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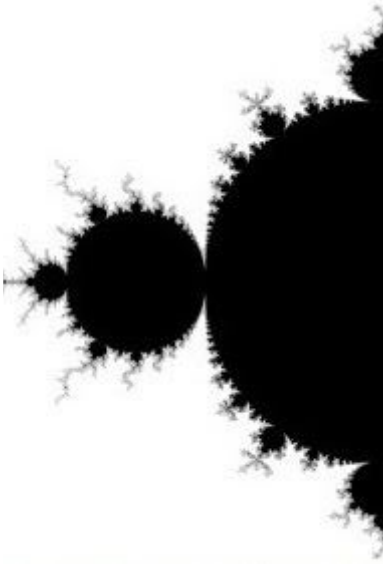


How to host your FileMaker Server on Amazon Web Services *without* using FileMaker Cloud

This is a living document and it receives updates from time to time. If the date at the bottom of the page is more than a month old, check in with us. If an update is available, we'll send you the latest version with the most up to date information available.

GUT CHECK: Who should be hosting their FileMaker solutions on AWS EC2?

The short answer: *pretty much everyone*. FileMaker Server (FMS) on Amazon Web Services (AWS) Elastic Compute Cloud (EC2) has a lot of advantages over local (onprem) servers. AWS has tools for managing your server - progressive backup with really cheap storage, cloudwatch and billing alarms, DNS and robust security tools, to name a few. Without physical hardware to maintain, businesses do not have to worry about dozens of typical IT problems like physically securing servers, network maintenance or security, power outages, network outages, etc. AWS infrastructure is probably the closest you can get to indestructible. AWS is an incredibly flexible platform with a wide (and ever growing) selection of services and functionality - if you can do it on the internet, they've probably already done it.

The real kicker is that they're usually the cheapest option too. When I wrote the first draft of this document in October 2019, I set up an On Demand EC2 instance that will run my cloud dev server for about $80/month including extra storage. If I need to change the amount of storage, CPU, RAM or something else about my server, I can do it without having to buy new hardware. I can also build as many servers as I want, whenever I want, from scratch for a few dollars. I can tinker with dozens of configurations and truly optimize my server's hardware to fit its role as a dedicated, cloud based FileMaker Server.

If my AWS server's hardware fails, I can build a new server to replace it in about 90 minutes. If I was trying to do the same thing with on-premises hardware I'm shelling out hundreds or thousands of dollars (and if I make a mistake, I own it). If I'm still using the same size AWS server in October of 2020, I'll probably pay for 3 years at once, which will cut my EC2 cost to around $600-700 per year. NOBODY can buy/maintain a comparable local server, a firewalled network and an internet connection for that, especially one on par with AWS.

Even if you don't have an AWS server, you should be using AWS to back up your databases. The cost of storage, especially with Glacier Deep Archive, is absolutely unbeatable. $1/TB per month for archiving is

READ THIS WHOLE DOCUMENT BEFORE YOU BEGIN. ***It is better to ask questions before you start rather than having to do this twice.*** ***Print this document and write on it, especially the last two pages.***

REQUIRED MATERIALS: What you need before you begin

This process typically takes three to six hours (including 1-2 hours to read the whole document).

How long it takes depends on the amount of data you have and your skill level.[7]
If you start and you have to come back to it later, no problem.

You'll need the following items to get your solutions onto AWS:

A local copy of the version of FMS you are planning on using.[8]
A local copy of your FM License Certificate file.
A credit or debit card (or your banking information).
A rock solid internet connection, especially for upload speed.
A comfortable chair and a beverage.

