

Outline

- How to avoid install problems?
- Where to look first?
- Common Problems
 - ▶ Prerequisite check fails
 - ▶ Remote database validation fails
 - ▶ WebSphere Member Manager configuration fails
 - ▶ Unable to access User Management Services
 - ▶ Add node fails while configuring for clustering

Here's a brief outline:

We start by listing some quick steps to help you avoid installation problems.

We show you where to look first when you do encounter a problem.

Finally we describe 5 common problems and how to resolve them. These problems range from pre-installation to problems you may encounter while configuring for clustering.

How to avoid installation problems?

- Follow Expeditor Information Center Checklist to prepare system
- Verify Application Server is at least at 6.0.2.11 level
- Verify DB2[®] UDB is at 9.1 level
- Run Application Server Verify Install
 - ▶ Link from WebSphere[®] Application Server First Steps
- Run the Application Server Snoop servlet
 - ▶ http://<your_machine_name>/snoop

The first step to avoiding problems is to follow the instructions. Use the checklist provided in the Information Center to make sure all the main requirements are met.

Ensure that the prerequisite software is at the required level. Expeditor 6.1 Server requires WebSphere Application Server 6.0.2.11 or greater and DB2 Universal Database 9.1 or higher.

Also, running the WebSphere Application Server install verification ensures the application server is installed and configured properly. The WebSphere Application Server First Steps application provides a link to verify the install.

Finally, make sure the snoop sample application is working. This test application ensures that the http server and plug-ins are working together correctly.

Where to look first?

- What if something goes wrong?
- Places to look (pre-install):
 - ▶ <\$TEMP>\IBM\logs\suite_install_trace.log
- Places to look (post-install):
 - ▶ <Expeditor Install Location>\logs\suite_install_trace.log
 - ▶ <Expeditor Install Location>\logs\config_trace.log

When errors happen, there are number of logs to help you determine what's wrong. If an error occurs before the install has started (for example while validating the remote database username and password), look for log files in the IBM/logs directory in the TEMP directory. On Linux®, the TEMP directory is normally /tmp. On Windows®, the TEMP directory is normally C:\Documents and Settings\Administrator\Local Settings\Temp. There is a suite_install_trace.log file that contains all the trace information during the installer.

After the files are installed, the suite_install_trace.log is copied to the Expeditor/logs directory. Additional information is appended there. The configuration wizard writes it's logs to the config_trace.log file, also in the Expeditor/logs directory.

Outline

- How to avoid install problems?
- Where to look first?
- Common Problems
 - ▶ Prerequisite check fails
 - ▶ Remote database validation fails
 - ▶ WebSphere Member Manager configuration fails
 - ▶ Unable to access User Management Services
 - ▶ Add node fails while configuring for clustering

Back to the outline. Now let's discuss common problems, starting with ways that the prerequisite check fails.

Prerequisite install paths empty



During installation, the installer detects installed prerequisite software and these paths are pre-filled. If these paths are not pre-filled, this indicates a problem detecting the prerequisite software.

Prerequisite install paths empty

- Install paths are detected using the following:
 - ▶ DB2 Universal Database
 - Check db2level
 - ▶ IBM HTTP Server
 - Check vpd.properties
 - ▶ WebSphere Application Server
 - Check .WASRegistry and vpd.properties
- If the path is empty, you may need to reinstall the prerequisite software.

If the paths are not pre-filled, check the following:

For DB2, check that the db2level command is in the path and displays the install path on the last line.

For IBM HTTP Server, check that the vpd.properties file has the necessary entries relating to IHS. vpd.properties can be found in C:\Windows on Windows and in /root on Linux

For WebSphere Application Server, check that the .WASRegistry contains the install path to WAS. The .WASRegistry can be found in C:\Documents and Settings\Administrator on Windows and in /root on Linux. The installer also uses the vpd.properties file to check for a WAS install in case searching the .WASRegistry does not find one.

If the path is empty, you may need to reinstall the prerequisite software to enable the proper checking.

Prerequisite check fails



The installer checks each prerequisite software install path and validates that some basic files are in place. It also checks that the version found is correct. If you see the popup displayed on this slide, then one of the prerequisites is not at the correct level. This popup identifies which prerequisite failed. In this case, it is the IBM HTTP Server.

