

Lab 1. Install and start the JBoss Data Virtualization Server

There are three different ways to install Red Hat JBoss Data Virtualization.

1. Graphical mode: Graphical mode launches a graphical wizard which provides step-by-step instructions for installing and configuring the Red Hat JBoss Data Virtualization. Additional setup, including the Quickstarts and Maven Repository, is also possible with the installer.
2. Text mode: You can launch the installer in the text mode as well. Text mode provides step-by-step instructions for installing and configuring the Red Hat JBoss Data Virtualization.
3. Automated script mode: You can install multiple identical instances of Red Hat JBoss Data Virtualization using the automated script. This automated script is generated after the first installation instance. We will explain the graphical mode and automated script mode in more detail in the following paragraphs.

1.1 Installing JBoss Data Virtualization through graphical mode

1.1.1 Download the JBoss Data Virtualization installer binary by clicking the green download button at <http://www.jboss.org/products/datavirt.html>.



The screenshot shows the JBoss Data Virtualization product page. The page has a dark blue header with the JBoss Community logo and navigation links: GET STARTED, GET INVOLVED, PROJECTS, and PRODUCTS. There are also links for Log In and Register, and a search bar. The main content area has a large heading "Red Hat JBoss Products" with the subtext "How can Red Hat JBoss products help you?". Below this is a breadcrumb trail "JBoss Products > Red Hat JBoss Data Virtualization". The main heading is "Red Hat JBoss Data Virtualization". Underneath, it says "VERSION 6.0 GENERAL AVAILABILITY" and "Turn siloed, fragmented data into actionable information at your business speed." It then announces the general availability and public launch of the Red Hat JBoss Data Virtualization v6 (formerly known as Red Hat JBoss Enterprise Data Services Platform). The text describes the volume, velocity, and variety of data in enterprises and the need to transform this data into actionable information. It then states that JBoss Data Virtualization is a complete data provisioning, federation, integration and management solution that enables organizations to gain actionable and unified information. Red Hat JBoss Data Virtualization enables agile data utilization in 3 easy steps:

1. Connect: Access data from multiple, heterogeneous data sources.
2. Compose: Easily create reusable, business-friendly logical data models and views by combining and transforming data.
3. Consume: Make unified data easily consumable through open standard interfaces.

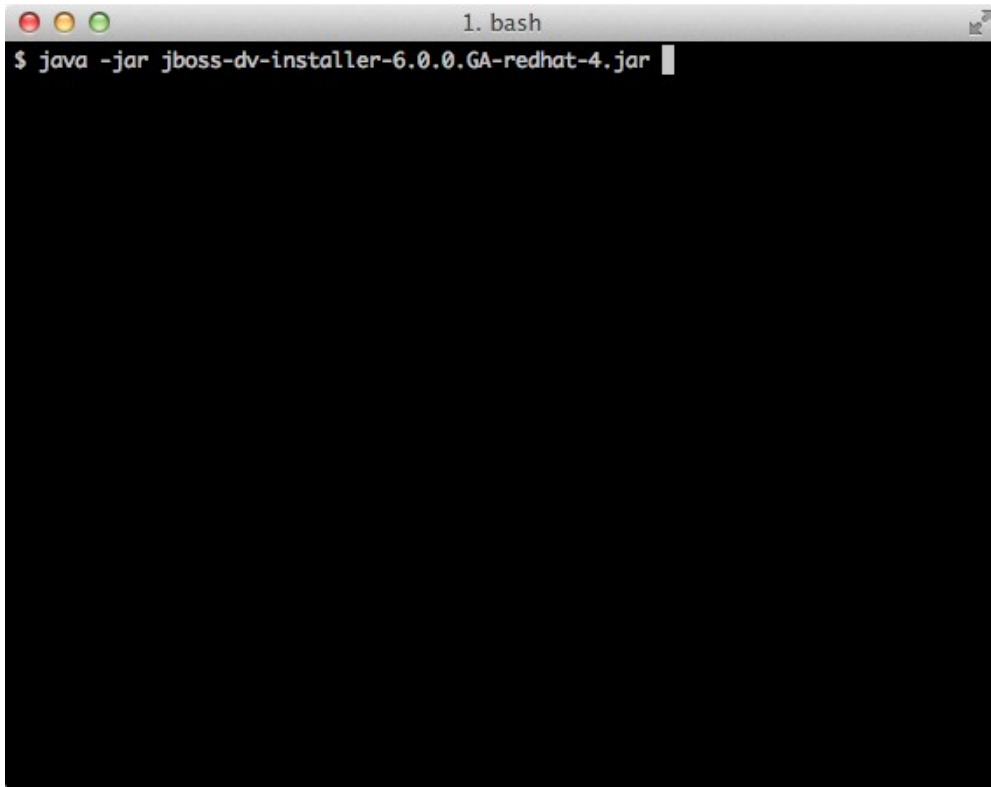
At the bottom, there is a green button that says "Download JBoss Data Virtualization 6" and "Turn data into actionable information @ business speed". Below the button are links for "Installation Instructions" and "Download Source". On the right side, there are social media icons for GitHub, Facebook, Twitter, LinkedIn, and Email. Below these is a section titled "New capabilities and features" with sub-sections: "BIG DATA AND CLOUD INTEGRATION" (listing Hadoop integration (Hive), NoSQL (MongoDB - Tech Preview) and JBoss Data Grid, OData support, and SaaS integration (Salesforce.com)), "BUSINESS DASHBOARD" (listing Rapid data visualization and reporting capability), and "ENHANCED DEVELOPER PRODUCTIVITY" (listing New Teiid Designer 8 integrated with JBoss Developer Studio v7 and Enhanced data sanitization support with column level masking).

1.1.2 Open a terminal window and navigate to the location where the GUI installer was downloaded.

1.1.3 Run the installer using java at the command prompt:

```
java -jar jboss-dv-installer-VERSION.jar
```

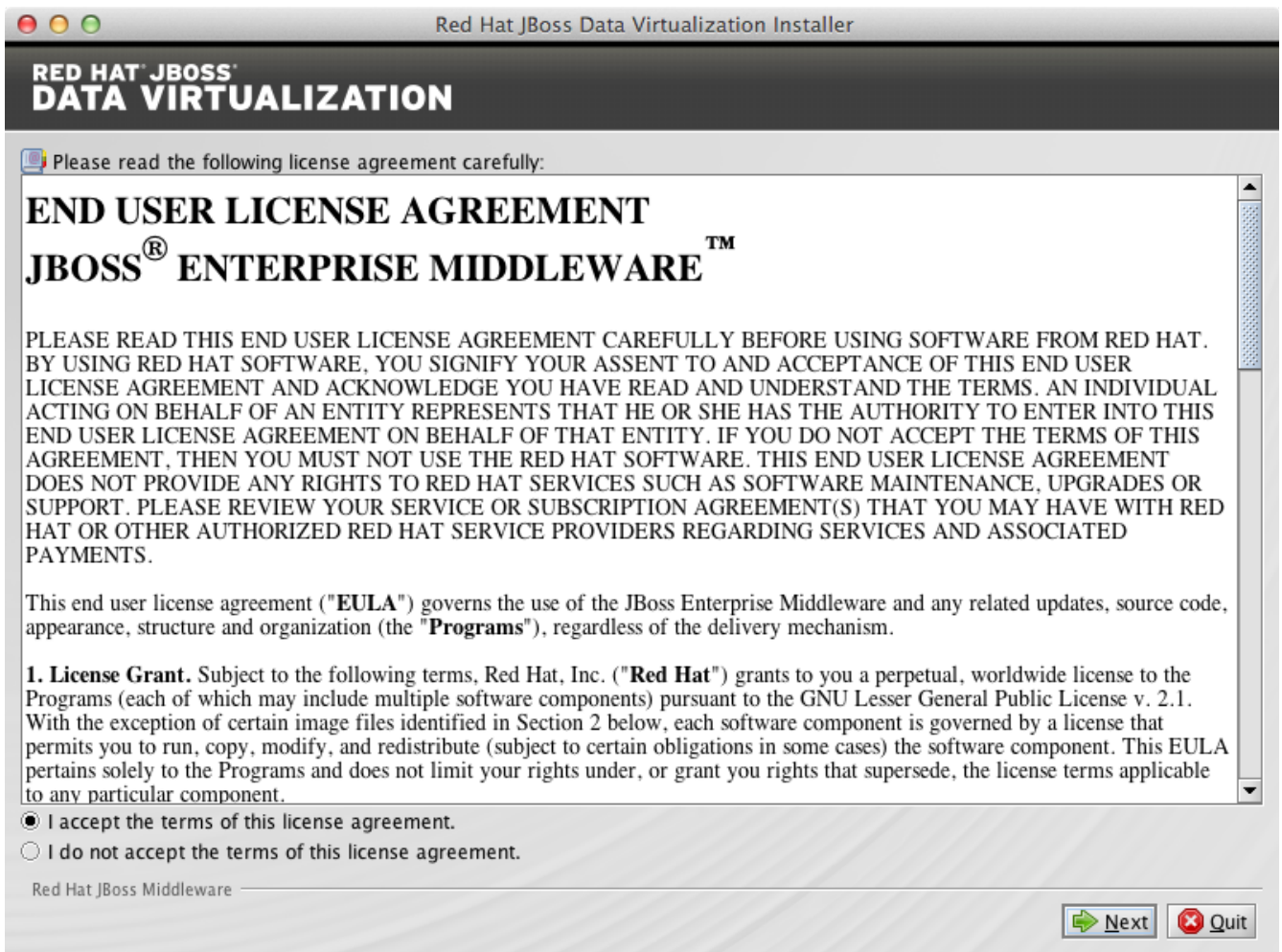
The current available version is 6.0.0.GA-redhat-4 and to run the installer at the command prompt see below:

A screenshot of a terminal window titled "1. bash". The terminal has a black background and white text. The command `$ java -jar jboss-dv-installer-6.0.0.GA-redhat-4.jar` has been entered, and a white cursor is visible at the end of the command line.

