



Quick Step-by-Step Guide to Apache Split Deployment with BI 4.1

Create a split Web content deployment for SAP BusinessObjects BI 4.1 using WDeploy and Apache Web Server 2.4.

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This document is the quick guide to create an Apache Split Deployment with Apache HTTP Server 2.4 and BI4.1. By splitting the static and dynamic content delivered by the SAP BusinessObjects portals and having the Apache Web server deliver the static content, you can significantly decrease the load on your Tomcat Web App Server(s). The result is a significant increase in Web performance for both the back-end Web app tier *and* the user. For a more detailed explanation of *Split Deployment*, please refer to the following documents:

- [Improving the User Experience in SAP BI Platform 4.0 with Apache and Wdeploy](#) by James Rapp
[Supplement covering BI4.1 and Apache 2.4:](#)
- [SAP BusinessObjects BI Platform - Web Application Deployment Guide](#)

Environment Setup

The following environment is assumed in this document:

- Operating System: Windows Server 2012
- Web Server: Apache 2.4 + mod_jk 1.2.37 + Mod_headers, Mod_deflate, mod_cache
- Application Server: Tomcat 7 + JDK 1.6 (default installed with BI4.1)
- SAP BusinessObjects BI 4.1
- Deployment - WDeploy executed in split mode in order to separate static and dynamic content

Pre-assumptions

1. Environment is windows based.
2. SAP BI Platform 4.1 is installed with default configuration including Tomcat 7.

Configuration Package

Before moving on to the next step, save the configuration files attached below. Make sure you have both the **httpd-bi41.conf** file and **workers.properties** file saved on the machine you are running deployment on.

To save the attachments, double-click each one to open and save them.

These are plain text files so opening them with Notepad is recommended.



httpd-bi41.conf



workers.properties

Download Apache HTTP Server and mod_jk module

- Download the compiled Apache binaries from Apache Lounge here: www.apachelounge.com/download/
- Choose the latest available Apache 2.4 binaries for Win64.
 - At the time of writing it is **http-2.4.7-win64-VC11.zip**
- Also download the module packages from Apache Lounge because we will require mod_jk module
 - At the time of writing it is **Modules-2.4-win64-VC11.zip**
- Be sure that you have installed Visual C++ Redistributable for Visual Studio 2012. The Apache Lounge Web site has a link to this:
 - At the time of writing it is **VC11 vcredist_x64/86.exe**

Install and Start Apache HTTP Server 2.4

- Unzip the Apache zip file to a folder. **C:\Apache24** is assumed.
This is the default server root in Apache httpd.conf. If you wish to change the install directory, you will also need to change the **ServerRoot** and **DocumentRoot** parameters specified in **httpd.conf** under folder **\Apache24\conf**
- Find **mod_jk.so** from the downloaded Apache module package and place it under the folder **C:\Apache24\modules**
- Edit the **httpd.conf** file, and specify values for the following parameters
 - Listen 80
 - ServerName localhost
 - ServerAdmin youradminaddress@company.com
- Disable IIS if it is installed on the machine. If you wish to leave IIS running, you'll have to manage which server responds to port 80.
- Start Apache httpd from command prompt (Start → run → cmd), and install as a service
 - **cd C:\Apache24\bin**
 - **httpd.exe -k install**
- Also launch ApacheMonitor from C:\Apache24\bin. You can monitor the Apache Web service status with this tool.

Test the installation of Apache httpd by launching a browser and typing the URL: <http://localhost>. You should get a page saying "It works". Here you have successfully installed Apache HTTP Server 2.4

BI4 WDeploy Configuration

- Ensure WDeploy has correct configuration so it knows where to find the relevant resources for Apache httpd and Tomcat
 - In a default Windows installation, the files are located at:
 - **C:\Program Files (x86)\SAP BusinessObjects\SAP BusinessObjects Enterprise XI 4.0\wdeploy\conf**
 - In the wdeploy\conf folder, Open file **config.apache** in a text editor and set the parameter 'ws_dir' to the root of the Apache install:

```
ws_dir=C:\Apache24
```

- Then Open file config.tomcat7 and make sure the first 3 entries in the file look like:

```
# as_dir: the installation directory of the application server
#as_dir=/home/qaunix/Tomcat6018
as_dir=C:\Program Files (x86)\SAP BusinessObjects\tomcat\
# as_instance: the application server instance to deploy to (represents
the name of a folder in the conf/Catalina directory)
as_instance=localhost
#on windows, if tomcat is installed as a service, specify
#service name to modify service startup parameters too
as_service_name=BOEXI40Tomcat
```

Apache HTTPD Configuration

- Place the downloaded configuration file **httpd-bi41.conf** in folder C:\Apache24\conf\extra
- Place the downloaded workers.properties file in folder C:\Apache24\conf, alongside **httpd.conf**
- Enable an AJP connector in order for Apache to communicate with Tomcat using mod_jk by doing the following:
 - Open up **server.xml** file from Tomcat configuration folder in a text editor:
 - **C:\Program Files (x86)\SAP BusinessObjects\tomcat\conf\server.xml**
 - Uncomment the Connector entry and save the server.xml file, as follows:

```
<!-- Define an AJP 1.3 Connector on port 8009 -->
<Connector port="8009" protocol="AJP/1.3" redirectPort="8443" URIEncoding="UTF-8"
enableLookups="false" connectionTimeout="20000"/>
```

- Restart Apache (using the Windows' Services app) to load mod_jk.
- Edit the httpd.conf file, and scroll down to the mod_cache section, you should see the Cachelockpath and Cacheroot parameters are specified as follows
 - CacheLockPath **C:/temp/mod_cache-lock**
 - CacheRoot **C:/cacheroot**

Create these two folders and ensure the Apache user has Read/Write privileges to the cache locations

- Set up **htcacheclean** in unattended mode by doing the following steps:
 - Launch the Windows **Task Scheduler**
 - Select "create Task" from the Action menu
 - Set the user account of the task to the Apache User (user with rights to the cache root and cache lock path)
 - On the Triggers tab, set the task to begin on startup
 - On the Action tab, browse to htcacheclean at the location C:\Apache24\bin\htcacheclean.exe
 - Pass the command line arguments to the process

```
-d 480 -n -p C:/cacheroot -l 500M -i
```

- Edit C:\Apache24\conf\httpd.conf by adding the following line at the end of the file

```
Include \conf\extra\httpd-bi41.conf
```

- Restart Apache and make sure it can start up

Running WDeploy

- Before starting deployment, check the BI4 Central Configuration Manager (CCM) to make sure Apache Tomcat and the Server Intelligence Agent (SIA) are stopped
- Launch a command prompt (Start → Run → cmd)

```
> cd C:\Program Files (x86)\SAP BusinessObjects\SAP BusinessObjects Enterprise XI  
4.0\wdeploy  
> wdeploy.bat tomcat7 -Das_mode=split -Dws_type=apache -DAPP=BOE deployall
```

For this deployment, we're specifying WDeploy to

1. Use Tomcat7 as application server
2. Use split mode deployment
3. Use the Apache web server
4. Only deploy BOE (not mobile). See the [Web Application Deployment Guide](#) for more information on WDeploy options.

This part of the process divides the static and dynamic content, deploying static content to the Apache htdocs folder and .war files containing dynamic content to Tomcat. WDeploy supports a wide variety of additional deployment options covered in the product documentation. Refer to the [Web Application Deployment Guide](#).

- It is strongly recommended that you turn off any anti-virus software while running WDeploy. Split deployment time takes approximately half an hour when anti-virus is disabled. It can range from one hour to 12+ hours when anti-virus is enabled, depending on the performance of the system. Upon completion, you will receive the message "Build successful, return code 0" at the command prompt

Post-Deployment Checks

- Confirm mod_jk has been configured correct by looking at the bottom of the httpd.conf file for the line:
Include conf/bobj.BOE.conf

This line tells apache to load the **bobj.BOE.conf** file in C:\Apache24\conf. This file contains the JkMount commands and should be created automatically

- Confirm the .war files have been deployed to Tomcat by checking the content of webapp directory :
C:\Program Files(x86)\SAP BusinessObjects\tomcat\webapps
- Restart Apache (in the Windows' Services app) and restart Tomcat and the SIA in the BI4 Central Configuration Manager.

After starting the SIA, allow time to make sure all servers are properly initialized before proceeding.

Now the environment has been setup and the Web applications deployed. You should be able to access the BI Launch Pad through Apache by using the following URL from Web server machine

<http://localhost/BOE/BI>

Testing and Resolving Issues

If you have any issues starting Apache, be sure to check the log files located in C:\Apache24\logs. Issues are most often configuration issues that will be pointed out in the log files.

To see error output to the console from Apache httpd, run it from a command prompt instead of running it from the Windows' Services app. Error information will be displayed in the console. You can press Ctrl+C to stop the process in order to re-launch it again.

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