Best Practices : Troubleshooting Lotus Connections 3.0

Abstract

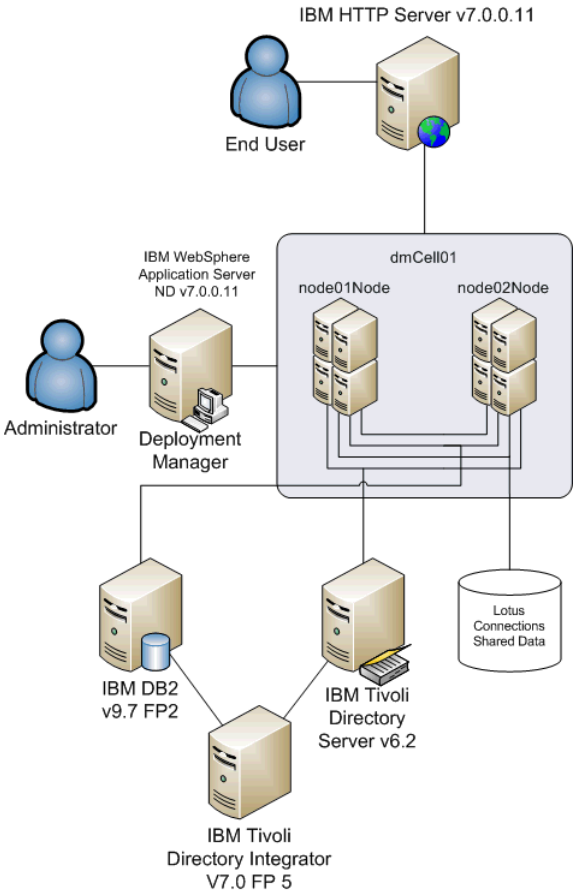
Troubleshooting Lotus Connections 3.0

Introduction

The following guide outlines a methodology to Troubleshoot Lotus Connections 3.0. These methods are the best practices as used by the Lotus Connections System Verification Test (SVT) team. The initial discussion in this document is very general and does not focus on particular issues which might occur. The latter half of this guide focuses on issues and solutions which have been experienced within IBM by development and test teams. While this guide does not detail every possible issue which might occur, it does go into detail on how to troubleshoot and on particular issues which have been experienced to date. This discussion therefore should prove valuable even when the particular issue you are encountering is not detailed below. If, with the aid of this guide, you are not able to solve the issue in question, the methods which have been followed here in gathering logs and other debug information will assist greatly in any dealings with Customer Support and should improve the turnaround time of any correspondences.

Understanding the Topology of Lotus Connections 3

It is important to understand the topology of Lotus Connections before attempting to debug a problem. In a typical multi-node production environment the topology may look like this :



The above topology does not include any additional integration such as additional security suites like Tivoli Access Manager, SiteMinder, or a proxy server. There is also no integration with products such as Lotus Quickr, Lotus Sametime, WebSphere Portal or Sharepoint. Adding any additional complexity to the above configuration will bring its own risks and potential issues. For the purposes of this guide the focus is on troubleshooting Lotus Connections only so there will be no additional integration specific discussion. However, if you do bring additional integration into your configuration and are experiencing issues which require troubleshooting and investigation, then this guide should point you in the right direction.

Referring to the above diagram we can see that there are at least seven machines involved in any interaction the user has with the Lotus Connections product. There is the client machine which he/she is trying to access the product from. Next, there is the webserver, this is what the user is interacting with. Behind the webserver there are two nodes which host Lotus Connections - either of these could be handling the particular request from the user. There is the deployment manager which manages both of these nodes. Behind the application server infrastructure there is a database server and an LDAP - both of which are in contact with each other (via Tivoli Directory Integrator) and the application server cell. There is also the shared data location which typically could be located physically on one of the application server machines or else can be network storage such as a SAN attached to one of these machines. In order to ensure a fully functional deployment, all of these component machines need to be functioning correctly. A breakdown in any one of these components can have unexpected and unpredictable results on the functionality of your deployment.

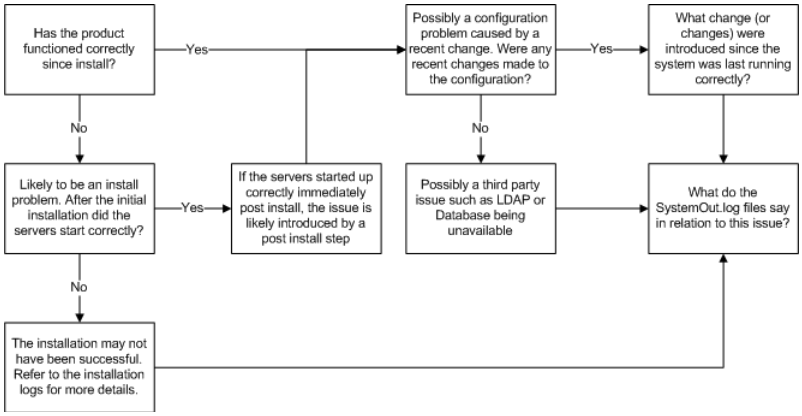
How to Troubleshoot

Any issue you encounter could be caused by one of a lot of possibilities or a combination of factors. Even the smallest omissions from an important configuration file can cause big problems for a deployment. The difficulty therefore lies in trying to identify the potential cause(s). Before we can identify causes we must first identify the issue or issues.

What is the Problem?

To begin, you need to know how to identify the problem. Whilst the problem itself may be obvious on the user interface we need to drill a little deeper to understand more about the problem. The first thing you need to know is how to produce the problem - what actions cause the issue to occur? Being able to reproduce the problem makes troubleshooting it a slightly less daunting task. Intermittent problems are difficult to produce by their very nature but with the correct log information and debugging process a root cause can be be found.

