

NYSE Arca Equities

FEES AND CHARGES

Effective Date: September 4, 2018

NYSE ARCA MARKETPLACE: TRADE RELATED FEES AND CREDITS¹

EXCHANGE TRANSACTIONS

ETP HOLDERS AND MARKET MAKERS²

Round Lots and Odd Lots (Per Share Price \$1.00 or Above)

Tier 1: For ETP Holders and Market Makers that provide liquidity an average daily share volume per month of 0.70% or more of the US CADV ³ :	Tape A, Tape B and Tape C Securities: \$0.0030 per share (fee) for orders routed outside the Book to any away market center that remove liquidity, including Primary Only (“PO”) Orders. Tape A and Tape C Securities:
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¹ Trade activity on days when the market closes early and on the date of the annual reconstitution of the Russell Investments Indexes does not count toward volume tiers. For purposes of determining trade related fees and credits based on average daily volume (“ADV”) and US CADV (as defined in note 3) below, the Exchange may exclude any day that (1) the Exchange is not open for the entire trading day and/or (2) a disruption affects an Exchange system that lasts for more than 60 minutes during regular trading hours.

² These transaction fees do not apply to: (1) Directed Orders, regardless of account type, that are matched within the Directed Order Process; (2) Directed Orders for the account of a retail public customer that are executed partially or in their entirety via the Directed Order, Display Order, Working Order, and Tracking Order processes (however, any unfilled or residual portion of a retail customer’s order that is routed away and executed by another market center or participant will incur this transaction fee); (3) Cross Orders; and (4) participants in the Nasdaq UTP Plan that transmit orders via telephone. Orders with specific rates (e.g., MPL, Tracking, PL, Retail Add, RPI, RMO) may be used to qualify for volume thresholds but are not eligible for tiered rates.

³ US CADV means United States Consolidated Average Daily Volume for transactions reported to the Consolidated Tape, excluding odd lots through January 31, 2014 (except for purposes of Lead Market Maker pricing), and excludes volume on days when the market closes early and on the date of the annual reconstitution of the Russell Investments Indexes. Transactions that are not reported to the Consolidated Tape are not included in US CADV.

	<p>\$0.0031 per share (credit) for orders that provide liquidity to the Book for Tape A Securities and \$0.0032 per share (credit) for orders that provide liquidity to the Book for Tape C Securities</p> <p>\$0.0030 per share (fee) for orders that take liquidity from the Book for Tape A Securities and Tape C Securities</p> <p>For Mid-Point Liquidity (“MPL”) orders providing liquidity to the Book:</p> <p style="padding-left: 40px;">\$0.0015 per share (credit) in Tape A Securities and \$0.0020 per share (credit) in Tape C Securities if provided liquidity in MPL Orders for Tape A, Tape B and Tape C Securities combined (“MPL Adding ADV”) during the billing month is at least 3 million shares;</p> <p style="padding-left: 40px;">\$0.0015 per share (credit) in Tape A Securities and Tape C Securities if MPL Adding ADV during the billing month is at least 1.5 million shares and less than 3 million shares;</p> <p style="padding-left: 40px;">\$0.0010 per share (credit) in Tape A and Tape C Securities</p> <p>\$0.0030 per share (fee) for MPL orders removing liquidity from the Book that are not designated as “Retail Orders” defined below.</p> <p>\$0.0010 per share (fee) for MPL orders removing liquidity from the Book and are designated as “retail” that meet the requirements of Rule 7.44-E(a)(3) but that are not executed in the Retail Liquidity Program (“Retail Orders”)</p> <p>\$0.0015 per share (fee) for Market and Auction-Only Orders executed in an Early Open Auction, Core Open Auction or Trading Halt Auction, capped at \$20,000 per month per Equity Trading Permit ID</p> <p>\$0.0010 per share (fee) for Market, Market-On-Close, Limit-On-Close, and Auction-Only Orders executed in a Closing Auction</p> <p>\$0.0010 per share (fee) for PO orders routed to NASDAQ that execute in the opening or closing auction</p>
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	<p>No fee or credit for Limit Non-Displayed Orders that provide liquidity to the Book</p> <p>\$0.0030 per share (fee) for Limit Non-Displayed Orders that take liquidity from the Book</p> <p>Tape A Securities:</p> <p>\$0.0012 per share (credit) for PO Orders that provide liquidity to the NYSE</p> <p>\$0.0010 per share (fee) for PO Orders routed to the NYSE that execute in the opening or closing auction</p> <p>Tape B Securities:</p> <p>\$0.0023 per share (credit) for orders that provide liquidity to the Book. An additional credit shall apply to ETP Holders and Market Makers affiliated with LMMs that provide displayed liquidity to the Book based on the number of Less Active ETP Securities in which the LMM is registered as the LMM. The applicable tiered-credits are noted below (See LMM Transaction Fees and Credits).</p> <p>\$0.0029 per share (fee) for orders that take liquidity from the Book</p> <p>No per share (credit) for PO orders routed to NYSE American that provide liquidity to the NYSE American Book</p> <p>MPL orders providing liquidity to the Book:</p> <p style="padding-left: 40px;">\$0.0020 per share (credit) if MPL Adding ADV during the billing month is at least 3 million shares;</p> <p style="padding-left: 40px;">\$0.0015 per share (credit) if MPL Adding ADV during the billing month is at least 1.5 million shares and less than 3 million shares;</p> <p style="padding-left: 40px;">\$0.0010 per share (credit) if MPL Adding ADV during the billing month is less than 1.5 million shares.</p> <p>\$0.0030 per share (fee) for MPL orders removing liquidity from the Book that are not designated as Retail Orders</p>
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	<p>\$0.0010 per share (fee) for MPL orders removing liquidity from the Book that are designated as Retail Orders</p> <p>\$0.0015 per share (fee) for Market and Auction-Only Orders executed in an Early Open Auction, Core Open Auction or Trading Halt Auction, capped at \$20,000 per month per Equity Trading Permit ID</p> <p>\$0.0010 per share (fee) for Market, Market-On-Close, Limit-On-Close, and Auction-Only Orders executed in a Closing Auction in NYSE Arca primary listed securities (includes all ETFs/ETNs)</p> <p>\$0.0005 per share (fee) for PO Orders routed to NYSE American that execute in the opening or closing auction</p> <p>No fee or credit for Limit Non-Displayed Orders that provide liquidity to the Book</p> <p>\$0.0029 per share (fee) for Limit Non-Displayed Orders that take liquidity from the Book</p>
<p>Tier 2: For ETP Holders and Market Makers that either (1) provide liquidity an average daily share volume per month of 0.30% or more, but less than 0.70% of the US CADV³ or (2) provide liquidity of 0.10% or more of the US CADV³ per month, and are affiliated with an OTP Holder or OTP Firm that provides an ADV⁴ of electronic posted Customer and Professional Customer executions in all issues on NYSE Arca Options (excluding mini options) of at least 1.50% of total Customer equity and ETF option ADV as</p>	<p>Tape A, Tape B and Tape C Securities:</p> <p>\$0.0030 per share (fee) for orders routed outside the Book to any away market center that remove liquidity, including PO Orders</p> <p>Tape A and Tape C Securities:</p> <p>\$0.0029 per share (credit) for orders that provide liquidity to the Book</p> <p>\$0.0030 per share (fee) for orders that take liquidity from the Book</p> <p>For MPL orders providing liquidity to the Book:</p> <p>\$0.0015 per share (credit) in Tape A Securities and \$0.0020 per share (credit) in Tape C Securities if MPL Adding ADV during the billing month is at least 3 million shares;</p>