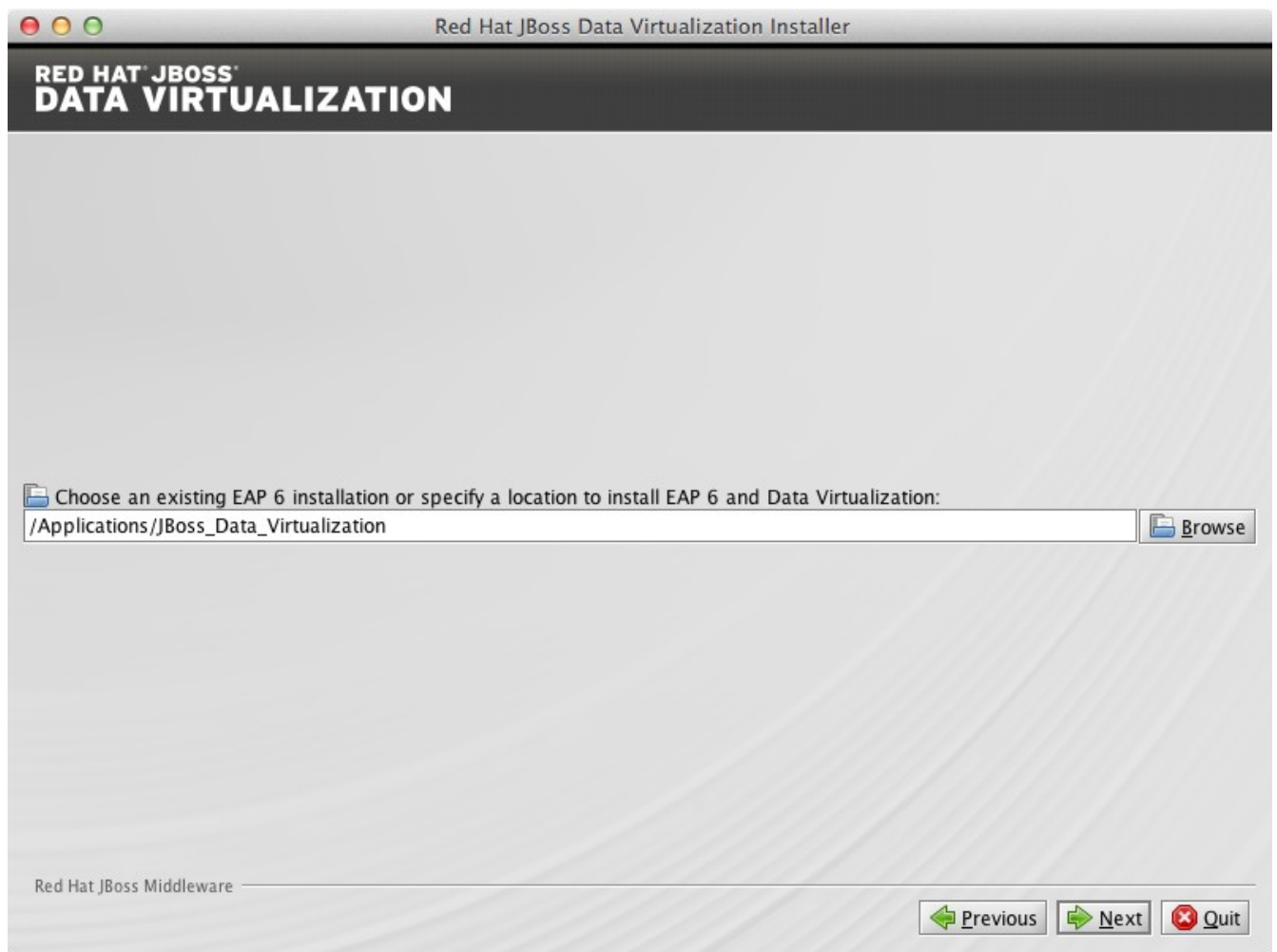
```
1. bash
$ java -jar jboss-dv-installer-6.0.0.GA-redhat-4.jar
```

1.1.4 Follow the installer prompts to complete the installation process. See the Getting Started with JBoss Data Virtualization Installation and Configuration video. See <http://vimeo.com/76457404>) for more details.

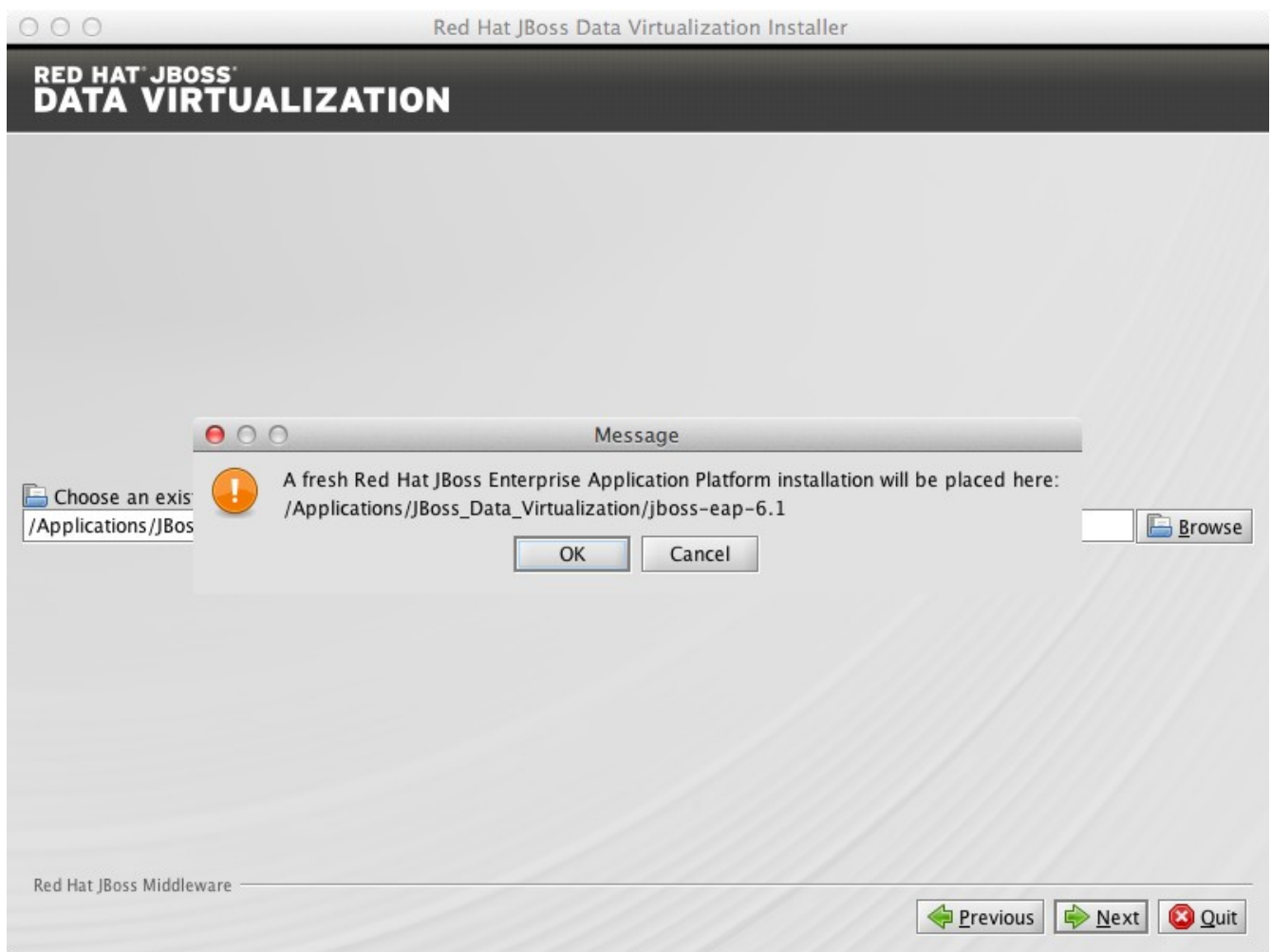
A dialogue box will open followed by the End User License Agreement. If you accept the terms of the agreement, click I accept the terms of this license agreement and then click “Next”.



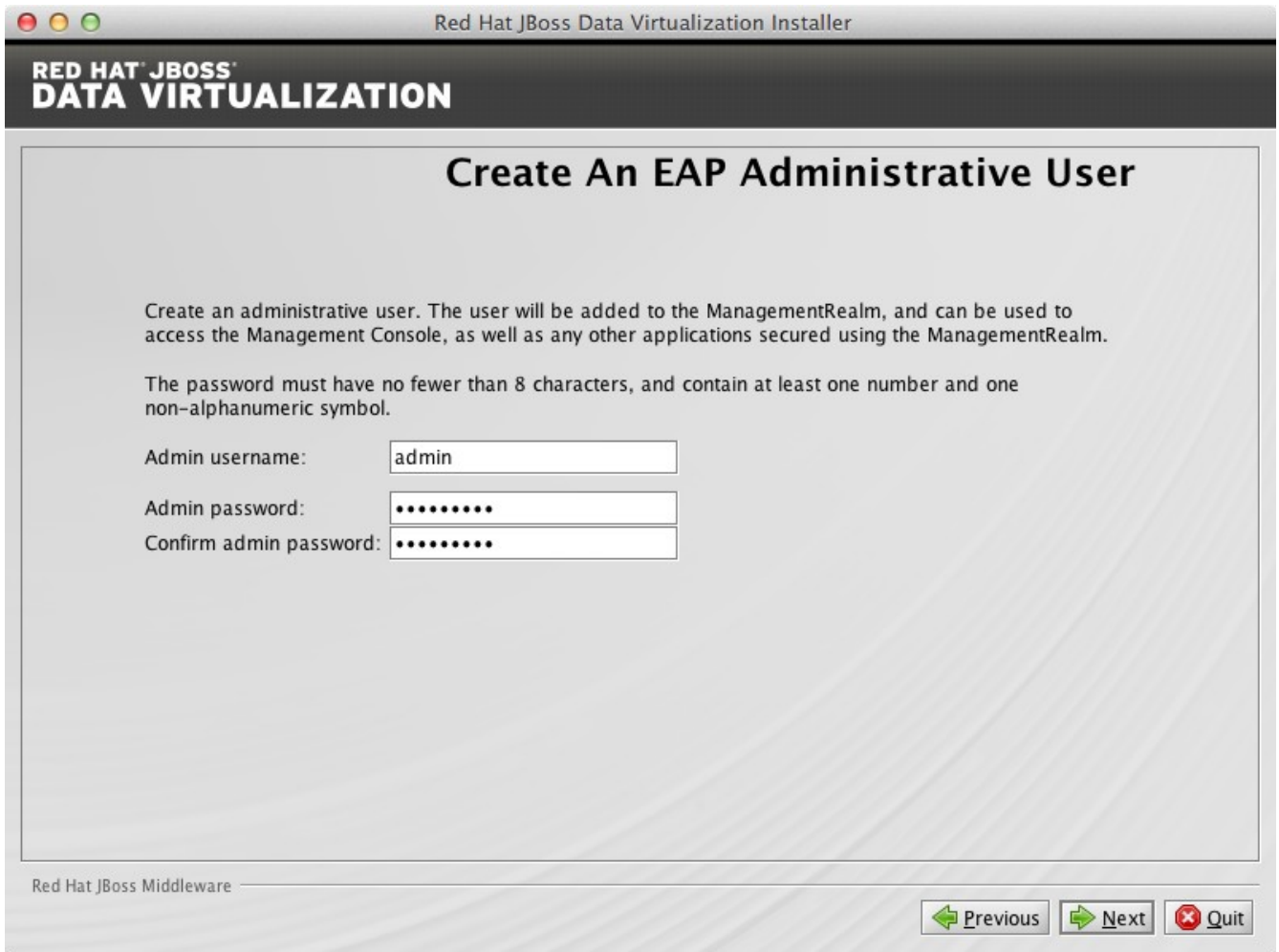
1.1.5 A filepath confirmation dialogue box will appear. In the Select the installation path field, type the path where you want JBoss Data Virtualization to be installed or click Browse to navigate to the desired location. When the Select the installation path field shows the correct path, click “Next”.



1.1.6 When you are prompted about the specified location being created or overwritten, review the message and, if satisfied, click “OK” and then press “Next”.



