



# Starting Your Data-Driven Journey Through FME 2022

*What's new in 2022 ?*



# Presenters



**Albin**  
GIS Specialist



**Eulalie**  
GIS Specialist



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GIS Specialist

# Up to 73 percent of company data goes unused. FME can fix that.

We are constantly improving and evolving the FME Platform to fuel your success

Smarter

FME Server App User Identity

Faster than ever

FME Server Analytics

Data-Aware

Workspace Comparison

450+ Formats

+ API support

Truevision TGA

Unfolded

CKAN

3D Clipping

SchemaScanner

530 Transformers



# Evolution of FME





# Meet Your New Car...

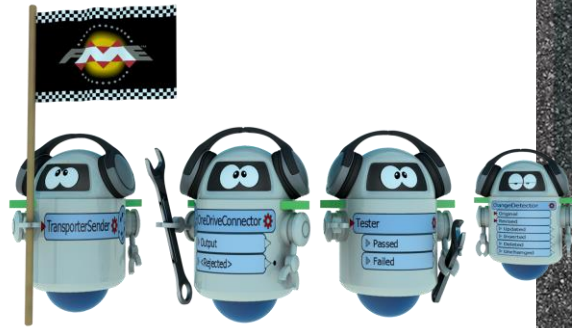
## FME 2022

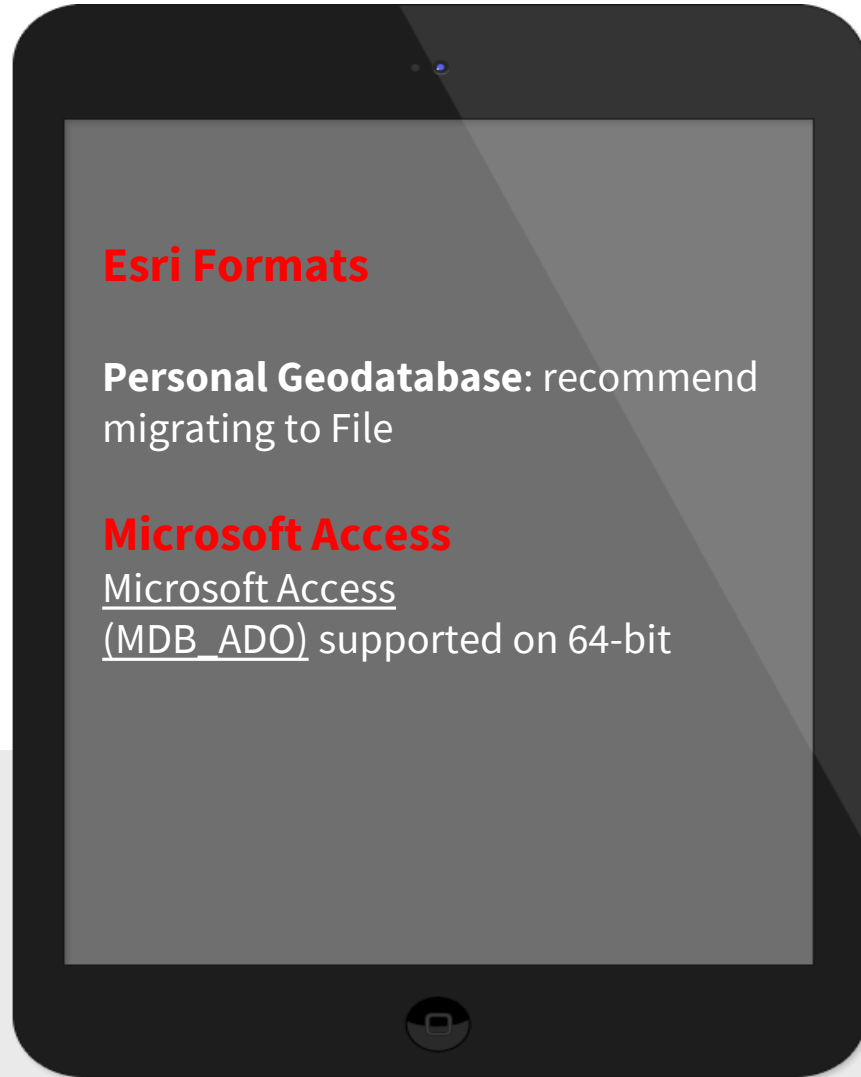
The FME Platform pulls out all the stops so that you can win your races on the data-integration race course



# Before starting

- Beginning with FME 2022, FME will support 64-bit Windows only





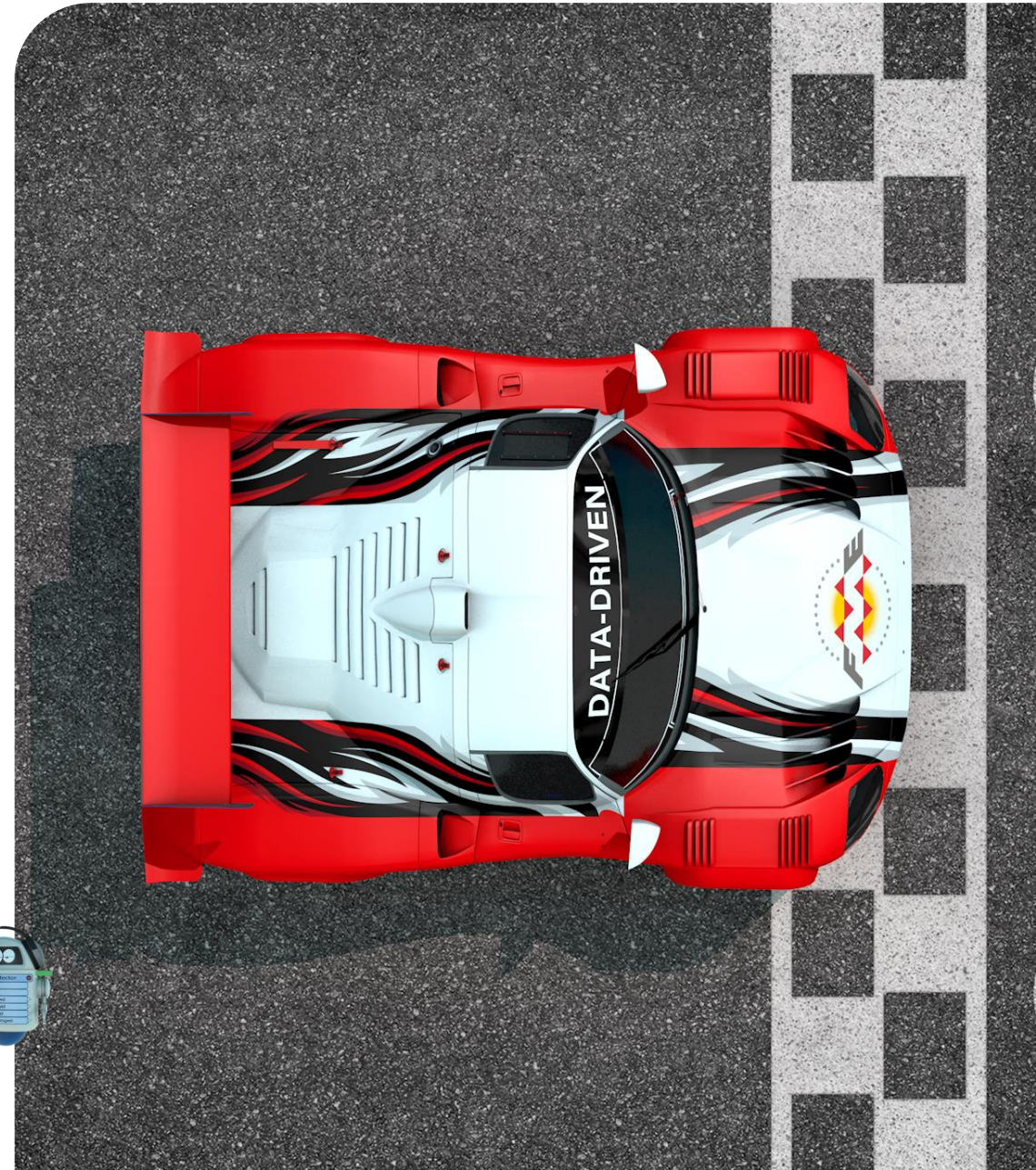
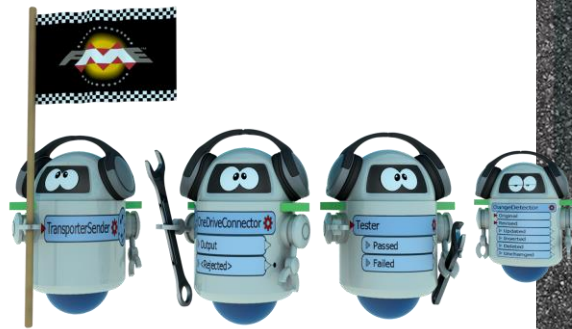
# Notable Formats in 64 bits

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# Python 2.7 check-up

- Period of transition is over
- Support for Python 2.7 will be removed entirely from Windows in 2022.0
- Python 2.7 will not be shipped with FME 2022.0 as part of the 32-bit Windows deprecation