The following questions provide a framework for identifying more information about the problem:



For the purposes of this document issues will be broken down into two types - installation issues and configuration issues. Installation issues refers to issues arising from the actual installation of the product. Once you have installed Lotus Connection 3.0 successfully with no error messages produced in the installation logs and are able to start Lotus Connections 3.0 successfully without any post install steps then the installation is deemed successful. Any issues which occur from this point onwards are referred to in this guide as configuration issues.

To identify what type of problem you are experiencing follow the above flow chart. You will see in all cases that the SystemOut.log files are crucial in determining what type of issue(s) you are experiencing. This log file will include the most important data in making an initial diagnosis of the issue you are experiencing. The following table outlines key considerations at install time and when making configuration changes to avoid causing problems.

Installation	Configuration
Setup & Verify Security Settings on the WebSphere Application Server Integrated Solutions Console. Backup the prepared WebSphere profiles pre-installation in case there is a need to re-install.	When editing Lotus Connections configuration files ensure to use the wsadmin client. This client ensures that your configuration files are valid when they are checked back in.
Synchronize System Clocks.	If you are unsure of changes you are making on the deployment take a backup of the entire system before making that change.
On Linux/AIX environments ensure that the user installing the product has the correct privileges as described in the Lotus Connections 3.0 product documentation.	When a configuration change causes a problem, note the change you made and revert it if possible to verify that this change is what is causing the issue.
At the installation complete information screen scan through the associated log files to ensure there are no errors.	
Once installation is complete start Lotus Connections servers to verify that they are functioning as expected. Access the services at their internal address (e.g. http://node1.example.com:9080/profiles) and check that functionality works as expected.	

Before we move to more Lotus Connections specific issues, let's focus on the big picture painted by the configuration diagram produced at the top of this discussion.

Look at the Big Picture

As there are a lot of components in a Lotus Connections deployment, it is a good idea to start looking at this big picture and then attempt to focus in on the problematic areas you uncover.

- Are the core machines in the deployment functioning correctly? All operating systems for each machine in the configuration should be running without issue.
- The system clocks on all machines should be the same. It is a good idea to synchronize all the system clocks - this is both functional as the product may depend on it in more complex scenarios using single sign-on (SSO) and useful in matching up messages from different machines for debug purposes.
- The piece of infrastructure installed on each machine should be started. Check the status of the database, LDAP, WebSphere Application Server Nodes and Deployment Manager and the HTTP Server.
- If everything looks OK on the Server side check the status of the client side. Are there connection issues? Could it be a network problem? Could a browser setting be causing a problem?
- Try to identify where in the configuration things are breaking down.
- Can you access the product via the internal address but not on the webserver address? This suggests a webserver configuration problem.
- Is the UI working but error messages are being generated containing references to SQL? This suggests a database issue.
- Does the configuration work intermittently? This could indicate that the nodes in your deployment are not properly in synch.

Identifying the problem

Once you know how to produce the problem consistently you are in an excellent position to solve it. Now try to produce the problem and monitor the SystemOut.log to uncover which messages in the log are related to this issue. What do the logs indicate? Do they mention any XXXX-config.xml files - if so, then this could indicate a problem with the content in this file.

Once you think you have identified a possible solution (e.g. need to correct mistake in LotusConnections-config.xml file), the next step is to :
1. Check out that file via the wsadmin client.
2. Update the file with the new and correct values.
3. Resynch the nodes.
4. Restart Lotus Connections.
5. Re-attempt to produce the problem.

If the problem is no longer producible then the change made has fixed the issue. If not you may need to revert back the change you have made.

In all situations, if the problem has been introduced after you have a made a particular change (or set of changes), then it is recommended to revert to a previous working backup of the configuration and to step through the changes verifying that each one does not introduce any issues as you go along.

Tip: In a clustered environment, it can be easier to solve the problem by only starting one server in the cluster that has the issue. This way all requests will go to this server and you can monitor this servers log only.
Tip : When testing, if a change you made has resolved the issue, then be sure to restart your browser and to clear its cache so that the result of your tests are correct.

The Lotus Connections Configuration

The main configuration files for Lotus Connections can be found in the following folder :
D:\IBM\WebSphere\AppServer\profiles\\config\cells\\LotusConnections-config

e.g. D:\IBM\WebSphere\AppServer\profiles\Dmgr01\config\cells\dmCell01\LotusConnections-config

Here you will find a number of important configuration files such as the main configuration file - LotusConnections-config.xml which needs to be updated as part of the installation. This update requires caution so as not to enter any incorrect values / improper XML formatting. Using the wsadmin client reduces the chances of introducing problems to these files due to improper formatting.

There are a number of other important configuration files in this location such as oa-config.xml, profiles-config.xml, wikis-config.xml, files-config.xml, forum-config.xml, notification-config.xml and many more. Please refer to the Lotus Connections documentation when editing these files and for information on what these files are responsible for. It is possible that when you have an issue with the Files application, for example, that it could be related to a recent incorrect change to the files-config.xml.

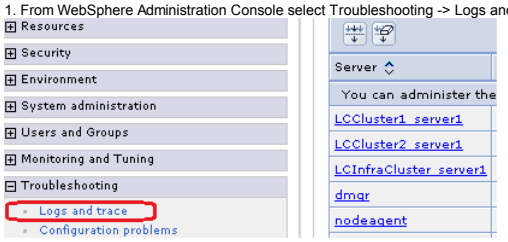
Tools to Aid Investigation

In situations where the SystemOut.log is not providing enough information to help diagnose the issue there are a number of other actions we can take to get more information about the problem.

