



IBM Software Group

2006 B2B Customer Conference

B2B – Catch the Next Wave

C2: Troubleshooting the WPG Environment

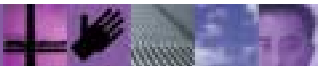
WebSphere. software

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Objectives

- Gain an understanding of some basic troubleshooting techniques in a WPG environment
- Develop a process and a systematic approach that ‘works’ for every problem
- Understand the kind of questions to ask and where to go for help
- Converse intelligently with other IT groups when a potential WPG problem occurs
- Get the comfort level with the product and make the daily WPG maintenance life cycle ‘simpler’ and less stressful



Objectives Contd.

- Troubleshooting is a very broad scope
- This is not a session where we will go over WPG software specific issues
- We will discuss are all the entities around WPG that collectively make up the WPG environment
- Need to focus time troubleshooting the environment and not just the WPG software



Troubleshooting In General

Two kinds of troubleshooting:

- Installation /upgrade problems
 - Periodic. Once fixed do not appear for a while
 - Dependent on new releases and fixes/patches
- Operations problems
 - Daily activity /transactions
 - Several external dependencies
 - 24/7 support
 - Beyond WPG: The WPG environment



Troubleshooting Installation & Upgrades

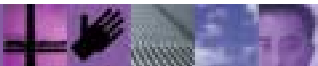
Usual suspects:

- O/S level
- Documentation & instructions not followed
- Incorrect user ids/passwords being used
- Insufficient access rights
- vpd.properties file problem
- All other symptoms : WPG environment domain



Troubleshooting vpd.properties

- Used by ISMP (Install shield for multiplatform) to install code
- Lists program components that are currently installed
- Backing up and starting off with a new file helps in some instances
- Location dependent on platform
 - AIX: usr/lib/objreps
 - Linux: root directory
 - Windows: c:\WINNT or c:\windows



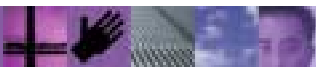
Troubleshooting vpd.properties

Sample

- 1e282797a0e5692c382b1cb613324092|4|2|0|2|4.2.2.0|1=routerWASBobcatLinux2|WAS.Bobcat.AIX| | | |
|/wbi/sftw/iwbi/IBM/WBICConnect/router/was|0|0|1|WBIC-RouterBobcat|4|2|0|2|4.2.2.0|1|0|false|
|true|3|1e282797a0e5692c382b1cb613324092|4|2|0|2|4.2.2.0|1
- 1e282797a0e5692c382b1cb613324092|4|2|0|2|4.2.2.0|2=routerWASBobcatLinux2|WAS.Bobcat.AIX| | | |
|/opt/IBM/WBICConnect/router/was|0|0|1|WBIC-RouterBobcat|4|2|0|2|4.2.2.0|2|0|false|
|true|3|1e282797a0e5692c382b1cb613324092|4|2|0|2|4.2.2.0|2
- 2f15b5e7d45a529da8f0143679f815f5| | | | |1=component20|WmSamples| | | |
|/webmethods/sftw/B2BServer/4.6/packages/WmSamples|0|0|1|8f259565e88deafcf052dc130f835fa9| | | |
|1|0|false| |true|3|2f15b5e7d45a529da8f0143679f815f5| | | | |1
- 328f9a78214ccde4a28ad1f0eac89832| | | | |1=feature8|Repository Server| | | |
|/webmethods/sftw/B2BServer/4.6/reposerver|0|0|1|4ac6d884046fe4246af5f1f4e3c7a0b2| | | | |1|0|false|
|true|3|328f9a78214ccde4a28ad1f0eac89832| | | | |1
- 39b0b41aab0208766523a7413504a8e6|4|2|0|2|4.2.2.0|1=WBIC Licence Agreement Program|Lap
Component|WBIC Licence Agreement Program| | |
|/opt/IBM/WBICConnect|0|0|1|IBMWBICEE|4|2|0|2|4.2.2.0|1|0|false|
|true|3|39b0b41aab0208766523a7413504a8e6|4|2|0|2|4.2.2.0|1
- 39b0b41aab0208766523a7413504a8e6|4|2|4|2|4.2.2.4|1=WBIC Licence Agreement Program|Lap
Component|WBIC Licence Agreement Program| | |
|/wbi/sftw/iwbi/IBM/WBICConnect|0|0|1|IBMWBICEE|4|2|4|2|4.2.2.4|1|0|false|
|true|3|39b0b41aab0208766523a7413504a8e6|4|2|4|2|4.2.2.4|1
- 3ffe64b74d4032e9c955e3225201f3d6|4|2|0|2|4.2.2.0|1=consoleWASBobcatUninstallUnix|WAS.Bobcat.Uninst
all| | | | |/opt/IBM/WBICConnect/console/was|0|0|1|WBIC-ConsoleBobcat|4|2|0|2|4.2.2.0|1|0|false|
|true|3|3ffe64b74d4032e9c955e3225201f3d6|4|2|0|2|4.2.2.0|1
- 47becdb3019a540dd9f05bd744596aa3| | | | |1=component8|Common Lib| | | |

