BECOME AN APPLICATION SUPER-HERO

MINIMIZE APPLICATION DOWNTIME AND ACCELERATE TIME TO RESOLUTION

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INTRODUCTION

• For those new to FusionReactor, why it’s so valuable for server troubleshooting
• For those already using it, show what’s coming in FR 6
• Show what’s coming in new FR 6 Cloud deployment option
• Show what’s coming in new Production Debugger (PD) feature
• All due to be released in coming months…and so worth the wait
  • Engineers have spent man-years of effort in development
  • Most heavily tested FR version yet
ABOUT INTERGRAL

- Intergral GmbH, founded in 1998
- Headquarters located in the Technology & Business Park, Stuttgart, Germany
  - Other offices in UK (Intergral Ltd. - 2008), USA (Intergral Inc. – 2011)
- Global customer base – 4500+ customers – 15,000+ servers
- FusionReactor celebrating its 10\textsuperscript{th} anniversary next month
- Frequent sponsor, contributor to CF events around the world
FR INTRODUCTION

• Most of session will be live demos of what’s new
• But a few key points of intro for those new to FR
• Why do we even consider monitors?
  • Most think it’s to see “what’s happening”
  • FR helps you understand why, helps solve problems…
WHY USE FUSIONREACTOR

- More than just a monitor!
  - You can watch what’s going on now as well as historically
    - In interface and in substantial logs, and soon in cloud-based deployment
  - FR can automatically watch for certain common problems
    - Can alert you and even possibly take protection steps
  - You can view details of a currently running request, down to line of code (stack trace)
  - All this is vital to understanding real nature of problems
- And new PD changes the game entirely. Can find and auto-fix discovered problems!
WHO CAN USE FUSIONREACTOR?

• FR is intended for use constantly on production servers
• Can monitor more than just ColdFusion: including Railo/Lucee, BD
  • Indeed any JEE server (Tomcat, Jetty, Wildfire, etc.) or Java app (including Solr, etc.)
• Low-cost license
  • Price starts at just €19/month (US$24), per server, including maintenance/updates
  • Only one license needed for all app servers/instances on a given server
  • Available 14-day free trial
• Note: demos to follow are showing FR6 beta
MONITORING FEATURES

• Running requests
• Request history (100 most recent, longest-running since startup, most recently slow)
• Database activity (cfquery, cfstoredproc, ORM, client storage, indeed any JDBC operations)
• CFHTTP processing
• Error details
• User agent, real IP address (if behind load balancer), and other headers
• Requests by return code
• Memory spaces, garbage collection, class loading, thread activity, and more
• And much more
DIAGNOSTIC FEATURES

- Stack traces
- Alerts
- Force Garbage Collection
- Daily reports
- Logs
- Enterprise Dashboard to watch multiple instances (via web or mobile apps)
STILL MANY MORE FEATURES, BUT NO TIME TO COVER THEM ALL

- Protection: kill, queue, reject requests depending on conditions
  - Interactively via interface, or automatically via alerts
- Transaction support (indicated in your code)
- User experience monitoring
- Log configurability
  - Can view most recent logs in FR interface
- Content filtering/replacement
- Content capture (incoming and outgoing)
- Compression
- 3 available levels of user access
- Installation, FRAM
- License portal
- Online help
WHAT’S NEW IN FUSIONREACTOR 6

• View memory used per request, per query, and more!
• Tracking resources by application (and sort/filter on them)
  • See especially requests, jdbc, transactions, resp code pages (activity and history)
• Enhanced session tracking, including by application (now in User menu on left)
• Optional SQL “explain”/query plan information for slow queries
• New system resource tracking
  • with details on server-wide resources (disk, cpu, memory, network, processes, and more)
• New CF Metrics and CF System Metrics
• …
WHAT’S NEW IN FUSIONREACTOR 6 (CONT.)

• Enhanced “Daily Report” and new Weekly and Monthly reports (metric summaries, restarts)
  • Configurable “end of week”, alert levels, different email recipients, and more
• Enhanced CP alert emails: new layout, tracking of running query duration, and more
• Tail feature when viewing logs within interface
• Ability to change FR instance name and port (needed for dynamic virtual server deployments)
• Java source code decompilation from within stack trace
• Some new features may be limited or not present in FR Standard
• New Ultimate edition will be added to lineup of FR Standard, Enterprise – adds PD
• And more (but we’re out of time for this topic)
COMING FR 6 CLOUD DEPLOYMENT OPTION

- New architectural model (adds to current FR deployment model):
  - The FR within your instance sends metric data to Intergral-hosted cloud platform
  - Data stored (privately, your account only) in hi-perf cloud database persistence layer
  - New form of FR interface runs in the cloud for your account
  - Data is kept far longer than FR ever could, including over restarts, weeks, months, …
  - Yet it can still view things like running requests, queries, do stack traces—and it’s all really fast!
  - And of course you can still view the FR interface offered from within your instance, as before
COMING FR 6 CLOUD DEPLOYMENT OPTION (CONT.)

- Each viewed instance shows high level overview of server health
  - And options to view details on requests, JDBC activity, threads, stack traces, etc., just like FR
- Check out other options on each instance
  - “Expand Server Window”
  - View>Resources>Graphs (and drop-down of many things to graph)
- Also expands on the traditional FR Enterprise Dashboard
  - Ability to view/group multiple servers, mark favorites
  - Various alerting mechanisms (watching for thresholds, configurable)
COMING FR 6 CLOUD DEPLOYMENT OPTION (CONT.)

- When viewing details, considerable new functionality over FR
- Provides time dimension selectability (various intervals, moving forward/back in time, etc.)
  - Yet including option to switch to “Live mode”, where data is just 2 seconds old (by default)
- Can sort and/or filter by application
  - Also new application view (view averages, maxes, last activity per app)
  - Can also set alert/alarm thresholds per application
- Can filter displays of slow requests/queries to only those above selected duration
- Can save requests, stack traces, and more for later review
- Stack trace offers option to decompile java source, as in FR 6
- And more
COMING NEW FR PRODUCTION DEBUGGER (PD)

- Radically new functionality, never before available (patent pending)
- How often have you had problems happen in prod, not recreatable in test? How to solve?
  - Traditional approaches: add debug output/logs, use FR, stack traces, etc.
  - If in development, might try to use step debugger, but tied to IDE; sometimes challenging
- What if you could have FR watch for breakpoints/conditions in running code
  - And stop a thread, for you to examine within FR—in PRODUCTION, no risk to instance!
  - While request is paused, you can step through source code, view and even set variables!
- Quick demo, then some common questions, and solutions…
COMING NEW FR PRODUCTION DEBUGGER (PD, CONT.)

- *What if I'm not looking at FR when a breakpoint or condition hits?*
  - Can have PD send you an email, telling you there’s a breakpoint hit and waiting for you
  - Can set default duration that the thread will wait to be debugged, else will proceed
- *If I can set a variable, that could fix a problem, could I just script a fix to fire automatically?*
  - YES! That’s a powerful aspect of this: not just interactive step debugging
    - but FIXING problems automatically, perhaps until a code push can resolve permanently
- *What if I don’t want to debug or script a fix, but just want to know how often trigger is hit?*
  - You can set breakpoint action to simply track (or “graph”) that it happened
What if I don’t know a line of code on which to stop? Or a variable condition to watch? Can I just trigger a breakpoint on a specific error?

- Yes you can, using error as shown in FR’s “error details” for a given failed request

What if I don’t know a line of code, but I see one in a stack trace. Can I use that?

- Yes you can, just “point and shoot” to use that as a breakpoint, as with an error

Does the email that tells me about a triggered breakpoint show all current variables/scopes?

- Yes it does. And if you want to limit that, you can (by scope, by number of vars, etc.)
- So it’s so much more powerful than just a stack trace (for those using them)
Once I setup breakpoints/triggers/actions on one server, can I copy them to another?

Yes you can. The breakpoint configuration is stored in a file that can be copied.

Can I impose limits on the debugger so it won’t ever hold up all threads/hang server?

Yes you can. There are several configurable “circuit breakers”/settings for this.

So what do you think? It’s “out there”, when first considered, but what do you think?

PD will be part of FR, but only in the new “Ultimate” edition referred to earlier.

FR6 will be released first (nearing final release), then PD and Cloud.
CONSIDER OTHER FUSION TOOLS

• No time to discuss these, but be aware of them as options
• FusionAnalytics (powerful analysis of FR data, in still more dimensions than FR Cloud)
  • For more, see fusion-analytics.com
• FusionDebug (IDE-based step debugger for CFML)
  • See fusion-debug.com
GETTING HELP WITH FR

• Can find more info on FR at fusion-reactor.com
  • Docs, technotes, videos, blog, discussion list, live demo, and more
• Don’t struggle with understanding how to install, use, solve problems with FR
  • Search, read, ask (support@fusion-reactor.com or the discussion list)
  • CFConsultant.com
• See it live, with David Tattersall or David Thacker, at sponsor booth in hall
SUMMARY

• Again, had four primary goals
  • Introduce FR, for those new to it, appreciate its power beyond “just a monitor”
  • Show what’s new and coming with FR 6, Cloud, Production Debugger
• And cover all that in under an hour!
• Did we achieve our objective?
  • Thank you, and enjoy the rest of the conference