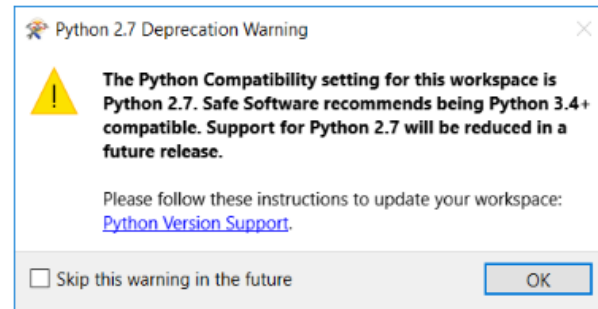




# Symptoms in old versions of FME



## Workbench warnings



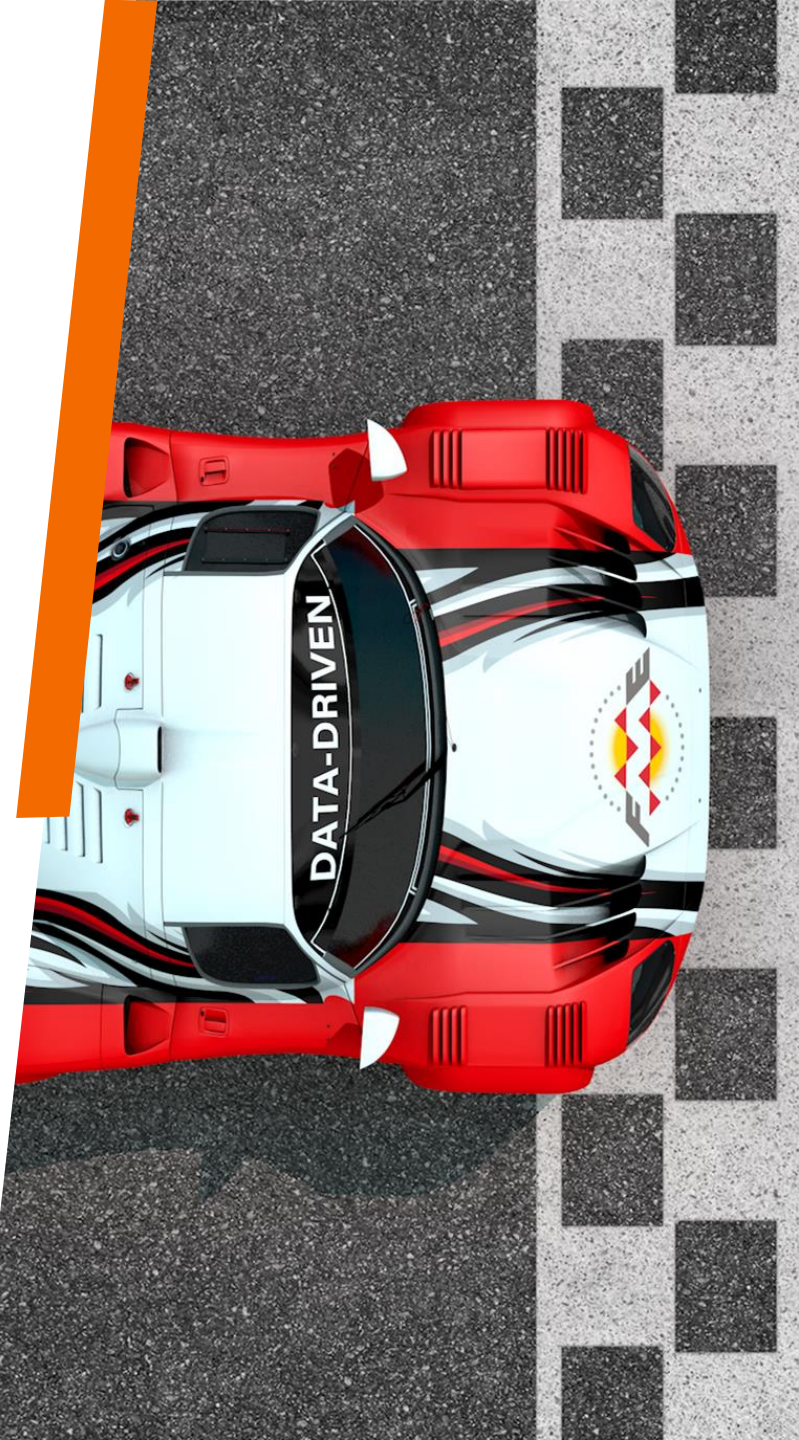
## Log warnings

```
|INFORM|Using Python interpreter from 'C:\Program Files\FME_2018.0_b18497_64'  
|INFORM|Python version 2.7 loaded successfully  
|WARN |In a future release, FME will have reduced support for Python 2.7. |  
|INFORM|Adding folder 'C:\Users\dleung\Documents\Sample_Workspaces\PythonCal'  
|INFORM|Emptying factory pipeline
```

# Behaviour in FME 2022.0 +



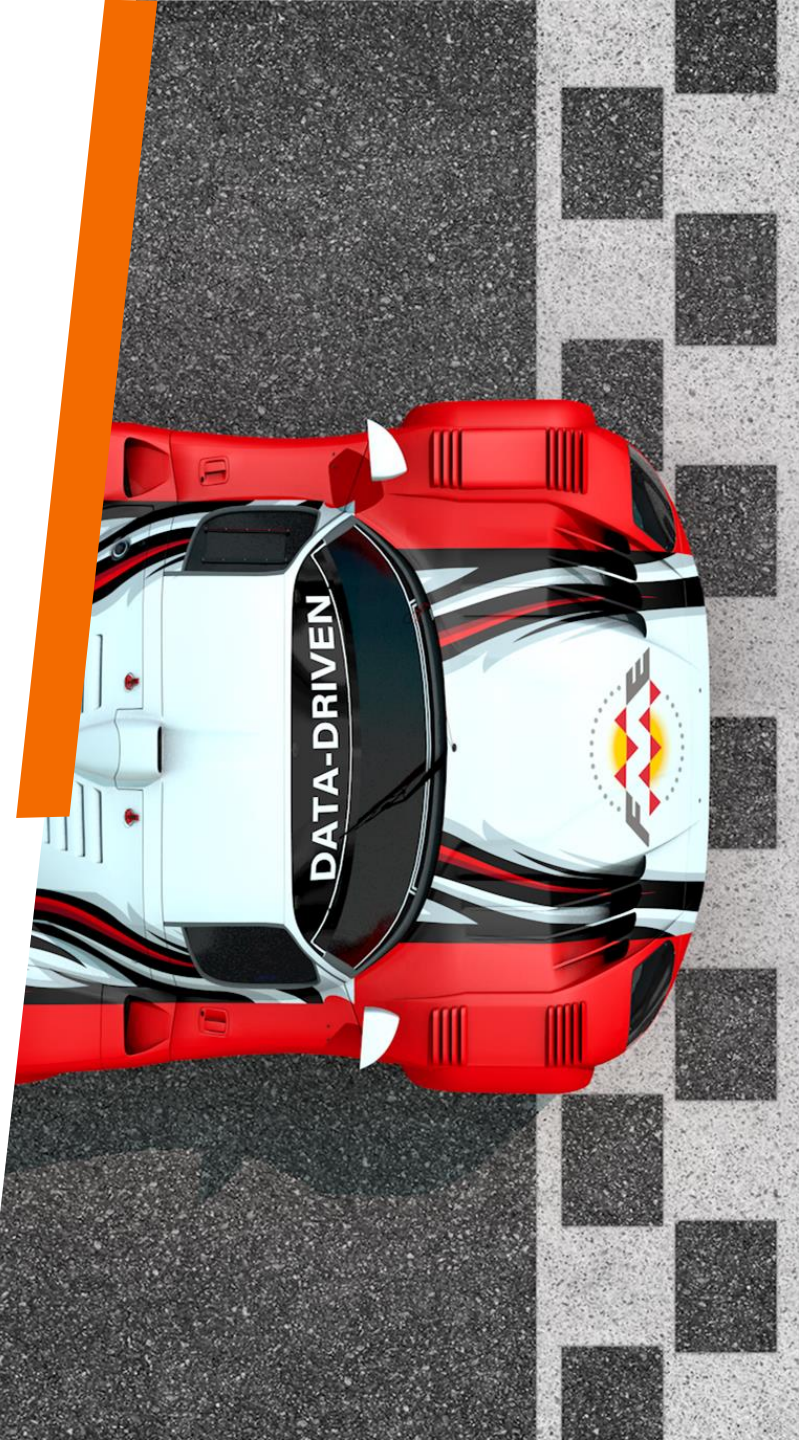
- Workspace with a Python Compatibility setting of Python 2.7 or Esri ArcGIS Python 2.7 **can not run or be authored**
- Compatibility setting of Python 2.7 or Esri ArcGIS Python 2.7 **do not exist anymore**
- Any workspace with Python 2.7 scripting **will fail**



