

NYSE Pillar - Arca Options Migration FAQs

Scope and Disclaimer

This summary document is intended for informational purposes only to answer common questions regarding the plan for Arca Options (the “Exchange”) on NYSE Pillar and to provide additional transparency on the Exchanges’ technology and recommend best practices so that all Exchange Participants can effectively integrate their systems with those of the Exchange and better manage their operational risks. While the summary information provided is believed to be accurate at the time of publication, the document may become outdated as the Exchange continuously evaluates new solutions and enhances technology to improve resiliency, performance, and scalability. Exchange Participants should also refer to the Exchanges’ most current rules and product technical specifications for more definitive information, which information ultimately controls in the event of any inadvertent conflict with this document.

Migration

- 1. What is the timeline for the symbol migration?**
Arca Options will begin its symbol migration on **November 1, 2021**. The migration will be completed in a span of three weeks.
- 2. Will the migration strategy occur by underlying or by matching engine?**
The symbol migration will be performed on an underlying basis. All outright series and complex series for an underlying will either trade on the Pillar or UTP platform.
- 3. How will Exchange Participants know which platform an underlying will trade on during the migration?**
NYSE will provide a target deployment plan in the weeks prior to the start of the migration which will be posted to the [Pillar migration website](#). Additionally, a Trader Update will be published prior to each symbol migration and will announce any changes to the timing of plan deployment if necessary. Participants can also look at Symbol Mapping files posted on the NYSE MFT that will provide the details of which platform - UTP vs Pillar - each underlying will trade on the next business day. These files will be available nightly, after 10:00 pm et.
- 4. Can Participants access series trading on UTP and Pillar via the same gateway connections?**
No. Pillar gateways will interface with series traded on Pillar, and existing UTP options gateways will interface with series traded on UTP only. The same applies for Drop Copy Gateways.
- 5. Will the Production systems be available for weekend tests?**
Yes. The Exchange will host seven weekend tests in the Production environment. The final two mandatory Participant tests will be end-to-end tests and incorporate all functionality, market data, reporting and customer outputs.
- 6. Will Participants be able to access the symbol configuration files ahead of weekend tests?**
Yes. The symbol configuration files will be available on Friday evening.

7. [Will global risk controls be aggregated between UTP and Pillar during the migration?](#)
No. Risk controls for each underlying will be segregated based on the platform where the underlying is trading. Additional details on risk controls settings in Pillar can be found in the [NYSE Pillar Risk Controls](#) document.
8. [What documentation is required for the migration?](#)
For the Production migration, Participants must have a NYSE Master User Agreement (“MUA”), and/or corresponding Arca Options Additional Platform Agreement. Connectivity and Session request forms are required once MUAs are in place. Service Bureaus may be required to complete additional requirements. Please contact the Client Relationship Services team at crs@nyse.com to confirm the documentation required for your firm.
9. [Will current TPIDs be migrated over to Pillar?](#)
No. Existing TPIDs and Firm symbols will be replaced by MPIDs, which are 4-character (alpha) identifiers. Each MPID has a single clearing relationship. If a firm has an MPID or other 4-character alpha identifier in use on another exchange, that identifier can be used in Pillar (if available). If a firm does not have an MPID, or other 4-character alpha identifier already in use, they may contact crs@nyse.com to request an MPID be reserved.
10. [Do Participants need to maintain market data feed handlers for both UTP and Pillar during the migration?](#)
Yes. During the series migration, Participants reading market data must maintain legacy XDP feed handlers in conjunction with new Pillar feed handlers to continue receiving proprietary market data for all issues. After the migration is completed, Participants no longer need to connect or maintain a legacy feed handler.
11. [Are there any changes to OPRA?](#)
No. There are no changes to OPRA in support of this migration.

Pillar Certification environment (“Pillar Cert”)

12. [What documentation is required to access Pillar Cert?](#)
Participants must submit a [Pillar Certification Session Request Form](#) to the Technology Member Services (TMS) team. An MUA is not required to begin testing.
13. [Are there any fees for accessing the Pillar Cert environment?](#)
No. There are no fees for accessing the Cert environment.
14. [Can I access Pillar Cert via internet?](#)
Yes. Participants can access Arca Pillar Cert environment via SFTI or internet. Please Note: Multicast market data is not available via internet.
15. [Does Pillar Cert offer market data feeds?](#)
Yes. Pillar Cert offers the Top, Deep and Complex proprietary data products offered in Production.
16. [Is certification required to order refresh/re-transmission sessions?](#)
Yes. Certification testing is required for Participants wishing to order refresh/retransmission sessions.

