

# DIFFERENCES BETWEEN COLD FUSION ENTERPRISE & STANDARD

**MORE THAN YOU MAY THINK**

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Updated: 6/13/2023

- ▶ How many differences can you name between Std and Ent?
  - ▶ Most people can name only a couple or few
  - ▶ But there are many—indeed a couple dozen, as we will see!
- ▶ And while there is indeed a large cost difference, you may find it worth it
  - ▶ You might even be able to *SAVE* money with what you learn today
- ▶ Or you may learn of some feature in Enterprise that could save your bacon
  
- ▶ Who am I? Quick intro
- ▶ Presentation slides available after session at my site

# PREPARE TO BE SURPRISED

- ▶ Since I'm not here as a sales person, I'll do what they never would...
  - ▶ List price of CF 2018 Standard: US\$2,499
  - ▶ List price of CF 2018 Enterprise: US\$9,499
  - ▶ Pricing is per server, and per a number of cores (more later)
  - ▶ Discount for upgrading from prior release (only, from CF2016 to 2018)
  - ▶ We'll see if any changes when the next release (CF2021?) comes out
    - ▶ [carehart.org/blog/client/index.cfm/2020/10/12/getting\\_started\\_with\\_CF2021\\_public\\_beta](https://carehart.org/blog/client/index.cfm/2020/10/12/getting_started_with_CF2021_public_beta)
- ▶ Note: you can nearly always get a discount by buying from a reseller
  - ▶ Like buy-cf.com (aka buy-adobe-software.com, from makers of FusionReactor)
    - ▶ Normally about 5% off on any license (including upgrades)
    - ▶ Currently offering **25% off** CF 2018 license if coming from CF9, 10, 11!

## THE ELEPHANT IN THE ROOM--PRICE

# MAJOR DIFFERENCES

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Most notable things that are Enterprise-only

- ▶ Perhaps the number one uniquely Ent-only feature that most would name
  - ▶ Ability to create multiple instances on a single machine
    - ▶ Each with own admin, own jvm, own service, etc
  - ▶ As well as ability to cluster/load balance instances (local or remote ones)
  - ▶ And to replicate sessions between instances (or enable “sticky sessions”)
    - ▶ If using “j2ee sessions” feature in CF admin “memory variables” page
- ▶ See [helpx.adobe.com/coldfusion/configuring-administering/using-multiple-server-instances.html](http://helpx.adobe.com/coldfusion/configuring-administering/using-multiple-server-instances.html)
- ▶ Not always the right solution, if problem is really in a shared DB, for instance
- ▶ What if on CF Standard? Can you “cluster” two or more instances? ...

## MULTIPLE INSTANCES, CLUSTERING, ETC.

- ▶ For many Ent features, I'll identify if there's an alternative for Standard
- ▶ As for instances/clustering, could have multiple machines with one CF Std
  - ▶ And do clustering and load balancing **outside** of CF
  - ▶ Using any of many software or hardware alternatives
- ▶ Note also that CF2016 added optional Redis session storage, in Ent and Std
  - ▶ So can share sessions between CF instances via that shared Redis storage
  - ▶ Note: can NOT use this with that "j2ee sessions" feature in CF admin
- ▶ Let's move on...

## MULTIPLE INSTANCES, CLUSTERING, ETC. (CONT.)

- ▶ Could do entire preso on this, and they have been done:
  - ▶ [youtube.com/watch?v=ITm4S2yXMN0&list=PLG2EHZEbhy0-QirMKgSxhjkUyTSSTvHjL](https://youtube.com/watch?v=ITm4S2yXMN0&list=PLG2EHZEbhy0-QirMKgSxhjkUyTSSTvHjL)
- ▶ Again, licensed ONLY with CF Enterprise (2016 and up)
  - ▶ Not written in CF, nor running on CF, simply packaged with it (own installer)
- ▶ Adds
  - ▶ API version and lifecycle management; rate limiting and throttling
  - ▶ API monitoring; access control; caching; API developer portal
  - ▶ SOAP to REST Translation, SOAP Gateway, and more
- ▶ See
  - ▶ [helpx.adobe.com/coldfusion/api-manager/getting-started-coldfusion-api-manager.html](https://helpx.adobe.com/coldfusion/api-manager/getting-started-coldfusion-api-manager.html)
- ▶ Alternatives? Yes, but they tend to be very expensive
  - ▶ This alone may be a valuable benefit of licensing CF Enterprise...then others are bonus!

