	CfbEncrytionTime	CbcEncrytionTime	CtrEncrytionTime	GcmEncrytionTime
1	2.61082649230957031250	2.21283435821533203125	1.73654556274414062500	1.71487331390380859375
2	5.37841320037841796875	4.82144355773925781250	3.81412506103515625000	3.75540256500244140625
3	7.63967037200927734375	6.69407844543457031250	5.21795749664306640625	5.11019229888916015625
4	10.15141010284423828125	8.90939235687255859375	6.75549507141113281250	6.97174072265625000000
5	12.53950595855712890625	11.10739707946777343750	8.43880176544189453125	8.65390300750732421875
6	15.36984443664550781250	13.73753547668457031250	10.60614585876464843750	10.90071201324462890625
7	18.55447292327880859375	16.43021106719970703125	12.78324127197265625000	13.11092376708984375000
8	21.10366821289062500000	19.15016174316406250000	14.79897499084472656250	15.00554084777832031250
9	24.49650764465332031250	21.88515663146972656250	17.29052066802978515625	17.61493682861328125000
10	26.97172164916992187500	24.41880702972412109375	19.76141929626464843750	19.67418193817138671875
11	29.65269088745117187500	26.63166522979736328125	20.83265781402587890625	21.29840850830078125000
12	32.88352489471435546875	29.35543060302734375000	23.38719367980957031250	23.48167896270751953125
13	36.43255233764648437500	32.38701820373535156250	25.66196918487548828125	26.53138637542724609375
14	38.58182430267333984375	34.32524204254150390625	27.26950645446777343750	27.79381275177001953125
15	41.84541702270507812500	36.86642646789550781250	29.50010299682617187500	29.97801303863525390625
16	44.22776990661621093750	39.45691585540771484375	31.23817443847656250000	31.97529315948486328125
17	46.76394462585449218750	41.61329269409179687500	33.22813510894775390625	33.84261131286621093750
18	50.04882812500000000000	44.69819068908691406250	35.39698123931884765625	36.23187541961669921875
19	52.19798088073730468750	46.88847064971923828125	37.01086044311523437500	37.88506984710693359375
20	55.59775829315185546875	49.98519420623779296875	40.10844230651855468750	40.56322574615478515625
* size in MB && time in ms				
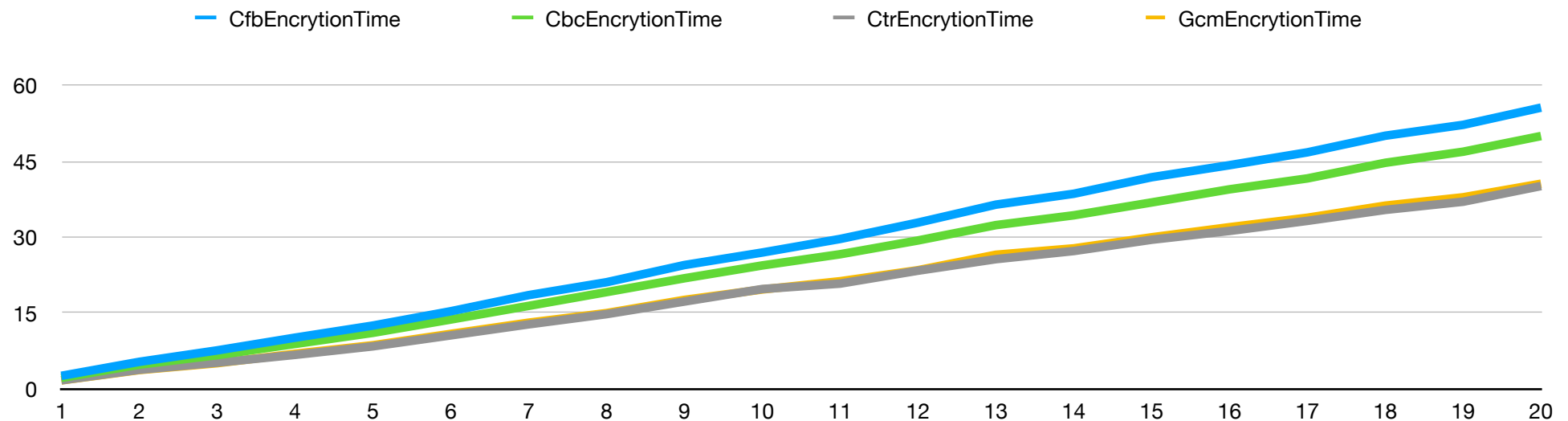
Encryption:

The encryption time data is based from various algorithms (AES_CFB, AES_CBC, AES_CTR, AES_GCM) across multiple sizes (1 MB to 20 MB):

1. **Performance Comparison**:

   - **CTR** consistently shows the fastest encryption times, followed closely by **GCM (Galois/Counter Mode),** which means that CTR or GCM is more appropriate for larger data sizes. CTR and GCM both takes about 40 ms for 20 MB.
   - **CBC** and **CFB** have moderate performances, which are about 50 ms for 20 MB.

2. **Scalability**:

   - All modes show an increasing trend in encryption time as the size increases, which is expected. However, the rate of increase varies:
     - **CFB** has a ratio about 2.64934659004211
     - **CBC** has a ratio about 2.38861799240112
     - **CTR** has a ratio about 1.91854983718872
     - **GCM** has a ratio about 1.94241762161255

3. **Time Efficiency**:

   - At the 20 MB size, the encryption times are about CFB: 55.6 ms, CBC: 50.0 ms, CTR: 40.1 ms and GCM: 40.6 ms.
   - Base on the performance of the time consuming, CTR and GCM not only perform faster overall but also remain more efficient with larger data sizes.

	CfbDecrytionTime	CbcDecrytionTime	CtrDecrytionTime	GcmDecrytionTime
1	3.98406982421875000000	3.32248210906982421875	3.27615737915039062500	3.33030223846435546875
2	7.99052715301513671875	6.69381618499755859375	6.61869049072265625000	6.69560432434082031250
3	11.94403171539306640625	9.91151332855224609375	9.89251136779785156250	9.91485118865966796875
4	16.25099182128906250000	13.55030536651611328125	13.33065032958984375000	13.51671218872070312500
5	20.09189128875732421875	16.81735515594482421875	16.69306755065917968750	16.94371700286865234375
6	24.27084445953369140625	20.38214206695556640625	20.19274234771728515625	20.31676769256591796875
7	28.78603935241699218750	24.19760227203369140625	23.95226955413818359375	24.40207004547119140625
8	33.23140144348144531250	28.00154685974121093750	27.88302898406982421875	27.94027328491210937500