<p>reported by OCC:</p>	<p>\$0.0015 per share (credit) in Tape A Securities and Tape C Securities if MPL Adding ADV during the billing month is at least 1.5 million shares and less than 3 million shares;</p> <p>\$0.0010 per share (credit) in Tape A and Tape C Securities for MPL orders providing liquidity to the Book if MPL Adding ADV during the billing month is less than 1.5 million shares.</p> <p>\$0.0030 per share (fee) for MPL orders removing liquidity from the Book that are not designated as Retail Orders</p> <p>\$0.0010 per share (fee) for MPL orders removing liquidity from the Book that are designated as Retail Orders</p> <p>\$0.0015 per share (fee) for Market and Auction-Only Orders executed in an Early Open Auction, Core Open Auction or Trading Halt Auction, capped at \$20,000 per month per Equity Trading Permit ID</p> <p>\$0.0010 per share (fee) for Market, Market-On-Close, Limit-On-Close, and Auction-Only Orders executed in a Closing Auction</p> <p>\$0.0010 per share (fee) for PO orders routed to NASDAQ that execute in the opening or closing auction</p> <p>No fee or credit for Limit Non-Displayed Orders that provide liquidity to the Book</p> <p>\$0.0030 per share (fee) for Limit Non-Displayed Orders that take liquidity from the Book</p> <p>Tape A Securities:</p> <p>\$0.0012 per share (credit) for PO Orders that provide liquidity to the NYSE</p> <p>\$0.0010 per share (fee) for PO Orders routed to the NYSE that execute in the opening or closing auction</p> <p>Tape B Securities:</p> <p>\$0.0022 per share (credit) for orders that provide liquidity to the</p>
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	<p>Book. An additional credit shall apply to ETP Holders and Market Makers affiliated with LMMs that provide displayed liquidity to the Book based on the number of Less Active ETP Securities in which the LMM is registered as the LMM. The applicable tiered-credits are noted below (See LMM Transaction Fees and Credits).</p> <p>\$0.0029 per share (fee) for orders that take liquidity from the Book</p> <p>No per share (credit) for PO orders routed to NYSE American that provide liquidity to the NYSE American Book</p> <p>For MPL orders providing liquidity to the Book:</p> <p style="padding-left: 40px;">\$0.0020 per share (credit) if MPL Adding ADV during the billing month is at least 3 million shares;</p> <p style="padding-left: 40px;">\$0.0015 per share (credit) if MPL Adding ADV during the billing month is at least 1.5 million shares and less than 3 million shares;</p> <p style="padding-left: 40px;">\$0.0010 per share (credit) if MPL Adding ADV during the billing month is less than 1.5 million shares.</p> <p>\$0.0030 per share (fee) for MPL orders removing liquidity from the Book that are not designated as Retail Orders</p> <p>\$0.0010 per share (fee) for MPL orders removing liquidity from the Book that are designated as Retail Orders</p> <p>\$0.0015 per share (fee) for Market and Auction-Only Orders executed in an Early Open Auction, Core Open Auction or Trading Halt Auction, capped at \$20,000 per month per Equity Trading Permit ID</p> <p>\$0.0010 per share (fee) for Market, Market-On-Close, Limit-On-Close, and Auction-Only Orders executed in a Closing Auction in NYSE Arca primary listed securities (includes all ETFs/ETNs)</p> <p>\$0.0005 per share (fee) for PO Orders routed to NYSE American that execute in the opening or closing auction</p> <p>No fee or credit for Limit Non-Displayed Orders that provide</p>
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	<p>liquidity to the Book</p> <p>\$0.0029 per share (fee) for Limit Non-Displayed Orders that take liquidity from the Book</p>
<p>Tier 3: For ETP Holders and Market Makers that provide liquidity an average daily share volume per month of 0.20% or more, but less than 0.30% of the US CADV³:</p>	<p>Tape A, Tape B and Tape C Securities:</p> <p>\$0.0030 per share (fee) for orders routed outside the Book to any away market center that remove liquidity, including PO Orders</p> <p>\$0.0010 per share (fee) for Market, Market-On-Close, Limit-On-Close, and Auction-Only Orders executed in a Closing Auction</p> <p>Tape A and Tape C Securities:</p> <p>\$0.0025 per share (credit) for orders that provide liquidity to the Book</p> <p>\$0.0030 per share (fee) for orders that take liquidity from the Book</p> <p>No fee or credit for Limit Non-Displayed Orders that provide liquidity to the Book</p> <p>\$0.0030 per share (fee) for Limit Non-Displayed Orders that take liquidity from the Book</p> <p>Tape A Securities:</p> <p>\$0.0010 per share (fee) for PO Orders routed to the NYSE that execute in the opening or closing auction</p> <p>Tape B Securities:</p> <p>\$0.0022 per share (credit) for orders that provide liquidity to the Book. An additional credit shall apply to ETP Holders and Market Makers affiliated with LMMs that provide displayed liquidity to the Book based on the number of Less Active ETP Securities in which the LMM is registered as the LMM. The applicable tiered-credits are noted below (See LMM Transaction Fees and Credits).</p>

	<p>\$0.0029 per share (fee) for orders that take liquidity from the Book</p> <p>No fee or credit for Limit Non-Displayed Orders that provide liquidity to the Book</p> <p>\$0.0029 per share (fee) for Limit Non-Displayed Orders that take liquidity from the Book</p> <p>For all other fees and credits, Basic Rates apply</p>
<p>Step Up Tier: For ETP Holders and Market Makers that directly execute providing average daily volume (ADV) per month of 0.50% or more, but less than 0.70% of the US CADV and directly execute providing ADV that is an increase of no less than 0.10% of US CADV for that month over the ETP Holder's or Market Maker's providing ADV in Q1 2018:</p>	<p>Tape A Securities:</p> <p>\$0.0030 per share (credit) for orders that provide displayed liquidity to the Book.</p> <p>Tape B Securities:</p> <p>\$0.0023 per share (credit) for orders that provide displayed liquidity to the Book.</p> <p>Tape C Securities:</p> <p>\$0.0031 per share (credit) for orders that provide displayed liquidity to the Book.</p>
<p>Step Up Tier 2: For ETP Holders and Market Makers that directly execute providing average daily volume (ADV) per month of 0.22% or more, but less than 0.30% of the US CADV and directly execute providing ADV that is an increase of no less than 0.06% of US CADV for that month over the ETP Holder's or Market Maker's providing ADV in May 2018:</p>	<p>Tape A and C Securities:</p> <p>\$0.0028 per share (credit) for orders that provide displayed liquidity to the Book.</p> <p>Tape B Securities:</p> <p>\$0.0022 per share (credit) for orders that provide displayed liquidity to the Book.</p> <p>For all other fees and credits, Tiered or Basic Rates apply based on a firm's qualifying levels.</p>

<p>Step Up Tier 3: For ETP Holders and Market Makers that directly execute providing average daily volume (ADV) per month of 0.15% or more, but less than 0.20% of the US CADV and directly execute providing ADV that is an increase of no less than 0.075% of US CADV for that month over the ETP Holder's or Market Maker's providing ADV in May 2018:</p>	<p>Tape A and C Securities:</p> <p>\$0.0025 per share (credit) for orders that provide displayed liquidity to the Book.</p> <p>Tape B Securities:</p> <p>\$0.0022 per share (credit) for orders that provide displayed liquidity to the Book.</p> <p>For all other fees and credits, Tiered or Basic Rates apply based on a firm's qualifying levels.</p>
<p>BBO Setter Tier: For ETP Holders and Market Makers that directly execute providing average daily volume (ADV) per month of 0.70% or more of the US CADV, and whose ETP ID, on a daily basis, measured monthly: (1) directly executes providing ADV of at least 0.20% of US CADV, (2) sets a new NYSE Arca Best Bid or Offer ("BBO") with at least 0.10% of US CADV; and (3) sets a new NYSE Arca BBO of at least 40% of that ETP Holder's or Market Maker's ETP ID providing ADV:</p>	<p>Tape A and Tape C Securities:</p> <p>\$0.0004 per share (credit) for orders that set a new NYSE Arca BBO. This credit shall be in addition to the ETP Holder's or Market Maker's Tiered or Basic Rate credit(s), and for Tape C Securities, the credit shall be in addition to any capped credit.</p> <p>Tape B Securities:</p> <p>\$0.0002 per share (credit) for orders that set a new NYSE Arca BBO. This credit shall be in addition to the ETP Holder's or Market Maker's Tiered or Basic Rate credit(s), and the credit shall be in addition to any capped credit.</p> <p>For purposes of the BBO Setter Tier, ETP ID means an ETP ID when using Pillar phase I protocols to communicate with the NYSE Arca Marketplace or an MPID when using Pillar phase II protocols to communicate with the NYSE Arca Marketplace.</p>
<p>Cross-Asset Tier1: For ETP Holders and Market Makers that (a) provide liquidity of 0.30% or more of the US CADV³ per month, (b) are affiliated with an OTP Holder or OTP Firm that provides an ADV⁴</p>	<p>Tape A, Tape B, and Tape C Securities:</p> <p>\$0.0030 per share (credit) for orders that provide liquidity to the Book</p> <p>For all other fees and credits, Tiered or Basic Rates apply based on a firm's qualifying levels.</p>