# API MANAGER

- ▶ Tool added in CF2016, but again Enterprise only
  - ▶ Can scan CFML code for vulnerabilities, recommends improvements
  - ▶ Works via CF Builder (2016 and up)
- ▶ Does not work with Standard, let alone the free Developer edition
  - ▶ I argue strongly that this should be available in Standard, if not also Dev
  - ▶ Until then, is again a potentially valuable reason to run CF Enterprise
- ▶ See *[helpx.adobe.com/coldfusion/using/security-enhancements.html](https://helpx.adobe.com/coldfusion/using/security-enhancements.html)*
- ▶ Alternative? Fixinator from Pete Freitag, [foundeo.com](http://foundeo.com) (not free)
  - ▶ *<https://fixinator.app>*

## SECURITY CODE ANALYZER



- ▶ New in CF2018, again Enterprise-only
  - ▶ Extends CF caching feature set beyond default of ehCache
  - ▶ CF9 added many new language features to cache things in CFML
- ▶ Can now store cache in redis or memcached (in Enterprise-only)
  - ▶ These can be distributed (installed on another server or servers)
  - ▶ CF Admin configuration page allows for its configuration
  - ▶ Can also override at app level (using different caching for different apps)
- ▶ Note that in all editions, another new caching option is JCS (and ehCache)
- ▶ See [coldfusion.adobe.com/2018/07/distributed-caching-coldfusion-2018-release](http://coldfusion.adobe.com/2018/07/distributed-caching-coldfusion-2018-release)

## DISTRIBUTED CACHING

# WHERE ARE THE DEMOS, CHARLIE?

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- ▶ Enterprise-only settings on CF Admin “Mail” page, affecting cfmil throughput
- ▶ **Mail Delivery Threads** - maximum # of simultaneous threads used to deliver spooled mail
- ▶ **Spool Mail Messages For Delivery To "Memory"**
  - ▶ Not to be confused with option to disable spooling, available in all (and the default, spool to disk)
- ▶ **Maximum Number Of Messages Spooled To Memory** - max # of messages that spool to memory before switching to disk spooling
- ▶ See [trunkful.com/2017/11/27/ColdFusion-MailSpoolService-Performance](http://trunkful.com/2017/11/27/ColdFusion-MailSpoolService-Performance)
- ▶ These are truly enterprise-only...not even in Dev edition!
- ▶ Yet while docs indicate these as Ent-only, I found them in Standard in my testing
  - ▶ Backup Mail Servers
  - ▶ Maintain Connection To Mail

# HIGH-VOLUME MAIL SENDING

# SEVERAL OTHER DIFFERENCES

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Less notable things that are Enterprise-only

- ▶ DB drivers for DB2, Oracle, Sybase
  - ▶ Technically, one can find 3<sup>rd</sup> party JDBC driver equivalents
- ▶ JEE deployment: deploying CF and CFML as EAR or WAR files
  - ▶ Impact on Commandbox: this is why it does not support Std for prod use
- ▶ Cluster support for web sockets
  - ▶ E.g.: Publish msg to all subscribers, across all nodes of a cluster setup
  - ▶ Checkbox in CF admin websockets page
  - ▶ [adobe.com/devnet/coldfusion/articles/using-websocket.html#articlecontentAdobe\\_numberedheader\\_3](https://adobe.com/devnet/coldfusion/articles/using-websocket.html#articlecontentAdobe_numberedheader_3)
- ▶ Solaris is listed in docs as only in Enterprise, but did not test

## ADMIN-ORIENTED ENT-ONLY FEATURES

- ▶ CFPDF DDX support (available since CF11)
- ▶ ORM text search (available since CF10)
- ▶ Solr data import handler (available since CF10)
- ▶ RSA FIPS 140-compliant strong cryptography
  - ▶ “algorithm” arg on encrypt/decrypt/hash/etc
  - ▶ See docs for details
- ▶ You may think, “well, that’s not too many differences” (13+)...we’re not done!