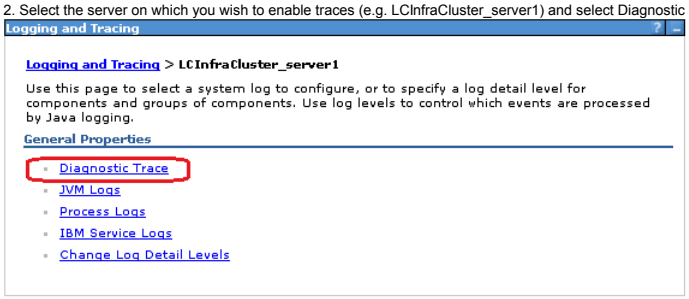
Traces

There are a number of WebSphere traces and trace levels which can be enabled on the application server(s) to gather extra diagnostic information about the problem. To enable a trace do the following

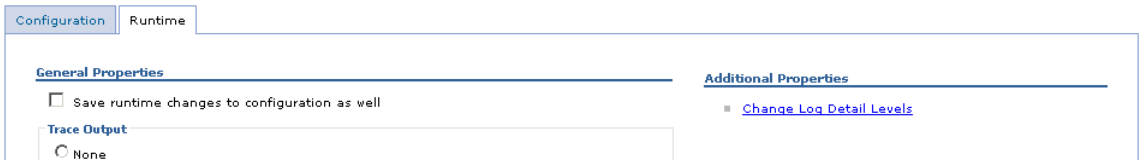
1. From WebSphere Administration Console select Troubleshooting -> Logs and Traces :



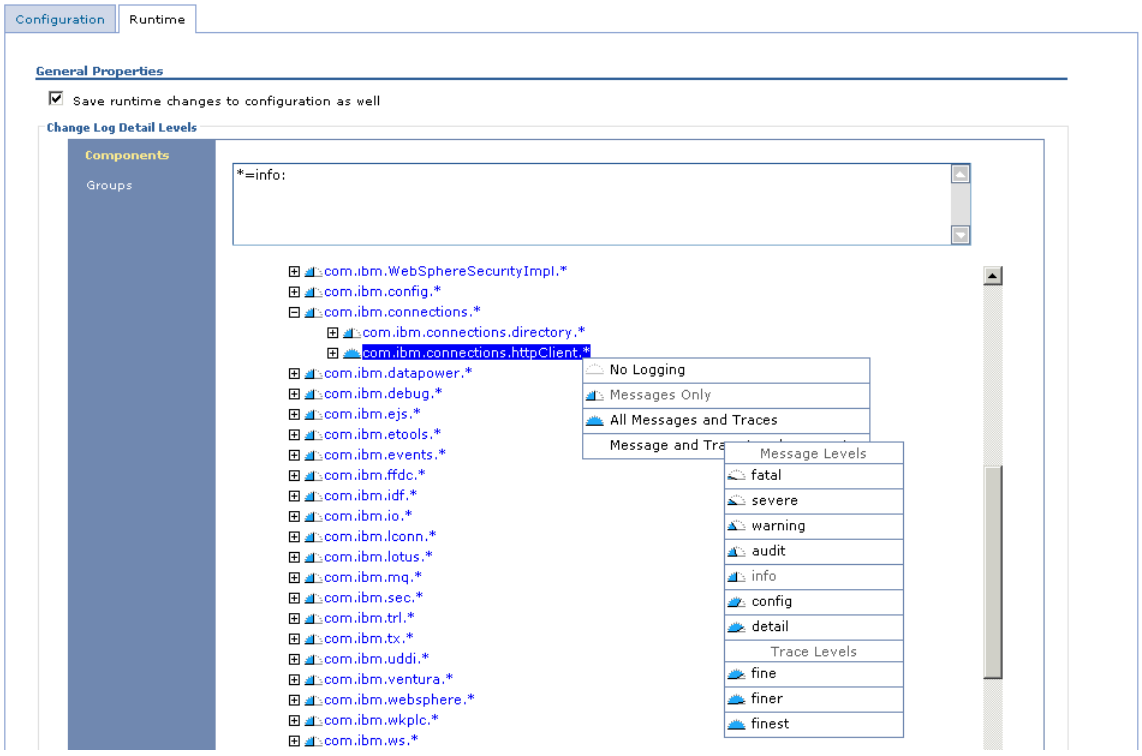
2. Select the server on which you wish to enable traces (e.g. LCInfraCluster_server1) and select Diagnostic Trace :



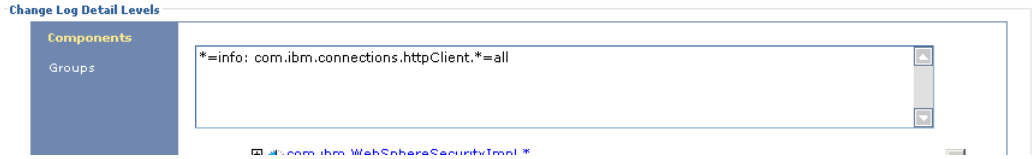
3. Click the Runtime tab and click Change Log Detail Levels:



4. Now set the required trace level (& ensure to select Save runtime changes to configuration option), in the below example the httpClient traces are being selected:



5. Click Apply & Save this change.



As we have selected to create the trace in runtime and saved the change to the configuration as well we will find that the trace is created immediately and this trace information will continue to be logged on each subsequent system restart until it is disabled.

Remember to disable the traces when they are no longer required as some traces log a lot of information and can slow the system performance down if unnecessarily enabled.

IBM Support Assistant

IBM Support Assistant (ISA) Lite is a tool that is installed with Lotus Connections 3.0 that helps to gather data to provide to IBM support teams. ISA Lite can be used to automate data collections and therefore can expedite the problem resolution. Please refer to the instructions on the wiki about how to use this tool here.