<p>of electronic posted Customer executions in all issues on NYSE Arca Options (excluding mini options) of at least 0.80% of total Customer equity and ETF option ADV as reported by OCC, and (c) execute an ADV⁴ of Retail Orders that provide liquidity during the month that is 0.10% or more of the US CADV:</p>	
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⁴ ADV means Average Daily Volume.

<p>Cross-Asset Tier 2: For ETP Holders and Market Makers that provide liquidity an average daily volume share per month of 0.30% or more of the US CADV³ and are affiliated with an OTP Holder or OTP Firm that provides an ADV⁴ of electronic posted executions for the account of a market maker in all issues on NYSE Arca Options (excluding mini options) of at least 0.55% of total Customer equity and ETF option ADV as reported by OCC:</p>	<p>Tape A Securities: \$0.0031 per share (credit) for orders that provide liquidity to the Book.</p> <p>Tape B Securities: \$0.0030 per share (credit) for orders that provide liquidity to the Book. \$0.0029 per share (fee) for orders that take liquidity from the Book.</p> <p>Tape C Securities: \$0.0032 per share (credit) for orders that provide liquidity to the Book. \$0.0030 per share (fee) for orders that take liquidity from the Book.</p> <p>For all other fees and credits, Tiered or Basic Rates apply based on a firm’s qualifying levels.</p>
<p>Cross-Asset Tier 3: For ETP Holders and Market Makers that (a) provide liquidity of 0.30% or more of the US CADV³ per month, and (b) are affiliated with an OTP Holder or OTP Firm that provides an ADV⁴ of electronic posted Customer and Professional Customer executions in all issues on NYSE Arca Options (excluding mini options) of at least 0.80% of total</p>	<p>Tape A, Tape B, and Tape C Securities: \$0.0030 per share (credit) for orders that provide liquidity to the Book</p> <p>ETP Holders and Market Makers that meet the requirements of Cross Asset Tier 3 and execute providing volume in Tape C Securities during the billing month equal to at least 0.35% of Tape C CADV for the billing month will receive an incremental credit of \$0.0004 per share for orders that provide liquidity to the Book in Tape C Securities. ETP Holders and Market Makers that qualify for this incremental Tape C credit shall not qualify for any fees and credits under Tape C Tier 1, Tape C Tier 2, and Tape C Tier 3.</p>

<p>Customer equity and ETF option ADV as reported by OCC, of which at least 0.20% of total Customer equity and ETF option ADV as reported by OCC is from Customer and Professional Customer executions in non-Penny Pilot issues on NYSE Arca Options:</p>	<p>For all other fees and credits, Tiered or Basic Rates apply based on a firm's qualifying levels.</p>
<p>Tape B Tier 1: For ETP Holders and Market Makers on a daily basis, measured monthly, that directly execute providing volume in Tape B Securities during the billing month ("Tape B Adding ADV⁴") that is equal to at least 1.50% of US Tape B CADV³ for the billing month:</p>	<p>Tape B Securities: \$0.0030 per share (credit) for orders that provide liquidity to the Book. LMMs cannot qualify for the Tape B Tier 1. For all other fees and credits, Tiered or Basic Rate apply based on a firm's qualifying levels.</p>
<p>Tape B Tier 2: For ETP Holders and Market Makers on a daily basis, measured monthly, that directly execute Tape B Adding ADV⁴ that is either (1) equal to at least 1.0% of the US Tape B CADV³ or (2) equal to at least 0.20% of the US Tape B CADV³ for the billing month over the ETP Holder's or Market Maker's Q2 2015 Tape B Adding ADV taken as a percentage of Tape B CADV³:</p>	<p>Tape B Securities: \$0.0028 per share (credit) for orders that provide liquidity to the Book. LMMs cannot qualify for the Tape B Tier 2. For all other fees and credits, Tiered or Basic Rates apply based on a firm's qualifying levels. ETP Holders and Market Makers that meet the requirements of Tape B Tier 2 and execute providing volume in Tape B Securities during the billing month equal to at least 0.40% of Tape B CADV over the ETP Holder's or Market Maker's Q1 2018 Tape B Adding ADV taken as a percentage of Tape B CADV for the billing month will receive an incremental credit of \$0.0001 per share for orders that provide liquidity to the Book in Tape B Securities. This credit shall be in addition to the ETP Holder's or Market Maker's Tiered or Basic Rate credit(s); provided, however, that such combined credit(s) shall not exceed \$0.0030 per share.</p>

<p>Tape C Tier 1: For ETP Holders and Market Makers on a daily basis, measured monthly, that directly execute providing volume in Tape C Securities during the billing month (“Tape C Adding ADV⁴”) equal to at least 0.10% of the US Tape C CADV³ for the billing month over the ETP Holder’s or Market Maker’s Q4 2016 Tape C Adding ADV taken as a percentage of Tape C CADV:</p>	<p>Tape C Securities:</p> <p>\$0.0002 per share (credit) for orders that provide liquidity to the Book. This credit shall be in addition to the ETP Holder’s or Market Maker’s Tiered or Basic Rate credit(s); provided, however, that such combined credit shall not exceed \$0.0031 per share.</p> <p>ETP Holders and Market Makers that qualify for Tape C Tier 1 shall not qualify to receive any additional incremental Tape C Tier credits.</p> <p>For all other fees and credits, Tiered or Basic Rates apply based on a firm’s qualifying levels.</p>
<p>Tape C Tier 2: For ETP Holders and Market Makers on a daily basis, measured monthly, that directly execute Tape C Adding ADV⁴ equal to at least 0.20% of the US Tape C CADV³ for the billing month over the ETP Holder’s or Market Maker’s Q4 2016 Tape C Adding ADV taken as a percentage of Tape C CADV:</p>	<p>Tape C Securities:</p> <p>\$0.0002 per share (credit) for orders that provide liquidity to the Book. This credit shall be in addition to the ETP Holder’s or Market Maker’s Tiered or Basic Rate credit(s); provided, however, that such combined credit shall not exceed \$0.0033 per share.</p> <p>ETP Holders and Market Makers that qualify for Tape C Tier 2 shall not qualify to receive any additional incremental Tape C Tier credits.</p> <p>\$0.0029 per share (fee) for orders that take liquidity from the Book in Tape C Securities.</p> <p>For all other fees and credits, Tiered or Basic Rates apply based on a firm’s qualifying levels.</p>
<p>Tape C Tier 3: For ETP Holders and Market Makers on a daily basis, measured monthly, that (1) directly execute providing volume in Tape C Securities during the billing month (“Tape C Adding ADV⁴”) equal to at least</p>	<p>Tape C Securities:</p> <p>\$0.0002 per share (credit) for orders that provide liquidity to the Book. This credit shall be in addition to the ETP Holder’s or Market Maker’s Tiered or Basic Rate credit(s).</p> <p>\$0.0029 per share (fee) for orders that take liquidity from the Book in Tape C Securities.</p>