1.1.7 You will be prompted to create a new admin username and password. Once created, it will be added to the ManagementRealm and can be used to access the Management Console and other applications secured using ManagementRealm. Enter the new username and password in the appropriate fields and click “Next”.



The screenshot shows a window titled "Red Hat JBoss Data Virtualization Installer". The main header is "RED HAT JBOSS DATA VIRTUALIZATION". The title of the current screen is "Create An EAP Administrative User".

Below the title, there is instructional text: "Create an administrative user. The user will be added to the ManagementRealm, and can be used to access the Management Console, as well as any other applications secured using the ManagementRealm." and "The password must have no fewer than 8 characters, and contain at least one number and one non-alphanumeric symbol."

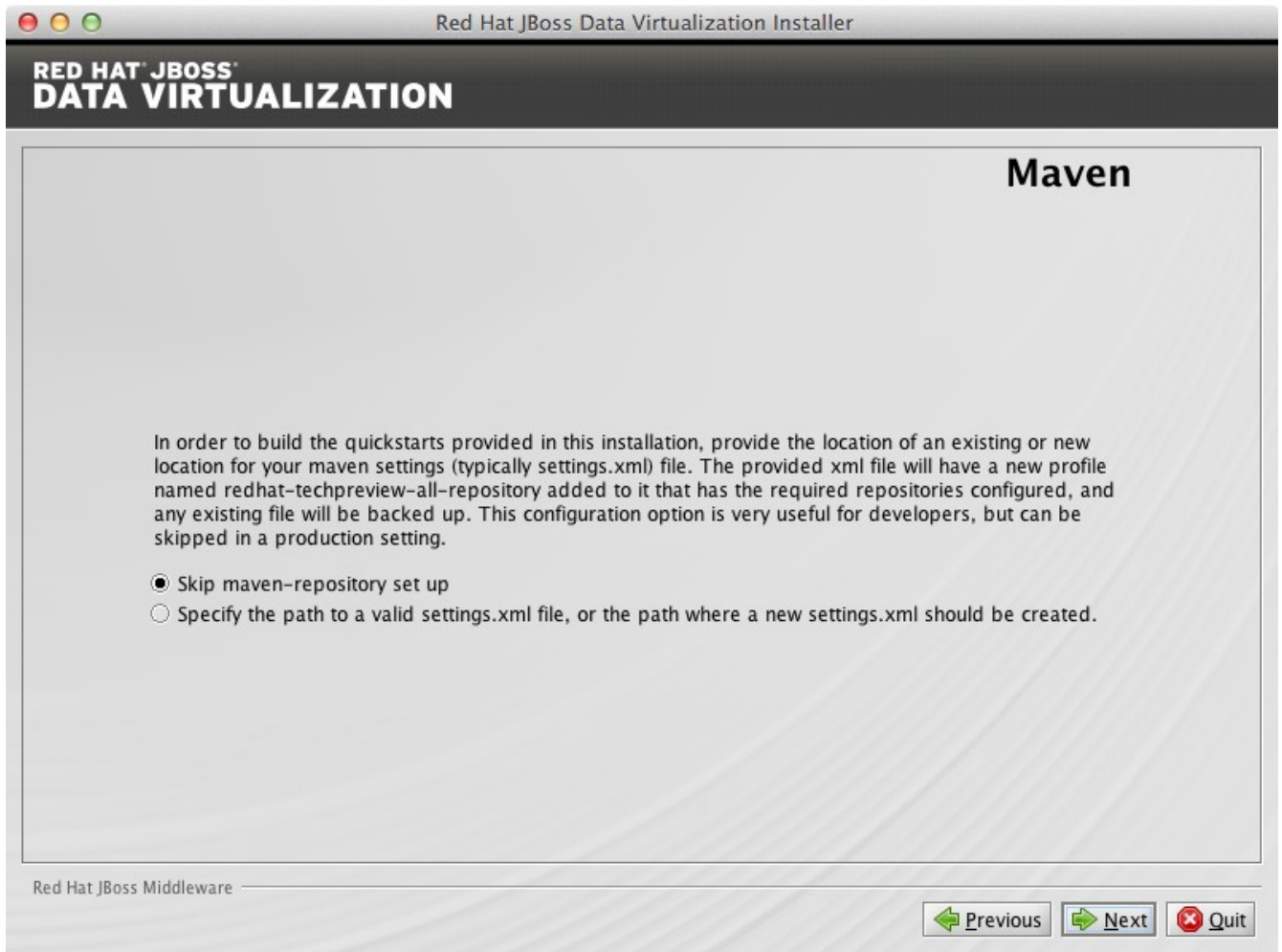
There are three input fields:

- Admin username:
- Admin password:
- Confirm admin password:

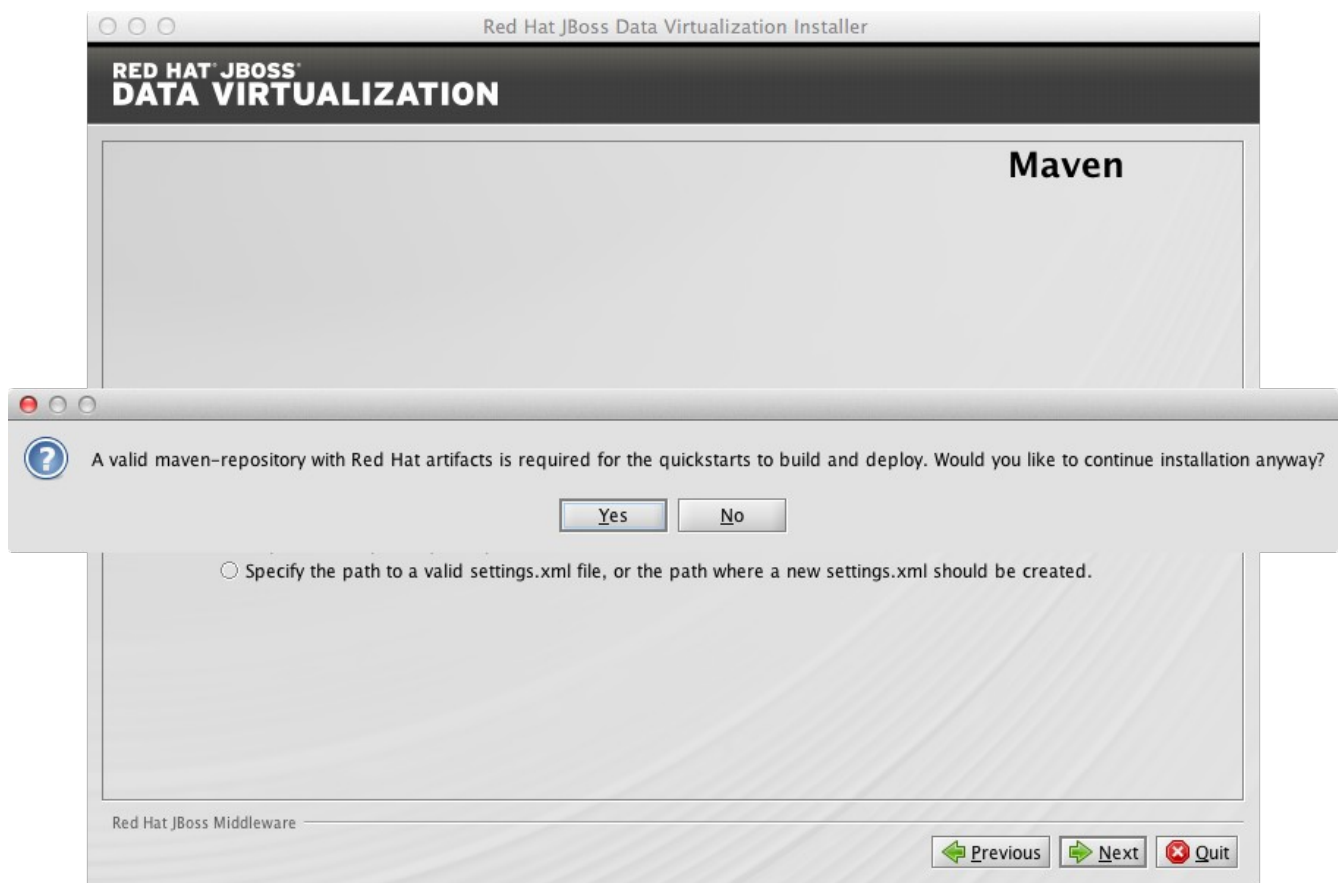
At the bottom left, it says "Red Hat JBoss Middleware". At the bottom right, there are three buttons: "Previous" (with a left arrow), "Next" (with a right arrow), and "Quit" (with a red X icon).

1.1.8 The Maven Repository Setup window appears. You will need to provide Maven repository settings in order to build quickstarts provided in the Red Hat JBoss Data Virtualization installation. At this point, the installer can automatically configure your Maven settings to setup the online repository for remote access.

To setup the Maven repository, select Specify the path (or URL).... Enter the location of the Maven settings.xml file or select Browse to navigate to the file. Alternatively, you can choose to skip the Maven repository setup.

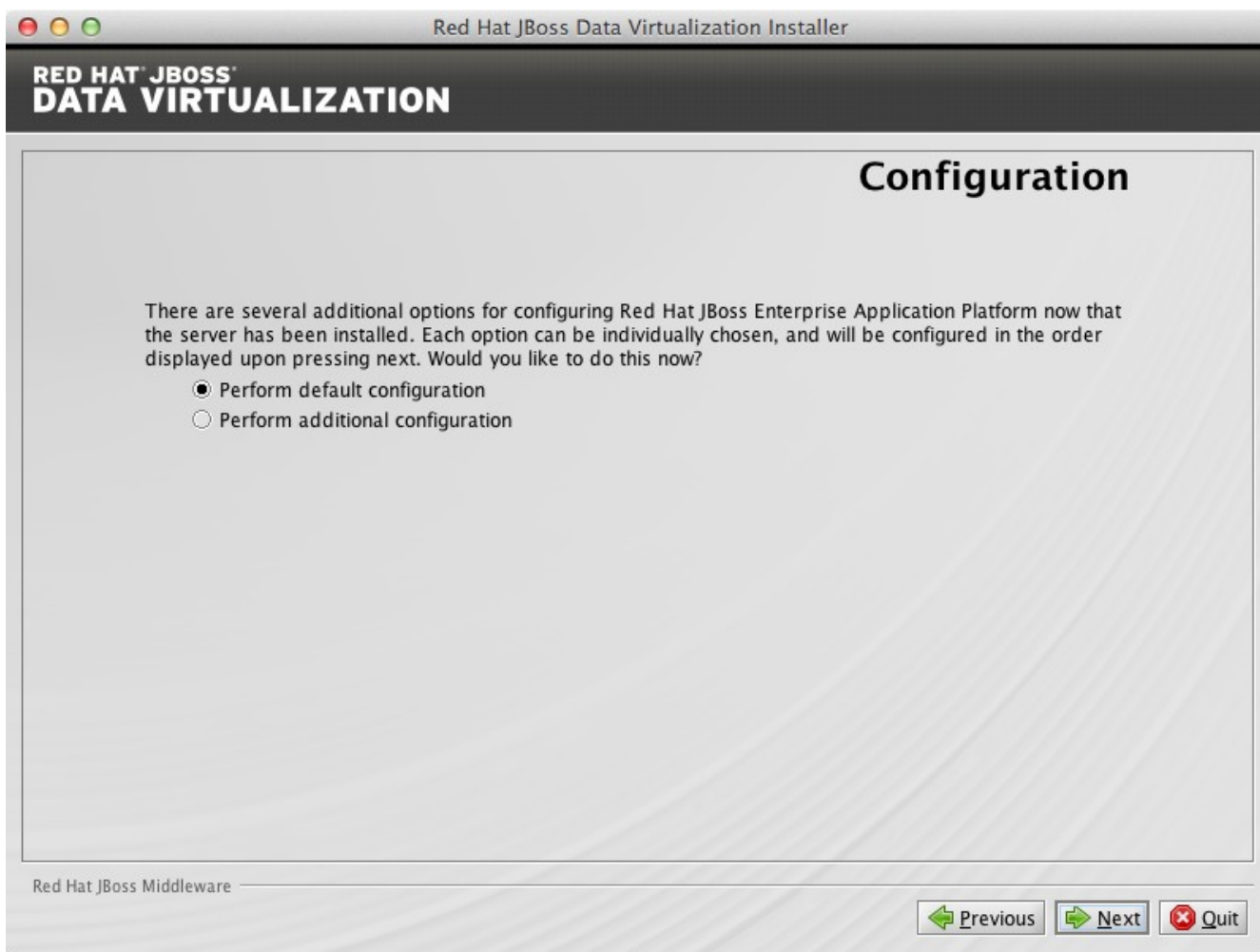


Skip maven-repository set up for now. Click “Next” to proceed.

