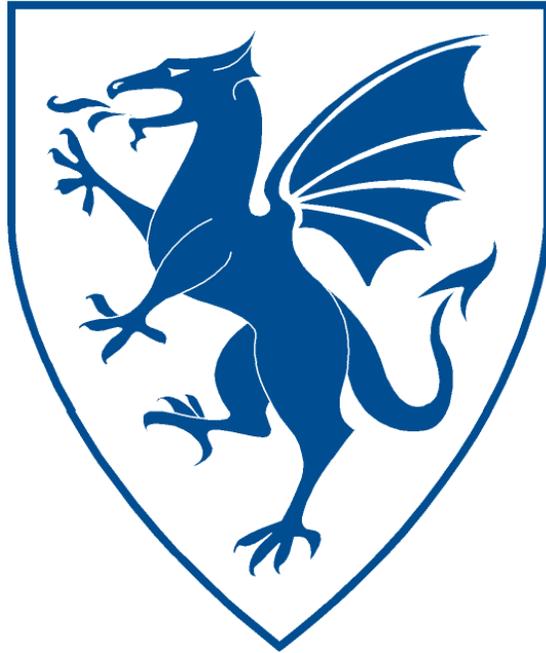


# BlueDragon



# BlueDragon<sup>TM</sup> 7.1

Server JX  
Installation Guide

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NEW ATLANTA COMMUNICATIONS, LLC

# BlueDragon™ 7.1

## Server JX Installation Guide

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May 11, 2009  
Version 7.1



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# 1. Introduction

**B**lueDragon is a family of server-based products for deploying dynamic web applications developed using ColdFusion® Markup Language (CFML). BlueDragon features native technology platform integration on the operating system, web server, and database of your choice. CFML is a popular server-side, template-based scripting language that boasts a rich feature set and renowned ease-of-use.

In addition to CFML, some BlueDragon editions also implement the Java Servlet API and Java-Server Pages™ (JSP) standards defined by Sun Microsystems, Inc. as component technologies of the Java Platform, Enterprise Edition (Java EE).

BlueDragon provides a high-performance, reliable, standards-based environment for hosting CFML web applications, and enables the integration of CFML with Java EE and Microsoft .NET technologies.

## 1.1 About This Manual

This *BlueDragon 7.1 Server JX Installation Guide* presents information of use primarily to those responsible for installing BlueDragon, but it also offers information useful to those planning for installation as well as CFML developers interested in certain technical details about the BlueDragon environment.

This manual offers a brief discussion of the BlueDragon product configurations, then information on preparing for installation, running the installer, verifying the installation, using the BlueDragon administration console, viewing logs of activity, and uninstalling BlueDragon.

Additionally, it offers information on executing your CFML templates with BlueDragon (where to place code, depending on whether you're using the built-in web server or a web server adapter), as well as information about updating BlueDragon from one release to another, and the special issues regarding preserving settings, documents, and logs between releases.

## 1.2 Technical Support

If you're having difficulty installing or using BlueDragon, visit the self-help section of the New Atlanta web site for assistance:

[http://www.newatlanta.com/products/bluedragon/self\\_help/index.cfm](http://www.newatlanta.com/products/bluedragon/self_help/index.cfm)

Details regarding paid support options, including online-, telephone-, and pager-based support are available from the New Atlanta web site:

[http://www.newatlanta.com/support/support\\_options.jsp](http://www.newatlanta.com/support/support_options.jsp)

### 1.2.1 Additional Information in FAQs

As discussed above, additional information about working with BlueDragon can be found in the frequently asked questions section of the New Atlanta web site:

[http://www.newatlanta.com/biz/c/products/bluedragon/self\\_help/faq/home](http://www.newatlanta.com/biz/c/products/bluedragon/self_help/faq/home)

In particular, new information is often posted there before it can be incorporated into this documentation. It's always useful to read the FAQs when you're having a problem, then use the BlueDragon discussion forums if you have continuing questions not answered in the documentation.

## 1.3 Other Documentation

The other manuals available in the BlueDragon documentation library are:

- *What's New in BlueDragon 7.1*
- *BlueDragon 7.1 CFML Compatibility Guide*
- *BlueDragon 7.1 CFML Enhancements Guide*
- *BlueDragon 7.1 User Guide*

Each offers useful information that may be relevant to developers, installers, and administrators, and they are available in PDF format from New Atlanta's web site:

[http://www.newatlanta.com/products/bluedragon/self\\_help/docs/index.cfm](http://www.newatlanta.com/products/bluedragon/self_help/docs/index.cfm)



## 2. BlueDragon Product Configurations

BlueDragon is currently available in three product configurations: BlueDragon Server JX, BlueDragon for Java EE Servers, and BlueDragon for the Microsoft .NET Framework.

### 2.1 BlueDragon Server JX

BlueDragon Server JX is a full-featured standalone web application server that supports CFML, JSP, and Java Servlets. BlueDragon Server JX is available for Windows and Linux; it contains a built-in web server for development and testing, and integrates with Microsoft IIS and Apache web servers for deployment.

### 2.2 BlueDragon for Java EE Servers

BlueDragon for Java EE Servers (BlueDragon/JEE) allows you to deploy CFML applications as native Java EE components on BEA WebLogic, IBM WebSphere, JBoss, and other standard Java EE servers (and servlet engines such as Apache Tomcat and New Atlanta ServletExec).

In addition to enabling native integration with other Java EE components on the server (such as EJBs, JMS, and more), you can also leverage features of the Java EE server which can include supporting multiple independent instances of your web application, clustering of your application across multiple servers, load balancing and failover, support for Java EE sessions and Java EE datasources, and more.

BlueDragon/JEE is available for Windows, Mac OS X, SPARC Solaris, IBM AIX, HP-UX and Linux (and indeed, on any operating system which supports a Java EE server).

For information on BlueDragon/JEE, see the BlueDragon document, *Deploying CFML on Java EE Application Servers*.

### 2.3 BlueDragon for the Microsoft .NET Framework

BlueDragon for the Microsoft .NET Framework (BlueDragon.NET) allows you to deploy CFML applications as native ASP.NET components on Windows servers. BlueDragon.NET provides rich native integration of CFML with Windows, .NET, IIS, ASP.NET, and other Microsoft products and technologies.

For information on BlueDragon.NET, see the BlueDragon document, *Deploying CFML on the Microsoft .NET Framework*.

## 2.4 Trial Editions and Licensing

When BlueDragon Server JX is first installed it operates in Evaluation mode for 30 days. While in Evaluation mode, BlueDragon Server JX is fully-featured without any restrictions or limitations.

At the end of the 30-day evaluation period, BlueDragon Server JX reverts to Development mode, in which BlueDragon Server JX only accepts requests from clients (browsers) running on the same (local) computer. After purchasing a license key (or obtaining a time-limited Evaluation license key from [sales@newatlanta.com](mailto:sales@newatlanta.com)), enter the license key via the BlueDragon administration console to remove the local-IP development mode restriction.