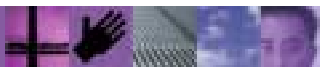
Troubleshooting vpd.properties

- Example of troubleshooting with vpd.properties
- Installed WBIC router only with fix pack 4
- Architecture and design requirements now demand the installation of receiver on the same box
- The installation of receiver fails !
- Why?



Troubleshooting vpd.properties

- The vpd.properties has fix pack 4 information in it and the installer for receiver thinks a newer version of WBIC is already installed
- Backup the current vpd.properties and let the installer create a new vpd file. Once successful then install the receiver on it
- Now install the fix pack 4 for the receiver
- What happens if we need to upgrade to fix pack 5?



WPG Operational Problems

Involves daily activities and transaction flows.

- OS/ levels
- Network
- Firewalls
- Payloads
- Transactions & load
- Partners
- Security
- 'Other' non WPG software
- Anything else we can think of. Really!!
- &.....



WPG Operational Problems

- & WPG, of course!



A Production Troubleshooting Example 1

Sample problem in hand

- Description of the problem
 - On 2/20/06 and 2/22/06 partner claims that they did not receive documents
 - Zero bytes files dropped by ftp program into the file system. XML documents coming from partner A should have been delivered to partner B
 - Immediate assumption by the development team – “WPG is failing documents”



A Production Troubleshooting Example 1 Contd.

Approach taken:

- Reviewed the problem statement and documentation provided that listed the time and day the transaction failed
- Reviewed the FTP process that moved the files
- Started by asking specific questions
 - How is this document traded?
 - Can I see an example of data flow?
 - Where is the document originating?



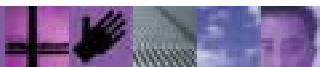
A Production Troubleshooting Example 1 Contd.

- How does it get to WPG?
- What is the impact of failure?
- The zero byte files in the file system with new names, do they mean something?
- Has the name changed and does anyone know the process?



A Production Troubleshooting Example 1 Contd.

- Logged into the production console
 - Went to viewers / event viewers and did a search on 2/20/06 between an hour window for all transactions
 - Viewed the result set
 - No obvious errors/warnings that could relate to the partner A or partner B XML document
 - Saw no trading with any source or target between partner A and /or partner B



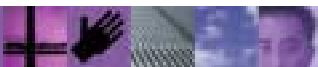
A Production Troubleshooting Example 1 Contd.

- Saw some errors between different partners X and Y but irrelevant to problem in hand
- Shifted search in Document Viewer and searched on 2/20/06 for that time range
- Same result
- Repeated the above for 2/22/06
- Same result



A Production Troubleshooting Example 1 Contd.

- Sat back and gave some more thought
 - Why do I not see any trading of any documents on that day between partner A / partner B ?
 - In the search criteria I tried to locate partner A or B but could not find. Closest was partner X. Is this same as partner A?
 - I need to look at all the trading partners in WPG...
 - Did a listing of participants...still no partner A or B
 - Are they even trading through WPG?



A Production Troubleshooting Example 1 Contd.

