This selected chapter of the second edition of SAP BusinessObjects BI System Administration covers the product installation for every SAP BusinessObjects BI system under the sun. Start your journey, and discover which installation method is right for you, with detailed, step-by-step instructions and screenshots.

“Installation: If You Build it, They Will Come”

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The Authors

Greg Myers, Eric Vallo
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Now that you know a little bit more about where SAP BusinessObjects BI has been and how it all works, it’s time to get your hands dirty. Get ready to install some stuff!

3 Installation: If You Build it, They Will Come

If you’re a rookie SAP BusinessObjects BI administrator, and you’re still reading this book, you win two points. Not that those two points are going to do you any good at the end of the book, but we hear that gamification is a big thing now.

You’re ready. You’ve downloaded your media from the SAP Service Marketplace, you have your development/test or production keys in hand, and this book is aaaaallll you need (you’ve seen Steve Martin in The Jerk, right?). You’re about to start an install that is going to take a number of hours to complete end-to-end. You’re also likely to be installing a patch or patches on top of a base install of the product. There is an important choice to be made here that will determine how much work you do down the road—whether to install all components of SAP BusinessObjects BI or just what you intend to use.

Consider the scenario in which your organization hasn’t purchased SAP BusinessObjects Dashboards. You could certainly choose to do a custom installation and strip out that part of the installation. But, then also consider the possibility that you may purchase SAP BusinessObjects Dashboards down the road. Uh-oh. No Dashboard Cache Server. No Dashboard Processing Server. No performance optimizing capabilities. Had you done that complete install and simply stopped, disabled, and set to not automatically start, you’d simply need to enable those services now. The same could be true whether the scenario was for SAP Crystal Reports 2013 or SAP BusinessObjects Web Intelligence. So, take an inventory, be aware of your space limitations (or lack thereof), and do the full install if you can.
Upgrading SAP BusinessObjects BI

You’re currently at a fork in the road in our choose-your-own-adventure book. Both paths do lead back to this same chapter but result from two entirely different decisions that you have to make before going forward. If you are the reader that is about to step into an upgrade of SAP BusinessObjects BI versus a user that is starting from scratch, step back right now and be sure you know the answer to this question:
Are these the droids you’re looking for?

We’re totally kidding. That’s not it.

Do we have the capital to have a parallel implementation alongside our existing SAP BusinessObjects BI environment, or do we have to upgrade in place?

This is huge. Any administrator will find it difficult to find a clear way to do an in-place upgrade with SAP BusinessObjects BI 4.1. It’s big, it’s resource-intensive, and it stands to reason, you may have already learned in Chapter 2 that your existing infrastructure doesn’t hold up to the demands as forecasted by the SAP Sizing Estimator.

It’s relevant to look deeper at the two paths and arrive at the right spot for your deployment. A pro and con list can never hurt, right? See Table 3.1.

As if it can’t get more complicated, if your target platform version is SAP BusinessObjects BI 4.0, customers must take a holistic look at this approach as well.

<table>
<thead>
<tr>
<th>Upgrade Path</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers upgrading from versions pre-SAP BusinessObjects BI 4.0 – Flash cut in the same environment</td>
<td>Lowest cost in terms of infrastructure.</td>
<td>Difficult rollback scenario.</td>
</tr>
<tr>
<td></td>
<td>Less involvement required by external teams to complete the implementation in your environment.</td>
<td>More blunt for the user community.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>May elongate in-flight development lifecycles with out-of-sync lower environments.</td>
</tr>
<tr>
<td>Customers upgrading from versions pre-SAP BusinessObjects BI 4.0 – Upgrade in parallel (we like this one)</td>
<td>Leave existing deployments untouched during implementation and regression testing.</td>
<td>More costly if newer hardware was not required.</td>
</tr>
<tr>
<td></td>
<td>Challenges in go-live? Just roll back to the existing environment.</td>
<td>A larger project requiring other enterprise resources (storage, database, network).</td>
</tr>
</tbody>
</table>

Table 3.1 Upgrade Path Options

Before we get started with a concrete installation example, you should understand the overall flow of an implementation:

1. Install the application.
2. Migrate existing content.
3. Configure and tune.
4. Perform regression test.
5. Deploy to users (phased or flash cut).

Stick with us as we move into the remainder of this chapter and actually deploy SAP BusinessObjects BI 4.1 in a Linux environment and a Windows environment. (Those of you that are forced down the path of deploying to a UNIX or Linux distribution, don’t fret. Even though the flavor is different, in general the deployments are extremely close to being the same.) We’ll also talk about how you can perform clustering in an SAP BusinessObjects BI landscape. Finally, we’ll introduce you to the concept of virtualization and how this might affect your system.

Let’s get the party started without further delay.
Pop Quiz

1. Which upgrade path should be taken if no other servers are available to stage the migration?
2. What is the appropriate tool(s) to size the target SAP BusinessObjects BI 4.1 migration for a new deployment?

### 3.1 UNIX and Linux Installation

If you’re looking for pretty graphical user interfaces (GUIs) and pictures of models in the install screens, then jump on down to the section on Windows because you won’t find those here. The UNIX and Linux flavors of operating system are strong and stable but have never been described as pretty. Let’s talk through a few prerequisites before we begin the install process:

1. You’ll want to make sure you carefully checked the Product Availability Matrix (PAM) and have all of your required operating system patches applied. If you’re using a third-party database, make sure the middleware is installed. Another thing to check (constant “gotcha”) is your environment variables. These should be a part of your user profile or something that is sourced before you start the installation.

2. After you download your installation software from the SAP Service Marketplace, you’ll have your very first nasty surprise waiting for you. SAP packaged the non-Windows binaries as an .exe file. (Insert collective sigh here.) So, first you’ll need to download the binaries to a Windows box, run the .exe to unpack the files, and then repack them with a zip tool like 7-Zip. It’s best if you first repackage the files to a .tar file, and then a .gz (gzip) after that. After this chore is complete, you’ll need to Secure FTP (SFTP) it to your UNIX or Linux server and unpack it. Best-practice alert: If you’re going to be installing more than a few SAP BusinessObjects BI environments on a non-Windows platform, stage your install files somewhere centrally located, such as a network attached Storage (NAS), which can be easily accessed from any of your UNIX or Linux hosts. That way, you need only FTP and to unpack the install files once, and they’ll provide a lifetime of enjoyment.

3. Ensure that any needed database drivers are installed not just in their 64-bit version but also in the 32-bit counterpart as well.

4. Ensure that you already have appropriate database accounts created with create/modify rights to the schema for both the CMS and Auditor databases for your application.

5. Create a runtime account for the server, such as “boadmin,” “bobjadmin,” or whatever, for you to run both the installation and the application under. As a nice enhancement to appease the security folks, you actually can no longer run SAP BusinessObjects BI as the root user.

6. Create a location on the file system in which this runtime user will have full control.

When you’re ready, and sure you’re ready, give the install.sh a rip, and you’ll start walking through the install screens. Here we go:

1. The first screen (see Figure 3.1) you’ll encounter asks you to pick your language. This only sets the language for the installer script to present on the forthcoming screens. Of course, we picked English.

![Figure 3.1 Language Selector Screen](image-url)
2. Next, you'll need to pick the path where you want SAP BusinessObjects BI 4.1 to run from (see Figure 3.2). Think ahead! How large is this file system? Will it accommodate growth from content storage, temporary storage, and general patching in the future? Select a location that lives on its own disk and is easily expanded for future growth.

![Figure 3.2 Destination Selection Screen](image1)

3. The installer script will check your environment and make sure all of the prerequisites it requires are already in place. If they aren't, it will tell you which one failed and then terminate the script if it was a critical prerequisite. We did our homework, so ours went off without a hitch.

![Figure 3.3 Prerequisite Check Summary](image2)

4. It wouldn't be SAP without a legal disclaimer, now would it? You must accept (see Figure 3.4).

![Figure 3.4 Legalese Screen](image3)

5. After you get through that license agreement (you did read it, didn't you?), you'll have to put in your product key code before you go any further. If you didn't get it yet, now would be a perfect time to hop over to the SAP Service Marketplace (service.sap.com) and get one, or ping your account manager for a temporary key while you get things sorted on your license agreement.

6. Pick the language packs that can be a part of SAP BusinessObjects BI 4.1 (see Figure 3.5).

![Figure 3.5 Language Packs Selector Screen](image4)

7. Next, you have to choose your install type (see Figure 3.6). If this is your first time through, the full install is probably best to install the web, application, and database tiers in their entirety. If you're doing something fancier, such as clustering or setting up a separate web tier, then pick those options. We chose Full.

![Figure 3.6 Install Type Selector Screen](image5)
8. Next is the database selection screen (see Figure 3.7). We chose the default. You'll notice that "Uncle Oracle" and his MySQL database have totally gotten the boot here. The new default is Sybase SQL Anywhere.

**Figure 3.7 Database Selection Screen**

9. Choose your **Java Web Application Server** (see Figure 3.8). We chose Tomcat.

**Figure 3.8 Java Web Application Server Selection Screen**

10. You have the choice of installing a new Subversion version control database or using an existing one. You have to tell it which version control system to use at this step. We went with the default Subversion (see Figure 3.9).

**Figure 3.9 Version Control Selection Screen**

11. Now things are getting interesting. Enter your **SIA Port** if you have different port standards than the defaults. (See Chapter 5 for specifics on port assignments.) This is also where you'll name your node (see Figure 3.10).

**Figure 3.10 Server Intelligence Agent Configuration Screen**

12. Now, you'll assign a port for the Central Management Server (CMS), or just use the default. This screen also allows you to set the administrator password and your cluster key (see Figure 3.11). For more on security standards with your cluster keys, see Chapter 5.

**Figure 3.11 Central Management Server Configuration Screen**

13. Here you'll want to configure the password for your built-in **ADMINISTRATOR Account Password** and **CMS Cluster Key** (see Figure 3.12). You're not one of those administrators that leaves the password blank, are you?

**Figure 3.12 CMS Account Configuration Screen**

14. If you chose the default Sybase SQL Anywhere database, like we did, then assign it to a port as well (see Figure 3.13).

**Figure 3.13 Database Configuration Screen**

15. Tomcat needs ports as well. For this demonstration, we went with all default values (see Figure 3.14).
16. Tomcat needs a listening port (see Figure 3.15). Are you still listening?

17. Subversion needs a little time and attention, so we’ll give it a port and assign some passwords, as shown in Figure 3.16. (Chapter 5 has some suggestions about passwords to use in these cases.)

18. The Solution Manager Diagnostics (SMD) agent needs some ports to run on. This is necessary if you’re going to hook into SAP Solution Manager or Wily Introscope Enterprise Manager (see Figure 3.17).

19. The Solution Manager Diagnostic (SMD) is on the local host. Enter the details here so it can start collecting all kinds of good info about your system and start shipping it off to WIEM (see Figure 3.18).

20. If you’re going to configure your connection to WIEM now (if not, you should be), here’s where you do so (see Figure 3.19).

21. This is the last screen on the Wily stuff. Here’s where you put in the digits to your WIEM server (see Figure 3.20).

Mark of Excellence

If you’re planning on installing SAP BusinessObjects BI 4 in a production environment, there’s a good chance you’ll want some enhanced monitoring on it. Do yourself a huge favor, and if you don’t already have SAP Solution Manager in house, install a copy of Wily Introscope Enterprise Manager (WIEM) and the Solution Manager Diagnostic Agent first. By doing that, you’ll have the server ready to hook into your SAP BusinessObjects BI 4 system in the following screens. It will configure the collector agents for you as a part of the installation routine. Neat, huh? You can certainly put them in after the fact, but it’s a bit tedious and, let’s face it, a huge pain. Trust us. Do this first. We’ll accept most forms of craft beer as thanks.
22. Now it's time to let her rip (see Figure 3.21 and Figure 3.22)!

Figure 3.21 Are You Ready to Go? Screen

Figure 3.22 Post Installation Steps Screen

Hopefully you had a nice, clean install and you landed with this friendly message in Figure 3.23.

Figure 3.23 Installation Success Screen

If you've gone with that system install, don't forget to have the init scripts executed to set SAP BusinessObjects BI 4.1 to run at launch. Otherwise, you're on your own to get it started after reboots.

3.2 Windows Installation

Windows isn't a bad word when it comes to deploying SAP BusinessObjects BI 4.1—as opposed to its estranged cousin, UNIX. If you selected Windows, rest assured that most of the rest of the world did too. That's good enough for us. Let's dive in by thinking through prerequisites for completing a build in a Windows environment.

Don't tell your Windows administrators we told you this, but do yourself a favor before you get started: stop your server-side antivirus application. By now, it's already looked inside your install files. Don't let it bog down your install process. Here are some other helpful tips:

- Be sure you're all caught up on your reading for the latest patch. It's wise to understand whether the latest build is appropriate for your efforts.
- Get your installers ready and staged on your local file system of your server, including all database drivers and SAP BusinessObjects BI 4.1 installs.
- Install the 64-bit database driver for your target CMS and Auditor databases.
- Ensure that you have the user name and password for the target CMS and Auditor databases and that a DBA has granted privileges to modify that schema. In addition, if you think the use of the Monitoring application is in your future, request that as well, and assume it's going to be a big one.
- While you're at it, go ahead and install the 32-bit versions as well. Connections to other databases through the Connection Server will need these at some point.
- Ensure any other dependencies such as network file systems, load balancers, domain, or other entitlement accounts.
- Ensure that you have the .NET platform installed and ready to go on your servers.
- If you don't already have a permanent key on hand for the SAP BusinessObjects BI 4.1 platform, you either need your permanent key or a temporary key from your SAP account manager.
- Read the PAM—again. Make sure your platform, driver, and other configuration components are supported now.

You've made it. The moment of reckoning is here. Your server has all it needs now for you to start your build. With your installs from the SMP residing on your server, let's kick off the installer. And the good news is that once you do, you'll be able to go get coffee, get lunch, take a siesta, or get a nice massage.

3.2.1 Preinstallation Steps

Before you go crazy and start unpacking the giant EXE and RAR files included with SAP BusinessObjects BI 4.1, you should know there are really two ways to go about unpacking all these files:
A multipart compressed installer is best unpacked with the leading package file. The uninstaller will uncompres and generally let you select where you want to unpack the files.

A single-part compressed installer can be unpacked and reviewed with tools like 7-Zip, which is our choice for a handy compression tool. The great part is that it will also work on the EXE files created by the packagers.

Now, let’s get started. Buried deep within the unpacked/extracted install files, the installer has a `setup.exe` executable that you can double-click to run (see Figure 3.24).

**Figure 3.24** Setup.exe Buried Deep

A quick selection of installer language gets you on your way to begin the install process (see Figure 3.25).

**Figure 3.25** Choosing the Setup Language

While we did our best to fulfill the preceding prerequisites, the installer is handy in that it has a much-needed prerequisite checker included in it. The prerequisite check step will ensure you have all you need without a false start (see Figure 3.26). Don’t freak out when you see INFORMATION STEWARD AND DATA SERVICES COMPONENTS in this prerequisites check. Even if you’re a customer of the two, you’ll have the option to add them at a later date, although we’re going to strongly advocate right here and now that you not use this platform as your SAP Data Services Information Platform Services server.

**Figure 3.26** Prerequisites Summary

Click through the next informational screen warning of copyright to get to the next step. Additionally, the license compliance screen requires a positive acknowledgment before it will let you proceed to the next install step. While the name and organization are artifacts/novelties of days of Windows installers gone by, the product keycode is still relevant. Get your key ready and enter it in the screen, as shown in Figure 3.27. You may have missed our list of prerequisites earlier. Don’t fret. If you haven’t gotten your permanent license key, you can
request a temp key through the SAP Marketplace to begin your installation. You’ll be able to change this key at a later date in the Central Management Console.

SAP BusinessObjects BI 4.1 has great multilingual support, all ready to go. When you enter the next screen (not shown here), choose the language or languages you want to support within your environment and continue.

### 3.2.2 Installation Options

Next, we hit our first fork in the road. To be clear, we’re going to walk through a single path to start, and we’ll talk about variants of the install path a little later. For now, familiarize yourself with the three install types, all of which are shown in Figure 3.28:

- **Full**
  Takes much of the guesswork out of what you’re doing, makes broad assumptions, and gives you everything, including the kitchen sink.

- **Custom/Expand**
  While fully capable of installing everything, this option allows you to tailor your installation based on the needs of your deployment. We’re going to work from this install path.

- **Web Tier**
  Thinking back to earlier chapters, SAP has done a fine job creating an installer sensitive to building a web tier and an application tier. Choose this option to get the out-of-the-box web tier alone on your server.

For the purposes of this walk-through, a **Custom/Expand** install will be selected to walk through as many of the installer steps in one section as we can. Let’s dive in, and click **Next**.

The original/default path supplied by the installer picks a path like `C:\Program Files (x86)\SAP BusinessObjects` (see Figure 3.29). Before you get up in arms over the naming standard here, yes indeed, it’s still a 64-bit server. It had to go somewhere.
As you can see from Figure 3.29, the standard path isn’t set in stone. We like to pick a new path for two primary reasons:

- Ours is shorter. No, seriously. We do like to put SAP BusinessObjects BI in a short path that makes it easier to reach later.
- It’s worthwhile to run SAP BusinessObjects BI on a physically separate disk from your operating system and associated swap file if you can. The gain may be tiny, but why not squeeze every ounce of performance out of this box, right?

The next step in the custom install process is to select all of the million components, both large and small, based on your system requirements, and move on (see Figure 3.30). Thinking back to our policy on full installs versus partial installs, this is where you must make that initial decision. Do I install everything? Or do I install the bare minimums? There are a few key pieces of the install that we’ll call your attention to here as we move ahead to help with that decision-making process.

The installer selection is simple. Select the checkbox and you get the component installed. Just be sure to note this is a tree-based view of installable components, and caring for each level is relevant (see Figure 3.31). There are a LOT of options here. This platform did not get smaller from a component perspective.

One of the first custom install pieces to take note of is that Tomcat 7.0 64-bit will get installed alongside SAP BusinessObjects BI. In a distributed architecture, perhaps Tomcat has already been broken out to a dedicated web tier node. Perhaps you’ve even chosen to deploy another Java application container such as IBM WebSphere to a web tier. With that, this option can be unselected, and you may use the wdeploy application to install your web tier at a later time.
But, also consider that this a great debugging tool. Perhaps users are reporting that the BI Launch Pad works, but they are unable to log in, and you simply can’t deduce what the problem is. Just start Tomcat on your application tier and validate that there are no communication failures between your web tier and your application tier.

Setting up Tomcat in the final state to support this is easy. After the installation is completed, just set Tomcat to not automatically start with the system, and you’re all set.

New in SAP BusinessObjects BI 4.1 are the options to automatically deploy mobile services. Unlike other application architecture components in SAP BusinessObjects BI 4.1, the mobile servers are simply web applications that get deployed on your web tier. Please consult your SAP account executive or your license agreement for specific terms on using these services, and stop in on Chapter 10 of this book for the scoop on deploying it.

Next, within the individual servers deployed with SAP BusinessObjects BI, an integrated database option is available (see Figure 3.32). This is where additional options will be enabled depending on how you set this install property. New to SAP BusinessObjects BI 4.1, Sybase SQL Anywhere will be installed, and we’ll supply the necessary defaults for it later. With this option disabled, the installer will make it mandatory to identify a separate database to support this environment.

Consider carefully the implications of this last step. Only you know what you’re using this box for, as well as the resources it has available. If this is a sandbox, development, lower test environment, or so on, an integrated database option is a totally viable option. However, in production, seriously consider deploying the database to a separate and distinct server in your environment.

While there are several other platform services here that you may or may not want, the last one that stands out as needing clear definition is Subversion (see Figure 3.33). Prior to SAP BusinessObjects BI 4.1, it was reasonable to make a case that Lifecycle Manager (now Promotion Management) would exist in its own environment, centrally managing content for all clusters in your systems development lifecycle. Here, enabling Subversion will dictate whether this server will be able to support Promotion Management functions in your cluster. As before, remember that you really only need one Promotion Management Server.

From here, there are tons of other options in the customer installer that we’ll attempt to highlight, but not micro-manage:

- **Connectivity and Data Federator Services**
  These provide access to data both via direct connection and via the new common semantic layer (CSL).

- **Processing Servers**
  Crystal Report Services, Web Intelligence Services, and Analysis Services ensure that users can view and refresh content within your environment.

- **Multitenancy Manager**
  New with SAP BusinessObjects BI 4.0 SP4, this is a really exciting new capability of the platform. Many organizations are content with a decentralized security model, allowing many different applications to leverage an environment. The Multitenancy Manager allows a primary administrator to create application silos with ease compared to the old days of trying your best to strip away as much as you can from the Central Management Console.

- **Data sources**
  There are more than a few to mention here. Again, based on your known requirements, or the all-in approach, choose the sources you know you need to make available to developers. If space isn’t an issue, don’t be stingy with your install options. It’s probably also worth noting that the bulk of these are relevant to SAP Crystal Reports only.

- **RESTful SDKs**
  You never know when you’re going to need or want them. The key to integrating applications you develop or those developed by third parties is to install these.
Upgrade Management Tool (UMT)

UMT is still not available on the client tools installation. Ensure you install this on at least one server node.

3.2.3 CMS Deployment Options

Moving along, we'll assume that we're starting with a new CMS cluster (see Figure 3.34). This is a branch in the install process if you do want to add this node to an existing CMS cluster, but here we choose the option to start a new one, and click Next to continue.

Figure 3.34 Starting a New CMS or Expand Another

As the Server Intelligence Agent (SIA) is named in this next step, be conscious of the fact that at some point, you may add additional SIAs to this physical server, whether it's to scale vertically or to add completely independent clusters to your server. Pick a name indicative of the sequence of the installation of your SIA or maybe, more specifically, the application for which it exists, and click Next (see Figure 3.35).

Figure 3.35 Defining the Server Intelligence Agent

The next step is CMS Port selection (see Figure 3.36). This is critical to get right for a few reasons:

- If your organization has standards for port assignment, the CMS port is the first one to ensure you get it right and stay within compliance of your organization’s standards.
- If this is a secondary or tertiary CMS on this physical box, taking the default will create an automatic conflict when it tries to start this CMS node.

Pick a CMS port that works for your environment and continue to set up the default password and cluster key for this environment.

The next step has to do with CMS security (see Figure 3.37). In a new environment, the administrator account password is as good as root on a UNIX or Linux system. Write this down in your handy password safe and guard it with your life. The cluster key, new with SAP BusinessObjects BI 4.1, is for the protection of adding additional SIAs to your cluster. It's really a simple layer of security to keep people from messing up your cluster. Like the administrator password, you should document and protect this string.
Progressing along, we know that in this vanilla installation, we selected the default database included with SAP BusinessObjects BI 4.1. That means we have to give this database some credentials to remember us by (see Figure 3.38).

Like the SAP BusinessObjects BI administrator, the DBA account is the equivalent of root for Sybase SQL Anywhere. In the same regard, keep it somewhere safe. The user account that gets created in the second set of boxes is actually the runtime user that the CMS will log in with when communicating with the default database. Fill it in, and let’s proceed.

Much like the CMS port number, we need to also select ports under which Tomcat can properly function (see Figure 3.39). You’ll note that for the purposes of this install, we kept the default port 8080. However, here’s a tip. If another server, such as Apache HTTP Server or Microsoft Internet Information Server (IIS), is absent, you can run Tomcat on port 80 instead of 8080. What is the result? Consider this: \texttt{http://some_server:8080/BOE/BI} vs. \texttt{http://some_server/BOE/BI}
Because modern web browsers will assume port 80 is the standard port, your users don’t have to include that on your server. Just remember, if you put Apache or IIS on this server, and they occupy port 80, you’ll have to move Tomcat back to port 8080 and put the redirect in as appropriate.

Figure 3.39 Web Tier Ports

Moving to the next screen (new, but not shown), the HTTP Listening Port for connecting to the Web Application Container Server (WACS) or the new RESTful APIs should be validated and confirmed before proceeding.

When Promotion Management is chosen for deployment (back via that Subversion option during the custom installation part of the process), you have to supply some default values for Subversion to deploy on. There really is no flexibility in the Repository Name here, but an alternate Repository Port can be chosen. Supply a Repository User Account and Repository Account Password that you can communicate and refer back to safely, and continue (see Figure 3.40).

Figure 3.40 Promotion Management/Subversion Setup

The next screen determines whether you want to deploy the Solution Manager Diagnostics agent for integration with Wily Introscope. This deployment isn’t covered in this text. Subsequently, it’s set to not configure in this step of the installation process. Per our suggestion in Section 3.1 during the installation on Linux, be sure to set this up now for less pain.

In a similar fashion, you may configure SAP BusinessObjects BI 4.1 to integrate with Introscope Enterprise Manager. This text doesn’t cover integration with Introscope Enterprise Manager, so this option isn’t configured during installation. While it can be perceived that neither of these options has hit mainstream yet, consider now that SAP does provide runtime versions of Wily Introscope with SAP BusinessObjects BI for advanced monitoring of your SAP BusinessObjects BI landscape.

And with that, you’ve made it to the end of the installation parameters! Click Next to continue. At this point, feel free to use the restroom, go shopping, visit
the Diversified Semantic Layer podcast site, and snuggle up to the latest SAP BusinessObjects BI community podcasts (hilarity ensues), or leave for the day and come back later—because it’s highly likely that you’ll see in excess of a one-hour installation here, especially if you’ve chosen all components for deployment in your cluster node.

3.2.4 Post-Installation Steps
As the installation comes to a close, a screen with post-installation instructions will pop up (see Figure 3.41). There are some tasty bits here, so be sure to pay attention as the deployment for SAP BusinessObjects BI 4.1, the terminology, and locations of the web applications have changed in a not-so-insignificant way.

Figure 3.41 Post-Installation Steps

Home run. You made it. Kind of makes you wonder, though, who the guy in this picture is and why he doesn’t look happier that the install was successful (see Figure 3.42).

Anyway, it’s time to hop into your new environment and give it your first review. You’ll note that similar to older deployments, the web application shortcuts are in the Start menu of Windows servers, but the Start menu is missing those client tools that have always accompanied the server install (see Figure 3.43).
The first step to ensure you're up and running is to always try to access the Central Management Console. Point your browser to http://your_server_name:8080/BOE/CMC, and see if the logon page works (see Figure 3.44).

![Figure 3.44 Successful Web Tier Deployment](image)

It’s an awesome first step to demonstrate that, at least to this point, the web application has deployed successfully and is rendering the content to your web browser. The next step is an actual logon (see Figure 3.45).

Ladies and gentlemen, we have lift off. If you’re able to successfully log on to the CMC, this means that the web server, database server, and some other moving parts are all clicking, and you have the fundamental building blocks of an SAP BusinessObjects BI 4.1 cluster.

### 3.2.5 Alternative Installation Paths

Obviously, this install path doesn’t fit every need. There are alternative paths for full installs, decentralized database deployments, web tier deployments, and more. Let’s take a look at a few alternative deployments and how they shape up based on the varying configuration options. We won’t walk all the way through the build process again (nobody wants that), but let’s set some context around those scenarios and the impacts on the installer.

**Decentralized Database Deployments**

We’re sure you’ve already made the wise decision to use a database that won’t live on your SAP BusinessObjects BI 4.1 server. This is a good move. Let’s give as much horsepower to SAP BusinessObjects BI as we can. During the custom/expanded install process, we already selected the Sybase SQL Anywhere checkbox to ensure that Sybase SQL Anywhere was installed by default.

Here is the easy part. Just unselect this checkbox (see Figure 3.46). That’s really it. Now we’re on our way to supplying new database credentials to the installer.

![Figure 3.46 Default Database Selection](image)

In this example, let’s assume ORACLE will be the target CMS database for this deployment (see Figure 3.47).
With that done, click Next to continue on to supply the database credentials (see Figure 3.48).

The inputs for the credentials will vary based on the database type selected, but for our purposes, know your target database name, the user name with rights to create database objects, and its password, and you'll be good to go here.

Web Tier Installations

Another scenario that you’ve hopefully caught on to is that distributed web tier. That is easy too! SAP has made the installer for deploying SAP BusinessObjects BI 4.1 really quite simple on a web tier. Backing up to the beginning of the installation process, you’re once again presented with the option to do a full, custom/expanded, or web tier installation (see Figure 3.49).

The installation process itself is as straightforward as others: selecting the target web server type. At a minimum, the web tier installation provides the necessary components to be able to redeploy the web tier application files to whichever web tier technology your organization has settled on.
Pop Quiz

1. What is the minimum database driver type required for SAP BusinessObjects BI 4.1 to function: 32-bit or 64-bit?
2. Which type of installation is required of the default CMS database of Sybase SQL Anywhere?
3. If you don’t want to install Promotion Management on an environment, which option should be disabled in the custom/expanded install?
4. What is the proper resource to determine supported web servers for any installation?

3.3 Clustering

One thing that SAP BusinessObjects BI has always done well, way back to its roots in the days of Crystal Enterprise, is clustering and scaling for redundancy. Those are some big old terms, so let’s try to break it down a little bit.

When we talk about clustering, we need to take into consideration clustering options for both application and web tier perspectives. Clustering in each role varies, but the net result is an environment that is ready for fault.

When adding capacity to a cluster, you have one of two paths: up and out, also more generally known as vertical, and horizontal scaling. Vertical scaling is known as the approach to add additional services on a single node to increase capacity. Horizontal scaling involves adding additional physical (or virtual) servers to a cluster so that the multiple parts can function as a whole.

If not immediately obvious, there is a logical flow to this type of decision: scale up, then out. This is true if you don’t already have a secondary node to support immediate failover, which should be your first priority. However, the idea behind growing an environment is to grow it within your existing investment in this technology. After you’ve reached a practical limit within the confines of your server by adding additional services, then horizontal scaling is appropriate. With that said, let’s explore some examples in scaling out servers within the SAP BusinessObjects BI 4.1 cluster, specifically within the application tier.

3.3.1 Adding and Deleting Nodes Using the Central Configuration Manager

The Central Configuration Manager (CCM) provides us with what is perhaps the more crude approach to adding servers to a cluster. Think of it as an all-or-nothing approach to adding services within the cluster.

Adding Nodes

At the highest level, we can indiscriminately add servers by adding additional SIAs to the box. Let’s walk through this process using a Windows box as the example, but in all reality, logically, the workflow is the same on a Linux or UNIX environment, just managed via shell scripts.

Within the CCM, no new services have been added. That’s for you to fine-tune now. Start out by clicking the Add Node icon located on the toolbar (see Figure 3.50). When the wizard begins (not shown), click Next to begin the real work.

![Figure 3.50: The Unmodified Central Configuration Manager](image)

There are several paths you can run down here, but in each, you should specify the node name, or SIA name, and the SIA port. The following options will further dictate how you move from here:

* Add node with no servers
  A new SIA is created, but no additional servers are added. This assumes the SIA name must be unique, and the SIA port, too, must be unique when deployed.
Add node with CMS
Similar to the previous option, the SIA must not conflict, but a new CMS is created, whether you intend to cluster with an existing CMS or create a new one.

Add node with default servers
Like the first two options, however, all default servers are created when the SIA is built.

Recreate node
As you can surmise, you start from scratch, rebuilding the SIA.

In our example, we’re going to go with the assumption that we’ll add a node with default servers to demonstrate the ability to scale up (see Figure 3.51).

![Figure 3.51 Adding an SIA](image)

Because we aren’t adding a unique SAP BusinessObjects BI deployment (totally an option here, on the same server, provided you have a beefy enough box), we’ll use the existing, running CMS to add the new SIA (see Figure 3.52 and Figure 3.53).

![Figure 3.52 Reuse a CMS or Build a New One](image)

![Figure 3.53 Data Sources for the CMS](image)

Before selecting a data source, you must specify a new CMS port on this physical server (not shown). This port number can’t conflict with the existing CMS port number, which is generally 6400. But still, it must be unique across all running processes on your box. Port 6500 was chosen here as a safe spot.
On this same page, you must select the correct data source connection type for your CMS. Think back a few pages. On this box, we did use the built-in database to build our server, which uses Sybase SQL Anywhere. It also created some Open Database Connectivity (ODBC) connections for us to begin with. Take advantage of those by clicking the **Specify** button.

**Note**

Having used Sybase SQL Anywhere as your default data source, use the DBA database account specified during your initial CMS setup.

Select the SAP BusinessObjects CMS 140 data source on your box to leverage the same database, and click **OK** to move along (see Figure 3.54).

Hopefully, you heeded the note to store your passwords in a safe place because here is the first place you'll need to use them. Provide the database **User ID** and **Password** for the connection to verify your identity (see Figure 3.55).