<p>0.40% of the US Tape C CADV³ for the billing month over the ETP Holder's or Market Maker's Q4 2016 Tape C Adding ADV taken as a percentage of Tape C CADV, and (2) directly execute providing volume in Tape B Securities during the billing month equal to at least 3.5% of Tape B CADV for the billing month:</p>	<p>ETP Holders and Market Makers that qualify for Tape C Tier 3 shall not qualify to receive any additional incremental Tape C Tier credits.</p> <p>For all other fees and credits, Tiered or Basic Rates apply based on a firm's qualifying levels.</p>
<p>Retail Order Tier: For ETP Holders, including Market Makers, that execute an ADV⁴ of Retail Orders that provide liquidity during the month that is 0.15% or more of the US CADV³:</p>	<p>Tape A, Tape B, and Tape C Securities:</p> <p>\$0.0033 per share (credit) for Retail Orders that provide liquidity to the Book.</p> <p>For all other fees and credits, Tiered or Basic Rates apply based on a firm's qualifying levels.</p>
<p>Retail Order Step-Up Tier 1: For ETP Holders, including Market Makers, that execute an ADV⁴ of Retail Orders with a time-in-force of Day that add or remove liquidity during the month that is an increase of 0.12% or more of the US CADV above their April 2018 ADV taken as a percentage of US CADV³:</p>	<p>Tape A, Tape B, and Tape C Securities:</p> <p>\$0.0033 per share (credit) for Retail Orders that provide liquidity to the Book, unless a firm qualifies for a higher rebate based on its Tiered Rates. No fee for Retail Orders with a time-in-force of Day that remove liquidity from the Book.</p> <p>For all other fees and credits, Tiered or Basic Rates apply based on a firm's qualifying levels.</p>
<p>Retail Order Step-Up Tier 2: For ETP Holders, including Market Makers, that provide liquidity an average daily share volume per month of 1.10% or more of the US CADV³, and execute an ADV⁴ of Retail Orders with a time-in-force</p>	<p>Tape A, Tape B, and Tape C Securities:</p> <p>\$0.0035 per share (credit) for Retail Orders that provide displayed liquidity to the Book, unless a firm qualifies for a higher rebate based on its Tiered Rates. No fee for Retail Orders with a time-in-force of Day that remove liquidity from the Book.</p> <p>Tape C Securities:</p>

<p>of Day that add or remove liquidity during the month that is an increase of 0.35% or more of the US CADV above their April 2018 ADV taken as a percentage of US CADV:</p>	<p>\$0.0035 per share (credit) for orders that provide displayed liquidity to the Book. ETP Holders and Market Makers shall receive an incremental credit of \$0.0002 per share for orders that provide non-displayed liquidity to the Book. The incremental credit shall be in addition to the ETP Holder's or Market Maker's Tiered or Basic Rate credit(s).</p> <p>\$0.0027 per share (fee) for orders that take liquidity from the Book in Tape C Securities.</p> <p>For all other fees and credits, Tiered or Basic Rates apply based on a firm's qualifying levels.</p>
<p>Basic Rates (applicable when tier rates do not apply)</p>	<p>Tape A, Tape B and Tape C Securities:</p> <p>\$0.0035 per share (fee) for orders routed outside the Book to any away market center that remove liquidity, including PO Orders.</p> <p>\$0.0006 per share (fee) for executions in an Early Open Auction, Core Open Auction, Trading Halt Auction and Closing Auction, other than executions resulting from Market Orders, Auction-Only Orders, Market-On-Close Orders and Limit-On-Close Orders.</p> <p>Tape A Securities:</p> <p>\$0.0020 per share (credit) for orders that provide liquidity to the Book</p> <p>\$0.003 per share (fee) for orders that take liquidity from the Book</p> <p>Primary Until 9:45 Orders and Primary After 3:55 Orders that are designated as Retail Orders and routed to the primary listing market will be charged \$0.0010 per share (fee)</p> <p>For MPL orders providing liquidity to the Book:</p> <p style="padding-left: 40px;">\$0.0015 per share (credit) if MPL Adding ADV during the billing month is at least 3 million shares;</p> <p style="padding-left: 40px;">\$0.0015 per share (credit) if MPL Adding ADV during the billing month is at least 1.5 million shares and less than 3 million shares;</p>

	<p>\$0.0010 per share (credit) if MPL Adding ADV during the billing month is less than 1.5 million shares.</p> <p>\$0.0030 per share (fee) for MPL orders removing liquidity from the Book that are not designated as Retail Orders</p> <p>\$0.0010 per share (fee) for MPL orders removing liquidity from the Book that are designated as Retail Orders</p> <p>\$0.0015 per share (fee) for Market and Auction-Only Orders executed in an Early Open Auction, Core Open Auction or Trading Halt Auction, capped at \$20,000 per month per Equity Trading Permit ID</p> <p>\$0.0012 per share (fee) for Market, Market-On-Close, Limit-On-Close, and Auction-Only Orders executed in a Closing Auction</p> <p>\$0.0012 per share (credit) for PO Orders that provide liquidity to the NYSE</p> <p>\$0.0010 per share (fee) for PO Orders routed to the NYSE that execute in the opening or closing auction</p> <p>No fee or credit for Limit Non-Displayed Orders that provide liquidity to the Book</p> <p>\$0.0030 per share (fee) for Limit Non-Displayed Orders that take liquidity from the Book</p> <p>\$0.0030 per share (credit) for Retail Orders that provide liquidity to the Book</p> <p>Tape B Securities:</p> <p>\$0.0020 per share (credit) for orders that provide liquidity to the Book. An additional credit shall apply to ETP Holders and Market Makers affiliated with LMMs that provide displayed liquidity to the Book based on the number of Less Active ETP Securities in which the LMM is registered as the LMM. The applicable tiered-credits are noted below (See LMM Transaction Fees and Credits).</p> <p>\$0.003 per share (fee) for orders that take liquidity from the</p>
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	<p>Book</p> <p>Primary Until 9:45 Orders and Primary After 3:55 Orders that are designated as Retail Orders and routed to the primary listing market will be charged \$0.0010 per share (fee)</p> <p>No per share (credit) for PO orders routed to NYSE American that provide liquidity to the NYSE American Book</p> <p>For MPL orders providing liquidity to the Book:</p> <p style="padding-left: 40px;">\$0.0020 per share (credit) if MPL Adding ADV during the billing month is at least 3 million shares;</p> <p style="padding-left: 40px;">\$0.0015 per share (credit) if MPL Adding ADV during the billing month is at least 1.5 million shares and less than 3 million shares;</p> <p style="padding-left: 40px;">\$0.0010 per share (credit) if MPL Adding ADV during the billing month is less than 1.5 million shares.</p> <p>\$0.0030 per share (fee) for MPL orders removing liquidity from the Book that are not designated as Retail Orders</p> <p>\$0.0010 per share (fee) for MPL orders removing liquidity from the Book that are designated Retail Orders</p> <p>\$0.0015 per share (fee) for Market and Auction-Only Orders executed in an Early Open Auction, Core Open Auction or Trading Halt Auction, capped at \$20,000 per month per Equity Trading Permit ID</p> <p>\$0.0012 per share (fee) for Market, Market-On-Close, Limit-On-Close, and Auction-Only Orders executed in a Closing Auction in NYSE Arca primary listed securities (includes all ETFs/ETNs)</p> <p>\$0.0005 per share (fee) for PO Orders routed to NYSE American that execute in the opening or closing auction</p> <p>No fee or credit for Limit Non-Displayed Orders that provide liquidity to the Book</p> <p>\$0.0030 per share (fee) for Limit Non-Displayed Orders that take liquidity from the Book</p>
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	<p>\$0.0030 per share (credit) for Retail Orders that provide liquidity to the Book</p> <p>Tape C Securities:</p> <p>\$0.0020 per share (credit) for orders that provide liquidity to the Book</p> <p>\$0.003 per share (fee) for orders that take liquidity from the Book</p> <p>Primary Until 9:45 Orders and Primary After 3:55 Orders that are designated as Retail Orders that are routed to the primary listing market will be charged \$0.0010 per share (fee)</p> <p>For MPL orders providing liquidity to the Book:</p> <p style="padding-left: 40px;">\$0.0020 per share (credit) if MPL Adding ADV during the billing month is at least 3 million shares;</p> <p style="padding-left: 40px;">\$0.0015 per share (credit) if MPL Adding ADV during the billing month is at least 1.5 million shares and less than 3 million shares;</p> <p style="padding-left: 40px;">\$0.0010 per share (credit) if MPL Adding ADV during the billing month is less than 1.5 million shares.</p> <p>\$0.0030 per share (fee) for MPL orders removing liquidity from the Book that are not designated as Retail Orders</p> <p>\$0.0010 per share (fee) for MPL orders removing liquidity from the Book that are designated as Retail Orders</p> <p>\$0.0015 per share (fee) for Market and Auction-Only Orders executed in an Early Open Auction, Core Open Auction or Trading Halt Auction, capped at \$20,000 per month per Equity Trading Permit ID</p> <p>\$0.0012 per share (fee) for Market, Market-On-Close, Limit-On-Close, and Auction-Only Orders executed in a Closing Auction</p> <p>\$0.0010 per share (fee) for PO orders routed to NASDAQ that execute in the opening or closing auction</p>
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	<p>No fee or credit for Limit Non-Displayed Orders that provide liquidity to the Book</p> <p>\$0.0030 per share (fee) for Limit Non-Displayed Orders that take liquidity from the Book</p> <p>\$0.0030 per share (credit) for Retail Orders (as defined in Rule 7.44-E(a)(3) that provide liquidity to the Book</p>
IOI Credit	<p>Tape A, Tape B, and Tape C Securities:</p> <p>No Credit</p>
Tracking Order Tier 1: For ETP Holders and Market Makers that send Tracking Orders to the Exchange resulting in executions with an average daily share volume per month greater than or equal to 10 million shares	<p>Tape A, Tape B, and Tape C Securities:</p> <p>\$0.0015 per share (credit) for Tracking Orders that result in executions</p>
Tracking Order Tier 2: For ETP Holders and Market Makers that send Tracking Orders to the Exchange resulting in executions with an average daily share volume per month between 5 million shares and 9,999,999 shares	<p>Tape A, Tape B, and Tape C Securities:</p> <p>\$0.0012 per share (credit) for Tracking Orders that result in executions</p>
Tracking Order Tier 3: For ETP Holders and Market Makers that send Tracking Orders to the Exchange resulting in executions with an average daily share volume per month between 1 million shares and 4,999,999 shares	<p>Tape A, Tape B, and Tape C Securities:</p> <p>\$0.001 per share (credit) for Tracking Orders that result in executions</p>