Gateways and Infrastructure

17. Are Pillar gateways common across all NYSE markets on Pillar?

Gateways are not shared across NYSE markets. Each market has its own dedicated gateways which have their own, separate infrastructures, connectivity, and outputs.

18. Within each market, are all Pillar gateways shared or can Participants request dedicated gateways?

All Pillar gateways are shared by Participants within each market.

19. How many gateways are there in the Arca Options infrastructure?

Multiple instances of each gateway application are run in Production to allow for load balancing and redundancy. Internally, each gateway application provides access to all matching engines on the Exchange. All matching engines reside in one physical hall within the Mahwah data center.

Gateway capacity is periodically reviewed to ensure high availability and consistent throughput across all Participants. The specific number of gateways is not disclosed, but Participants can expect that each market has multiple gateway instances.

20. How many client sessions does a gateway process support?

Sessions are load balanced across gateway processes based on historical trading activity so that active users are typically balanced with less-active users. Market Maker and non-Market Maker sessions may be assigned to the same gateway process.

21. How does the gateway process ensure fairness for multiple Participants?

Multiple customer connections into each gateway are serviced in a round robin fashion (using edge triggered epoll), with processed messages internally queued in the gateways. Messages are then processed from multiple gateway queues by the matching engine, also in a round robin fashion. Inbound messages are processed in time sequence as received by the matching engine.

22. Do Pillar gateway and Matching Engine processes run on a single core or are they multi-threaded?

Pillar gateway and Matching Engine processes are single threaded.

23. Is the communication between the gateway and the matching engine unicast or multicast?

Communication between the gateway and the matching engine is multicast.

24. Will reference data be provided over the order entry gateways?

Yes. Reference Data containing underlying and series data will be provided over the binary gateways for both at start of day, as well as intraday adds. During the migration, the Reference Data will only contain the reference data for migrated symbols.

25. Does the Pillar architecture allow for latency differentials for messaging between the various gateway processes and matching engines?

The distributed architecture of Pillar has normalized messaging processing and latency between modules throughout the system.

26. How will the Exchange distribute series across matching engines?

Each underlying will be assigned to a single matching based on load balancing. Underlying distribution will be made available in the reference data.

27. Will FIX order entry sessions have any major functional limitations compared to Binary order entry sessions?
Unlike Binary order entry sessions, FIX order entry sessions will not support - Referential data streams, bulk quoting, complex symbol request, Risk Controls or use of complex symbol id (fast symbol).
28. Does pillar have segregated market maker gateway like UTP market maker Direct (MMD) gateways ?
No. Pillar supports market maker specific connections (sessions). They will share the gateway with all other participants including non-market making firms. There are many more gateways in Pillar than in UTP, which will allow for optimization and load balancing.
29. Will Pillar offer a dedicated takedown gateway?
No. Pillar is designed for maximum throughput, minimal latency, and a high degree of determinism. The architecture does not warrant creating dedicated gateways. Any Market Maker session can be used to enter Bulk cancels, orders and quotes or Bulk cancels only. Bulk cancels will be accepted and applied across all Market Maker sessions.

