must be running Windows XP, Windows Server 2003, or Windows Vista.
* A Read-only network share containing the Silverlight.exe installer
* A Read-write network share for storing centralized log files

## Example Script

|  |
| --- |
| setlocalREM \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*REM Environment customization begins here. Modify variables below.REM \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*REM Set DeployServer to a network-accessible location containing the Silverlight installerset DeployServer=\\server\share\SilverlightREM Set InstallerName to the name of your copy of the Silverlight installerset InstallerName=Silverlight.exeREM Set LogLocation to a central directory to collect log files.Set LogLocation=\\server\share\SilverlightLogsREM \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*REM Deployment code begins here. Do not modify anything below this line.REM \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*reg query HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Silverlight /v Versionif %errorlevel%==1 (goto DeploySilverlight) else (goto End)REM If 1 returned, the product was not found. Run setup here.:DeploySilverlightstart /wait %DeployServer%\%InstallerName% /q echo %date% %time% Setup ended with error code %errorlevel%. >> %LogLocation%\%computername%.txt REM If 0 or other was returned, the product was found or another error occurred. Do nothing.:EndEndlocal |

In this example, script logging information is written to *computername.txt* file. A return code of 0 in the log file indicates that the installation completed successfully. For more information about other error codes for Windows Installer processes for Silverlight products, see the [Windows Installer Error Code Reference](http://msdn2.microsoft.com/en-us/library/aa368542.aspx) on the Microsoft Developer Network website and the [troubleshooting section](#DSDOC_BKMK_AutoUpdates457de51b_2af5_48a1) of this deployment guide.

## Deploying Computer Startup Scripts

**To set up scripts on the domain controller**

* Copy the script and dependent files to the Netlogon shared folder or another shared folder on the domain controller from which you want the script to run.

|  |
| --- |
| http://technet2.microsoft.com/library/gallery/templates/MNP2.Common/images/note.gif**Note:**The target computer account needs Read permission to the Silverlight source files location, and Read and Write permissions to the log file location. The log file can be stored on the local computer. |

**To assign computer startup scripts**

|  |  |
| --- | --- |
| 1.  | Click **Start**, click **Control Panel**, click **Administrative Tools**, and click **Group Policy Management**. |
| 2.  | In the console tree, double-click Group Policy Objects in the forest and domain that contains the Group Policy object (GPO) that you want to edit. This is located in *Forest name*/**Domains**/*Domain name*/**Group Policy Objects**.  |
| 3.  | Right-click the GPO you want to use to assign scripts and click **Edit**. This opens the Group Policy Object Editor console. |
| 4.  | In Group Policy Object Editor, in the console tree, click **Scripts (Startup/Shutdown)**. This is located in the **Computer Configuration\Windows Settings** node. |
| 5.  | In the details pane, double-click **Startup**.  |
| 6.  | In the **Startup Properties** dialog box, click **Add**.  |
| 7.  | In the **Add a Script** dialog box, do the following:* In **Script Name**, type the path to the script, or click **Browse** to search for the script file in the Netlogon shared folder on the domain controller.
* In **Script Parameters**, type the parameters you want to use as you would type them on the command line. For example, if your script included parameters called //logo (display banner) and //I (interactive mode), type: **//logo //I**.
 |
| 8.  | In the **Startup Properties** dialog box, specify the options you want to use. The following options are available:* **Startup Scripts for Group Policy object**. Lists all the scripts that are currently assigned to the selected Group Policy object. If you assign multiple scripts, the scripts are processed in the order that you specify. To move a script up in the list, select the script and click **Up**. To move a script down in the list, select the script and click **Down**.
* **Add**. Opens the **Add a Script** dialog box, where you can specify additional scripts to use.
* **Edit**. Opens the **Edit Script** dialog box, where you can modify script information, such as name and parameters.
* **Remove**. Removes the selected script from the **Startup Scripts** list.
* **Show Files**. Displays the script files that are stored in the selected Group Policy object.
 |