Round Lots and Odd Lots (Per Share Price Below \$1.00)⁵

Tape A, Tape B, and Tape C Securities:	0.3% of the total dollar value for orders that take liquidity from the Book
Routing Services:	0.3% fee of the total dollar value (applicable to orders of listed and Nasdaq securities routed away and executed by another market center or participant)
Auctions	0.1% of the total dollar value for orders that execute in the Early Open, Core Open, Trading Halt or Closing Auctions.

Self Trade Prevention Modifiers (Tape A, Tape B, and Tape C Securities)⁶

STP credits and fees shall be capped at a net total of \$25,000.00 per month.

STP Cancel Newest (STPN)	\$0.00
STP Cancel Oldest (STPO)	\$0.00
STP Cancel Both (STPC) ⁷	\$0.0030 per share (credit) for resting STP orders returned to the ETP Holder \$0.0030 per share (fee) for incoming STP orders returned to the ETP Holder
STP Decrement and Cancel (STPD)	\$0.0030 per share (credit) for the portion of the resting STP order returned to the ETP Holder \$0.0030 per share (fee) for the portion of the incoming STP order returned to the ETP Holder

NYSE ARCA MARKETPLACE: ETP FEES

⁵ These fees are consistent with the limitations of Regulation NMS, SEC Rule 610(c), for securities with a price of less than \$1.00. Rebates will not be paid for executions in securities priced under \$1.00.

⁶ The incoming order (last received order) marked with one of the STP Modifiers controls the billing treatment of both interacting orders marked with STP Modifiers.

⁷ An incoming order marked with a STPC Modifier will be billed only up to the equivalent size of the contra order marked with a STP Modifier.

ETP Fee	\$15,000 per year per ETP Holder (billed monthly for each month during which the ETP is held for any portion of the month)
ETP Application Fees	
Initial Processing Fee	Waived
Investigation Fee	\$125 fee per individual for registration as an ETP Holder (includes any Allied Person ⁸ or Approved Person ⁹ listed on Schedule A or B of Form BD or Market Maker Authorized Trader for whom required information is not available on Web CRD ®)

REGULATORY FEES

FOCUS Filing Fee	\$100 annual filing fee for ETP Holders for which NYSE Arca is the Designated Examining Authority
Gross FOCUS Fee: Amount per \$1,000 Gross FOCUS Revenue	\$0.075 monthly fee per firm
DEA Fee	\$2,000 monthly fee per firm \$250 annual fee per trader
Application Resulting in Statutory Disqualification Proceedings	\$2,000 fee per application
Late Payment of Dues, Fees, Fines and Charges	
Number of Times Late Within Previous Twelve Months	Amount of Charge
1	\$250 or 1.0% of Invoice Amount, Whichever is Greater
2	\$500 or 1.5% of Invoice Amount, Whichever is Greater

CRD Fees for ETP Holders that are not FINRA Members

Each initial Form U4 filed for the registration of a representative or principal	\$100
Additional processing of each initial or amended Form U4, Form U5 or Form BD that includes the initial reporting, amendment, or certification of one or more	\$110

⁸ As defined by NYSE Arca Rule 1.1(b).

⁹ As defined by NYSE Arca Rule 1.1(c).

disclosure events or proceedings	
Processing and posting to the CRD system each set of fingerprints submitted electronically to FINRA, plus any other charge that may be imposed by the U.S. Department of Justice for processing each set of fingerprints	\$15
Processing and posting to the CRD system each set of fingerprint cards submitted in non-electronic format to FINRA, plus any other charge that may be imposed by the U.S. Department of Justice for processing each set of fingerprints	\$30
Processing and posting to the CRD system each set of fingerprint results and identifying information that have been processed through another self-regulatory organization and submitted to FINRA	\$30
System processing for each registered representative and principal	\$45 annually

NYSE ARCA MARKETPLACE: MARKET MAKER FEES AND CREDITS¹⁰

Lead Market Maker (“LMM”) Transaction Fees and Credits

Round Lots (Per Share Price \$1.00 or Above)

NYSE Arca Marketplace Primary Listed Securities (excluding Exchange-Traded Products (“ETPs”) in the Incentive Program) ¹¹	<p>\$0.0033 per share (credit) for orders that provide displayed liquidity to the Book in securities for which they are registered as the LMM and which have a CADV³ in the previous month greater than 3,000,000 shares</p> <p>\$0.004 per share (credit) for orders that provide displayed liquidity to the Book in securities for which they are registered as the LMM and</p>
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¹⁰ Market Maker fees for the NYSE Arca marketplace will not apply to MPL Orders (except MPL Orders will be eligible for transaction credit with respect to Tape A and Tape C Securities).