3rd Party Debug Tools

The use of diagnostic tools such Fiddler on Internet Explorer and Firebug on Firefox is recommended when you want to gather additional information by analysing all HTTP(S) traffic between your browser and the application server. These tools are very useful for gathering information on errors occurring in the UI (such as revealing the response code that is causing an issue) or in more complex environments involving SSO Solutions (Using Fiddler/Firebug to analyse HTTP traffic with SiteMinder server for example).

For an even more in depth analysis of the network traffic between different machines in your environment consider using Wireshark (Windows) or Ethereal (Linux) to get a complete network trace of all traffic between each machine. This type of analysis can be required when you want to analyse what is happening when additional integration is enabled on the configuration such as Quickr integration. A network trace can gather all the requests between the Connections application server and the Quickr application server, for example.

Where to find Key Troubleshooting Information

WebSphere Application Server Logs and Traces

Logs (SystemOut.log) and Traces (trace.log) can be found in the same location for each server. This location also contains the error log files such as SystemErr.log and can contain native_stderr.log which contain extra error information and JVM memory management information (if Verbose GC is enabled) respectively. This location is :

/AppServer/profiles//logs/
For example, C:\IBM\WebSphere\AppServer\profiles\AppSrv01\logs\LCCluster1_server1

HTTP Server Logs

Webserver logs are typically found here :
/logs/

There are also webserver plugin logs which can be found here:
/Plugins/logs/webserver1

Database Logs

When using IBM DB2 search for db2diag.log.

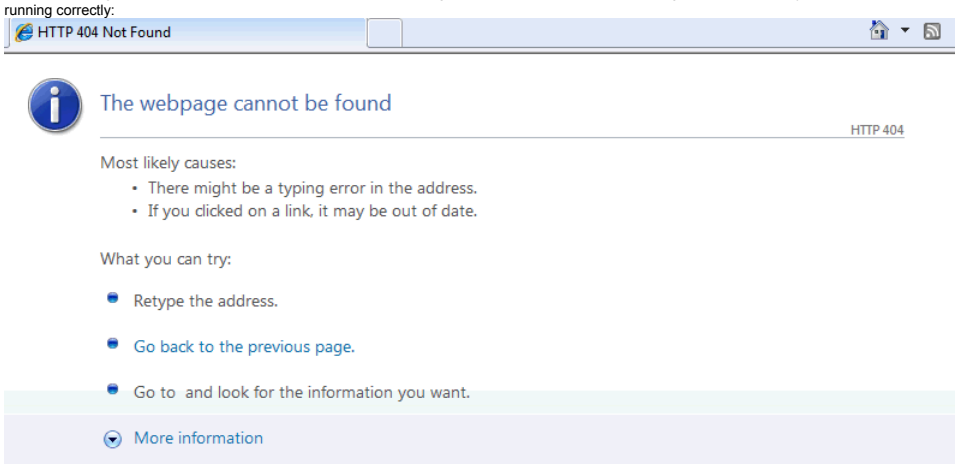
Please refer to MSSQL & Oracle Documentation respectively for information on where to find diagnostic information on either database.

Troubleshooting - Issues & Solutions

The following is a list of issues which have been encountered and their solutions. In each issue and solution we have tried to show the troubleshooting methodology at work - analysing the problem, identifying a solution and implementing it. This is not intended to be an exhaustive list of issues & solutions but these use cases may help in identifying solutions to other problems not listed.

Cannot access Lotus Connections via the Webserver

When attempting to access Lotus Connections via the webserver (e.g. connections.example.com), the page cannot be displayed. This is despite the fact that Lotus Connections is started and you expect it to be running correctly:



Assuming that the webserver is started, then this is likely to be an issue caused by the WebSphere plugin. Open the the plugin-cfg.xml to try to identify the problem. The below example is that of a plugin file which is not properly configured. This plugin file does not contain any mappings to the Lotus Connections Servers.

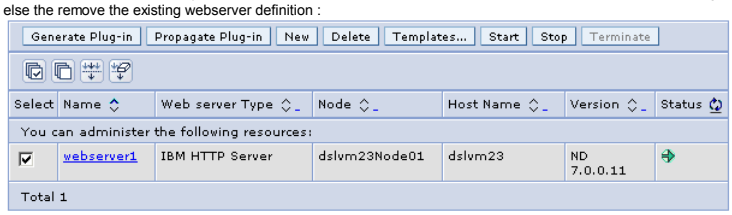
```
<?xml version="1.0" encoding="ISO-8859-1"?><!--HTTP server plugin config file for the webserver connectionsCe
<Config ASDisableNagle="false" AcceptAllContent="false" AppServerPortPreference="HostHeader" ChunkedResponse=
   <Log LogLevel="Error" Name="c:\IBM\HTTPServer\Plugins\logs\webserver1\http_plugin.log"/>
   <Property Name="ESIEnable" Value="true"/>
   <Property Name="ESIMaxCacheSize" Value="1024"/>
   <Property Name="ESIInvalidationMonitor" Value="false"/>
   <Property Name="ESIEnableToPassCookies" Value="false"/>
   <Property Name="PluginInstallRoot" Value="c:\IBM\HTTPServer\Plugins\"/>
   <RequestMetrics armEnabled="false" loggingEnabled="false" rmEnabled="false" traceLevel="HOPS">
      <filters enable="false" type="URI">
         <filterValues enable="false" value="/snoop"/>
         <filterValues enable="false" value="/hitcount"/>
      </filters>
      <filters enable="false" type="SOURCE_IP">
         <filterValues enable="false" value="255.255.255.255"/>
         <filterValues enable="false" value="254.254.254.254"/>
      </filters>
      <filters enable="false" type="JMS">
         <filterValues enable="false" value="destination=aaa"/>
      </filters>
      <filters enable="false" type="WEB_SERVICES">
         <filterValues enable="false" value="wsdlPort=aaa:op=bbb:nameSpace=ccc"/>
      </filters>
   </RequestMetrics>
</Config>
```

This can happen if the Lotus Connections applications are not mapped to the webserver. For instance, if you install Lotus Connections after adding a webserver definition to the deployment manager, then this is expected unless you map the modules manually for each application before propagating the webserver plugin.