## Specifying maximum time for startup scripts to run

**To set the maximum time for startup scripts to run**

1. Click **Start**, click **Control Panel**, click **Administrative Tools**, and click **Group Policy Management**.
2. In the console tree, double-click **Group Policy Objects** in the forest and domain that contains the Group Policy object (GPO) that you want to edit. This is located in Forest name/**Domains**/Domain name/**Group Policy Objects**.
3. Right-click the GPO you want to use to assign scripts and click **Edit**. This opens the **Group Policy Object Editor** console.
4. In **Group Policy Object Editor**, in the console tree, navigate to **Computer Configuration\Administrative Templates\System\Scripts**.
5. On the details pane (left side of the console), double-click the **Maximum wait time for Group Policy scripts** policy setting, click **Enabled**, enter the value you want to use in the **Seconds** scroll-down box, and then click **OK**.

|  |
| --- |
| http://technet2.microsoft.com/library/gallery/templates/MNP2.Common/images/important.gif Important:Make sure you fully test startup scripts in a staging, non-production environment *before* you deploy them to your production environment. |

# Manual Install options for Silverlight

This section provides basic information for deploying Silverlight by providing file version information and installation switches. Deploying Silverlight can be performed silently without user intervention and is explained in this section. This section may be useful for companies who do not have an Active Directory, WSUS, or SCCM infrastructure and utilize a separate means for software and patch distribution in the company or desire to deploy Silverlight to non-Microsoft clients. All versions of Silverlight do NOT require a reboot of the computer; only the open internet browsers during installation should be closed and opened for Silverlight functionality to be enabled.

## Obtaining Silverlight executable

All versions of Silverlight can be downloaded from the Silverlight Web site at <http://www.microsoft.com/silverlight/install.aspx>. If Silverlight is already installed on your machine, click on “Detailed Installation Instructions” which will provide a download link to the most current released executable.

## Installation Switches

The Silverlight install executable file has a number of different switches to customize the installation. The syntax of the setup file is as follows:

Silverlight*<version>*.exe

**/q** = quiet install or upgrade. This installs or upgrades Silverlight without seeing the GUI. When Silverlight is installed quietly, by default privacy related features such as DRM protected media playback and the Silverlight auto-update feature will be configured to prompt the user for permission on 1st use of the respective features. The Silverlight auto-update feature requires administrative rights so non-admin users will not be prompted.

**/doNotRequireDRMPrompt** = turns off the 1st use prompt allowing content protected by Digital Rights Management (DRM) to play without requiring any end-user intervention. When Silverlight is installed quietly, DRM Playback is set to prompt on 1st use by default.

**/ignorewarnings** = non-fatal warnings will not be reflected in the quiet installer return code but will instead return zero indicating success. This is useful if in testing or custom installation software requires a zero return code.

**/noupdate** = disables the Silverlight internal auto-updater. The Silverlight auto-updater requires administrative rights, so in environments where users have admin rights this switch may be used to prevent administrative users from being prompted to install updates if you want to control when updates to Silverlight are distributed. Group policy can also be used to implement this setting – see [Managing Silverlight Settings through Group Policy](#DSDOC_e35b8b47_4867_46d5_a46f_0a0b05e1ca) in this document for more information.

**/qu** = quiet uninstall. This uninstalls Silverlight without seeing the GUI. **Note**: This will only uninstall the exact same version that it installed, so is typically only useful for testing scenarios.

**Note:** The **/doNotRequireDRMPrompt** and **/ignorewarnings** switches are only available with the version of Silverlight 2 GDR 1 (KB 960353 / 2.0.40115.0) or later.