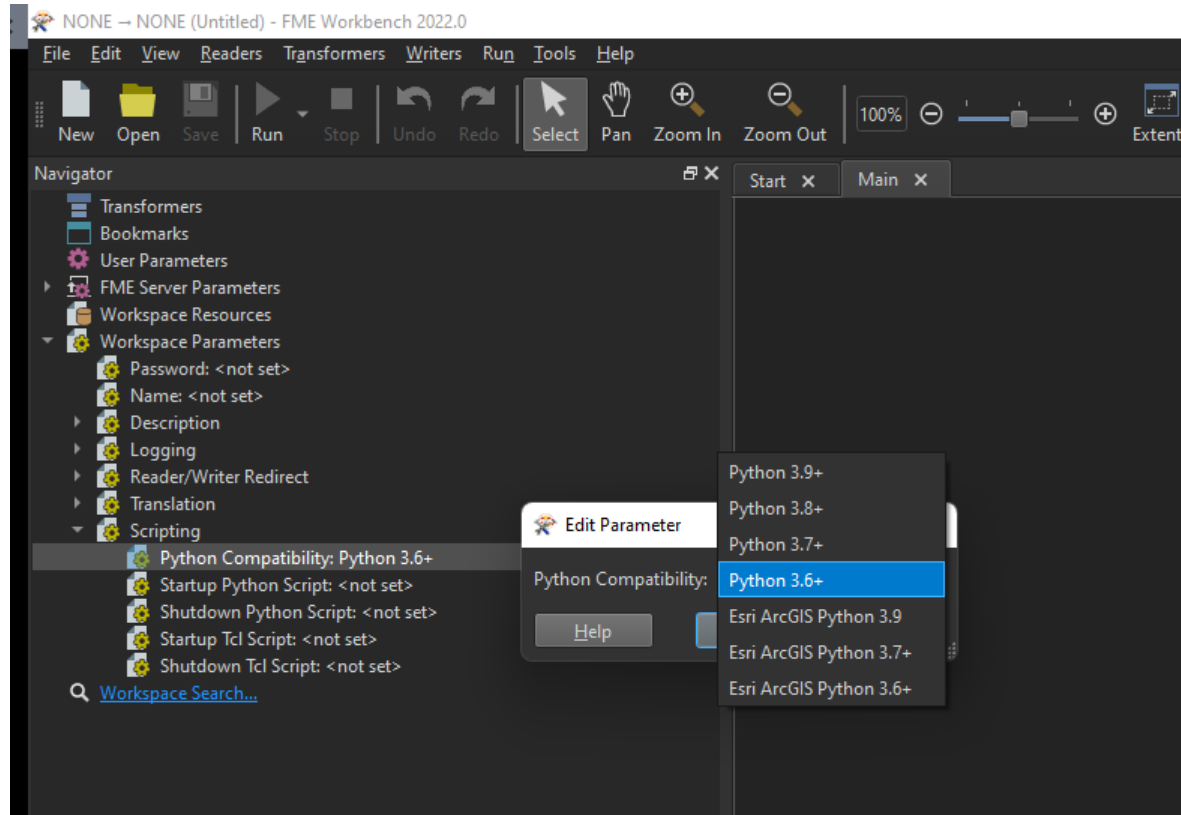
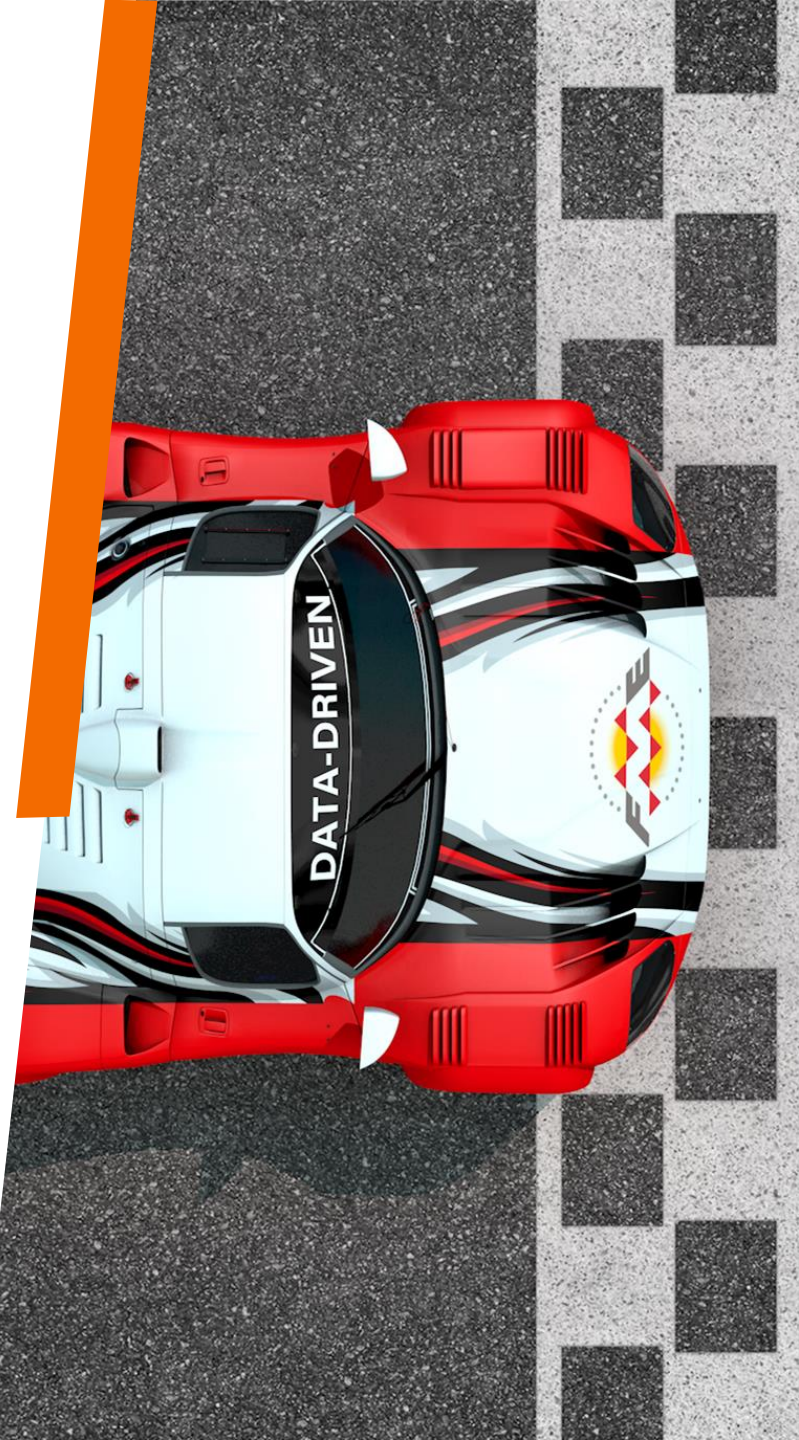
# Solution in FME 2022.0 +




- Simply **change** the Python Compatibility parameter of the workspace to 3.4+. Log warnings ( if warning is logged / no user-defined Python)
- **Port** all user-defined Python 2 code within the workspace to Python 3, then change the compatibility
- **Linux and macOS platforms:** Python 2.7 support has been removed in FME 2021.



# Python compatibility



# Change log



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## Select an FME Version

The installers below do not include a license. If you haven't purchased an FME license, please visit the [Pricing page](#) to learn more, or visit the [Free Licenses](#) page to try FME for free.

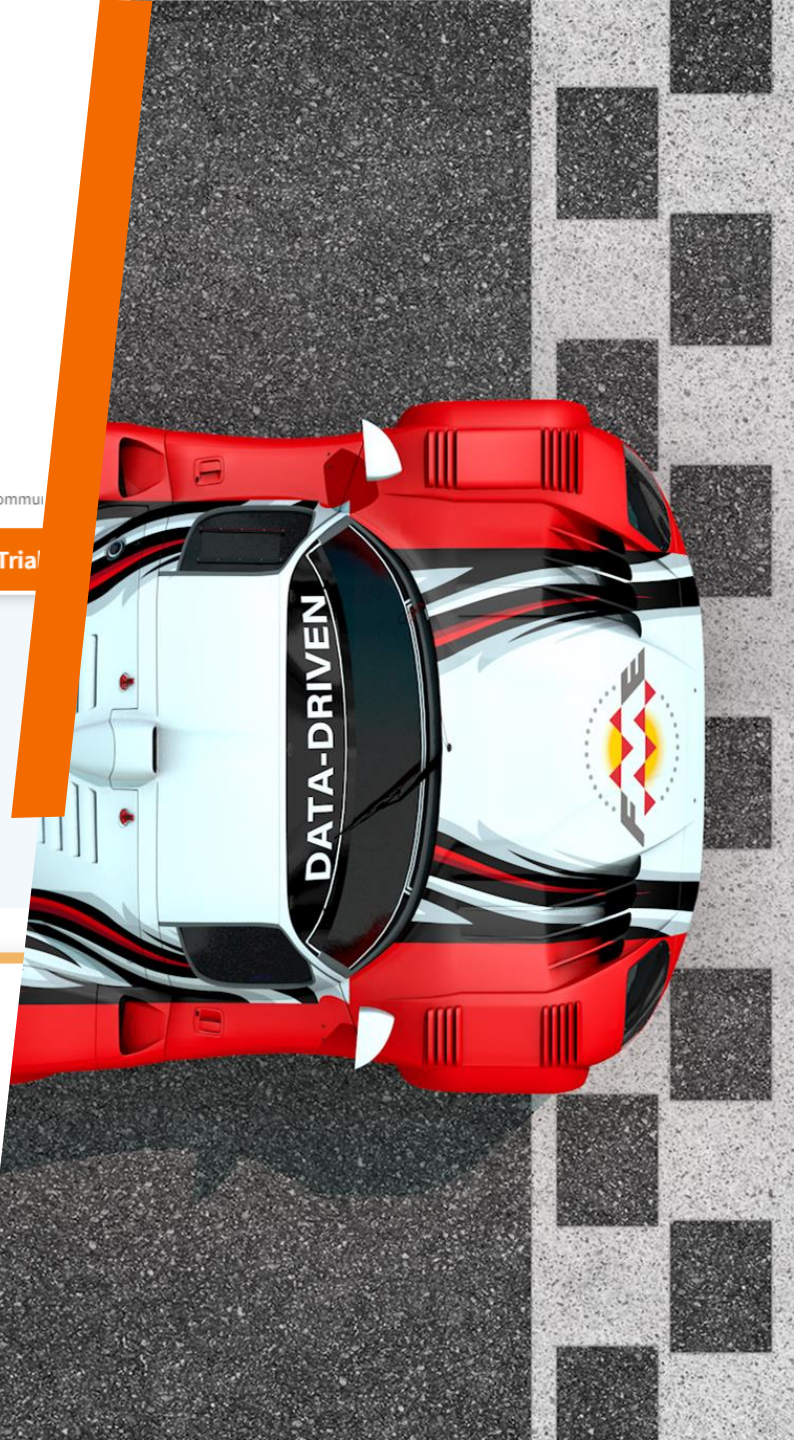

FME 2022.0 Official FME 2022.1 Beta Past Versions

Windows Linux macOS Mac

### FME Desktop 2022.0.0.1 for 64-bit Windows

Build 22339 / May 10, 2022 [Change Log](#)

Download ↓



# Change log

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FME 2022.0.0.1 "What's New"

=====

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FME 2022.0.0.0 b22337 20220428

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[Fix] Python 27 workspaces with no user python does not default to the latest Python (Python 39)

-----

FME 2022.0.0.0 b22335 20220426

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[Fix] Workbench crashes on save if parameter with empty default value is set for Value parameter in XMLUpdater

-----

FME 2022.0.0.0 b22334 20220425

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[Update] FME 2022+ Plug-in incompatibility error message should link to related Known Issue article on FME Community

-----

FME 2022.0.0.0 b22332 20220421

-----

[Fix] HTTPCaller: TLS revocation checking causing failures

-----

FME 2022.0.0.0 b22328 20220415

-----

[Fix] CRCCalculator: Fails to produce CRC output when using conditional statements on Filename

-----

FME 2022.0.0.0 b22327 20220414

-----

[Fix] RasterConvolver: Fix incorrect row index when filling tiles larger than one row

-----

FME 2022.0.0.0 b22325 20220412

-----

[Update] AIXM5 Writer: set writer default max precision to 9 decimal places

[Fix] OGCKML: Add separate \*.kml, \*.kmz file filters

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FME 2022.0.0.0 b22324 20220411

