

***ServletExec***<sup>TM</sup>

# ServletExec<sup>TM</sup> 2012

## Installation Guide

*for Microsoft Internet Information Server*

NEW ATLANTA COMMUNICATIONS, LLC

# ServletExec™ 2012 Installation Guide

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# Contents

<b>1. INTRODUCTION</b> .....	<b>1</b>
1.1 TECHNICAL SUPPORT .....	1
<b>2. SERVLETEXEC/AS: APPLICATION SERVER</b> .....	<b>2</b>
2.1 UPGRADING FROM A PREVIOUS VERSION .....	2
2.2 SYSTEM REQUIREMENTS .....	2
2.2.1 <i>Operating System and Web Server</i> .....	2
2.2.2 <i>JDK or JRE</i> .....	3
2.2.3 <i>JDK/JRE Installation</i> .....	3
2.2.3.1 Multiple JDK/JRE Versions Installed .....	4
2.3 UNINSTALLING OTHER SERVLET ENGINES .....	5
2.4 RUNNING THE SERVLETEXEC/AS INSTALLER .....	5
2.5 WHAT WAS INSTALLED AND/OR MODIFIED? .....	8
2.5.1 <i>The ServletExec AS Directory</i> .....	9
2.5.2 <i>Registry Entries</i> .....	10
2.5.3 <i>Microsoft IIS</i> .....	11
2.5.3.1 ServletExec_Adapter.dll and the Virtual Directory [VD] within IIS.....	11
2.5.3.2 ISAPI Filter Entry .....	11
2.5.3.3 The webadapter.properties Configuration File .....	12
2.6 CONFIGURING WEBADAPTER.PROPERTIES .....	12
2.6.1.1 Connection Pooling Between the Web Server Adapter and ServletExec .....	12
2.6.1.2 Hosts .....	13
2.6.1.1 ServletExec Instances .....	13
2.6.1.2 Global Properties.....	13
2.7 SERVLETEXEC/AS OPERATION.....	14
2.7.1 <i>Starting ServletExec/AS</i> .....	15
2.7.1.1 StartServletExec.bat.....	15
2.7.1.2 How StartServletExec.bat uses the java Command .....	15
2.7.1.3 Closing the DOS Window .....	18
2.7.2 <i>Stopping ServletExec/AS</i> .....	18
2.7.2.1 StopServletExec.bat .....	18
2.7.2.2 How StopServletExec.bat uses the java Command .....	18
2.7.3 <i>Remote Operation</i> .....	19
2.7.4 <i>Multiple ServletExec/AS Instances (Multiple Java VMs)</i> .....	19
2.8 UNINSTALLING SERVLETEXEC/AS .....	20



# 1. Introduction

**N**ew Atlanta ServletExec 2012 is a high-performance, reliable, and cost-effective web application server that implements the Java™ Servlet API 2.5, JavaServer Pages™ (JSP) 2.1, and JSP Standard Tag Library (JSTL) 1.2 standards defined by Sun Microsystems, Inc. as component technologies of the Java 2 Platform, Enterprise Edition (J2EE™). Additional information about J2EE, servlets, and JSP technologies can be found on Sun's web site:

<http://java.sun.com/j2ee/>

ServletExec enables you to deploy servlets and JSPs on Microsoft® Internet Information Server (IIS) in a standard, robust, high-performance environment.

## 1.1 Technical Support

If you're having difficulty installing, configuring, or using ServletExec, be sure to utilize the ServletExec Technical Support webpage:

<http://www.newatlanta.com/support/servletexec/index.jsp>

There you will find a rich set of free support resources such as FAQs, Documentation, and a Product Mailing List (with online searchable archive). In addition there are paid support options that are described there.

# 2

## 2. ServletExec/AS: Application Server

The ServletExec Application Server (ServletExec/AS) is a standalone web application server that hosts Java Servlets and JavaServer Pages (JSP). ServletExec/AS can be used by itself using its built-in web server or in conjunction with Microsoft IIS. A native web server adapter for IIS is included in the ServletExec/AS installer.

The ServletExec/AS for Windows installer is named `ServletExec_AS_2012.exe`. If you haven't already done so, you can download the installer file from:

<http://www.newatlanta.com/c/products/servletexec/download/home>

This chapter contains important information that will allow you to verify your installation of ServletExec/AS. It will also be useful should you decide to uninstall ServletExec/AS and need to make sure you've completely removed all installed components.

### 2.1 Upgrading from a Previous Version

Upgrading from a previous version always involves uninstalling the older version and then installing the newer one. There are no updaters that will update your SE installation "in place".

### 2.2 System Requirements

#### 2.2.1 Operating System and Web Server

- ServletExec/AS 2012 only supports the Windows operating systems Windows 2012/Windows 8 and Windows 2012 R2/Windows 8.1.
- ServletExec/AS 2012 supports the following operating systems and web servers through the use of web adapters:

OS	Web Server
Windows 2012 R2/8.1	▪ Microsoft IIS 8.5
Windows 2012/8	▪ Microsoft IIS 8.0

**Table 1. AS-Windows Supported Operating Systems and Web Servers**

---

**Important**

For IIS you must have the “ISAPI Extensions” and “ISAPI Filters” Features installed. Otherwise IIS will never load the installed ServletExec DLL and servlet requests will result in 404 responses.

Those 2 Windows Features may be enabled as follows:

Control Panel - Programs - Programs & Features - Turn Windows features on or off

From there navigate as follows:

- + Internet Information Services
  - + World Wide Web Services
    - + Application Development Features
      - # ISAPI Extensions
      - # ISAPI Filters

Check the checkboxes to enable ISAPI Extensions and ISAPI Filters. You will then at least need to restart the IIS Admin Service, and possible even reboot Windows.