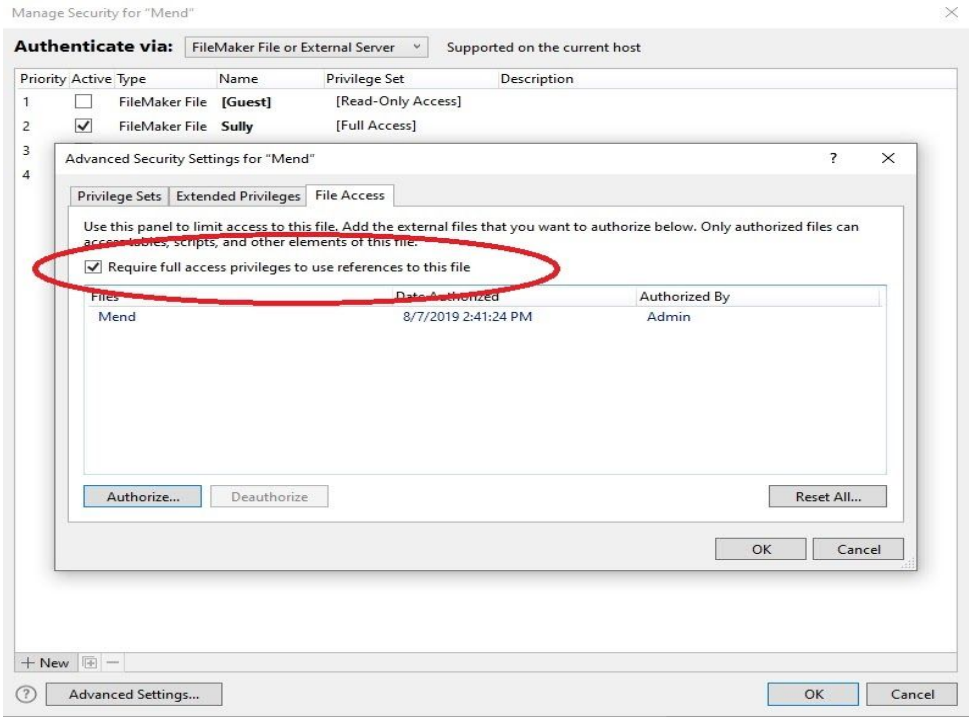
PREPARE YOUR DATA: Encryption and Permission Sets are Your Friends

Make sure your databases are secure enough to be hosted on AWS.

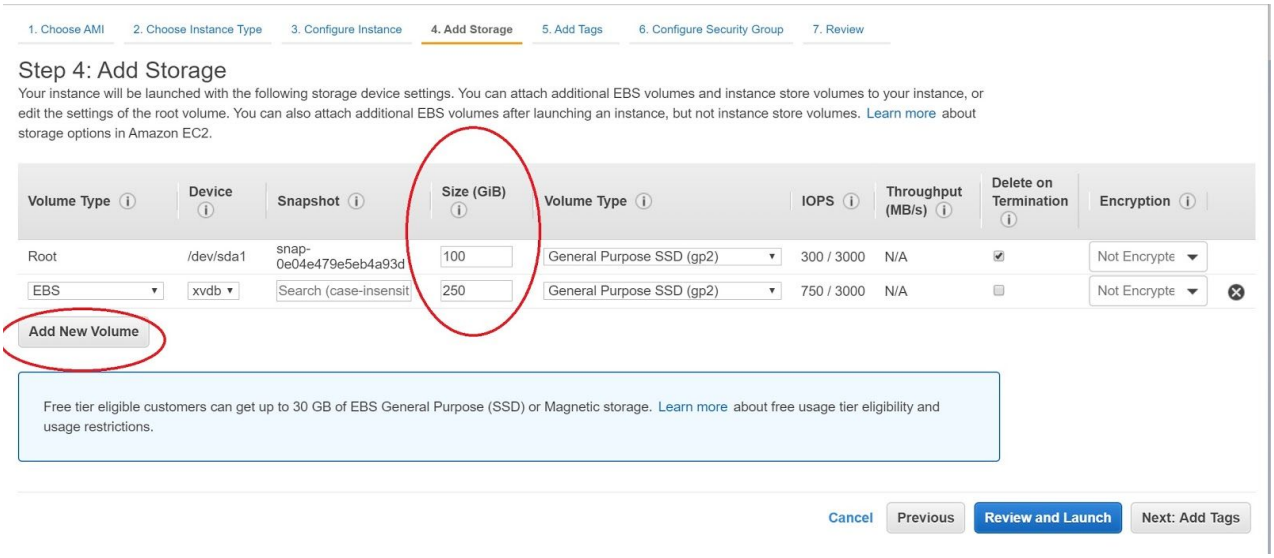
Since your server is available to the internet, you're going to need to take a few security precautions.

At the very minimum, you should do ALL of the following to EACH AND EVERY database you host:[9]

In the security settings, under advanced settings, check require full access privileges to reference files.



[7] Want to hit the big red "easy" button? Call Mandelbrot LLC and we'll do this whole thing for you. +1.312.778.8787.
[8] You may find that using an AWS S3 bucket is a better location for installation files and licenses if you're planning on setting up more than one server. I saved a copy of FMS 18.0.3's installer at: FMS 18.0.3
[9] If you are performing this task for a customer, print this section and do it with them before you set up your EC2 instance.

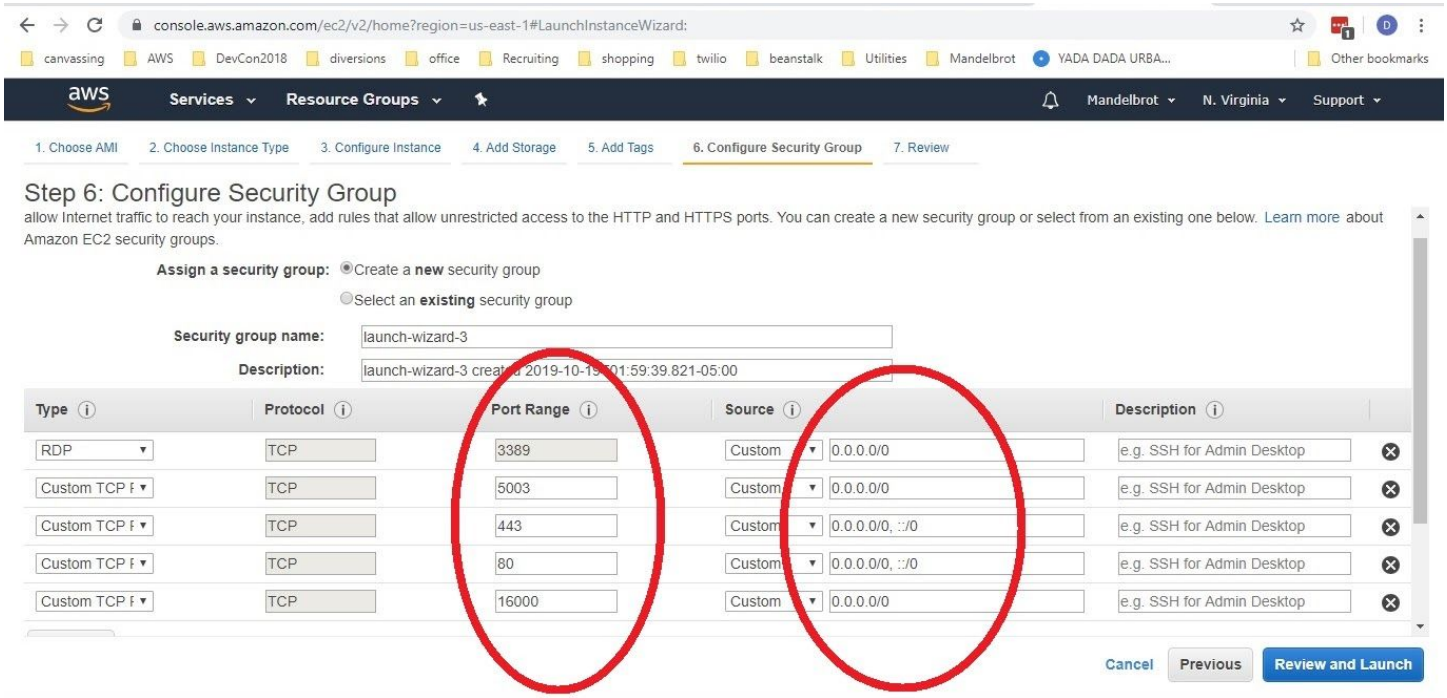


Configure security groups.

Click “6. Configure Security Group” at the top of the page.

Here we need to open the ports that FMS will use to communicate.

There are 4 of them, so click “Add Rule” four times to add four new rules.



Type in the following ports, one each, into the new rules.

80, 443, 5003, 16000

Then Copy/Paste in the value 0.0.0.0/0 for ports 16000 and 5003.

This should cover: FMP, FM Go, WebDirect, CWP, external container data and the Data API.

If you need to connect ODBC/JDBC resources, open port 2399 the same way you opened 5003.

Make sure you have an RDP connection available as well (see below).

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database files. 7+7+1 = 15, so you need a minimum of 15 times the total size of your databases. You also need 15 times whatever room you need to grow if your solution gets bigger.

