WebSphere Business Monitor V6.2 – Configuring a remote CEI server

What this exercise is about 2
Lab requirements 2
What you should be able to do 2
Introduction 3
Part 1: Install DB2 on machine 1 4
Part 2: Install monitor server on machine 1 5
Part 3: Install process server on machine 2 6
Part 4: Configure single sign-on and SSL on monitor server on machine 1 7
Part 5: Configure single sign-on and SSL on process server on machine 2 10
Part 6: Copy crosscell jar files to the remote server on machine 2 12
Part 7: Run the queue bypass scripts on the remote server on machine 2 13
Part 8: Install the Clips And Tacks BAM monitor model on the monitor server on machine 1 15
Part 9: Run events on the remote CEI server on machine 2 17
What you did in this exercise 19
Appendix 1: Screen captures for the DB2 install 20
Appendix 2: Screen captures for the monitor server install 32
Appendix 3: Screen captures for the process server install 44

What this exercise is about

The objective of this lab is to provide instructions for installing WebSphere Business Monitor V6.2 as a stand-alone server, then configuring it to use a remote CEI server which is installed on a second machine.

To enable the WebSphere® Business Monitor server to manage a remote CEI event server, you must install support files into the installation folder of the remote CEI server. If the CEI server is in a different cell than the WebSphere Business Monitor server, these tasks guide you through the configuration to enable the remote system to send events to WebSphere Business Monitor.

Lab requirements

List of system and software required for the student to complete the lab:

- WebSphere Business Monitor V6.2 which includes
    - WebSphere Application Server V6.1.0.21
    - Alphablox V9.5
- WebSphere Process Server V6.2
- DB2 ESE V9.5
- You should have two machines, or you may use just one machine if it has sufficient memory to allow starting two stand-alone servers simultaneously.

What you should be able to do

At the end of this lab you should be able to do the following:

- Install DB2 on machine 1.
- Install WebSphere Business Monitor on machine 1.
- Install WebSphere Process Server on machine 2.
- Configure single sign-on and SSL on both machines.
- Copy the crosscell JAR's to the remote server and register the plug-ins.
- Run the queue bypass scripts on the remote server and test the JDBC connection.
- Deploy a monitor model to the monitor server.
- Submit events on the remote server.
- Verify that monitoring context instances are created.

Introduction

To enable the WebSphere® Business Monitor server to manage a remote CEI event server, you must install support files into the installation folder of the remote CEI server. If the CEI server is in a different cell than the WebSphere Business Monitor server, then you must change the configuration to enable the remote system to send events to WebSphere Business Monitor. The remote server can be WebSphere Process Server 6.1, WebSphere Process Server 6.2, or WebSphere Application Server 6.1.

For WebSphere Business Monitor version 6.2, there are two options for receiving events, "Queued" and "Queue Bypass".

In previous releases, only the queued option was available and you would use the crosscell scripts to create an SI bus link which would create the connection between the buses on the two servers.

In this release, queue bypass is a new method for the consumption of events from the CEI server into the server Moderator for a monitoring model. Event flow skips the monitoring model's JMS queue and instead places all events directly into the monitoring model's event database table. This will increase server through-put.

This lab will show you how to install DB2 and a stand-alone monitor server onto machine 1. Then you will install a stand-alone process server on machine 2. Then you will configure the queue bypass connection.

You will not need an LDAP server since you will use the built-in VMM file based repositories.

Part 1: Install DB2 on machine 1

____ 1. Activate the license.

__ a. Unzip your activation zip to <DB2License> folder. An example of the license file is DB2_ESE_Auth_User_Activation_V95.zip.

__ b. Copy the 'db2' folder in <DB2License> to the 'db2' folder in the DB2 image folder <DB2Image>.

__ c. The DB2 installer will use this information to activate the license.

__ d. As an alternative, you could also wait until DB2 is installed, then open the DB2 control center, then select Tools > License center > select the system name in the drop down > License > Add > Browse to <DB2License>\db2\license\db2ese_u.lic > Ok.

____ 2. Run setup.exe in <DB2Image> to start the DB2 installer. Specify the following options in the wizard:

__ a. Specify typical installation type.

__ b. You do not need to specify a response file.

__ c. The default installation path is acceptable: \ibm\sqllib.

__ d. For user information, you do not need to specify a domain.

__ e. Enter a user and password. In this example the user is db2admin and the password is db2admin.

__ f. You do not need to prepare the DB2 tools catalog.

__ g. You do not need to setup notification.

__ h. Operation system security is not required.

____ 3. See the appendix for a series of screen captures for the installation process.

Part 2: Install monitor server on machine 1

____ 1. To install the supporting software properly, make sure that your folder structure is correct for the Monitor install image.

__ a. The Alphablox install.exe should be located in <MonitorImage>\ABX\Windows\.

__ b. The WebSphere Application server install.exe should be located in <MonitorImage>\WAS\.

____ 2. Install a stand-alone Monitor server.

__ a. Run Launchpad.exe in <MonitorImage>.

__ b. Use the following options in the wizard:

1) Select basic installation type.

2) Specify a short path for the installation, such as c:\MonServer62.

3) Enable administrative security, specifying a user and password. In this example the user is admin and the password is admin.

4) You do not need to configure human tasks.

5) For the database configuration, specify DB2 Universal Database. Select the option to create a local database. Provide a database name and schema name. In this example the database and schema names are MON62.

6) Enter your DB2 user and password, and select JDBC driver type 4.

7) See the appendix for a series of screen captures for the installation process.

____ 3. Make a backup of your monitor server profile.

__ a. For example, copy C:\MonServer62\profiles\WBMon01 to a backup folder.

____ 4. Start the server.

__ a. Programs > IBM WebSphere > Business Monitor 6.2 > Profiles > WBMon01 > Start the server.

____ 5. Check the SystemOut.log for any errors.

__ a. For example, look in C:\MonServer62\profiles\WBMon01\logs\server1\SystemOut.log.

____ 6. Log into the administrative console, to verify that it works properly.

__ a. For example, open this URL: https://localhost:9043/ibm/console

Part 3: Install process server on machine 2

____ 1. Install a stand-alone process server. You will not need DB2 for this installation since Derby will be used.

__ a. Run Launchpad.exe in <WPSImage>.

__ b. Use the following options in the wizard:

1) If you already have an application server on the machine, you will be prompted to use it or create a new server. Select the option to create a new application server.

2) Select typical installation type.

3) You do not need to load the samples.

4) Enter a short path for the installation such as \ProcServer62.

5) For the environment, select stand-alone server.

6) Enable administrative security and enter the user and password. In this example the user is admin and the password is admin.

7) See the appendix for a series of screen captures for the installation process.

____ 2. Make a backup of your process server profile.

__ a. For example, copy C:\ProcServer62\profiles\ProcSrv01 to a backup folder.

____ 3. Start the server.

__ a. Programs > IBM WebSphere > Process Server 6.2 > Profiles > ProcSrv01 > Start the server.

____ 4. Check the SystemOut.log for any errors.

__ a. For example, look in C:\ProcServer62\profiles\ProcSrv01\logs\server1\SystemOut.log.

____ 5. Log into the administrative console, to verify that it works properly.

__ a. For example, open this URL: https://localhost:9043/ibm/console

Part 4: Configure single sign-on and SSL on monitor server on machine 1

____ 1. Configure ‘Single Sign-on’ on monitor server on machine 1.

__ a. In the administrative console, navigate to Security > Secure administration, applications and infrastructure > Authentication > Web security > click the ‘Single sign-on (SSO)’ link

__ b. In the 'Single sign-on (SSO)’ panel, do the following:

1) Select the check box for ‘Enabled’

2) Ensure the check box for ‘Requires SSL’ is NOT selected

3) Enter your domain name, such as ibm.com

4) Select the check box for ‘Interoperability Mode’

5) Clear the check box for ‘Web bound security attribute propagation’

6) Click OK.

__ c. Click to save the configuration.

__ d. On the Secure administration, applications and infrastructure page, find the Authentication section, then click the link 'Authentication mechanisms and expiration'

1) Enter a password such as 'monitor' and the same for the confirm password

2) Enter the key file name such as 'C:\monitor.key'

3) Click the ‘Export Keys’ button. This action exports a key file to the specified location.

4) Click Ok

__ e. Click to save the configuration.

____ 2. Setup SSL on monitor server on machine 1.

__ a. In the administrative console, navigate to Security > SSL certificate & key management > Key stores & certificates

__ b. Click NodeDefaultTrustStore > Signer certificates > Retrieve from port

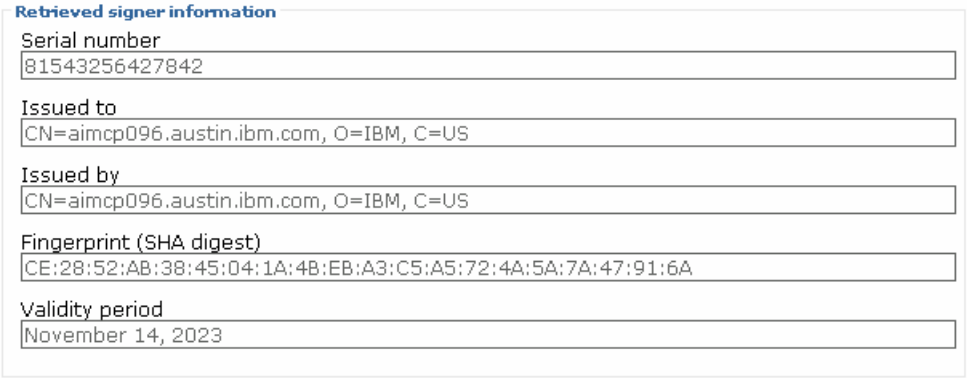
__ c. For the host name, enter the remote CEI server machine name. For example, aimcp096.austin.ibm.com.

__ d. Enter the remote server port. For example, 8880

1) You can verify the remote port by logging into the remote server administrative console and navigating to Servers > Server1 > Ports.

__ e. Enter the alias as wps62

__ f. Click to retrieve signer information.

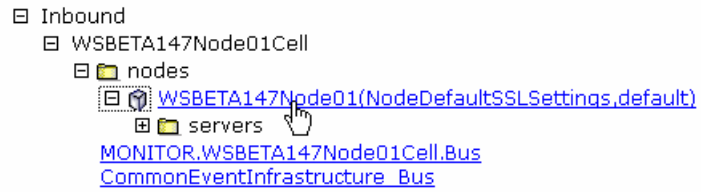


__ g. Click Ok.

__ h. Click to save the configuration.

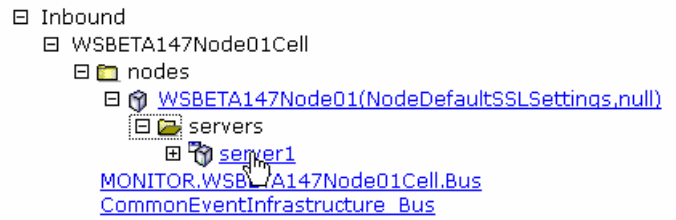
__ i. In the administrative console, navigate to Security > SSL certificate & key management > Manage endpoint security configuration.

__ j. For the inbound event node, navigate to Inbound > <yourCell> > nodes > then click the node link

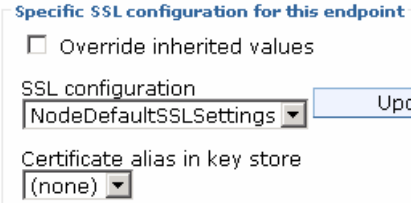


__ k. Make sure you have the default SSL configuration and the default alias:

__ l. For the inbound event node server, navigate to Inbound > <yourCell> > nodes > <yourNode> > servers > then click the server1 link



__ m. Make sure that override is unchecked:



__ n. Perform the same checks and updates for the outbound event node and server.

__ o. Save the configuration.

__ p. Restart the server.

__ q. Check SystemOut.log for errors.

Part 5: Configure single sign-on and SSL on process server on machine 2

____ 1. Copy the monitor.key file from machine 1 to machine 2. In this example it is copied to machine 2 at location C:\monitor.key.

____ 2. Configure 'Single Sign-on' on process server on machine 2.

__ a. In the administrative console, navigate to Security > Secure administration, applications and infrastructure > Authentication > Web security > click the 'Single sign-on (SSO)' link

__ b. In the 'Single sign-on (SSO)' panel, do the following:

1) Select the check box for 'Enabled'

2) Ensure the check box for 'Requires SSL' is NOT selected

3) Enter your domain name, such as ibm.com

4) Select the check box for 'Interoperability Mode'

5) Clear the check box for 'Web bound security attribute propagation'

6) Click OK.

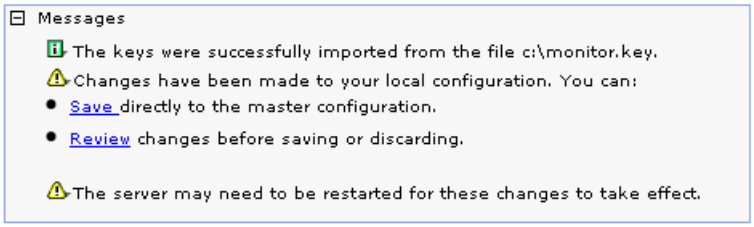
__ c. Click to save the configuration.

__ d. On the Secure administration, applications and infrastructure page, find the Authentication section, then click the link 'Authentication mechanisms and expiration'

1) Enter a password such as 'monitor' and the same for the confirm password

2) Enter the key file name such as 'C:\monitor.key'

3) Click the 'Import Keys' button.



4) Click Ok

__ e. Click to save the configuration.

____ 3. Setup SSL on process server on machine 2.

__ a. In the administrative console, navigate to Security > SSL certificate & key management > Key stores & certificates

__ b. Click NodeDefaultTrustStore > Signer certificates > Retrieve from port

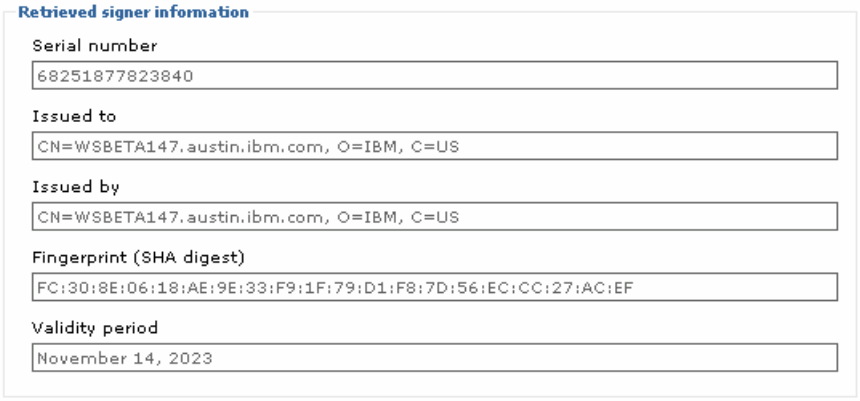
__ c. For the host name, enter the monitor server machine name. For example, wsbeta147.austin.ibm.com.

__ d. Enter the remote server port. For example, 8880

1) You can verify the monitor server port by logging into the monitor server administrative console and navigating to Servers > Server1 > Ports.

__ e. Enter the alias as mon62

__ f. Click to retrieve signer information.



__ g. Click Ok.

__ h. Click to save the configuration.

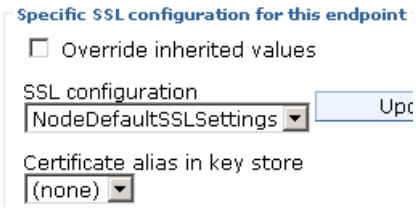
__ i. In the administrative console, navigate to Security > SSL certificate & key management > Manage endpoint security configuration.

__ j. For the inbound event node, navigate to Inbound > <yourCell> > nodes > then click the node link

__ k. Make sure you have the default SSL configuration and the default alias:

__ l. For the inbound event node server, navigate to Inbound > <yourCell> > nodes > <yourNode> > servers > then click the server1 link

__ m. Make sure that override is unchecked:



__ n. Perform the same checks and updates for the outbound event node and server.

__ o. Save the configuration.

__ p. Restart the server.

__ q. Check SystemOut.log for errors.

Part 6: Copy crosscell jar files to the remote server on machine 2

____ 1. From the <was_root>/scripts.wbm/crosscell folder of the local Business Monitor server installation, copy the mon61to61CrossCell.zip file to the <wps_root>/plugins folder of the remote CEI server and extract the contents.

____ 2. Stop the remote server.

____ 3. From the remote CEI server's <wps_root>/Profiles/<profile>/bin folder, run the command to configure the process server to recognize the new plugin jar files that were extracted into the plugins directory in the previous steps: osgiCfgInit.bat

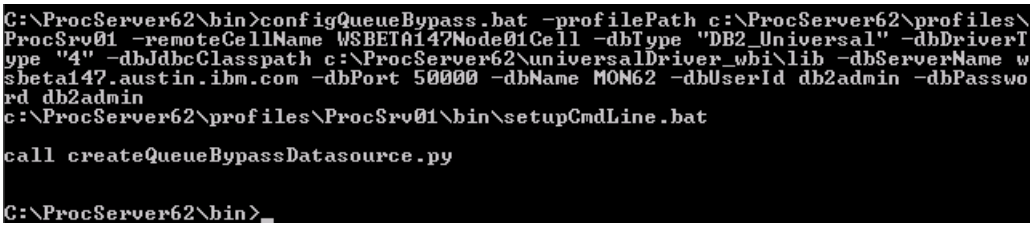
____ 4. Start the remote server.