Visit New Atlanta's web site for additional information regarding BlueDragon product configurations and licensing:

<http://www.newatlanta.com/products/bluedragon/index.cfm>



## 3. Preparing For Installation

Before proceeding with installation of BlueDragon, there are a few concepts you should understand and in some cases preliminary steps that you should take first.

### 3.1 System Requirements

BlueDragon Server JX is supported on the following operating systems, and provides web server adapters for the following web servers; all operating systems are supported on both x86 32-bit and x64 64-bit hardware, where applicable:

OS	Web Server
Windows Server 2008	<ul style="list-style-type: none"><li>▪ Microsoft IIS 5.0, 5.1, 6.0, and 7.0</li><li>▪ Apache HTTP Server 2.0.50</li><li>▪ Apache HTTP Server 2.2.3</li></ul>
Windows Vista	
Windows Server 2003	
Windows XP Professional	
Windows 2000	
Red Hat Enterprise Linux 4 and 5	<ul style="list-style-type: none"><li>▪ Apache HTTP Server 2.0.50</li><li>▪ Apache HTTP Server 2.2.3</li></ul>
Fedora Core 7, 8, and 9	
SuSe Linux 9 and 10	
CentOS 4 and 5	

The x86 32-bit version of BlueDragon Server JX is not supported on the WOW64 (Windows-on-Windows 64-bit) x86 emulator provided with 64-bit versions of Windows. You can only use the x64 64-bit version of BlueDragon Server JX on x64 64-bit versions of Windows.

Linux distributions other than those listed above have not been tested and are not officially supported. However, customers have successfully installed BlueDragon Server JX on Slackware, Debian, Gentoo, and others. The key requirement is to be running the 2.4 or higher kernel on an x86 32-bit or x64 64-bit platform.

If you need to deploy BlueDragon on combinations of operating system platform and/or web servers not listed here, consider using BlueDragon/JEE, which allows you to deploy CFML applications on any standard Java EE web server (or Servlet 2.3 servlet engine). Therefore, if a given Java EE server or servlet engine supports your desired platform/web server configuration not listed here, BlueDragon/JEE will allow you to run your CFML applications on that configuration.

For information about BlueDragon/JEE, see the document, *Deploying CFML on Java EE Application Servers*.

### 3.1.1 JDK Requirements

BlueDragon Server JX for Windows and Linux are bundled with JDK 1.6, and for those operating systems that is the only JDK version that is supported.

## 3.2 Installing with ColdFusion and Servlet/JSP Engines

You can install BlueDragon Server JX on a computer that already has ColdFusion 5, ColdFusion MX, or another Servlet/JSP engine—such as Apache Tomcat—installed. The concerns in this configuration are: (1) integration with an external web server (IIS or Apache); and, (2) port selection for the built-in web server (as discussed in the following sections). If you have installed ColdFusion MX, you may also have an issue with the WildCard Mapping feature in IIS; see section 3.6.2.2 for more information.

If you have ColdFusion or another Servlet/JSP engine installed and configured to integrate with an external web server, be aware that installing BlueDragon and choosing to integrate it with that web server will overwrite existing extension mapping configuration for the .cfm, .cfml, .cfc, .cfchart, and .jsp extensions.

Additionally, if you're using a web server that permits multiple virtual hosts (such as Apache and IIS), you can configure different hosts to respond to requests for CFML files, and the BlueDragon feature for adding a web server adapter on these servers can detect and offer to configure individual virtual hosts. See section 3.6 for additional information on configuring web server adapters.

Yet another solution is to configure the web server to identify different virtual directories to serve CFML out of a single physical directory but directed against either of multiple CFML servers installed on the machine. For more information, see the article, "Setting Up Your Development Server with ColdFusion 5, MX, and BlueDragon", in the September 2003 edition of ColdFusion Developers Journal, which is available online at

<http://coldfusion.sys-con.com/node/42069>

You can also avoid this problem by using BlueDragon's built-in web server for page processing, or you can install a new web server for integration with BlueDragon. Of course, there is no conflict installing BlueDragon if you have installed ColdFusion MX using its built-in web server or a servlet/JSP engine that uses its own web server.

## 3.3 Support for MySQL

All editions of BlueDragon show an available MySQL Driver in the list of choices of drivers offered in the administration console when adding a datasource (discussed further in section 6.3). Additionally, all editions deployed on Windows support the ODBC Driver available from MySQL.

Unfortunately, due to licensing restrictions the MySQL driver cannot be bundled with the download of BlueDragon. Instead, you must download and install the driver (JDBC or ODBC), and configure BlueDragon to recognize that driver.

For more information, see the FAQ 216, “How can I define a MySQL datasource?” which is available on the New Atlanta web site:

[http://www.newatlanta.com/c/products/bluedragon/self\\_help/faq/detail?faqId=216](http://www.newatlanta.com/c/products/bluedragon/self_help/faq/detail?faqId=216)

## 3.4 BlueDragon Servers Account Privileges

By default, BlueDragon Server JX runs as root on Linux and as the Local System account on Windows.

## 3.5 Built-in Web Server

BlueDragon Server JX contains a built-in web (HTTP) server that can be used for development and testing, and is also used to access the BlueDragon administration console. The BlueDragon built-in web server is not recommended for use on production web sites. See section 3.6 for more information on using web server adapters for integration with the IIS and Apache web servers. Additionally, see section 5.1 for additional information on using the built-in web server.

You will be prompted by the BlueDragon installer to specify a TCP/IP port number for the built-in web server; the default port number is 8080. After installation, you may modify the port number via the BlueDragon administration console.

## 3.6 Web Server Adapters

For deploying production web sites, BlueDragon Server JX includes adapters for the Microsoft® Internet Information Server (IIS) and Apache HTTP Server web servers. You may choose to have the BlueDragon installer install a web server adapter, or you may install a web server adapter via the BlueDragon administration console. Regardless of the method you choose, *you must restart the web server after installing a BlueDragon web server adapter.*

BlueDragon Server uses a TCP/IP port for communication with the web server adapter; the default port number is 9999. You will be prompted to specify the port number when you install a web server adapter. *The web server adapter port number must be different than the built-in web server port number!* (It also must be a port number not used by any other server on your machine, including any other installations of BlueDragon server that might also be using the default 9999 port.)

The following subsections describe additional topics relevant to using web server adapters.

### 3.6.1 General Web Server Adapter Issues

#### 3.6.1.1 Multi-homed Web Servers and the “Cache per Web Site” Option

If BlueDragon is serving multiple web sites (for example, "www.abc.com" and "www.xyz.com"), the "Cache per Web Site" setting on the “Application->caching” page of the BlueDragon administration console determines whether separate file caches are used for each web site (if enabled), or a single file cache is used for all web sites (if disabled).

