IBM Software Group

2005 B2B Customer Conference

Pioneering New Horizons – Solutions that Evolve

WDI in a HACMP Environment

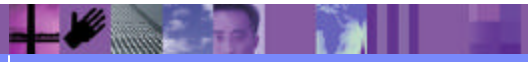
John L. Hatfield

WebSphere. software

ON DEMAND BUSINESS

Objectives

- Introduction/Requirements
- Review what a HACMP Environment is
- Concept of an EDI Server
- DB2 Choices
- MQ Adapter Choices
- Setup of the Environment
- Testing of the Environment
- Starting and Stopping WDI on AIX
- Lessons Learned

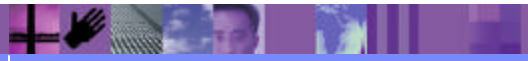


Introduction/Requirements

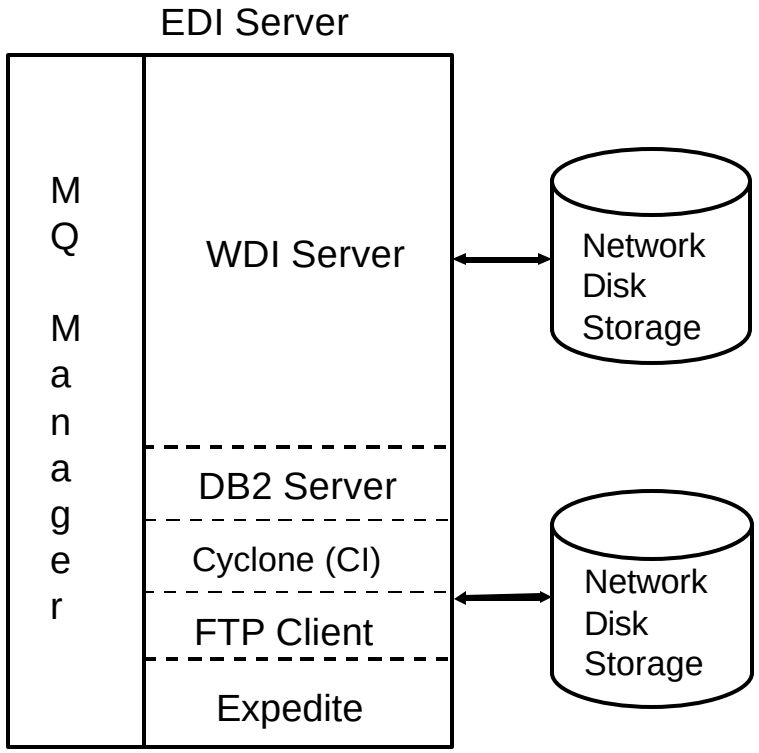
- EDI is critical to the success of the business
- EDI must be working 24X7X365
- A budget for hardware and software is required
- A Support Team to build and test AIX on your HACMP Environments
- You are monitoring the ENVIRONMENT NOT the applications.

What a HACMP Environment IS

- High Availability Cluster Multiprocessing (HACMP)
- Both Hardware and Software (AIX)
- Failure Detection and Automated Recovery to Redundant System
- Switching Back to Primary System is Automatic or Manual (Ping-Pong Effect)
- Your Monitoring the System NOT the Applications that run on it (like WDI)



Concept of an EDI Server



DB2 Choices

- DB2 Server on Same Platform as EDI Server
  - Pro's

    Better Performance
  - Con's

    Down when WDI Server is down

    Whom to monitor/admin DB2?
- DB2 Server on Separate Platform from EDI Server
  - Pro's

    Up Even while EDI Server is down

    DB2 Group to Admin/Monitor?
  - Con's

    Slower Performance

MQ Adapter Choices

- WDI Adapter
  - Pro's

    Simple to Understand
  - Cons'