Part 7: Run the queue bypass scripts on the remote server on machine 2

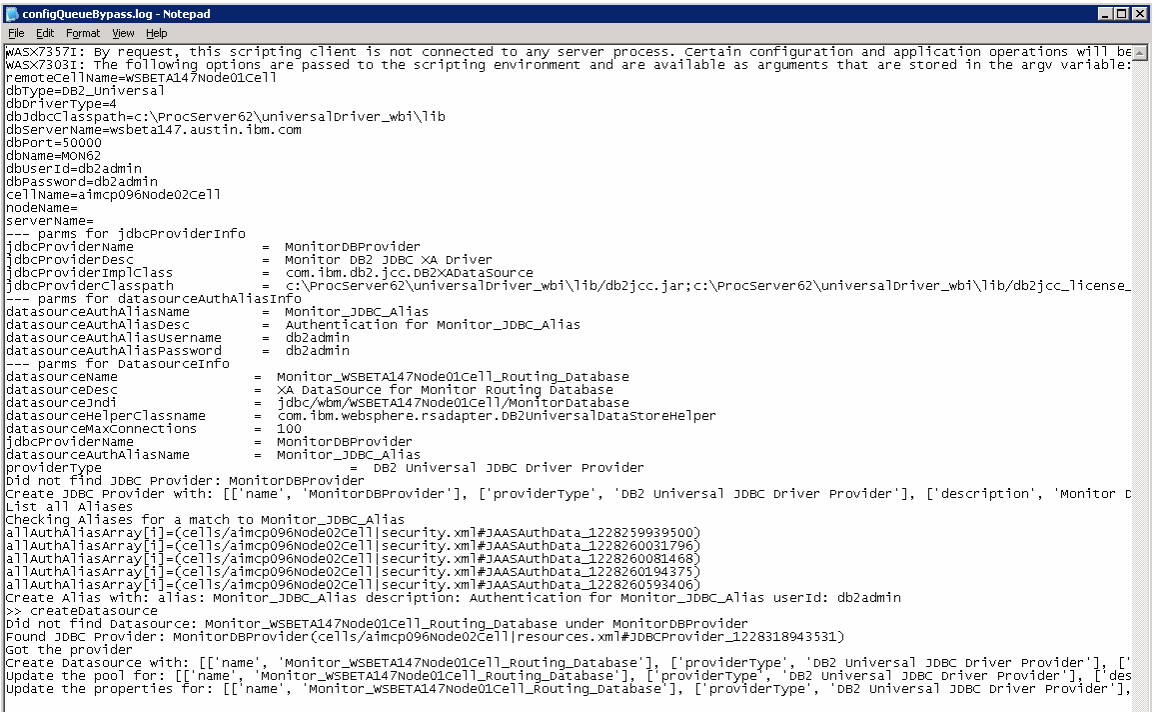
____ 1. From the <was_root>/scripts.wbm/queuebypass folder of the local Business Monitor server installation, copy all files in this folder to the <wps_root>/bin folder of the remote CEI server.

____ 2. From the <wps_root>\bin folder of the remote CEI server, run configQueueBypass.bat. Here is a sample. You will need to substitute the correct cell name of your monitor server, and you need to substitue the correct server name. Note that if you try to copy and paste from here to the command line on your server, the dashes may not copy properly, so you may need to overtype them.

```
configQueueBypass.bat –profilePath c:\ProcServer62\profiles\ProcSrv01
–remoteCellName WSBETA147Node01Cell –dbType "DB2_Universal" –
dbDriverType "4" –dbJdbcClasspath
c:\ProcServer62\universalDriver_wbi\lib –dbServerName
wsbeta147.austin.ibm.com –dbPort 50000 –dbName MON62 –dbUserId
db2admin –dbPassword db2admin
```



____ 3. Check the configQueueBypass.log in the same folder for any errors.

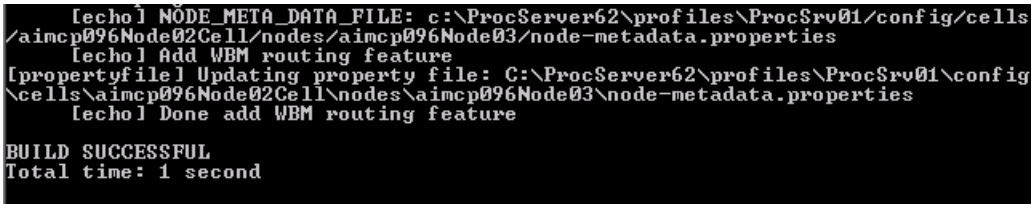


____ 4. Check that the data source was created.

__ a. On the remote server's administrative console, navigate to Resources > JDBC > Data sources. You should see the routing database entry in the list.

____ 5. From the <wps_root>\bin folder of the remote CEI server, run setupQueueBypass.bat. Here is a sample. You will need to substitute the correct cell and node names of your remote CEI server. Note that if you try to copy and paste from here to the command line on your server, the dashes may not copy properly, so you may need to overtype them.

```
setupQueueBypass.bat –wasHome c:\ProcServer62 –profileName ProcSrv01 –
profilePath c:\ProcServer62\profiles\ProcSrv01 –cellName aimcp096Node02Cell
–nodeName aimcp096Node03
```



____ 6. Restart both servers.

____ 7. Test the JDBC connection.

__ a. On the remote server's administrative console, navigate to Resources > JDBC > Data sources.

__ b. Click the 'Monitor <yourCell> Routing Database' in the list.

__ c. Click the button 'Test connection'.

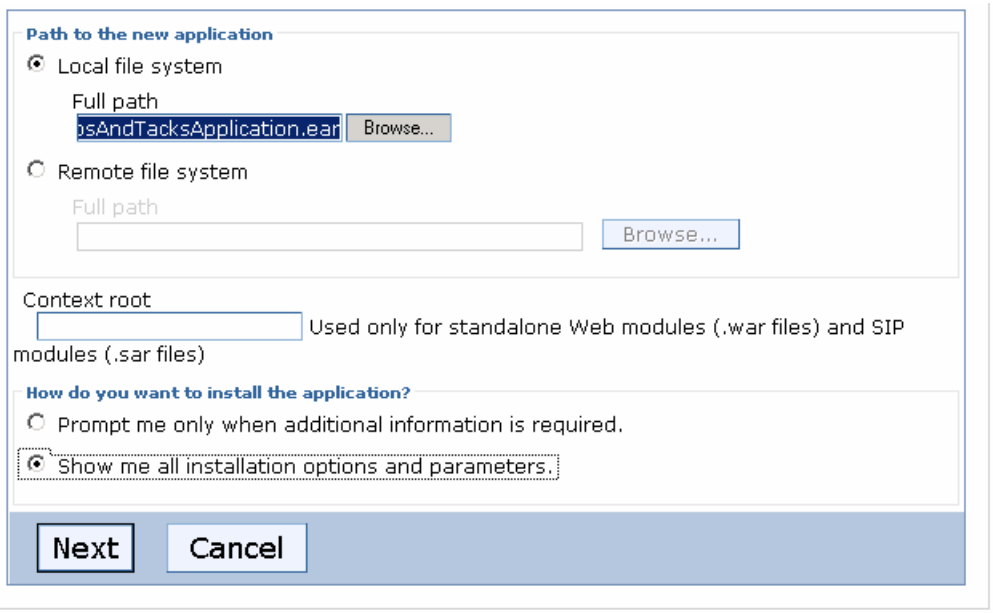
Part 8: Install the Clips And Tacks BAM monitor model on the monitor server on machine 1

____ 1. On monitor server's administrative console, install the Clips and tacks BAM model EAR, and specify the remote CEI server configuration.

__ a. Navigate to Applications > Install new application

__ b. Browse to the ear file, C:\Labfiles62\RemoteCEIServer\ClipsAndTacksApplication.ear

__ c. Make sure that you select 'Show me all installation options and parameters'.



__ d. In step 12 (Select monitor model CEI options) specify the remote CEI server.

1) Click location remote, also enter your remote CEI server name and port. For example, aimcp096.austin.ibm.com, 2810.

a) You can verify the remote CEI server port by logging into the remote server administrative console and navigating to Servers > Server1 > Ports.

2) Click security enabled, and enter the user and password for the server

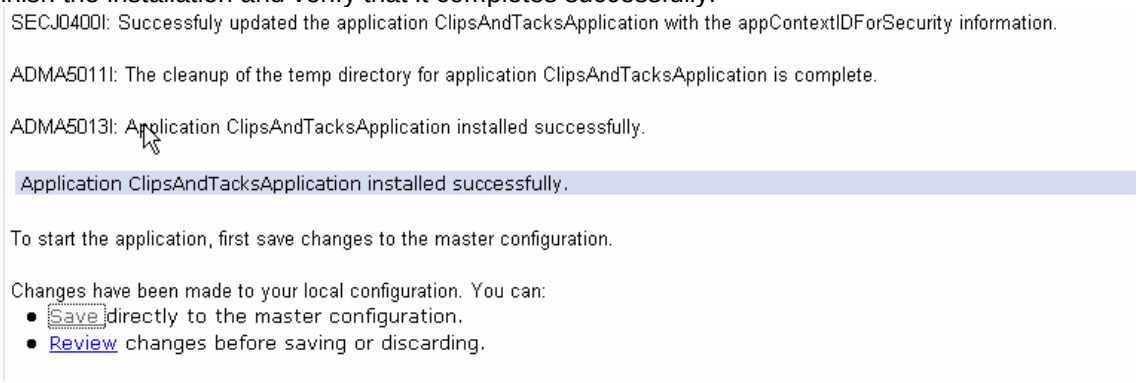
3) Click the button 'refresh list' on the page, and you should see that the events group profile list is updated with the remote cell:

Event group profile list name

Select	Event group profile list name	Scope
☑	Event groups list	cell=aimcp096Node02Cell, node=aimcp096Node03, server=server1

4) Verify that queue bypass is selected on this page:

__ e. Finish the installation and verify that it completes successfully:



__ f. Check SystemOut.log for errors. Here is a sample of messages for a successful installation:

1) ApplicationMg A WSVR0221I: Application started: ClipsAndTacksApplication

2) [12/3/08 10:52:53:937 CST] 00000044 LifecycleServ I com.ibm.wbimonitor.lifecycle.LifecycleServices start(String, long) CWMLC0126I: Model [ClipsAndTacks] version [2007-09-11T12:07:30] start completed.

3) [12/3/08 10:52:53:984 CST] 00000044 MMIntegration I com.ibm.wbimonitor.lifecycle.MMIntegration_General bindJMS_BATCH CWMLC0804I: ***** 'GENERAL' integration sequence is COMPLETE. modelID: 'ClipsAndTacks'

4) [12/3/08 10:52:55:968 CST] 00000010 ConsumerDaemo I com.ibm.wbimonitor.mm.ClipsAndTacks.20070911120730.moderator.ConsumerDaemonHandlerImpl startDaemon() CWMRT3005I: The Monitor Model "ClipsAndTacks 20070911120730" is starting consumption on this server or cluster member in SERIAL_MT mode with reordering=false from NORMAL_QUEUE_BYPASS.

____ 2. The application does not start automatically after installation, so leave the application in stopped status so that the model will leave the events in the inbound event table, so then you can easily check that the remote event configuration is working.

Part 9: Run events on the remote CEI server on machine 2

The supplied program is 'BatchCBEWriter61' and it will submit the events to the Common Event Infrastructure. Look for the program in \Labfiles62\ClipsAndTacks\BatchCBEWriter. This program reads XML files which represent the common base events for the model.

____ 1. Update BatchCBEWriter61.bat to point WAS_HOME to the CEI server home, for example 'set WAS_HOME=C:\ProcServer62'.

____ 2. Update config.properties, setting the serverName and portNumber. You can find the port number by browsing the server log and finding 'bootstrap port'. For example, check for the log at C:\ProcServer62\profiles\ProcSrv01\logs\server1\SystemOut.log . Here is an example of the config.properties settings:

__ a. `connect.serverName = localhost`

__ b. `connect.portNumber = 2810`

____ 3. Open a command window, then change directory to the folder containing BatchCBEWriter61, for example, type this command

__ a. cd \Labfiles62\ClipsAndTacks\BatchCBEWriter

____ 4. Run commands to load the common base events to the server.

__ a. batchcbewriter61 -Dsource.filename="c:/Labfiles62/clipsandtacks/cbe/allevents.xml"

__ b. When it prompts you for user identity and password, enter 'admin' for both (without the quotation marks)

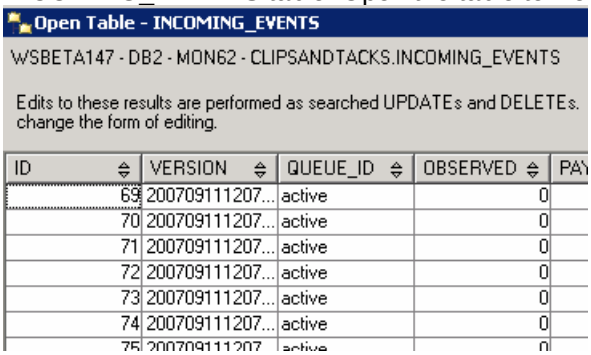
____ 5. When you run BatchCBEWriter61, you should see results such as:

```
C:\drivers\events>batchcbewriter61 -Dsource.filename="c:/drivers/events/clipsand
tacks/allevents.xml"
Getting CBEs.
Getting Emitter.
Removing GlobalInstanceIds.
Setting missing values.
Changing Instance Ids.
Updating timestamps.
Validating CBEs.
Sending CBEs.
START=09:14:10.875
Sending cbe[10].
Sending cbe[20].
Sending cbe[30].
Sending cbe[40].
Sending cbe[50].
Sending cbe[60].
Sending cbe[70].
Sending cbe[80].
END=09:14:24.390
TotalTime=13515 milliseconds.
CBEs/second=6.215316315205327
```

____ 6. Check the logs on monitor server and process server for errors.

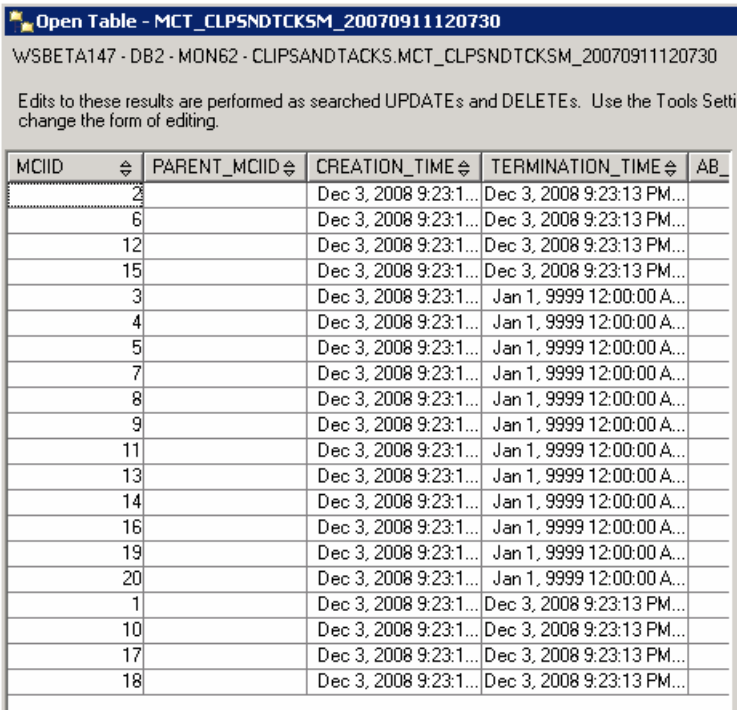
____ 7. Since the Clips and Tacks application is stopped the events should stay in the incoming events table. On the monitor server, open the DB2 control center, and navigate to the

INCOMING_EVENTS table. Open the table to view the 68 event records that were submitted:



ID	VERSION	QUEUE_ID	OBSERVED	PA
69	200709111207...	active	0	
70	200709111207...	active	0	
71	200709111207...	active	0	
72	200709111207...	active	0	
73	200709111207...	active	0	
74	200709111207...	active	0	
75	200709111207...	active	0	

____ 8. Start the ClipsAndTacksApplication on the monitor server, then wait a few minutes, then check the MCT_CLPSNDTCKSM_<timestamp> table in the DB2 control center for records. You should see 20 monitoring context instances:



MCIID	PARENT_MCIID	CREATION_TIME	TERMINATION_TIME	AB_
2		Dec 3, 2008 9:23:1...	Dec 3, 2008 9:23:13 PM...	
6		Dec 3, 2008 9:23:1...	Dec 3, 2008 9:23:13 PM...	
12		Dec 3, 2008 9:23:1...	Dec 3, 2008 9:23:13 PM...	
15		Dec 3, 2008 9:23:1...	Dec 3, 2008 9:23:13 PM...	
3		Dec 3, 2008 9:23:1...	Jan 1, 9999 12:00:00 A...	
4		Dec 3, 2008 9:23:1...	Jan 1, 9999 12:00:00 A...	
5		Dec 3, 2008 9:23:1...	Jan 1, 9999 12:00:00 A...	
7		Dec 3, 2008 9:23:1...	Jan 1, 9999 12:00:00 A...	
8		Dec 3, 2008 9:23:1...	Jan 1, 9999 12:00:00 A...	
9		Dec 3, 2008 9:23:1...	Jan 1, 9999 12:00:00 A...	
11		Dec 3, 2008 9:23:1...	Jan 1, 9999 12:00:00 A...	
13		Dec 3, 2008 9:23:1...	Jan 1, 9999 12:00:00 A...	
14		Dec 3, 2008 9:23:1...	Jan 1, 9999 12:00:00 A...	
16		Dec 3, 2008 9:23:1...	Jan 1, 9999 12:00:00 A...	
19		Dec 3, 2008 9:23:1...	Jan 1, 9999 12:00:00 A...	
20		Dec 3, 2008 9:23:1...	Jan 1, 9999 12:00:00 A...	
1		Dec 3, 2008 9:23:1...	Dec 3, 2008 9:23:13 PM...	
10		Dec 3, 2008 9:23:1...	Dec 3, 2008 9:23:13 PM...	
17		Dec 3, 2008 9:23:1...	Dec 3, 2008 9:23:13 PM...	
18		Dec 3, 2008 9:23:1...	Dec 3, 2008 9:23:13 PM...	