¹¹ No transaction fee or credit for orders executed as Directed Orders against a Directed Fill.

	<p>which have a CADV in the previous month of between 1,000,000 and 3,000,000 shares inclusive</p> <p>\$0.0045 per share (credit) for orders that provide displayed liquidity to the Book in securities for which they are registered as the LMM and which have a CADV in the previous month of less than 1,000,000 shares</p> <p>LMMs, and ETP Holders and Market Makers affiliated with such LMM in Tape B Securities, will receive an additional credit for orders that provide displayed liquidity to the Book in securities for which they are registered as the LMM and in securities for which they are not registered as an LMM based on the number of securities that have a CADV in the previous month of less than 100,000 shares, or 0.0070% of Consolidated Tape B ADV, whichever is greater (“Less Active ETP Securities”), as follows:</p> <ul style="list-style-type: none">- An additional credit of \$0.0004 per share if an LMM is registered as the LMM in at least 300 Less Active ETP Securities- An additional credit of \$0.0003 per share if an LMM is registered as the LMM in at least 200 but less than 300 Less Active ETP Securities- An additional credit of \$0.0002 per share if an LMM is registered as the LMM in at least 100 but less than 200 Less Active ETP Securities- An additional credit of \$0.0001 per share if an LMM is registered as the LMM in at least 75 but less than 100 Less Active ETP Securities <p>The number of Less Active ETP Securities for the billing month will be based on the number</p>
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	<p>of Less Active ETP Securities in which an LMM is registered as the LMM on the last business day of the previous month</p> <p>\$0.0029 per share (fee) for orders that take liquidity from the Book</p> <p>\$0.0030 per share (credit) for orders that provide undisplayed liquidity in Arca Only Orders to the Book in securities for which they are registered as the LMM.</p> <p>\$0.0015 per share (credit) for Limit Non-Displayed Orders that provide liquidity to the Book in securities for which they are registered as the LMM.</p> <p>No fee for orders executed in the Closing Auction</p>
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NYSE ARCA MARKETPLACE: EXCHANGE TRADED FUND LIQUIDITY PROVIDER PROGRAM (“ELP PROGRAM”) FOR TAPE B SECURITIES

ETP Holders and Market Makers (collectively, “ELPs”) receive a credit of \$0.0001 per share for orders that provide displayed liquidity to the Book each month in Tape B Securities provided the ELP meets the following requirements in Arca-listed Securities that have a consolidated average daily volume in the previous month of less than 250,000 shares (“ELP Securities”), as follows:

- For each billing month, in at least 50 ELP Securities, the ELP must:
 - Quote at the National Best Bid or Offer (NBBO) for at least 15% of the time for the billing month (“Quoting Standard”), and
 - Display at least 2,500 shares that are priced no more than 2% away from the NBBO at least 90% of the time for the billing month (“Quoting and Depth Standard”).

The credit of \$0.0001 per share is an incremental credit in Tape B Securities in addition to the ELP’s Tiered or Basic Rate credit(s); provided, however, that such combined credit shall not exceed \$0.0030 per share.

The Exchange will calculate each participating ELP’s Quoting Standard and Quoting and Depth Standard, as applicable, beginning each month on a daily basis, up to and including the last trading day of a calendar month to determine at the end of each month whether the ELP is meeting the requirements of the ELP Program.

If an ELP is enrolled in the ELP Program after the first trading day of the month, the ELP’s requirement to qualify for the ELP Program credit would be measured from the day the ELP is enrolled and, if the ELP meets the Quoting Standard and the Quoting and Depth Standard, as applicable, the ELP Program credit would be applied to those ELP executions that add displayed liquidity from the day the ELP is enrolled.

FEES AND CREDITS APPLICABLE TO EXECUTIONS IN THE RETAIL LIQUIDITY PROGRAM

Retail Liquidity Provider (“RLP”) or Non-RLP Retail Price Improvement Order (“RPI”) that executes against a Retail Member Organization (“RMO”) Retail Order:	Tape B and Tape C Securities: \$0.0003 credit.
Other non-displayed liquidity and displayable odd lot interest priced better than the best protected bid (“PBB”) or the best protected offer (“PBO”) (together, the “PBBO”) (“other price-improving interest”) that executes against an RMO Retail Order:	Tape B and Tape C Securities: Tiered or Basic Rates apply based on a firm’s qualifying levels.
RMO Retail Order that executes against an RLP or Non-RLP RPI or against other price-improving interest:	Tape B and Tape C Securities: No fee or credit applies.

NYSE ARCA MARKETPLACE: OTHER FEES AND CHARGES

Connectivity Fees

Line Connection	(Variable pass-through charge for each line installation)
Port Fee (not applicable to ports used for Risk Management Gateway (“RMG”SM), which are not charged)	In addition to the fees listed below a Decommission Extension Fee will apply to ETP Holders for the use of ports that communicate with the Exchange using Pillar phase I protocols, as follows: <ul style="list-style-type: none"> • June 2018: \$2,450 per port per month; • July 2018: \$2,950 per port per month; • August 2018: \$3,450 per port per month;

CO-LOCATION FEES

Definitions

The following definitions are for purposes of Co-Location Fees only:

An “Affiliate” of a User is any other User or Hosted Customer that is under 50% or greater common ownership or control of the first User.

“Aggregate Cabinet Footprint” of a User or Hosted Customer is (a) for a User, the total kW of the User’s cabinets, including both partial and dedicated cabinets, and (b), for a Hosted Customer, the total kW of the portion of the Hosting User’s cabinet, whether partial or dedicated, allocated to such Hosted Customer.

A “Hosted Customer” means a customer of a Hosting User that is hosted in a Hosting User’s co-location space.

A “Hosting User” means a User of co-location services that hosts a Hosted Customer in the User’s co-location space.

A “User” means any market participant that requests to receive co-location services directly from the Exchange.

General Notes

1. A User that incurs co-location fees for a particular co-location service pursuant to this Fee Schedule shall not be subject to co-location fees for the same co-location service charged pursuant to the NYSE Arca Equities Fee Schedule or by the Exchange’s affiliates NYSE American LLC (NYSE American), New York Stock Exchange LLC (NYSE) and NYSE National, Inc. (NYSE National).

2. To qualify for a Partial Cabinet Solution bundle, a User must meet the following conditions: (1) it must purchase only one Partial Cabinet Solution bundle; (2) the User and its Affiliates must not currently have a Partial Cabinet Solution bundle; and (3) after the purchase of the Partial Cabinet Solution bundle, the User, together with its Affiliates, will have an Aggregate Cabinet Footprint of no more than 2 kW.

- A User requesting a Partial Cabinet Solution bundle will be required to certify to the Exchange (a) whether any other Users or Hosted Customers are Affiliates of the certifying User, and (b) that after the purchase of the Partial Cabinet Solution bundle, the User, together with its Affiliates, would have an Aggregate Cabinet Footprint of no more than 2 kW. The certifying User will be required to inform the Exchange immediately of any event that causes another User or Hosted Customer to become an Affiliate. The Exchange shall review available information regarding the entities and may

request additional information to verify the Affiliate status of a User or Hosted Customer. The Exchange shall approve a request for a Partial Cabinet Solution bundle unless it determines that the certification is not accurate.

- If a User that has purchased a Partial Cabinet Solution bundle becomes affiliated with one or more other Users or Hosted Customers and thereby no longer meets the conditions for access to the Partial Cabinet Solution bundle, or if the User otherwise ceases to meet the conditions for access to the Partial Cabinet Solution bundle, the Exchange will no longer offer it to such User and the User will be charged for each of the services individually, at the price for each such service set out in the Price List. Such price change would be effective as of the date that the User ceased to meet the conditions.

In addition, a User that changes its Partial Cabinet Solution bundle from one option to another will not be subject to a second initial charge, but will be required to pay the difference, if any, between the bundles' initial charges.