In a medium Lotus Connections deployment type the following is the expected form of the correct plugin configuration file.

```
<?xml version="1.0" encoding="ISO-8859-1"?><!--HTTP server plugin config file for the webserver connectionsCe
<Config ASDisableNagle="false" AcceptAllContent="false" AppServerPortPreference="HostHeader" ChunkedResponse=
   <Log LogLevel="Error" Name="c:\IBM\HTTPServer\Plugins\logs\webserver1\http_plugin.log"/>
   <Property Name="ESIEnable" Value="true"/>
   <Property Name="ESIMaxCacheSize" Value="1024"/>
   <Property Name="ESIInvalidationMonitor" Value="false"/>
   <Property Name="ESIEnableToPassCookies" Value="false"/>
   <Property Name="PluginInstallRoot" Value="c:\IBM\HTTPServer\Plugins\"/>
   <VirtualHostGroup Name="default_host">
      <VirtualHost Name="*:9080"/>
      <VirtualHost Name="*:80"/>
      <VirtualHost Name="*:9443"/>
      <VirtualHost Name="*:5060"/>
      <VirtualHost Name="*:5061"/>
      <VirtualHost Name="*:443"/>
      <VirtualHost Name="*:9081"/>
      <VirtualHost Name="*:9444"/>
      <VirtualHost Name="*:9082"/>
      <VirtualHost Name="*:9445"/>
      <VirtualHost Name="*:9083"/>
      <VirtualHost Name="*:9446"/>
      <VirtualHost Name="*:9084"/>
      <VirtualHost Name="*:9447"/>
      <VirtualHost Name="*:9085"/>
      <VirtualHost Name="*:9448"/>
   </VirtualHostGroup>
   <ServerCluster CloneSeparatorChange="false" GetDWLMTable="false" IgnoreAffinityRequests="true" LoadBalance
      <Server CloneID="15ien3ick" ConnectTimeout="5" ExtendedHandshake="false" LoadBalanceWeight="2" MaxConne
         <Transport Hostname="connections" Port="9085" Protocol="http"/>
         <Transport Hostname="connections" Port="9448" Protocol="https">
            <Property Name="keyring" Value="c:\IBM\HTTPServer\Plugins\config\webserver1\plugin-key.kdb"/>
            <Property Name="stashfile" Value="c:\IBM\HTTPServer\Plugins\config\webserver1\plugin-key.sth"/>
         </Transport>
      </Server>
      <PrimaryServers>
         <Server Name="connectionsNode01_LCCluster2_server1"/>
      </PrimaryServers>
   </ServerCluster>
   <ServerCluster CloneSeparatorChange="false" GetDWLMTable="false" IgnoreAffinityRequests="true" LoadBalance
      <Server CloneID="15iel97pl" ConnectTimeout="5" ExtendedHandshake="false" LoadBalanceWeight="2" MaxConne
         <Transport Hostname="connections" Port="9080" Protocol="http"/>
         <Transport Hostname="connections" Port="9443" Protocol="https">
            <Property Name="keyring" Value="c:\IBM\HTTPServer\Plugins\config\webserver1\plugin-key.kdb"/>
            <Property Name="stashfile" Value="c:\IBM\HTTPServer\Plugins\config\webserver1\plugin-key.sth"/>
         </Transport>
      </Server>
      <PrimaryServers>
         <Server Name="connectionsNode01_LCInfraCluster_server1"/>
      </PrimaryServers>
   </ServerCluster>
   <ServerCluster CloneSeparatorChange="false" GetDWLMTable="false" IgnoreAffinityRequests="true" LoadBalance
      <Server CloneID="15iemagdh" ConnectTimeout="5" ExtendedHandshake="false" LoadBalanceWeight="2" MaxConne
         <Transport Hostname="connections" Port="9084" Protocol="http"/>
         <Transport Hostname="connections" Port="9447" Protocol="https">
            <Property Name="keyring" Value="c:\IBM\HTTPServer\Plugins\config\webserver1\plugin-key.kdb"/>
            <Property Name="stashfile" Value="c:\IBM\HTTPServer\Plugins\config\webserver1\plugin-key.sth"/>
         </Transport>
      </Server>
      <PrimaryServers>
         <Server Name="connectionsNode01_LCCluster1_server1"/>
      </PrimaryServers>
   </ServerCluster>
   <UriGroup Name="default_host_LCInfraCluster_URIs">
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/help/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/mobile/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/search/bookmarklet/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/search/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/homepage/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/homepage/bookmarklet/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/news/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/news/common/sand/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/news/bookmarklet/*"/>
   </UriGroup>
   <Route ServerCluster="LCInfraCluster" UriGroup="default_host_LCInfraCluster_URIs" VirtualHostGroup="defaul
   <UriGroup Name="default_host_LCCluster1_URIs">
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/communities/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/communities/bookmarklet/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/communities/mashupmaker/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/communities/widgets/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/communities/blogs/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/communities/activity/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/profiles/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/profiles/bookmarklet/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/profiles/seedlist/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/activities/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/activities/quickrpicker/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/activities/bookmarklet/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/forums/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/forums/bookmarklet/*"/>
   </UriGroup>
   <Route ServerCluster="LCCluster1" UriGroup="default_host_LCCluster1_URIs" VirtualHostGroup="default_host"/
   <UriGroup Name="default_host_LCCluster2_URIs">
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/dogear/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/dogear/bookmarklet/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/wikis/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/blogs/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/blogs/bookmarklet/*"/>
      <Uri AffinityCookie="JSESSIONID" AffinityURLIdentifier="jsessionid" Name="/files/*"/>
   </UriGroup>
   <Route ServerCluster="LCCluster2" UriGroup="default_host_LCCluster2_URIs" VirtualHostGroup="default_host"/
   <RequestMetrics armEnabled="false" loggingEnabled="false" rmEnabled="false" traceLevel="HOPS">
      <filters enable="false" type="URI">
         <filterValues enable="false" value="/snoop"/>
```

