



# Keep Applications Online

And Detect & Isolate  
Application Issues & Performance Bottlenecks In No Time

## With FusionReactor 6

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# What we'll cover



- Key new features of FusionReactor 6
  - Low overhead Profiler
  - Production Debugger
- Additional FR 6 improvements
- Some FR 6 hidden gems
- Quick overview of FR's long-standing benefits
- Sneak peek at FusionCLOUD (coming soon)

# Who does this talk apply to?



- Anyone interested in troubleshooting/tuning servers; solving coding issues
  - Admins, managers, developers, devops
- Whether using any CFML engine
  - ColdFusion, Lucee, Railo, BlueDragon
- Or any Java application or server
  - Tomcat, JBoss, Wildfly, Jetty, WebSphere etc.
  - Or java applications: Solr, Confluence, etc.
- FusionReactor is implemented simply as a javaagent
- And is a low-cost, low-impact, reliable tool
  - Trusted for over 10 years by thousands of companies (over 30K servers world-wide)

# Key new features in FR 6



- Low overhead Profiler (in Ultimate edition)
  - Lets you see where the most time is spent within a request
  - Can change profiler default triggering at > 3 seconds; change poll interval (200 ms)
    - FusionReactor>plugins>active plugins>FusionReactor Low Cost Profiler
  - More:
    - [www.fusion-reactor.com/production-java-profiler/](http://www.fusion-reactor.com/production-java-profiler/)
    - [www.fusion-reactor.com/evangelism/introducing-fusionreactors-production-java-profiler/](http://www.fusion-reactor.com/evangelism/introducing-fusionreactors-production-java-profiler/)
    - [docs.intergral.com/display/FR62/Profiler](http://docs.intergral.com/display/FR62/Profiler)
- ...

# Key new features in FR 6 (cont.)



- Production Debugger (Ultimate)
  - Lets you interactively step through code, view and change variables
  - All without bother of setting up an IDE
    - And yet totally safe for even PRODUCTION use! (Patented)
  - Includes options to trigger emails (with details), break on exceptions, conditions, and more
  - More:
    - [fusion-reactor.com/production-debugger](http://fusion-reactor.com/production-debugger)
    - Videos: [fusion-reactor.com/videotuts/?filter=prodDebug](http://fusion-reactor.com/videotuts/?filter=prodDebug)
    - [www.fusion-reactor.com/latest-fr-document.php?type=debug](http://www.fusion-reactor.com/latest-fr-document.php?type=debug)
    - [docs.intergral.com/display/FR62/Debug+Examples](http://docs.intergral.com/display/FR62/Debug+Examples)

# Additional FR 6 improvements



- System Resources (in Enterprise, Ultimate editions)
  - Via *System Resources* option on left
  - Track system CPU, memory usage, network traffic and disk I/O
  - Track all running processes in OS
- Rest of items available in either FR Standard, Enterprise, or Ultimate
- ...

# Additional FR 6 improvements (cont.)



- CF Metrics and CF System Metrics
  - Track CF metrics like db pool stats, template cache size, query cache size, more
  - Some values shown only if CF Enterprise Svr Mon features enabled
  - Via *Metrics* option on left
- Memory use now tracked PER request, query, transaction
  - Viewable in request/query/trx details, and new *Requests>Req. by Mem*
  - Do beware, is total mem used over life of request (not peak at any one time)
  - More: [fusion-reactor.com/evangelism/Transaction-Memory-Values-Explained](http://fusion-reactor.com/evangelism/Transaction-Memory-Values-Explained)
- ...

# Additional FR 6 improvements (cont.)



- New *Requests>Applications* page, to view more breakdown by app
- Improved Relations tab (on request details)
  - Breaks down kinds of operations within a request (that FR monitors queries, httpclient, etc.)
  - And new Aggregates tab, to more simply aggregate that info
- Can view aggregate totals of CFHTTP/httpclient URLs across ALL requests:  
*Transactions>External Resources*
- ...



# Additional FR 6 improvements (cont.)



- Sessions now tracked in User>Sessions
  - Was previously hidden in Metrics>Custom Series
  - Now includes tracking of session creation, removal, option to view per application
  - Can show sessions per application. See bottom of page
    - Can control with *User>Settings>Sessions*
- Changes to style of FR CP email alerts
  - Html formatted, tabular layout
  - “Query running” info, request thread id now offered with list of request details at top

# Additional FR 6 improvements (cont.)



- New weekly, monthly reports (in Enterprise, Ultimate editions)
  - Tracking counts of requests, queries, their durations, 404s, sessions, etc
  - Daily report available in FR Standard, since FR 5
    - FR6 offers extended daily report in Enterprise/Ultimate
  - More:
    - [fusion-reactor.com/daily-report-email/](https://fusion-reactor.com/daily-report-email/)
    - [fusion-reactor.com/evangelism/FusionReactor-Daily-Reports](https://fusion-reactor.com/evangelism/FusionReactor-Daily-Reports)