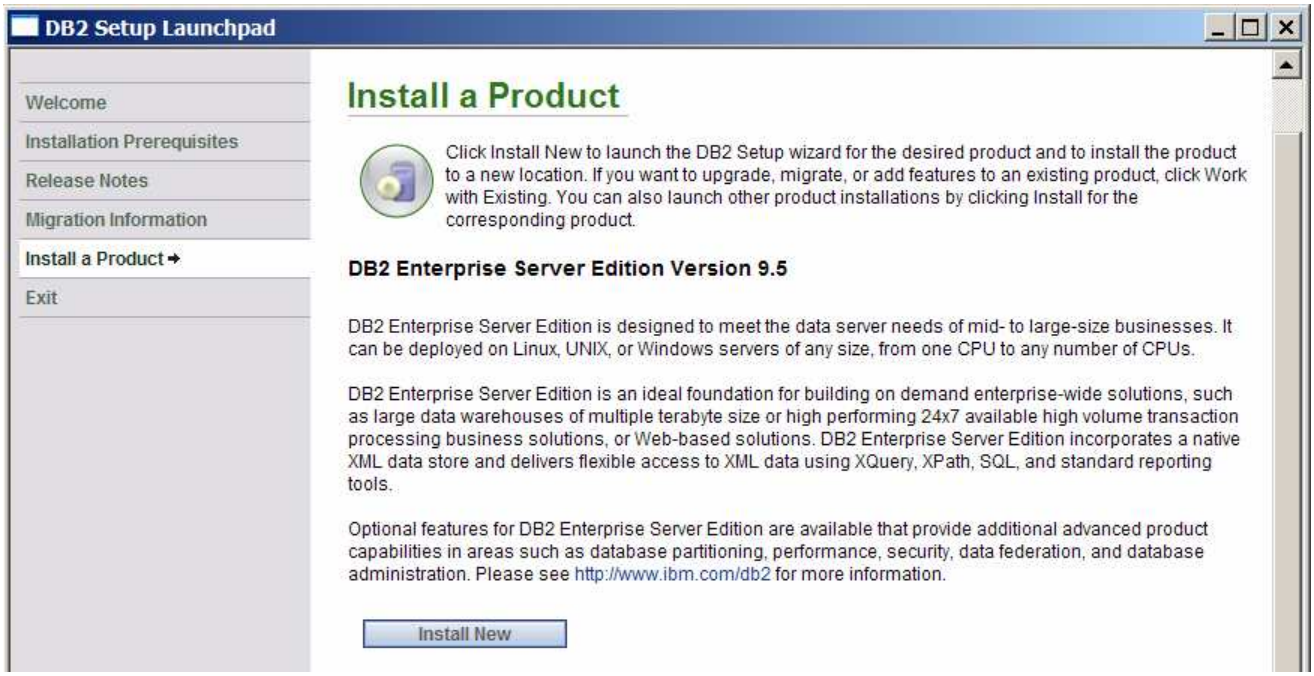
What you did in this exercise

You installed DB2 and a stand-alone monitor server onto machine 1.Then you installed a stand-alone process server on machine 2. Then you configured and verified the queue bypass connection. Also, you deployed a model and sent events from the remote server to the monitor server.

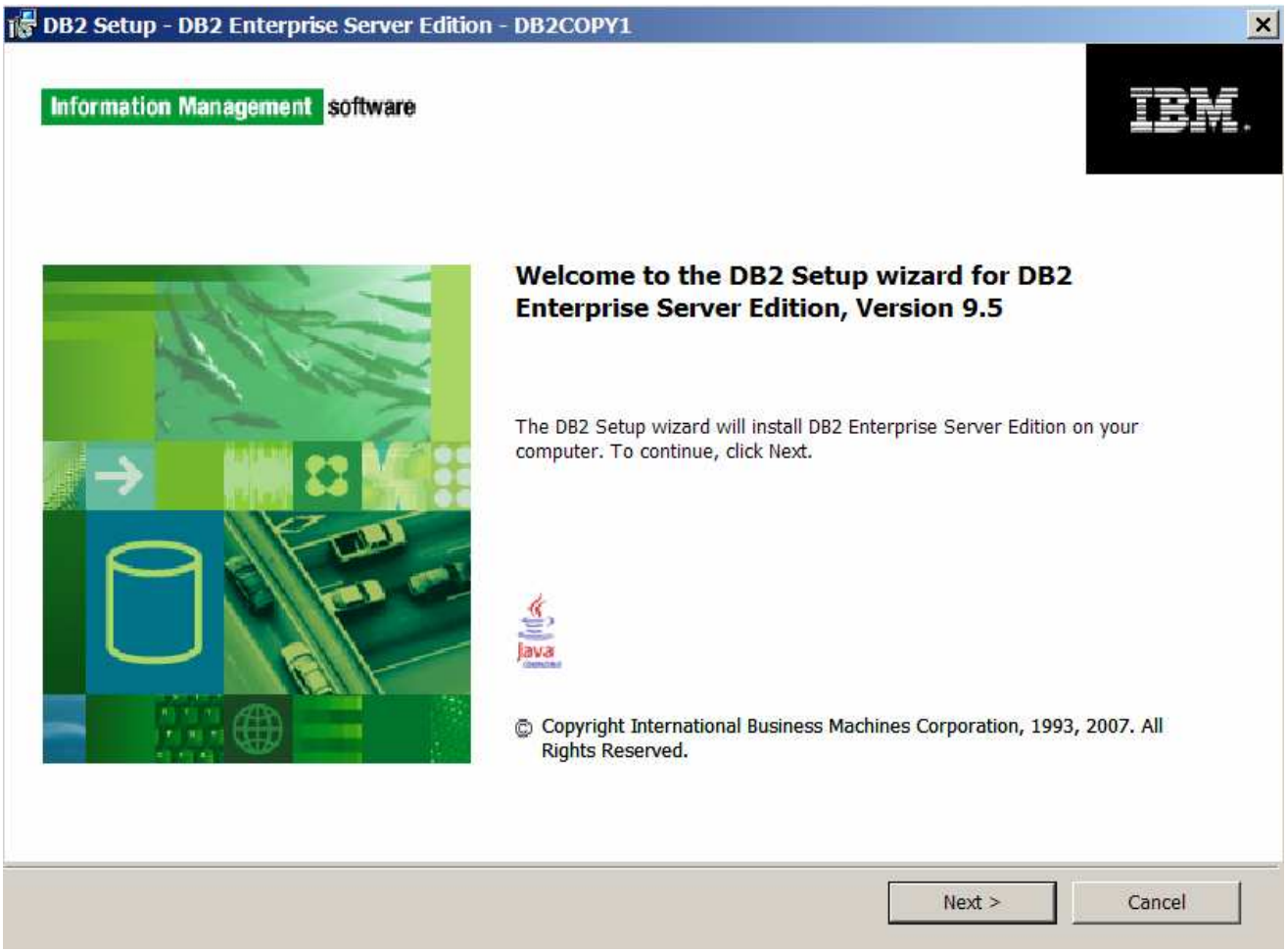
Appendix 1: Screen captures for the DB2 install

____ 1.

____ 2.



____ 3.



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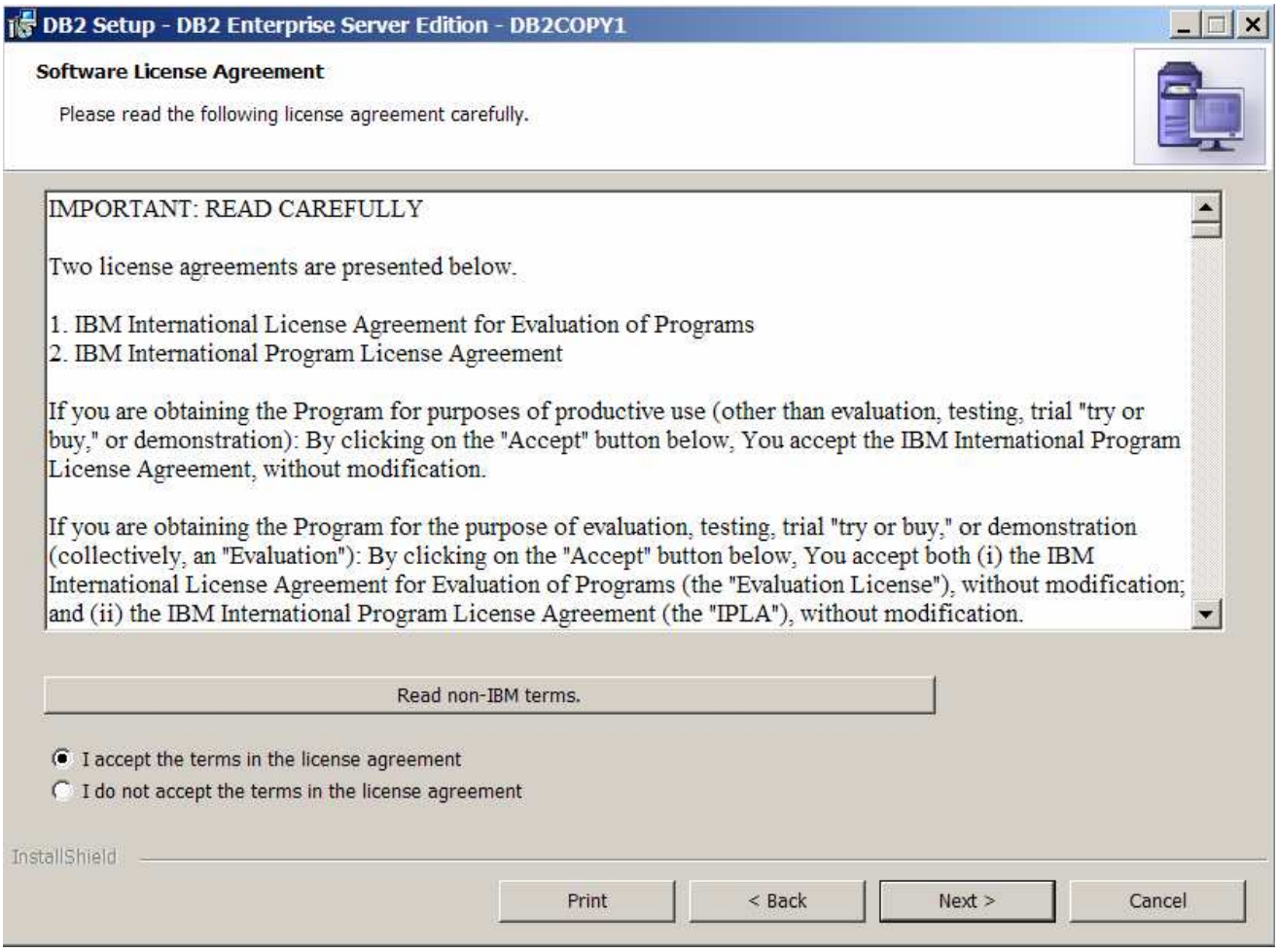
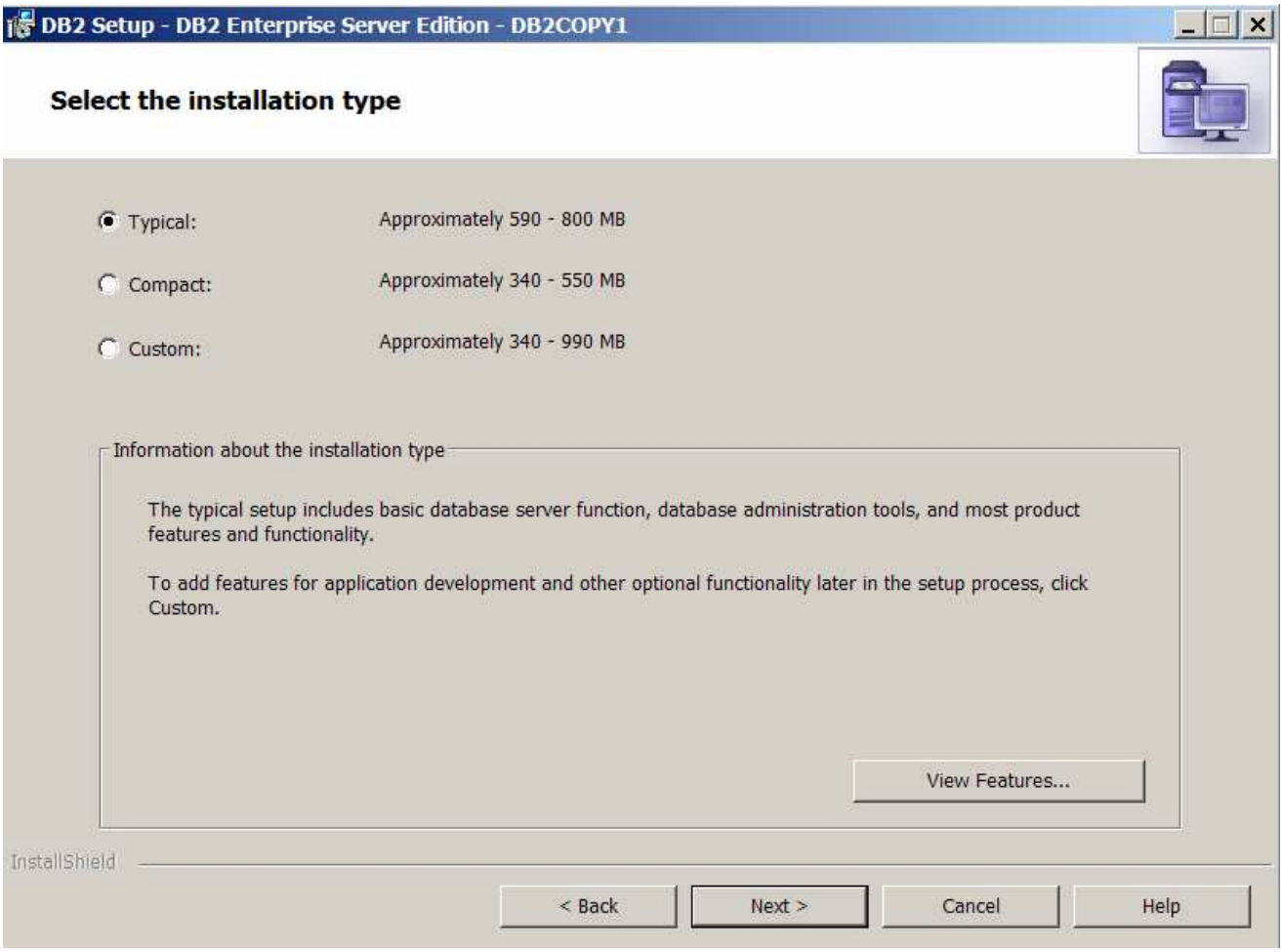