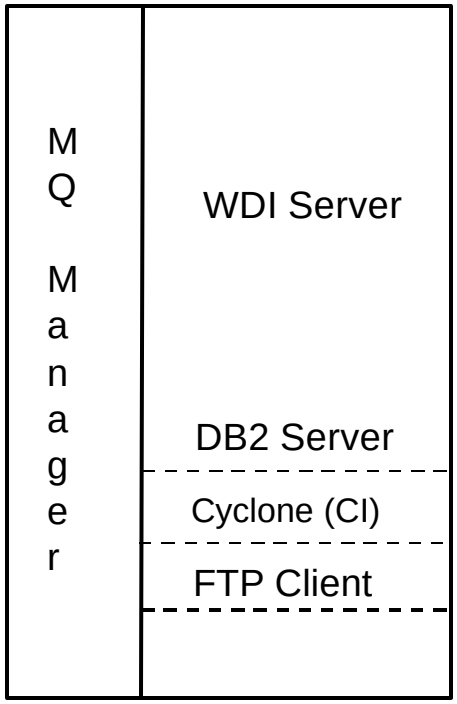
    Starts WDI each time
- WDI Advanced Adapter
  - Pro's

    WDI is always running

    Growth Potential
  - Con's

    Setup is more complex

Setup of Environment



Testing of the HACMP Environment

- 8 Test cases
  1) Stop EDI Server 1 Normally – EDI Server 2 takes over
  2) System Crash on EDI Server 1 – EDI Server 2 takes over
  3) With Inbound data flowing, stop EDI Server 1 – Let EDI Server 2 take over
  4) With Inbound data flowing, crash EDI Server 1 – Let EDI Server 2 take over
  5) With Outbound data flowing, stop EDI Server 1 – Let EDI Server 2 take over
  6) With Outbound data flowing, crash EDI Server 1 – Let EDI Server 2 take over

Testing of the HACMP Environment

7) With Inbound AND Outbound data flowing, stop EDI Server 1 – Let EDI Server 2 take over

8) With Inbound AND Outbound data flowing, crash EDI Server 1 – Let EDI Server 2 take over

NOTE: Start Up and Stop scripts have to be written in order to start/stop the applications

WDI Start Up Script

- Sample WDI Start Up Script

```
export WDISERVER_PROPERTIES=/usr/wdi/run/wdi.properties
cd /usr/wdi/run
rm nohup.out
nohup /usr/wdi/DIv32/bin/WDIServer &
```

WDI Stop Script

- Sample WDI Stop Script

```
#! /bin/ksh
#
# Stop WDI
WDIPID=`ps -fu wdi|grep WDIServer|grep -v grep|awk '{print $2}'`
cd /usr/wdi/run
/usr/wdi/DIv32/bin/WDIShutdown
while [ ${WDIPID}X != X ]
do
  echo "WDI Server is running (PID $WDIPID)"
  echo "Please wait while WDI is closed down.  This may take a while..."
  sleep 5
  WDIPID=`ps -fu wdi|grep WDIServer|grep -v grep|awk '{print $2}'`
done
#
```

Lessons Learned

- Users Ids between the two boxes are separate
- Anything on the Local Hard Disk doesn't Switch
  - /usr/home/userid – Data didn't switch
  - /etc
- First Test Case Takes the longest (Start and Stop Scripts)
- DB2 has to be catalog on each system (if not local)
- WDI needs time to shutdown. Issuing the command is only the start of the process. Write script to maintain control.
- WDI, when crashed, will leave behind directories and files when using the Advanced Adapter
- Make sure MQ has Persistent set on. Either at the data or the queue level.

Lessons Learned (cont)

- Use Queues as much as possible. File system, even networked, lead to problems
- Upon start up of the backup system, messages waited over two hours before WDI started processing the files. Why? DB2 timeout value too large. Changed to 10 minutes.
  - Changed tcp_keepidle to 540 with command

    no -o tcp_keepidle=540
- Switching between systems (EDI 1 to EDI 2) takes several minutes.

Summary

- HACMP not end all solution
  - Covers Hardware/OS Failure ONLY
- Choose DB2 Configuration Carefully
- Choose MQ Adapter
- Setup Defined Environment
- Test, test, test
- Document Everything
  - Before, During, After (lessons learned)