Silverlight Setup performs the following tasks:

Pre-requisite check (see [Installation Requirements](#DSDOC_BKMK_101d179b2_1040_42a1_82e6_68de) in this document)

Ensure a later version isn’t installed

Uninstall previously installed version if present

Install the product

Write Silverlight registry keys

Create files in %ProgramFiles%\Microsoft Silverlight\

## Silverlight Install through Advertisement

An alternate supported manual method for deploying Silverlight is by advertising to users they can install it. In order for this method to work, users must be members of the Administrators group since they will be installing the product themselves.

The basic steps to accomplish this are:

1. Prepare a network share accessible to the desired users
2. Advertise the executable or batch file for users to install

**Prepare the Network Share**

A flat network share is a folder or folder tree that is accessible to network users. This media type is used when you plan to distribute Silverlight from a LAN. The network share contains the single executable file necessary to install Silverlight and potentially a batch file. Manually create a flat network share, copy the file into a folder, and make that folder available to network users. If you desire to advertise the Silverlight program with custom switches, create a batch file (\*.bat) in this network share containing the network path and name of the executable in this share with the desired switches.

**Advertise the ability to install Silverlight**

There are a large number of options to advertise the Silverlight install to the users. The link provided would point to the executable or batch file you created when you prepared the network share above. The most common methods to advertise to users are:

1. Website: This might be an internal company website that contains a link to the install file.
2. Email: The link to the install file might be in an email sent out to specific groups, users, or in a newsletter.

# Part 3: Maintaining and Supporting Silverlight

Part 3 of the Silverlight Deployment Guide describes the processes used to maintain and support Silverlight in your organization after your initial deployment.

[Managing Silverlight Settings Through Group Policy](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#DSDOC_cc63243b_e057_4608_9206_0e9da66655) describes how to deploy configuration changes to Silverlight in your Active Directory environment by using Group Policy Administrative Templates.

[Keeping Silverlight Updated](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#DSDOC_457de51b_2af5_48a1_9a16_8a193ff50f) reviews detecting Silverlight versions, Microsoft Update methods, Silverlight automatic update, and manual methods to deploy updated versions of Silverlight.

[Troubleshooting](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#DSDOC_082495d9_84c1_474b_a6c0_e11c4c3459) helps you troubleshoot Silverlight installation and other issues you may encounter in your environment.

# Managing Silverlight Settings through Group Policy

If you use an Active Directory environment to administer the computers in your network, Group Policy provides a comprehensive set of policy settings to manage Silverlight after you have deployed it to your users' computers. You can use the Administrative Template policy settings to establish and lock registry-based policies for Silverlight options.

**Group Policy Overview**

Group Policy is a collection of settings that are used to define and manage configurations for groups of users and computers in an Active Directory environment. Group Policy enables you to define a Silverlight configuration and other software and system configurations as part of Group Policy objects (GPOs). The GPOs are linked to hierarchical Active Directory containers such as sites, domains, or organizational units. They enable you to manage your Silverlight and other system configurations for multiple users on any computer that is joined to the domain. For more information about Group Policy, go to the Group Policy TechCenter at (<http://go.microsoft.com/fwlink/?LinkId=59182>)

**Using Administrative Templates to manage Silverlight**

Registry-based Administrative Template policy settings in Group Policy have the capability to manage Silverlight on users' computers running Silverlight’s supported versions of Microsoft Windows. This guide does not contains any specific settings for configuring Silverlight using administrative templates; however, the complete list of configurable settings and ADMX/L files can be found at: <http://go.microsoft.com/fwlink/?LinkId=147986>

# Keeping Silverlight Updated

After you deploy Silverlight in your corporate network, you can use the following tools to distribute updated versions of Silverlight to your users' computers:

 [Microsoft Update Methods](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#_Automatic_Updates) are updating Silverlight through the Microsoft Update channel. This can include updating Silverlight via WSUS, SMS, SCCM, or even by using only a Microsoft Update client with an internet connection.