3. The initial and monthly charge for 2 bundles of 24 cross connects will be waived for a User that is waitlisted for a cage for the duration of the waitlist period, provided that the cross connects may only be used to connect the User's non-contiguous cabinets. The charge will no longer be waived once a User is removed from the waitlist.

- If a waitlist is created, a User seeking a new cage will be placed on the waitlist based on the date a signed order for the cage is received.
- A User that turns down a cage because it is not the correct size will remain on the waitlist. A User that requests to be removed or that turns down a cage that is the size that it requested will be removed from the waitlist.
- A User that is removed from the waitlist but subsequently requests a cage will be added back to the bottom of the waitlist, provided that, if the User was removed from the waitlist because it turned down a cage that is the size that it requested, it will not receive a second waiver of the charge.

4. When a User purchases access to the LCN or IP network, it receives the ability to access the trading and execution systems of the NYSE, NYSE American, NYSE Arca, NYSE National, and Chicago Stock Exchange, Inc. (CHX and, together, the Exchange Systems), subject, in each case, to authorization by the NYSE, NYSE American, NYSE Arca, NYSE National or CHX, as applicable. Such access includes access to the customer gateways that provide for order entry, order receipt (i.e. confirmation that an order has been received), receipt of drop copies and trade reporting (i.e. whether a trade is executed or cancelled), as well as for sending information to shared data services for clearing and settlement. A User can change the access it receives at any time, subject to authorization by NYSE, NYSE American, NYSE Arca, NYSE National, or CHX. NYSE, NYSE American, NYSE Arca, NYSE National and CHX also offer access to Exchange Systems to their members, such that a User does not have to purchase access to the LCN or IP network to obtain access to Exchange Systems.

When a User purchases access to the LCN or IP network it receives connectivity to any of the Included Data Products that it selects, subject to any technical provisioning requirements and authorization from the provider of the data feed. Market data fees for the Included Data Products are charged by the provider of the data feed. A User can change the Included Data Products to which it receives connectivity at any time, subject to authorization from the provider of the data feed. The Exchange is not the exclusive method to connect to the Included Data Products.

The Included Data Products are as follows:

Chicago Stock Exchange (CHX)
NMS feeds
NYSE: NYSE Alerts NYSE BBO NYSE Integrated Feed NYSE OpenBook NYSE Order Imbalances NYSE Trades
NYSE American: NYSE American Alerts NYSE American BBO NYSE American Integrated Feed NYSE American OpenBook NYSE American Order Imbalances NYSE American Trades
NYSE American Options
NYSE Arca: NYSE ArcaBook NYSE Arca BBO NYSE Arca Integrated Feed NYSE Arca Order Imbalances NYSE Arca Trades
NYSE Arca Options
NYSE Best Quote and Trades (BQT)
NYSE Bonds
NYSE National

Initial Fee per Cabinet	
Dedicated Cabinet	\$5,000
8-Rack Unit of a Partial Cabinet	\$2,500
Monthly Fee per Cabinet	
Dedicated Cabinet	
Number of kW	Per kW Fee Monthly
4 - 8	\$1,200
9 - 20	\$1,050
21 - 40	\$950
41+	\$900
8-Rack Unit of a Partial Cabinet	
Number of kW	Total Fee Monthly
1	\$1,500
2	\$2,700
Cabinet Upgrade Fee	
Dedicated Cabinet	\$9,200 (\$4,600 for a User that submitted a written order for a Cabinet Upgrade by January 31, 2014, provided that the Cabinet Upgrade became fully operational by March 31, 2014)
<u>PNU Cabinet</u>	monthly charge of \$360 per kW allocated to PNU Cabinet
<u>Cage Fees</u>	
2 -14 Cabinets	\$5,000 initial charge plus \$2,700 monthly charge
15 - 28 Cabinets	\$10,000 initial charge plus \$4,100 monthly charge
29+ Cabinets	\$15,000 initial charge plus \$5,500 monthly charge

Type of Service	Description	Amount of Charge
LCN Access	1 Gb Circuit	\$6,000 per connection initial charge plus \$5,000 monthly per connection
LCN Access	10 Gb Circuit	\$10,000 per connection initial charge plus \$14,000 monthly per connection. A User that purchases 5 10 GB LCN Circuits will receive the 6th 10 GB LCN Circuit without an additional monthly charge.
LCN Access	10 Gb LX Circuit	\$15,000 per connection initial charge plus \$22,000 monthly per connection.
LCN Access	40 Gb Circuit	\$15,000 per connection initial charge plus \$22,000 monthly per connection.
Bundled Network Access (2 LCN connections, 2 IP network connections, and 2 optic connections to outside access center)	1 Gb Bundle	\$25,000 initial charge plus \$13,000 monthly charge
	10 Gb Bundle	\$50,000 initial charge plus \$53,000 monthly charge
Partial Cabinet Solution bundles Note: A User and its Affiliates are limited to one Partial Cabinet Solution bundle at a time. A User and its Affiliates must have an Aggregate Cabinet Footprint of 2 kW or less to qualify for a Partial Cabinet Solution bundle. See Note 2 under "General Notes."	Option A: 1 kW partial cabinet, 1 LCN connection (1 Gb), 1 IP network connection (1 Gb), 2 fiber cross connections and either the Network Time Protocol Feed or Precision Timing Protocol	\$7,500 initial charge per bundle plus monthly charge per bundle as follows: <ul style="list-style-type: none"> • For Users that order on or before December 31, 2018: \$3,000 monthly for first 24 months of service, and \$6,000 monthly thereafter • For Users that order after December 31, 2018: \$6,000 monthly

<p>Option B: 2 kW partial cabinet, 1 LCN connection (1 Gb), 1 IP network connection (1 Gb), 2 fiber cross connections and either the Network Time Protocol Feed or Precision Timing Protocol</p>	<p>\$7,500 initial charge per bundle plus monthly charge per bundle as follows:</p> <ul style="list-style-type: none"> • For Users that order on or before December 31, 2018: \$3,500 monthly for first 24 months of service, and \$7,000 monthly thereafter • For Users that order after December 31, 2018: \$7,000 monthly
<p>Option C: 1 kW partial cabinet, 1 LCN connection (10 Gb), 1 IP network connection (10 Gb), 2 fiber cross connections and either the Network Time Protocol Feed or Precision Timing Protocol</p>	<p>\$10,000 initial charge per bundle plus monthly charge per bundle as follows:</p> <ul style="list-style-type: none"> • For Users that order on or before December 31, 2018: \$7,000 monthly for first 24 months of service, and \$14,000 monthly thereafter • For Users that order after December 31, 2018: \$14,000 monthly
<p>Option D: 2 kW partial cabinet, 1 LCN connection (10 Gb), 1 IP network connection (10 Gb), 2 fiber cross connections and either the Network Time Protocol Feed or Precision Timing Protocol</p>	<p>\$10,000 initial charge per bundle plus monthly charge per bundle as follows:</p> <ul style="list-style-type: none"> • For Users that order on or before December 31, 2018: \$7,500 monthly for first 24 months of service, and \$15,000 monthly thereafter • For Users that order after December 31, 2018: \$15,000 monthly

IP Network Access	1 Gb Circuit	\$2,500 per connection initial charge plus \$2,500 monthly per connection
IP Network Access	10 Gb Circuit	\$10,000 per connection initial charge plus \$11,000 monthly per connection
IP Network Access	40 Gb Circuit	\$10,000 per connection initial charge plus \$18,000 monthly per connection
Testing and certification IP Network Access	IP network circuit for testing and certification. Circuit can only be used for testing and certification and testing and certification period is limited to three months.	No charge.
Wireless Connection for Third Party Data	Wireless connection of Cboe Pitch BZX Gig shaped data and Cboe Pitch BYX Gig shaped data	\$5,000 per connection initial charge plus monthly charge per connection of \$6,000 Fees are subject to a 30-day testing period, during which the monthly charge per connection is waived.
Wireless Connection for Third Party Data	Wireless connection of Cboe EDGX Gig shaped data and Cboe EDGA Gig shaped data	\$5,000 per connection initial charge plus monthly charge per connection of \$6,000 Fees are subject to a 30-day testing period, during which the monthly charge per connection is waived.
Wireless Connection for Third Party Data	Wireless connection of NASDAQ Totalview-ITCH data	\$5,000 per connection initial charge plus monthly charge per connection of \$8,500 Fees are subject to a 30-day testing period, during which the monthly charge per connection is waived.

