



Hidden Gems in FusionReactor

for BoxLang, CF, and Lucee Users

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www.intothebox.org



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- Server troubleshooter, assisting orgs of all sizes/experience levels
- Interests: who here was at Karaoke last night? 😊
- Fun fact: Spoke at first CF conference in 1998, when dinosaurs roamed the earth



Intro

- Whether you're long-time FR user or fairly new; using an old or a new version...
 - So many "hidden gems" in the tool can help you
- Some are settings, some are features
 - Most apply to ANY CFML engine or Java app/app server
- Focus today is on "on-prem" UI, not FR Cloud (itself, so rich)
 - Also not "what is FR" or "how to use FR"...just hidden gems (for Dev or Prod)
- Slides for talk available online:
 - carehart.org/presentations



Today's topics

- FR's time machine—see what happened BEFORE a restart
- Accessing FR from “off server” (for better or worse)
- Viewing CFML Source (for better or worse)
- Reports to wow the boss (or your team/yourself)
- Alerts that are not “just more noise”
- Config options that might delight you
- Licensing activation/deactivation flexibility
- Some recent new features you may have missed
- Resources you might never have noticed

If you're new to FR

- This talk is for those already using it. What if you're not?
- It's a valuable monitoring/troubleshooting solution
 - Can be implemented in CF, Lucee, BoxLang or any Java app or app server
 - Whether run as service, process, container, or via CommandBox
- It's a commercial tool, with a free 14-day trial. More at fusion-reactor.com
- I help people use it about daily; it's SO powerful!
 - Can help readily resolve so many problems
 - Can help watch trends over time, via UI, reports, alerts, FR Cloud, and more!
- I have many youtube videos to help:
youtube.com/playlist?list=PLG2EHZEbhy09a16Lx0JIIUcpbA8UrWPuo
- Rest of this talk is for those already using FR

You know FR can show so much

- Requests and their details (url, querystring, IP address, queries run/running, headers, and much more)
 - For those running, or recently run, or that were slow, etc
- Queries and their details (sql, duration, rowcount, and more)
 - For those running or recently run, or that were slow, etc.
- CFHTTP calls out to services (url, duration, and more)
 - For those running or recently run, or that were slow, etc.
- And much more

- But you may also know that if the instance restarts, most of that is lost
 - How do you use FR to know what happened BEFORE such a restart?...

FR's time machine— what happened BEFORE a restart

- Archived metrics feature
 - Came out with FR 7.2 (early 2018)
 - Available in FR UI at **Metrics** > **Archived Metrics** or via **Logging** > **Archive Viewer**
- Shows metrics from previous hours—even before restarts—for up to past 30 days!
 - Is really a viewer of FR's tremendous logs
 - They log dozens of metrics every 5 seconds, and every request (start/stop), much more
- Demo
- More on these:
 - docs.fusionreactor.io/Logs/Log-Archive-Viewer/
 - docs.fusionreactor.io/Logs/Logs/
- Bonus tip:
 - Can also import FR logs into Excel/Calc/Sheets
 - docs.fusionreactor.io/Logs/Importing-and-Graphing-Data-in-Excel/

Accessing FR from “Off server” (for better or worse)

- Sure, you can use FR with its built-in web server (8088, by default)
 - But what if you want to access it via YOUR web server?
- Use special url:
 - *[yourDomain_or_IP]/fusionreactor.cfm/index.htm*
 - Works if your web server is configured to pass cfm request to CF
- Demo
- How to disable/enable this feature
 - **FusionReactor** menu (very top left) then **Enable/Disable** > “**UI access on external web server**”
 - Also offered during FRAM instance install
- Now disabled by default, as of FR 2025

Viewing CFML Source (for better or worse)

- Sometimes while in FR, you may wish to see CFML having issue
- While viewing a request profile or stack trace, click java classname for CF request
 - FR will open a window and show the CFML source for that page
- Only allowed (by default) if viewing FR via its web server
 - To enable doing that while viewing FR via external web server, add following JVM arg:
 - `-Dfr.decompile.external.enabled=true`
 - The default is *false*
- Arg may have been added to disable even local decompilation. To re-enable it:
 - `-Dfr.decompile.enabled=true`
 - And of course, to disable it entirely, set that to false (the default is *true*)

Reports to wow the boss (or your team/yourself)

- Do you get daily, weekly, and monthly reports from FR? You CAN!
 - They provide several key metrics about processing within your instance
 - The weekly reports do more than just aggregate the daily. Same for monthly
- fusion-reactor.com/blog/all-about-fusionreactors-daily-reports/
- To receive them, must configure **FR>Settings>Email Settings**
 - SMTP server, FROM address, TO address (can be a list of them), etc.
 - Beware: you'll get many up to 30 days of reports on first setup
- Bonus tip: by default, reports and alerts (next topic) go to that TO address
 - What if you want to send reports to a DIFFERENT address (or addresses)?
 - Configure that in **FR>Plugins>Active Plugins**
 - Select **FusionReactor Reports>Config>Daily/Weekly/Monthly Report>Recipients**