It is not necessary to install the Metabase Compatibility Feature.

---

### 2.2.2 JDK or JRE

ServletExec/AS 2012 is not supported on JDK or JRE 1.4.x or earlier.

To install ServletExec/AS 2012, you must first install one of these Java Development Kit (JDK™) or the Java™ Runtime Environment (JRE) choices:

- JDK/JRE 1.5.x, or 1.6.x for Windows from Sun Microsystems

---

**Important**

The JRE does not contain a Java compiler, which is required by ServletExec to support JavaServer Pages (JSP). Be sure to install the JDK, and not the JRE, if you plan to use JSP.

---

You can download the Sun JDKs for Windows from:

<http://java.sun.com/j2se/>

### 2.2.3 JDK/JRE Installation

To install ServletExec/AS, you must have first installed a compatible version of the JDK or JRE as explained in Section 2.2.2.

**Important**

The JDK or JRE must be installed on a local drive and not on a mapped network drive. If the JDK/JRE has been installed on a mapped network drive, ServletExec/AS will not be able to load and initialize the Java VM.

---

**2.2.3.1 Multiple JDK/JRE Versions Installed**

You may have multiple versions of the JDK/JRE installed on your system. The ServletExec/AS installer uses registry entries to determine which installed JDK/JRE to use. It will look for an installed JDK first and if it doesn't find one, it will look for a JRE. It will look for JDK/JREs from vendors in the following order: Sun Microsystems, and then IBM. Study the complete algorithm below, to gain a better understanding.

**How ServletExec selects an installed JDK/JRE**

1. Look for a Sun JDK using the following registry key:

`HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Java Development Kit`

- If Sun JDK found, go to Step 2. Otherwise, look for a Sun JRE using the following key:

`HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Java Runtime Environment`

- If Sun JRE found, go to Step 2. Otherwise, look for an IBM JDK or JRE using the following keys .

`HKEY_LOCAL_MACHINE\SOFTWARE\IBM\Java Development Kit`

or...

`HKEY_LOCAL_MACHINE\SOFTWARE\IBM\Java Runtime Environment`

- If no Sun or IBM JDK/JRE found using the above registry keys, then abort ServletExec installer.

2. Read the `CurrentVersion` variable from the key found in Step 1. Currently, the only valid values for this variable start with "1.3" or "1.4" (including, for example "1.4.2").

3. Append the value of the `CurrentVersion` variable from Step 2 to the key from Step 1 to create a new key. For example:

`HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Java Development Kit\1.4`

or...

`HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Java Runtime Environment\1.4`

4. Read the value of the `JavaHome` variable for the key from Step 3 to find the location of the JDK or JRE.

## 2.3 Uninstalling Other Servlet Engines

---

### Very Important

You **must** uninstall any other servlet engines previously installed before installing and using ServletExec/AS.

- For Microsoft IIS, the ISAPI Filters metabase entries associated with other servlet engines must be removed.

*See Section 2.5.3.2 for more information on ISAPI filters metabase entries.*

---

## 2.4 Running the ServletExec/AS Installer

### To run the ServletExec/AS Installer

1. Double-click the ServletExec/AS installer icon. After unpacking, the installer will display the ServletExec 2012 Application Server Setup window.
2. Click **Next** to bring up the Setup Type window.

After clicking **Next** on the welcome window, you will be prompted to choose a setup type, as shown in Figure 1.

The first time you run the ServletExec/AS installer, you will be offered two options for setup type. For subsequent installations, you will have additional options.

Typically, you will choose **Install a ServletExec/AS instance**, which will install a single ServletExec/AS instance and a single web server adapter.

---

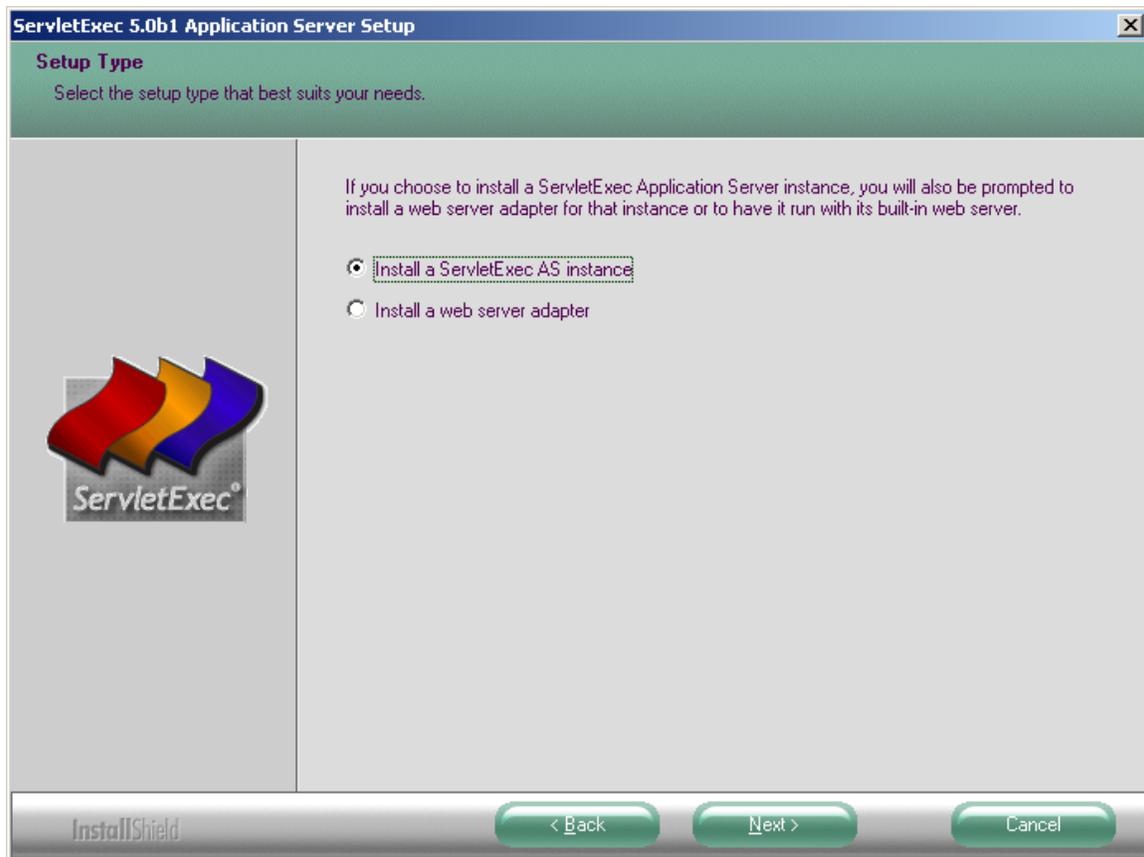
### Important

You must install at least one web server adapter whenever you install a ServletExec/AS instance.

---

The only time you would choose **Install a web server adapter** is after you have previously installed a ServletExec/AS instance on a different physical machine from the web server, and now wish to install a ServletExec/AS adapter to allow the web server to communicate with the ServletExec/AS instance running on the remote machine.

The remainder of this section applies only if you have selected **Install a ServletExec/AS instance**.



**Figure 1. Setup Type**

3. Click **Next**. Review the license agreement carefully and check the READ ME for any last minute notices before continuing.
4. After accepting the license agreement and reviewing the READ ME, the ServletExec/AS installer prompts you for the destination folder for installing the ServletExec/AS files. You may choose the default or click **Browse** to select a different folder.

---

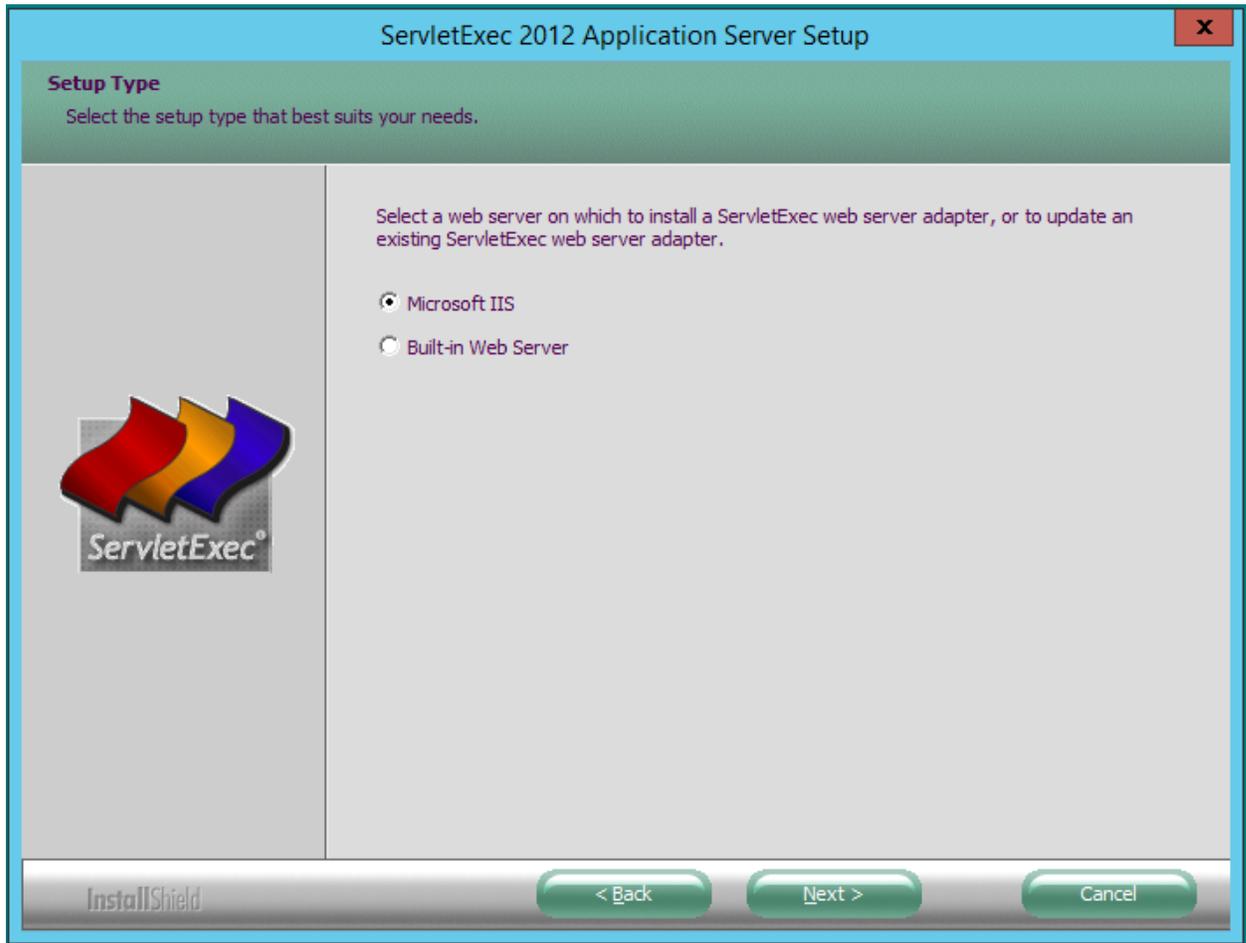
**Important**

Do NOT move or rename the folder you choose after ServletExec/AS is installed.