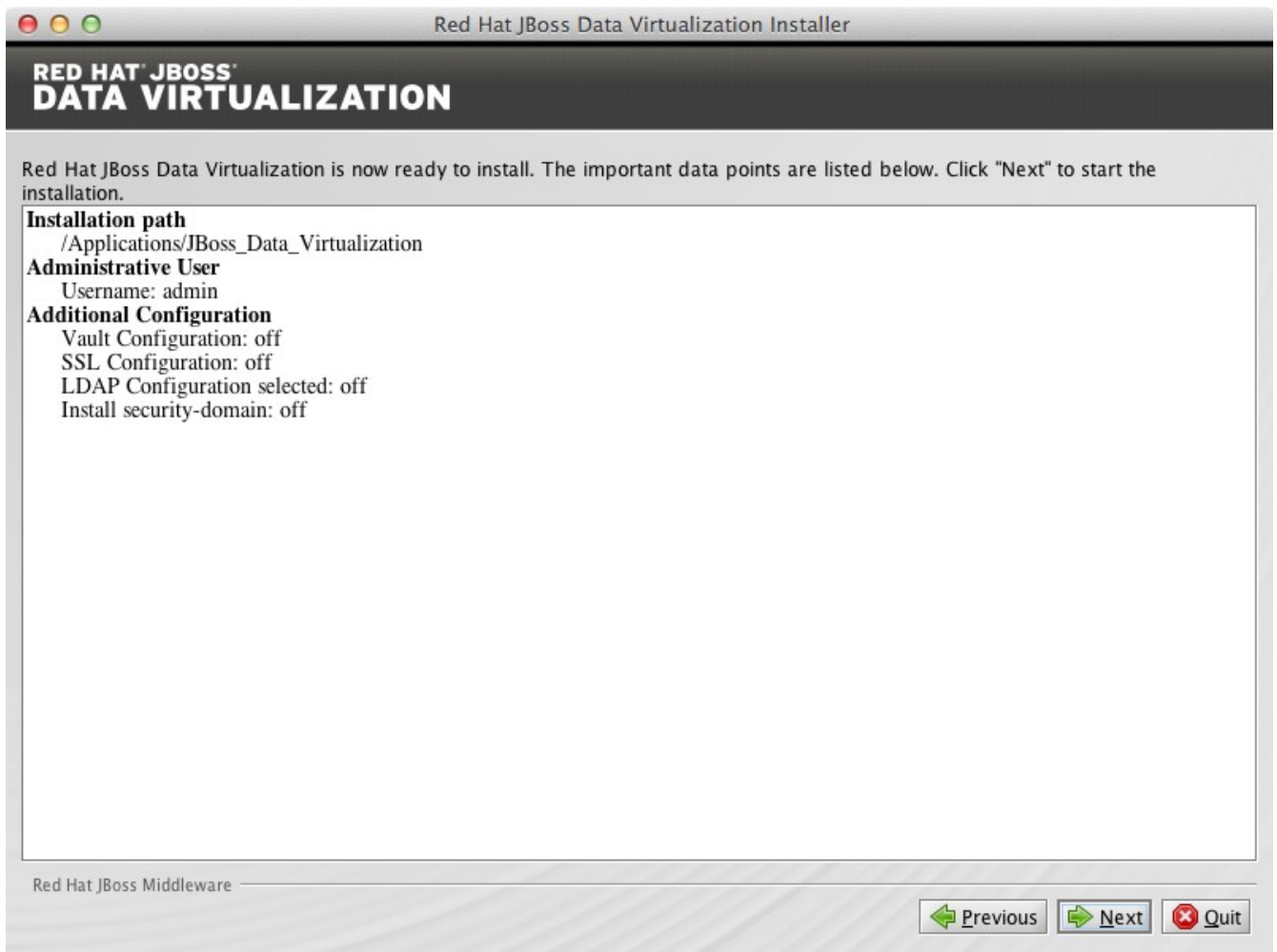


Click “Yes” to proceed.

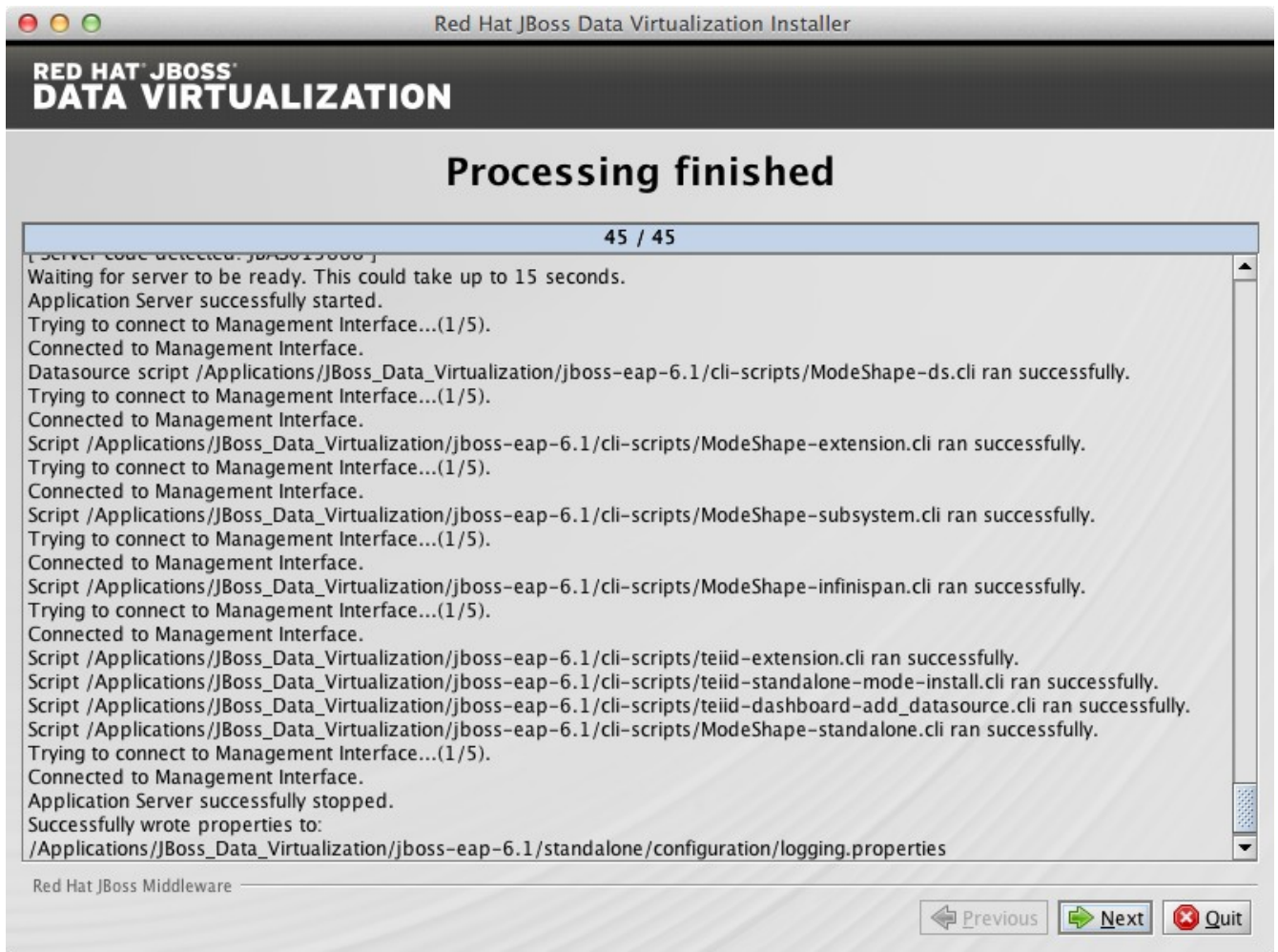
1.1.9 You can install JBoss Data Virtualization either with default configuration or with additional configuration options. Select option Perform default configuration. Click “Next” to proceed.