![Figure 3.54 Default ODBC Connections Created during Installation](image1)

In addition to authenticating to the database, you still need the cluster key that was defined during installation to complete the connection to the existing cluster (see Figure 3.56).

![Figure 3.55 Required Data Source Credentials](image2)

Not that knowing the database user name and password was enough, nor was knowing the cluster key; the final authentication step is to provide administrator rights to the existing CMS cluster. Another SIA and CMS, at a minimum, must be
running on your cluster to permit this authentication step to take place (see Figure 3.57).

The confirmation step is your last chance to recheck your ports, names, and target CMS before clicking the Finish button, which will make the CMS database modifications and server modifications to complete this server addition (see Figure 3.58).

That wasn’t so bad. When completed, a path to a log file is certainly available for review, but despite being a fairly invasive step, it’s a straightforward step (see Figure 3.59).

As long as everything turned out all right, the new SIA is present in the CCM for this specific server but is in a stopped state (see Figure 3.60). This is a good thing. To actually make any servers dependent upon this SIA available, the SIA must be started before logging into the CMC.
Log in to your CMC, click on the Servers panel, and note that in the Nodes portion of the tree, the new SIA is present in the CMC (Figure 3.61), although in this case, it isn’t fully aware of the SIA because on this instance it’s still not started (see Figure 3.62).

In the preceding options, during creation of the new node, we chose the option to create all of the default servers. While they are created in an enabled state, the servers are all stopped. But, like the other existing SIA’s servers, each can be started and controlled individually.

Deleting Nodes

With a new SIA up and running and perhaps running for some time, it stands to reason that the work load on a server node is too great and should be redistributed to new servers. Removing a node from a server is a simple process that walks along the same path.

To delete a node, return to the CMC and first stop the SIA you want to remove from the cluster and server. Next, select it explicitly from the list of available services, and click the Delete Node button (see Figure 3.63). You’ll note that this process isn’t quite as forgiving in letting you walk cautiously through this process. A few button clicks in, and the SIA is gone from your system, and all associated server references are gone from the CMS cluster.

At the confirmation screen, click Yes (see Figure 3.64), and confirm the deletion with the CMS authentication screen that appears next (not shown here). This is a good time to remember that you can’t take actions like this to modify the CMS if there isn’t a running CMS somewhere in the cluster of which this SIA is a part.

The SIA is now removed from this node (see Figure 3.65) and can be verified via the CMC by reviewing the node list once again (see Figure 3.66).
Another relevant way this may assist you is in dedicating an existing server to a web tier node. As an environment grows and flexes over time, you may order new hardware or virtual machines to take on the application tier role. Existing unlicensed servers can easily be converted to dedicated web tier nodes as appropriate.

### 3.3.2 Adding and Deleting Nodes in UNIX/Linux

The CCM on UNIX or Linux does many of the same functions as the prettier Windows version, but it is, of course, completely command-line driven. The following is a helpful listing showing the proper syntax to run the `ccm.sh` on Linux (see Listing 3.1).

**usage:** `ccm.sh <command>`

To display help:
```
ccm.sh -help
```

To start a node:
```
ccm.sh -start <node identifier>
```

To stop a node:
```
ccm.sh -stop <node identifier>
```

Node identifiers for start, stop, and restart can be listed by running `serverconfig.sh` and selecting ‘List all nodes’ (for example: node1, node2). Use ‘all’ to modify all nodes.

To restart a node:
```
ccm.sh -restart <node identifier>
```

Node identifiers for start, stop, and restart can be listed by running `serverconfig.sh` and selecting ‘List all nodes’ (for example: node1, node2). Use ‘all’ to modify all nodes.

To start a managed server:
```
ccm.sh -managedstart <fully qualified server name> [other authentication information]
```

To stop a managed server:
```
ccm.sh -managedstop <fully qualified server name> [other authentication information]
```

To restart a managed server:
```
ccm.sh -managedrestart <fully qualified server name> [other authentication information]
```

To force terminate a managed server:
```
ccm.sh -managedforceteminate <fully qualified server name> [other authentication information]
```

To enable a server:
```
ccm.sh -enable <fully qualified server name> [other authentication information]
```

To disable a server:
```
ccm.sh -disable <fully qualified server name> [other authentication information]
```

To disable warnings (only applicable for CMS when -managedstop or -managedforceteminate is used):
```
ccm.sh -nowarnings
```

To display a server’s fully qualified name and server status:
```
ccm.sh -display [other authentication information]
```
OTHER AUTHENTICATION INFORMATION:
To specify which CMS to log on to:
  -cms <cmsname:port#>
If a CMS isn't specified, it will default to your local machine name.

To specify a user name when logging onto the CMS:
  -username <username>
If a user name is not specified, it will default to Administrator.

To specify a password when logging onto the CMS:
  -password <password>
If a password is not specified, it will default to blank.

To specify an authentication type to use when logging onto the CMS:
  -authentication <authentication type>
If an authentication type is not specified, it will default to secEnterprise.

Example:
  ./ccm.sh -enable vanrdosol03.event.eventserver -cms vanrdosol03:6768
  -username jsheldon -password banana -authentication secEnterprise

Listing 3.1 Linux Options for ccm.sh

3.3.3 Adding a Node Using the Central Management Console

The CMC gives you much more granular capabilities to add individual servers within the cluster and within existing SIAs in the cluster. You can control the individual distribution of servers across each SIA in such a way that you can ensure you configure each with the most efficient configuration possible.

The CMC has a button in the toolbar in the Servers panel to create a new server, as shown in Figure 3.67.

![New Servers via the CMC](image)

This is a very complicated interface with a somewhat difficult-to-follow list of servers that you can add to your cluster with fine-grained control (see Figure 3.68).

![Create New Server Dialog](image)

**Figure 3.68 Create New Server Dialog**

First, servers are organized by **SERVICE CATEGORY**:
- **Analytical Services**
- **Connectivity Services**
- **Core Services**
- **Crystal Reports Services**
- **Dashboards Services**
- **Data Federation Services**
- **Explorer Services**
- **Promotion Management Services**
- **Web Intelligence Services**

Each service category contains one or more related services that while logically organized, can be grouped together in some cases.

Let's explore an example where we need to enhance the Data Federation Server capability on this cluster node. Two servers are required to construct a new Data Federation Server in the Adaptive Processing Server (APS) family. The first is in the **SERVICE CATEGORY** dropdown list, **Analysis Services**, and the service is **BEX Application Services** (see Figure 3.69). Select it and click **Next** to continue.
Installation: If You Build it, They Will Come

Figure 3.69  Building a New Data Federation Server

In the composite image shown in Figure 3.70, we must also add the DATA FEDERATION SERVICE before we start this new server.

