Diagnostic Best Practice in
Micro Focus Enterprise Server

Testing and Diagnostic information and recommendations in
Enterprise Server

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Testing Recommendations

- Have a 'Model office' test system

- 'Model Office' says that it is as close to the actual production system as possible including aspects such as all 3rd party software, OS levels (including any VM's) and can perform production load and stress testing

Testing Recommendations

- Execute Performance, stress and load testing before going into production

- *We recommend that you perform this initially with MF diagnostics turned on*

- Ideally performance in production will be acceptable with diagnostics turned on to facilitate efficient first point of failure data capture

- The amount of diagnostic information collected can be reduced once a stable state has been achieved – this also allows any performance change to be gauged

Testing Recommendations

- Execute parallel testing with existing system

- Otherwise do a full test over an extended period of several days with the full environment and load if possible – make sure such aspects as security are in place and fully used

- For this type of testing look to possible recordings of scenarios from the current production system to be able to playback on the new system

- Performance testing should always be done with well understood benchmarks, our recommendation for tuning is to only change one variable at a time to measure the effect

Testing Recommendations

- Test that you know all about diagnostics capture

- Make sure that you know what do the various diagnostics settings do and when should they be used

- How they are configured

- What output they produce and where it is located

- *It is vital that anyone that is responsible for the management of the system has been trained in this area. If you are unsure or need training then please ask Micro Focus*

Production Failure Handling

- 2 important jobs:

- Recover the system quickly and

- Capture the diagnostics generated by the failure and report them to Micro Focus

Production Failure Handling

- Always raise an incident using either the web interface or freefone line

- *Never rely on email, messages left on voicemail or personal contacts*

Production Failure Handling

- Use 'MFESdiags' or similar scripts to capture the full diagnostics

- Name the file using the following convention:
- NNNNN.DDDDDD.TTTTTT where
  - NNNNN = the incident number raised with MF to cover this problem report
  - DDDDDD – today's date in format YYMMDD
  - TTTT = time in 24 hour format i.e. 2200 for 10.00p.m. or 0100 for 01.00a.m.

- *This is important if we need more than one diagnostic collection for a particular incident, the date and time distinguishes each separate collection and shows us the latest/earliest*

Incident Information

- A high quality incident should have:

- An accurate short description of the symptom

- A long description that is full and complete, it should cover the circumstances and context of the failure

- Provide as much context and detail as possible, if you are unsure whether it is relevant provide it anyway

- Include important details such as chronology, symptoms, configuration, workload levels and 3rd party software involved

- *High quality initial incident reporting can considerably shorten the time that it takes to a solution*

Incident Information

- Always include relevant diagnostics on the initial report. A good set of diagnostics is:

- Uploaded to the MF ftp site or attached to the incident using the naming convention in 'Production Failure Handling' slide.

- Complete – includes traces, dumps, console and other relevant logs.

- Is from the same failure – submitting a console log from Tuesday, a trace from Wednesday and a dump from Thursday does not help as none of the process numbers or details will match.

- Includes details (probably in the long description) of the failure with particular attention to the date/time of the failure, when it started, what symptoms it demonstrated and did it recover or was manual intervention required?

Ongoing Observations

- If you believe that a problem reoccurs on a system:

- Always capture a new set of diagnostics – multiple sets may help us see 'patterns'.

- Update the existing incident number that the problem was reported on.

- Add comments to the incident detailing the date/time of the new failure, why you think it is a reoccurrence of the same problem and as much other context on this new failure as possible, including the similarity with previous failures.

- Supply the diagnostics to MF using the naming convention for the zip file as detailed in the 'Production Failure Handling' slide.

Diagnostics Available

- Types of diagnostics available:

- Traces and Logs
  - record events over a time period
  - Can be configured for different levels of output

- Dumps
  - a 'snapshot' of the system at a particular time
  - Can be a manual or automatic (at failure time)

- External Information
  - Environment and other OS-specific information

Traces and Logs

- Configurable:
  - Trace can be configured to record some or all types of events
  - Different types of problems require different types of tracing
  - More tracing causes more overhead – balance what is needed for a problem against the performance needs.
- Size:
  - Trace output can be voluminous
  - Some traces have disk files that swap with each other
  - Event details can be overwritten if a problem is initially missed
  - Important to know immediately when a problem occurs and to capture the trace datasets at that time
- Trace and Logs available without initial configuration
  - Console.log
  - Communications log (log.html)
  - MFDS log (journal)
- Trace and Logs requiring configuration
  - Auxiliarly Trace
  - CTF Trace (Common Trace Facility)
  - Fileshare

Default Logs

- Console log - main log for the region
  - This should always be captured
  - It records the system startup, activity and other events.
  - Can also be written to by user application programs

- Communications logs (MFCS comms component)
  - Shows initial listener startup connections/ports
  - Records http connections

- MFDS Journal.log (MFDS component)
  - Records connections to the Directory Service
  - Useful for investigating startup and security problems

Configurable Traces

- **Auxiliary Trace**
  - Requires 'Aux Trace Active' to be set
  - Writes to the trace files CASAUXTA and CASAUXTB
  - Requires specific trace flags to be selected
    - Usually configured from the ESMAC screens, but can be configured using the 'CTRA' transaction from a 3270 session
    - Examples of trace flags are Application (API), storage control (SCP), Application Container (RTS)
- **CTF Trace**
  - Requires a configuration file and is used for most of the components outside of the main Enterprise Server engine
- **Fileshare Trace**
  - Specialist tracing of the transactional file handler technology that also requires configuring
- **Other tracing:**
  - Other tracing can be required for various components, generally the direction is to use more CTF tracing but this is only a direction and changing slowly over time

Dumps

- Dump details

- Dumps are taken at different levels, local and system wide

- Dumps can be large but are usually a manageable size

- Dumps do not generally add any overhead to a system, the standard practice should be to take one if any problem occurs

- Dumps can be taken from the ESMAC page or from the command line using the CASDUMP command

- There are Different types of dumps including those for the system and for IMS – it is important to know what is available and to capture all forms

Further Information

- Microfocus SupportLine Site
  - http://supportline.microfocus.com/
  - Microfocus Community Site
  - http://community.microfocus.com/
- Contact:
  - **SupportLine Assistance**
    UK Freephone: 0800 783 5674
    US Freephone: 1800 632 6265
    E-mail: supportline@microfocus.com
- Microfocus home page
  - http://www.microfocus.com/