Prerequisite check requirements

- Four software components are checked
 - ▶ DB2 Universal Database 9.1
 - Found in `db2level`
 - ▶ IBM HTTP Server 6.0.2.11
 - Found in `IBM HTTP Server/version.signature`
 - ▶ WebSphere Application Server 6.0.2.11
 - Found in `AppServer/properties/version/WAS.product`
 - ▶ WebSphere Application Server Plug-ins 6.0.2.11
 - Found in `Plugins/properties/version/PLG.product`

This slide shows how the installer determines what software versions are installed. If the installer identifies one of these as not being at the correct level, you should check the file listed here to ensure that it shows the expected version. For example, in the last slide, we saw that IBM HTTP Server failed the prerequisite check. So when we open the `version.signature` file in the IBM HTTP Server install path, it should say something like 6.0.2.11 or higher. If not, then you need to run the IBM HTTP Server update program again. More information on the process of checking each of these software components follows.

Prerequisite – Checking DB2 version

- Prerequisite checker uses db2level to determine install location and version of DB2.
- You can run db2level from a command window.

- **Output of db2level**

DB21085I Instance "DB2" uses "32" bits and DB2 code release "SQL09010" with level identifier "02010107".

Informational tokens are "DB2 v9.1.0.356", "s060629", "NT32", and Fix Pack "0".

Product is installed at "C:\IBM\SQLLIB" with DB2 Copy Name "DB2COPY1".

This is the version

This is the install path

As mentioned in previous slides, the prerequisite checker uses db2level to determine the install location and the version of DB2 installed. You can run db2level from the command line to verify what level the prerequisite checker is finding.

In this sample output of db2level, we see the current install has version 9.1.0.136. The prerequisite checker is looking for 9.1 with anything in the last two positions. We also see that DB2 is installed at C:\IBM\SQLLIB.

Prerequisite – Checking IBM HTTP server version

Location:

▶ <IBM HTTP Server Location...>\version.signature

■ Sample Contents

IBM HTTP Server 6.0.2.11

This should be
6.0.2.11 or greater

■ Updater Log Location

▶ <IBM HTTP Server Location>\logs\update

The prerequisite checker uses the version.signature file in the IBM HTTP Server install to determine the version. This file lists the name and the version. The version must be at least 6.0.2.11. The last number can be higher, since we support the latest maintenance. If the version is not at the expected level, look at the Updater logs to see if there was a failure while applying the maintenance. These logs can be found in the logs/update directory of the IBM HTTP Server install.

Prerequisite – Checking WebSphere Application Server and plug-ins version

Location:

- ▶ <App Server Install Location...>\properties\version\WAS.product
- ▶ <Plug-ins Install Location.....>\properties\version\PLG.product

Sample Contents

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE product PUBLIC "productId" "product.dtd">
<product name="IBM WebSphere Application Server ND"
  <id>ND</id>
  <version>6.0.2.11</version>
  <build-info date="6/7/06" level="cf110623.10"/>
</product>
```

Want this to be
6.0.2.11 or greater

Updater Log Location

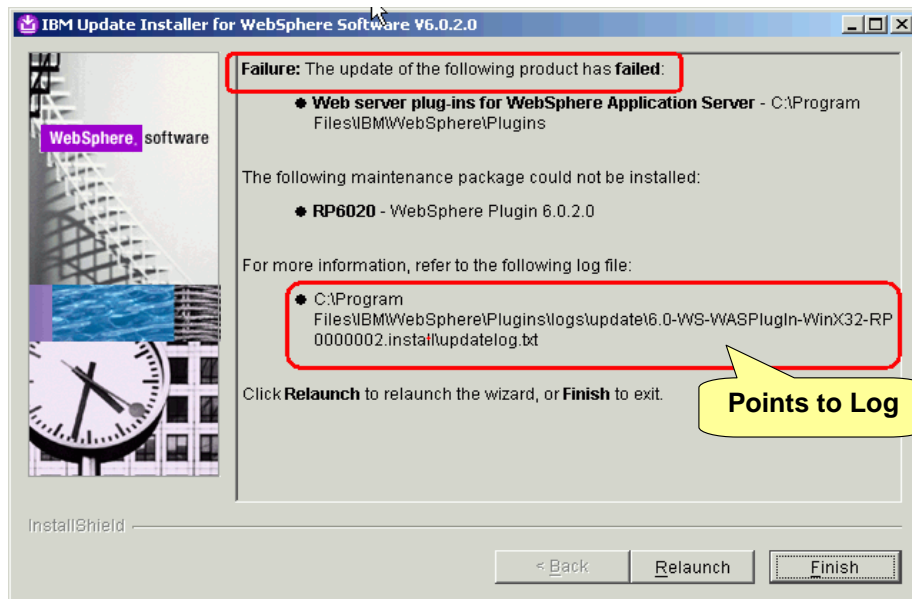
- ▶ <App Server Install Location>\logs\update
- ▶ <Plug-ins Install Location.....>\logs\update

The prerequisite checker uses WAS.product and the PLG.product files to determine the version of WebSphere Application Server and Plug-ins installed.

The product files are xml files and have the same formatting. The sample contents on this slide show the version element and the prerequisite checker makes sure this is version 6.0.2.11 or greater. Expeditor supports higher levels of maintenance, but not newer versions. For example, we support future maintenance levels like 6.0.2.21, but not version 6.1 or version 7 yet.

If the version is not at the level you expect, look at the Updater logs to see if there was a failure while applying the maintenance.

Example: Failed plug-ins update



This slide shows an Updater panel failure. Take the time to read these messages, or you could miss the fact that the update failed. In that case you might make a mistake and think your prerequisite software is at the required level.

Example: Failed plug-ins update (cont.)

- See plug-ins Updater log

C:\Program Files\IBM\WebSphere\Plugins\logs\update\6.0-WS-WASPlugIn-WinX32-RP0000002.install

- Log snippet at end