- Printed the participants list and asked for identification of partner in question
- Told that the partner in question was were not listed
- Requested some documentation on the trading activity between partner A and B since there is no evidence of any success or failure between the two in WPG
- Eventually received a diagram



A Production Troubleshooting Example 1 Contd.

- Diagram showed Partner A sending XML documents to WebMethods which are sent to the mainframe. FTP program picks it up and drops it to the file system and sends it to ICS and then to partner B
- WPG did not exist in this scenario
- Not a WPG related problem
- Gave other non WPG related troubleshooting tips



A Production Troubleshooting Example 2

Sample problem in hand in Development and QA

- Description of the problem
 - Multiple but similar problems occurring in the development and QA environment
 - In QA no incoming transactions working for one partner
 - Partner receiving error when posting document
 - Perception: WPG is failing documents in QA



A Production Troubleshooting Example 2 Contd.

Error Message:

Cannot post message null null

java.net.ConnectException: Operation timed out:

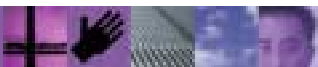
connect

at java.net.PlainSocketImpl.socketConnect(Native
Method)

at

java.net.PlainSocketImpl.doConnect(PlainSocketImpl.
java:345)

at



A Production Troubleshooting Example 2 Contd

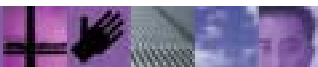
- In development no incoming http requests coming in for any partners
- Posting partners receiving an HTTP 408 error



A Production Troubleshooting Example 2 Contd

Approach taken:

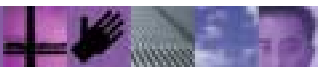
- Are the problems in development and QA related?
- Looked into viewers in the console and no activity recorded
- No error reported in the logs in QA
- In development receiver log timeout errors are seen



A Production Troubleshooting Example 2 Contd

Approach taken for QA

- Asked if any configuration change was implemented for this partner...answer was no
- Asked if a firewall rules got changed for this partner....answer was maybe
- Further investigation revealed that a firewall change was implemented and that was when the problem started. The rule was taken out and the QA problem went away.



A Production Troubleshooting Example 2 Contd

Approach taken for Development

- Since the firewall rule change fixed the QA environment the same questions were asked for dev. The rules happened to be correct and did not fix the problem in dev
- Asked if anything else got changed and the answer was no
- Since there was timeout error in the receiver log and no logging in the router it appeared that the document was not being picked up by the router



A Production Troubleshooting Example 2 Contd

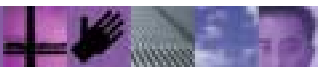
- Further investigation revealed that the receiver was persisting the messages to a different directory while the router was polling the sync_in folder
- There was a custom java process that was being used to do some encryption/decryption before moving the files across directories
- The custom java process was down
- Hence all incoming documents were failing
- Not a WPG problem



A Production Troubleshooting Example 3

Sample problem in hand

- Description of the problem
 - A new partner added to the environment and cannot send documents to the partner via https.
 - Partner gets an error



A Production Troubleshooting Example 3 Contd

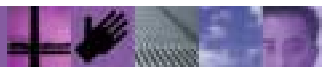
➤ The following errors shows in WPG router log
.....First delivery attempt failed for message
1133893040442000B1700F1001327228D0A71A48DD
913372 due to
'com.rsa.ssl.AlertedException : An Alert was received:
Bad Certificate',
on gateway 'CompanyA@[unspecified]' (id=493).....



A Production Troubleshooting Example 3 Contd

Approach taken:

- Checked the validity of the certs and they were valid
- Inquired if using SSL Client authentication for outbound document and the response was yes
- Turned SSL debug on by setting the property “bcg.http.SSLDebug = true” in the properties of router
- Restarted WPG and reviewed the trace
- Asked about the procedure used to upload the private key in the console and the response was the developer who did that was no longer working



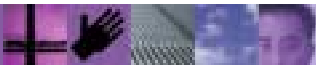
A Production Troubleshooting Example 3 Contd

- Inquired if steps were documented somewhere and the response was no
- Had the team export the certificate and the private key in a PKCS12 format file and upload in the console
- Restarted WPG
- It worked!
- Not a WPG software related problem!