 [Silverlight Automatic Updates](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#_Automatic_Updates). Every install of the Silverlight client software includes an automatic update feature which can automatically install updates on machines running on a Windows operating system when Silverlight is used on these machines by users with administrative rights. This feature operates independently from the Microsoft Update methods mentioned above. To disable Automatic Updates of Silverlight, see the administrative settings section above.

 [Manual Methods](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#DSDOC_BKMK_SoftwareDist457de51b_2af5_48a). Group Policy and installation via scripts are additional methods to update Silverlight on computers.

Upgrades can be completed while browsers are open, but in order for the upgrade to be loaded all browsers open during the time of install must be closed and reopened.

## Detecting Versions

At some point, you may desire to determine what version of Silverlight the machines in your environment are running. There are major versions and minor versions of Silverlight (i.e. 1.x, 2.x - where “x” is the minor version #). Updates are installed by manually installing the newest version of the installer from the website listed above, the built-in Silverlight update mechanism updating the client, or installing the latest update available from Microsoft Update.

You can detect the current version of Silverlight which is running on client machines by any one of these means:

* Querying the: “HKLM\Software\Microsoft\Silverlight\Version” registry key
* On the client, visiting the website [www.microsoft.com/silverlight/install.aspx](http://www.microsoft.com/silverlight/install.aspx)
* Viewing the installed programs manually
For a Vista client: Open Control Panel – **Programs and Features** and click the **View Installed Updates** link on the top left. Microsoft Silverlight will be listed as a category. The version of Silverlight will be listed after Microsoft Silverlight. See table below.

The following version table maps the KB article and associated patch to a Silverlight version number:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **KB** | **Version** | **~Size** | **Update ID - Update Rollup** | **Update ID - Feature Pack** | **Rev** |
| 946609 | 1.0.30109.0 | 1.38 MB | Not given in this table | d9b505b4-26e2-44ad-b3ad-400916ff10c9 | 102 |
| 951213 | 1.0.30401.0 | 1.39 MB | f9bd6583-0638-4987-9823-7d234e643bf5 | b30226f5-e589-4a6d-acb6-6832b0eea132 | 100 |
| 955305 | 1.0.30716.0 | 1.37 MB | 867e47fa-f9e1-4028-845f-defbe2800815 | 776d890a-3448-4c84-b005-1008a86d33d6 | 100 |
| 957938 | 2.0.31005.0 | 4.64 MB | 558587e7-8d33-46ba-ad04-8ae90c9d87d2 | 830f2725-da40-45c6-a696-2bd9d8fa8b98 | 100 |
| 960353 | 2.0.40115.0 | 4.68 MB | 9b92f738-8c61-4cd1-b0a5-7c8a013ea1c9 | ead86401-93d2-41ab-b847-04d90a4f1ae0 | 101 |

Future mappings can be determined by viewing the update rollup or feature pack in the WSUS console and also by viewing the registry key value listed above after installation. Additionally, a table will be updated at the following link: <http://go.microsoft.com/fwlink/?LinkId=147986>

## Microsoft Update methods

If you already manage software distribution and updates on your network by using WSUS, SMS with Microsoft update based method, or SCCM with WSUS you can use these tools for ongoing deployments or updates to Silverlight. Silverlight 2 or later can also automatically be installed by having the client set to automatically download and install “important” updates through the Microsoft Update service. This option will not be covered in this document due to the lack of control for enterprises to distribute, but worth mentioning as a supported means to install or update Silverlight. For more information, please read the [Windows update using Vista](http://www.microsoft.com/windows/downloads/windowsupdate/learn/windowsvista.mspx) webpage.

#### Windows Server Update Services (WSUS)

If you use WSUS 2.0 SP1 or later, you can centrally manage the distribution of Silverlight updates to computers on your corporate network. Updating Silverlight can be accomplished using WSUS by approving the newer Silverlight “update rollups” available. Specific steps to approve newer updates using WSUS 3.0 SP1 are described in the [approve Silverlight install](#_Approve_Silverlight_Install) section of this document.