---

5. Enter an **Instance Name**. After selecting a destination folder, the ServletExec/AS installer prompts you for the ServletExec/AS instance name. This name is used to uniquely identify the ServletExec/AS instance for administration, and is especially important if you install more than one instance on your server. By default, the installer suggests using the computer name as defined in Control Panel's **Network**, but you're free to use any unique name. Avoid using spaces or other special characters (“>”, “/”, etc.) in the instance name.
6. Select a web server. After defining the ServletExec/AS instance name, the installer prompts you to select a web server on which to install a web server

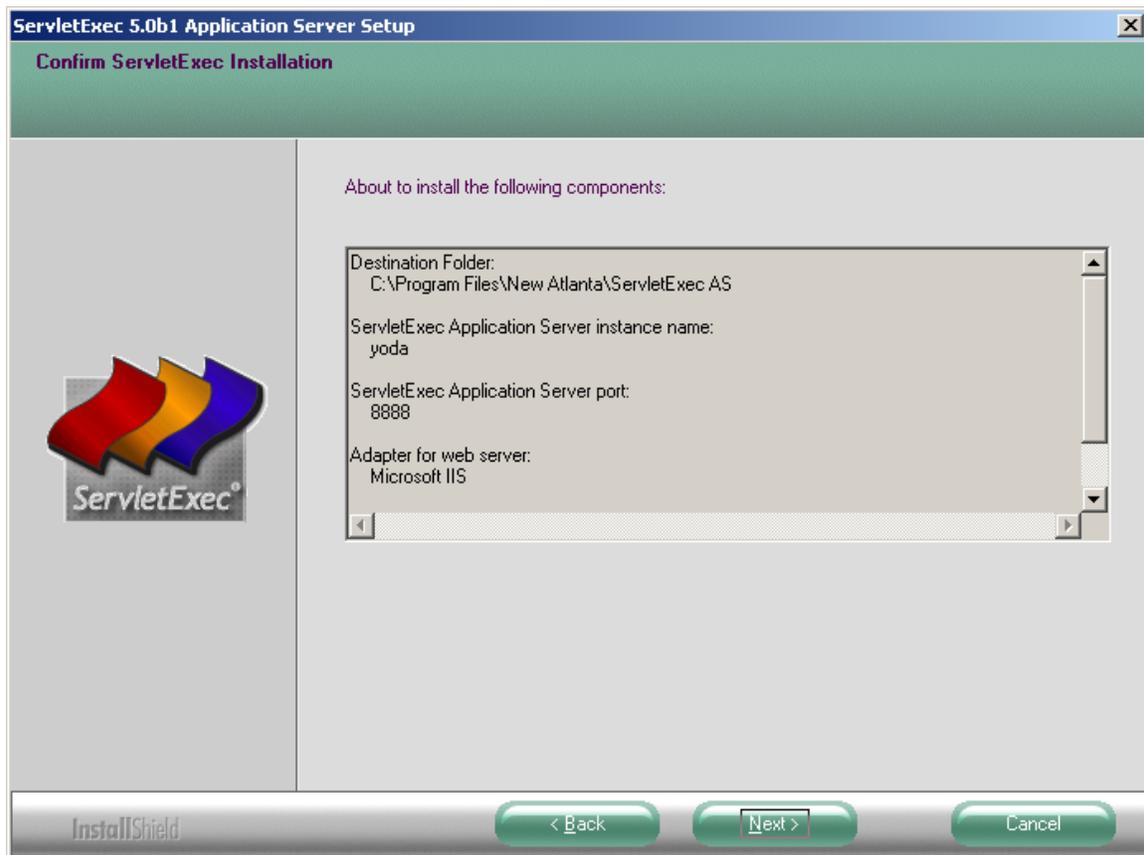
adapter for communicating with the ServletExec/AS instance that is about to be installed. The selection dialog is illustrated in Figure 2.



**Figure 2. Web Server Adapter**

7. Before making any change to your computer, the ServletExec/AS installer displays a confirmation dialog, as represented in Figure 3. Click **Back** to modify any of your selections, or **Cancel** to abort the installation. After clicking **Next**, the ServletExec/AS installer will begin copying files to your computer.
8. Install ServletExec as a Windows Service? The installer will prompt you to install the ServletExec/AS instance as a Windows service. Installing the instance as an Windows service has the following advantages:
  - You will be able to start and stop the ServletExec/AS instance from the **Services** control panel.
  - The ServletExec/AS instance will continue running if you log off Windows.
  - The ServletExec/AS instance can be configured using the **Services** control panel to automatically start when Windows restarts.

If you choose not to install the ServletExec/AS instance as a Windows Service, you will need to manually start and stop the instance as described in Section 2.7, below.



**Figure 3. Confirm ServletExec Installation**

If you install a web server adapter, the ServletExec/AS installer will automatically create the `webadapter.properties` configuration file. After completing the ServletExec/AS installation, be sure to restart the web server on which you installed the ServletExec/AS web server adapter.

## 2.5 What Was Installed and/or Modified?

When you installed ServletExec/AS, these changes were made to your system:

- The "ServletExec AS" directory was created
- ServletExec/AS registry entries were created or modified
- The web server configuration file was modified to support the ServletExec/AS web server adapter

The following sections describe each of these changes.

### 2.5.1 The ServletExec AS Directory

The `ServletExec AS` directory was created in the location you selected during the installation process. The default location suggested by the installer is:

```
C:\Program Files\New Atlanta\ServletExec AS
```

---

#### **Important**

Do not move the `ServletExec AS` directory after installation. If you move this directory, `ServletExec` will be unable to find its configuration files.