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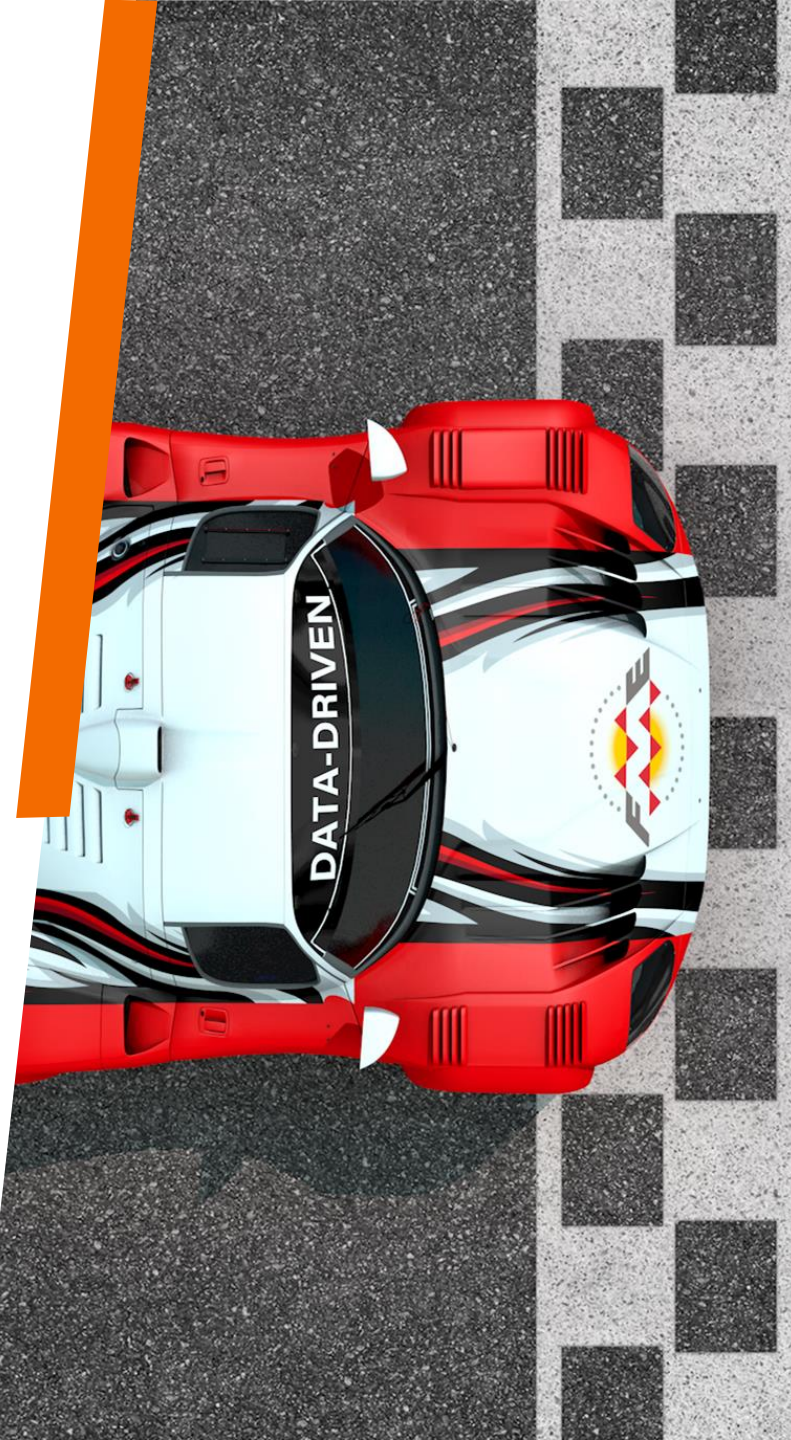
[Fix] OGC API: FeatureReader does not correct return results when using parameters based on Attribute Value

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FME 2022.0.0.0 b22323 20220408

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[Fix] CKAN Reader/Writer: Description for Quick Add is Incorrect

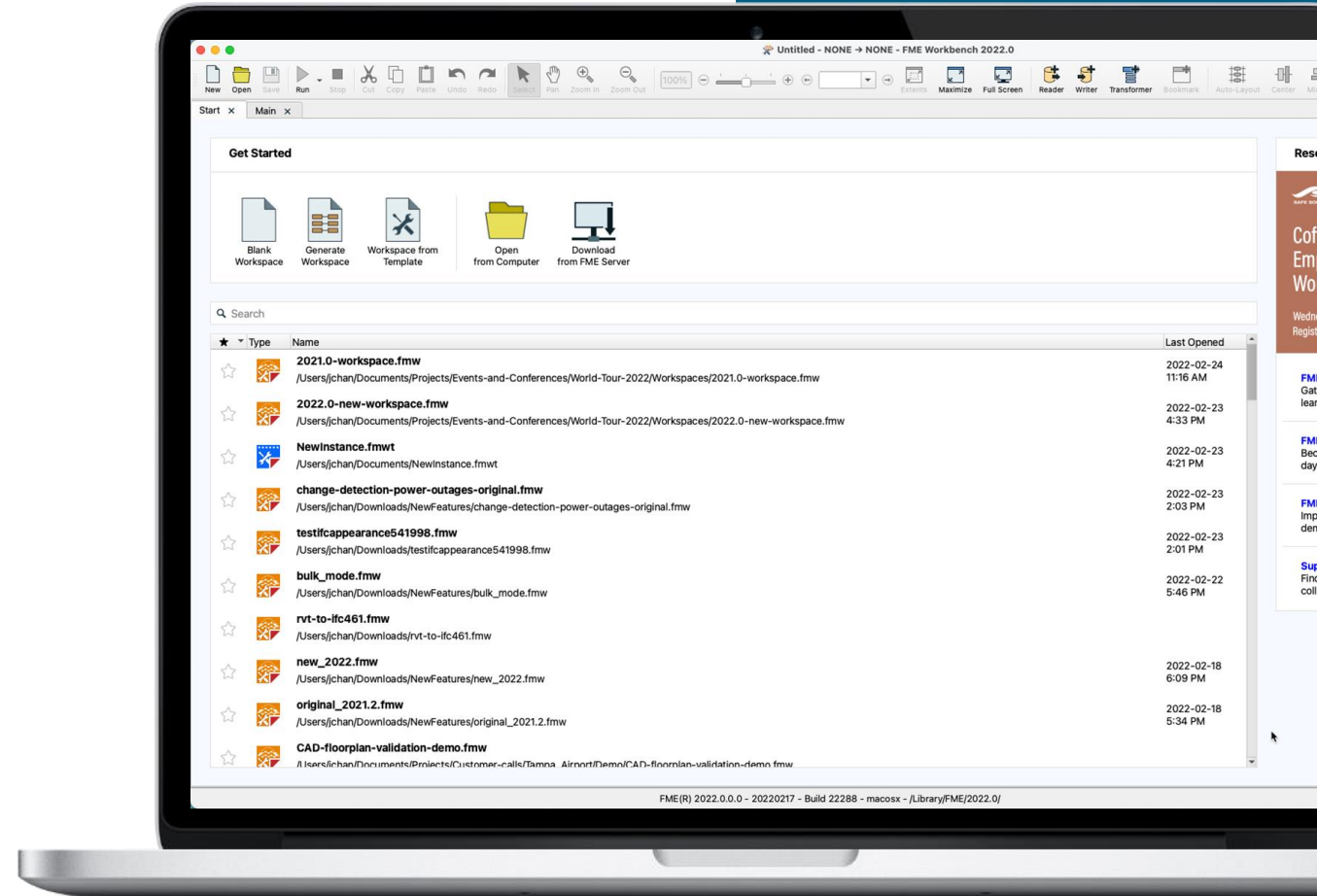


# Ready, Get Set... Start!

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## Revamped Start Page

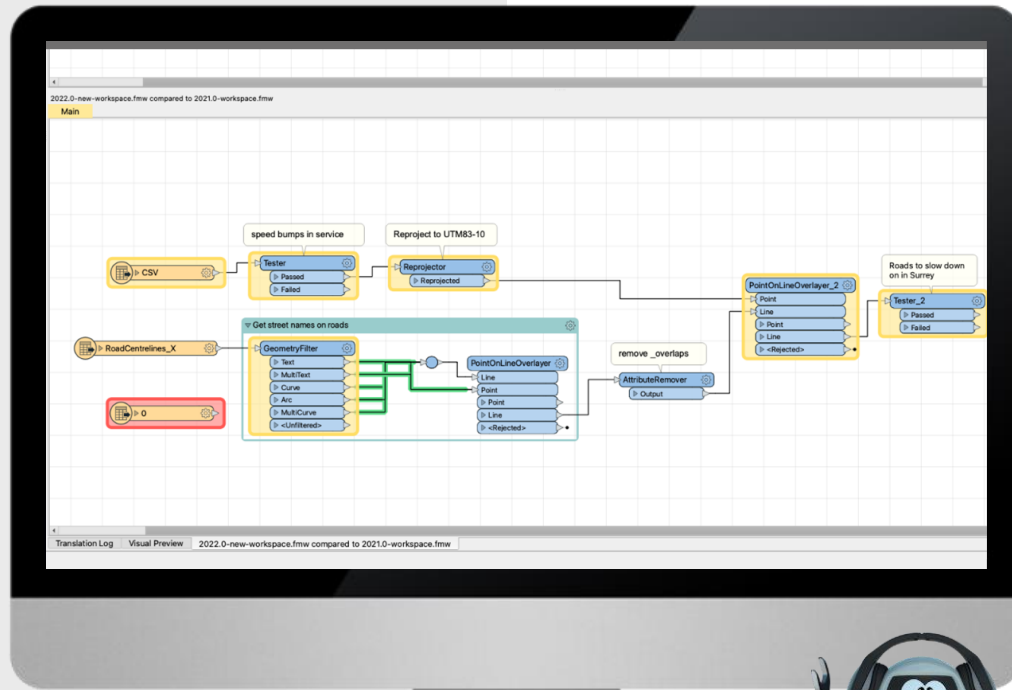
- Open a Workspace from Template
- Download from FME Server
- Search and preview recently opened workspaces





**Demo**





# Collaborate on and share workspaces easier than ever

## Workspace Comparison and Merging

- Track changes added, modified, or deleted
- Merge new changes instantly
- No coding required
- For workspaces since 2000





**Demo**

# Was this log always so beautiful?

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Logging is now meaningfully connected to the transformers on the canvas

The screenshot displays the FME Desktop interface. The top canvas shows a workflow with three transformers: a CSV transformer (outputting 924 features), a Tester transformer (receiving 924 features, with 867 passed and 57 failed), and a Reprojector transformer (receiving 867 features and outputting 57 reprojected features). Below the canvas, the Translation Log window is open, showing a detailed log of the process. The log includes columns for Timestamp, CPU, Elapsed, Transformer, and Message. The messages provide context for each step, such as feature storage, writing to files, and reprojecting features.

