FINRA CAT™

2024 Business Clock Synchronization Survey by FINRA CAT

1. Purpose of Survey:

The CAT NMS Plan requires the CAT Chief Compliance Officer to annually develop and conduct an assessment of Business Clock synchronization, as to whether industry standards have evolved such that: (i) the synchronization standard in Section 6.8(a) should be shortened; or (ii) the required time stamp in Section 6.8(b) should be in finer increments.

Industry Members and CAT Reporters are encouraged to complete this survey. Your input will help shape recommendations for potential changes to the Business Clock requirements.

Survey Participants who submit a completed survey and provide a business email will receive a copy of aggregated and anonymized summary results.

Current Business Clock Synchronization Requirements:

Pursuant to Section 6.8(a) of the CAT NMS Plan

Each Industry Member shall synchronize its Business Clocks, other than such Business Clocks used solely for Manual Order Events or Allocation Reports, at a minimum to within a fifty (50) millisecond tolerance of the time maintained by the atomic clock of the NIST, and maintain such synchronization. For Manual Order Events or Allocation Reports, synchronize its Business Clocks at a minimum to within one second of the time maintained by the NIST atomic clock and maintain such synchronization.

Pursuant to Section 6.8(b) of the CAT NMS Plan

Each Participant shall, and through its Compliance Rule shall require its Industry Members to, report information required by SEC Rule 613 to the Central Repository in milliseconds. To the extent that each Participant and its Industry Members order handling or execution systems utilize timestamps in increments finer than the minimum required, such finer increments shall be reported to the Central Repository.

Current Self-Reporting Standards:

A CAT Reporter is required to self-report to FINRA CAT, deviations of clock synchronization standards required under SRO Rules and the CAT NMS Plan. CAT Reporters would need to self-report a deviation if a system creating and recording CAT Reportable Events drifts outside of the CAT NMS
Plan's required timeframe based on thresholds outlined in CAT Alert 2020-02 (10/19/2020), which can be found at www.catnmsplan.com.

1. Please enter the Following Optional Information:

Name: [   ]

Company: [   ]

Business Email
(required to receive
aggregated survey
results): [   ]

2. Please send me aggregated and anonymized summary results of this survey to my business email.

- ( ) Yes
- ( ) No

3. Identify your business profile below. Check all that apply:

- [ ] Clearing Broker-Dealer only
- [ ] Introducing Broker-Dealer only
- [ ] Clearing & Introducing Broker-Dealer
- [ ] ATS
- [ ] Service Vendor
- [ ] Other (please specify)

[   ]

4. Specify the type of Business. Check all that apply:

- [ ] Retail Only
- [ ] Institutional Only
- [ ] Retail and Institutional
- [ ] Routing Venue
- [ ] ATS Operator
- [ ] Service Vendor
- [ ] Market Maker
- [ ] Proprietary Trading
- [ ] Execution Venue
- [ ] Other (please specify)

[   ]

5. What is the size of your Broker-Dealer?

- ( ) Total Capital less than $500,000
- ( ) Total Capital greater than $500,00
- ( ) Not Applicable (e.g. Vendor)

6. Identify the types of instruments traded. Check all that apply.

☐ Reg NMS Securities

☐ OTC Securities

☐ Options

7. My firm relies

○ Exclusively on a service provider's system(s) for clock synchronization

○ On a combination of service provider's and in-house

○ Exclusively on in-house

8. Provide the total count of systems, not servers, which you operate for which Business Clocks are maintained.

○ 1 System

○ 2 to 5 Systems

○ 5 to 10 Systems

○ More than 10 Systems

○ Not Known

9. How many of these systems capture timestamps in finer increments than milliseconds?

○ None

○ Less than 5 systems

○ 5 to 10 systems

○ More than 10 systems

○ Not Known

10. Identify the types of systems you operate in which Business Clocks are maintained. Check all that apply.

☐ Order Origination System

☐ Order Routing System

☐ Order Execution or Matching System

☐ Internalization Systems

☐ Back office Systems

☐ Third Party Systems (clearing, vendor systems)

☐ Not applicable. (Clocks maintained by third party)

☐ Other (please specify)

11. Does the firm maintain different synchronization tolerances for Business Clocks used for different systems?

○ Yes

○ No (Skip Question #12)

○ Not Known

12. Do tolerances vary based on:

☐ Business Need

☐ Location of Business Clock (e.g., internal data center)

☐ Other (please specify)

[   ]

13. Does your frim have tighter Business Clock drift tolerances than what is required by the CAT NMS Plan?

○ Yes

○ No (Skip Question #14)

○ Not Known

14. If Yes, provide the current Business Clock drift tolerances tighter than the current standard requirement for each system. For multiple systems, check all that apply.