---

There are no restrictions on the location of the `ServletExec AS` directory.

The “`ServletExec AS`” directory contains the following subdirectories:

<code>bin</code>	The <code>bin</code> subdirectory contains the native code web server adapters used by <code>ServletExec/AS</code> . It also contains utility programs for installing and uninstalling a <code>ServletExec/AS</code> instance as a Windows service.
------------------	---

---

#### **Important**

Do not modify the contents of this directory!

---

<code>config</code>	The <code>config</code> directory contains the <code>webadapter.properties</code> file.
<code>Documentation</code>	Contains the <code>ServletExec User Guide</code> , and the <code>Servlet 2.5</code> and <code>JSP 2.1</code> API documentation from Sun Microsystems.
<code>Examples</code>	This subdirectory contains examples of a web application and a JSP page with an embedded bean. <i>See the appropriate chapters of the <code>ServletExec User Guide</code> for instructions on running these examples.</i>
<code>ExampleServlets</code>	The <code>ExampleServlets</code> subdirectory contains example servlets that are copied to the <code>Servlets</code> subdirectory for each <code>ServletExec/AS</code> instance as it is installed. The example servlets are here just for use by the installer.
<code>se-&lt;instance-name&gt;</code>	There is one <code>se-&lt;instance-name&gt;</code> subdirectory for each <code>ServletExec/AS</code> Instance [ASI] that is installed on the computer. <i>See further discussion of this directory directly below.</i>
<code>installerFiles</code>	The <code>installerFiles</code> subdirectory contains files used by the <code>ServletExec/AS</code> setup program for installing multiple <code>ServletExec/AS</code> instances. This directory and

its contents are only used by the installer.

`lib`

The `lib` subdirectory contains the Java archive (.jar) files required by ServletExec/AS.

---

**Important**

Do not modify the contents of this directory!

---

The `se-<instance-name>` subdirectories of the ServletExec AS directory each contain the following subdirectories.

`classes`

The `classes` subdirectory is automatically added to the ServletExec VM classpath. Place class files that will be shared by multiple web applications in this directory.

*See the READ ME file within the classes subdirectory for more information.*

`ServletLogs`

This subdirectory contains the `Servlet.log` files that capture the output from the `Servlet.log()` method. In some cases, this directory isn't created until the first ServletExec initialization.

`ServletExecData`

Contains the ServletExec/AS configuration files. These files are generally modified using the ServletExec Admin UI, but can also be edited manually.

`Servlets`

This subdirectory contains the class files for legacy servlets hosted by ServletExec/ISAPI. These servlets run under the context of the default web application.

*See the READ ME in the Servlets directory and the ServletExec User Guide for more information.*

`webapps`

This directory contains a subdirectory for each configured virtual server. A web application can be automatically deployed to a virtual server by placing it in the subdirectory for that virtual server as a WAR file or open directory structure.

*See the READ ME in the webapps directory and the ServletExec User Guide for more information.*

### 2.5.2 Registry Entries

The ServletExec/AS registry entries are stored under the following key:

```
HKEY_LOCAL_MACHINE\SOFTWARE\New Atlanta Communications\ServletExec AS
```

**Important**

These registry entries are modified by the ServletExec/AS installer and uninstaller, and should not be edited manually.

---

**2.5.3 Microsoft IIS**

If you installed a web server adapter for Microsoft IIS, the installer modified your system as described in the following sections.

**2.5.3.1 ServletExec\_Adapter.dll and the Virtual Directory [VD] within IIS**

The `ServletExec_Adapter.dll` dynamic link library (DLL) was installed in the `C:\InetPub\Scripts` directory, which is mapped to the `Scripts` virtual directory [VD] in the default IIS installation; or if the `Scripts` VD was not defined then `ServletExec_Adapter.dll` was copied to the directory you selected during the installation process, and a VD named `Scripts` (which points there) was created by the installer. The directory in which `ServletExec_Adapter.dll` resides **must** be mapped to a Microsoft IIS VD and that VD **must** have `execute` permission enabled. VD's for Microsoft IIS are configured using the Microsoft Management Console (Internet Service Manager).

If you are using IIS 8 you will find that your IIS does not have a VD named `Scripts` by default. The ServletExec AS installer will create that VD for you in the IIS website named "Default Website". If you ever have need to create (or re-create) that VD manually with IIS 8 then you will need to read section 2.5.3 of this document and see the screenshots given in that section as they pertain to SE AS.

**2.5.3.2 ISAPI Filter Entry**

The ServletExec/AS installer automatically modifies the IIS to add the ISAPI Filter entry.

---

**Very Important**

You **must** remove entries for other servlet engines you may have previously installed. The uninstallers for most servlet engines do not automatically remove the ISAPI Filter entry.

---

**To examine or manually modify the ISAPI Filter under IIS**

1. Run **inetmgr**
2. In the left panel, click on the machine.
3. In the right panel, double-click the **ISAPI Filters** icon.
4. Click any previously installed servlet engines, and then click **Remove**.
5. Click **ServletExec**, and then click **Edit...** to examine or modify it (if you wish).
6. If you do not see **ServletExec** then click **Add** and follow the instructions to add the ServletExec/AS entry, making sure to point to `ServletExec_Adapter.dll`.

Note that you should **not** modify the location of the SE DLL here since IIS is also "pointing" to that same DLL via its Web Service Extensions and the Web Service Extensions are not modifiable. Both the Web Service Extensions and the ISAPI Filters must be pointing to the same exact copy of the DLL.