In order to solve this problem you can either map the web server modules as per this product documentation page : http://www-10.lotus.com/ldd/lcwiki.nsf/dx/Mapping_applications_to_IBM_HTTP_Server_lc3, or else the remove the existing webserver definition :



Delete the above entry and then create it again exactly as before. When the webserver is re-added all Lotus Connections modules will automatically be mapped to the webserver. Then generate a new plugin and propagate this plugin. Restart the webserver for this change to take effect.

Lotus Connections servers do not start Cleanly

Unknown errors are occurring in the SystemOut.log during server startup. These errors also appear to have some effect on the UI. For example, the following error occurs when trying to access the profiles page :

Error Page Exception

SRVE0260E: The server cannot use the error page specified for your application to handle the Original Exception printed below.

Original Exception:

Error Message: org/springframework/context/ApplicationContext
Error Code: 500
Target Servlet: null
Error Stack:
java.lang.NoClassDefFoundError: org/springframework/context/ApplicationContext
at com.ibm.lconn.profiles.internal.service.AppServiceContextAccess.getContextObject(AppServiceContextAccess.java:66)
at com.ibm.lconn.profiles.internal.service.AppServiceContextAccess.getContextObject(AppServiceContextAccess.java:52)
at com.ibm.lconn.profiles.web.servlet.AppContextFilter$HttpAppContext.<clinit>(AppContextFilter.java:64)
at java.lang.J9VMInternals.initializeImpl(Native Method)

And in the SystemOut.log we see similar errors :

```
[12/1/10 11:51:24:931 GMT] 00000016 webapp        E com.ibm.ws.webcontainer.webapp.WebApp logError SRVE0293E:
        at java.lang.J9VMInternals.verifyImpl(Native Method)
        at java.lang.J9VMInternals.verify(J9VMInternals.java:72)
        at java.lang.J9VMInternals.initialize(J9VMInternals.java:134)
        at java.lang.Class.forNameImpl(Native Method)

Caused by: java.lang.ClassNotFoundException: org.springframework.context.ApplicationContext
        at java.lang.Throwable.<init>(Throwable.java:80)
```

These errors point to some classes not being found causing some kind of internal issues for the JVM. Perhaps the nodes have not been properly synchronised with the deployment manager as this class would have been installed during the installation of the product.

To solve the problem :
1. Stop Lotus Connections Servers.
2. Do a full resynchronization of the nodes with the deployment manager by logging onto a node machine and navigating to the application server profile bin directory (e.g. AppSrv01/bin) in the console/terminal. Then issue the following command :
> synchNode.bat dm.example.com 8879 -username wasadmin -password wasadmin
3. Once the synchronization is complete, try to start the server again to see if the situation has improved.

Lotus Connections Servers Fail to Start

There are a number of reasons why a server might fail to start. The following discussion presents some of the most common reasons why this can happen. Key to resolving this issue will be what content is found in the SystemOut.log surrounding this problem.

If there are messages relating to the messaging engine from SibMessage or JMSPublisher, such as the following snippets :

```
[12/2/10 9:48:16:181 GMT] 00000011 SibMessage    E   [ConnectionsBus:LCCluster1.000-ConnectionsBus] CWSIS1561

[12/2/10 9:48:16:181 GMT] 00000011 SibMessage    E   [ConnectionsBus:LCCluster1.000-ConnectionsBus] CWSIS1567

[12/2/10 9:48:31:118 GMT] 00000011 SibMessage    E   [ConnectionsBus:LCCluster1.000-ConnectionsBus] CWSID0035

[12/2/10 9:48:31:134 GMT] 00000011 SibMessage    E   [ConnectionsBus:LCCluster1.000-ConnectionsBus] CWSID0027

[12/2/10 9:48:31:165 GMT] 00000011 SibMessage    E   [ConnectionsBus:LCCluster1.000-ConnectionsBus] CWSID0039

[12/2/10 9:52:14:212 GMT] 0000002b JMSPublisher  E com.ibm.lconn.events.internal.publish.impl.JMSPublisher pu

Caused by: javax.jms.JMSException: CWSIA0241E: An exception was received during the call to the method JmsMan
```

This may point to an issue with the message stores. Perhaps they have become corrupt. This can happen if the servers are shutdown unexpectedly. Try removing the messagestores from the shared data folder directly. Ensure that all Lotus Connections servers are stopped before trying this. Delete (or move) all content under messagestores/* and restart the servers. New messagestores will be created at startup time and the above errors should be resolved.

Another possible reason for a server not starting may be that when the server was stopped previously the port used by the server was not freed properly. If this is the case, then you must either restart the physical machine in question or find the process that is blocking the port and kill it manually. Use the following commands to identify the port that you need to use :
Windows : **netstat -b**
Linux : **netstat -lp**

When you have identified the process you must kill, terminate it and then attempt to restart the server once more.