Market Maker Quoting and Order Handling

30. How many quote updates are supported in a single Bulk Quote message?
Bulk quote messages will support a maximum of 20 single-sided quotes.
31. How are Bulk Quotes acknowledged?
A single ack is provided for a single bulk quote. The ack will identify in the repeating group if a quote was accepted or rejected after all 20 quotes are processed. If a quote subsequently reprices after the initial bulk quote ack, a subsequent ack is provided with the new quote information only.
32. Is there a latency difference in the Binary gateway between Order Entry vs Bulk quoting?
No. Bulk quoting is atomic across matching engines and will not have a latency difference from Binary Order Entry.
33. Does Pillar throttle messages?
Yes. Inbound messages are throttled on a per-session basis at a rate of 500 messages/100 rolling milliseconds. Participant firms using Binary gateways can indicate if they would like throttled messages to queue until they can be processed, or have the messages reject. Bulk quote messages are counted as one message.
34. What is the level of atomicity for Bulk Cancels?
Since a Bulk cancel request can be for multiple underlyings, the request is first processed in an external process, spread out to matching engines (as necessary) and when received by the matching engine is atomic. Once a bulk cancel has reached the matching engine, all orders subject to cancellation will not be executed. Cancellation ack messages will reach the customers subsequently.
35. Has purge functionality been enhanced in Pillar?
Yes. Bulk Cancels can be sent from any Market Maker session and will cancel any order or quote regardless of the session it was received from, provided that the order or quote meet the criteria for the cancel. Bulk cancellations can be specified to cancel quotes only, orders only or both orders and quotes. Additionally, cancellations can be conducted by Firm, MMID, Session, underlying, series and/or the new user defined Group ID. The user defined GroupID allows Market Makers to define

groupings. The GroupID may be specified for a given underlying symbol or across multiple underlying symbols.

36. When a mass cancel spans underlyings, does the Exchange broadcast it to all appropriate matching engines at once or one matching engine at a time and wait for the cancel to finish before proceeding to the next matching engine?

Mass cancels are spanned out to all appropriate matching engines.

37. How are orders and quotes handled in a matching engine failure scenario?

The standard Pillar recovery process that exists for equities will be implemented for options. All open interest, including GTC orders, will be cancelled within the failure domain and cancel confirmations will be sent when possible.

Proprietary Market Data

38. Will current XDP market data feed handlers work for new Pillar market data feeds?

No. Current XDP market data feed handlers will not work with Pillar market data feeds. Participants must code to Pillar specifications for the [Top](#), [Deep](#) and [Complex](#) feeds and connect to new corresponding [IP address](#). Participants are strongly recommended to verify their new feed handlers in the Pillar Cert environment.

39. Are new real-time market data products being introduced for Pillar?

No. The Exchange will continue to offer existing products with new Pillar specifications for the [Top](#), [Deep](#) and [Complex](#) feeds. Please note: the Deep feed offering will be enhanced from a three-level Depth price feed, to a full NYSE Integrated order-based product.

40. What is the latency difference between the Top feed and the Deep feed?

The latency profile for Top vs. Deep feeds for options will be very similar, as both are published from within the Core symbol partition in parallel.

41. What will the bandwidth be for the new Pillar market data feeds? How will they differ from today?

The Exchange is currently stress testing bandwidth requirements and will publish additional details closer to Production test dates.

42. Will OrderIDs and TradeIDs on the gateway be reflected in market data feeds?

Yes. In the OrderID field within the Deep feed and TradeID field(s) within the Top and Deep feeds.

43. Will series/symbol channel (TXN) distribution change every day, or will it stay the same day-on-day? Does the distribution change on a particular schedule?

Participants should read the series index mapping message each day to determine series channel information. While unlikely to change every day, the Exchange does not guarantee series symbol moves will not occur, so Participants are advised to determine this information within feed handlers.

Additional Details

44. Will the new Trade Ops Portal (TOP) retain all GEMS functionality?

TOP will be optimized to support Pillar functionality. Additional features will be added that are not currently available in GEMS and features no longer applicable in Pillar and will be removed.

45. [Are Market Maker and Floor Broker Badges changing?](#)

Current Market Maker and Floor Broker badges will remain the same but will be tied to new Pillar MPIDs. Floor Brokers must coordinate with [CRS](#) to formally link FB badges to their new MPIDs.

46. [What are the fallback plans during the migration period?](#)

If any issues surface during the migration, the Exchange will fallback overnight; Participants will not need to support an intra-day fallback to UTP.

47. [Where can I find additional information regarding the Pillar Options migration?](#)

The latest information can be found on the migration webpage located at www.nyse.com/pillar-migration. Any additional questions or feedback can be sent to the NYSE Pillar migration team at Info-NYSE-PillarQueries@Ice.com or the Relationship Management team at rmteam@nyse.com.