

# 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<sup>th</sup> 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—& 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



## COMING NEW FR PRODUCTION DEBUGGER (PD, CONT.)

- *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)

## COMING NEW FR PRODUCTION DEBUGGER (PD, CONT.)

- *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](http://fusion-analytics.com)
- FusionDebug (IDE-based step debugger for CFML)
  - See [fusion-debug.com](http://fusion-debug.com)

## GETTING HELP WITH FR

- Can find more info on FR at [fusion-reactor.com](http://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](mailto:support@fusion-reactor.com) or the discussion list)
  - [CFConsultant.com](http://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