Continuous Server Analysis

Keeping ColdFusion Servers Healthy!

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A Day in the Life…

- How often do you have server problems?
  - Server stops responding?
  - Requests take too long?
  - ColdFusion using too much memory?
  - To name just a few

- How do you identify, diagnose, and resolve such problems?
  - What resources do you use? Logs? Tools?

- How often do you watch out for trouble?
  - Do you know of problems before your users?
Continuous Server Analysis

- You don’t need to wait for the server to crash
  - Creates high stress, has high costs
- Continuous Server Analysis
  - Methodology of processes, tools
    - to monitor, tune, stabilize, maintain CF servers
  - Server, application, page performance/stability
    - examined on a regular basis
  - Leading to the identification of
    - problem areas, action plans, feedback to dev/support

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Presentation Focus

- Resources available to Analyze
  - Logs and tools
  - Built into CF and external

- Some common problems found

- Simple methodology of monitoring

- Also, special announcement/demo, near end, of powerful new tool coming soon
  - Even without that tool, resources shared here may bring great new insight

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About Charlie Arehart

- Independent consultant since April 2006
- 11 yrs CF experience (26 in Enterprise IT)
  - Member, Adobe Community Experts
  - Certified Adv CF Developer (4 - 7), Cert. Adobe Instructor
  - Writer in CFDJ, FAQU, Adobe DevCenter, more
  - Contributor to all three Ben Forta CF8 books
  - Frequent speaker to user groups, conferences worldwide including CFUnited, cf.Objective, webDU, webManiacs, et al
  - Run the Online ColdFusion Meetup (coldfusionmeetup.com)
  - Living in Alpharetta, Georgia (north of Atlanta)
About Charlie Arehart

- Web home at www.carehart.org
  - 200+ blog entries, 60+ articles, 70+ presentations, more
  - UGTV: recordings of preso’s by nearly 200 CFUG speakers
- Resource Lists:
  - Tools/Resources to Consider:
    - Over 400 tools/resources in 40 categories
  - Many other resource lists for CFers
- Consulting: available for troubleshooting, tuning, training
  - For as few as days, hours, or even minutes; remote or on-site
Resources for CF Server Monitoring

- There are many resources
  - Some free, some commercial
  - Some work with CF, some are not specific
- What are some resources?
  - Logs
  - Tools
  - Other

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Log Analysis
CF Logs

- [cf]\logs
  - application.log
  - derby.log (cf8)
  - eventgateway.log (cf7 Ent., 8)
  - exception.log
  - flash.log
  - mail.log
  - monitor.log (cf8 Ent.)
  - print.log (cf8)
  - scheduler.log (if enabled in Admin)
  - server.log

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CF Logs (cont.)

- [cf]\runtime\logs
  - Or in Multiserver (Multi-instance) mode, [jrun4]\logs
  - -event, -err, -out logs

- Note
  - Can modify CF so that different files hold different log info levels (info, debug, metrics, etc.)
  - See http://blog.daemon.com.au/archives/000277.html (and others) for how to edit [cf]\runtime\servers\coldfusion\SERVER-INF\jrun.xml
CF8 Logging Options

- **Debugging & Logging>Logging Settings**
  - “Log slow pages taking longer than X seconds”
  - “Enable logging for scheduled tasks”

- **Server Settings>Mail>Mail Logging Settings**
  - “Error Log Severity”
  - “Log all mail messages sent by ColdFusion”

- **Datasource “Advanced Settings”**
  - “Log Activity”
  - Writes substantial amount of data about connection to database, including all data returned
  - Note: need to name directory AND filename
CF8 Logging Options (cont.)

- Interesting option for Derby Datasources:
  - CF Admin Datasource setting> “Advanced Settings”>“Connection String”
    - derby.language.logQueryPlan=true
    - Writes to [cf]\logs\derby.log
Other Logs

- Web Server Logs
- Windows Event Viewer
- FusionReactor logs (more later)
Free Generic Logging Tools

- Universal Viewer (ATViewer)
  - http://www.uvviewsoft.com/
- Log Parser (free, from Microsoft)
  - http://www.logparser.com
- BareTail, to view logs as they’re added to, live
  - http://www.baremetalsoft.com/baretail/
- Sawmill Universal Log File Analysis & Reporting (not free)
  - http://www.sawmill.net/
- Many web server log analysis tools
  - Google Analytics
  - AWStats (awstats.sourceforge.net), etc.
Monitoring Tools
Free CF-specific Monitoring Tools

- **CFStat**
  - Command line tool, found in [cf]in\
  - New –x argument in CF8
- **CF Performance Monitor stats**
  - Windows tool, but with CF-specific info

**Note:**
- Previous two be enabled in CF Admin (debugging page)
- `GetMetricData("perf_monitor")`
Free CF-specific Monitoring Tools (cont.)

♦ JRun metrics
  - Can be enabled on any CF edition (6-8) to add a line at regular intervals to track current state
  - More at:
    - http://tutorial351.easycfm.com/
    - http://www.adobe.com/go/tn_19120
    - http://www.bpurcell.org/blog/index.cfm?mode=entry&entry=991

♦ System Probes (in Enterprise)
  - CFAdmin Debugging&Logging>System Probes
Free CF-specific Monitoring Tools (cont.)