____ 5.



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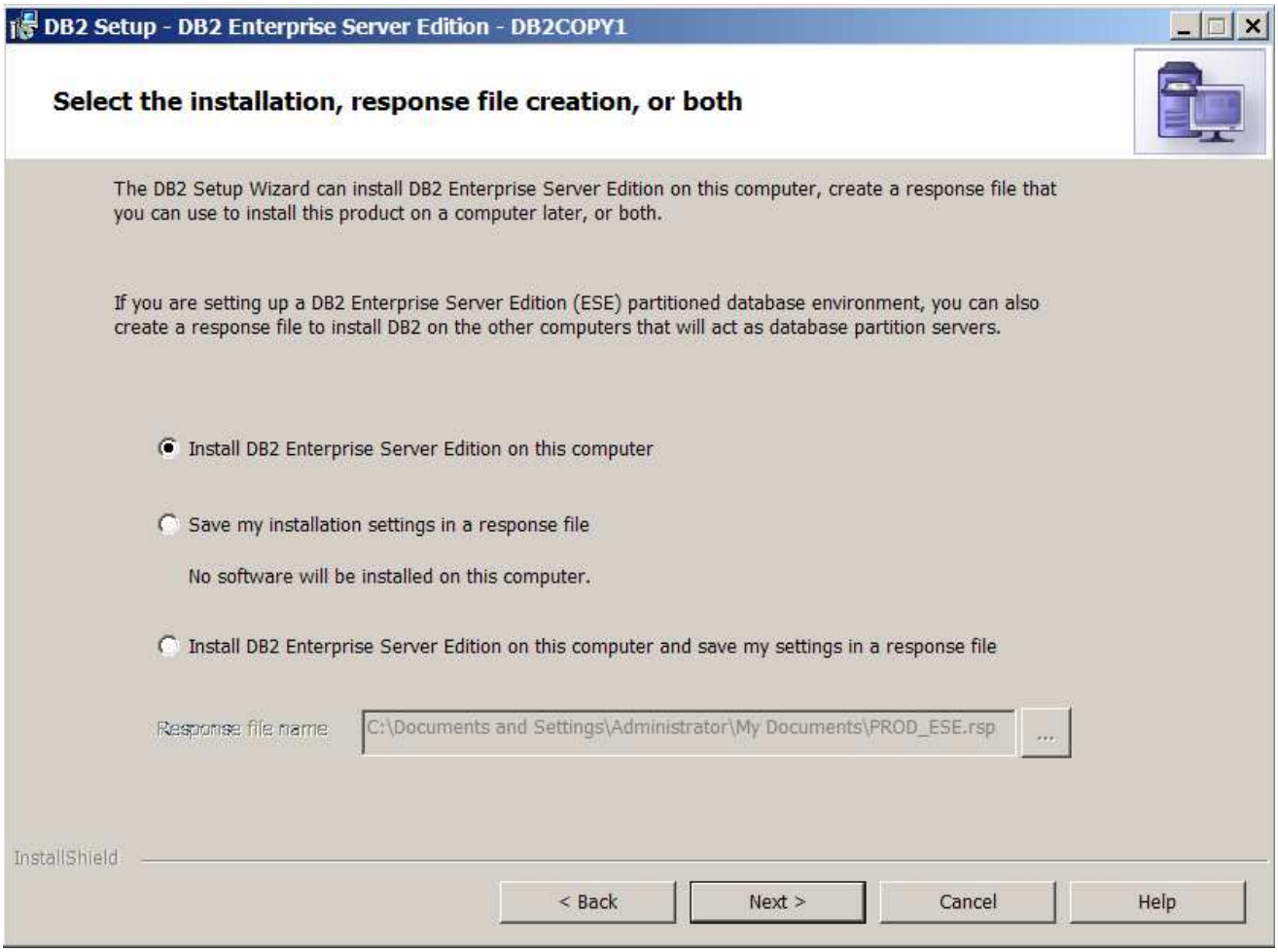

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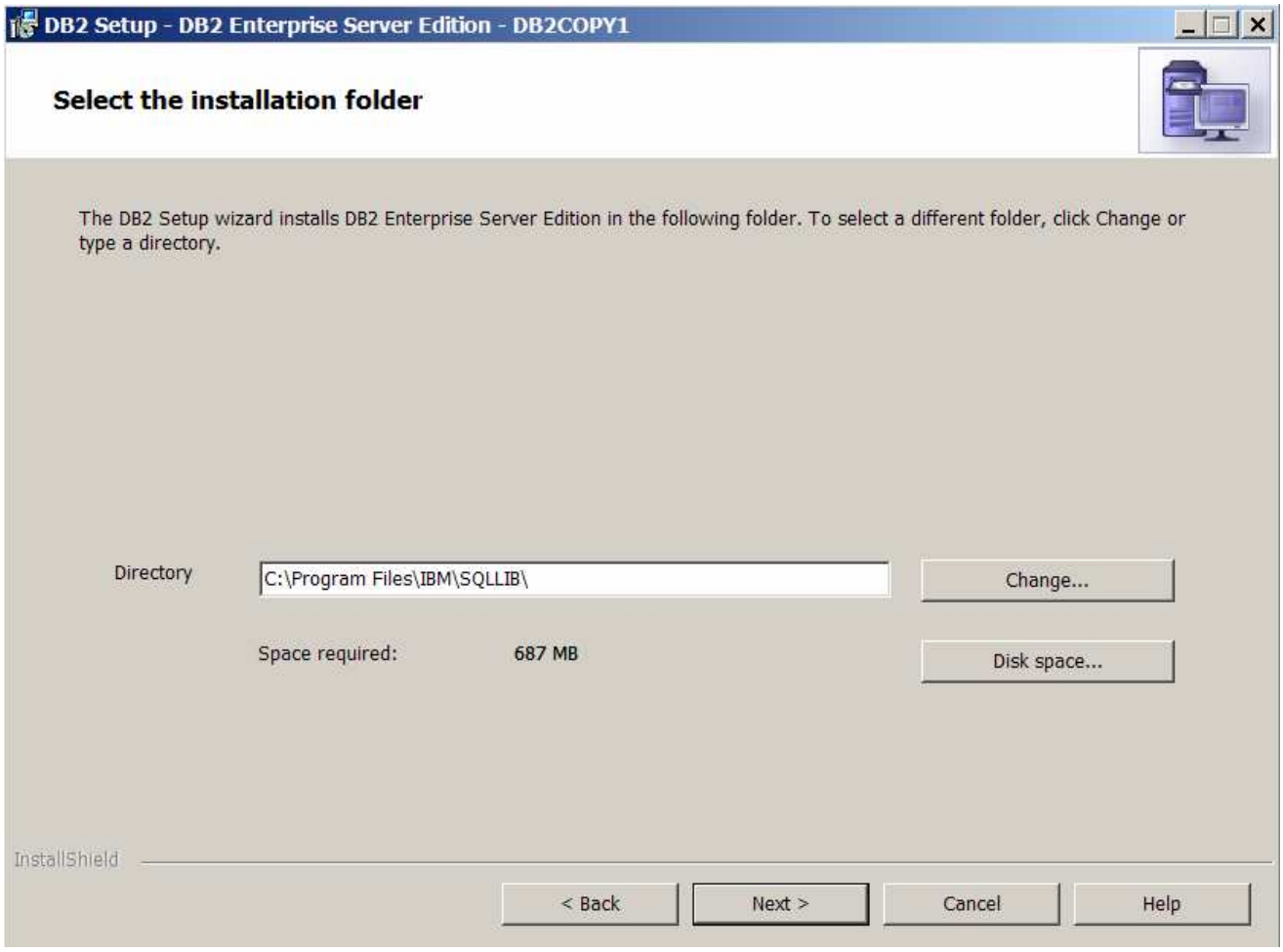

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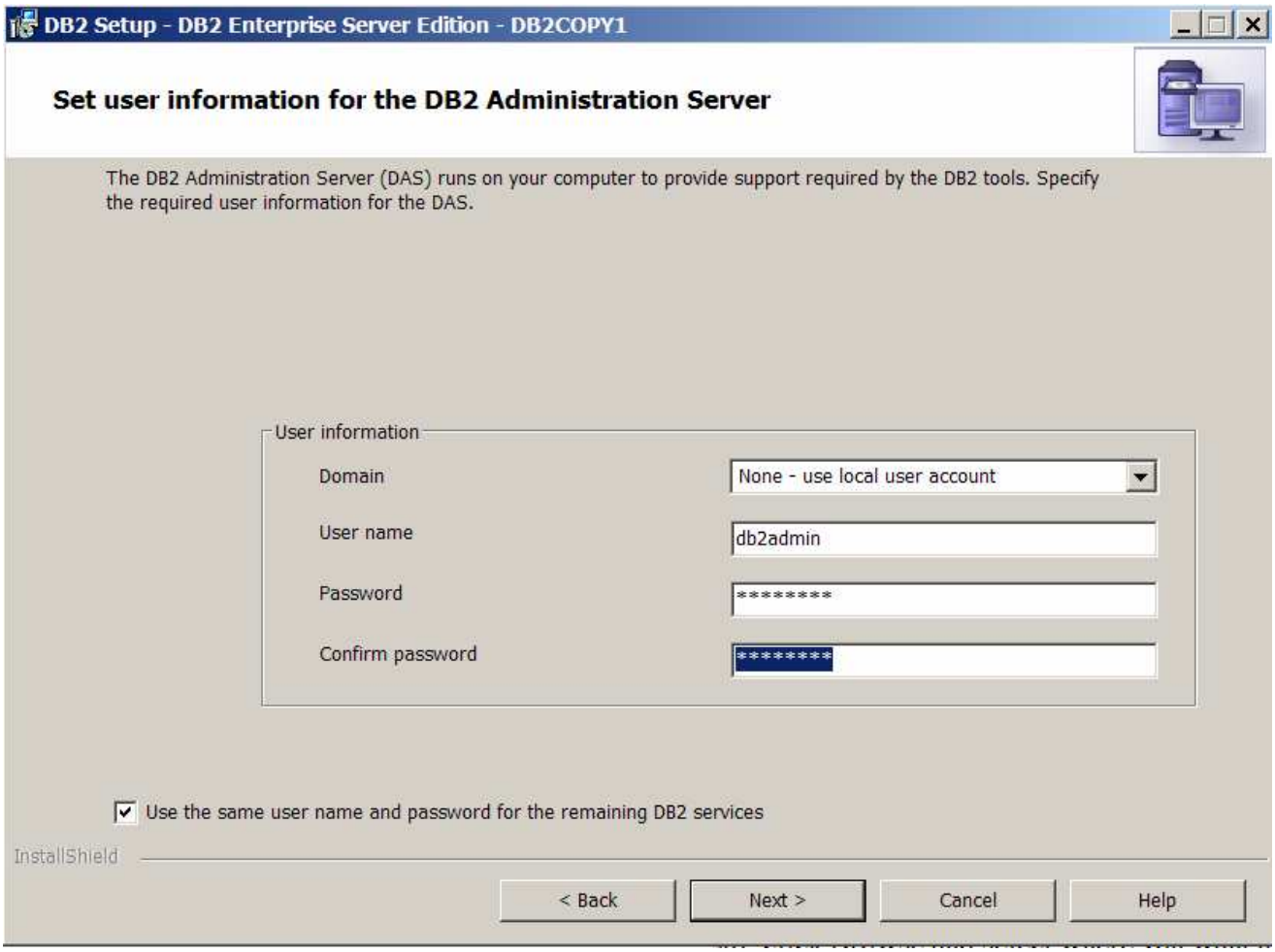
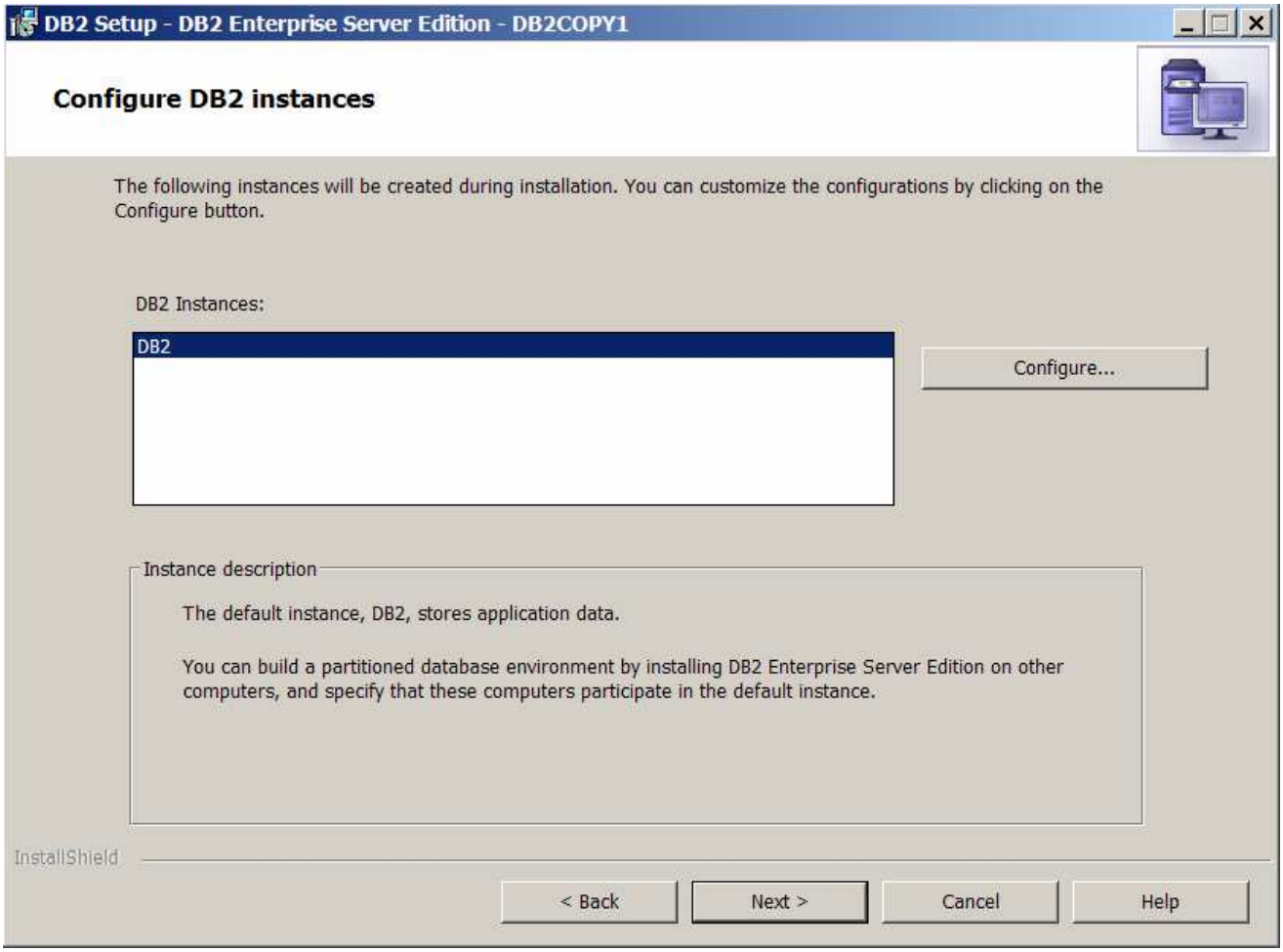


____ 9.



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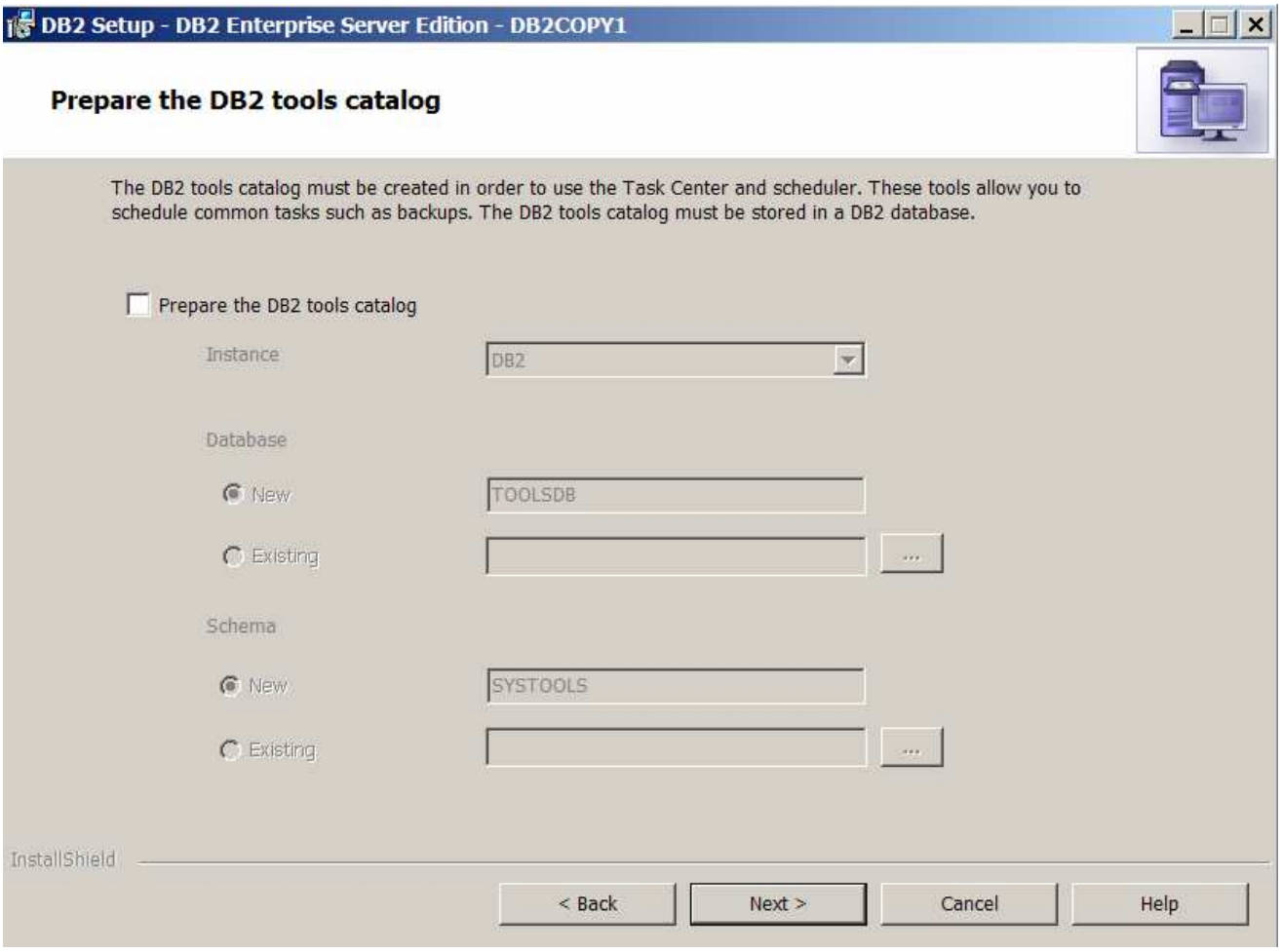