```
... msg1, Updating component: plugins.http, percent complete: 16%
... Failed to delete: file:/C:/Program%20Files/IBM/WebSphere/Plugins/bin/mod_was_ap20_http.dll
... Failed to delete: file:/C:/Program%20Files/IBM/WebSphere/Plugins/bin/mod_was_ap20_http.dll
... java.io.IOException: Failed to delete:
file:/C:/Program%20Files/IBM/WebSphere/Plugins/bin/mod_was_ap20_http.dll
```

```
...
... msg1, CWUPI0000I: EXITCODE=1
```

```
... msg1, INSTCONFFAILED
```

- Cause: IBM HTTP Server Running

- Fix:

- ▶ Stop IBM HTTP Server
- ▶ Rerun Plug-ins updater
- ▶ Restart Expeditor Installer

Having seen the update failure, you open the plug-in updater log and see a section of the log that indicates there is a problem deleting the `mod_was_ap20_http.dll` file. A common reason for this is that the HTTP server is running and that file is in use.

To fix this problem:

Stop the IBM HTTP Server

Run the Plug-ins Updater again

And restart the Expeditor server install

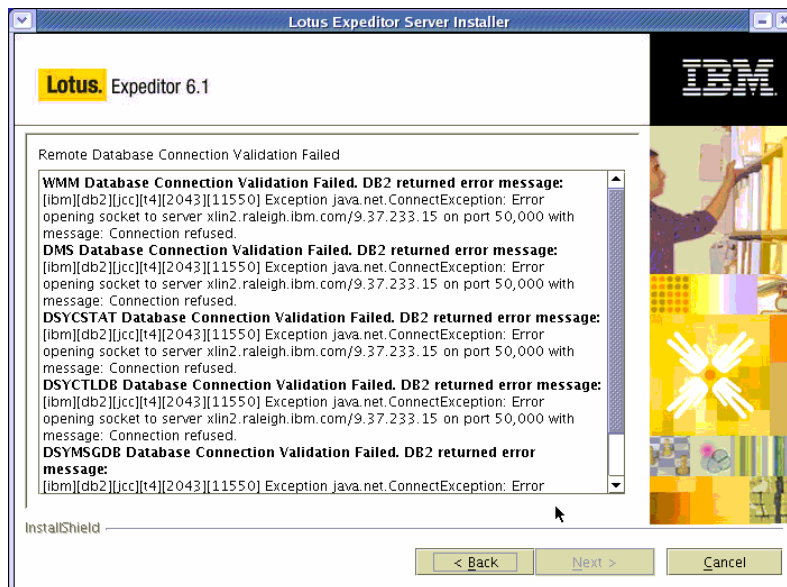
The correct version of the plug-ins installed is now detected.

Outline

- How to avoid install problems?
- Where to look first?
- Common Problems
 - ▶ Prerequisite check fails
 - ▶ Remote database validation fails
 - ▶ WebSphere Member Manager configuration fails
 - ▶ Unable to access User Management Services
 - ▶ Add node fails while configuring for clustering

The next common problem is when the remote database validation fails

Remote database validation fails



This slide shows the panel you get when the validation of the remote database fails. You can see in these logs, the repeated error “ConnectException” and “Connection refused”. These messages come directly from DB2 so they may change depending on the error that is occurring.

Remote database validation fails – suggestions

- Check database server is running
- Check createDBs script has been run on remote database server to create databases
- Check username and password
- Check firewalls which might prevent access on database port (default 50,000)

Here we outline several issues that can cause the remote database validation to fail:

First, check that the database server is running.

Second, check that the database is successfully created on the remote server.

Go back and check that the username and password are entered correctly.

Check that the user's password is not expired or locked.

Also make sure there are no firewalls running that might prevent access to the database port. This port is normally 50,000.

Outline

- How to avoid install problems?
- Where to look first?
- Common Problems
 - ▶ Prerequisite check fails
 - ▶ Remote database validation fails
 - ▶ **WebSphere Member Manager configuration fails**
 - ▶ Unable to access User Management Services
 - ▶ Add node fails while configuring for clustering

Sometimes on Linux, the WMM configuration fails.

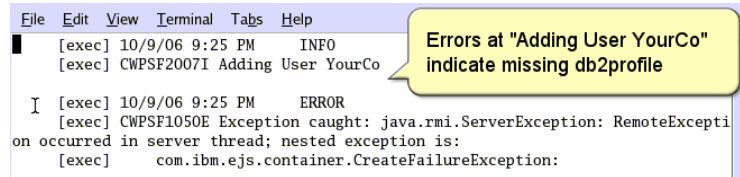
WebSphere Member Manager configuration

Step 1 of 5 on Linux



This panel shows an error during configuration in the first of five steps. When you see an error like this, look at the log referenced on the screen. In this case, you need to open the `config_wmm_out.log`.

WebSphere Member Manager configuration fails – Adding user YourCo