If all web sites being served by BlueDragon are sharing a common set of CFML templates, this option should be disabled to avoid storing duplicate copies of the same files in the cache (one copy for each web site). If the web sites are not sharing a common set of CFML templates, this option should be enabled to avoid having files from one web site served to another web site due to duplicate names (such as "index.cfm").

If this option is enabled, the file cache size should be set to the maximum number of templates across all web sites (the file cache size is a "global" number, not a per web site number). If a single web site is being served by BlueDragon, this option should be disabled.

#### 3.6.1.2 BlueDragon Does Not Configure Index.cfm as Default Document

BlueDragon does not declare index.cfm or any other filenames in the web server’s list of default documents. If your code relies on that, please add that yourself using the appropriate mechanism, such as the `Documents` tab in the `Properties` dialogue for the IIS web site or virtual directory, or the `DirectoryIndex` entry in Apache’s `httpd.conf` file.

### 3.6.2 IIS Web Server Adapter Issues

Following are several issues specific to Microsoft IIS.

#### 3.6.2.1 Microsoft IIS Adapter uses Extension Mappings

If you install a web server adapter on Microsoft IIS, be aware that the adapter runs using extension mappings rather than as an ISAPI filter. Generally, the adapter configuration is handled entirely by BlueDragon, but this clarification is useful should you need to perform any manual configuration.

#### 3.6.2.2 Disable Any IIS “Wildcard Mapping” Enabled by ColdFusion MX

On Windows Server 2003 only, if the ColdFusion MX installer has been run prior to installing BlueDragon, it will have enabled an IIS-specific feature called “wildcard mappings”, which is set on the `Application Configuration` page where file extensions (like CFM and CFC) are defined. You must remove any wildcard mappings before BlueDragon can process CFML pages.

#### 3.6.2.3 Windows “Data Execution Protection” Mechanism

Editions of Windows XP SP 2 and Windows Server 2003 may enable another possible security feature in its Data Execution Protection (or DEP) mechanism. If enabled, this may prevent the BlueDragon installer from running. See the following for more information:

<http://support.microsoft.com/kb/875352>

#### **3.6.2.4 Windows Server 2003 Security Settings**

Windows Server 2003 is configured by default to not permit ASP.NET pages to execute. You must also ensure that proper security settings have been enabled to permit execution of ASP.NET pages, as discussed in the following resource:

<http://www.microsoft.com/technet/prodtechnol/WindowsServer2003/Library/IIS/44f16c37-f727-4244-9813-2289e13dadba.mspx>

Again, the same security restrictions (if not lifted) would prevent execution of CFML pages once BlueDragon is installed.

Recent editions of Windows Server 2003 may also have enabled the “Security Configuration Wizard for Windows Server 2003”. While disabled by default, if enabled, this could be another source of security restrictions. See the following for more information:

<http://www.microsoft.com/windowsserver2003/technologies/security/configwiz/default.mspx>

#### **3.6.2.5 Issues with IIS Lockdown Tool URLScan Feature**

Some users have reported that the IIS Lockdown tool’s URLScan feature can cause a conflict with BlueDragon/IIS integration. If you have enabled the Lockdown tool, and are having problems with BlueDragon running on IIS, disable the URLScan feature. For more information on the tool, see:

<http://technet.microsoft.com/en-us/library/dd450372.aspx>

and

<http://technet.microsoft.com/en-us/security/cc242650.aspx>

### **3.6.3 Apache Web Server Issues**

Following are Apache web server issues.

#### **3.6.3.1 Apache Configurations in Linux**

Many Linux distributions provide pre-installed Apache web server configurations. Some of these installations use Apache directory structures that are unique to the installation and differ from the "standard" provided by the Apache Group's binary and source configurations. Rather than recognizing all these configurations, the BlueDragon Server JX installers and administration console recognize either a “Red Hat standard” configuration or a "standard" configuration used by the Apache Group's binary packages. Therefore, in situations in which neither of these Apache configuration are found, BlueDragon will not present the option to integrate with Apache during installation or on the Web Server Adapter screen in the BlueDragon Admin console.

The “RedHat standard” installation assumes that the following directories exist and contain specific executables or configuration files. When found, BlueDragon Server will report the location of the Apache installation as “/etc/httpd” and will detect its specific version.

“RedHat standard”	
base installation directory <code>\${BASEDIR}</code>	<code>/etc/httpd</code>
configuration files	<code>/etc/httpd/conf</code>
document root	<code>/var/www/html</code>
Module or adapter storage	<code>\${BASEDIR}/modules</code>
executable file	<code>/usr/sbin/httpd</code>

To accommodate other systems which do not implement this configuration, the following information describes a method to create a simple set of symbolic links which allow BlueDragon to properly detect any non-standard Apache installation. This set of symbolic links **must be established prior to installation** of the BlueDragon Apache adapter—either before installation of BlueDragon Server JX itself or before starting the BlueDragon Server JX when attempting to use the administration console to add the web server adapter.

For more clarity, the following table describes the directory and file differences between the Apache Group standard and the Gentoo default configurations. From this information it should be straightforward to derive the required information for other configurations, such as Debian or Slackware. (Note that the “environment variable”-style notation used below is only to compact the size of the table and need not be used in any commands executed on your system).

	Apache Group	Gentoo
base installation directory <code>\${BASEDIR}</code>	<code>/usr/local/apache</code>	N/A
configuration files <code>\${CONFDIR}</code>	<code>\${BASEDIR}/conf</code>	<code>/etc/apache/conf</code>
configuration specification file	<code>\${CONFDIR}/httpd.conf</code>	<code>\${CONFDIR}/apache.conf</code>
document root	<code>\${BASEDIR}/htdocs</code>	<code>/var/www/html</code>
modules	<b>Apache 1:</b> <code>\${BASEDIR}/libexec</code> <b>Apache 2:</b>	<code>/etc/httpd/modules</code>

	<code>\${BASEDIR}/modules</code>	
<b>executable file</b>	<code>\${BASEDIR}/bin/httpd</code>	<code>/usr/sbin/httpd</code>

To accommodate these differences, the following commands need to be run on a Gentoo system to adapt the Apache web server configuration for use with BlueDragon Server JX:

```
mkdir -p /usr/local/apache/bin
ln -s /etc/httpd/conf /usr/local/apache/conf
ln -s /var/www/html /usr/local/apache/htdocs
ln -s /etc/httpd/modules /usr/local/apache/libexec
ln -s /etc/httpd/modules /usr/local/apache/modules
ln -s /usr/sbin/httpd /usr/local/apache/bin/httpd
ln -s /etc/apache/conf/apache.conf /usr/local/apache/conf/httpd.conf
```

Note that this example for Gentoo includes a link for the Apache configuration specification file (`httpd.conf`) since its name is different than that for an Apache Group installation.

**Please note** that the symbolic link method described above can use either “`/usr/local/apache`” and/or “`/usr/local/apache2`” as the “base installation directory `${BASEDIR}`”. This allows BlueDragon Server JX to recognize multiple installed Apache web server versions. BlueDragon will search for Apache installations in these directories in the following order:

```
/usr/local/apache
/etc/httpd
/usr/local/apache2
```

To prevent possible false duplicate installations from being reported, BlueDragon will detect if searching these directories finds that any symbolic links are used to “point to” the pre-installed version or if the “`/usr/local/apache`” or “`/usr/local/apache2`” symbolic links are “pointing to” the same Apache installation.

## 3.7 Linux Installation Concerns

Following are some Linux-specific installation concerns.

### 3.7.1 Running as a Non-root User on Linux-based Systems

On Linux systems, the use of the root user for running BlueDragon is often undesirable because of the possible security breaches which may be introduced. To prevent this possibility, the BlueDragon Server JX installer allows installation to be performed by users other than root.

However, this often presents problems for the configuration of the BlueDragon external web server adapter because the web server (eg. Apache) installation is owned by the root user. This then prevents BlueDragon’s installer or administration console from modifying the web server’s configuration as required.

Therefore, if the desire is to avoid the use of the root user for BlueDragon, then the web server that is to be used in conjunction with BlueDragon must be either owned by the same user, in the

same group, or the web server configuration file (i.e. `<apache-root>/config/httpd.conf`) must be writable by the same user or group.

### 3.7.2 C++ CFX Tags on Linux

On some Linux systems, C++ CFX tags may fail to execute if the C++ native shared object/library (`libstdc++.so`) does not exist on the system or does not exist in the `/usr/lib` directory.

Since the proper version of this library cannot easily be determined and packaged with the BlueDragon Server installer in advance, the library will need to be separately installed to the system whenever C++ CFX tags are needed. This library is typically available with the installation of the GNU C compiler package or the `compat` package in Linux distributions.



## 4. Running the Installer

There are separate BlueDragon Server JX installers for Windows and Linux; also, there are separate installers for 32-bit (x86) and 64-bit (x64). Be sure to download the appropriate installer for your operating system.

The BlueDragon installers are Java-based and include a bundled Java VM (JVM) for Windows and Linux. You are not required to have a JVM installed on Windows or Linux in order to install BlueDragon; if you do have a JVM installed, BlueDragon will always use its bundled JVM. It is not possible to configure BlueDragon to use an external JVM.

The BlueDragon installers require 32MB of free RAM, a minimum of 8-bit color depth (256 colors), and a minimum 640 x 480 screen resolution. (There is an available console-mode installation for Linux, as explained in section 4.2.1 below.)

The following sections describe installation on Windows and Linux. A final section details what was installed. Be sure to review the previous chapter for information about web server adapters before proceeding.

### 4.1 Installing on Windows

The BlueDragon Server JX installers for 32-bit and 64-bit Windows are named, respectively:

```
BlueDragon_Server_JX_71.exe  
BlueDragon_Server_JX_71-x64.exe
```

Double-click the BlueDragon installer icon to launch Setup. Please review the Software License Agreement carefully and check the READ ME displayed by the setup program for any last minute notices before continuing.

#### 4.1.1 Resolving Installation Problems on Windows

Basic installer status information can be found in the installer log file, which is named `BlueDragon_Server_JX_7.1_InstallLog.log` located in the BlueDragon installation directory (if the installer is aborted before completing, the log file is placed on the Windows desktop).

More detailed installer debug information can be found in the following files found in the root directory of the drive where BlueDragon installation was attempted:

```
BlueDragon_Server_installation_error.log
```

BlueDragon\_Server\_installation\_output.log

## 4.2 Installing on Linux

The BlueDragon Server JX installers for 32-bit and 64-bit Linux have the following file names, respectively:

```
BlueDragon_Server_JX_71-Linux.sh  
BlueDragon_Server_JX_71-Linux-x64.sh
```

### 4.2.1 Installing via GUI Versus Console Mode

The BlueDragon installers for Linux can be run in either Graphical User Interface (GUI) mode or console (command-line) mode. To launch the installers in GUI mode, enter the following command:

```
sh ./BlueDragon_Server_JX_71-Linux.sh
```

To launch the installers in console mode, enter the following command:

```
sh ./BlueDragon_Server_JX_71-Linux.sh -i console
```

Please review the Software License Agreement carefully and check the READ ME displayed by the setup program for any last minute notices before continuing.

### 4.2.2 Resolving Installation Problems on Linux

Basic installer status information can be found in the installer log file, which is named `BlueDragon_Server_JX_7.1_InstallLog.log` located in the BlueDragon installation directory.

More detailed installer debug information can be found in the following files found in the system root directory:

```
BlueDragon_Server_installation_error.log  
BlueDragon_Server_installation_output.log
```

### 4.2.3 Startup and Shutdown Automation on Linux

BlueDragon Linux installations include a script for simplifying the starting and stopping of BlueDragon Server JX. The script is constructed in the “rc” standard form which allows for integration into the system startup and shutdown sequence of UNIX systems. This script is named based upon the BlueDragon edition and installed into the `/etc/rc.d/init.d` directory. For example, for BlueDragon Server JX, the file `/etc/rc.d/init.d/BlueDragon_Server_JX` will be created.

Currently, BlueDragon Server JX installers only create the script, but do not assume configuration into any specific run-level. Therefore, in order to have BlueDragon Server JX controlled at system startup and shutdown, it must be manually *installed* into appropriate `rc.x` subdirectories.

Common practice is to create a symbolic link within these directories to the actual start/stop script in the `/etc/rc.d/init.d` directory. For example, to start up BlueDragon Server JX on a RedHat Linux system running the X11 window system (run-level 5), the `ln` command below can be used. [Note that the actual run-level of a system may be different and this link would need to change accordingly. For example a server system may choose not to activate the X11 window system and therefore would start in run-level 3. In this case, the BlueDragon Server JX startup needs to be linked into the `/etc/rc3.d` directory.]

```
ln -s /etc/init.d/BlueDragon_Server_JX /etc/rc5.d/S95bluedragon
```

To stop BlueDragon Server JX at system shutdown & single user mode, links should be added to the appropriate run-level directories. For example, the following commands can be used to configure the shutdown of BlueDragon Server JX for all single-user states (run-levels 0, 1) on Red-Hat Linux systems:

```
ln -s /etc/init.d/BlueDragon_Server_JX /etc/rc0.d/K95bluedragon
ln -s /etc/init.d/BlueDragon_Server_JX /etc/rc1.d/K95bluedragon
```

Note that although the specific symbolic link name (S95bluedragon & K95bluedragon) need not be exactly as in these examples, they must conform to the “rc” specifications. Most importantly, startup scripts **MUST** begin with “Sxx” and shutdown scripts must begin with “Kxx”, where “xx” is any two digit number. See the Linux system specific documentation for complete details on “rc” scripts.

## 4.3 What Was Installed

The BlueDragon Server JX installers prompt you for an installation directory. On Windows, the default installation directory is:

```
C:\BlueDragon_Server_JX_71
```

On Linux, the default installation directory is:

```
/usr/local/NewAtlanta/BlueDragon_Server_JX_71
```

Table 1, below, describes the contents of the BlueDragon Server JX installation directory.

Item	Description
bin	This directory contains various binary executable files used by BlueDragon Server. <b>Do not modify or delete the contents of this directory.</b>
classes	This directory exists in BlueDragon Server JX only and is automatically added to the classpath. See the READ ME in this directory for more information.
config	This directory contains various configuration files used by BlueDragon Server. <b>Do not modify or delete the contents of this directory.</b>
customtags	This directory is pre-configured in the BlueDragon administration console to contain CFML custom tags, typically called using the “CF_” prefix or

	with CFMODULE, that should be shared by all applications in the server. For example, a custom tag file named <code>BlueDragonHello.cfm</code> could be placed in this directory and then invoked via the tag <code>&lt;CF_BlueDragonHello&gt;</code>
docs	This directory contains the BlueDragon manuals in PDF format.
install	This directory contains various files used by the BlueDragon Server installer. <b>Do not modify or delete the contents of this directory.</b>
jre	This directory contains the BlueDragon Server built-in Java Runtime Environment (JRE). <b>Do not modify or delete the contents of this directory.</b>
lib	This directory contains various Java archive (.jar) files required by BlueDragon Server. <b>Do not modify or delete the contents of this directory.</b>
logs	This directory contains BlueDragon Server log files. Refer to these log files when you have problems or need to contact technical support.
servlets	This directory exists in BlueDragon Server JX only. Place Java servlet class files in this directory. See the <i>BlueDragon 7.1 User Guide</i> for further information on running servlets.
uninstall	This directory contains various files used by the BlueDragon Server uninstaller. <b>Do not modify or delete the contents of this directory.</b>
work	This directory contains a variety of runtime files created by BlueDragon Server.
wwwroot	This is the document root directory for the BlueDragon Server built-in web server. Place any .cfm, .jsp, .html, .gif files, etc., in this directory and serve them as you would normally for any web server.

**Table 1. BlueDragon Server Installation Directory Content**

### 4.3.1 How the BlueDragon Server JX Has Been Installed

On Windows, BlueDragon Server JX is installed as a service that is configured for automatic startup, and is started by the installer. On Linux, BlueDragon Server JX is installed as a daemon and is started by the installer.



## 5. Verifying Your Installation

With BlueDragon Server JX installed, you should now verify that the installation was successful by running some tests against the BlueDragon server as described in this section.

### 5.1 Built-in Web Server

To verify that the BlueDragon Server JX built-in web server is running, enter the following URL in a web browser (if you specified a port other than 8080 during installation, use that port number in the URL):

<http://localhost:8080/index.cfm>

If the BlueDragon built-in web server is working properly, you'll see a page similar to the one in Figure 1, below. See section 7.2 for more information on using the built-in web server.

Note that even if you install a web server adapter (discussed in the next section), you will still use the built-in web server for accessing the BlueDragon administration console (discussed in section 6).

Indeed, because the administration console is accessible via the built-in web server, BlueDragon is configured by default to allow access to the built-in web server only from the machine on which BlueDragon is installed (localhost).

### 5.2 Web Server Adapter

If you installed a web server adapter, *be sure to restart the web server*, then verify the installation by entering the following URL in a web browser (if your web server is not running on the standard port 80 enter the port number in the URL):

<http://localhost/index.cfm>

This URL should return a page similar to the one shown in Figure 1, below.

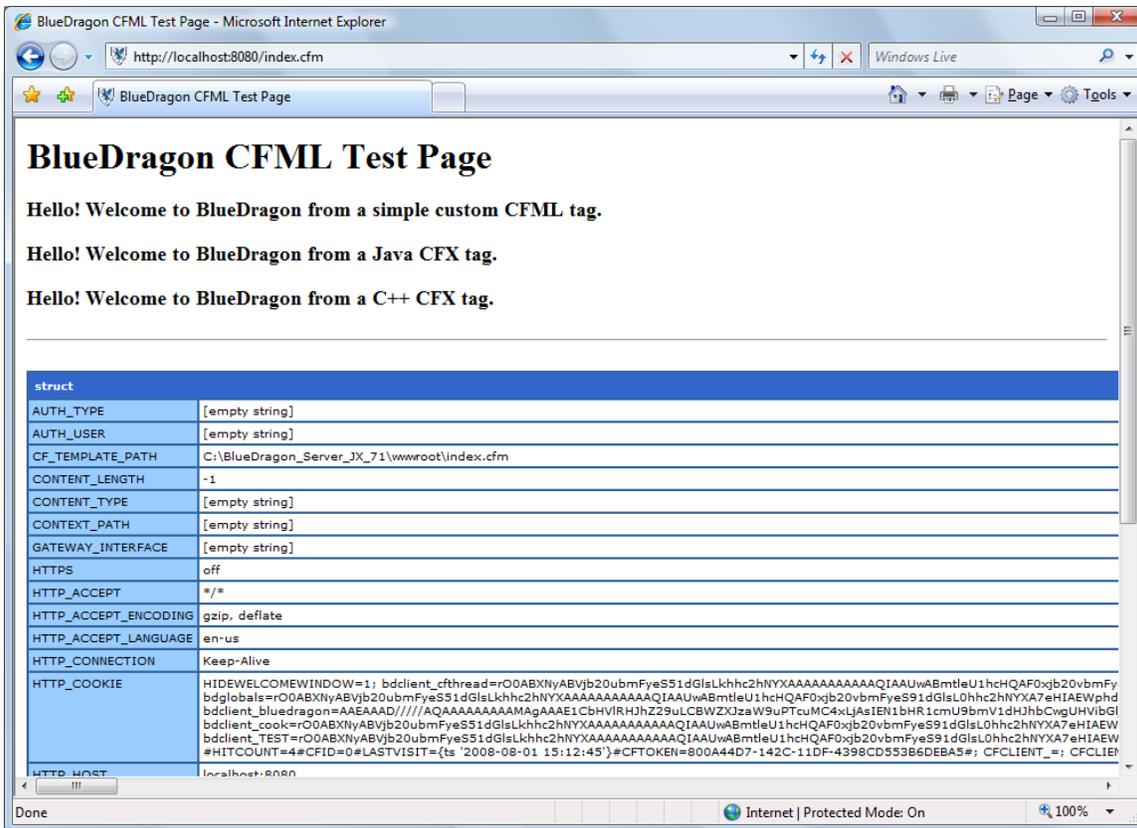


Figure 1. BlueDragon CFML Test Page



## 6. BlueDragon Administration Console

The BlueDragon administration console is used primarily to configure the BlueDragon environment. It also provides status information about the BlueDragon runtime state.

The console offers online help on each page to assist in understanding how its features work. There is information in the online help that is not in the BlueDragon documentation. Additional discussion of the online help is found in the *BlueDragon 7.1 User Guide*.

The first part of this section focuses simply on how to access the administration console, both locally and remotely.

Perhaps the most common activity performed in the administration console is the process of configuring datasources for use by CFML programmers. This topic is covered extensively in the *BlueDragon 7.1 User Guide*. But this section concludes with certain key points that may be relevant to readers of this document.

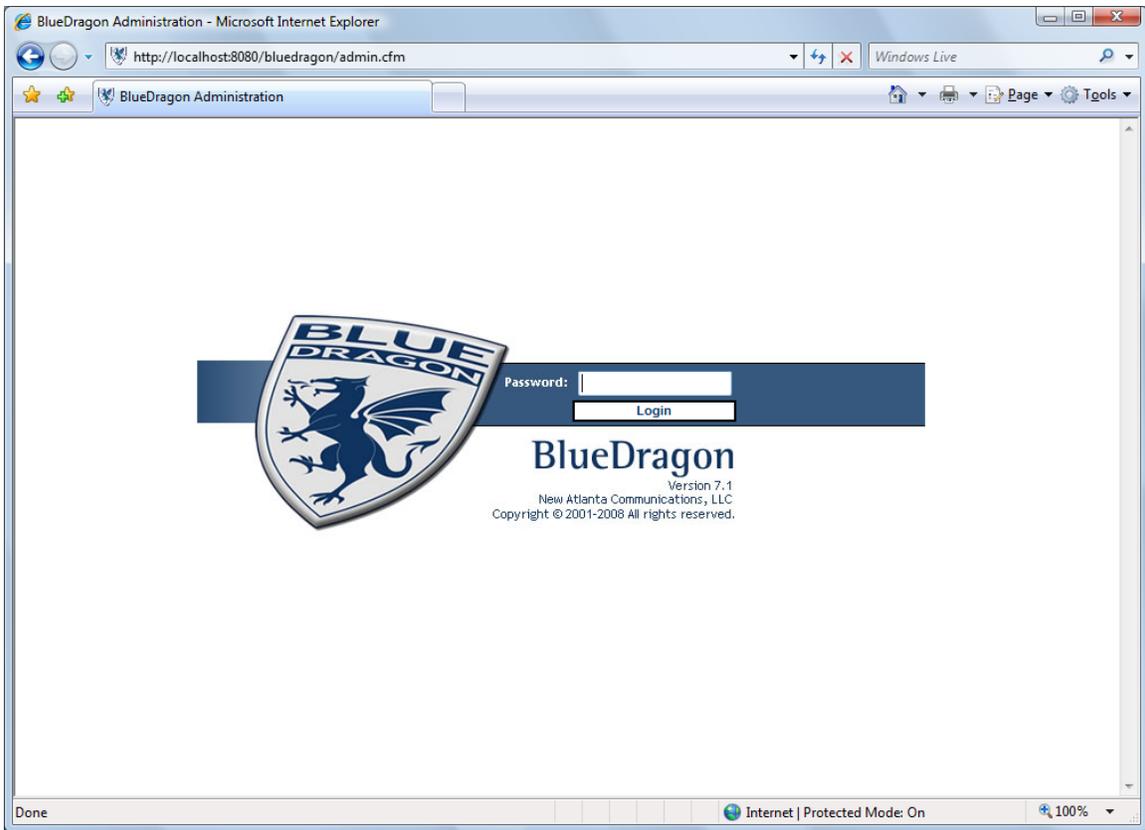
### 6.1 Accessing the BlueDragon Administration Console

The BlueDragon administration console is accessible only via the built-in web server; it is not accessible via web servers on which you've installed a web server adapter.

To access the BlueDragon administration console, enter the following URL in a web browser (if you specified a port other than 8080 for the built-in web server during installation, use that port number in the URL):

<http://localhost:8080/bluedragon/admin.cfm>

After entering this URL you will be prompted to log in to the BlueDragon administration console using the password you provided during installation. See Figure 2, below.



**Figure 2. Administration Console Login**

After logging in, the BlueDragon administration console will appear similar to Figure 3, below. Click the menu items in the left frame to access the various BlueDragon administration functions. Refer to the *BlueDragon 7.1 User Guide*, which can be found in the `docs` directory of the BlueDragon installation directory, for more information about using the administration console.

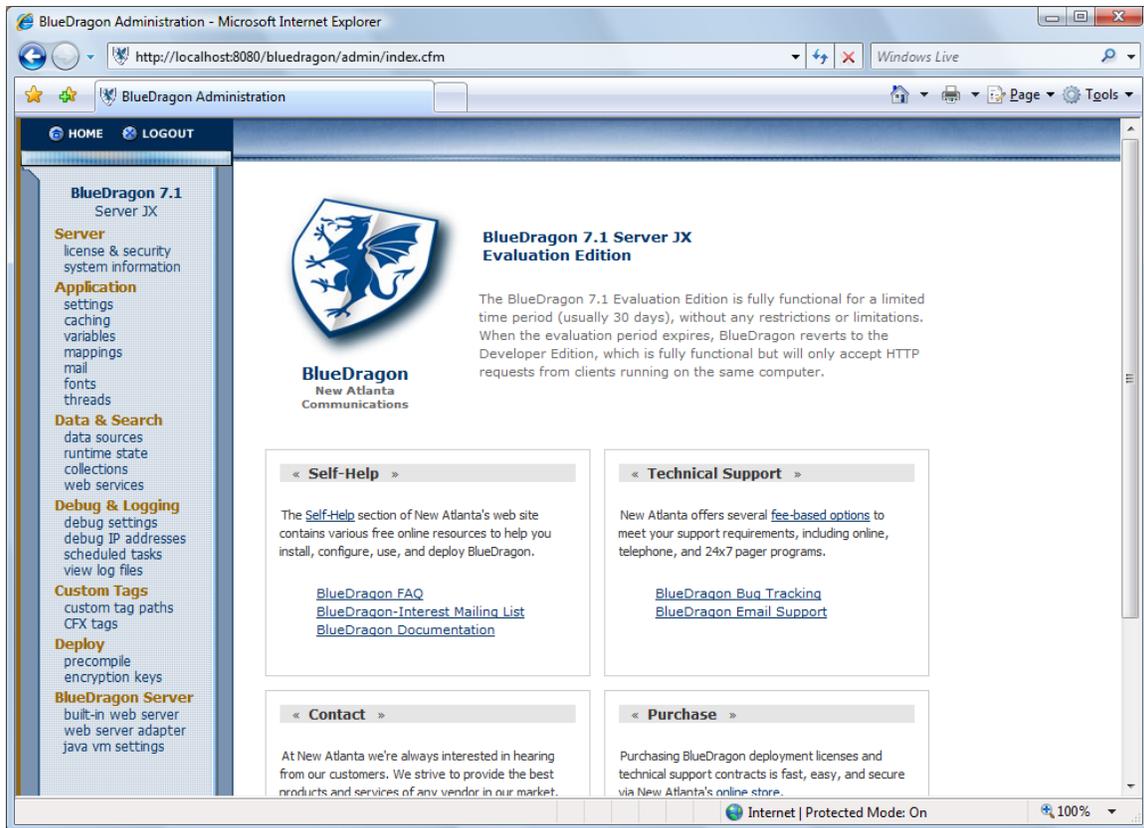


Figure 3. BlueDragon Administration Console

## 6.2 Accessing the Administration Console Remotely

As mentioned in the previous section, the BlueDragon administration console can only be accessed using the built-in web server. By default, the administration console is remotely accessible from any computer. Access to the administration console can be controlled based on the IP address of the remote computer; go to the “Server->license & security” page and modify the “Allowed IPs” and “Deny IPs” settings to configure remote access for the administration console (see the administration console Help page for more information).

Additional points to keep in mind:

- If you just want to provide access to the administration console from machines other than that on which it's installed but within your own network, you may want to also set your firewall to block access to the BlueDragon built-in web server port (8080 by default) from outside of your network.
- The admin password will be passed in clear text from your browser to the server. Unfortunately, BlueDragon doesn't currently support SSL in its built-in web server.

For now, if you're concerned about security, a better approach is to use SSH or other approaches to tunnel into the machine.

## 6.2.1 Enabling SSH Tunneling

Another, more secure, way of opening remote access to the built-in web server (and administration console) is to use SSH tunneling. This is easiest to do with a Linux/Unix servers and any client, but it's also possible with a Windows server. Free SSH servers are available. See [http://www.jfitz.com/tips/putty\\_config.html](http://www.jfitz.com/tips/putty_config.html) for a tutorial on the Putty (ssh client) on Windows.

Forward local port 8080 (or wherever you have BlueDragon's internal server set) via SSH to the remote server port 8080. This will also allow you to leave the remote server configured to accept requests only from localhost/127.0.0.1, as that is where the incoming SSH tunnel will appear to come from.

On Linux, the command takes this form:

```
ssh -L localport:remotemachine:remoteport accountname@remotemachine
```

You can add the `-C` switch for compression if on a slow connection, but be aware that on a fast connection it will actually slow things down. To make the ssh forwarded connection available to other computers, add a `-g` switch. Here is an example:

```
ssh -C -L 8080:mybox.myisp.com:8080 myaccount@mybox.myisp.com
```

Enter the password when prompted. Then you can use your browser to access <http://localhost:8080> (in this example) for the BlueDragon Admin on your remote machine.

## 6.3 Datasource Configuration

There are some aspects of datasource configuration in BlueDragon that may not be obvious to casual users of the administration console. These are highlighted here, and explained in more detail in the *BlueDragon 7.1 User Guide*.

### 6.3.1 Automatic Configuration of ODBC Datasources (Windows)

On Windows platforms, when BlueDragon Server JX is installed it automatically finds any existing ODBC datasources (as configured by the Windows ODBC Datasource Administrator) and imports the configuration information into BlueDragon.

Note that if such an auto-configured ODBC datasource had a username, password, or server name specified in the Windows ODBC configuration, BlueDragon is not able to preserve that and therefore you must add those back manually.

See the *BlueDragon 7.1 User Guide* for more information on using the administrator console to create additional datasources, as well as using the "ODBC Refresh" button to refresh the list of automatically configured ODBC datasources, and also a means to disable this auto-refresh mechanism if desired.

### 6.3.2 Support for MySQL

As discussed previously in this document, while BlueDragon supports MySQL (and even shows an available MySQL Driver in the list of choices of drivers offered in the administration console when adding a datasource), the driver is not installed with BlueDragon. See section 3.3 for more information on preparing the environment to support MySQL.

### 6.3.3 Configuring Datasources Not Listed

If you'd like to use a database other than those listed in the BlueDragon administration console, you may be able to, if you have the needed JDBC driver. For more information, see the *BlueDragon 7.1 User Guide* as well as FAQ 215:

[http://www.newatlanta.com/c/products/bluedragon/self\\_help/faq/home](http://www.newatlanta.com/c/products/bluedragon/self_help/faq/home)



## 7. Executing Your CFML Applications

With BlueDragon Server JX installed and verified, the next step will be to execute your existing CFML applications. How you do this will depend on whether you're using the built-in web server or have implemented a web server adapter.

### 7.1 Working with a Web Server Adapter

If you're using a web server adapter, the location of your CFML files will be driven by your web server and/or virtual directory mappings for that web server. For instance, if you're using IIS, you would typically place your CFML templates in a subdirectory of `C:\inetpub\wwwroot`. Or, you may create a virtual directory in IIS and then point that virtual directory (alias) to any directory accessible to the web server.

Indeed, if you already have CFML templates in the web server root or a virtual directory from having worked with ColdFusion previously, and you implement the BlueDragon web server adapter for that web server (thus choosing to have BlueDragon process your CFML templates instead of ColdFusion), you will be able to simply execute those same CFML applications from their existing location. See section 3.2 for information on configuring the environment when you already have ColdFusion installed and integrated with your web server.

### 7.2 Working with the Built-in Web Server

If you choose to use BlueDragon's built-in web server instead (such as for testing or development), you will want to place your CFML templates in the `wwwroot` sub-directory of the BlueDragon installation directory. Move or copy/paste any `.cfm`, `.jsp`, `.html`, `.gif` files, etc., into the `wwwroot` directory or a subdirectory and serve them as you would normally for any web server. The BlueDragon Server JX built-in web server does not currently support creation of virtual directories.

### 7.3 Log Files

BlueDragon creates several log files which may assist in your understanding the operation of both the BlueDragon engine and your CFML applications. See the discussion of log files in the *BlueDragon 7.1 User Guide*.



## 8. Upgrading BlueDragon

The BlueDragon Server JX 7.1 installer can be used to automatically upgrade an existing installation of BlueDragon Server JX 7.0 or 7.0.1. Simply launch the 7.1 installer and it will automatically detect, backup, and upgrade the existing 7.0 or 7.0.1 installation.

The remainder of this Section 8 discusses the steps needed to perform a manual upgrade to BlueDragon Server JX 7.1 from any of the following previous versions: 6.0, 6.1, 6.2, or 6.2.1.

### 8.1 Protecting Previous Work, Settings and Logs

When planning for a manual upgrade, you will want to make backup copies of some (if not all) of the directories in the previous BlueDragon Server JX installation. Of course, a complete copy of the BlueDragon installation directory may be created for any future reference. When making such a backup, be aware that the BlueDragon service should be stopped to assure that all files may be accessed (avoiding any file locking) and the full directory must exist so that the uninstall process can complete correctly.

The BlueDragon uninstall process will save some information when it recognizes that additions were made. This will occur with each of the following directories which contain application-related data. These directories are preserved by renaming them with a ".save" extension (for example, "wwwroot" becomes "wwwroot.save").

- `wwwroot` holds any CFML and other web documents you created if you used the built-in web server for development
- `classes` and `lib` hold CFX custom tags, database drivers, servlets, or other java classes (note that each will contain files and subdirectories even if you don't place any there)
- `customtags` holds any CFML custom tags you may have placed there for server-wide access (again, there are some sample files already placed there at installation)
- `servlets` holds any Java Servlets you may have placed there (again, there are some sample files already placed there at installation)

These directories and included files may be simply placed in their respective locations in the newly installed BlueDragon directory since they are simply CFML templates, custom tags, servlets, etc.

The following directories contain data used by BlueDragon internal operations. Saving this data would be necessary only if archiving of the logging data is important to you. The only exception is the “config/bluedragon.xml” file which contains BlueDragon configuration data (such as custom tag path definitions, directory mappings, caching configuration, etc) which is custom to the installed application/templates or overall configuration. Note again that this file is saved during the uninstallation process by renaming it “bluedragon.xml.save”.

- `config`, which contains the `bluedragon.xml` and various other properties files
- `logs` contains logs of activity from the execution of the BlueDragon Server
- `work` contains several files from the execution of the BlueDragon Server, including the `bluedragon.log` (logging server activity and server errors) and various directories for logs created by `CFLOG`, `CFSCHEDULE`, and `CFMAIL`, cached queries (if used), and any undelivered mail from using `CFMAIL`. It also contains the `temp/rtelogs` directory, holding a file for each error that occurred during the execution of `CFML`.

Because these directories contain internal data files, they should never be copied into their respective locations in the new installation. Many of these files may not remain the same from one version to another. “config/bluedragon.xml” is the only exception.

## 9. Uninstalling BlueDragon

The following sections describe uninstalling BlueDragon on Windows and Linux.

### 9.1 Protecting Previous Work, Settings, and Logs

Before uninstalling, be cautioned that the BlueDragon uninstall process attempts to remove all directories and files where BlueDragon was installed, which may include useful work and information that you may want to protect (especially if you're planning to then install a new version).

Therefore, if you used custom tags, database drivers, servlets, other Java classes, or if you care to preserve the various logs created by BlueDragon and possibly your applications, you'll want to back up those as well. Again, this is discussed further in section 8.1.

When the uninstall process is completed, there may be a few directories and/or files remaining from the uninstall process (such as web server adapter libraries that may have been in use when BlueDragon was uninstalled). These can generally be safely deleted.

You will also find an uninstall log file in the BlueDragon Uninstall directory.

### 9.2 Uninstalling on Windows

The BlueDragon uninstaller can be invoked from the Add/Remove Programs Control Panel or by double-clicking the BlueDragon uninstaller icon which is located in the `uninstall` sub-directory of the BlueDragon installation directory. The graphical uninstaller requires a minimum of 8-bit color depth (256 colors) and a minimum 640 x 480 screen resolution.

### 9.3 Uninstalling on Linux

At a command prompt enter the following from the `uninstall` sub-directory of the BlueDragon installation directory to launch the uninstaller:

```
sh ./Uninstall_BlueDragon_Server_JX_7.1
```

The uninstaller will be launched in console or GUI mode based on the mode used when the installer was run. The GUI mode uninstaller requires a minimum of 8-bit color depth (256 colors) and a minimum 640 x 480 screen resolution.

## 10. BlueDragon Server JX Remote Configuration

It is possible to configure BlueDragon Server JX into a 2- or 3-tier configuration. Essentially this allows the BlueDragon Server JX to be physically installed onto a system other than that which contains the installation of the associated web server. This configuration also allows for multiple web servers to use a single BlueDragon Server JX installation for their CFML request support.

### 10.1 Configuration Instructions

To configure BlueDragon Server JX to operate on a system other than the web server system, the following installation and configuration steps must be executed. These steps refer to two systems, the "BlueDragon host" and the "Web Server host", which must be systems on the same local area network. The configuration of the BlueDragon Server JX requires manual modification of both these systems.

Note: the 'double backslashes' are required to define all path separators on Windows.

The following steps are to be done on the "BlueDragon host" system:

1. Install BlueDragon Server JX using the standard BlueDragon installer. The installation **should not** install the "web server adapter", therefore choose the "None at this time." response for that installation step.
2. Set the "allow" property in "<BDroot>\config\bluedragon-server.properties" to permit the 'Web Server' host system to access the BlueDragon Server (IP address must be used). Multiple entries must be separated with commas or blanks. For example:

```
allow=192.168.200.17,100.100.100.3
```

3. [optional] The document root path can be modified from the default of "<BDroot>\wwwroot". There are two different supported configuration options.
  - a. Single document root for all requests. The document root folder may be changed by modifying the "srvrroot" property in "<BDroot>\config\bluedragon-server.properties". For example, the following will define the document root folder as the subdirectory "Application\Examples" in the BlueDragon "<BDroot>":

```
srvrroot=.\Application\Examples
```

- b. Distinct document root for each supported remote 'Web Server'. Support for multiple remote 'Web Servers' may be established. This is automatically enabled by the definition of

specific "srvrroot" entries for each 'Web Server'. The "<web-server-hostname>" is the same as the request's "host header" value or the host portion of the URL if a "host header" is not defined. The generic structure of the property definition is as follows:

```
srvrroot.<web-server-hostname>/=<docroot-local-pathname>
```

For example:

```
srvrroot.www.site.com/=.\\merlyn\\site1
srvrroot.this_site.com/=.\\merlyn\\site2
srvrroot.www.sitename.com/sub_site=.\\merlyn\\site3
```

The CFML application (CFML, CFCs, custom tags) must be installed onto the BlueDragon host machine into the BlueDragon Server's document root.

The following steps are to be done on each of the 'Web Server' host systems:

1. Create a folder to serve as the BlueDragon "base location". This folder must be accessible by the 'Web Server' processes.
2. Copy the BlueDragon Server JX version of the appropriate *web server adapter* from the "BlueDragon host" installation into the "base location", maintaining the directory hierarchy (for example when using IIS install the following file: "<base location>\bin\isapi\BlueDragon\_Adapter.dll").
3. Copy the BlueDragon Server JX version of the *configuration properties* from the "BlueDragon host" installation into the "base location", maintaining the directory hierarchy (ie, "<base location>\config\bluedragon.properties").
4. Set the "instances" property in the "<base location>\config\bluedragon.properties" to reference the "BlueDragon host" system IP address.

For example:

```
servletexec.default.instances=192.168.200.123:9999
```

Configure the web server's "application extensions" for each of the extensions .cfm, .cfml, .cfc, & .jsp referencing the full pathname of the BlueDragon web server adapter from the "base location" as the 'executable'. For IIS, be sure that the "Verify that file exists" setting is 'OFF' for each of these extension mappings.

Restart both the web server and the BlueDragon Server on their respective systems. If the basic test page installed with BlueDragon Server JX ("index.cfm") can be accessed via the 'Web Server' URL (in the example above "http://192.168.200.17:81/index.cfm"), then the installation configuration is correct.