## CODING-ORIENTED ENT-ONLY FEATURES

# THINGS LIMITED IN STANDARD

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But NOT limited in Enterprise



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- ▶ This may for some be THE MOST IMPORANT reason to consider Enterprise
- ▶ In CF8, a decision was made to allow “all” functionality in Std AND Ent
  - ▶ But a new limiter was imposed, for some (not all, nor even many) tags
    - ▶ Called “Enterprise Feature Router”
    - ▶ Listed in “Buying Guide” docs as “restricted”, not by tag but by functionality
      - ▶ cfdocument, cfpdf, cfpdfform, cfhtmltopdf, cfspreadsheet, cfprint, cfpresentation
- ▶ With this limiter, only ONE REQUEST AT A TIME can run such a limited tag
  - ▶ All user users, wanting to run that tag, will wait (be queued) until the first is done
  - ▶ ...

# ENTERPRISE FEATURE ROUTER - THE BIG GOTCHA



- ▶ This has been a real gotcha for many
  - ▶ May never even realize it's happening, causing impact (things just “hanging”)
- ▶ Stack trace while running would show queued requests stuck here:
  - ▶ `coldfusion.featurerouter.edition.StandardServerEdition.acquireEnterpriseFeatureLock ...`
  - ▶ `- locked <0x1e9e5f6f> (a coldfusion.featurerouter.EFRContext)`
- ▶ For some folks, even if no other Ent difference is “worth it”, this may be
  - ▶ Along with a licensing matter I will discuss later
- ▶ But this is not the only limitation in Standard compared to Enterprise...

## ENTERPRISE FEATURE ROUTER - THE BIG GOTCHA (CONT.)

- ▶ “Request tuning” page in Admin
  - ▶ Std: only one limit: "max simultaneous requests", for all request types
  - ▶ Ent: can adjust limits for **each** request type (CFM pages, CFC URLs, incoming Web Service requests, Flash Remoting) independently
- ▶ CFThread limits (same page in Admin)
  - ▶ Std: max of 10 concurrent running threads
  - ▶ Ent: no limit
  - ▶ Note that CF2018 PMT as well as FusionReactor 8.5 can monitor cfthreads
    - ▶ As could the CF Server Monitor that was in Enterprise-only from CF8-2016
    - ▶ Leads nicely to next section...

## ADMIN/CONFIG-ORIENTED LIMITATIONS

# SOME SURPRISES

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Which may also be significant, whether on Std or Ent

- ▶ Over the years, some things that were Ent-only have moved down to Std!
- ▶ Built-in CF monitoring
  - ▶ While CF Svr Mon was Ent-only from 8-2016, now CF2018 offers **PMT in both editions**
- ▶ CAR (ColdFusion ARchive feature)
  - ▶ Now in Standard since CF11
- ▶ Security sandbox feature
  - ▶ Now in Standard since CF11 (before, Std offered instance-wide "resource security")
- ▶ CF Admin User Manager (create multiple admin, RDS users)
  - ▶ Now in Standard since CF9
- ▶ ...

THINGS NO LONGER ENTERPRISE-ONLY

- ▶ Web sockets
  - ▶ Originally indicated in CF10 to be limited in Std to 5 sockets, soon lifted to 100
  - ▶ Since CF11, there are NO limits on websockets in CF Standard
- ▶ Mail server config
  - ▶ Recall “backup mail servers” and “Maintain Connection To Mail” in my CF2018 Std
- ▶ HTML5 charting
  - ▶ Was originally indicated to be ent-only when CF 10 was released, soon lifted
- ▶ 64-bit CF support
  - ▶ Now in Standard since CF9
- ▶ Event gateways
  - ▶ Now in Standard since CF8

THINGS NO LONGER ENTERPRISE-ONLY  
(CONT.)