Installation is Successful, but upon starting Lotus Connections you see errors in the SystemOut.log

After completing a successful installation of Lotus Connections 3.0 the servers do not start correctly. Upon reviewing the SystemOut.log you see the following error message:

```
[12/3/09 17:11:02:655 CET] 00000023 ProductDAOImp E   EJPVJ9958E: Unable to get product version
information. [null]
                              com.ibm.db2.jcc.b.SqlException: "WIKIS.PRODUCT" is an undefined
name.
        at com.ibm.db2.jcc.b.qh.c(qh.java:1671)
        at com.ibm.db2.jcc.b.qh.d(qh.java:1659)
        at com.ibm.db2.jcc.b.qh.a(qh.java:1216)
        at com.ibm.db2.jcc.a.db.g(db.java:139)
        at com.ibm.db2.jcc.a.db.a(db.java:39)
        at com.ibm.db2.jcc.a.t.a(t.java:34)
```

A little further down the log you see this:

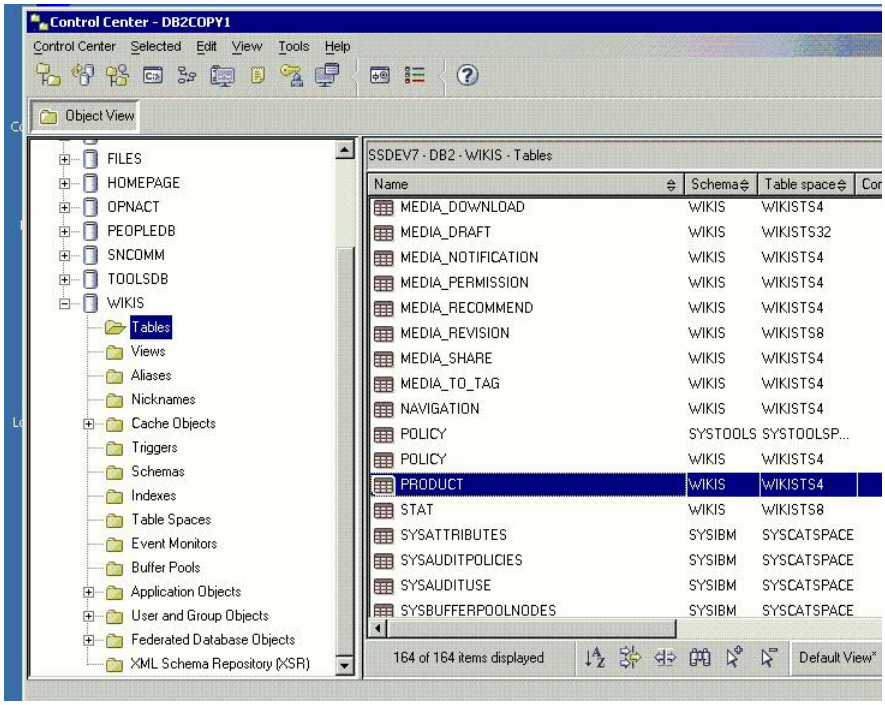
```
[---- Begin backtrace for Nested Throwables
com.ibm.db2.jcc.b.SqlException: An error occurred during implicit system action type "2".
Information returned for the error includes SQLCODE "-204", SQLSTATE "42704" and message tokens
"WIKIS.PRODUCT".
        at com.ibm.db2.jcc.b.qh.a(qh.java:1671)
```

This error message seems to indicate a problem with the databases. When you refer to the product documentation for this error, you learn the following :

```
EJPVJ9958E: Unable to get product version information.
Explanation: An error occurred while attempting to get the product version information from the database. An
User Response: Examine the nested exception. If the database could not be reached, please check configuration
```

Next, refer to the tables directly. Open the database (in this case DB2) and try to find this table in the Wikis database. Now you see that the "PRODUCT" table is actually missing. In this case we only had the "system" tables and no "PRODUCT" table.

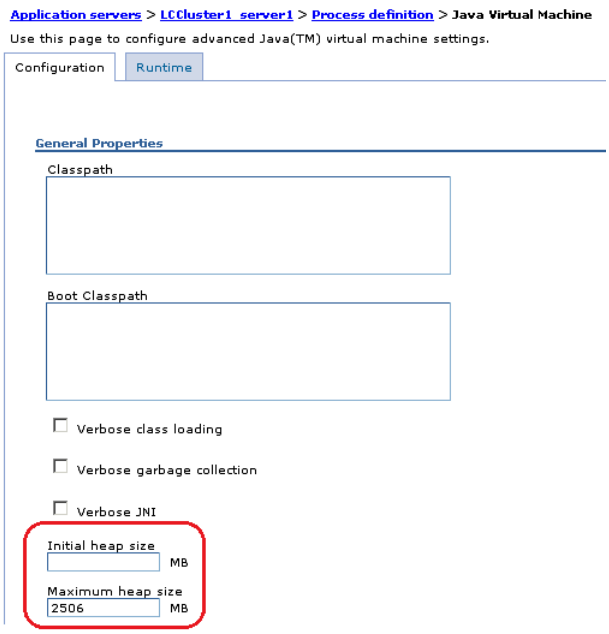
The solution here is to drop the wikis database and to re-create it. Do the following :
1. Open the connections.sql folder containing all of the database scripts and locate wikis/db2/dropDb.sql.
2. Execute the command using "db2 -td@ -vf dropDb.sql db2inst1".
3. From the same directory execute the command "db2 -td@ -vf createDb.sql"
4. Once again, open the Wiki Database, now in the list of tables you should see the PRODUCT table :



5. Restart Lotus Connections and this error should no longer appear in the logs at startup.

Server starts but then reports out of memory errors in the SystemOut.logs

This could suggest that the maximum JVM heap size is not big enough. On the node machine where the server attempted to start check the process information and see how much memory it is currently consuming. If this value is similar to that of the Maximum heap size parameter, then you need to increase the maximum heap size available to this server. This property is located here on the deployment manager :