### 2.5.3.3 The `webadapter.properties` Configuration File

The `webadapter.properties` file was created in the `config` subdirectory of your ServletExec AS 2012 installation. This file contains the configuration properties used by the ServletExec adapter. These properties are used by the adapter for routing HTTP requests from the web server to a ServletExec Application Server (AS) instance.

---

#### Important

The IIS adapter (`ServletExec_Adapter.dll`) will first look in the directory where it resides for the `webadapter.properties` file. If the file is not found, then it will look in the `config` directory of your ServletExec installation. You'll only want to do this if you need a separate copy of the `webadapter.properties` file for different IIS websites.

---

You can find more information about the `webadapter.properties` configuration file in section 2.6 of this document..

## 2.6 Configuring `webadapter.properties`

All ServletExec/AS native adapters can be configured using the `webadapter.properties` file. The file is always put in the `config` directory of your ServletExec installation by default, but it can be put in alternate locations. See the information in this document regarding your brand of web server for specifics on specifying an alternate location.

The `webadapter.properties` file is used by the ServletExec/AS native adapter, no matter which brand of web server is used. The top of the `webadapter.properties` file contains extensive comments about the various properties that can be set in that file. This section will describe some of the properties that can be controlled from this file. Property names are always set up in the form of:

`servletexec.<instance name>.<property name>`

The `<instance name>` portion of the property name is used to “group” sets of properties together. Each “grouping” of properties applies to 1 single SE AS Instance.

Properties in this file are used to modify connection pooling between the web server adapter and the ServletExec AS Instance(s), find ServletExec instances that are set up to handle the incoming requests, and forward the request to instances set up to handle specific hostnames and/or specific web applications that are deployed.

### 2.6.1.1 Connection Pooling Between the Web Server Adapter and ServletExec

The installer automatically enables connection pooling between the web server adapter and ServletExec, using default settings. The purpose of this connection pooling is to improve performance through better resource management.

You can change the default settings by modifying the configuration file as explained below. The two parameters that provide the connection pooling are: `pool max idle` (sets maximum number of idle connections that can be in the pool... default setting is 10)

and `pool increment`. (sets the number of idle connections to be added to the pool when the pool is empty and another request is received... default setting is 5). Once the `pool max idle` limit is reached, freed connections will be disconnected.

A good guideline for changing these parameters from their default settings would be to set the `pool max idle` to your average number of connections, and to set the `pool increment` to the average spike number of connections.

### To modify Connection Pooling for ServletExec/AS

- Add the following to the end of the `webadapter.properties` file on two separate lines:

```
servletexec.<instance-name>.pool-increment=<value>
servletexec.<instance-name>.pool-max-idle=<value>
```

#### 2.6.1.2 Hosts

The `hosts` property is used to find all ServletExec AS instances that are configured to process requests for the designated host. The host name is taken from the HOST header field of the HTTP request. The `hosts` property should contain a comma separated list of IP addresses and/or hosts names. The special value `all` can be used to indicate that all hosts should be processed by the specified instance name.

#### To update the hosts property in `webadapter.properties`

- Use the following form:

```
servletexec.<instance-name>.hosts=www.newatlanta.com
```

#### 2.6.1.1 ServletExec Instances

The `instances` property contains the IP address and port number of 1 (not multiple) ServletExec AS instance. This is used by the adapter for forwarding HTTP requests to that instance. Each instance must contain a unique IP address and port number combination. The default value is `127.0.0.1:8888`.

#### To update the instances property in `webadapter.properties`

- Use the following form:

```
servletexec.<instance-name>.instances=127.0.0.1:8888
```

#### 2.6.1.2 Global Properties

In addition to the per-instance properties there are also a few global properties.

- `servletexec.aliasCheckInterval`

The default value is 10 (measured in seconds).

Setting it to -1 turns it off, so that there is no request-time polling.

An example of using this property in `webadapter.properties` is:

```
servletexec.aliasCheckInterval=20
```

This global property governs how often the adapter will ping/query the SE AS instances (ASIs) that are defined in that file, to ask them if there are any changes to the aliases (webapp context paths, uri mappings for security, filters, servlets, etc...). The adapter stores a local copy of such mappings in what's referred to as an *Alias Cache* (1 alias cache per ASI) and periodically attempts to update that cache (at request time) if warranted.

If an ASI is not running and the adapter tries to ping/query it, there may be a timeout delay before the socket knows that there is nothing at the other end to respond to the ping/query. This is usually 1 second, but may differ depending on OS, and other factors. If there are several ASI's that are not running or are otherwise unreachable then the delay is increased proportionally (1 second delay for each ASI that's down). This situation can be avoided by enabling the `multiInstanceMode` property (see next bullet).

For additional details about the `aliasCheckInterval` property, please see: [http://www.newatlanta.com/c/support/servletexec/self\\_help/faq/detail?faqId=259](http://www.newatlanta.com/c/support/servletexec/self_help/faq/detail?faqId=259)

- `servletexec.multiInstanceMode`

The default value is `disabled`.

An example of using this property in `webadapter.properties` is:

```
servletexec.multiInstanceMode=enabled
```

Enabling multi-instance mode will cause the adapter to:

- only ping an unresponsive ASI every `aliasCheckInterval` seconds (rather than continually trying to ping it on every request in an attempt to update its outdated/expired alias cache).
- clear the in-memory alias cache for any ASI that becomes unresponsive. This provides better support for using SE in a failover/clustered environment. It allows the request to "filter down" to the other ASI's or the webserver itself rather than giving **Failed To Connect to ServletExec** messages over and over. Just be aware that you may get 404 Not Found responses in this case.