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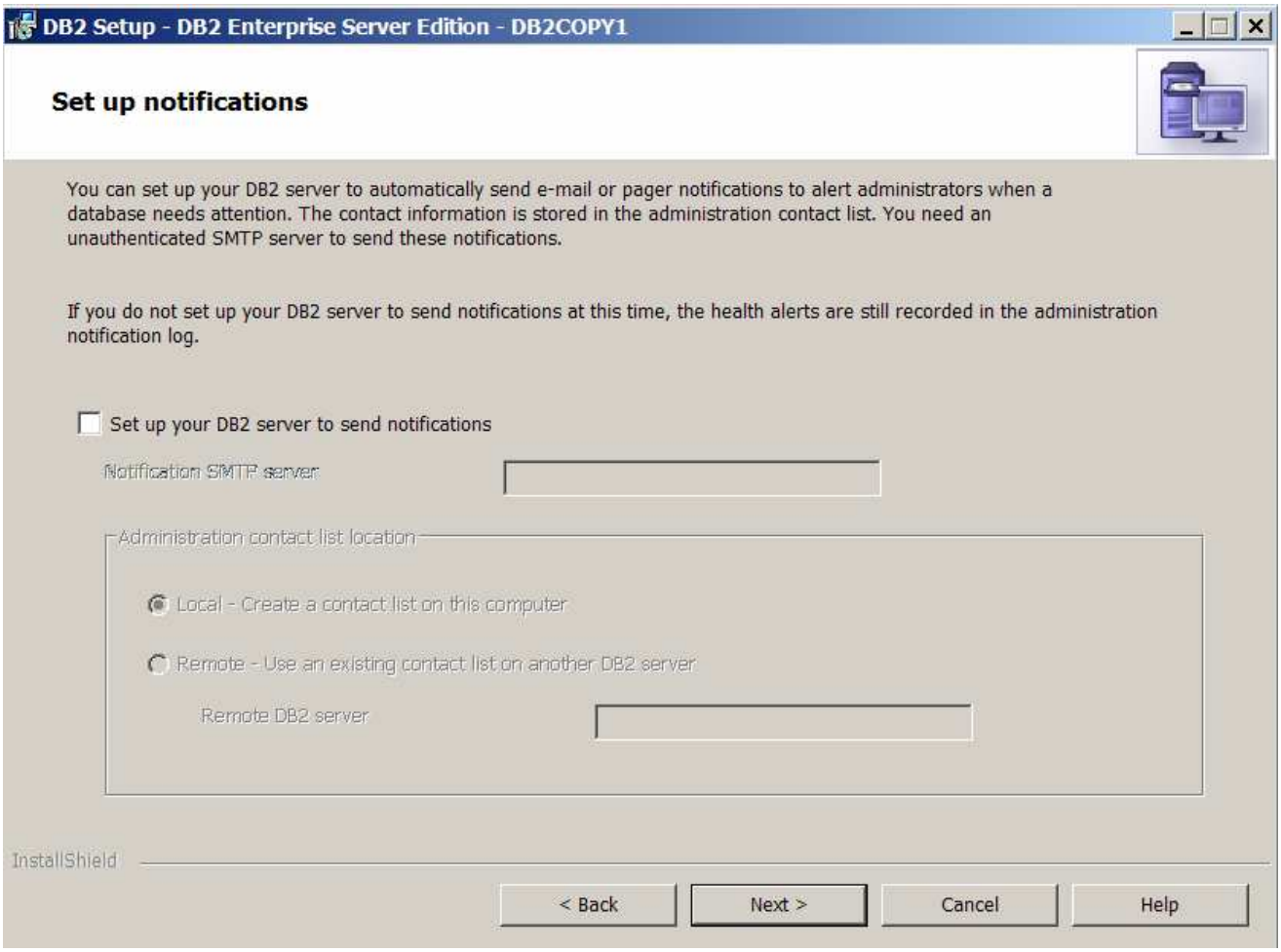

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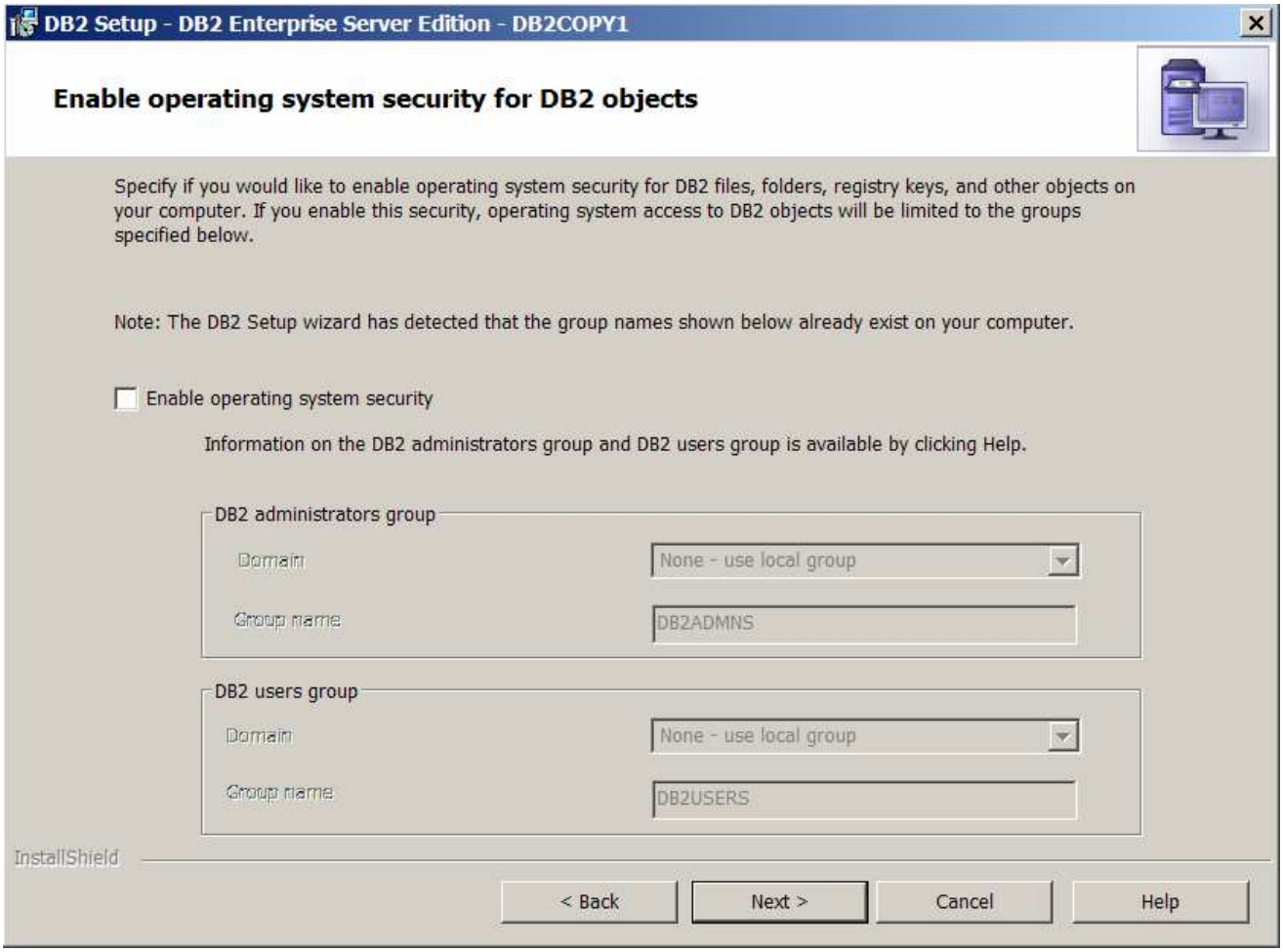

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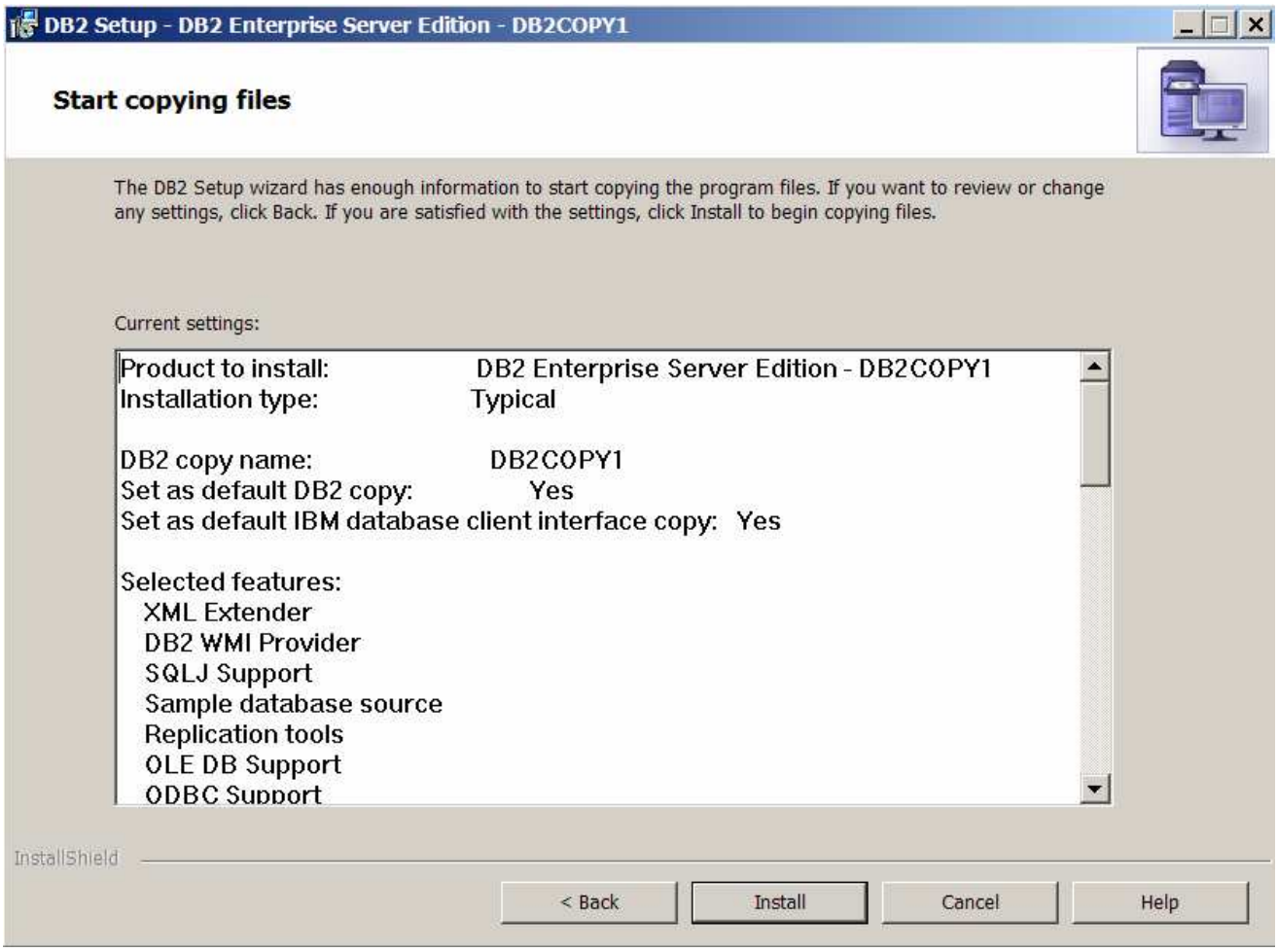
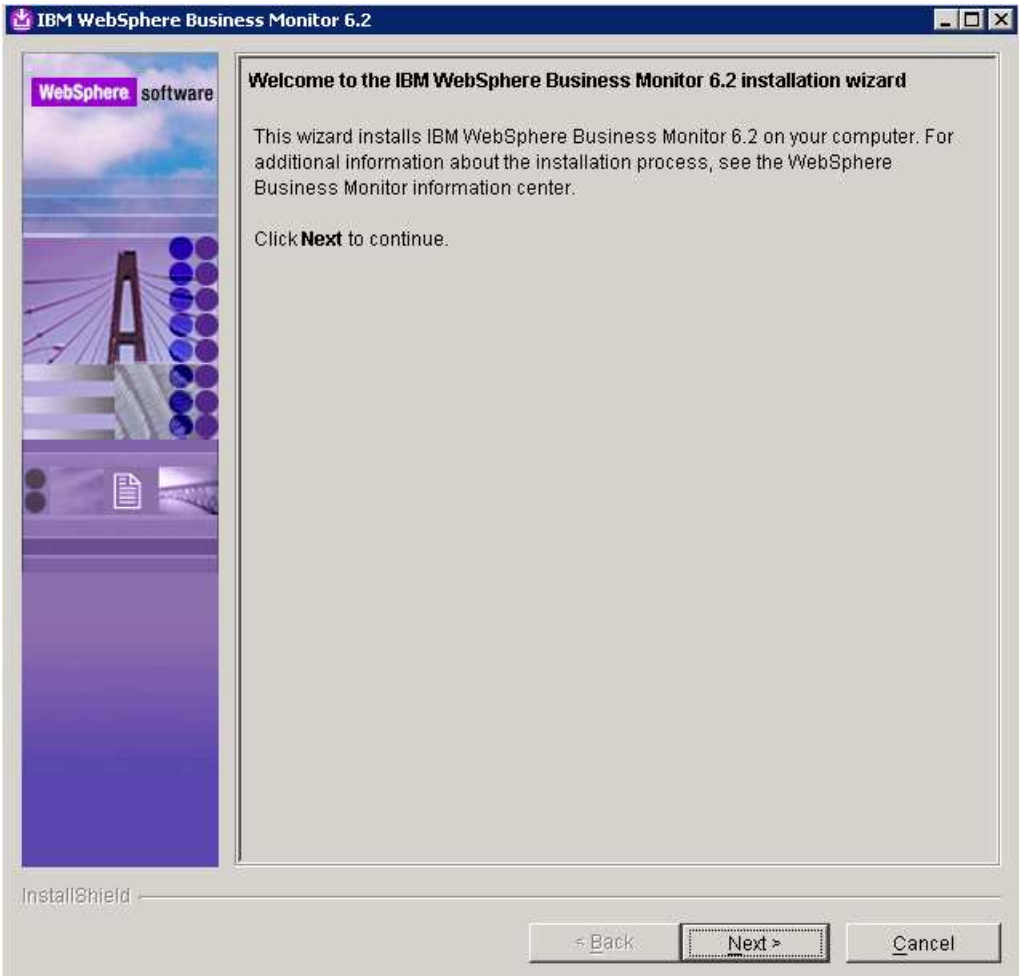
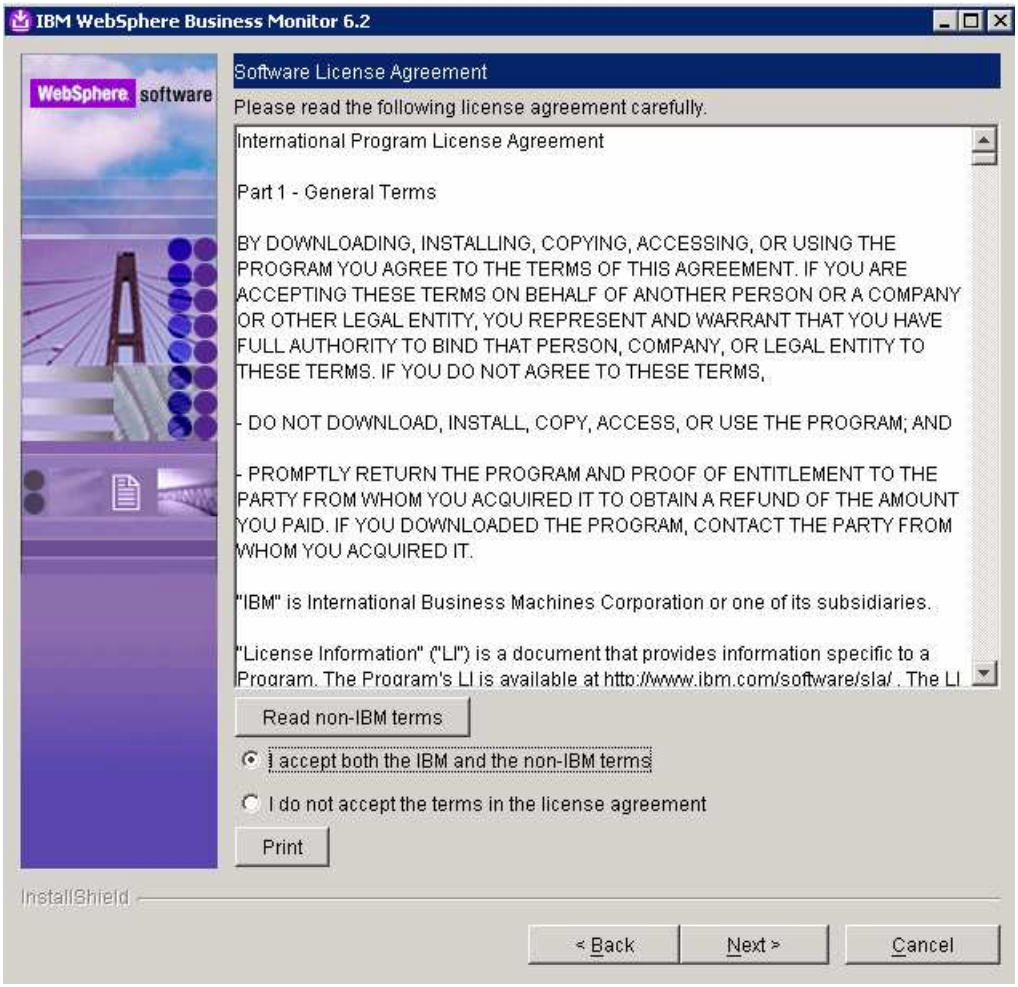