If you desire to automatically update Silverlight to the latest version, an automatic approval rule should be setup and configured. This can be accomplished by following these steps:

1. Open up the WSUS console from the Administrative Tools and click on the **Options** section.
2. Select **Automatic Approvals**. And click on New Rule.
3. For Step 1: Check “When an update is in a specific product”
For Step 2: click on the “any product” link and check Silverlight from the dropdown box. Click on the “all computers” link and choose the computer groups where you would like Silverlight to automatically update.
For Step 3: Specify any desired name and then click OK.
Click OK again to save your rule.



#### System Center Configuration Manager (SCCM)

SCCM is a dedicated, flexible system to use for updates and software deployment. It provides robust features to facilitate scheduling, managing, and reporting for your Silverlight distributions in large-scale corporate environments. To update Silverlight using SCCM with WSUS, Silverlight would be deployed using a package which contains the newest Update Rollup visible in the SCCM console. SCCM can also update Silverlight by installing the latest executable file over the top of existing installations. See the [Using SCCM to Deploy Silverlight](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#_Using_SCCM_to) in this deployment guide for additional guidance.

## Silverlight Automatic Updates

By default Silverlight will automatically update using the built-in self-update mechanism. Every week, the version of Silverlight that is installed on your users’ browser connects externally to a Microsoft website and compares itself against the most current Silverlight version that is available for download. If the version on the web is newer than the version on users’ computers then Silverlight will automatically update itself if the user logged in has administrative privileges.

By using the group policy Administrative Templates policy setting Automatically check for Silverlight updates listed in this document, you can disable automatic checks for Silverlight updates. For more information about changing the Automatic Update settings, see [Managing Silverlight Settings Through Group Policy](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#_Managing_Silverlight_Settings).

If using the Silverlight updater you will need to give the client computer access to the following domains:

1. go.microsoft.com
2. silverlight.dlservice.microsoft.com
3. rs.update.microsoft.com
4. slupdate.dlservice.microsoft.com (only for Silverlight 1.x)
5. www.microsoft.com
6. update.microsoft.com

**Note:** If Silverlight is installed using the /noupdate argument or the updater is disabled via Group Policy settings then Silverlight will NOT automatically update using this mechanism. Installations of Silverlight via WSUS currently disable the Silverlight automatic update feature by default; however, the behavior of only the WSUS feature pack (not the update rollups) *may* revert to enabling the updater in the future.

Note: Your users must have local administrative privileges on their computers to install an updated version of Silverlight, starting with version 2 or higher. Version 1 of Silverlight can update without admin privileges on machines running Vista.

## Manual update methods

Manual methods of updating Silverlight require the most amount of effort not only to deploy, but also to update. Also, these methods do not allow reporting for verification the update has been installed successfully. Microsoft Update based methods such as WSUS, SMS, and SCCM are recommended as listed in this document.

Note If any of these options are used, the built-in automatic update method should be disabled as referenced in the [Registry-based Silverlight policy settings](#DSDOC_e35b8b47_4867_46d5_a46f_0a0b05e1ca) section if it is desired to reduce internet bandwidth usage or control the updates to the client.

Manual update options upgrade Silverlight by running the executable following the manual process you chose for your initial deployment, such as via group policy scripts, a 3rd party software installation program, or advertising the executable hosted a network share. Utilizing the /q switch during the upgrade install will allow a silent upgrade of Silverlight. For more information about the manual methods of deployment and installation switches for Silverlight, see [Manual Install options for Silverlight](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#DSDOC_6de5565b_c9fc_41ee_b1c9_35a1bd9872) in this deployment guide.