	Timestamp	CPU	Elapsed	Transformer	Message
94	2022-02-24 11:19:37	0.1	0.0		FME Configuration: Using FME Reprojection Engine
95	2022-02-24 11:19:37	0.1	0.0		Storing feature(s) to FME feature store file `~/private/var/folders/b5/_np8z5816n3cvlyshcache-2021.0-workspace-MjeafU/Main CSV -1 2 -1 0 c96d3e09fdcd7d8134904327d62d43cda8`
96	2022-02-24 11:19:37	0.1	0.0		FFS writer: Writing 924 feature(s) to file `~/private/var/folders/b5/_np8z5816n3cvlyshcache-2021.0-workspace-MjeafU/Main CSV -1 2 -1 0 c96d3e09fdcd7d8134904327d62d43cda8`
97	2022-02-24 11:19:37	0.1	0.0		Spatial Index: Adding 924 features
98	2022-02-24 11:19:37	0.1	0.0	Tester	Storing feature(s) to FME feature store file `~/private/var/folders/b5/_np8z5816n3cvlyshcache-2021.0-workspace-MjeafU/Main Tester -1 3 fo 0 PASSED 0 0e943a3c9b0cee12020ca19bf3e7c0caf82ee816.ffsupdating`
99	2022-02-24 11:19:37	0.1	0.0	Tester	FFS writer: Writing 867 feature(s) to file `~/private/var/folders/b5/_np8z5816n3cvlyshcache-2021.0-workspace-MjeafU/Main Tester -1 3 fo 0 PASSED 0 0e943a3c9b0cee12020ca19`
100	2022-02-24 11:19:37	0.1	0.0	Tester	Spatial Index: Adding 867 features
101	2022-02-24 11:19:37	0.1	0.0	Reprojector	CS-MAP Reprojector: Transformation will be automatically selected for 'LL-WGS84' -> 'UTM83-10' guaranteed to remain the same in future releases of FME
102	2022-02-24 11:19:37	0.2	0.1	Reprojector	Reprojector: Using transformation `NAD83_to_WGS84,Inverse(Null,EPSSG:1188)` when reproje UTM83-10
103	2022-02-24 11:19:37	0.2	0.0	Reprojector	Storing feature(s) to FME feature store file `~/private/var/folders/b5/_np8z5816n3cvlyshcache-2021.0-workspace-MjeafU/Main Reprojector -1 18 fo 0 REPROJECTED 0 6a29567bf29ad1e811941e500f7ff59c15751fe8.ffsupdating`
104	2022-02-24 11:19:37	0.2	0.0	Reprojector	FFS writer: Writing 867 feature(s) to file `~/private/var/folders/b5/_np8z5816n3cvlyshcache-2021.0-workspace-MjeafU/Main Reprojector -1 18 fo 0 REPROJECTED 0 6a29567bf29ad1e811941e500f7ff59c15751fe8.fts`
105	2022-02-24 11:19:37	0.2	0.0	Reprojector	Spatial Index: Adding 867 features
106	2022-02-24 11:19:37	0.2	0.0	PointOnLin...	PointOnLineOverlayer 2 (OverlayFactory): Splitting bulk features into individual feature
107	2022-02-24 11:19:37	0.3	0.1	Tester	Storing feature(s) to FME feature store file `~/private/var/folders/b5/_np8z5816n3cvlyshcache-2021.0-workspace-MjeafU/Main Tester -1 3 fo 1 FAILED 0`



**Demo**

What has no wheels but runs faster than FME 2021?



# What has no wheels but runs faster than FME 2021?

*FME 2022 of course!*

## **Bulk mode is a huge time-saver**

- Allows efficient processing of large datasets
- Massive performance gains
- A few workspaces that run in 99% less time
- Bulk mode support gradually added (all Python-based transformers, readers, and writers )

**Don't forget to upgrade your transformers !**



# What has no wheels but runs faster than FME 2021?

*FME 2022 of course!*

Transformers or translations that...	May run in...
<b>Filter features</b> (Tester, AttributeFilter...)	60% less time
Process datasets containing <b>string attributes</b>	25% less time
Using <b>Group By</b>	60% less time
<b>Use a subset of attributes</b>	35% less time
<b>Clipping areas</b>	97% less time
<b>Tiling areas</b>	99.995% less time



Efficient Geodatabases=  
reclaim you day!

## FME 2022

Drastically improved speed across top cases in our geodatabase readers and writers

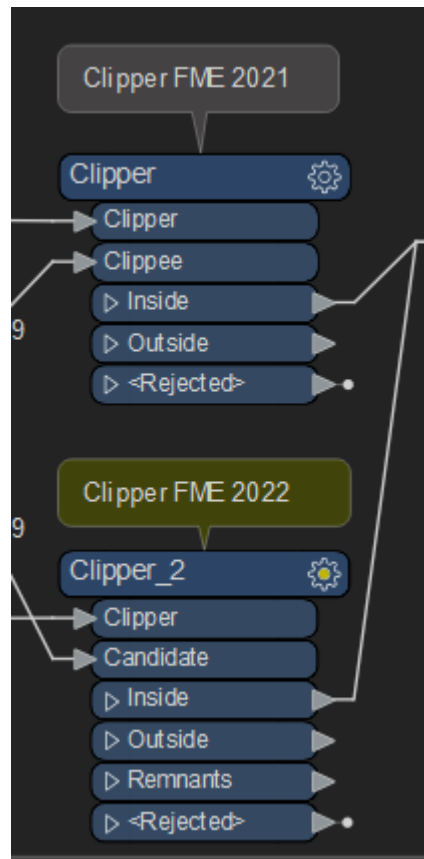
Case	Before	After
Raster Dataset Writing	15 min	30 sec
Versioned Deletes (Geodatabase SDE)	4 min 30 sec	30 sec
Reading Aggregate Geometries (File Geodatabase)	45 sec	4 sec





**Demo**

# Improvements



FME 2021	5 min 36,5
FME 2022	1 min 44

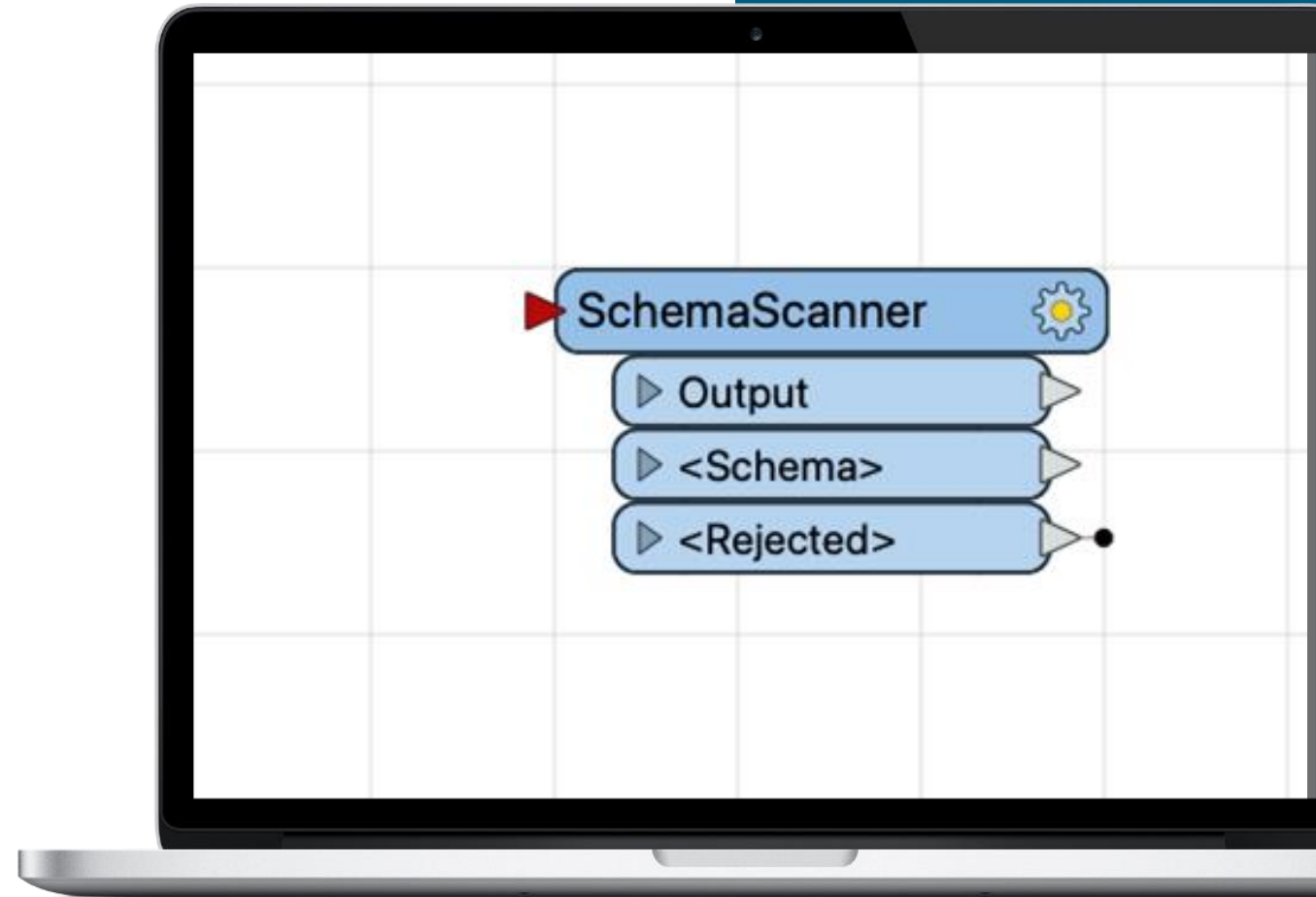
**Don't forget to upgrade your transformers !**



# SchemaScanner

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- Produce best fit schema **at runtime** and detect schema changes.
- Design robust data validation flows.
- Help detect schema drift.
- Ensure high data quality and reduce storage cost.