Appendix 2: Screen captures for the monitor server install

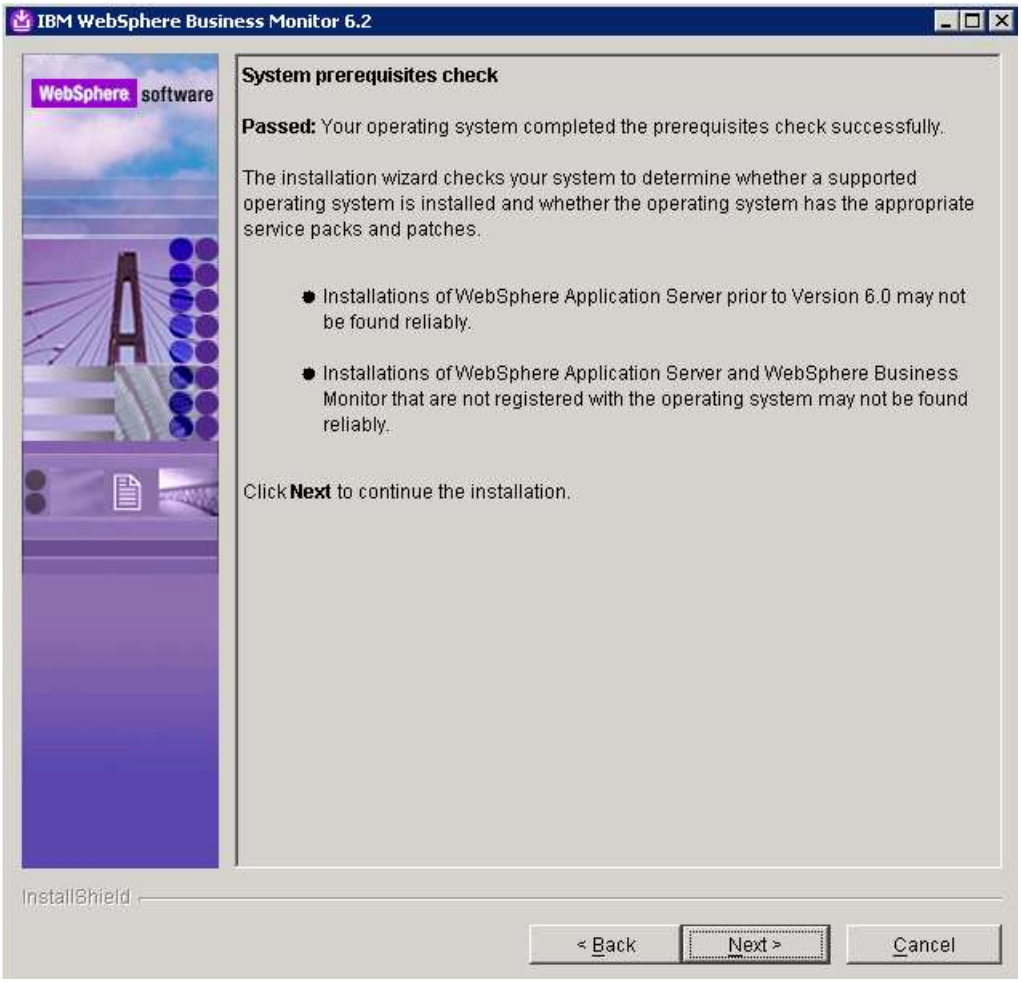
____ 1.



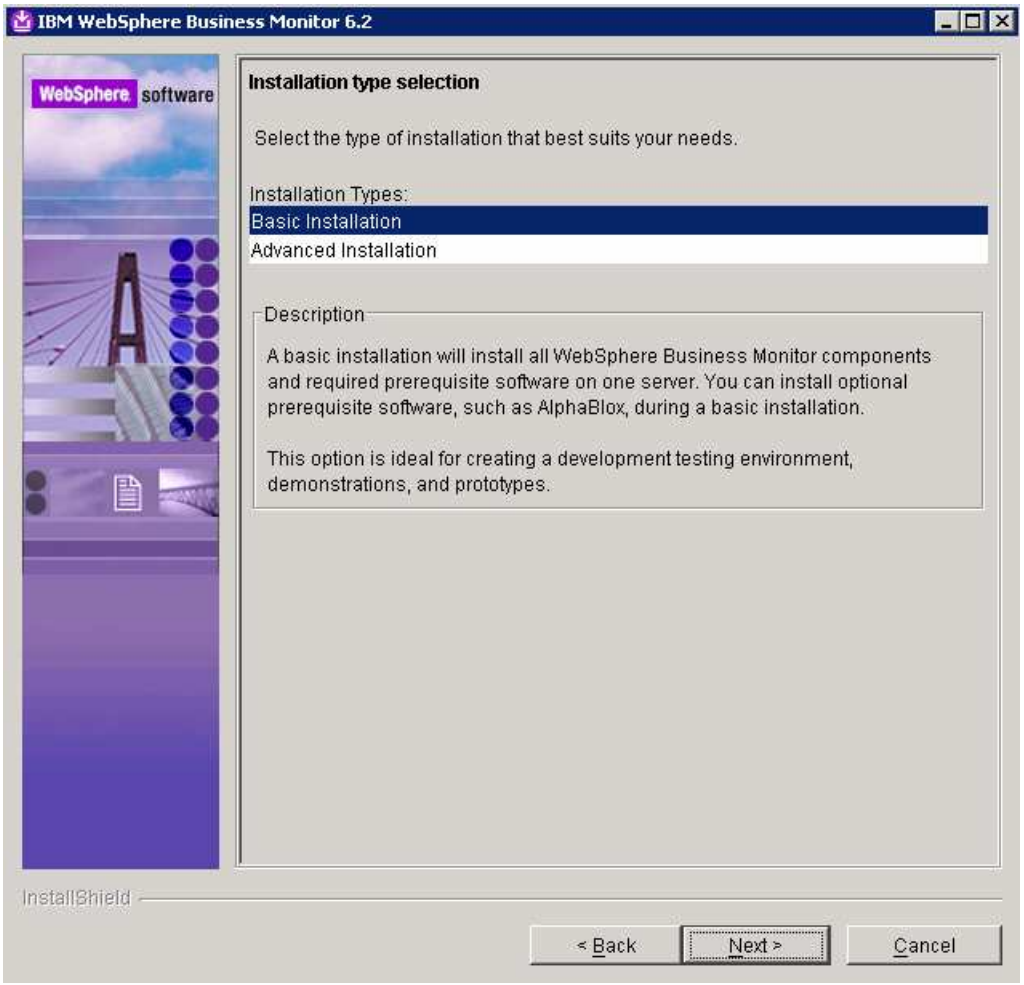
____ 2.



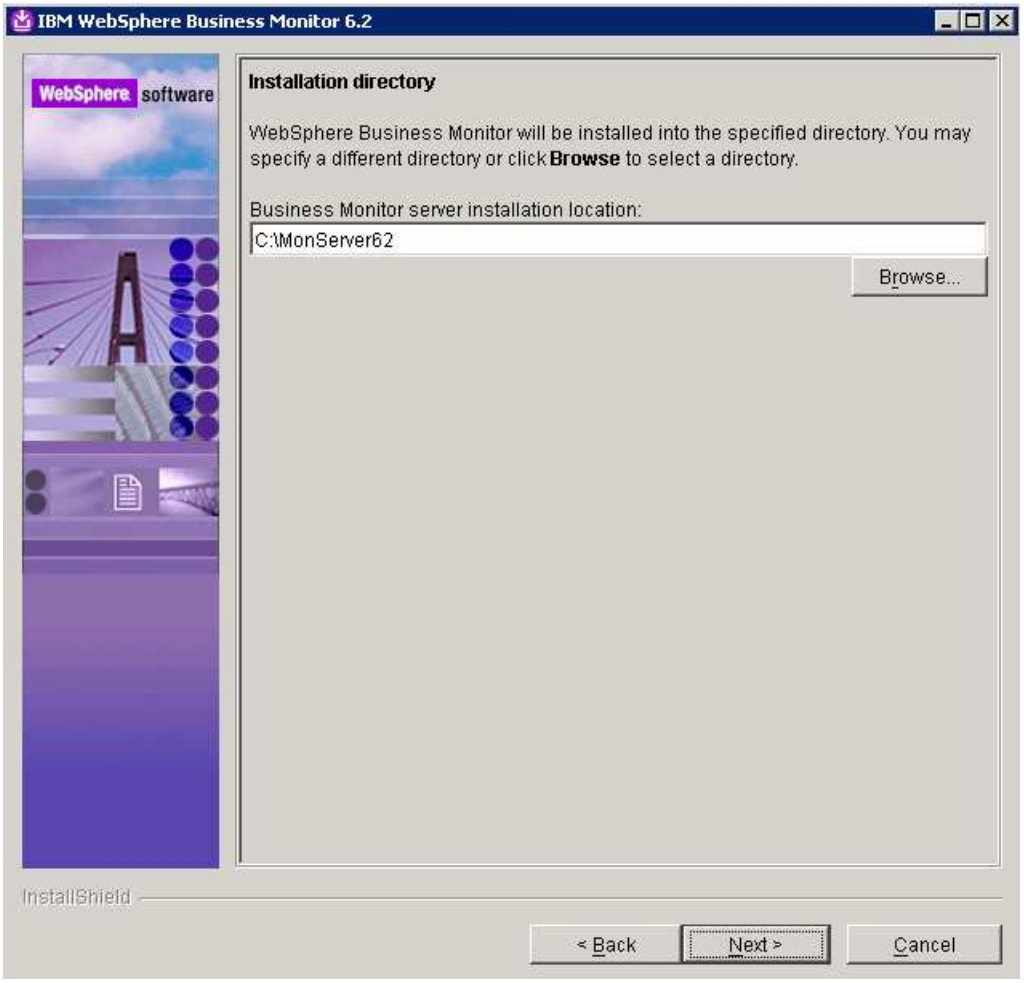
____ 3.



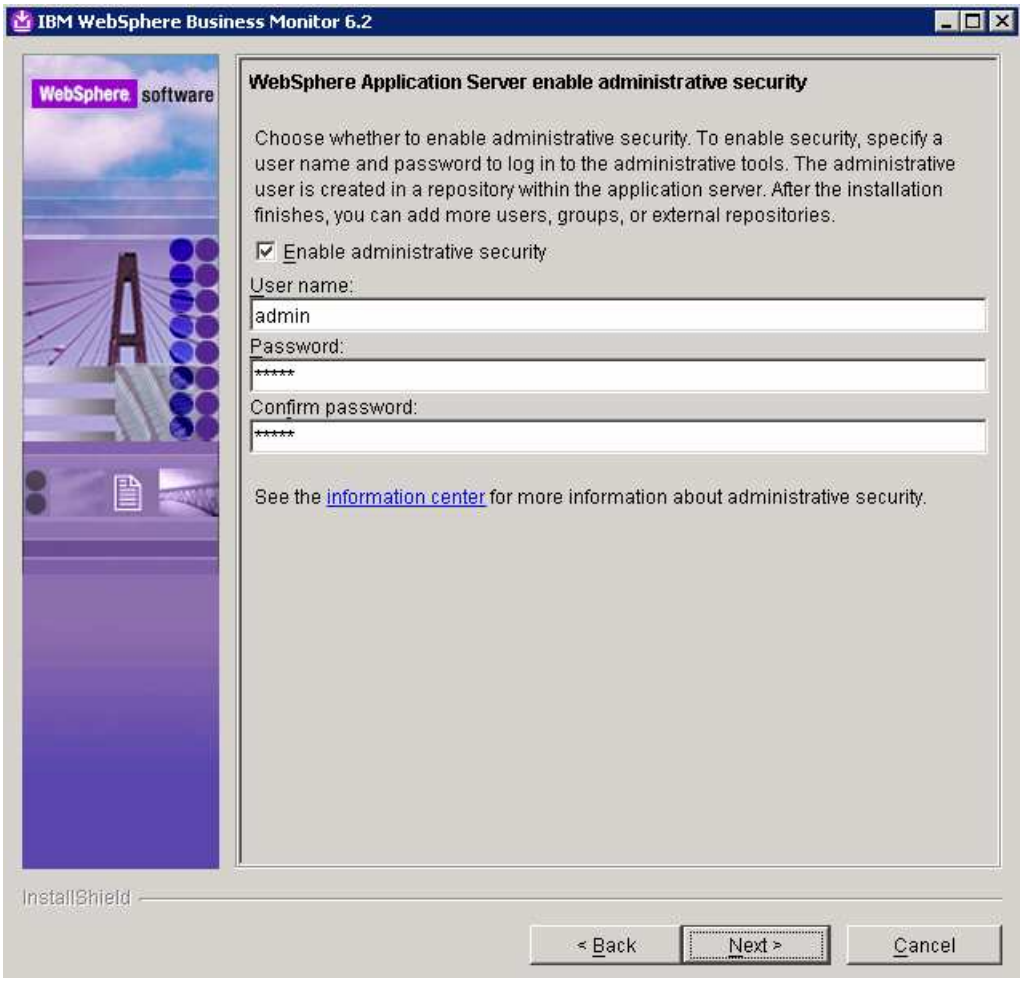
____ 4.



____ 5.

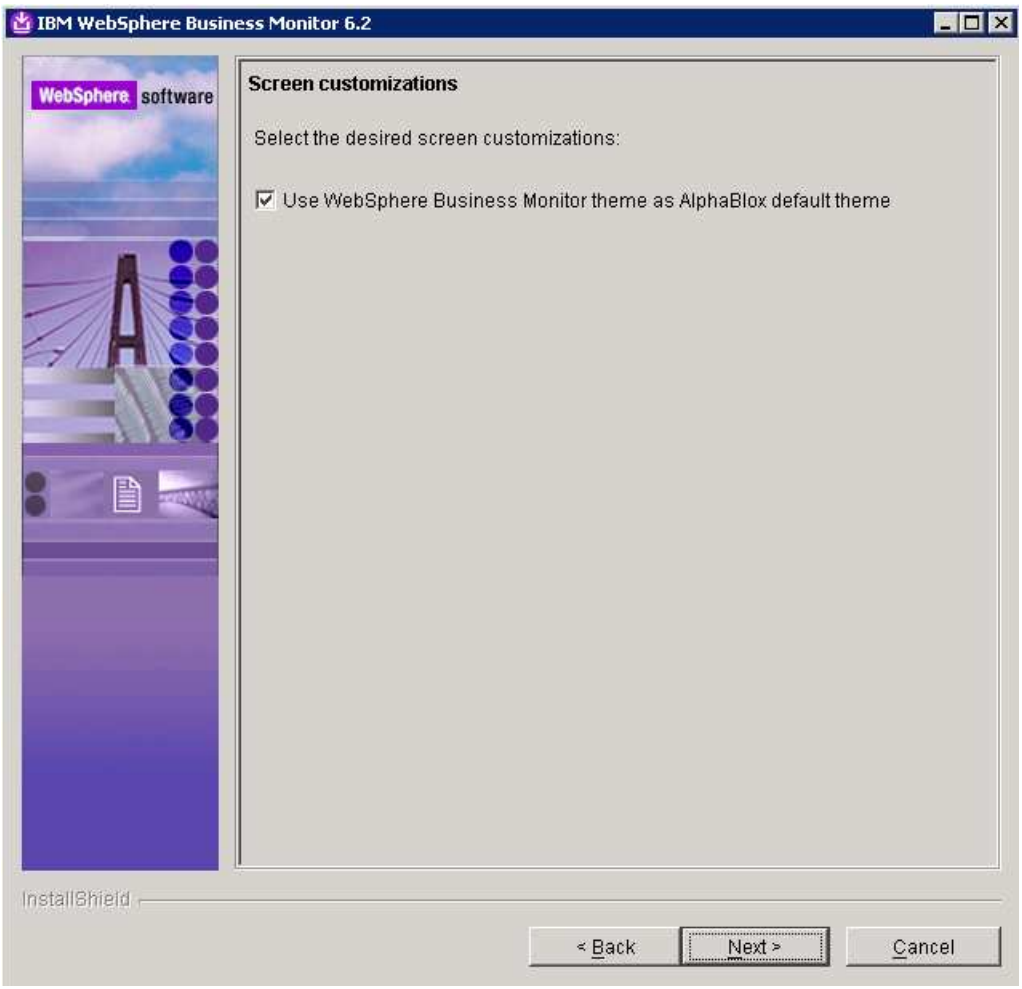


____ 6.



____ 7.

____ 8.



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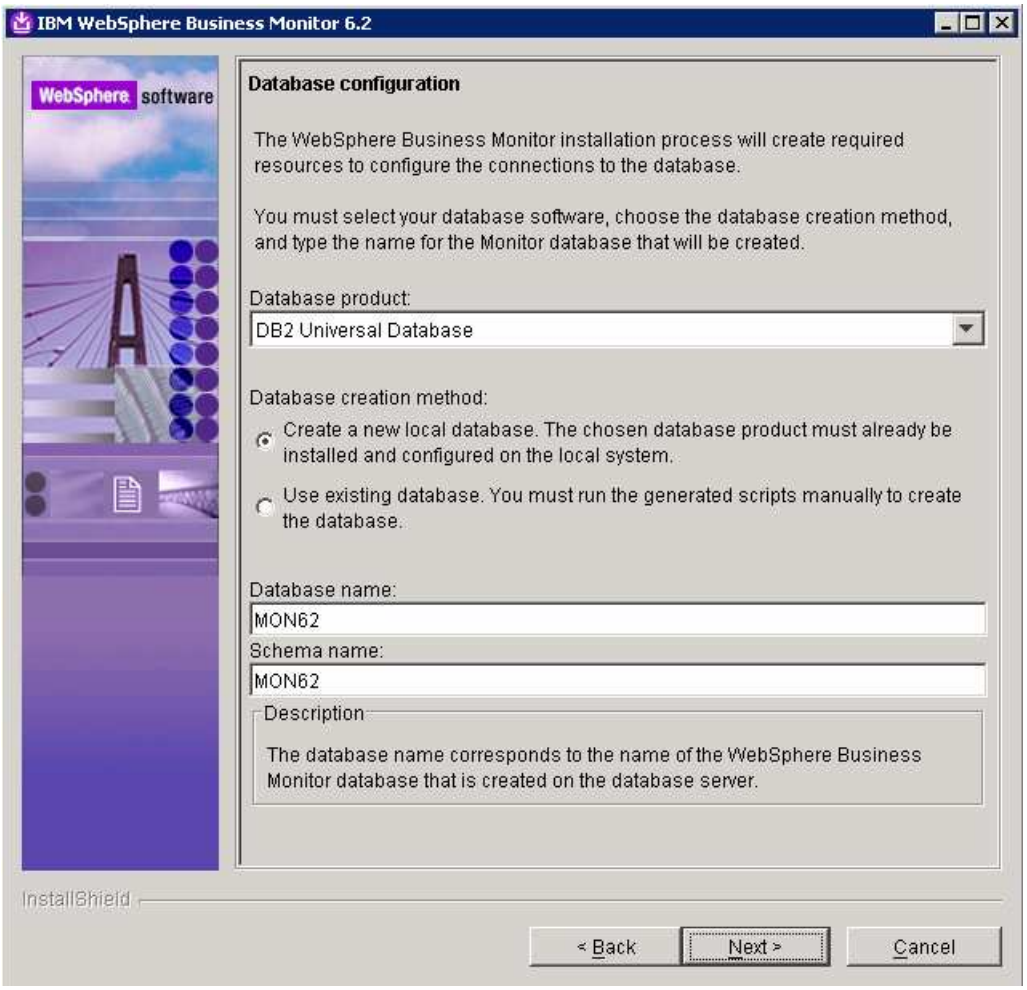