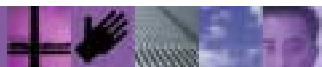
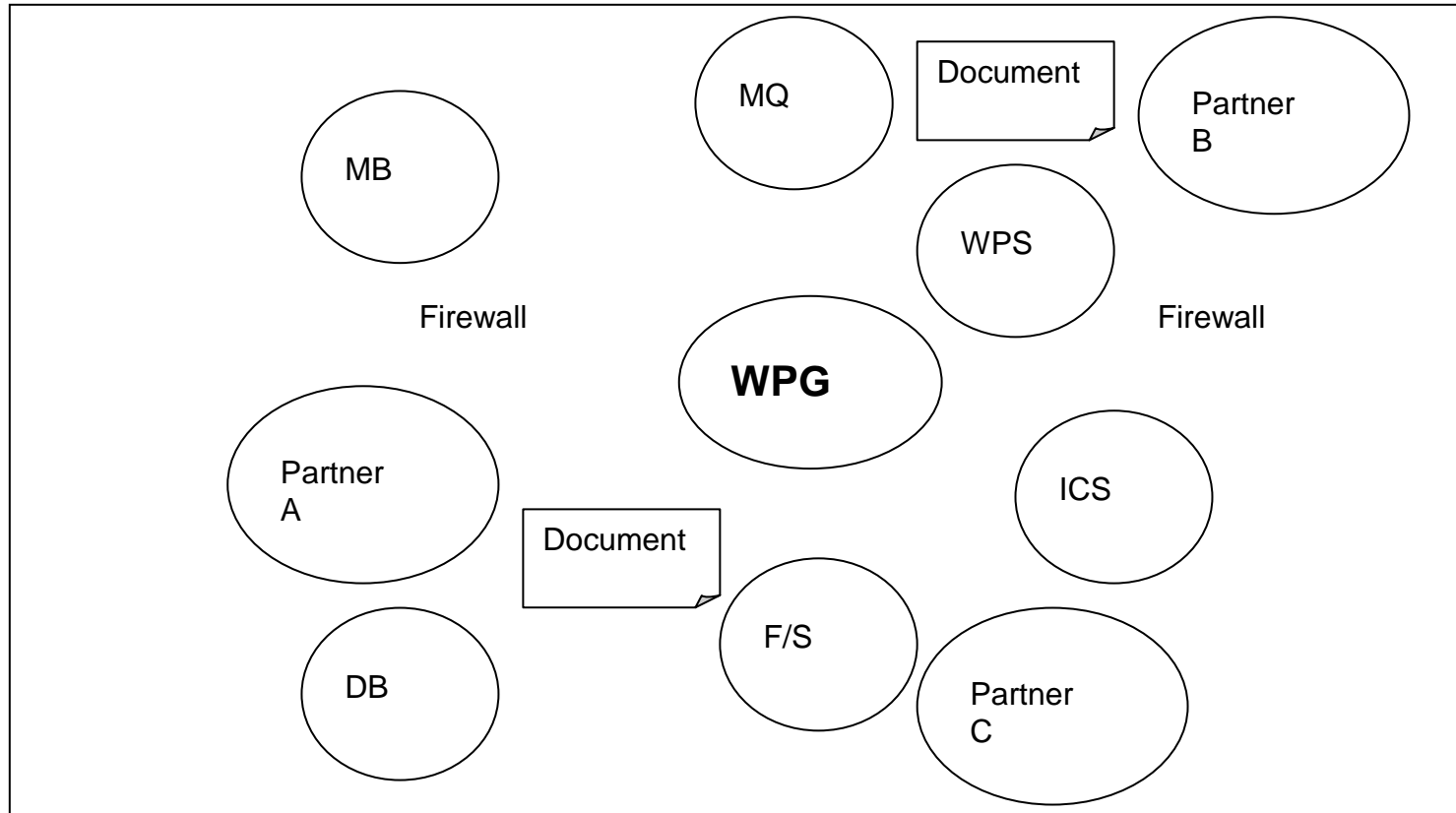
Troubleshooting WPG

- >50 % of daily operational problems are non WPG software related
- Usually WPG is in the center of all



Troubleshooting WPG

WPG ENVIRONMENT



Troubleshooting Approach

Why WPG transactions could be failing while there might be nothing wrong with WPG itself?