Figure 3.70  Add Additional Services

With the prerequisite services assigned to the new server, name it and select the appropriate node for this new server. Then click the CREATE button to have the new server added (see Figure 3.71).

Figure 3.71  New Server Properties

A new server with the name you chose is added in a stopped and disabled state to the appropriate SIA you selected during the definition steps (see Figure 3.72). That is server scalability with relative ease right there.

Figure 3.72  New Server Added

Alternatively, you can add additional services by cloning servers. Before a server is cloned, it’s generally accepted as a first step to set the configuration template on the original server to be cloned first. Select the server to be cloned, right-click it, and choose PROPERTIES (see Figure 3.73).

Figure 3.73  Server Properties

Most major sections of a server’s properties include an option to either set or use a configuration template. In this case, let’s assume we’ve tuned this APS, and it’s awesome. Select the checkbox to set the configuration template, and click SAVE AND CLOSE (see Figure 3.74).

Figure 3.74  Set Configuration Template

With the configuration template set, select the server to be cloned, and right-click to reach the menu with CLONE SERVER near the bottom (see Figure 3.75).

Figure 3.75  Clone Server Option 1

The only two choices of concern in cloning the server initially are to ensure that it has both a unique name on the selected node and to select the SIA/node in which it will run (see Figure 3.76).
The server list is then kind enough to show that now we have two servers (see Figure 3.77). Nice. Now despite the fact that the server is in fact a clone, they aren’t linked together in settings. That’s why we set the configuration template earlier. Enter the properties for your cloned server.

In each section where you want the clone to inherit the parent’s configuration, select the Use Configuration Template checkbox (see Figure 3.78). Any subsequent changes in properties should be made on the parent server. Those changes will then propagate to any clones using the configuration template. It’s worth noting that not every server must be a clone to use the configuration template, but it sure helps.

We’ve spent considerable time thinking about scaling out the application tier. You as the administrator must also remember, you’re in charge of ensuring that you scale the web tier and that the file system and database tiers are at the very least being addressed by your other administrator pals. The web tier, depending on the technology platform you’ve chosen, will vary in terms of how you scale it out. We highly recommend that, at this point, you research the configuration for your web tier of choice and implement it. Importantly, remember that hardware load balancing is, in our opinion, the best way to achieve the desired result.

### 3.3.4 Failover and High Availability

Now that we know how to expand an environment, either up or across, we also need to continue to explore configurations that avoid single points of failure. Let’s ensure once again that we’re on the same page when it comes to the terminology. The term *failover capabilities* implies that a redundancy exists within an environment so that while it may not be able to actively swap to another running server without interruption to the user, an environment can be resumed within a reasonable amount of time to a passive node. This is also known as an *active/passive configuration*.

High availability paints a different picture. Also known as an *active/active configuration*, it means that more than one node in the cluster functions in such a way that they simultaneously handle requests to process user interactions.

Ultimately, your service level agreement with the business will dictate which approach you take in your environment, even going so far as to formulate requirements for disaster recovery. Designing this type of architecture, however, doesn’t necessarily have to crush your budget. Budgets and environments come in all shapes and sizes, ranging anywhere from zero budget, to more money than sense. Therefore, you must formulate your redundancy strategy based on those types of variables. Consider a phased approach for those that are budgetarily challenged:

- **Failover: active/passive**
  
  A second server, whether physical or virtual, is mirrored to the active node but not started or actively handling requests. In addition, database, file store, and web tier components have similar capability of cold swapping processes.

- **High availability: active/active**
  
  That second server just got a promotion and now is actively fulfilling requests. This also implies that other components of the architecture, such as the web tier, database tier, and file store, can function despite either software or hardware failure within the environment.

- **Disaster recovery**
  
  Shops with deep pockets will have a backup plan to recover SAP BusinessObjects BI in some other area of the country. This backup strategy will either call for mirrored servers in the backup data center or a strategy to quickly recover from backup to alternate servers in that backup data center. The mean time to recovery is dictated by the mission criticality of BI in your organization compared to the size of your deployment to be recovered.
Virtualization

3.4 Virtualization

We’re big, big fans of virtualization. This book is by no means an endorsement of any particular virtualization vendor, but in generally accepted guidelines, we’ll refer to VMware throughout this book as a solution to virtualization for SAP BusinessObjects BI.

Sometime shortly after BusinessObjects XI hit the shelves, virtualization topics really started to get lively. “Would BusinessObjects (now SAP) support my environment if I put it on VMware?” “Is there any performance decrease if I virtualize my environment?” The concept of having many operating systems on a single big-boy server confounded some and became an opportunity to avoid underutilization of hardware platforms for those who saw the chance to improve their investment in technology.

As the years after BusinessObjects XI and XI R2 ticked by, and BusinessObjects became more and more open to the idea that enterprises could virtualize their environments, administrators were really now left with the only question: “How is performance?”

There are no benchmarks in this book to tell you with any real evidence what the actual performance hit on an SAP BusinessObjects BI environment is, but there are some considerations you have to factor in as you talk with your systems/virtualization architect about the performance of your virtual environment:

- How fast is the interconnect to storage for the virtual machines (VMs)?
- How many network interconnects are available to the virtual host to create network connections for virtual machines?
- Are CPU and memory reservations for the SAP BusinessObjects VMs set appropriately?
- How is the virtual host environment? In other words, did everybody have the brilliant idea to virtualize their servers too?
- How many virtual hosts make up the virtualization environment, and how easily can it scale to support additional demand?
- Are there enough virtual hosts to create a distributed virtual environment for SAP BusinessObjects BI?

As you factor all of these things together, you can expect a VM running SAP BusinessObjects BI to take a hit of anywhere from 2% to 10% of what a physical box of similar stature could. Again, only you and your system/virtualization architect can get real on these numbers. However, as you go through your sizing exercise that we set up in Chapter 2, do take into account that loss in capacity as you get to the upper end of your environment’s capacity.

In addition, know that you absolutely should talk to your SAP account manager when deciding to virtualize your SAP BusinessObjects BI environment. Based on your existing master agreement with SAP, the language in your license may dictate the validity of virtualizing components of SAP BusinessObjects BI.

This section won’t go into extensive detail about virtualization, but it will give you the basics you need to know to do further research: your main virtualization options, and what they mean for a UNIX/Linux landscape.