To confirm that your adapter is running in multi-instance mode, look for the presence of the following line in your adapter's startup messages:

***This adapter will run with multi-instance optimizations.***

## 2.7 ServletExec/AS Operation

A ServletExec/AS instance [ASI] is a standalone Java application that communicates with the web server (through the ServletExec/AS web server adapter) using network sockets.

If you installed an ASI as a Windows service, you can start and stop it using the **Services** control panel. The Windows **Services** mechanism simply calls either the `StartServletExec.bat` file or the `StopServletExec.bat` file when starting or

stopping an ASI. Those batch files are located in the `se-<instance-name>` subdirectories of the `ServletExec AS` installation directory. Each ASI has its own copy of those 2 batch files. Do not move or delete these batch files.

To manually install an ASI as a Windows Service (if you did not let the installer do so automatically), look in the `bin` subdirectory of the `ServletExec AS` installation directory and read `NTService READ ME.txt`.

## 2.7.1 Starting ServletExec/AS

A ServletExec/AS instance may be started as a Windows Service, or by manually invoking the `StartServletExec.bat` file. There are 2 ways to manually invoke that batch file: (1) double-click it, or (2) open a DOS prompt, `cd` to folder that contains the file, and then use the keyboard to type out `StartServletExec.bat`. This 2<sup>nd</sup> way is very useful for troubleshooting since if the ASI is having problems starting up, you'll likely see the errors there on the DOS prompt.

### 2.7.1.1 StartServletExec.bat

If you examine this batch file in a plain text editor you can see that it uses standard *java options*, and also several required and optional *program arguments*. You may edit `StartServletExec.bat` as needed. The next section features a complete list of ServletExec/AS command line arguments.

### 2.7.1.2 How StartServletExec.bat uses the java Command

The information in this section can help you edit the `StartServletExec.bat` file to modify the startup parameters for a ServletExec/AS instance (if needed).

The general form is:

```
java <java options> ServletExec <ServletExec/AS program arguments>
```

#### Important

The *java options* must include the `-classpath` option specifying the path to the `servlet-api.jar`, `jsp-api.jar`, `ServletExec80.jar`, `ServletExecAdmin.jar`, `el-api.jar`, `jasper-el.jar`, `jstl.jar`, `appserv-jstl.jar`, `activation.jar`, `mail.jar` archives.

### Start ServletExec/AS arguments

If an option or argument value contains spaces then the entire value must be placed inside double quotes, as in the following example:

```
-name "Local Instance"
```

See the following table for a complete list of available arguments.

Argument	Explanation
<code>-help</code>	Displays all available arguments and explanations.
<code>-port &lt;port number&gt;</code>	<b>Optional.</b> The default value is 8888. This

Argument	Explanation
	argument specifies the TCP/IP port on which the ServletExec/AS instance communicates with the web server adapter(s). If you modify this value, you must also modify the web server configuration file(s) as described above, and you must also modify the <code>-port</code> value used in the <code>StopServletExec.bat</code> file.
<code>-backlog &lt;length&gt;</code>	<b>Optional.</b> The default value is 50. This argument specifies the size of the ServletExec/AS incoming request queue. Requests received when the queue is full are rejected. Increasing the size of the request queue may prevent requests from being rejected under heavy loads, but may increase per-request response times.
<code>-name &lt;instance-name&gt;</code>	<b>Optional.</b> This is used to specify the name of the ServletExec/AS instance and is used only for display in the Admin UI to identify the instance.
<code>-home &lt;path to the ServletExec/AS instance home directory&gt;</code>	<b>Optional.</b> The default is the directory from which the <code>java</code> command is executed. This specifies the directory in which the ServletExec/AS instance will look for the <code>ServletExecData</code> , <code>ServletLogs</code> , and <code>Servlets</code> subdirectories.
<code>-log &lt;path to the ServletExec/AS instance log directory&gt;</code>	<b>Optional.</b> This can be used to specify an alternate directory for writing the ServletExec/AS log files. By default, log files are written to the <code>ServletLogs</code> subdirectory of the ServletExec/AS home directory as specified by the <code>-home</code> argument.
<code>-root &lt;path to the web server's document root directory&gt;</code>	<b>Required.</b> Specifies the <b>case-sensitive</b> path to the web server's document root directory. If using SE virtual servers [VS], the doc root of each SE VS must be configured using a separate <code>-root</code> argument using the following format:  <code>-root &lt;virtual server&gt;=&lt;folder&gt;</code>  for example:  <code>-root www.abc.com=C:\Apache\htdocs\abcdocs</code>
<code>-root &lt;path to the</code>	<i>See previous explanation.</i>

Argument	Explanation
virtual server's document root directory>	
-addl <url=directory>	<p><b>Optional.</b> This can be used to specify additional <b>case-sensitive</b> document directories (other than the root) and is specified in two forms:</p> <pre>-addl &lt;url&gt;=&lt;physical directory&gt; -addl &lt;virtual server/url&gt;=&lt;physical directory&gt;</pre> <p><b>For example:</b></p> <pre>-addl /test=C:\Test -addl www.abc.com/support=C:\Support</pre>
-addl <virtual server/url=directory>	<i>See previous explanation.</i>
-mimetypes <path to the web server's mime.types file>	<p><b>Optional.</b> This specifies the path to the web server's <code>mime.types</code> file. If this argument isn't provided, the <code>ServletContext.getMimeType()</code> method always returns <code>null</code>. (For Microsoft IIS, which doesn't have a <code>mime.types</code> file, the <code>ServletContext.getMimeType()</code> method always returns <code>null</code>).</p>
-allow <ip1,ip2,...,ipn>	<p><b>Optional.</b> This specifies the IP address(es) of the web server(s) that are allowed to communicate with the ServletExec/AS instance. Either IPv4 or IPv6 Addresses may be used. IPv4 addresses must be of the form <code>x.x.x.x</code> (where <code>x</code> is in the range 0-255) IPv6 addresses must be of the form <code>[y:y:y:y:y:y]</code> (where <code>y</code> is a 4-digit hexadecimal number). IP addresses can include the "*" character to indicate a subrange (for example: <code>168.121.97.*</code>, <code>[:*:*:*:*:*:*]</code>). If the <code>-allow</code> argument is not specified, the ServletExec/AS instance only accepts requests from web servers running on the local machine.</p>