	Order Origination System	Order Routing System	Order Execution or Matching System	Order Allocation	Other
Under 1 Millisecond	○	○	○	○	○
1 Millisecond	○	○	○	○	○
2 milliseconds to 5 milliseconds	○	○	○	○	○
6 Milliseconds to 10 milliseconds	○	○	○	○	○
Not Known	○	○	○	○	○

15. How often does the firm synchronize its Business Clocks? For multiple systems, check all that apply.

☐ Once a day

☐ More than once a day, but less than once an hour

☐ Once and hour or more, but less than once a minute

☐ Once a minute or more, but less than once a second

☐ Once a second or more, but less than once a hundredth of a second

☐ Dynamic or Ongoing

☐ Not Known

16. How often does the firm check the accuracy of its Business Clock Synchronization?

- [ ] Once a day
- [ ] More than once a day, but less than once an hour
- [ ] Once an hour or more, but less than once a minute
- [ ] Once a minute or more, but less than once a second
- [ ] Once a second or more, but less than once a hundredth of a second
- [ ] Dynamic or Ongoing
- [ ] Not known

17. Is the frequency of Business Clock Synchronization checks by the firm the same for all systems?

- ( ) Yes
- ( ) No
- ( ) Not Known

18. If your clocks drift outside of your clock synchronization tolerance, what amount of drift outside tolerance would cause you concern?

- ( ) Less than 1 millisecond
- ( ) 1 millisecond to 2 milliseconds
- ( ) 3 milliseconds to 5 milliseconds
- ( ) 6 milliseconds to 10 milliseconds
- ( ) 11 milliseconds to 49 milliseconds
- ( ) More than 50 milliseconds

19. If your system fails to re-synchronize, over what period of time do you consider that a concern?

- ( ) Multiple times per second
- ( ) Multiple times per minute
- ( ) Multiple times per hour
- ( ) Multiple times per day
- ( ) Daily
- ( ) Weekly

20. Would escalation discussed in questions 18 and 19 vary based on the impacted system?

- ( ) Yes
- ( ) No
- ( ) Not Known

21. Provide the firm's current Business Clock synchronization maintenance and compliance costs per year.

○ Less than $25,000

○ $25,000 to $50,000

○ $50,000 to $100,000

○ $100,000 to $500,000

○ $500,000 to $1,000,000

○ More than $1,000,000

○ Not Known

22. Has you company changed the time stamp granularity on any systems in the past:

○ Within the past year ○

Within the past 2 years ○

Within the past 5 years ○

Not known

23. Estimated costs for changes to time stamp granularity contemplated by question #22

○ Less than $25,000

○ $25,000 to $50,000

○ $50,000 to $100,000

○ $100,000 to $500,000

○ $500,000 to $1,000,000

○ More than $1,000,000

○ Not Known

24. Has you company changed its Business Clock synchronization checks in the past:

○ Within the past year ○

Within the past 2 years ○

Within the past 5 years

Not known

○

25. Estimated costs for changes to Business Clock synchronization checks contemplated by question #24

○ Less than $25,000

○ $25,000 to $50,000

○ $50,000 to $100,000

○ $100,000 to $500,000

○ $500,000 to $1,000,000

○ More than $1,000,000

○ Not Known

26. What do you believe are the advantages or disadvantages of reducing the current Business Clock synchronization standard? (e.g., reduce latency, improve competitive advantage)

27. What do you believe are the advantages or disadvantages of requiring finer time increments for CAT reporting? (e.g., Improve accuracy of sequencing order events - finer timestamps would validate the uniqueness of the Routed Order Id)

28. Should the Business Clock synchronization requirements set forth in the Plan vary depending on the type of CAT Reporter, IM and/or the type of system?

☐ Yes

☐ No

If Yes, Explain how and why.

29. Do you have any other comments: