



CFE TECHNICAL INTEGRATION FREQUENTLY ASKED QUESTIONS

Last Updated: **01/23/18**

GENERAL QUESTIONS

What are the immediate effects of this transaction on me as a Trading Privilege Holder (TPH)?

- While we'll be busy at work behind the scenes integrating the two companies this year, there will be no significant operational changes in 2017. All TPHs should continue to interact and communicate with each exchange as they normally would.
- To eliminate confusion and provide an immediate high level of service, we are integrating the sales teams, and your point of contact for equities, options, and futures will continue to be in touch.
- The Cboe and legacy Bats production platform support teams will continue to operate independently, including the Help Desk/Trade Desk and TPH Administration/Membership Services teams, so these contacts at the respective organizations remain unchanged at this time.
- As the integration process progresses, we will continue to keep you apprised of any changes in day-to-day contacts and/or processes as it relates to your interaction with the exchanges.
- Your feedback is important to us so expect to hear from us regularly throughout the integration process.

What's happening with CFE?

- We plan to migrate CFE to Bats technology on February 25, 2018.
- The migration process will begin later this year and details will continue to be made available on the integration website as the integration progresses: [Integration Web Page \(http://batsintegration.cboe.com\)](http://batsintegration.cboe.com)
- An integration timeline will also be made available on the [Integration Web Page](#).

Will functionality of CFE change?

- We plan to transition CFE to Bats technology on February 25, 2018.
- We will provide ample notice to all TPHs regarding any technology and/or functionality changes that may impact their businesses.

How will pricing be affected on CFE?

- There are no changes to CFE pricing at this time. If any decisions are made to change pricing, we will provide ample notice for any changes.

Are you keeping all order types and product offerings of both companies?

- We are in the process of reviewing all product offerings and order types with a view to leverage the best-in-class offerings from both organizations.
- Once the technology migration to Bats technology is complete, most CFE order types and functionality will continue to be supported on Bats technology based on customer demand.
- There may be certain minor changes related to the migration to the Bats technology; however, the functionality and differentiation that are core to CFE's marketplace will remain.
- More details regarding functionality can be found within the new technical specifications available on the [CFE Integration Page](#).

Will the trading hours of CFE change?

- Yes. Upon migration to Bats technology CFE trading hours will change to the [trading hours](#) that are found on the integration website.

Will TPHs need to complete new registration materials for CFE?

- No. We do not currently anticipate any need to repaper existing CFE TPHs.
- Each TPH application will be migrated and we expect that there will be one trading permit for each TPH.
- In situations where a firm currently has multiple permits, they will likely be consolidated and managed as a single permit for the Bats technology platform.

Will TPHs be restricted to a specific number of logins as they are today? What will order entry session restrictions look like on Bats technology?

- No. The concept of a login will be eliminated in favor of the concept of a logical order entry session.
- Each TPH may maintain as many logical order entry sessions as they are willing to purchase.
- Logical order entry sessions will have a substantially higher messages per second capacity than existing CFE order entry sessions.
- Logical order entry sessions will also allow for multiple EFIDs to be associated with a session for clearing purposes.

What is an EFID?

- An EFID is an Executing Firm ID which associates a 4 character alpha ID with an OCC clearing number.
- EFIDs must be associated with a logical session and submitted with orders on a given session to identify the clearing relationship to be used for a respective order.
- Once EFIDs have been established for a firm, the EFID association to logical ports a firm desires the EFID(s) to be supported on can be managed by contacting CFE Trade Desk.

How do I obtain an EFID?

- In order to obtain an EFID assignment, a firm must first ensure they have a clearing guarantee on file with TPH Administration/Membership Services at registration@cboe.com. The TPH Administration/Membership Services team will then work with the TPH to complete the EFID assignment.

How will billing be handled for CFE?

- We do plan to update the billing process in the future as part of the migration to Bats technology.
- We will provide ample notice to all TPHs regarding any billing changes that may impact their businesses.

Who do I call if I have a question?

- The existing Cboe/C2 Help Desk, CFE Help Desk and Bats Trade Desk will continue to operate as they have in the past. If you have a question related to the active legacy Cboe exchanges, contact the Cboe/C2 or CFE Help Desks and if you have a question related to the legacy Bats markets, contact the Cboe US Trade Desk.
 - Cboe/C2 Help Desk (legacy platform): helpdesk@cboe.com or +1.866.728.2263
 - CFE Help Desk (legacy platform): cfehelpdesk@cboe.com or +1.877.226.3773
 - CFE Trade Desk (Bats platform): cfetradedesk@cboe.com or +1.312.786.8700
 - Cboe US Trade Desk (Bats platform): tradedesk@cboe.com or +1.913.815.7001
 - Index Support: indexsupport@cboe.com or +1.312.786.7635
 - Cboe Listings Team: listings@cboe.com
 - Cboe Europe Trade Desk: tradedeskeurope@cboe.com or +44.20.7012.8901
 - Hotspot Contact Info:
 - Americas: +1.212.209.1420 or HotspotSales@cboe.com
 - Europe: +44.207.131.3450 or HotspotSales@cboe.com
 - Asia: +65.6818.9071 or HotspotSales@cboe.com
 - Technical Support: +1.212.378.8558
- Additionally, our technology and operations personnel are available to discuss questions regarding our systems functionality with all market participants that interface with our markets (Technical Review). If you would like to request a Technical Review meeting or call, please contact the Trade Desk.
- The Cboe NOC may be contacted for questions regarding connectivity questions related to the platform migration to Bats technology.
 - Cboe NOC: noc@cboe.com or +1.913.815.7005
- Unless a representative from Cboe has informed you otherwise, your additional contacts, e.g. business development or sales, are unchanged at this time.

Will CFE Ownership and Control Reporting (OCR) change?

- No. The current CFE OCR procedure will remain in place. Following is a link to the CFE OCR portal, <https://cfe.cboe.com/OCR/Login.aspx?ReturnUrl=%2focr%2f>.

TECHNOLOGY/INTEGRATION QUESTIONS

What is the integration transition timeline? When will CFE transition to Bats technology?

- Our plan is to migrate CFE to Bats technology at the Equinix NY5 data center on February 25, 2018, at which point the legacy CFE technology will be retired.
- The migration process will begin later this year and an [Integration Timeline](#) as well as more details can be found on the [Integration Web Page](#).
- We will remain in close dialogue with our customers and provide regular communication and ample notice on any technology changes we plan to make that will impact their business.

What is the plan for the data centers? Will you continue to operate in the same ones you currently operate in?

Secaucus

- Cboe plans to consolidate all exchanges into the Equinix NY5 data center in Secaucus, NJ.
- CFE will remain in its current location at Equinix NY4 until the migration to Bats technology in NY5 on February 25, 2018.
- Cboe EDGA Exchange, EDGX Exchange, BYX Exchange, BZX Exchange, and BZX Options Exchange and EDGX Options Exchange will remain in their current location in Equinix NY5.
- NY5 is a state-of-the-art data center that is part of the Equinix Secaucus, NJ campus. It is approximately ½ mile west of NY4 and can be accessed via an Equinix IBX cross-connect from both NY4 and NY2.
- Cboe will maintain a network Point-of-Presence (PoP) in NY4 indefinitely so that current (legacy) CFE TPH physical connections in NY4 can be used to access CFE once CFE has moved to NY5. **Note that while existing connectivity may be utilized, for optimal performance, new physical connectivity to CFE latency equalized network should be requested from the Cboe NOC.** New orders for physical connectivity may be entered beginning Monday, July 3, 2017.
- **TPHs using legacy physical connections to access the new CFE platform will be required to either use public IP address space OR change their private addressing to ranges assigned by the Cboe NOC.**
- CFE TPHs will also be able to use the legacy Bats' PoP in NJ2 to access CFE once it is moved to NY5 on Bats technology.
- TPHs with physical connectivity will be required to maintain redundant physical connectivity. Any combination of WAN circuits and/or cross connects in the Secaucus or Weehawken data centers can be used for redundancy. An Extranet connection does not meet the requirement for physical connectivity redundancy.
- CSMI (Index) data feed subscribers will be required to make updates to connect to new IPs as part of a new platform update prior to January 22, 2018. While existing CFE connections may continue to be utilized to access the new platform, it is recommended that new cross-connects be ordered through the Cboe NOC for optimal performance. Note that existing Cboe Options market cross-connects will not support access to the new CSMI data feed platform.
- To ensure a seamless transition to NY5 while preserving the ecosystem in NY4, we will engineer connectivity with equal latency from both NY4 and NY5 demarcation points to all Cboe matching engines in NY5 for the foreseeable future.

Chicago

- **TPHs using legacy physical connections to access the new CFE platform will be required to either use public IP address space OR change their private addressing to ranges assigned by the Cboe NOC.**
- TPHs in the Disaster Recovery data center in 400 S. La Salle may continue to use existing connectivity.
- CFE Disaster Recovery data center will remain at 400 S. La Salle in Chicago.
- TPHs will be able to access CFE, C2, and Cboe DR in 400 S. La Salle via a Cboe PoP in 350 E. Cermak.

Will CFE TPHs have the ability to access all other Cboe markets from a single connection?

- Not in the Secaucus data center. As is the case today, CFE connectivity will be physically segregated from all other Cboe exchanges.
- TPHs will have the ability to access other Cboe Disaster Recovery markets in 400 S. La Salle (i.e. Cboe and C2) from a single connection at 400 S. La Salle.

Will CFE TPHs be required to maintain connectivity to the Cboe Disaster Recovery data center?

- TPHs are strongly encouraged to maintain connectivity to the Disaster Recovery data center to protect against short term as well as prolonged outage scenarios in Secaucus. There are no Disaster Recovery connectivity requirements at this time, but CFE may require them in the future.

Will CFE TPHs require separate connections for order entry and market data?

- No. A single physical connection will be allowed to be used for both order entry and receipt of CFE market data.

Will CFE production migration occur in a single day?

- Yes, we will be migrating CFE to NY5 on Bats technology on February 25, 2018.
- To ensure the migration goes well, we will be conducting multiple dress rehearsals in 4Q17 and 1Q18.
- We will also allow trading of test symbols in NY5 on the new CFE production trading platform during normal production [trading hours](#) starting in 4Q17.

Regarding the planned network and connectivity testing for CFE, will TPHs be able to conduct this testing with the physical cross-connect they may have at NY4? Or would TPHs need to have new infrastructure to do that testing?

- Cboe will maintain a PoP at NY4 that will enable TPHs to conduct testing and connect to the new CFE trading platform without having an infrastructure presence at NY5. TPHs will be able to use their existing CFE connectivity to connect and test but are encouraged to order new CFE latency equalized connectivity to ensure the fastest access.

How is Cboe handling latency differences between NY4 and NY5?

- Cboe plans to engineer equal latency between NY4 and NY5 so that TPHs that already have their infrastructure in place at NY4 will not be disadvantaged **so long as they establish new**

physical connectivity to CFE latency equalized network. New orders for physical connectivity may be entered beginning Monday, July 3, 2017.

Will my CFE connectivity fees be changing?

- There are no changes to CFE pricing at this time. If any decisions are made to change pricing, we will provide ample notice to customers.

Will I be charged for physical port fees if I bring up a new NY5 connection prior to the production integration date?

- No. Physical ports in NY5 that connect to the new CFE environments will not be billable by CFE until after CFE production migration is complete.
- Post-integration pricing for physical port fees in NY5 has not been determined, but Cboe will provide ample notice to customers regarding any changes to existing connectivity fees.

Will TPHs, Extranets or Telco providers be allowed co-location space within the new CFE NY5 cage?

- No. However, TPHs can order a circuit to NY5 that will be extended to the Cboe NY5 cage at no additional cost to them.

Which order entry protocols will be supported?

- The FIX and BOE order entry protocols (adapted from Bats technology) will be the standard protocols for CFE.
- These technical specifications are now available on the [CFE Integration Page](#).

How will the CTI/Account Type specifications change as part of the migration?

- When CFE migrates to Bats technology on February 25, 2018, TPH's will be required to enter the Customer Type Indicator (CTI) code and Account Type in separate order entry fields.
- Standard CTI codes 1, 2, 3, and 4 as well as Account Types of Customer or Firm will be accepted. Currently, CFE TPHs provide a Cboe letter code Account Type that corresponds to a CTI code/Account Type combination.

Will there be any changes to the CFE VIX spreads as part of this migration? Also, CFE currently requires the trader to send + or - on price depending on whether the spread order is debit or credit. Will this remain the same or will there be a change?

- CFE will continue to automatically create calendar spreads and TPHs will be able to request other types of spreads from the CFE Trade Desk.
- Upon migration, VIX spread pricing will be normalized and will use the standard futures industry pricing. The debit or credit designation will go away.
- There may be some situations based on term structure where negative prices will be disseminated.

Will my firm's legacy production logical order entry sessions be converted to new sessions on the new platform?

- Effective October 2, 2017, CFE will determine how many order entry logins each firm has on the current production platform and will create a logical production order entry session on the Bats technology platform for every firm login that exist on that effective date.
- One FIX session will be created for every firm FIX login, and one BOE session will be created for every firm CMI2 session.
- Default session settings will be applied as defined within the FIX and BOE specifications, but may be updated by making a “Modify” [Logical Port Request](#) update in the [Cboe US Customer Web Portal](#).
- One FIX Drop session will be created for every firm in production as well and firms will be able to work with the CFE Trade Desk as well as their account managers to ensure this Drop port and any others desired are configured in the manner expected prior to the production launch.
- Once logical production ports have been created in 4Q17, firms may obtain their logical session connection information via the [Ports](#) tool within the [Cboe US Customer Web Portal](#).
- Additional sessions must be requested via the [Logical Port Request](#) “add” tool in the [Cboe US Customer Web Portal](#) in 4Q17.
- Sessions that are auto-generated on October 2, 2017 that a firm does not wish to maintain must be requested to be deleted via the [Logical Port Request](#) “delete” tool in the [Cboe US Customer Web Portal](#) prior to activation of the new CFE production trading platform.

CERTIFICATION QUESTIONS

May I use my existing CFE Certification sessions?

- No. All existing CFE Certification sessions are being decommissioned and cannot be used to certify the new CFE trading platform. There will be no automatic transfer of Certification sessions from the legacy platform to the Bats technology platform.

How do I request a new CFE Certification session?

- Once firms establish physical connectivity to the new latency equalized network infrastructure within either the NY4 or NY5 data center, free of charge Certification order entry, market data, and drop sessions may be requested via the [Logical Port Request](#) form found in the [Cboe US Customer Web Portal](#). In their requests, firms should specify any desired port settings other than the port defaults which can be found in the FIX or BOE Specifications located on the [Integration Web Page](#).

During what hours can I connect to the Certification environments?

- Firms may connect to Certification sessions during normal production [trading hours](#).
- [Trading hours](#) for CFE on the new platform can be found on the integration website.
- Certification sessions are not available outside of normal [trading hours](#) nor on market holidays.

What should I do prior to completing Certification?

- Firms must first establish physical connectivity to the new CFE latency equalized network infrastructure within the NY4 or NY5 data center and must then request new Certification sessions.

What symbols can I use for testing?

- Certification supports trading in products which trade in the Production system. Certification product ID lists are available at the following locations:
 - [CFE Certification Simple Instruments](#)
 - [CFE Certification Complex Instruments](#)

How do I use the Certification website to test Risk Management?

- The public Certification website at <https://certification.bats.com/> parallels the production site and includes a real-time book view of Certification orders for a specified symbol and environment, which firms may find useful in testing.
- Firms may request a Certification Web Portal login by emailing cfetradedesk@cboe.com. This will allow firms to become familiar with the full suite of production web portal tools. This includes Web Portal Risk Control tools.
- Clearing Firms should also request a Certification Web Portal login by emailing cfetradedesk@cboe.com to test clearing firm level risk controls with their TPH clearing customers.

How and when do I complete Certification?

- Upon completion of sufficient unattended testing, Firms may at any time perform their own self-service certification through the Conformance App in the Production [Customer Web Portal](#).
- TPHs may also contact the CFE Trade Desk by emailing cfetradedesk@cboe.com during normal operational hours to schedule a live Certification. Live certifications will normally be conducted **during CFE operational hours**.

For which features will I be required to certify?

- All TPHs must certify for basic functionality, including establishing and maintaining connectivity, order entry, and disconnect recovery.
- TPHs are expected to certify for all functionalities they intend to use in production, but they will only be required to certify for order types or order modifiers they intend to use in production.

If I have certified on one of the legacy Bats Exchanges, do I need to certify for CFE as it is migrated to Bats technology?

- Upon successful certification for one Exchange, TPHs will only be required to complete additional certification for functionalities unique to the additional Exchange(s) to which they will be submitting production orders.

What happens after I certify?

- Upon successful Certification, TPHs will receive an emailed copy of their completed Certification script. TPHs will be able to request and connect to FIX or BOE sessions created in the NY5 data center with the certified functionalities enabled.
- **Note that, regardless of any prior production and/or Certification session settings, all new production sessions will be created with the Bats default session settings. Therefore, it is the responsibility of the TPH to specify any desired non-default settings when they request their new production sessions.**
- For reference, a list of port default settings is available within the BOE and FIX specifications located on the [Integration Web Page](#). TPHs may also view the port and default port settings through the [Port Status](#) tool available on the [Cboe Bats US Customer Web Portal](#). To view default port settings, from the Port Status page simply click on the “More Options” icon and select “View Port Attributes Info”.
- Additional order entry sessions beyond those currently in place with CFE may be requested via the [Logical Port Request](#) form found in the [Cboe Bats US Customer Web Portal](#); these requests are typically filled same day for next day connectivity.

Where can I find the technical specification for Bats order entry protocols?

- The most recent specifications can be found on the [Integration Web Page](#).

MARKET DATA QUESTIONS

Which market data protocols will be supported post-migration?

- The Bats market data protocols will be the standard protocols for CFE following the technology migration. For CFE, Bats will offer Multicast PITCH and Multicast TOP market data products. The technical specifications will be posted and available through the [Integration Web Page](#) per the defined integration schedule.
- The CSMI (Index) data feed will be migrating to a new platform in the Equinix data center effective January 22, 2018. This is strictly a platform change requiring IP and connectivity updates. The format of the CSMI data feed protocol will remain the same as defined under the CFN documentation tab at <https://systems.cboe.com>. Refer to the CSMI data feed specification for updated IP and port information.

What changes can I expect to the market data protocols in support of CFE?

- The market data protocols for CFE will be based off of existing legacy Bats market data protocols used by other legacy Bats trading platforms (i.e. TOP and PITCH), but CFE will have its own specification for each protocol specific to CFE platform available on the [Integration Web Page](#) per the defined integration schedule.
- The VIX index level (VBI) will not be disseminated through TOP or PITCH. However, the index can continue to be obtained from the Cboe’s CSMi feed by contacting indexdata@cboe.com.

If I currently subscribe to CFE Market Data, but not Cboe Bats Market Data, will I have to complete new agreements?

- Cboe and Bats will be working toward consolidating the Market Data Agreements for our US products, where agreement consolidation may occur prior to the completion of the

technology integration. Firms will be notified in advance of any change to their agreement, which will include change details and any required action on the part of the firm.

What changes can I expect regarding my Market Data bills?

- At this time there will be no changes to your market data bills. As the integration process continues, market data billing may be consolidated across some or all of the exchanges. Notice will be provided prior to any changes being implemented. Please direct questions related to your market data invoice items to marketdata@cboe.com.

How will Market Data reporting requirements change?

- Firms should follow current reporting policies and procedures for Cboe and Bats market data. As part of the consolidation, Cboe and Bats will look to consolidate policies and procedures where applicable. Firms will be notified in advance of any changes to policies and procedures, including any firm requirements.

Will I need to certify to receive Market Data feeds post-migration?

- No certification will be required to receive Market Data feeds after the technology migration. Please refer to the **Certification Questions** section above for details regarding order entry Certification.

BILLING QUESTIONS

How will billing be impacted by the integration?

- Cboe's billing for CFE will be migrated to the same Bats technology billing system used to support all existing Bats U.S. Equities and Options Exchanges.
- As is the case today, with the new billing system, CFE will issue a bill to TPHs for all transaction and non-transaction fees which will be collected through the OCC.
- At a future date to be announced, TPHs will be required to migrate from the current CFE Firm58 billing portal to use the [Cboe Bats US Customer Web Portal](#) for accessing their invoices.

Will there be any changes to my CFE invoice and how payment will be made for those fees?

- Yes. Market data, direct data access and physical port fees will be reflected on your Cboe Global Markets invoice which payment will need to be remitted per the instructions on the invoice.

How can I view my trade detail for CFE?

- Your trade detail will be made available online via the [Cboe Bats US Customer Web Portal](#) upon completion of the platform migration.
- Instructions for accessing the [Cboe Bats US Customer Web Portal](#) for future CFE services will be made available by CFE Trade Desk in Q4 2017.