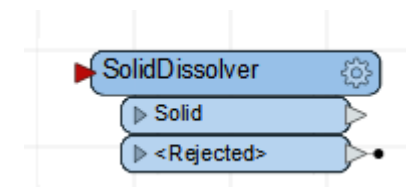
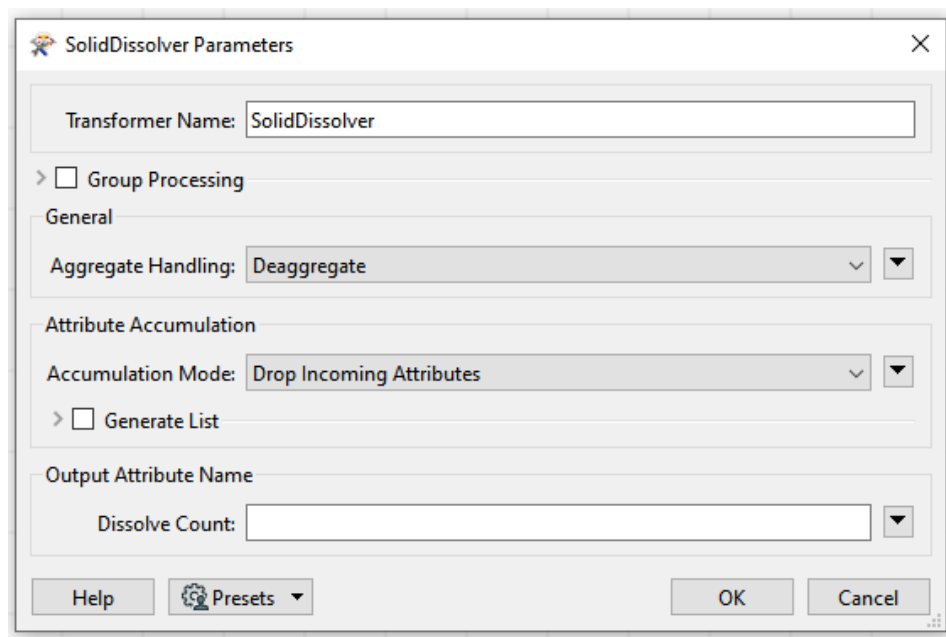




**Demo**

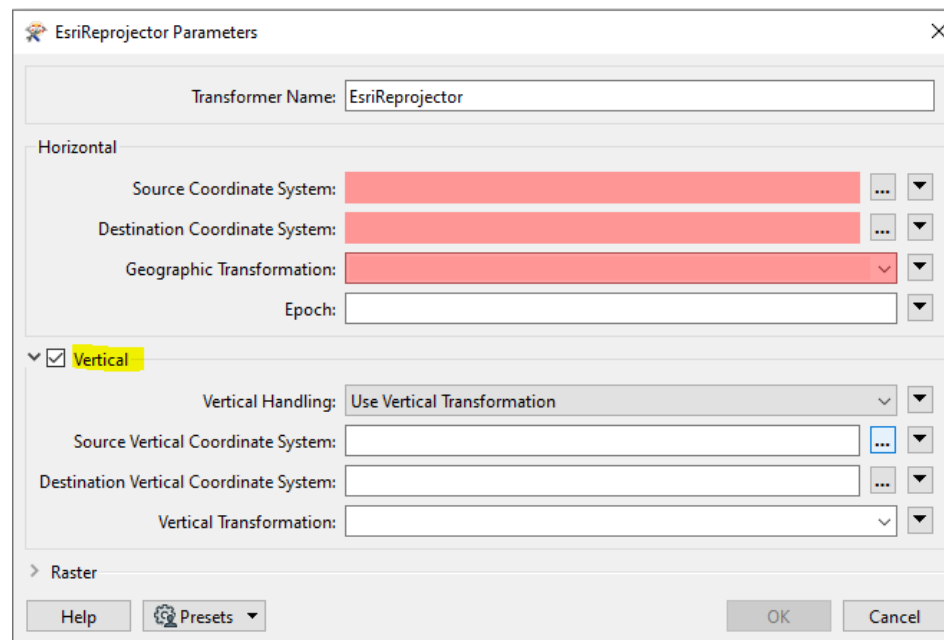
# New Transformers

- SolidDissolver: replaces the FME Hub transformer; up to 40 times faster than the workarounds

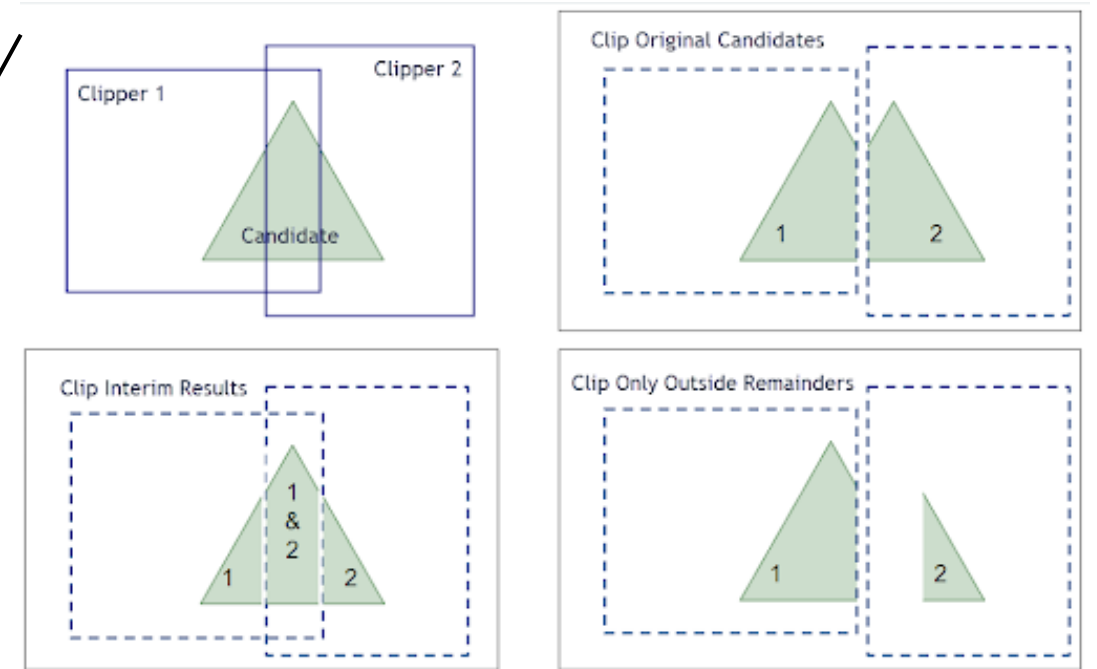
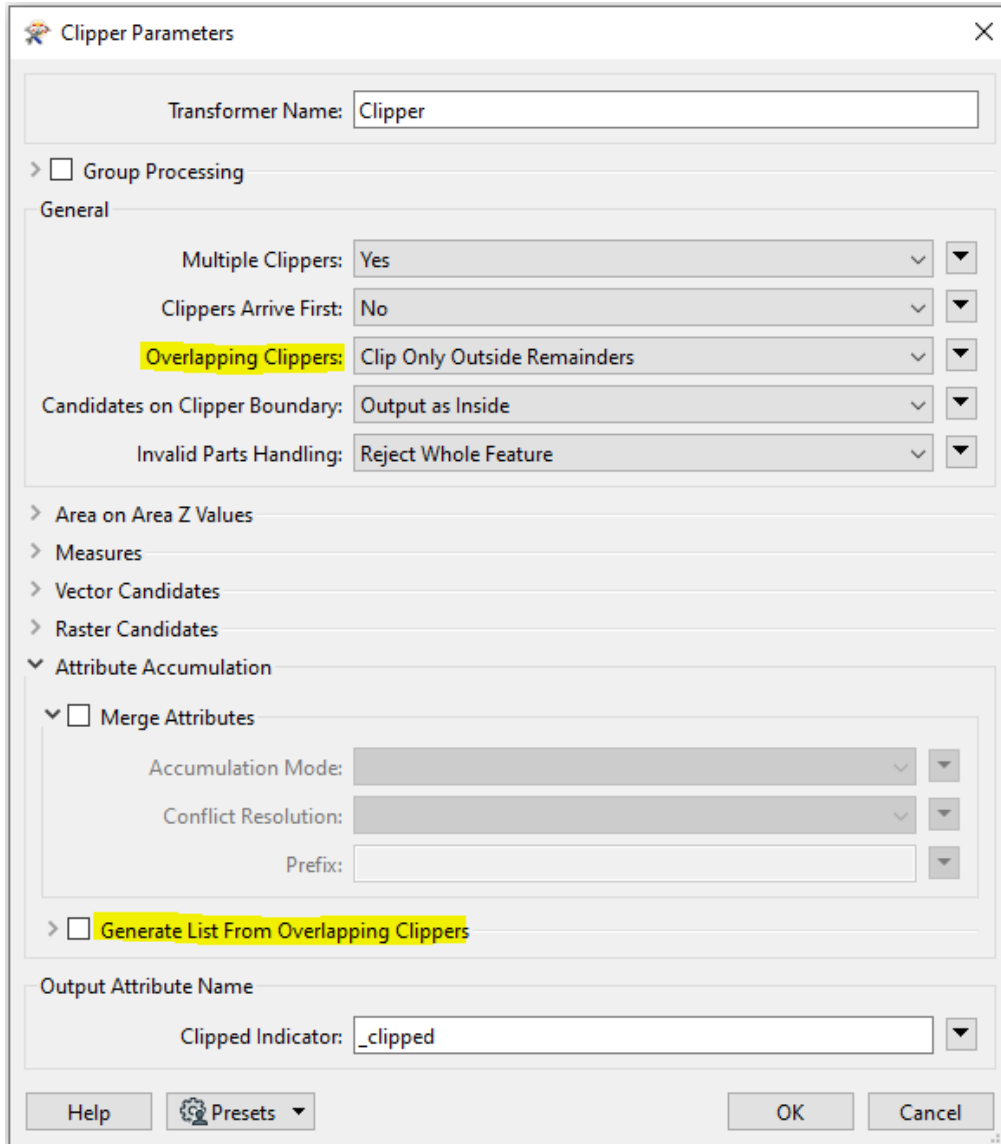


# Modified Transformers

- EsriReprojector Transformer Update: Support for Vertical and Time-dependent Coordinate Systems



- New parameters are added to the Clipper



# New formats

- **Unfolded Studio Data Reader/Writer and FME Hub Package - [link](#)**
- **SpatiaLite Native Reader/Writer**
- COG (Cloud Optimized GeoTIFF) Reader/Writer
- Precisely Maps background maps
- Truevision TGA (TARGA) Reader
- FITS Reader/Writer
- SkySQL Reader/Writer via MariaDB Cloud Database
- OGC CSW (Catalogue Service for the Web) Reader





# Update + Insert = Upsert

Synchronize and manage data in near real-time, no coding required.