- Network down
- Firewalls rules change
- Badly formed payload
- Partner site down
- Incorrect configuration in WPG console
- Incorrectly defined security



Troubleshooting Approach

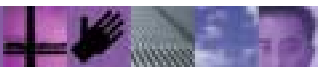
- 'Other' integrated software – ICS, MB, DB, MQ, WPS etc.
- Custom code
- File system
- Transaction does not belong to WPG



Review Of Steps For Troubleshooting The WPG Environment

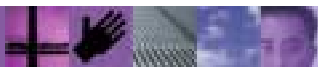
What to do when the phone call or the email arrives with the phrase: “WPG is down” or “WPG is failing”?

- Ask Questions
- Do not assume anything first
- Look for documentation – data flow, trading scenario, partner profile
- Step by step approach
- Make assumptions if any
- Validate the assumptions



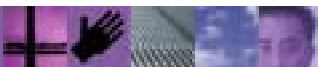
Review Of Steps For Troubleshooting The WPG Environment

- Is this problem really a problem?
- Is WPG running?
- Is it a WPG issue or another component?



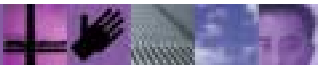
Review Of steps For Troubleshooting The WPG Environment

- Console viewers: depending on the document type
 - AS1/AS2 viewer
 - Document viewer
 - Event viewer
 - Test participant connection



Review Of steps For Troubleshooting The WPG Environment

- Server logs – Receiver and Document manager
 - SystemOut.log
 - SystemErr.log
 - startServer.log
 - Wpg_console.log, wpg_receiver.log, wpg_router.log
 - Trace level to debug
 - Rolling File maximum size and number



Review Of steps For Troubleshooting The WPG Environment

- Test connectivity
- Trade sample document
- Check firewall rules
- Check network
- And if all else fails.....



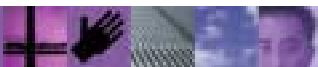
Review Of steps For Troubleshooting The WPG Environment

-
- Make friends with the network administrator. He will be your last resort before you are ready to make that call to open the PMR.
 - Study the document flow and create checkpoints where you think network activity needs to be captured and sniffers need to be placed. Work with the network administrator and understand the sniffer trace files. You could install ethereal on your laptop and do a little bit of research yourself!



Review Of steps For Troubleshooting The WPG Environment

- If things are still failing and you do not have an answer then collect all the necessary logs and error messages (with debug turned on)
- Make that call to open a PMR and send the logs to the support



Using Ethereal With Sniffers

The screenshot shows the Ethereal network sniffer interface. The top window displays a list of captured packets with columns for No., Time, Source, Destination, Protocol, and Info. Below this, a detailed view of a selected packet (Frame 1) is shown, including Ethernet II, Internet Protocol, and Transmission Control Protocol details. At the bottom, a hex dump of the packet data is visible.