9	38.79065513610839843750	33.68792533874511718750	32.49316215515136718750	32.52968788146972656250
10	42.26417541503906250000	35.70733070373535156250	35.28811931610107421875	35.51042079925537109375
11	51.72529220581054687500	44.71342563629150390625	43.25051307678222656250	45.21527290344238281250
12	49.76155757904052734375	41.95554256439208984375	41.42439365386962890625	41.93565845489501953125
13	57.83390998840332031250	48.26502799987792968750	47.73690700531005859375	47.91996479034423828125
14	59.33275222778320312500	49.93171691894531250000	49.41625595092773437500	50.19669532775878906250
15	62.50464916229248046875	52.48937606811523437500	51.61290168762207031250	52.29485034942626953125
16	66.69139862060546875000	55.82730770111083984375	55.53417205810546875000	55.83992004394531250000
17	72.57623672485351562500	60.74256896972656250000	60.42201519012451171875	61.37011051177978515625
18	76.43439769744873046875	63.71185779571533203125	63.07101249694824218750	63.56148719787597656250
19	80.06129264831542968750	66.61858558654785156250	66.31500720977783203125	66.95928573608398437500
20	84.54101085662841796875	70.72596549987792968750	70.45655250549316406250	70.97251415252685546875
* size in MB && time in ms				
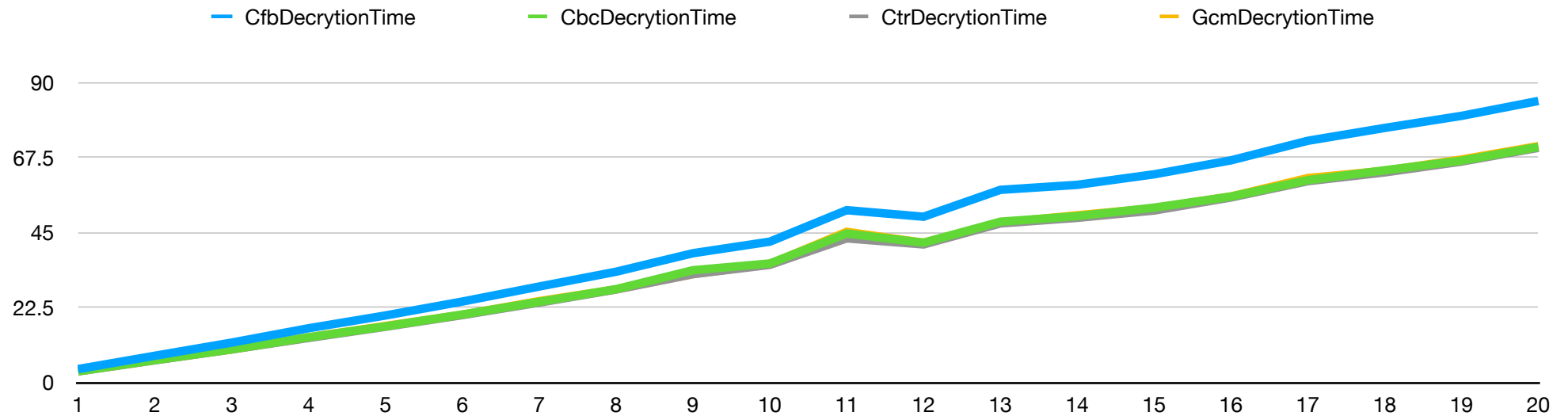
Decryption

The decryption time data is based from various algorithms (AES_CFB, AES_CBC, AES_CTR, AES_GCM) across multiple sizes (1 MB to 20 MB):

1. **Performance Overview**:

   - **CTR, CBC** and **GCM** have the fastest decryption times overall.
   - **CFB** has the slowest decryption time.

2. **Scaling Behavior**:

   - All algorithms exhibit an increasing trend in decryption time as data size increases, which is expected.
     - **CFB** has a ratio about 4.0278470516204
     - **CBC** has a ratio about 3.37017416954041
     - **CTR** has a ratio about 3.35901975631714
     - **GCM** has a ratio about 3.38211059570313

3. **Time Efficiency at 20 MB**:

   - At 20 MB, the decryption times are approximately about CFB: 24.3 ms, CBC: 20.4 ms, CTR: 20.2 ms and GCM: 20.3 ms.
   - Base on the performance of the time consuming, CBC, CTR and GCM not only perform faster overall but also remain more efficient with larger data sizes.
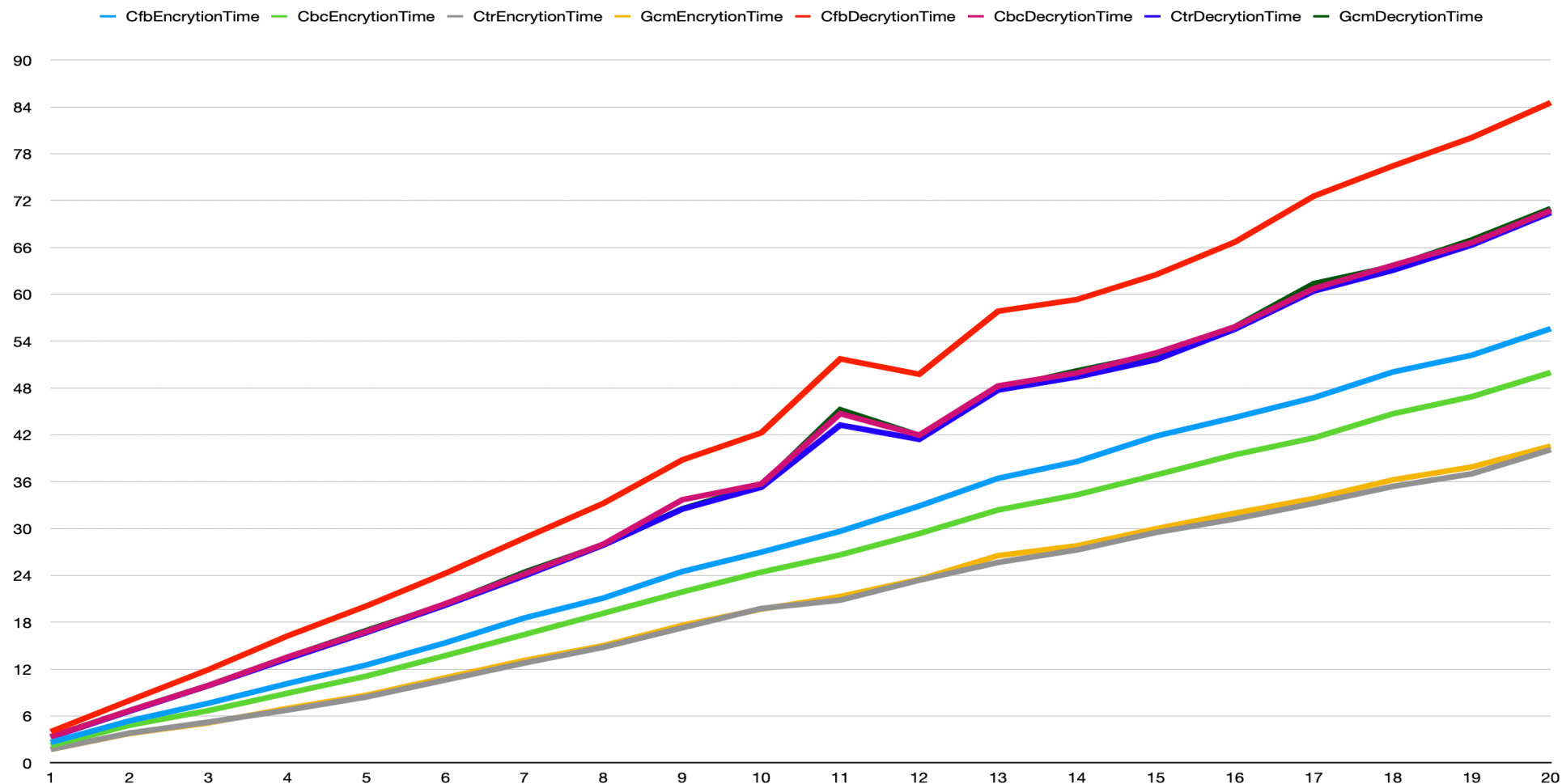
Conclusion: As the figures shown, time consuming more as the data size increases. CTR and GCM don't have much difference because of GCM is an extension from the CTR. Not matter of what, CFB is not recommending. CFB takes most of the time for encryption and decryption. Even though CFB is much more easy than the other modes. For applications that speed is critical, if cryptography is required and symmetric encryption is acceptable, then CTR or GCM would be preferred, especially for large datasets. Maybe the encrypted process that rely on previous message would affect the performance of time. CFB and CBC encrypted based on previous message. CTR and GCM don't need the previous encrypted messages. Also, not always the easy encryption method would have better time performance.