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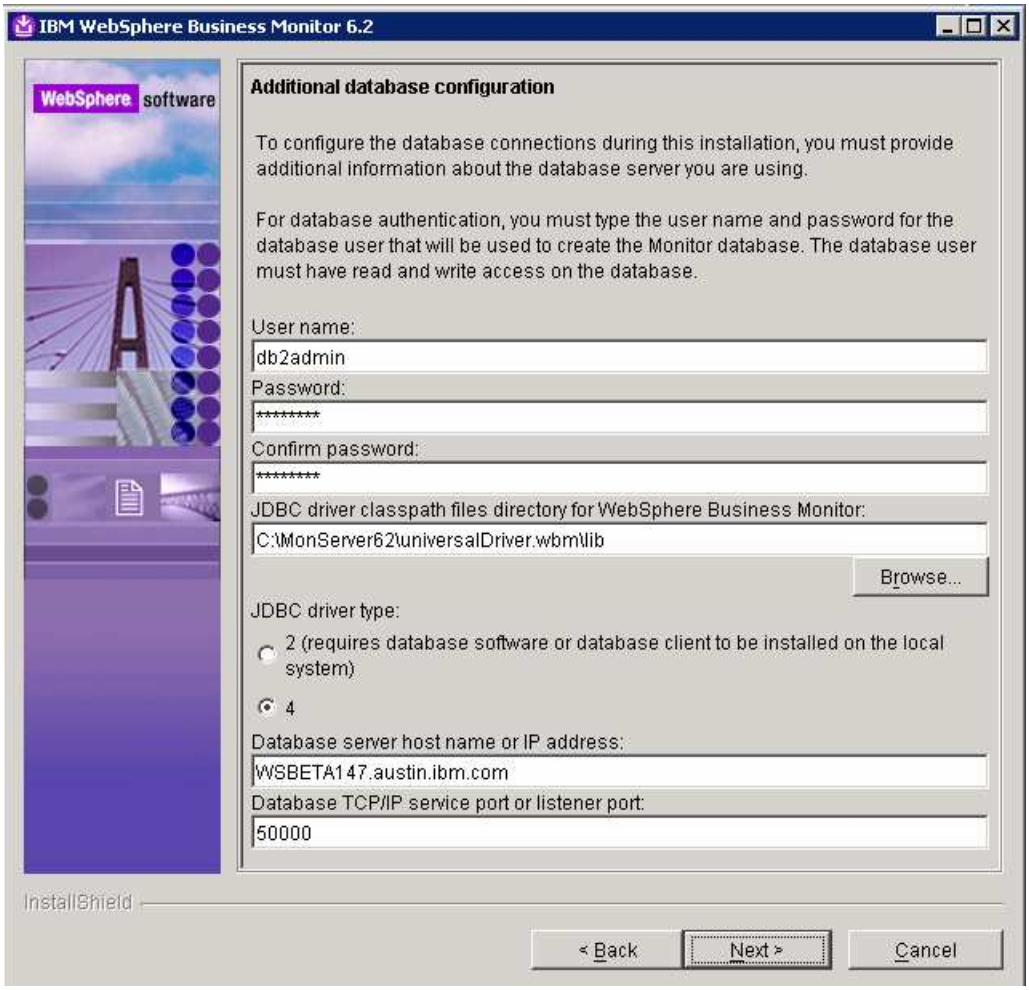
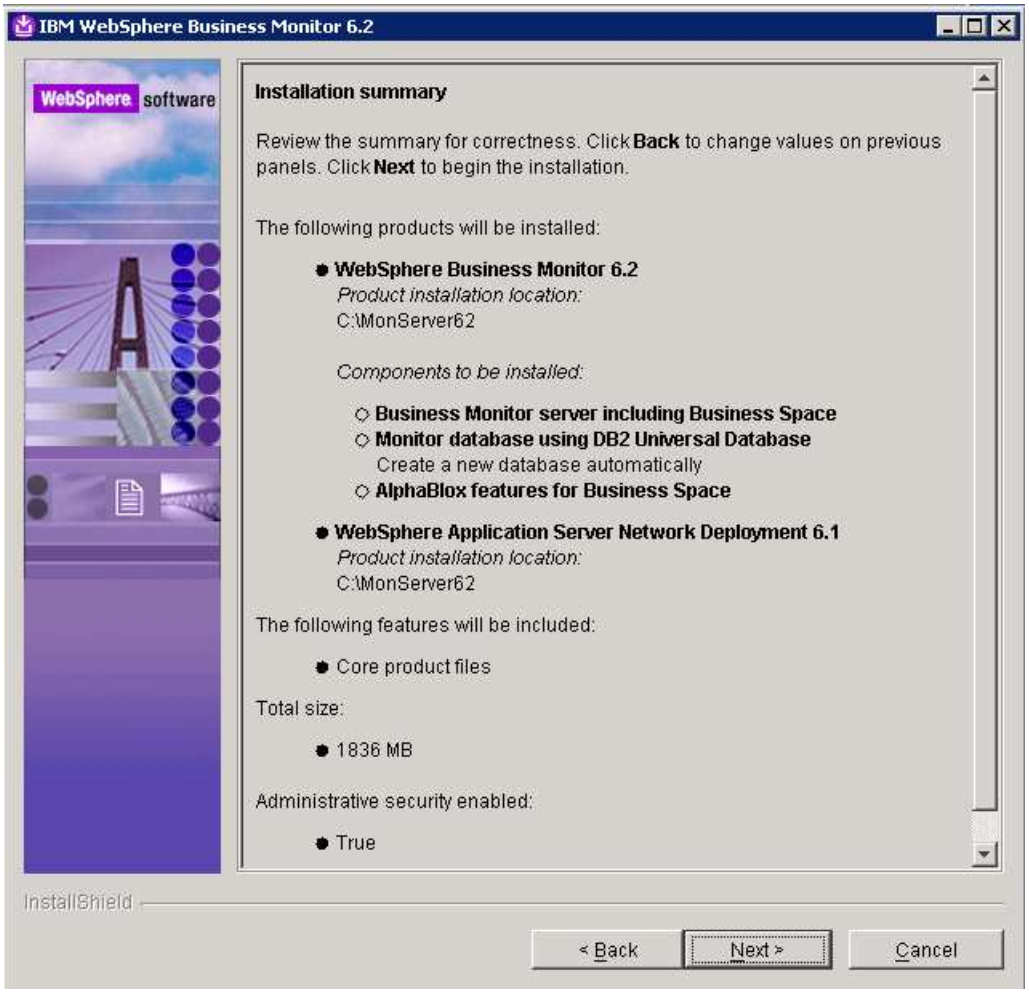
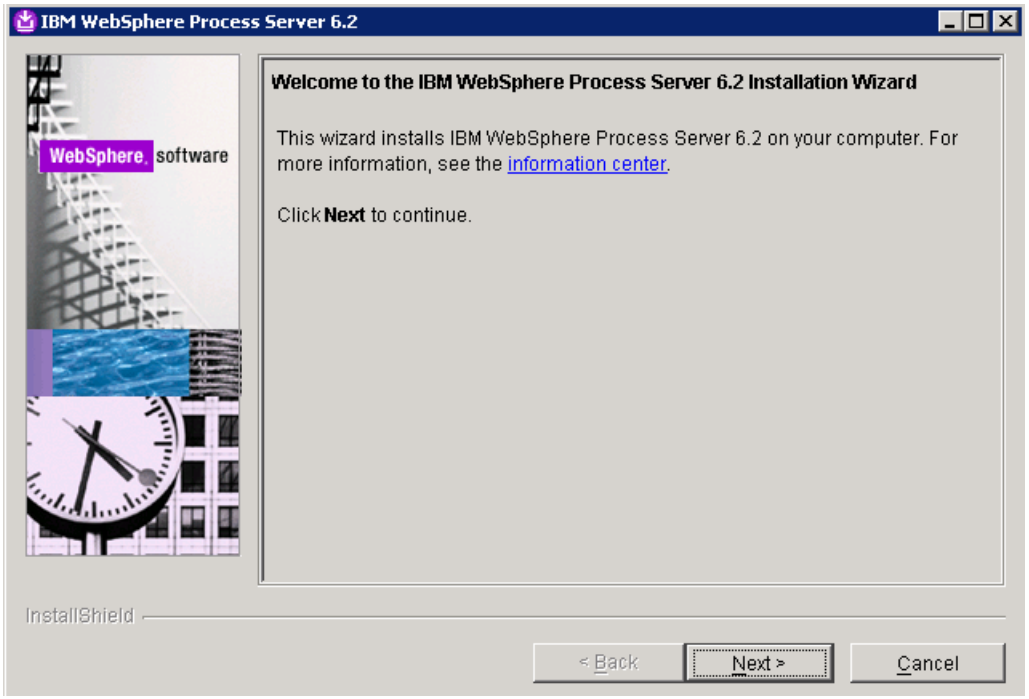


____ 11.

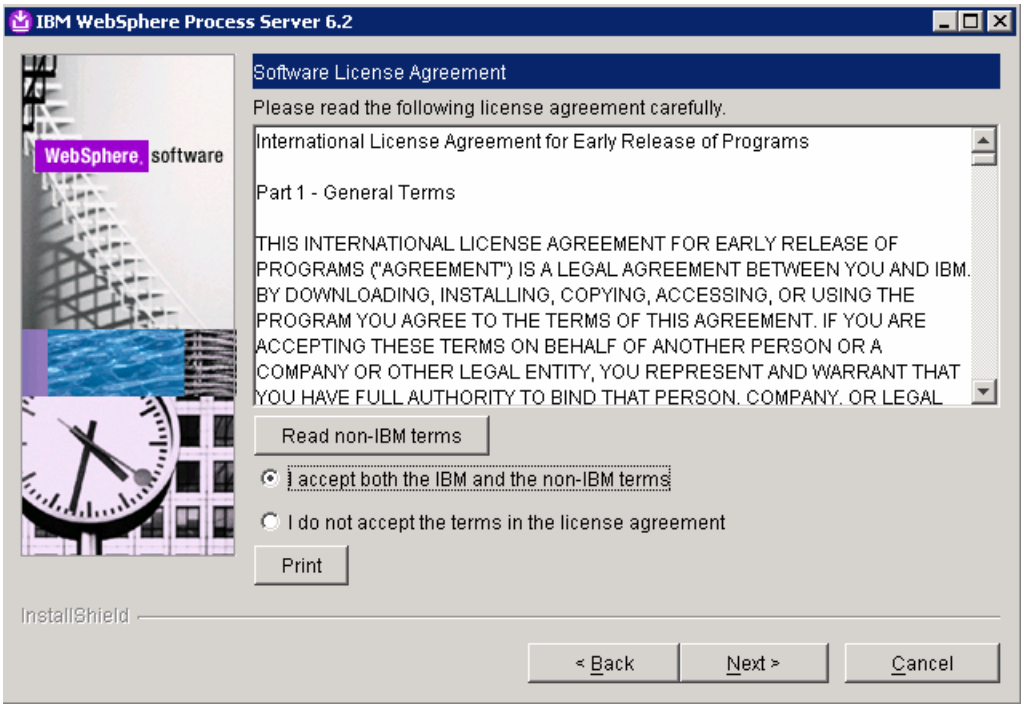


Appendix 3: Screen captures for the process server install

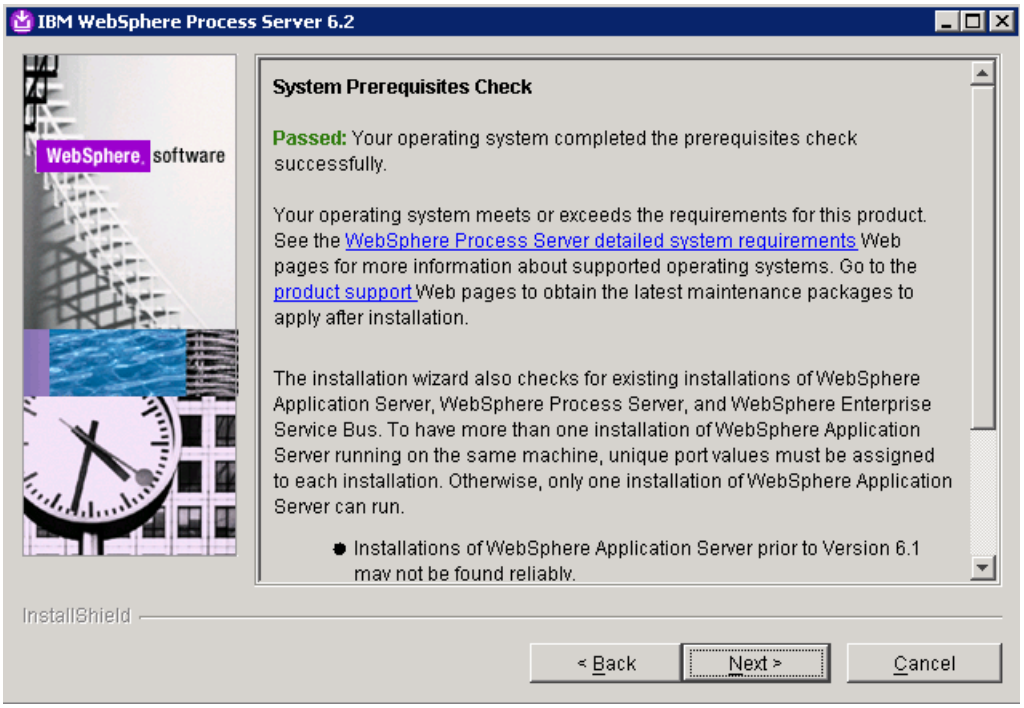
____ 1.



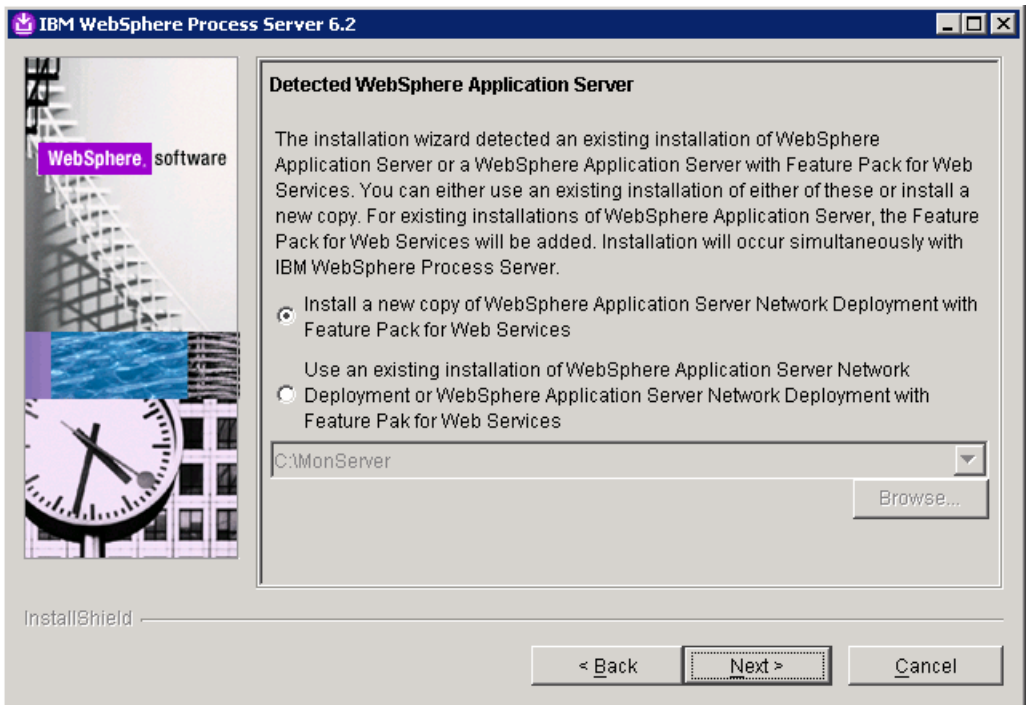
____ 2.