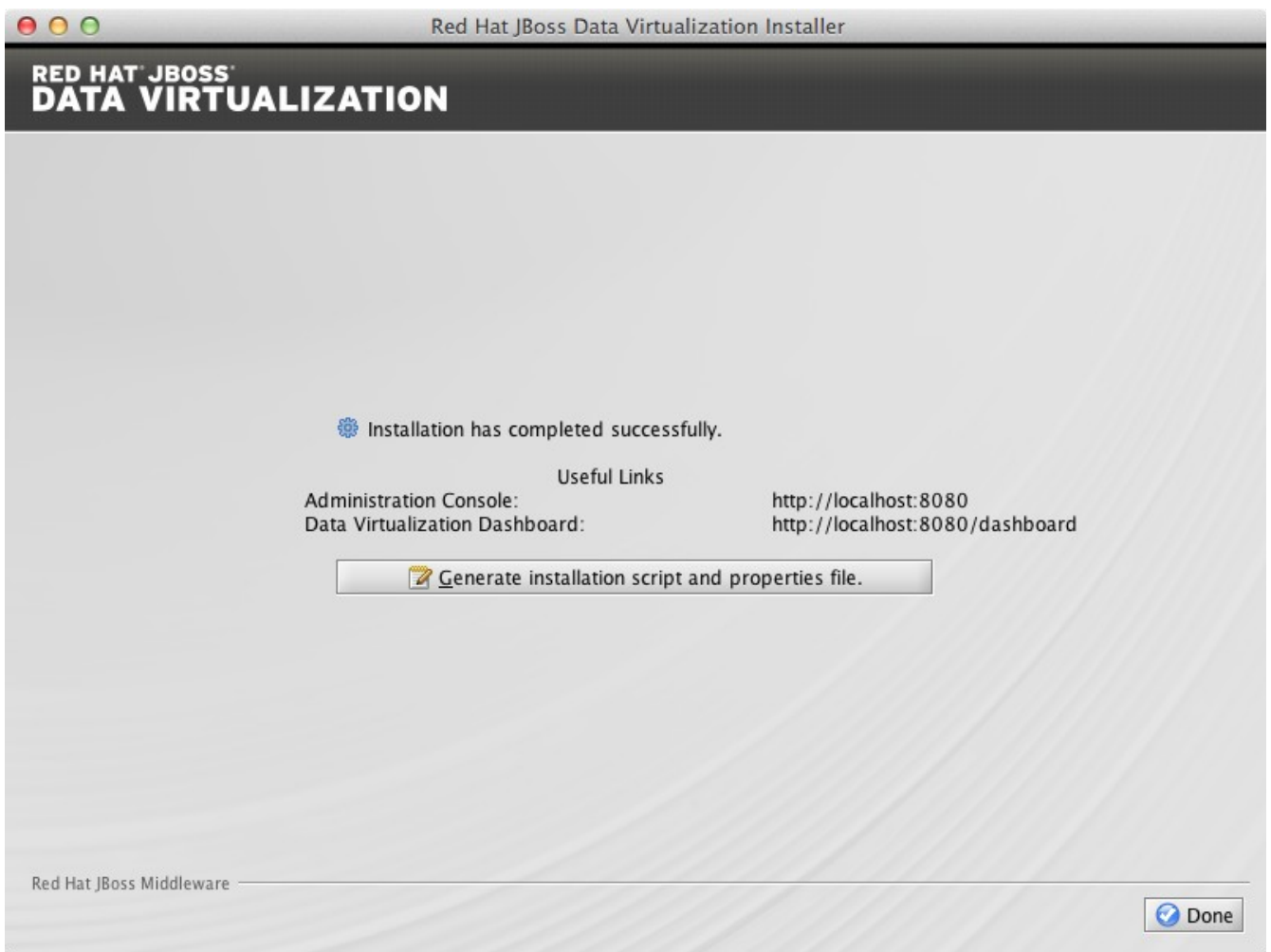
1.1.10 A summary of the installation will be displayed. Click “Next” for the installation to commence. This may take a minute.



Once all the components are installed, click “Next”.



Click Generate installation script and properties file if you wish to generate an automatic script and properties file.



For now click “Done” to complete the installation.

1.1.11. Red Hat JBoss Data Virtualization is now successfully installed and configured.

When the installation is complete, navigate to

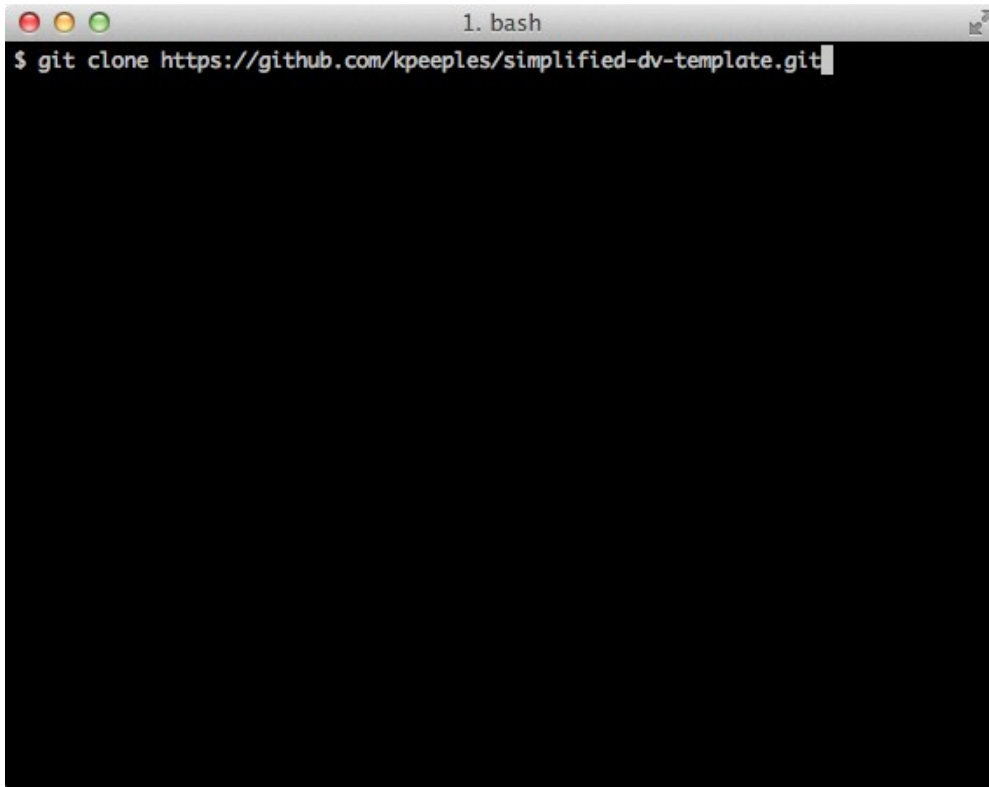
- Unix/Linux: **EAP_HOME**/bin and run the `./standalone.sh`
- Windows: **EAP_HOME**\bin and run `standalone.bat`

to start the JBoss Data Virtualization server.

1.2 Installing JBoss Data Virtualization through automated script mode

Installing JBoss Data Virtualization by using an automated script provides everything you need to get you started quickly.

1.2.1 Clone the repository from <https://github.com/kpeeples/simplified-dv-template.git>

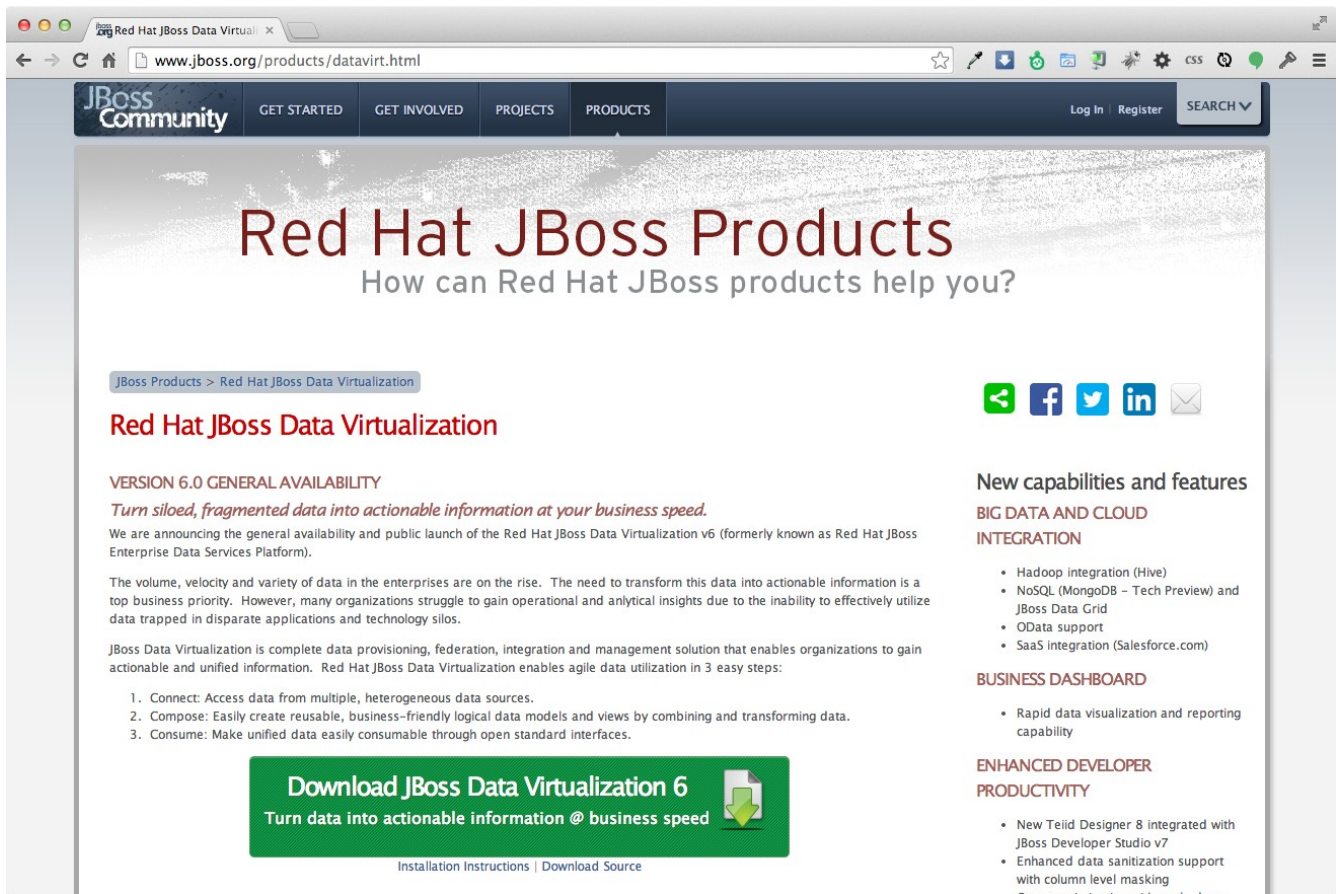
A screenshot of a terminal window with a dark background. The title bar at the top shows three colored window control buttons (red, yellow, green) on the left and the text "1. bash" in the center. The terminal content shows a command prompt "\$" followed by the command "git clone https://github.com/kpeeples/simplified-dv-template.git". A white cursor is positioned at the end of the command line.

```
1. bash
$ git clone https://github.com/kpeeples/simplified-dv-template.git
```

The following username/passwords will be installed automatically for access to JBoss EAP Administration console: admin/redhat1!

Teiid Server: user/user

1.2.2 Download the JBoss Data Virtualization installer binary by clicking the green download button at <http://www.jboss.org/products/datavirt.html>

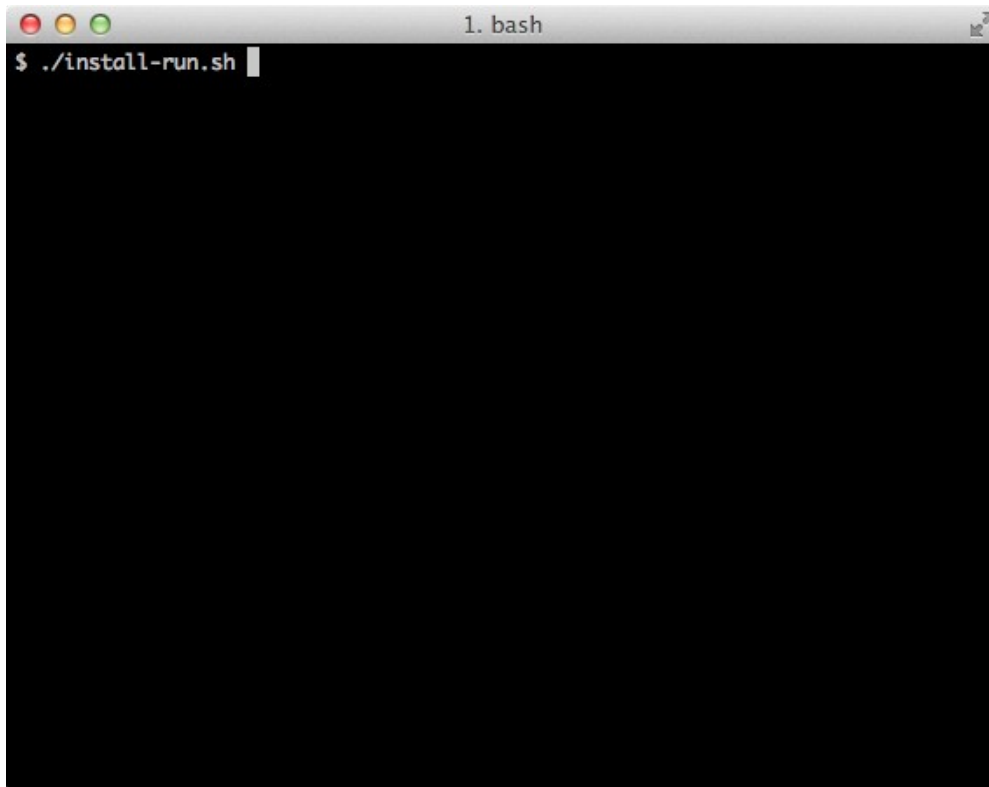


1.2.3 Place the software in the distros subfolder of simplified-dv-template folder which was previously created in step 1.2.1.

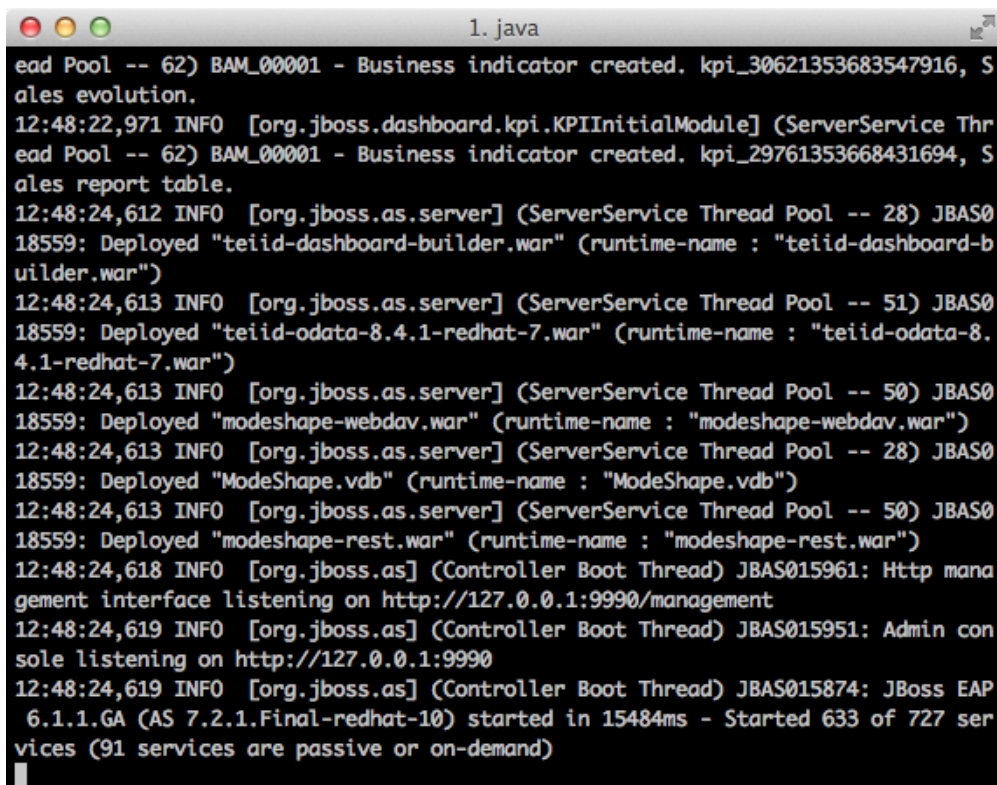
1.2.4 Modify the support/InstallationScript.xml file to contain the full path to the installed/dv directory. Make sure to leave the installed/dv directory. The script performs the automated install of Jboss Data Virtualization v6.0.0.GA.

<installpath>/home/kpeeples/demos/dv-install-script-demo/installed/dv</installpath>

1.2.5 Run the install-run.sh script to install JBoss Data Virtualization and the server will be started automatically as shown below.



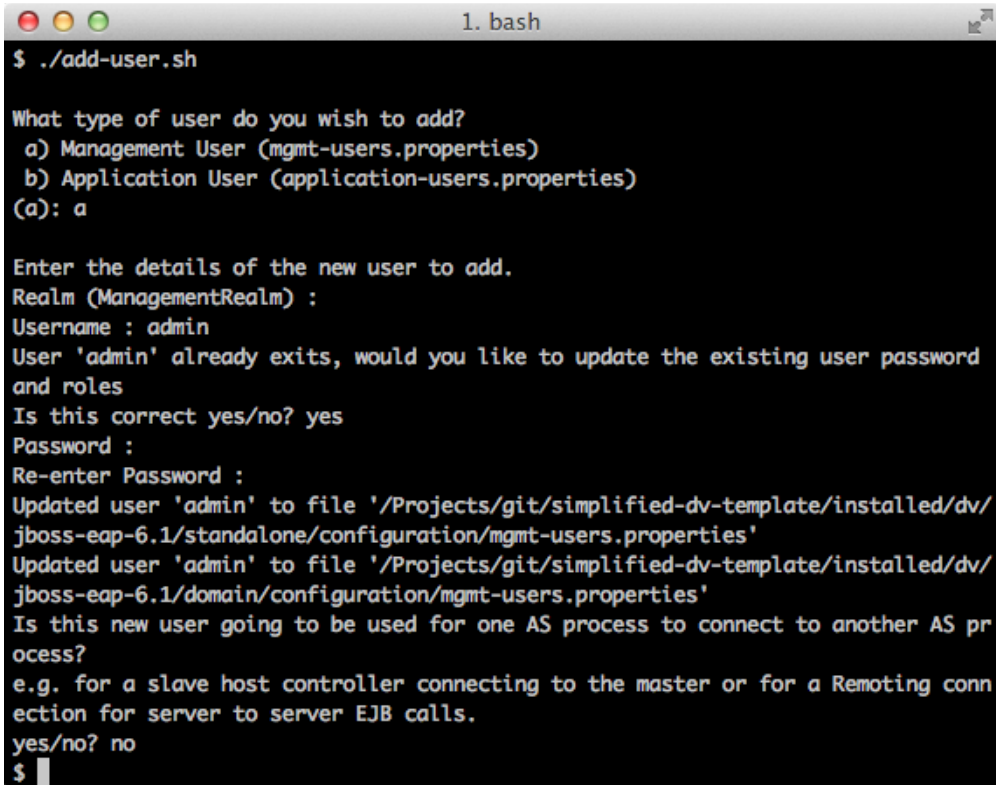
```
1. bash
$ ./install-run.sh
```



```
1. java
12:48:22,971 INFO [org.jboss.dashboard.kpi.KPIInitialModule] (ServerService Thread Pool -- 62) BAM_00001 - Business indicator created. kpi_30621353683547916, Sales evolution.
12:48:22,971 INFO [org.jboss.dashboard.kpi.KPIInitialModule] (ServerService Thread Pool -- 62) BAM_00001 - Business indicator created. kpi_29761353668431694, Sales report table.
12:48:24,612 INFO [org.jboss.as.server] (ServerService Thread Pool -- 28) JBAS018559: Deployed "teiid-dashboard-builder.war" (runtime-name : "teiid-dashboard-builder.war")
12:48:24,613 INFO [org.jboss.as.server] (ServerService Thread Pool -- 51) JBAS018559: Deployed "teiid-odata-8.4.1-redhat-7.war" (runtime-name : "teiid-odata-8.4.1-redhat-7.war")
12:48:24,613 INFO [org.jboss.as.server] (ServerService Thread Pool -- 50) JBAS018559: Deployed "modeshape-webdav.war" (runtime-name : "modeshape-webdav.war")
12:48:24,613 INFO [org.jboss.as.server] (ServerService Thread Pool -- 28) JBAS018559: Deployed "ModeShape.vdb" (runtime-name : "ModeShape.vdb")
12:48:24,613 INFO [org.jboss.as.server] (ServerService Thread Pool -- 50) JBAS018559: Deployed "modeshape-rest.war" (runtime-name : "modeshape-rest.war")
12:48:24,618 INFO [org.jboss.as] (Controller Boot Thread) JBAS015961: Http management interface listening on http://127.0.0.1:9990/management
12:48:24,619 INFO [org.jboss.as] (Controller Boot Thread) JBAS015951: Admin console listening on http://127.0.0.1:9990
12:48:24,619 INFO [org.jboss.as] (Controller Boot Thread) JBAS015874: JBoss EAP 6.1.1.GA (AS 7.2.1.Final-redhat-10) started in 15484ms - Started 633 of 727 services (91 services are passive or on-demand)
```

1.2.6 Change the password of the admin user which will be used at a later stage

Go to the subfolder installed/dv/jboss-eap-6.1/bin of simplified-dv-template folder which was previously created in step 1.2.1 and type in the following command and inputs as shown below.