Alerts that are not “just more noise”

- What if you could know of problems BEFORE others tell you? In great detail
- Can configure alert notifications (or optional “protection”)
 - Conditions include too many or slow requests running, memory or cpu too high
- Can opt to just get email (my preference)
 - Or can optionally queue or reject requests upon reaching the alert condition
 - Mail configuration is same as that discussed on previous slide
- Alert email includes details on requests running at the time of the alert
 - As well stacks trace of optionally each running requests or ALL JVM threads
 - I’ve done a youtube video on assessing FR CP alert emails (see playlist)
- Bonus tip: alerts on even more conditions are available in FR Cloud

Config options that might delight you

- Tracking user agent in FR request logs
- Showing the user agent or other headers for each request
 - Also applies to FR alerts
- Tracking the “real” ip address for requests
- Using FR “restrictions”: to hide “cf_connector_heartbeat” requests
- Logging JDBC queries (all or only those slower than xxx ms)
- Changing FR instance name (shown in top right of UI, and reports/alerts/cloud)

Licensing activation/deactivation flexibility

- While FR licensing is per machine (physical or virtual)
 - So you may be reluctant to implement it on more than number licensed
- But you CAN implement the FR license **on more than one machine**
 - It's that **only one can be activated** (if you've licensed only one)
- Note that you can easily and freely deactivate/activate licenses
 - Under the **FusionReactor** menu, then **About**, see "**deactivate**" button
 - No restart of your instance required
- Then repeat the same action on the server you want to activate
 - If you have not yet implemented the license key on the new machine, you can find it on the original machine on that same FR "About" page
- And yes, this applies to dev or prod licensing
 - And yes, there is an FR Dev license, \$22/mo:
 - fusion-reactor.com/fusionreactor-developer-edition/

Some recent new features you may have missed

- Option for login via LDAP/X.500
 - Or using FR Cloud credentials
- Event Snapshot feature (and why you may opt to disable it)
- Request Content Capture feature change
 - Can log EITHER requests/responses/both; and headers/bodies/both (10.0.2)
- New features, over various releases: docs.fusion-reactor.com/New-In-FR/
 - Of course, FR Cloud has even MORE new features, updating frequently
 - docs.fusion-reactor.com/Getting-started/WhatsNew/
- One last “hidden gem”...

Bonus topic: What can FR monitor?

- Many readily think of FR for monitoring CF or Lucee (and now BoxLang)
 - But again it can be implemented in ANY Java app or app server
- Did you know you could implement it in:
 - CF's "add-on service" (Solr and pdfG/cfhtmltopdf)?
 - As well as ANY Solr instance or any indeed Jetty-based app?
 - CF's PMT (yes, it's written in Java, so you could monitor CF's monitor!)
 - CF's API Manager
 - Even cf tools like cfpm, cfsetup
- Non-CF Java-based apps: Jenkins, Jira, BitBucket, Confluence, etc.
 - Any Spring, Spring Boot, Struts application, and so on

Resources you might never have noticed

- FR web site: fusion-reactor.com and fusion-reactor.com/blog
- Youtube videos (youtube.com/@FusionReactorMonitor)
 - My playlist: youtube.com/playlist?list=PLG2EHZEbhy09dI6Lx0JIIUcPbA8UrwPuo
- 2-hour version of this talk, more gems: youtube.com/watch?v=gb7I12IkfMo
- Release notes: docs.fusion-reactor.com/release-notes
 - fusion-reactor.com/blog/fusionreactor-7x-release-notes/
- FR Docs: docs.fusionreactor.io
 - What's new page: docs.fusion-reactor.com/New-In-FR/
 - docs.fusion-reactor.com/Configuration/FusionReactor-System-Properties/
- Log file formats (see excel page I'd mentioned)
 - docs.fusionreactor.io/Logs/Importing-and-Graphing-Data-in-Excel/
 - And my github log headers repo: github.com/carehart/FusionReactor-Log-Headers

Summary

- So many features of FR can make you even more capable
 - Hope I've pointed you to many that you will want to explore
- Again, my contact info for feedback/follow-up:
 - Charlie Arehart
 - charlie@carehart.org
 - @carehart (Slack, Github, X, FB, LinkedIn, etc.)
 - Slides: carehart.org/presentations
- With that, hope you enjoyed the talk!
 - Use QR code for slide deck
- ...time for questions?





Thank You!

The Future of **Modern Development** Starts Here, with you! 🚀