- Simplify your incremental update workflows
- Reduce overall workspace complexity

Support in 22.0 includes:

- PostgreSQL, PostGIS/PostGIS Raster, SpatiaLite, SQLite

→ *Support for additional databases and formats coming in our summer release!*

### UPSERT — "UPDATE or INSERT" in PostgreSQL writer

FME Desktop

Status In Beta 680 Points 👍 👎 geogaard March 2, 2016

Include the possibility to make use of the UPSERT function in PostgreSQL 9.5 as a feature operation in the PostgreSQL writer in FME.

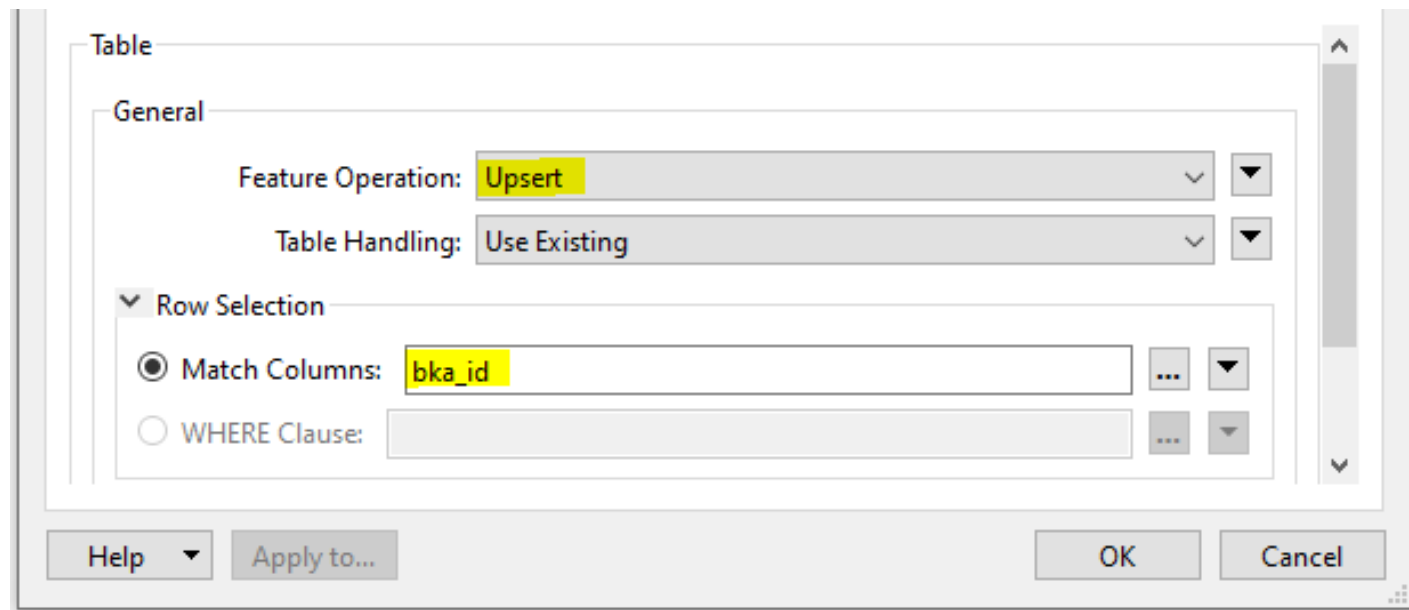
This will make it possible to do an insert or an update if there is a conflict with an existing row in the table.

For more information take a look at the [PostgreSQL documentation](#)



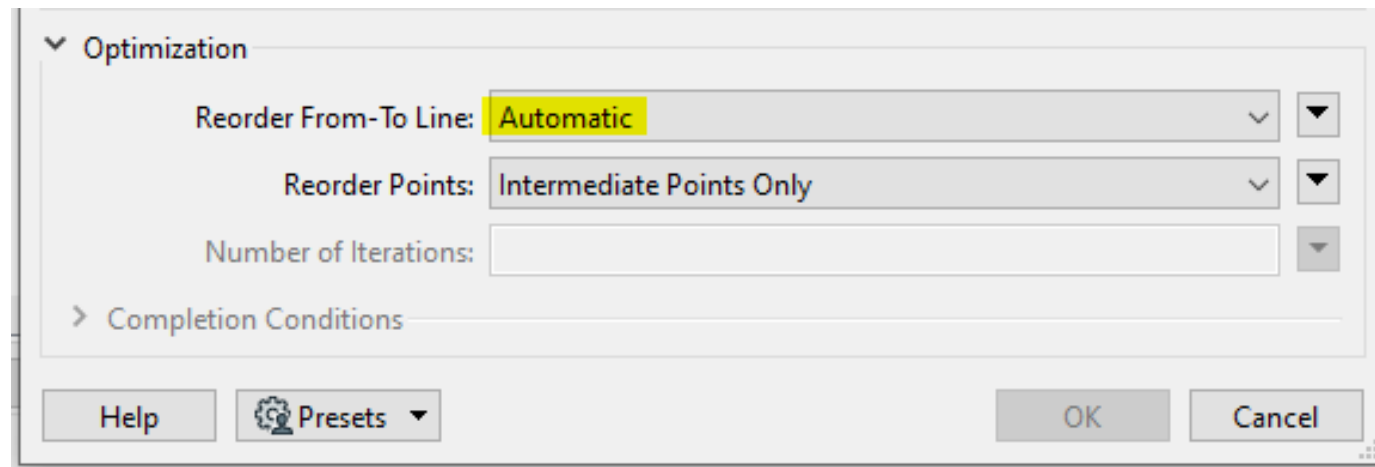
# Specific Format Improvements

- PostgreSQL: Write to databases using **UPSERT**



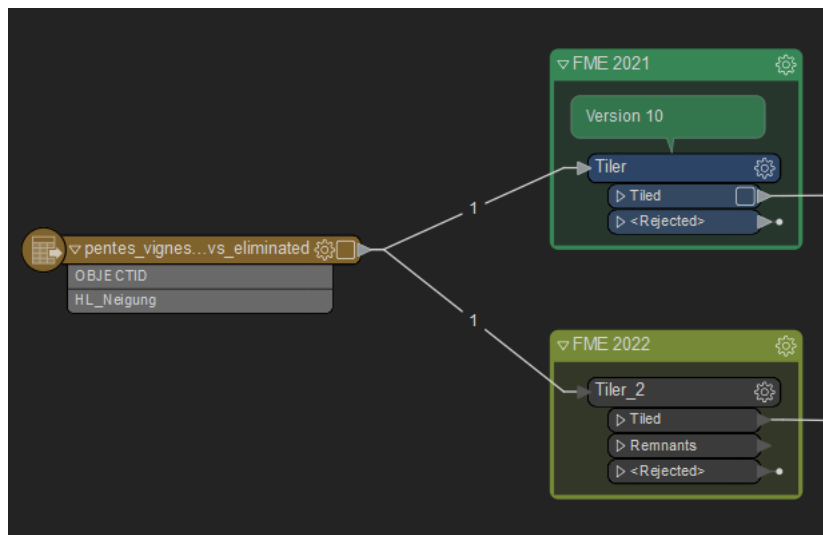
# Specific Transformer Improvements

- **ShortestPathFinder:** Use the simple new **Automatic** reordering mode



# Specific Transformer Improvements

- **Tiler: Big** performance improvements! **Upgrade any Tilers** in your existing workspaces to start using the faster version.



1 Tile into 15 x 15 squares:

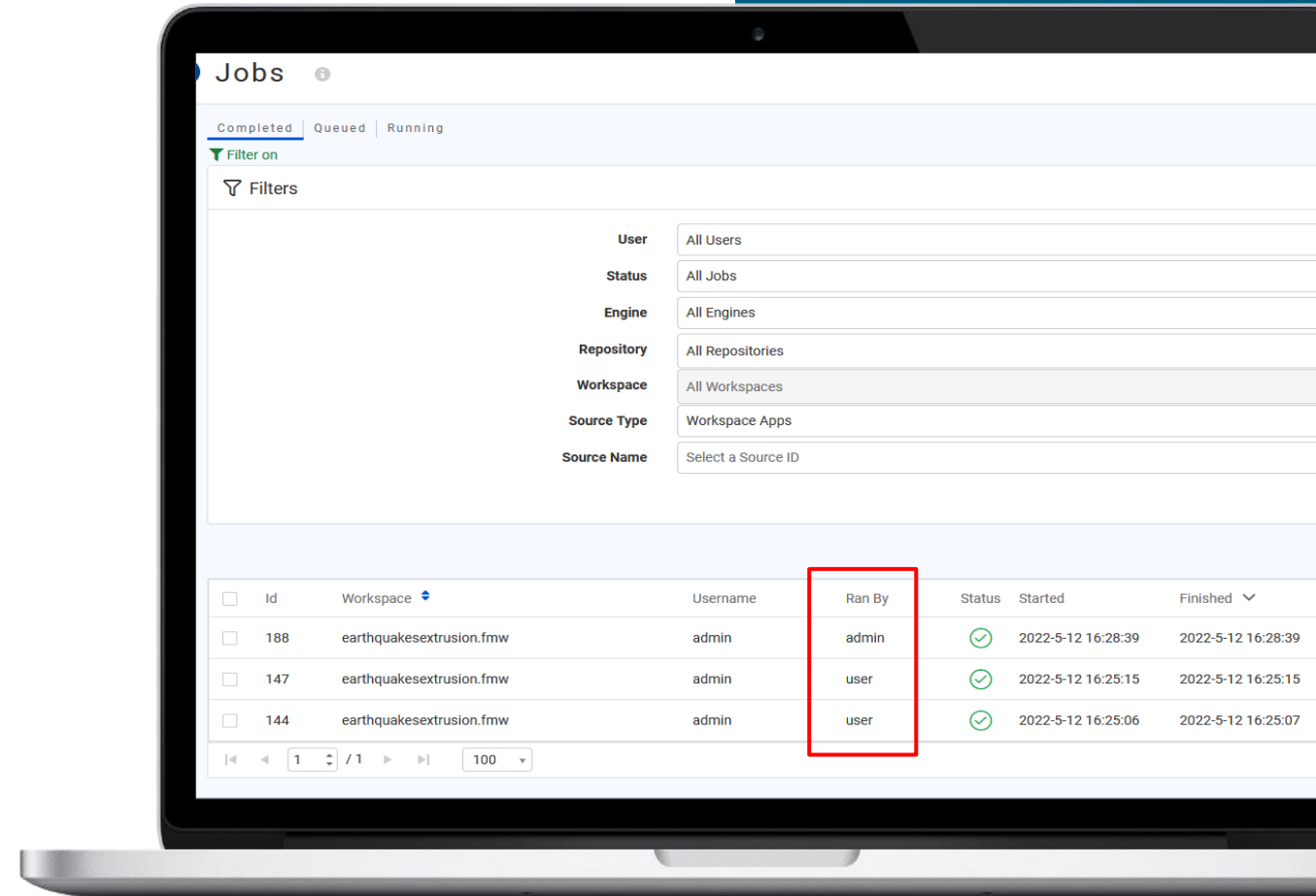
FME 2021	1 min 31
FME 2022	3.6 sec

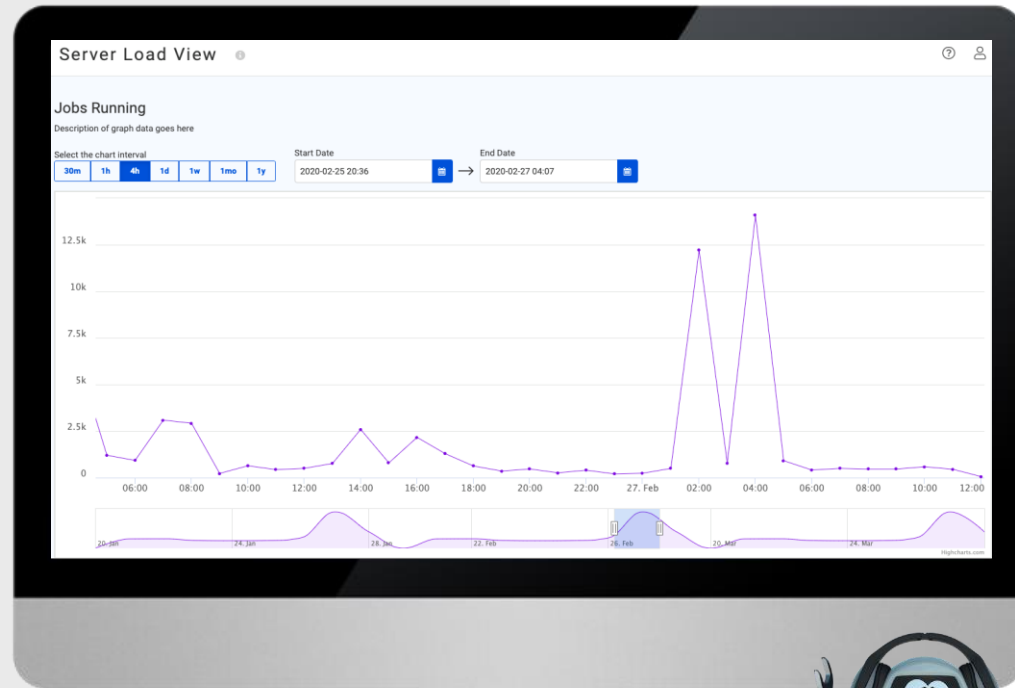


# FME Server Apps: User Identity

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- **Admins** and **authors** can see who accessed and ran an authenticated Workspace App
- Receive usage data, track the number of users over time and see usage trends!





# FME Server Metrics.

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**Leverage FME Server statistics**

**Identify Peaks and Troughs**

**Allocate Resources**

**Optimize future workloads more efficiently**

# Enhanced Engine Assignment Rules

Maximum number of queues for any engine

Maximum number of engines for a queue



Queue Limit Per Engine

Unlimited Queues



Maximum Queues per Engines

Cancel

OK

Create Engine Assignment Rule

Name

Type

Rule **AND OR** + Create Property + Rule + Ruleset

=

Queues

Enabled

# Server Security Updates



## New to FME 2022.0: FME Server user authentication with SAML 2.0



### Secure Sign-On

- Login and multi-factor authentication via SAML - Okta, Google Cloud, and Microsoft Azure
- Login with Azure AD, Window AD, and Generic Directory credentials



### Monitoring & Alerting

- Only 1 authorized user with 1 active web session at any given time
- Broadcast messages communicate system status and security reminders





# *Tips and Tricks*



# Tips for performance (lap 1): Minimize Reading

- Only read what you need
- Use where clauses on readers features types





# Demo

Show Performance Lap 1: where clauses and attributes selection

## Tips for performance (lap 2): Watch Feature Types

- Delete unused readers feature types
- Even if not connected, they read data



# Tips for performance (lap 3): Watch Attributes

- Remove unused attributes regularly
- List attributes are particularly intensive: remove them as soon as you can
- Stop carrying list attributes: remove them or don't create them at all
- Try the AttributeKeeper / AttributeRemover / AttributeManager





**Demo**

## Tips for performance (lap 4): Use Caching Wisely

- Collapse bookmarks to reduce number of caches
- Turn Feature caching off when you are done authoring



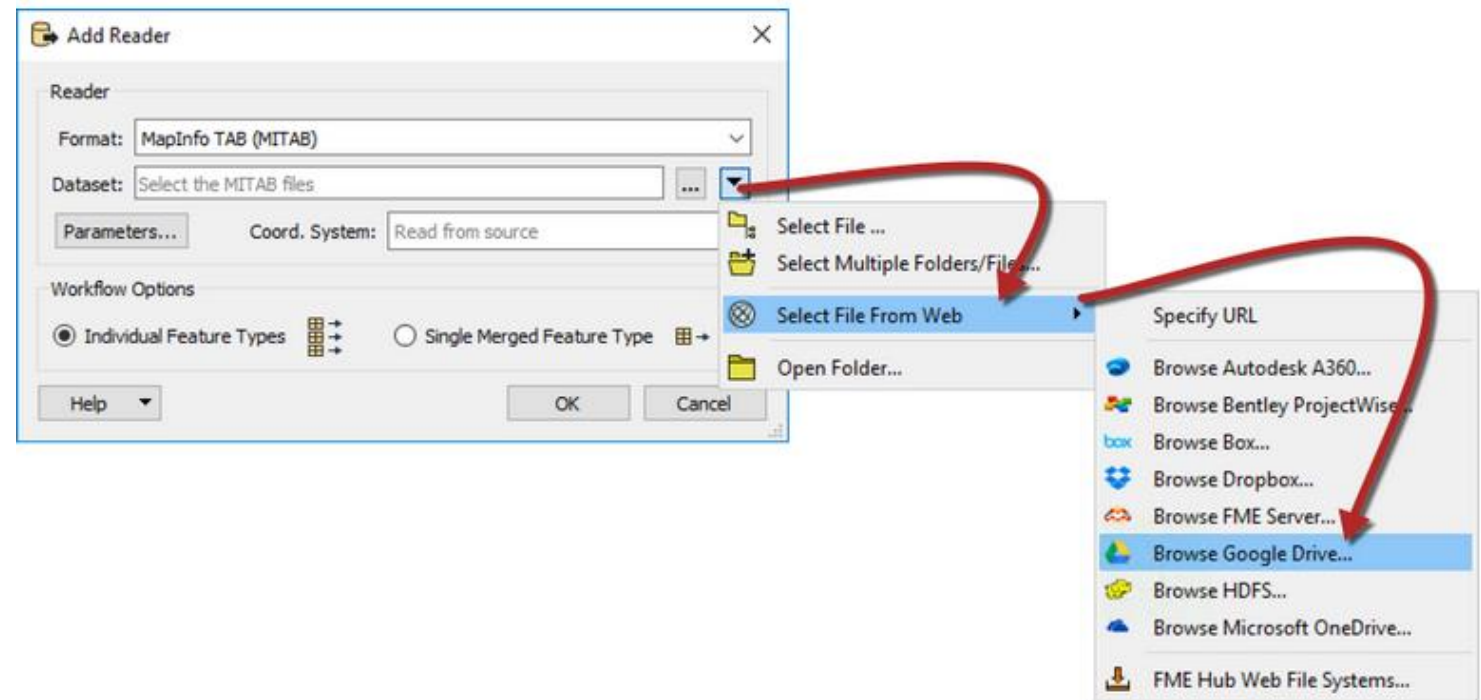


**Demo**



# Tips for maintenance (lap 5): Reading datasets straight from web

- No need to download files
- No need to unzip files
- Read straight from web





**Demo**

# Tips for maintenance (lap 6): Creating and sharing web/database connections

- Reuse web/database connections
- Credentials are not stored in workspace
- Easily use same workspace in different environments
- Share connections with colleagues





**Demo**



**Thank you!**