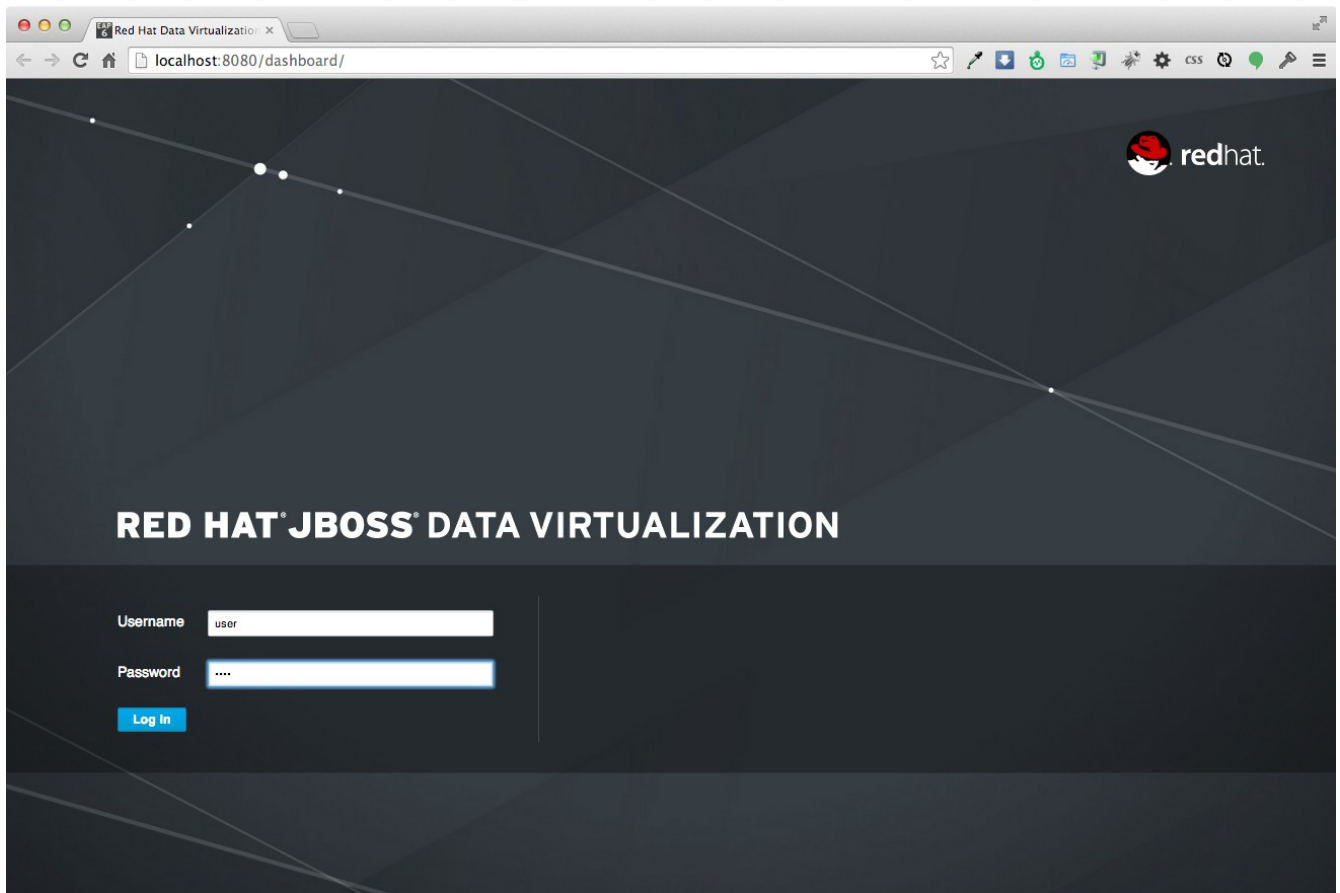


```
1. bash
$ ./add-user.sh

What type of user do you wish to add?
  a) Management User (mgmt-users.properties)
  b) Application User (application-users.properties)
(a): a

Enter the details of the new user to add.
Realm (ManagementRealm) :
Username : admin
User 'admin' already exists, would you like to update the existing user password
and roles
Is this correct yes/no? yes
Password :
Re-enter Password :
Updated user 'admin' to file '/Projects/git/simplified-dv-template/installed/dv/
jboss-eap-6.1/standalone/configuration/mgmt-users.properties'
Updated user 'admin' to file '/Projects/git/simplified-dv-template/installed/dv/
jboss-eap-6.1/domain/configuration/mgmt-users.properties'
Is this new user going to be used for one AS process to connect to another AS pr
ocess?
e.g. for a slave host controller connecting to the master or for a Remoting conn
ection for server to server EJB calls.
yes/no? no
$
```

1.2.7 Browse to <http://localhost:8080/dashboard> for the Red Hat JBoss Data Virtualization Dashboard to verify the installation and use user/user as the credentials that were installed as default and click “Log In”.



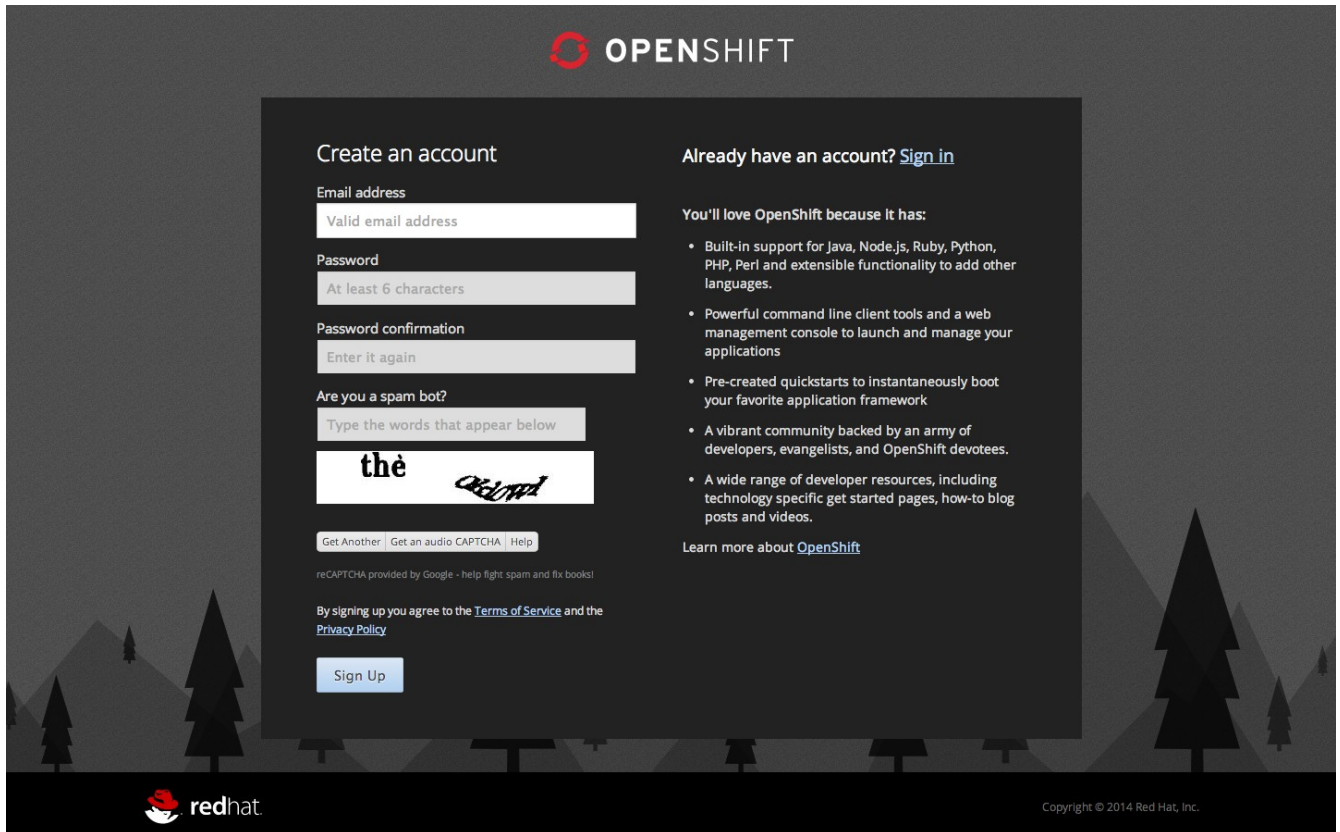
JBoss Data Virtualization is now successfully installed, configured and started using the automated script mode.

1.3 Provision JBoss Virtualization on OpenShift online

With OpenShift you can easily deploy and run JBoss Data Virtualization in minutes to connect your applications to data from many different sources. JBoss Data Virtualization on OpenShift Online is available as a Developer Preview to allow you to explore the capabilities of the technology running on OpenShift Online.

1.3.1 Get your free OpenShift Online account

Sign up for your free account OpenShift Online account at <https://www.openshift.com/app/account/new> and you should see the screen below.

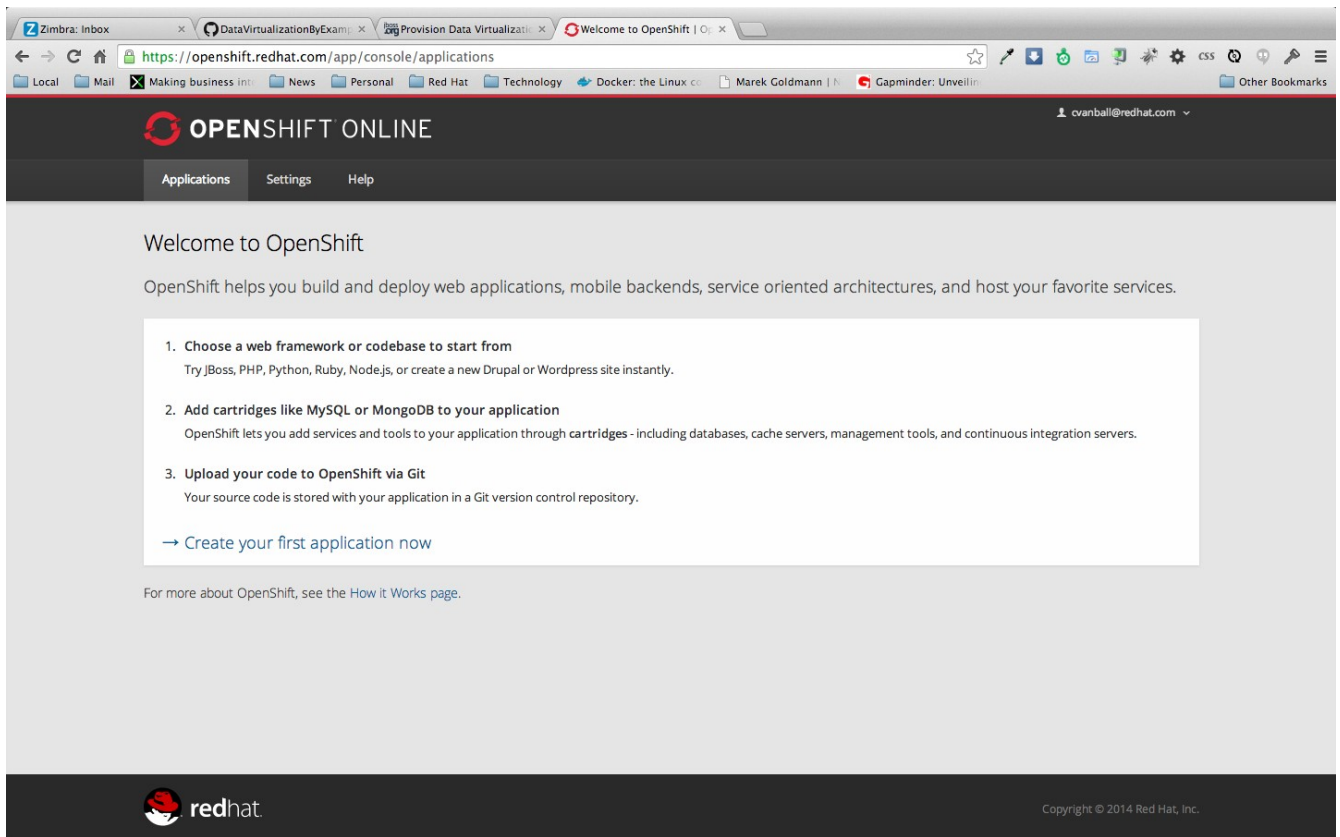


The screenshot shows the OpenShift Online account creation interface. At the top, the OpenShift logo is displayed. The main content area is divided into two sections. On the left, under the heading "Create an account", there are input fields for "Email address" (with a placeholder "Valid email address"), "Password" (with a placeholder "At least 6 characters"), and "Password confirmation" (with a placeholder "Enter it again"). Below these is a CAPTCHA section titled "Are you a spam bot?" with a text input field showing the words "the" and "cloud" and a "Sign Up" button. On the right, under the heading "Already have an account? [Sign in](#)", there is a list of features under the heading "You'll love OpenShift because it has:". The features listed are: "Built-in support for Java, Node.js, Ruby, Python, PHP, Perl and extensible functionality to add other languages.", "Powerful command line client tools and a web management console to launch and manage your applications", "Pre-created quickstarts to instantaneously boot your favorite application framework", "A vibrant community backed by an army of developers, evangelists, and OpenShift devotees.", and "A wide range of developer resources, including technology specific get started pages, how-to blog posts and videos." Below the list is a link "Learn more about [OpenShift](#)". At the bottom of the form, there is a link "Get Another" and a link "Get an audio CAPTCHA" with a "Help" button. Below the CAPTCHA section, there is a note "reCAPTCHA provided by Google - help fight spam and fix books!". At the bottom of the form, there is a link "By signing up you agree to the [Terms of Service](#) and the [Privacy Policy](#)". At the bottom of the page, there is a Red Hat logo and the text "Copyright © 2014 Red Hat, Inc."