- ▶ Storing session variables in local/distributed redis storage
- ▶ And again, CF2018 PMT (monitor)

THINGS YOU/OTHERS MAY THINK ARE  
ENTERPRISE-ONLY, BUT ARE NOT

- ▶ Mail config:
  - ▶ Backup Mail Servers
  - ▶ Maintain Connection To Mail
- ▶ All event gateway types
- ▶ PDF archiving, redaction, sanitization, comments, attachments, stamps, etc.
- ▶ Beware: some scheduled tasks features ARE Ent-only but APPEAR in Std Admin
  - ▶ Clustered tasks, misfire and exception handling, listeners, chaining
  - ▶ When used, shows “Advance Scheduling support is not available in this edition of ColdFusion server”

THINGS LISTED AS ENTERPRISE-ONLY IN  
DOCS/GUIDES, BUT I FOUND IN STANDARD

- ▶ Multisite restful services
- ▶ PDFg cluster support

THINGS LISTED AS ENTERPRISE-ONLY IN  
DOCS, BUT I COULD NOT FIND AT ALL



- ▶ Again, as mentioned before...
- ▶ Security Analyzer
- ▶ High-volume mail server config options
  - ▶ Mail Delivery Threads
  - ▶ Spool Mail Messages For Delivery To - "Memory" option
  - ▶ Maximum Number Of Messages Spooled To Memory

THINGS FOUND ONLY IN ENTERPRISE,  
**NOT EVEN DEVELOPER** EDITION

- ▶ Not necessarily: first for dev/test, but **perhaps even for prod**
- ▶ Developer edition is free, of course
  - ▶ Offers nearly everything in Ent. (only Security Analyzer, high-vol mail held back)
  - ▶ Limited only in terms of number of IPs that can make requests until restart
  - ▶ Of course, not to be used in production
- ▶ Trial edition last 30 days, identical to Ent, but not to be used for prod
- ▶ Hosting companies offer CF Std or Ent (shared hosting, vps, Docker, etc.)
- ▶ Adobe offers Amazon AML (pay by hour)
- ▶ But if you ARE going to license CF, that leads to licensing matters...

DO YOU HAVE TO BUY ENT LICENSE TO GET ENTERPRISE-ONLY FEATURES?

# LICENSING MATTERS

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Considerations that may surprise you



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- Might you be able to SAVE money by switching to Enterprise? Possibly...
- Did you know that since CF2016, CF has been licensed based on cores?
  - Do you know how many you are running?
- Standard is licensed per 2 cores; Enterprise per 8 cores
- See sections 3.1.1 and 3.1.2 of the CF2018 EULA
  - As well as section 1.5 for definition of “core”, vm’s, etc.
- See [coldfusion.adobe.com/2018/01/finding-the-eula-end-user-licensing-agreement-for-your-installed-cf-version/](http://coldfusion.adobe.com/2018/01/finding-the-eula-end-user-licensing-agreement-for-your-installed-cf-version/)
- So...

CF LICENSING IS PER CORE—HOW  
MANY ARE YOU RUNNING?

- So if you're running CF Standard on a 4-core machine
  - technically you should have bought 2 Standard licenses
  - That's a bummer if you only bought one and didn't know about this...
- But if you're on an 8-core machine, you should buy 4 Std licenses
  - And a single Enterprise license costs LESS than 4 Standards (9499 vs  $4 * 2499 = 9996$ )
- What about Docker?
  - See [coldfusion.adobe.com/2019/03/coldfusion-licensing-docker-containers/](https://coldfusion.adobe.com/2019/03/coldfusion-licensing-docker-containers/)
- What about development? CF has always been free for dev, even with Docker
- But what about testing/staging?...

# CF LICENSING IS PER CORE—HOW MANY ARE YOU RUNNING?

- ▶ Back in CF9, Adobe changed policy to allow production license keys to be used on staging/test or shared dev machines
  - ▶ Terry Ryan wrote a famous blog post announcing this, and there was rejoicing
- ▶ Even today, some people buy CF licenses for test/dev/staging, and **may not need to!**...however...

## DEV/TEST/STAGING SERVER LICENSING

- ▶ By CF2016, Adobe had tightened that freedom (section 3.2)
  - ▶ “For each **Enterprise License** of Software, obtained by Licensee pursuant to Section 3.1.1, Licensee gets the right to install and use the Software as Development Software.
  - ▶ If Licensee has obtained more than one license for **Standard** version of Software under section 3.1.2, Licensee may use one of such license as Development Software.”
- ▶ And see section 3.2.1 for the definition of “development software”, as for
  - ▶ “**testing, development, and staging** purposes, to be used and accessed by Authorized Users over the **Licensee’s Internal Network**”
- ▶ All that said, make sure whether you NEED to be buying a license for dev/stage/test. You may **not**, saving more money!

## DEV/TEST/STAGING SERVER LICENSING (CONT.)

- ▶ Finally, here's one more bonus way to perhaps save money
- ▶ Did you know that with every purchase of CF, you get CFBuilder free?
  - ▶ You get 3 CFB licenses with Enterprise, and 1 with Standard
  - ▶ See [helpx.adobe.com/coldfusion/builder/faq.html](https://helpx.adobe.com/coldfusion/builder/faq.html)
- ▶ And even **if you're no fan of CF Builder:**
  - ▶ Recall how it is used with the Security Code Analyzer in CF Enterprise only
- ▶ Indeed, Adobe has announced plans to recreate CFBuilder atop VSCode!
  
- ▶ And with that, I count about 20 differences so far
  - ▶ Let's wrap up...

## CFBUILDER LICENSING



# WRAPPING UP

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- ▶ There are various resources on the Adobe site that distinguish Ent & Std
  - ▶ [adobe.com/products/coldfusion-family/buying-guide.html](https://adobe.com/products/coldfusion-family/buying-guide.html)
    - ▶ Plainly lists what's in Ent vs Std, as of CF2018
  - ▶ **See also** [adobe.com/products/coldfusion-enterprise/buying-guide.html](https://adobe.com/products/coldfusion-enterprise/buying-guide.html)
    - ▶ And [adobe.com/products/coldfusion-standard/buying-guide.html](https://adobe.com/products/coldfusion-standard/buying-guide.html)
  - ▶ [www.images.adobe.com/www.adobe.com/content/dam/acom/en/products/coldfusion/pdfs/cf2016/ColdFusion\\_2016\\_buying\\_guide.pdf](https://www.images.adobe.com/www.adobe.com/content/dam/acom/en/products/coldfusion/pdfs/cf2016/ColdFusion_2016_buying_guide.pdf)
    - ▶ Despite file name and path, does cover 2018 as well
  - ▶ [helpx.adobe.com/pdf/coldfusion2018-support-matrix.pdf](https://helpx.adobe.com/pdf/coldfusion2018-support-matrix.pdf)
    - ▶ Shows OS and DB driver differences
- ▶ These resources are not always consistent/accurate/up-to-date
  - ▶ I plan to create bug reports, perhaps a blog post identifying these

## HOW WOULD YOU FIND THESE DIFFERENCES?

- ▶ So in summary, there's a LOT more to the differences than most would think
- ▶ Key features unique to Enterprise:
  - ▶ Scalability: instances, clustering, load balancing, session replication, EAR/WAR
  - ▶ API Manager: manage, monitor, throttle, secure APIs
  - ▶ Security analyzer (I'd argue it should be in Standard)
  - ▶ Distributed caching feature
  - ▶ High-volume mail sending
  - ▶ CF Ent Svr Mon (for those on CF2016 and earlier. PMT on all editions of 2018)
  - ▶ DB drivers for Oracle, DB2, Sybase
  - ▶ Clustered sched tasks, clustered support for websockets
  - ▶ ...

## SUMMARY

- ▶ And still more “advantages” to Enterprise:
  - ▶ ORM search, enhancements to scheduled tasks, more encryption, PDF DDX, etc
  - ▶ Lifting of **EFR limitations** on tags like cfdocument, cfpdf, cfspreadsheet, cfprint, etc.
  - ▶ Lifting of limits like number of cfthread threads; enabling limits by type of request thread
  - ▶ “Bonuses”: core counts, license counts for dev/test servers, Docker, CFBuilder
- ▶ That said, some things that were previously enterprise-only no longer are
  - ▶ And alternatives do exist for some features, for use in Standard
- ▶ Remember 25% discounted price of CF upgrades from CF 9/10/11 at [buy-cf.com](http://buy-cf.com)
- ▶ Hope you may feel you have learned a lot today
- ▶ Reach out to me with questions (see bottom right)

## SUMMARY (CONT.)