```
File Edit View Terminal Tabs Help
[exec] 10/9/06 9:25 PM INFO
[exec] CWPSF2007I Adding User YourCo

[exec] 10/9/06 9:25 PM ERROR
[exec] CWPSF1050E Exception caught: java.rmi.ServerException: RemoteExcepti
on occurred in server thread; nested exception is:
[exec] com.ibm.ejs.container.CreateFailureException:
```

Errors at "Adding User YourCo" indicate missing db2profile

- Errors might include SQL Unsatisfied Link Error

In the config_wmm_out.log, we see an error in the “Adding User YourCo” section. You can see the java.rmi.ServerException. Further in the log you are also likely to see a SQL Unsatisfied Link exception.

This is a common problem on Linux when the application server is started and the DB2 profile environment is missing

WebSphere Member Manager configuration fails – add db2profile to setupCmdLine.sh

```
#!/bin/sh
. /home/db2inst1/sqllib/db2profile
setWASHome()
```

Add db2profile to setupCmdLine.sh

- Adding the db2profile to setupCmdLine.sh ensures that every time an Application Server is started, it has the necessary environment to access DB2 libraries.

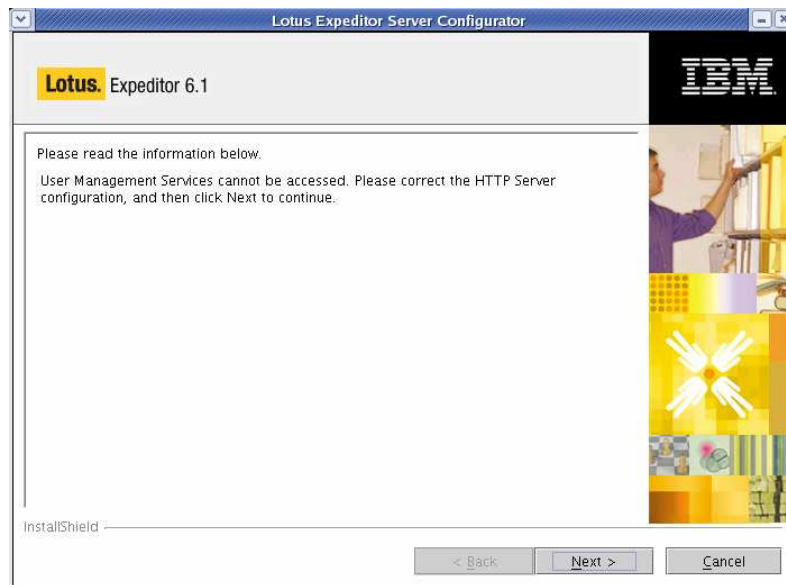
To ensure that the DB2 profile environment is always available to the application server, open the setupCmdLine.sh script and source the db2profile at the beginning of that file. This ensures that the CLASSPATH and LD_LIBRARY_PATH variables are configured correctly before starting the application server.

Outline

- How to avoid install problems?
- Where to look first?
- Common Problems
 - ▶ Prerequisite check fails
 - ▶ Remote database validation fails
 - ▶ WebSphere Member Manager configuration fails
 - ▶ Unable to access User Management Services
 - ▶ Add node fails while configuring for clustering

The next problem to examine is when the configuration wizard indicates that it is unable to access User Management Services.

Unable to access User Management Services



On this slide, you see that User Management Services cannot be accessed. This indicates a problem with the HTTP Server configuration.

Unable to access User Management Services

- Before configuring DB2e (step 4 of 5) the configuration wizard validates that the User Management Services URL is accessible. This message indicates some failure.
- Test URL in browser:
`http://<your_machine_name>/UserGroupInfoWebService/servlet/rpcrouter`
- Valid response would be:
 1. Prompt for user/password
 2. Then the following output in browser:
SOAP RPC Router
Sorry, I don't speak via HTTP GET- you have to use HTTP POST to talk to me.