No.	Time	Source	Destination	Protocol	Info
2	0.002297	156.65.31.39	164.39.179.31	TCP	57080 > 30057 [RST, ACK] Seq=0, Ack=1, Win=6384, Len=0 MSS=512
3	0.019621	164.39.179.31	156.65.31.39	TCP	30057 > 57080 [ACK] Seq=1, Ack=1, Win=65535, Len=0
4	0.048991	164.39.179.31	156.65.31.39	TCP	30057 > 57080 [ACK] Seq=1, Ack=1, Win=65535, Len=512
5	0.054821	164.39.179.31	156.65.31.39	TCP	30057 > 57080 [ACK] Seq=513, Ack=1, Win=65535, Len=512
6	0.098761	156.65.31.39	164.39.179.31	TCP	57080 > 30057 [ACK] Seq=1, Ack=1025, Win=6384, Len=0
7	0.144037	164.39.179.31	156.65.31.39	TCP	30057 > 57080 [ACK] Seq=1025, Ack=1, Win=65535, Len=512
8	0.146965	164.39.179.31	156.65.31.39	TCP	30057 > 57080 [PSH, ACK] Seq=1537, Ack=1, Win=65535, Len=198
9	0.325931	156.65.31.39	164.39.179.31	TCP	57080 > 30057 [ACK] Seq=1, Ack=1735, Win=6384, Len=0
10	0.058331	156.65.31.39	164.39.179.31	TCP	57080 > 30057 [ACK] Seq=1, Ack=1735, Win=6384, Len=512
11	0.1394042	164.39.179.31	156.65.31.39	TCP	30057 > 57080 [ACK] Seq=1735, Ack=513, Win=65535, Len=0
12	0.194480	156.65.31.39	164.39.179.31	TCP	57080 > 30057 [ACK] Seq=513, Ack=1735, Win=6384, Len=512
13	0.194496	156.65.31.39	164.39.179.31	TCP	57080 > 30057 [PSH, FIN, ACK] Seq=1225, Ack=1735, Win=6384, Len=229
14	0.441321	164.39.179.31	156.65.31.39	TCP	30057 > 57080 [ACK] Seq=1735, Ack=1255, Win=65535, Len=0
15	0.442960	164.39.179.31	156.65.31.39	TCP	30057 > 57080 [PSH, ACK] Seq=2735, Ack=1255, Win=65535, Len=0
16	0.443181	156.65.31.39	164.39.179.31	TCP	57080 > 30057 [ACK] Seq=1255, Ack=1736, Win=6384, Len=0
17	0.017389	164.39.179.31	156.65.31.39	TCP	30057 > 57080 [RST] Seq=0, Ack=0, Win=65535, Len=0 MSS=512
18	0.018534	156.65.31.39	164.39.179.31	TCP	57080 > 30057 [RST, ACK] Seq=0, Ack=1, Win=6384, Len=0 MSS=512

* Frame 1 (62 bytes on wire, 62 bytes captured)
 * Ethernet II, Src: xylapix_0a:00:d9 (00:90:2d:0a:00:d9), Dst: nokiaint_34:5a:af (00:10:0e:34:5a:af)
 * Internet Protocol, Src: 164.39.179.31 (164.39.179.31), Dst: 156.65.31.39 (156.65.31.39)
 * Transmission Control Protocol, Src Port: 30057 (30057), Dst Port: 57080 (57080), Seq: 0, Ack: 0, Len: 0

```

0000  00 40 8e 34 5a af 00 90 2d 0a 00 d9 00 10 0e 34 5a af  ...42...  ----S-
0010  00 30 b6 3d 40 00 74 06 37 0b a4 27 13 1f 9c 42  .0.=B.2. P...A
0020  3f 27 75 69 8e f8 43 7b 27 f9 00 00 00 00 70 02  .af..C| .....P-
0030  ff ff 50 9a 50 00 02 04 01 04 01 04 02
  
```

Helpful Application Documents

- Problem Determination flow
- Architecture Diagrams
- Component Diagrams
- Trading Scenarios between partners



Summary

- Troubleshooting the WPG environment does not mean it has to be a problem with WPG
- Follow a systematic approach for all your troubleshooting. Ask the right questions
- Refer to the application document flows and the system architecture.
- Get the problem resolved!



Helpful Documentation

Redbooks

- ***B2B Solutions using WBIC v4.2.2,***
<http://www.redbooks.ibm.com/abstracts/SG246355.html?Open>
- ***Secure Production Deployment of B2B Solutions using WBIC,***
<http://www.redbooks.ibm.com/abstracts/SG246457.html?Open>
- ***B2B Solutions using WPG v6.0,***
<http://www.redbooks.ibm.com/redpieces/abstracts/sg247109.html?Open>

WBIC / WPG Articles

- <http://www-306.ibm.com/software/integration/wspartnergateway/library/infocenter/>



Questions

- Please complete your session evaluation
- Thank you