# Troubleshooting

This section of the deployment guide provides information about troubleshooting the deployment of Silverlight in a corporate environment. Troubleshooting topics are categorized into the following areas:

 [Silverlight installation and uninstallation](file:///C%3A%5CUsers%5Cdavete%5CDesktop%5CSilverlight%20Deployment%20Guide%20v2.docx#DSDOC_BKMK_Install082495d9_84c1_474b_a6c)

 [Disabiling Silverlight in IE](#DSDOC_BKMK_GroupPolicy082495d9_84c1_474b)

## Silverlight installation and uninstallation

Following are ways to help you troubleshoot installing and uninstalling Silverlight on your users' computers.

### Silverlight Install process fails

If the install fails, you can troubleshoot errors by using the Setup log files:

 SilverlightMSI.log - MSI engine

* Silverlight0.log - UI wrapper on top of MSI

Each installation creates both log files, which collects information about that particular installation. If the Silverlight log files already exist, setup overwrites them.

When you do the install (GUI or command line) or uninstall with the /qu option, the log files are created in the folder associated with the %TEMP% variable. The files document the entire process from the moment the exe starts running until the installation or uninstall is complete.

The UI wrapper log can be useful for troubleshooting installation failures. During most installation scenarios this log will contain a return code for the installation. The return code can be used to determine whether an installation error occurred and to gain more information about the error. The return code will be written near the bottom of the Silverlight0.log file and will be preceded by the text “Process returning code”.

| **Return Code** | **Meaning** |
| --- | --- |
| 0 | Installation was completed successfully |
| 1508 | Installation was completed successfully. However, users of the machine must restart their browser instances to apply these changes. Passing the /ignorewarnings command line argument to the installer will suppress this return code such that 0 is returned instead. |
| 1511 | Installation was completed successfully. However, the Windows Update APIs used by the Silverlight auto-updater are out of date. Passing the /ignorewarnings command line argument to the installer will suppress this return code such that 0 is returned instead. |
| Other | An installation error has occurred. To learn more about the error you should visit the information page for this error by appending the return code to the following URL: [http://go.microsoft.com/fwlink/?LinkID=87096&errorID=<returnCode](http://go.microsoft.com/fwlink/?LinkID=87096&errorID=%3creturnCode)>Example:If your UI log file includes the line Process returning code 3010Then you should visit <http://go.microsoft.com/fwlink/?LinkID=87096&errorID=3010> |

### Unable to uninstall Silverlight

In most cases, you can uninstall Silverlight on your users' computers that are running Windows XP with SP2 or Windows Server 2003 with SP1 by using the Add or Remove Programs tool in Control Panel or in Windows Vista by going into **Programs and Features** in Control Panel.

If you cannot use Add or Remove Programs or **Programs and Features** in Control Panel to uninstall Silverlight, the uninstall information might not be on the computer. Re-install Silverlight to install the control to replace the uninstall information and then try uninstalling again.

## Disabling Silverlight add-on in Internet Explorer

To isolate browser issues that might be related to the Silverlight add-on, you can selectively disable the add-on in Internet Explorer 7 or later.

To disable a browser add-on in Internet Explorer 7:

|  |
| --- |
| 1. Click the Tools menu, click Manage Add-ons, and then click Enable or Disable Add-ons.
2. Change the “Show” Drop-down box to “Add-ons that have been used by Internet Explorer”
3. Click **Microsoft Silverlight** (or AgControl Class for Silverlight 1)**,** click Disable, and then click OK.
 |

To disable a browser add-on in Internet Explorer 8:

|  |
| --- |
| 1. Click the Tools menu, click Manage Add-ons
2. Click **Microsoft Silverlight** (or AgControl Class for Silverlight 1)**,** click Disable, and then click OK.
 |

Alternatively, you can turn off all add-ons temporarily in Internet Explorer 7 or later by starting in No add-ons mode.

To start Internet Explorer 7 or later in No add-ons mode

|  |
| --- |
| 1. Click Start, click All Programs, and then click Accessories. 2. Click System Tools, and then click **Internet Explorer** (No Add-ons). |

Note

You can also start Internet Explorer 7 or later with no add-ons or toolbars by running the command iexplore.exe -extoff.