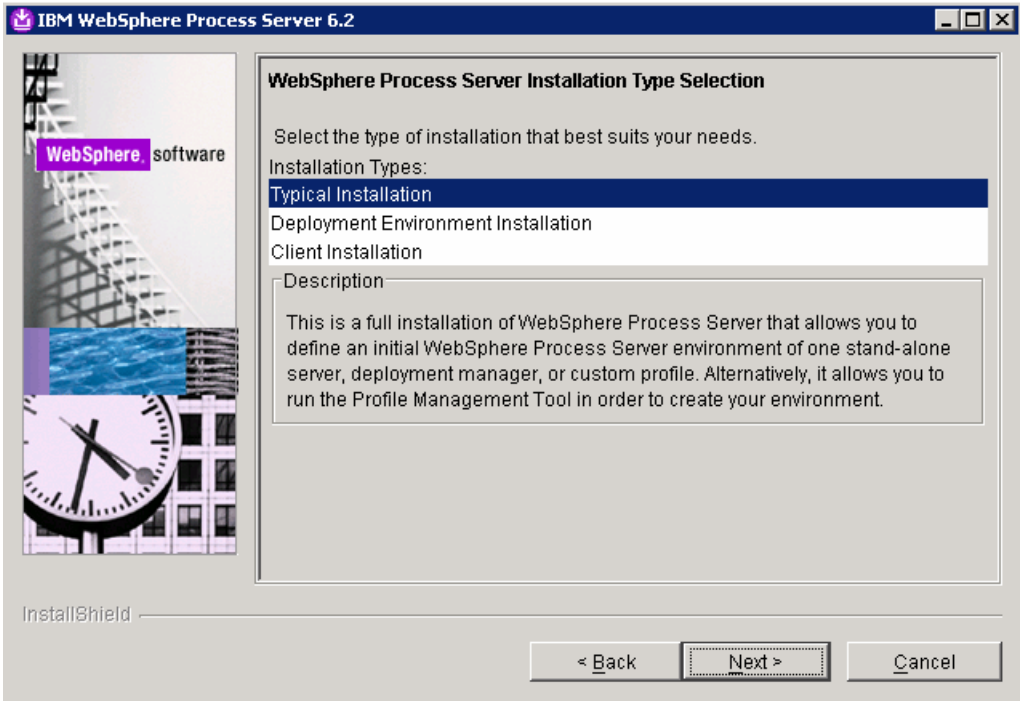
____ 3.



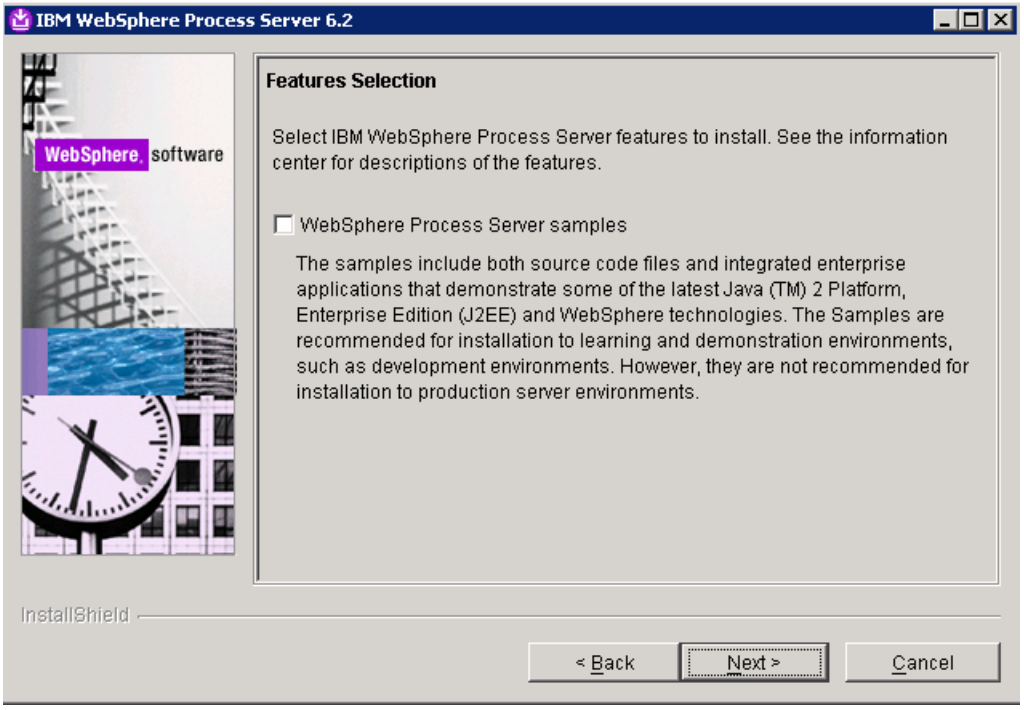
____ 4.



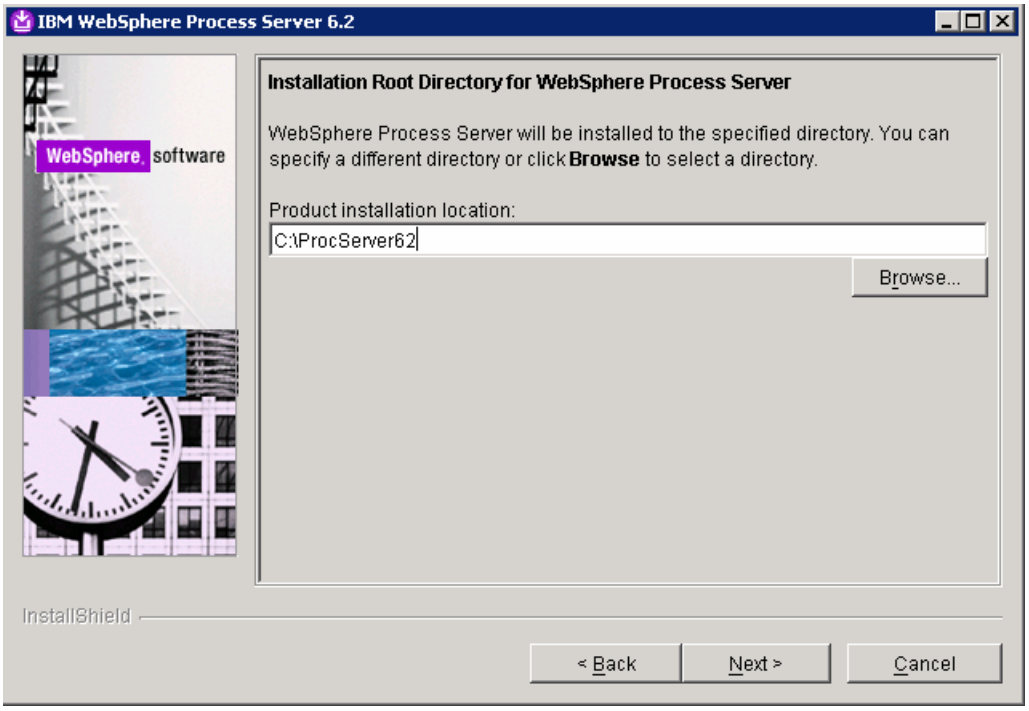
____ 5.



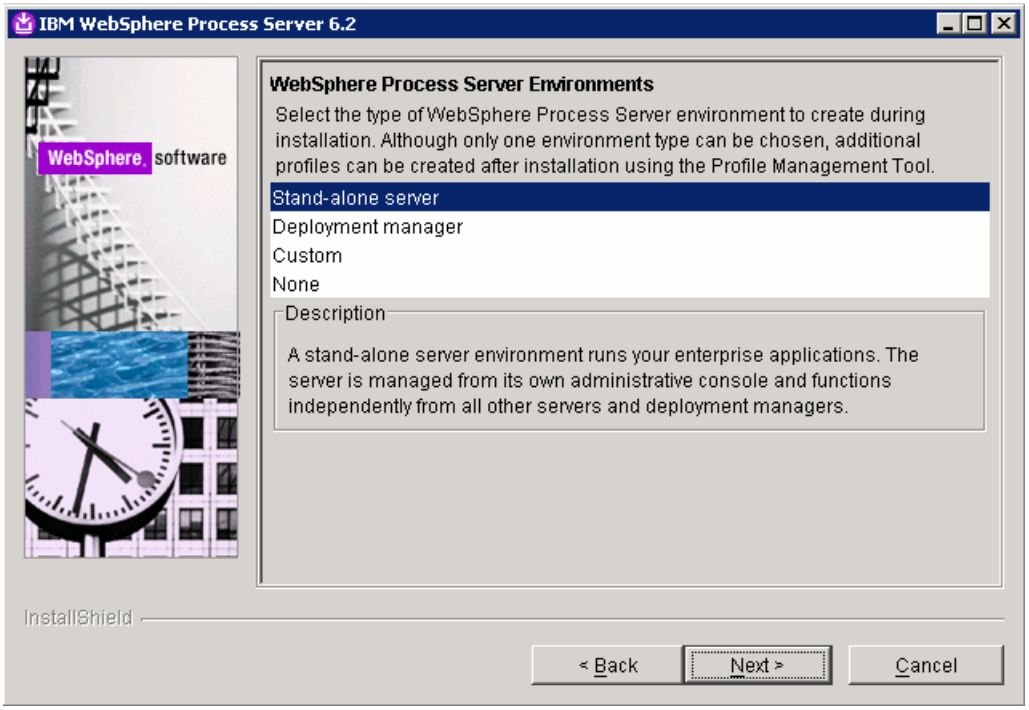
____ 6.



____ 7.



____ 8.



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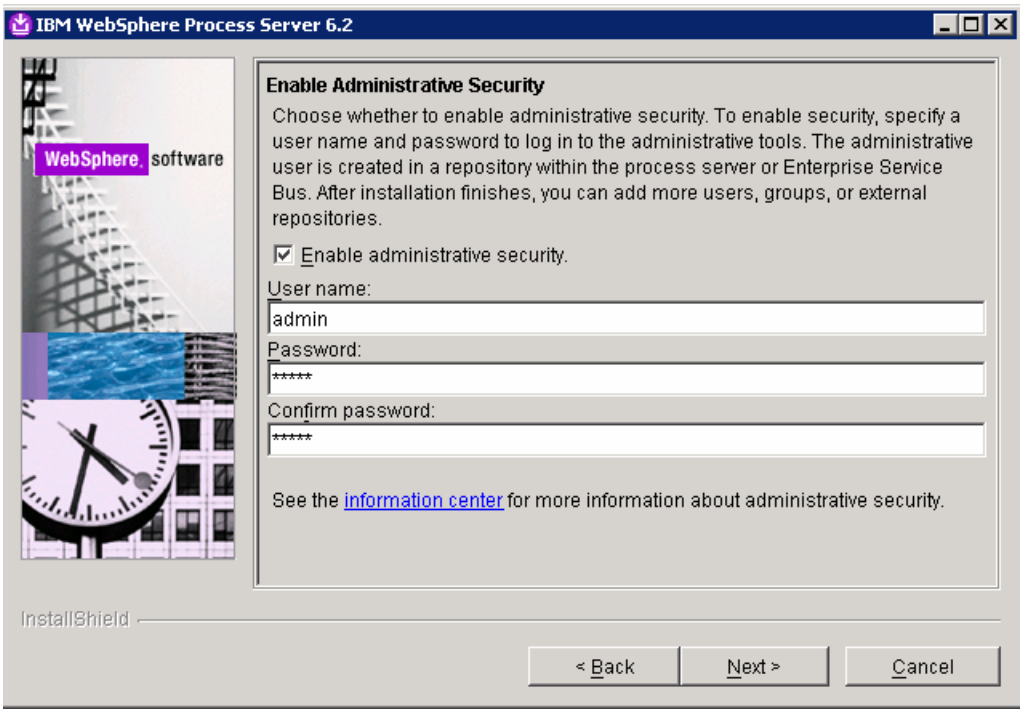

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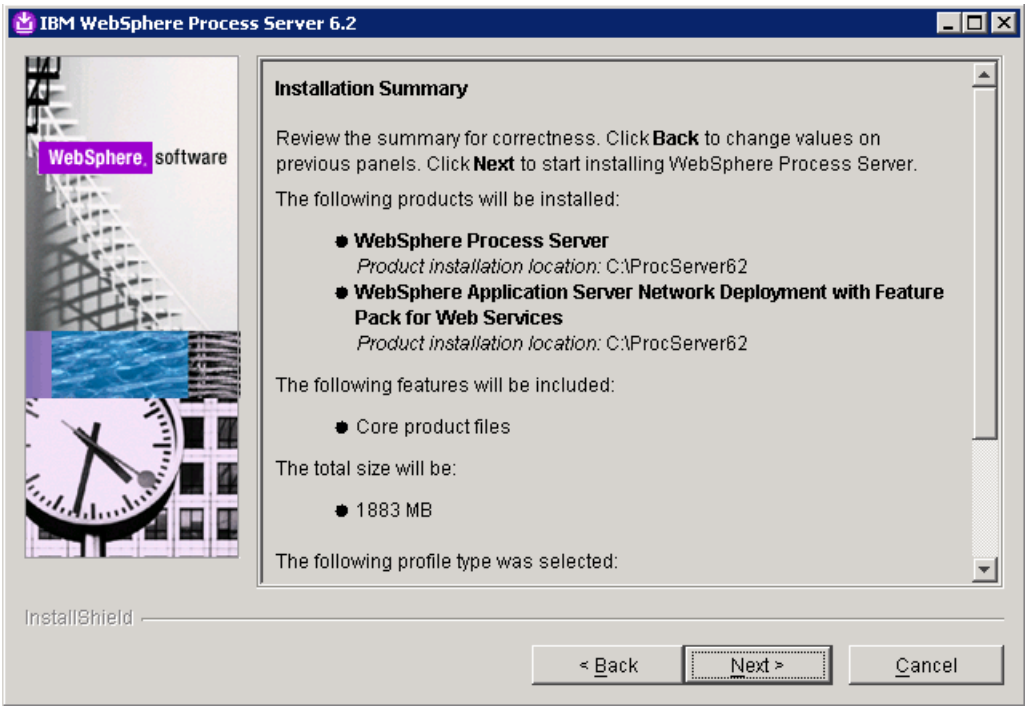
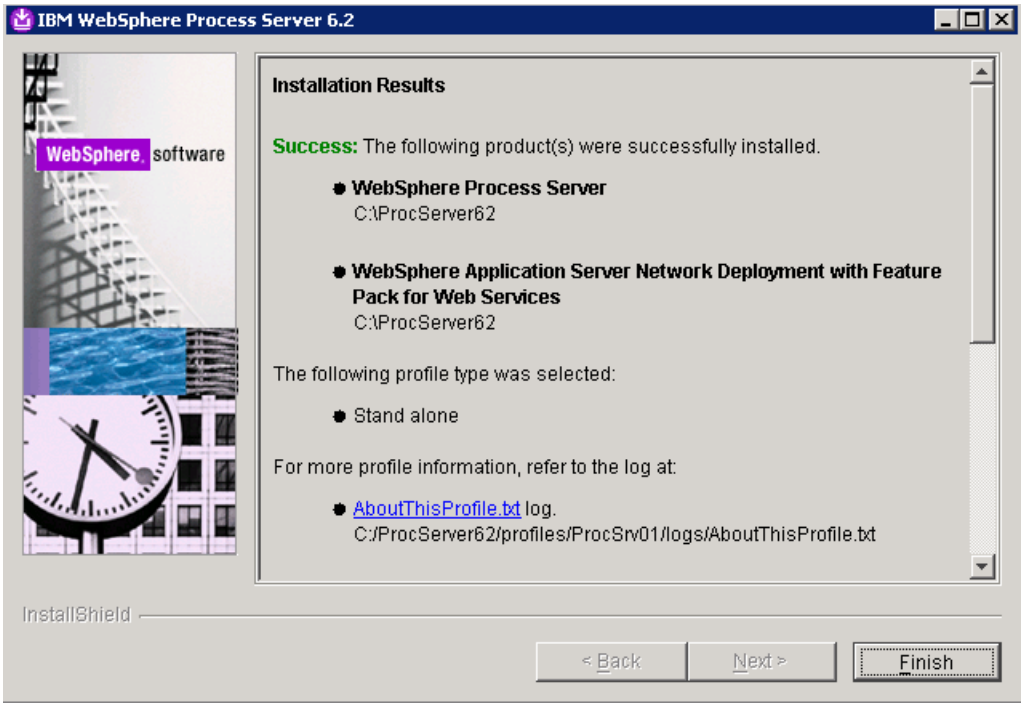


____ 11.



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