If you already have an OpenShift Online account please sign in with your known OpenShift Online username password combination.

1.3.2 Create a new application

If this is your first login into OpenShift Online click at the “-> Create your first application now” link



If you already have an OpenShift Online account click the “Add Application” button below your list of applications.


Alternately, you can deploy the DataVirtualization cartridge using the [OpenShift RHC Client Tools](#). Using the rhc client tools type:


```
$ rhc app create dv jboss-dv-6.0.0
```


1.3.3 Choose a type of applications


You can either scroll down to the list of quick links and click “JBoss Data Virtualization 6” under “xPaaS” or search for “Data”.

xPaaSsee all



JBoss Data Virtualization 6
JAVA EE 6

JBoss Enterprise Application Platform 6
JAVA EE 6


JBoss Fuse 6.1
INTEGRATION MESSAGING

JBoss Business Process Management Suite

or

 or 

Matches search 'Data' [\(show all\)](#)

JBoss Data Virtualization 6

A complete data provisioning, federation, integration and management solution that enables organizations to gain actionable and unified information.

<http://www.jboss.org>

Community created
Does not receive automatic security updates

JAVA JAVA EE 6 JBOSS XPAAS

Click “JBoss Data Virtualization 6”

1.3.4 Configure Application

Name your application in your domain, scroll down and click “Create Application” button.

OPENSIFT ONLINE

cvanball@redhat.com

ApplicationsSettingsHelp

1 Choose a type of application

2 Configure the application

3 Next steps

Based On

JBoss Data Virtualization 6 Cartridge

A complete data provisioning, federation, integration and management solution that enables organizations to gain actionable and unified information.
<http://www.jboss.org>
Community created
Does not receive automatic security updates

Public URL

http://

dv

-jbosscs.rhcloud.com

OpenShift will automatically register this domain name for your application. You can add your own domain name later.

Source Code

Optional URL to a Git repository

Branch/tag

We'll create a Git code repository in the cloud, and populate it with a set of reasonable defaults. If you provide a Git URL, your application will start with an exact copy of the code and configuration provided in this Git repository.

Gears

Small

Gears are the application containers running your code. For most applications, the small gear size provides plenty of resources. You can also [upgrade your plan](#) to get access to more gear sizes.

Cartridges

JBoss Data Virtualization 6

Applications are composed of cartridges - each of which exposes a service or capability to your code. All applications must have a web cartridge.
Downloaded cartridges do not receive updates automatically.

Scaling

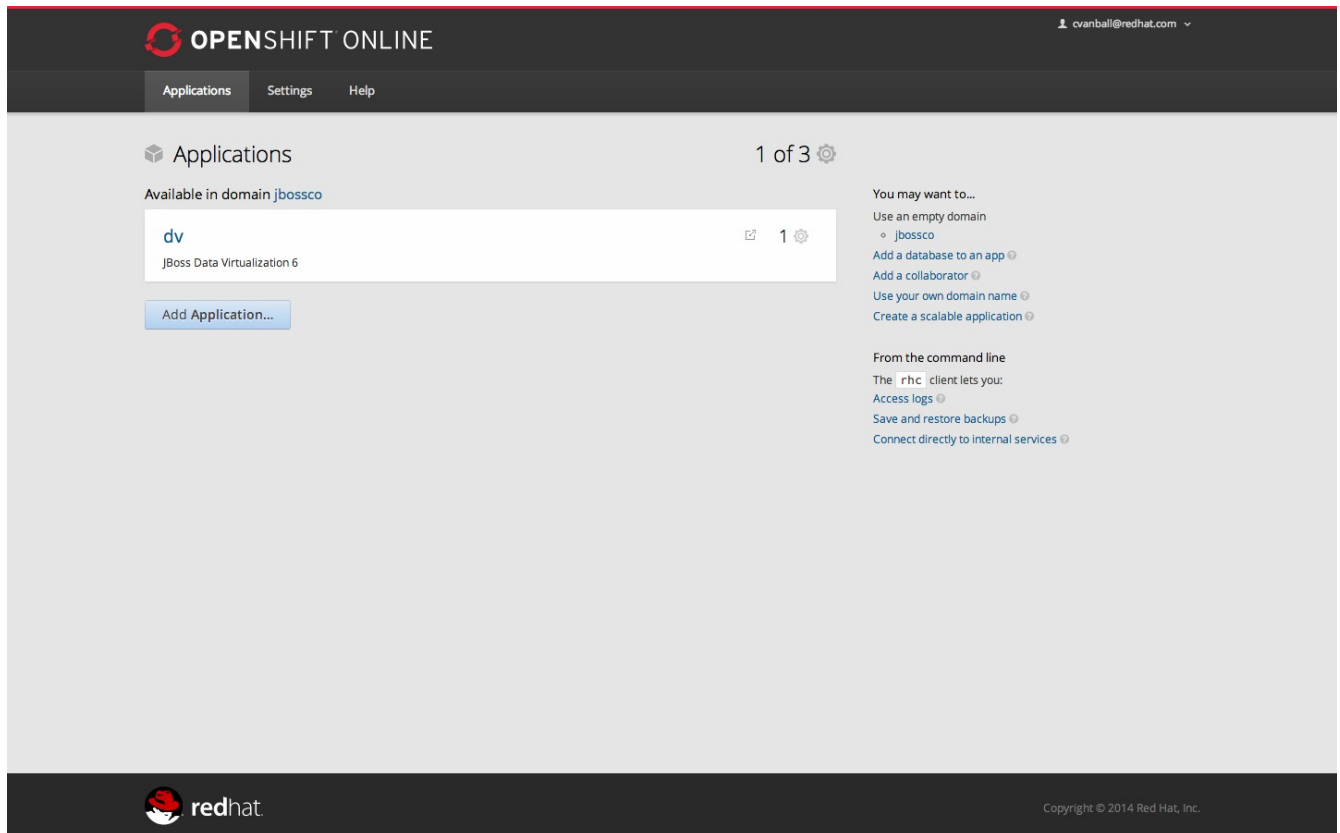
No scaling

OpenShift automatically routes web requests to your web gear. This application shares

1.3.5 Next steps

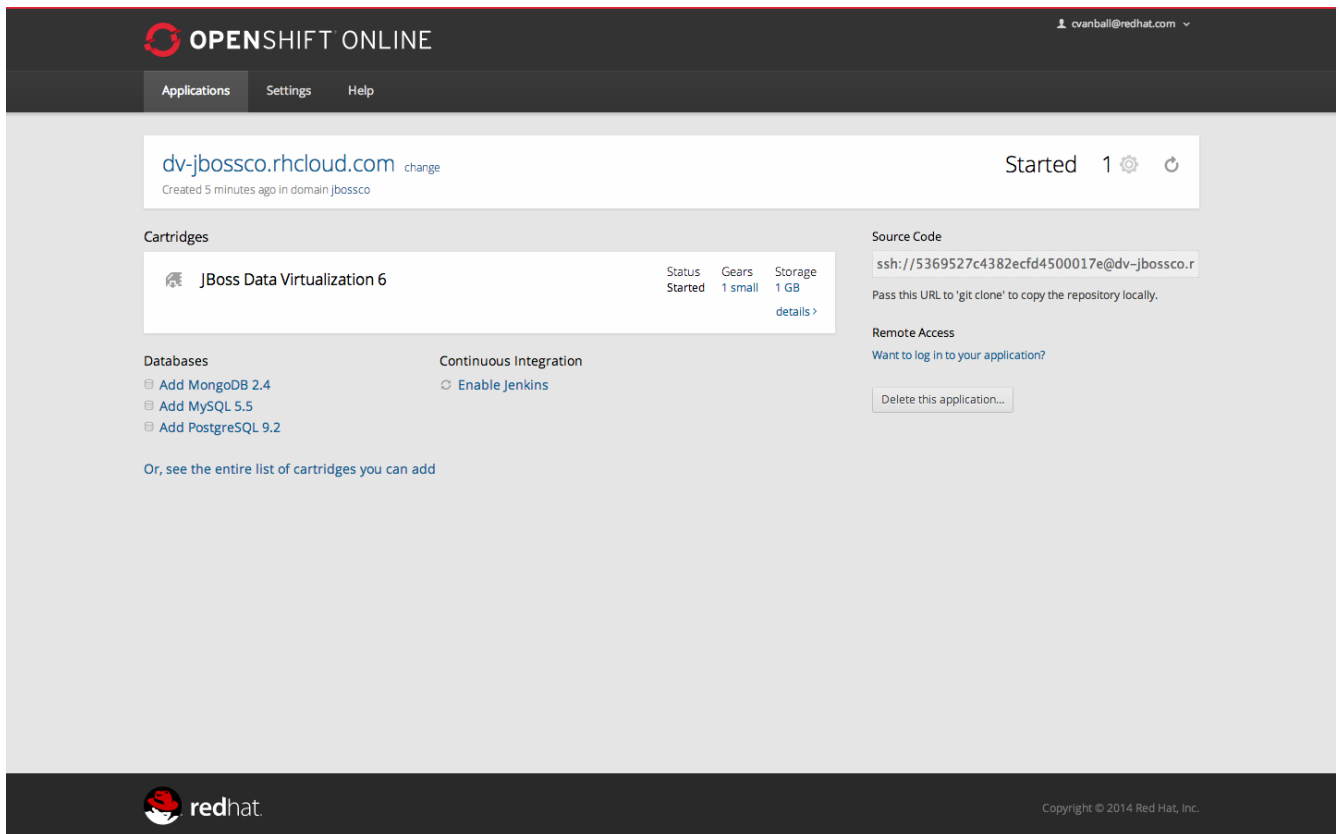
In the Next steps we would like a PostgreSQL database to the application previously created on OpenShift Online.

The following figure is shown when the application is successfully created in your domain.



Now we would like to add a PostgreSQL database to the application. Click the Application name link, in the above figure it's called “dv”.

The following screen should appear.



Click “Add PostgreSQL 9.2” and click at the next appearing screen “Add Cartridge”.

You have now a successfully created a JBoss Data Virtualization environment with a PostgreSQL 9.2 database in just a matter of seconds.

Note: at the moment you need a local installation of JBoss Data Virtualization in order to deploy Data Virtualization projects to the OpenShift environment. This will be addressed in a newer version of JBoss Developer Studio.

Congratulations, you have completed Lab #1.