3.4.1 Virtualization Options

Only you and your leadership can decide what exactly you should virtualize with the SAP BusinessObjects BI environment. Especially, with the significant increase in system requirements for an SAP BusinessObjects BI 4.1 cluster, administrators in the virtual server farms may have a heart attack when you ask them for servers with more than quadruple the minimum requirements of your old SAP BusinessObjects environments. However, let’s take this in tiny steps:

- The web tier
  This is an easy call. If you’re using Apache Tomcat, distributed with SAP BusinessObjects BI, your only cost to implement is the VM and the operating system license. In addition, you’re free to start with the safest/smallest amount of CPU and memory resources you think your web tier will need and can easily scale up as CPU and memory utilization goes up. We like to think this will also give your systems/virtualization administrators the warm and fuzzy feeling that you really do care about conserving resources in their environment. On the
other hand, if your boss is a tyrant and wants all the horsepower you can get, go big or go home. The web tier is also a simple environment to build and rapidly deploy within your cluster. So if you add additional web tier nodes, throw them behind a load balancer, and move along, and then you have a really inexpensive footprint to allow more HTTP traffic. This will be especially relevant not only to all of your users that use the BI Launch Pad, but also to your Dashboards developers and Dashboards consumers that are using web tier resource-hungry dashboards.

- **The application tier**
  As we make the transition to SAP BusinessObjects BI 4.1, the reality of virtualization will inevitably come into question for enterprises of all sizes. With minimum memory requirements of 8GB of RAM (but in reality, pushing more toward a need for 16GB of RAM minimum), the strategy behind using virtualization must be carefully considered. Will SAP BusinessObjects BI be the straw that broke the proverbial camel’s back? Many will fall in the camp that says “get the best performance out of the investment in SAP BusinessObjects.” In other words, throw as much and as big of a piece of hardware as you can out there for your licenses to eat up. The mission of any organization supporting BI should not only be to deliver effective BI but also to be the best stewards of the investment in this technology. We do that by getting the most mileage out of the software and the hardware as we can.

- **Other virtualization opportunities**
  Outside of the web tier and application tier, there isn’t necessarily a lot of mileage in virtualizing other components of this platform unless you have no choice. Database servers, if wisely chosen to outsource to your enterprise database team, should not be an issue. However, if you’re stuck in a situation where you have a small enough enterprise with no central environment for databases, consider virtualizing a database to support your CMS and Auditor databases on a machine that isn’t the same as your web or application tiers.

  There is clearly still the remote possibility that you have a multiserver environment and no SAN or NAS solution to centralize your File Repository Server (FRS). Fear not. A virtual machine is a great place to create a shared file system that your cluster can leverage for its File Repository Servers. Is this ideal? Probably not. Could you just use a share on one of the members of your cluster? Probably. But if you want a clean location to house your files and simplify backup and recovery, a simple virtual machine may be your fix.

Consider Figure 3.79, which shows a part of the standard VMware stencil set. In this diagram, two physical VMware ESX hosts make up a two-node cluster. While technologies such as VMware are smart enough to redistribute the load automatically, the implications for both members of the cluster being on the same node in the event of a failure are significant.

With that, just as we cluster SAP BusinessObjects BI across multiple machines, it also can be a credit to consider forcing individual members of an SAP BusinessObjects BI cluster onto distinct virtual hosts to ensure not only redundancy but also resource availability within the virtual host cluster.

![Figure 3.79 Example Virtualized Architecture](image-url)

### 3.4.2 UNIX and Linux Landscapes

As you work toward defining a virtualization strategy, realize too that UNIX and Linux landscapes give an even more distinctive opportunity to virtualize applications. When we talk about virtualization in the land of non-Windows, just like the operating system, things look a little different. While Linux is supported by VMware very much like Windows is, the other versions of UNIX are quite different.

Both Solaris and AIX support the concept of a virtual machine. Just to confuse you, they’re called different things. On AIX, a virtual machine is called a workload.
partition, or WPAR. On Solaris, they are called either containers or zones. Both of these funny names do the same thing. They segment off a portion of a large physical host into a distinct virtual host. Each zone or WPAR is totally separate from the others and, to the untrained eye, appears and acts exactly like a separate physical host. So, in essence, if you had a huge Solaris host with six different local zones, you could have six different installations of SAP BusinessObjects BI (one on each). Or, you could stratify your tiered architecture across three or four different zones, and while the workloads are separated, they all physically reside on the same host server.

The non-Windows operating systems make it a little easier for you to put multiple installations of SAP BusinessObjects BI on the same host. This is due to how UNIX and Linux handle the concept of roles. You could have one physical host machine and six different installations of SAP BusinessObjects BI running from six different directories running under six different roles. These additional levels of functionality really help you push the utilization of your physical hardware to the max.

One of the major advantages of this approach is the cost of licensing. If you purchased CPU-based licenses, you have the physical host licensed. If you put 10 zones or workload partitions on that hardware, they are covered by the CPU license for that physical box. It’s like getting 10 servers for the price of one. Don’t get too excited, though. CPU licenses are expensive. Contact your account manager for more details.

Pop Quiz
1. Is it ever OK to blindly use a virtual machine farm to host SAP BusinessObjects BI servers?

3.5 Summary

SAP BusinessObjects BI 4.1 is a robust architecture with many paths that can be taken to make the technology fulfill business needs. As the technology matures, and additional capabilities are added, it becomes increasingly important for an administrator to comprehend those requirements, the technology components that are used to fulfill them, and potential impacts on business users as implementations are planned and executed.

As you design your environment, make an implementation plan that lays out key players, time lines for each environment build, and even, at a more granular server build level, cite dependencies and roles. Not tracking action items and key deliverables in builds as complex as SAP BusinessObjects BI can be a recipe for disaster at some point, whether it’s by your hand or the poor guy that comes along next.

Remember, too, that frequent conversations with organizational architects and business stakeholders about both the needs for your environment and the targets for fulfilling business requirements will keep everyone in the know and avoid leaving people in the dark.

Go forth, build, and configure.
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Greg Myers has worked in the analytics industry for the past 16 years, specializing in Business Objects tools for 12 years. He is primarily focused on the operational side of analytics, working with SAP BusinessObjects BI architecture, performance, and administration. He is an SAP Certified Associate in SAP BusinessObjects, as well as an SAP Mentor and active volunteer with America’s SAP User Group (ASUG). He has a Bachelor of Science degree in Business and Information Systems, and a Master of Business Administration. Greg lives in the suburban Philadelphia area of Pennsylvania, and when he's not working or speaking at a conference, he can be found outside running, training for his next marathon.

Eric Vallo has been a part of the greater Business Objects community since 1999, and involved in business intelligence as a whole since early 1998. He has had the opportunity to cover all facets of reporting and analytics, ranging from report and universe development through to business intelligence platform architecture and strategy. Eric is one of the co-founders of EV Technologies in the United States and Australia, and the managing partner at EV Technologies in the United States, an SAP Certified Associate in SAP BusinessObjects, an SAP Mentor, and, along with Greg, a co-host of the Diversified Semantic Layer podcast network. Eric currently lives in St. Louis, MO.