CF8 Server Monitor (CF8 Enterprise, Developer editions)

- See my 4-part article series in the Adobe Dev Center, starting at:
- Only available with CF8 Enterprise
  - Can only monitor CF8 Enterprise servers
Commercial CF-specific Monitoring Tools

- **FusionReactor**
  - [http://www.fusion-reactor.com](http://www.fusion-reactor.com)

- **SeeFusion**
  - [http://www.seefusion.com](http://www.seefusion.com)

- These both work with CF 6, 7, and 8
  - Both have free trials
About CF-specific Monitoring Tools

- All 3 CF monitors really open the black box of CF
  - See all currently running requests
  - Can terminate long-running ones
  - View past long-running requests (while server is up)
  - See details of each queries executed in request
  - See “stack trace” to view line of code being executed
- CF8 monitor can view all sessions, applications, and more
- FR and CF8 monitor can be configured to send email notifications of problem states
  - Requests taking too long, too little memory, etc.
- FusionReactor also
  - Writes out substantial log files
  - Can run scripts when monitored server stops/starts
  - And much more
Generic Server Monitoring Tools

- Windows Task Manager
- SysInternals Process Explorer
  - Powerful replacement for Task Manager
- Windows Performance Monitor
- SysInternals Process Monitor
  - Combines former Filemon, Regmon tools
Database Monitoring Tools

- Consider tools available for databases
  - **Free**
    - SQL Server Profiler/Trace
    - Spotlight on MySQL
  - **Commercial**
    - Spotlight on SQL Server (others for DB2, Oracle, etc.)
    - MonYog (for MySQL)
  - Others exist as well, of course
Problem Analysis
Some Common Problems

- CF stops responding (but now down)
  - Use monitoring tools to see what requests are running
- CF runs out of memory
  - Use monitoring tools to view use within server
- Requests taking too long
  - Use monitoring tools to view details of request
  - Optionally view “stack trace”
  - Optionally terminate requests

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Some Common Problems (cont.)

- **Client variable purge process**
  - CF will purge registry, databases every 67 mins by default
  - Could take a long time if repositories have become huge
    - Could be caused by spiders

- “Timeout Requests after x seconds” may not timeout all long-running requests
  - In CF Admin>Server Settings>Settings
  - Does not stop requests while talking to resources outside of CF:
    - CFQUERY, CFHTTP, web services, etc.
Some Common Problems (cont.)

♦ File Upload issues before CF8
  ▪ Prior to CF8, files upload to CF were held in memory—and NOT released after request
  ▪ Hotfix for 7.02  available (not in CHF)
    • http://www.adobe.com/go/kb401239

♦ To name just a few …
Resources for CF Tuning

- Grant Straker’s “ColdFusion MX: Performance Troubleshooting and Tuning Guide”
  - Website and accompanying PDF ($50)
  - http://www.cfperformance.com/

- Bloggers prone to write about CF troubleshooting, tuning
  - “Sarge” - http://sargeway.com/blog/
  - Brandon Purcell - http://www.bpurcell.org/blog/
  - Steven Erat - http://www.talkingtree.com/blog/

- ColdFusion 8 Performance WhitePaper
Resources for CF Tuning (cont.)

- Meta-resources (pages pointing to others)
  - http://blog.pixl8.co.uk/index.cfm/2006/12/29/Coldfusion-Tuning-links

- Some specific classic entries
  - http://www.robsen.com/index.cfm?mode=entry&entry=FD4BE2FC-55DC-F2B1-FED0717CC1C7E0AF
  - http://www.petefreitag.com/articles/gctuning/
Resources for CF Troubleshooting

♦ 3-hour FusionReactor classes
  ▪ http://www.fusion-reactor.com/services/traininginformation.cf
♦ My day-long class at CFUnited
  ▪ CF911: Solving CF Performance and Reliability Problems
    • http://teratech.com/go/training/class-schedule?trainingaction=detail&TID=332
What this talk has not covered

- CF Admin tuning settings
  - Simultaneous requests
  - Request throttling, size limits (new in 7)
  - Template cache control, Trusted Cache
  - Save Class Files
  - Cache web server paths
  - Query cache control
  - Client Variable mgt (default storage, “Disable global client variable updates”, purge interval)
  - Session/Application variable default timeouts
  - Java and VM tuning
  - Datasource config tuning
  - Disabling debugging (in prod)
What this talk has not covered

- Client-side proxy/request monitoring tools
  - Fiddler (free)
    - http://www.fiddlertool.com
  - Firebug (free)
    - http://www.getfirebug.com/
  - Yslow (free)
  - Many others listed at http://www.carehart.org/resourcelists/tools_to_consider/index.cfm
Monitoring
Methodology
A Simple Monitoring Methodology

- Interactive
- Daily
- Weekly
- Monthly
- Quarterly
- Yearly
So Where Does that Leave Us?

- So the logs and tools are there
  - And it’s a fair bit of work to watch it all manually
- What if you had a tool to help do it all for you?
  - ...
FusionAnalytics

- New tool coming from Intergral
  - Makers of FusionReactor
- Powerful tool that solves problem of server analysis over CF restarts
  - Saves you the hassle of reading log files
  - Does powerful analysis across many logs
    - CF
    - FusionReactor
    - Others will be added
- Designed to permit you to point to new logs
- Let’s see a demo

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FusionAnalytics

♦ Some other features
  - Can add your own logs to analyze
  - Can add your own indicators of “annotations”
  - Can build your own queries to analyze data

♦ The tool is only in Alpha now
  - Improving dramatically by the day!
  - Contact sales@fusion-reactor.com
Summary

- There are many logs available to help
  - Some in CF, some outside of it
  - Some are optional, or can be configured
- There are tools to help view logs
- There are tools to monitor CF interactively
- We need to monitor these things continuously
  - Could follow a methodology of regular analysis
- FusionAnalytics will really help with this task
Questions On Presentation

♦ Charlie Arehart
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♦ I’d really appreciate your feedback
  ▪ http://carehart.org/feedback/

♦ Also available for troubleshooting, training, consulting
  ▪ Also other developer productivity coaching, system admin and tuning support, and more
  ▪ For as few as days, hours, or even minutes; remote or on-site