Before configuring DB2e, the configuration wizard validates that User Management Services is correctly installed. This is necessary because DB2e uses User Management Services and this validation prevents failures during the DB2e configuration.

If this error occurs, open a web browser and type in the User Management Services URL as listed on this slide. The expected response is a prompt for the username and password. Then the browser reports a message “Sorry, I don’t speak via HTTP GET – you have to use HTTP POST to talk to me” This is the servlet responding. If you receive an error message from the configuration wizard, however, then continue to the next slide for possible fixes.

Unable to access UGI failure - Suggestions

- If the URL test in the browser fails
 - ▶ Check that IBM HTTP Server is started
 - ▶ Check the IBM HTTP Server error_log to ensure the plug-in file is being loaded correctly
 - ▶ Check plugin-cfg.xml is being generated and propagated to the correct location as referenced in the httpd.conf file
 - ▶ On Linux, check permissions on plugin-cfg.xml and parent directories to ensure the IBM HTTP Server can read the file.

If the URL fails:

First check that the http server is started.

Check the error_log in the IBM HTTP Server logs directory. This log should indicate if the plug-in is being loaded correctly.

Also check that the plugin-cfg.xml file is being generated and propagated to the location listed in the httpd.conf file.

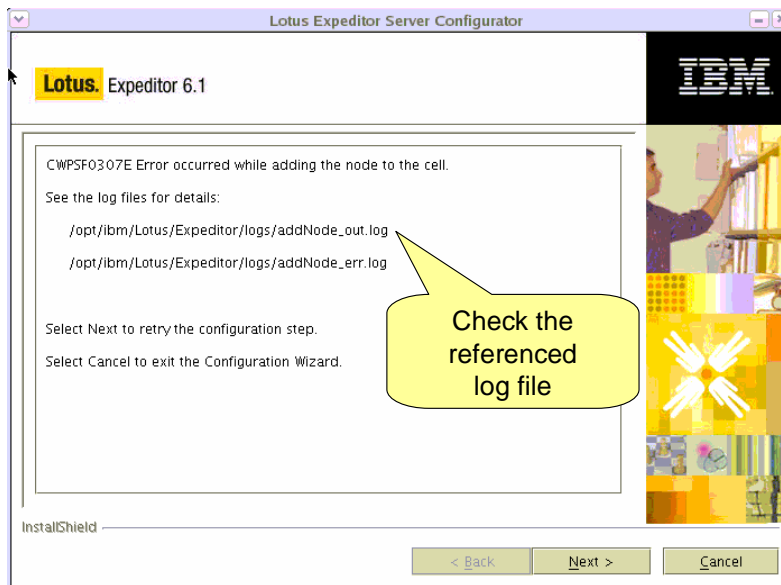
Finally, on Linux check that the user running the server has permissions to read the plugin-cfg.xml file. By default the http server on Linux is configured to run as a non-privileged user so the plugin-cfg.xml file must be readable by that user.

Outline

- How to avoid install problems?
- Where to look first?
- Common Problems
 - ▶ Prerequisite check fails
 - ▶ Remote database validation fails
 - ▶ WebSphere Member Manager configuration fails
 - ▶ Unable to access User Management Services
 - ▶ Add node fails while configuring for clustering

Now to the last common problem. During clustering, the add node process can fail for several reasons.

Error adding node to the cell



This screen shows the error message displayed when the add node process fails. The first step is to open the addNode_out.log file.

Finding the addNode.log file

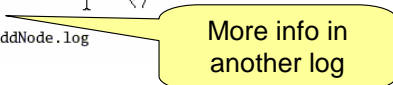
- The Expeditor/logs/addNode_out.log may point to the addNode.log in the profile logs directory

```
add-node:
[log-msg] 10/10/06 12:25 AM  INFO  add-node
[log-msg] CWPSF7001I Adding node xlin1Node01 to cell

[log-msg] 10/10/06 12:25 AM  ERROR  add-node
[log-msg] CWPSF7003E Failed to add node xlin1Node01 to cell

[log-msg] 10/10/06 12:25 AM  INFO  add-node
[log-msg] CWPSF7003I Additional logging information can be found in /IBM/Profiles/AppSrv01/logs/addNode.log

[root@xlin1 ~]# vi /IBM/Profiles/AppSrv01/logs/addNode.log
[root@xlin1 ~]#
```



More info in another log

Here in the addNode_out.log, we see the add-node task configuration log. It tells us there is more information in the WebSphere Application Server addNode.log. So we should open that file and investigate there. The addNode.log file is found in the WebSphere profile's logs directory.

Example failures in the addNode.log

```
[10/10/06 0:25:30:561 EDT] 0000000a AdminTool A ADMU0128I: Starting tool w
ith the AppSrv01 profile
[10/10/06 0:25:30:576 EDT] 0000000a AdminTool A ADMU0128I: Starting federatio
n of node xlin1Node01 with Deployment Manager Server: xlin1.raleigh.ibm.com:8879.
[10/10/06 0:25:34:875 EDT] 0000000a AdminTool A ADMU0128I: Starting federatio
n of node xlin1Node01 with Deployment Manager Server: xlin1.raleigh.ibm.com:8879.
[10/10/06 0:25:35:654 EDT] 0000000a AdminTool A ADMU0128I: Successfully co
nnected to Deployment Manager Server: xlin2.raleigh.ibm.com:8879.
[10/10/06 0:25:41:524 EDT] 0000000a AdminTool A ADMU0124I: The system cloc
k of the new node (Oct 10, 2006 12:25:41 AM) is not synchronized with that of th
e deployment manager (Oct 9, 2006 11:10:59 PM).
[10/10/06 0:25:41:684 EDT] 0000000a AdminTool A ADMU0125E: Change the cloc
k of the new node to be within 5 minutes of the clock of the deployment manager.
[10/10/06 0:25:41:813 EDT] 0000000a AdminTool A ADMU0027E: An error occurr
ed during federation <null>; rolling back to original configuration.
[10/10/06 0:25:41:923 EDT] 0000000a AdminTool A ADMU0211I: Error details m
ay be seen in the file: /IBM/Profiles/AppSrv01/logs/addNode.log
[10/10/06 0:25:41:926 EDT] 0000000a AdminTool E ADMU0111E: Program exiting
with error: com.ibm.ws.management.tools.DoNotDoAddNodeException
at com.ibm.ws.management.tools.NodeFederationUtility.failAddNodeBecauseC
locksNotInSync(NodeFederationUtility.java:1285)
at com.ibm.ws.management.tools.NodeFederationUtility.doCheckIfAddNodeIsO
kToRun(NodeFederationUtility.java:1285)
```

Clocks not in sync
error message

failAddNodeBecauseClocksNotInSync
in trace error

This slide shows the WebSphere Application Server addNode.log file. Here we see several clues related to the problem.

The first clue indicates “The system clock of the new node ... is not synchronized with that of the deployment manager...”.

The next line gives the solution, “Change the clock of the new node to be within 5 minutes of the clock of the deployment manager”

Later on in the log we see a list of exceptions. One level in the exception is the failAddNodeBecauseClocksNotInSync method.

Checking addNode.log for errors

- Common exceptions found in addNode.log
 - ▶ failAddNodeBecauseClocksNotInSync – the node and deployment manager system clocks are not synchronized.
 - They must be within 5 minutes of each other.
 - Use net time (Windows) or ntpdate (Linux) or another method to synchronized clocks.
 - ▶ unknownHostException – the node and deployment manager cannot determine the IP address of each other.
 - They must be able to resolve short names to IP addresses of each other.
 - If these machines are not in the same domain, they must be in the domain search path.

There are several errors that can cause the add node to fail. We just saw one example where the clocks are not synchronized. The clocks are synchronized when they are within 5 minutes of each other. On Windows, you can use net time to set both machines to synchronize their clocks with a time server. On Linux you can do the same thing with the ntpdate command. It is highly recommended to maintain some synchronization of the clocks between machines in a managed environment. If the clocks get out of sync later, the node sync process could fail.