**Table 2. Start ServletExec/AS Command Line Arguments**

Note: The `-root` and `-addl` arguments are used by the webapp named “default-app” only, and have no effect on other deployed webapps. For more details please see SE FAQ #278: [http://www.newatlanta.com/c/support/servletexec/self\\_help/faq/detail?faqId=278](http://www.newatlanta.com/c/support/servletexec/self_help/faq/detail?faqId=278)

### 2.7.1.3 Closing the DOS Window

When starting a ServletExec/AS instance manually using the `java` command (either using the `StartServletExec.bat` file or from the command line), the DOS window must remain open while the ServletExec/AS instance is running. To be able to close the DOS window, use the `javaw` command instead of `java`. After the ServletExec/AS instance has started, you can close the DOS window and the instance will continue running.

## 2.7.2 Stopping ServletExec/AS

You must stop a ServletExec/AS instance using the `StopServletExec.bat` file. If a ServletExec/AS instance is not shut down properly, `servlet destroy()` methods are not invoked, sessions are not saved, Web Application Lifecycle Events are not generated, and buffered log messages are lost.

### 2.7.2.1 StopServletExec.bat

`StopServletExec.bat` invokes the `StopServletExec` Java program to stop the ServletExec/AS instance. That program opens a TCP port and sends a message to the instance, telling it to shutdown.

### 2.7.2.2 How StopServletExec.bat uses the java Command

The information in this section can help you edit the `StopServletExec.bat` file to modify the shutdown parameters for a ServletExec/AS instance (if needed).

The general form is:

```
java <java options> StopServletExec <program arguments>
```

The only edits you’d likely ever need to make to this file is to change the value of the `-port` argument to match the `-port` value specified in `StartServletExec.bat`, or to change the version of `java` being used.

### Stop ServletExec/AS arguments

If an option/argument value contains spaces then the entire value must be placed inside double quotes, as in the following example:

```
-name "Local Instance"
```

See the following table for a complete list of available arguments.

Argument	Explanation
<code>-help</code>	Displays all available arguments and explanations.
<code>-port</code>	Specifies the port number used by the ServletExec/AS instance

**Table 3. Stop ServletExec/AS Command Line Arguments**

### 2.7.3 Remote Operation

By default, a ServletExec/AS web server adapter is installed on the same machine as the ServletExec/AS instance, and the ServletExec/AS instance (by default) only accepts requests from web server adapters running on the local machine. It is possible to install and configure web server adapters to run on a different machine (a “remote” machine) than the ServletExec/AS instance.

#### To run a web server adapter on a different machine

1. Edit the `startServletExec.bat` file for the ServletExec/AS instance to add the following argument at the end of the `java` command line:

```
-allow <ip address>
```

where `<ip address>` is the IP address of the remote machine on which the web server adapter will be installed

*See table 4 in section 2.7.1.2 for a complete discussion of the `-allow` argument.*

2. Run the ServletExec/AS installer on the remote machine on which the web server adapter is to be installed. Choose **Install a web server adapter** when prompted.

*See Section 2.4 for more information.*

3. Enter the **name**, **IP address**, and **port number** of the ServletExec/AS instance when prompted.

---

#### Note

You can install multiple web server adapters on multiple machines or on a single machine to forward requests to a single (or multiple) ServletExec/AS instance(s).

---

### 2.7.4 Multiple ServletExec/AS Instances (Multiple Java VMs)

It's possible to install and run multiple ServletExec/AS instances on a single server machine (or on unique machines). Each ServletExec/AS instance will run independently of the others, each within its own Java Virtual Machine (VM).

#### To install multiple ServletExec/AS instances

Run the ServletExec/AS installer again to install another instance. Remember to give each instance a unique name and port number during the installation process.

#### To configure a web server adapter to forward HTTP requests to more than one instance

It's possible (but not required) to configure a single web server adapter to forward HTTP requests to more than one ServletExec/AS instance. The adapter will use both the hostname of the request and the context path of the request to decide which (if any) SE AS instance should be handed the request. The hostname portion of the request is matched against the hosts defined in `webadapter.properties`. The context path portion of the request is matched against the context paths of all webapps deployed on all AS instances whose hostname matched the request.

One option to configure this is to use unique webapp context paths (unique across all SE instances). Another option is to modify the webadapter.properties file to define a unique set of hostnames or IPs [via the .hosts value] for each instance. Yet another option is to use some combination of those 2 options. For details please read SE FAQ #259:

[http://www.newatlanta.com/c/support/servletexec/self\\_help/faq/detail?faqId=259](http://www.newatlanta.com/c/support/servletexec/self_help/faq/detail?faqId=259)

## 2.8 Uninstalling ServletExec/AS

### To uninstall ServletExec/AS or a web server adapter

1. Open Control Panel and click Add/Remove Programs.
2. In the list, click **ServletExec 2012 AS**, and then click **Add/Remove** or **Change/Remove**, depending on your operating system. This launches the ServletExec installer/uninstaller.
3. Click the appropriate option from the following choices: uninstall a ServletExec/AS instance, uninstall a web server adapter, or completely uninstall ServletExec/AS.

If you are completely removing ServletExec/AS from your system, delete the ServletExec AS directory.