# Additional FR 6 improvements (cont.)



- New option to track CFML line execution times
  - Provided as option for CF as of FR 6.0.4, and Lucee/Railo as of FR 6.2
  - AKA “line performance profiler”, tracks execution/duration of every line
  - *Can have high performance impact, so **disabled by default***
    - Enabled via *FusionReactor>Plugins>Active Plugins*
    - Impact is during enabling, using, then also disabling the feature
- Available tool to view its saved result
  - [github.com/intergral/cfperformanceexplorer](https://github.com/intergral/cfperformanceexplorer)
  - Can be used as a code coverage tool
- [docs.intergral.com/display/FR62/FusionReactor+ColdFusion+Line+Performance+Profiler](https://docs.intergral.com/display/FR62/FusionReactor+ColdFusion+Line+Performance+Profiler)
- [docs.intergral.com/display/FR62/FusionReactor+Lucee+and+Railo+Plugin](https://docs.intergral.com/display/FR62/FusionReactor+Lucee+and+Railo+Plugin)

# Some FR 6 hidden gems



- Can now export FR logs from archives in UI (by default in FR6)
  - See *Logging>Log Archive*
- New tail feature in FR UI log viewer (for current hour logs)
  - See *FusionReactor>Logs*, then “Tail” button in top right of UI
- Option to obfuscate SQL in UI (hides customer data w/in the sql)
  - *JDBC>settings>transaction settings>obfuscate sql data*
- Option to generate JDBC SQL Explain Information on very slow queries
  - *JDBC>settings>query plan settings*
- Improved support for Java Frameworks – Spring, Struts
- And lots more...

## FR 6 hidden gems (cont.)



- Much more on hidden gems in FR6, in new webinar
  - And another: Hidden Gems in FR (for those in FR 6 or earlier)
  - Still other coming additional ones (tentative titles)
    - Troubleshooting with FR
    - Advanced FR use
    - Foundations of FusionReactor
- Indeed, before concluding, I want to highlight such fundamentals briefly...

# Quick overview of Fusionreactor's long-standing benefits



- FR lets you do so much more than these “new” things discussed today
- Primary task: monitoring your CFML or Java app server
  - Tracking every request, and details about each
  - And every query, and details about each
  - Also offers info on heap use, cpu, and much, much more
- And many folks focus on slow requests/queries, high cpu/memory
  - FR helps easily see **when** and **where** such problems happen
- But folks are often left wondering why
  - Good news: the answers are usually there, with just a little effort...

# Quick overview of Fusionreactor's long-standing benefits (cont.)



- Fundamental (now new) features which everyone using FR should know
  - Covered in Fast Track training, FR docs, FR site feature pages, and so on
  - Stack tracing
    - to identify line of code, while request is currently running
  - FR CP alerts
    - to show tremendously useful info by email at time of hangup
    - and the possibility of protecting against some crashes
  - Logs
    - To track nearly all FR data over time
    - Self-managed to not take up space, and high-speed, so little impact
  - End-user performance monitoring (time spent getting to/from client)

## Quick overview of Fusionreactor's long-standing benefits (cont.)



- All this is done with very little overhead
- And available via mobile devices (in FR Enterprise)



# Next steps



- Check out free 14-day trial (latest version is 6.2.3)
- Inexpensive licensing, by monthly subscription or perpetual purchase
  - 3 editions: **Standard** starts at \$39/month, **Enterprise** 59/mo, **Ultimate** 79/mo
  - Newly available Developer edition: \$199 – Optional annual maintenance just \$99
- More at [fusion-reactor.com](http://fusion-reactor.com)
  - Docs, videos, technotes, blog, google group, and more
- Or come by the booth here to meet the FR folks
  - Including Darren Pywell (CTO), David Tattersall (Managing Director)
  - Who I would like to introduce now to discuss a new addition to the Fusion Family – FusionCLOUD

# FusionCLOUD Features....



- CLOUD Dashboard – very configurable, thresholds, grouping servers
- Bi-directional secure channel (SOCKET) – Ability to send requests down to your server e.g. Stack Trace / Garbage Collection / Execute script
- Application view – generated from individual or clustered servers
- Application broken down by %Time taken, Average, Slowest, Throughput, #Errors
- Automatic identification of “interesting transactions”
- Ability to SAVE requests, transactions, stack traces, JDBC
- Server Metrics, Transactions, Requests, JDBC
- Alerting Engine for email, PagerDuty, HipChat, Email, Slack, OpsGenie , VictorOps, FLOWDOCK, Twilio, IRCCAT etc.

# FusionCLOUD Facts



- Hybrid Solution – FusionReactor on-premise + FusionCLOUD (optional)
- Infrastructure runs on AWS
- Beta has been running for around 12 months – now migrating beta users „soft rollout“
- Licensing Model
  - CLOUD – Server Reservations combined with On-demand (similar to AWS)
- Editions available –
  - Enterprise – Multi-Server, Advanced Reporting, Mobile Client, Enterprise Scripting
  - Ultimate – Production Debugger, Production Profiler, Production Memory Analyzer (TBA)
- Pricing
  - Enterprise - \$99 month / \$990 year
  - Ultimate - \$149 month / \$1490 year