Another common error is the unknownHostException. This error happens when the deployment manager tries to find an IP address for the new node. It uses the short hostname in the lookup and fails if they are in different domains and the DNS domain search path is not configured correctly. To test this, attempt to ping the node from the deployment manager using the short hostname. Also try the reverse, where the node pings the deployment manager using the deployment manager's short name.

Final suggestions

- Check the Information Center for additional requirements:
 - ▶ WebSphere software prerequisites (that is, rpm-build on Linux)
 - ▶ Username and password character restrictions
 - ▶ Installation path restrictions

Some final suggestions. If you are running into problems:

Check the Information Center troubleshooting section.

Also check to make sure you have all the prerequisites for WebSphere Application Server. For example, if you are missing the rpm-build package on Linux, you may have installed and configured WebSphere Application Server, but the prerequisite checker fails to find it installed, because the WebSphere Application Server installation fails to update the vpd.properties if rpm-build is missing.

Confirm that the usernames and passwords follow the character restrictions. Using certain characters will cause the configuration wizard to fail.

Also check that the install path follows the restrictions. Normally this is not a problem, because the install prevents installing with any unsupported characters in the install path.

Hopefully you will never have to troubleshoot the install process. Installations should be problem free.

Trademarks, copyrights, and disclaimers

The following terms are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both:

DB2 IBM Lotus WebSphere

Windows and the Windows logo are registered trademarks of Microsoft Corporation in the United States, other countries, or both.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Product data has been reviewed for accuracy as of the date of initial publication. Product data is subject to change without notice. This document could include technical inaccuracies or typographical errors. IBM may make improvements or changes in the products or programs described herein at any time without notice. Any statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only. References in this document to IBM products, programs, or services does not imply that IBM intends to make such products, programs or services available in all countries in which IBM operates or does business. Any reference to an IBM Program Product in this document is not intended to state or imply that only that program product may be used. Any functionally equivalent program, that does not infringe IBM's intellectual property rights, may be used instead.

Information is provided "AS IS" without warranty of any kind. THE INFORMATION PROVIDED IN THIS DOCUMENT IS DISTRIBUTED "AS IS" WITHOUT ANY WARRANTY, EITHER EXPRESS OR IMPLIED. IBM EXPRESSLY DISCLAIMS ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT. IBM shall have no responsibility to update this information. IBM products are warranted, if at all, according to the terms and conditions of the agreements (for example, IBM Customer Agreement, Statement of Limited Warranty, International Program License Agreement, etc.) under which they are provided. Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products in connection with this publication and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products.

IBM makes no representations or warranties, express or implied, regarding non-IBM products and services.

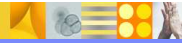
The provision of the information contained herein is not intended to, and does not, grant any right or license under any IBM patents or copyrights. Inquiries regarding patent or copyright licenses should be made, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. All customer examples described are presented as illustrations of how those customers have used IBM products and the results they may have achieved. The actual throughput or performance that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput or performance improvements equivalent to the ratios stated here.

© Copyright International Business Machines Corporation 2006. All rights reserved.

Note to U.S. Government Users - Documentation related to restricted rights-Use, duplication or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract and IBM Corp.



This concludes this presentation.