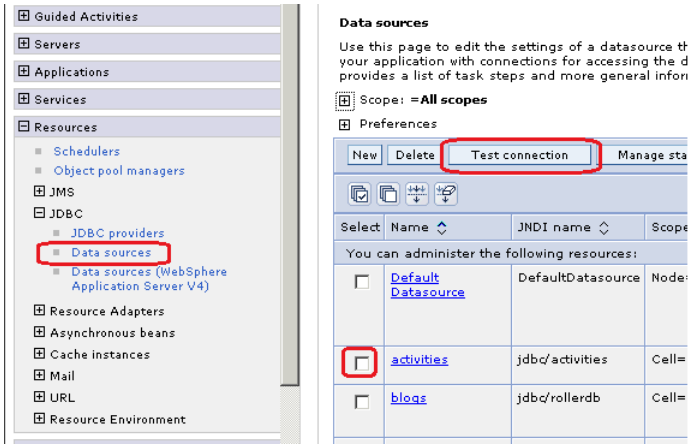


Please refer to the Lotus Connections 3.0 tuning guide for information on what appropriate maximum heap sizes are for each server in your topology. Note also that the load expected on each server should be taken into account when setting these values. Finally, when increasing the maximum heap size property, ensure that this value is correct for the bitness of your system and that you have the physical RAM available to provide this extra heap. If necessary you may need to add additional memory to your system.

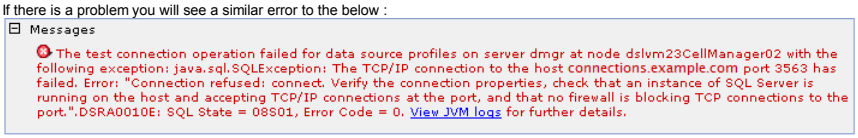
You can monitor heap usage by enabling Verbose garbage collection at the above screen and using the IBM Heap Analyser to interrupt the native_stderr.log which the garbage collection generates.

Lotus Connections is Started but I cannot login

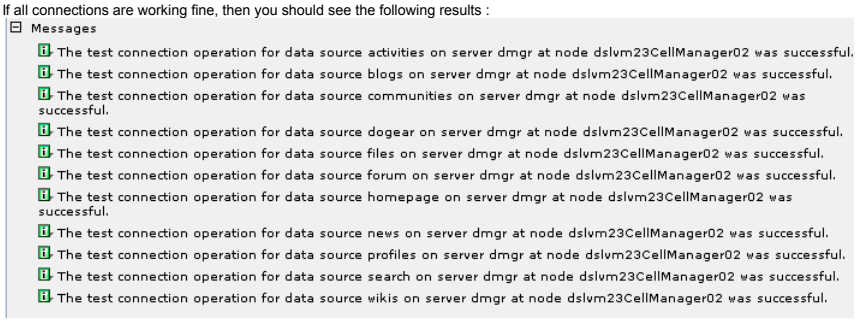
This could be due to a database connection issue. If the databases are not started and available then you will be unable to log in to connections. It is a good idea in this situation to do a database connection test from the Deployment Manager console. Do this from Resources -> JDBC -> Data Sources, select the datasource you wish to check and click the test connection button. It is possible to check multiple connections at the same time.



If there is a problem you will see a similar error to the below :



If all connections are working fine, then you should see the following results :



If there are connection issues then check the status of the database, check that it is started and that the database user's credentials have not expired. It is also worth checking that there is enough free hard disk space for the database to operate and that the Database machine is not displaying any resource problems such as not having enough RAM.

The navigation bar directs users back to the internal node address of the application

The links that appear in the navigation bar are built from the hrefs and ssl_hrefs which are provided in LotusConnections-config.xml. If the webserver has been correctly configured then all href and ssl_hrefs in this configuration file will be contain the webserver host name e.g. connections.example.com and all navigation links in Lotus Connections will be based on this. If, however, the links are directing the user back to the node address including the applications port number, then this indicates a problem. This either could be :
1. LotusConnections-config.xml is not configured properly.
2. It has been configured properly but the nodes have not been synchronised.

Verify the addresses in the LotusConnections-config.xml file, resynchronise your nodes, and restart Lotus Connections. Then recheck the navigation bar with a clean browser.

Third Party Issue : Can only log into profiles when using Web Access manager such as Siteminder, TAM or SPNEGO

Authorization issues are the most common issues that occur when an additional layer of security is introduced on the configuration such as SiteMinder, TAM or SPNEGO.

In these scenarios, be vigilant for errors in the logs declaring a directory services error. This may indicate that the integration with the security solution has not completed correctly. Please refer to the Lotus Connections 3.0 documentation on the wiki for how to setup each type of SSO solution.

Another common error when setting up such integration is only being able to log in to profiles but nothing else. This is due to issues with the interservice communication in backend. Things to check in this scenario are :

1. Ensure LDAP user is connectionsAdmin and an administrator of the WebSphere Application Server deployment manager. See the product documentation for information about how to change this user to an LDAP user.
2. Ensure the correct authenticator is used such as SiteMinderAuthenticator or TAMAuthenticator in the LotusConnections-config.xml - see the product documentation topic on custom authenticators.
3. Ensure there are no database connection issues.

Intergration Issue: SSO is not working correctly between Quickr and Connections

SSO (Single sign-on) allows you to log in once to one of the products in the environment and thereby be logged into all products in that environment. For example, if Lotus Connections and Lotus Quickr are integrated with SSO enabled then you should be able to log into either one and navigate to the other without having to input credentials again. This should work in both directions. If you are experiencing SSO issues, then the following areas need to be checked:

1. Both applications share the same LTPA token. If not, generate one on the Connections DM and add it to the Quickr configuration also.
2. On consoles for both applications, ensure realms are set to the same value for the LTPA token. Interoperability mode should be set on the Connections side.
3. Ensure that the same LDAP directory of users is used.
4. Ensure the system clocks are in synch on the Quickr and Connections machines (this includes the timezone setting also)

5. Clear the browser cache and try again

The topic of integration between Lotus Quickr and Lotus Connections is explained in detail in Scenario 2 here

About the Authors

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