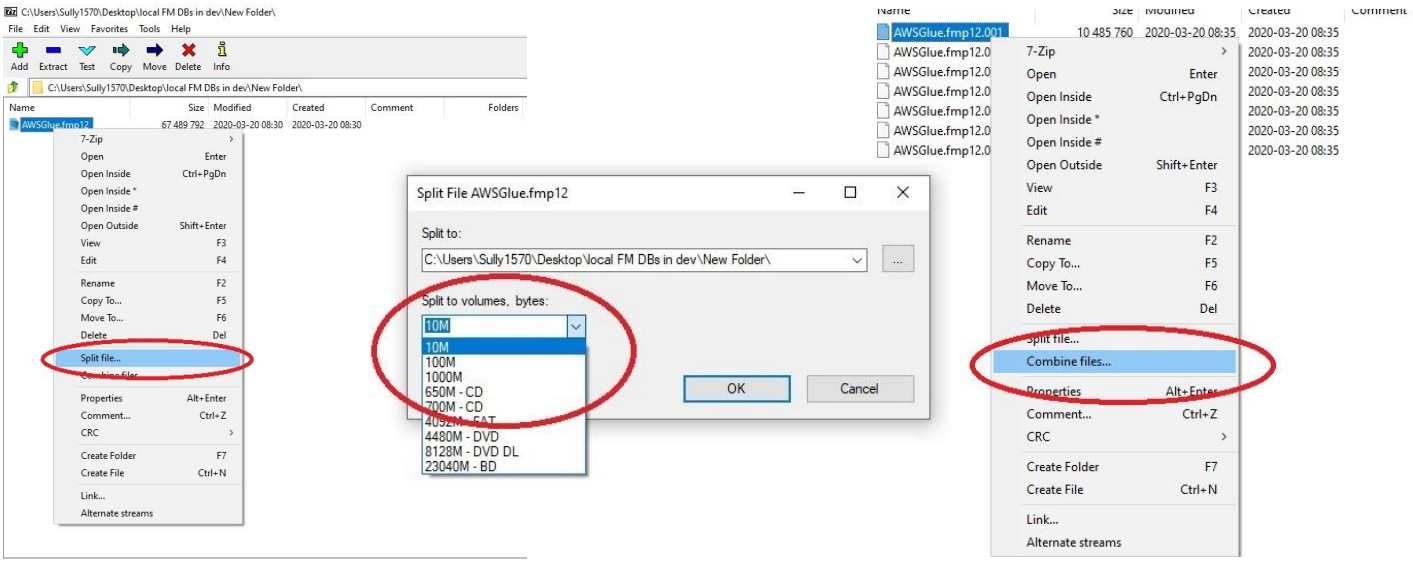
Go back to the backups tab and click Back Up Now to test your backup folder location.
Yes, you're backing up a sample database. That's ok.
You will need a backup of something to test your backup to S3.

Upload your Databases: method one, for small files and/or good internet connections.

This method is best for databases under 1GB and/or strong, fast internet connections.
Use the onboard tools in FMP.
Click File > Sharing > Upload to Host and follow the instructions.

Upload your Databases: method two, for large files and/or bad internet connections.

If your files are larger or your internet is not so good, use 7-zip to chunk the files into small pieces.
7-Zip is a free utility that helps split files into smaller pieces.
This helps tremendously if you have an unreliable internet connection.
Download and install the free 7-Zip utility onto both your local computer and your EC2 server.
https://www.7-zip.org/
Navigate to your databases in 7-Zip.
Right click on the database you want to split and choose Split File.
Select 100M or 1000M for the file size. ***Do not use the default of 10M.***
If possible, keep the number of files generated by splitting between 10 and 100.
Then, create a new S3 bucket in the same region as your ec2 instance.
To upload, click upload and drag the files into the bucket.
Log into RDP, open your AWS Admin Console and go to your S3 dashboard, then open the bucket.
From here you can download each file one at a time.
To download a file, check the box and click the download button.
Doing this for less than 100 files shouldn't take very long; downloads from S3 to EC2 are very fast.[24]
Once all the files are on your server, open 7-ZIP.
Navigate to your split files in 7-ZIP, right click the first one and select Combine Files.
Once the files are combined, move them to the D:\Databases folder.



[24] If you have no choice but to do over 100 files, call me and I'll walk you through some other alternatives.

For help with your FileMaker Solution, contact us at:

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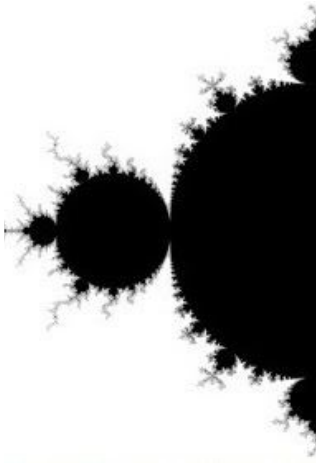

FileMaker Server Credentials

These Credentials are secret. Store them in a safe place.

AWS Root Username is	
AWS Root Password is	
RDP Password is	
Elastic IP Address	
Domain is Registered at	
Domain Registrar Username is	
Domain Registrar Password is	
admin@yourdomain redirects to	
Fully Qualified Domain Name is	
First nameserver is	
Second nameserver is	
Third nameserver is	
Fourth nameserver is	
FileMaker Admin Username is	
FileMaker Admin Password/PIN	
SSL Certificate Password is	
SSL provider account email is	
SSLprovider account pw is