Wireless Connection for Third Party Data	Wireless connection of NASDAQ BX Totalview-ITCH data	\$5,000 per connection initial charge plus monthly charge per connection of \$6,000 Fees are subject to a 30-day testing period, during which the monthly charge per connection is waived.
Wireless Connection for Third Party Data	Wireless connection of NASDAQ Totalview Ultra (FPGA)	\$5,000 per connection initial charge plus monthly charge per connection of \$11,000 Fees are subject to a 30-day testing period, during which the monthly charge per connection is waived.
Wireless Connection for Third Party Data	Wireless connection of NASDAQ Totalview-ITCH and BX Totalview-ITCH data	\$5,000 per connection initial charge plus monthly charge per connection of \$12,000 Fees are subject to a 30-day testing period, during which the monthly charge per connection is waived.
Wireless Connection for Third Party Data	Wireless connection of NASDAQ Totalview Ultra (FPGA) and BX Totalview-ITCH data	\$5,000 per connection initial charge plus monthly charge per connection of \$14,500 Fees are subject to a 30-day testing period, during which the monthly charge per connection is waived.
Wireless Connection for Third Party Data	Wireless connection of Toronto Stock Exchange (TSX)	\$5,000 per connection initial charge plus monthly charge per connection of \$8,500 Fees are subject to a 30-day testing period, during which

		the monthly charge per connection is waived.
Wireless Connection for Third Party Data	Port for wireless connection	\$3,000 monthly charge per port, excluding first port
Virtual Control Circuit between two Users	1Mb	\$200 monthly charge
	3Mb	\$400 monthly charge
	5Mb	\$500 monthly charge
	10Mb	\$800 monthly charge
	25Mb	\$1,200 monthly charge
	50Mb	\$1,800 monthly charge
	100Mb	\$2,500 monthly charge
Hosting Fee		\$1,000 monthly charge per cabinet per Hosted Customer for each cabinet in which such Hosted Customer is hosted
Data Center Fiber Cross Connect	Furnish and install 1 cross connect	\$500 initial charge plus \$600 monthly charge
	Furnish and install bundle of 6 cross connects	\$500 initial charge plus \$1,800 monthly charge
	Furnish and install bundle of 12 cross connects	\$500 initial charge plus \$3,000 monthly charge
	Furnish and install bundle of 18 cross connects	\$500 initial charge plus \$3,840 monthly charge
	Furnish and install bundle of 24 cross connects	\$500 initial charge plus \$4,680 monthly charge
		See General Note 3.
Connection to Time Protocol Feed	Network Time Protocol Feed (Note: LCN only)	\$300 initial charge plus \$100 monthly charge
	Precision Time Protocol	\$1,000 initial charge plus \$250 monthly charge
	GPS Time Source (Note: dedicated cabinets only)	\$3,000 initial charge plus \$400 monthly charge

Expedite Fee	Expedited installation/completion of a User's co-location service	\$4,000 per request
Change Fee***	Change to a co-location service that has already been installed/completed for a User	\$950 per request
Initial Install Services*** (Required per cabinet)	Dedicated Cabinet: Includes initial racking of equipment in cabinet and provision of cables (4 hrs).	\$800 per dedicated cabinet
	Partial Cabinet: Includes initial racking of equipment in cabinet and provision of cables (2 hrs).	\$400 per eight-rack unit in a partial cabinet
Hot Hands Service***	Allows Users to use on-site data center personnel to maintain User equipment, support network troubleshooting, rack and stack, power recycling, and install and document cable.	\$100 per half hour
Shipping and Receiving***	Receipt of one shipment of goods at data center from User/supplier. Includes coordination of shipping and receiving.	\$100 per shipment
Badge Request***	Request for provision of a permanent data center site access badge for a User representative.	\$50 per badge
External Cabinet Cable Tray***	Engineer, furnish and install Rittal 5"H x 12"W cable tray on cabinet.	\$400 per tray
Custom External Cabinet Cable Tray***	Engineer, furnish and install 4" H x 24" W custom basket cable tray above client's cabinet rows.	\$100 per linear foot
Visitor Security Escort***	All User representatives are required to be accompanied by a visitor security escort during visits to the data center, unless visiting the User's cage. Requirement includes User representatives who have a permanent data center site access badge.	\$75 per visit

*** These fees are waived for the move of a User’s equipment within the Data Center when incurred in connection with such a move required by the Exchange (“Migration Move”). A User selected by the Exchange for a Migration Move will receive written notice (the “Notice”). The Notice will identify the 90-day period during which a User must move its equipment, which period would commence at least 60 days from the date of the Notice. Monthly recurring fees for the User’s existing space based on the rate of the monthly recurring fees that the User was paying as of the date of the Notice are also waived for the month during which a User’s Migration Move takes place, so the User would not incur these fees for the period of overlapping use of equipment and services in the old and new locations. In addition, the monthly recurring charges are waived for the month following the completion of a User’s Migration Move, based on the rate of the monthly recurring fees that the User was paying as of the date of the Notice. No User will be required to move more than once within any 12-month period.

Co-Location: Connectivity to Third Party Systems, Data Feeds, Testing and Certification Feeds, and DTCC

Connectivity to Third Party Systems

Pricing for access to the execution systems of third party markets and other service providers (Third Party Systems) is for connectivity only. Connectivity to Third Party Systems is subject to any technical provisioning requirements and authorization from the provider of the data feed. Connectivity to Third Party Systems is over the IP network. Any applicable fees are charged independently by the relevant third party content service provider. The Exchange is not the exclusive method to connect to Third Party Systems.

Bandwidth of connection to Third Party System	Monthly recurring fee per connection to Third Party System
1Mb	\$200
3Mb	\$400
5Mb	\$500
10Mb	\$800
25Mb	\$1,200
50Mb	\$1,800
100Mb	\$2,500
200 Mb	\$3,000
1 Gb	\$3,500

Third Party Systems
Americas Trading Group (ATG)
BM&F Bovespa
Boston Options Exchange (BOX)

Canadian Securities Exchange (CSE)
Cboe BYX Exchange, Cboe BZX Exchange, Cboe EDGA Exchange, and Cboe EDGX Exchange
Cboe Exchange (Cboe) and Cboe C2 Exchange (C2)
Chicago Mercantile Exchange (CME Group)
Credit Suisse
Euronext Optiq Cash and Derivatives Unicast (EUA)
Euronext Optiq Cash and Derivatives Unicast (Production)
Investors Exchange (IEX)
ITG TriAct Matchnow
Miami International Securities Exchange
MIAX PEARL
Nasdaq
NASDAQ Canada (CXC, CXD, CX2)
NASDAQ ISE
Neo Aequitas
NYFIX Marketplace
Omega
OneChicago
OTC Markets Group
TMX Group

Connectivity to Third Party Data Feeds

Pricing for data feeds from third party markets and other content service providers (Third Party Data Feeds) is for connectivity only. Connectivity to Third Party Data Feeds is subject to any technical provisioning requirements and authorization from the provider of the data feed. Connectivity to Third Party Data Fees is over the IP network, with the exception that Users can connect to Global OTC and ICE Data Global Index over the IP network or LCN. Market data fees are charged independently by the relevant third party market or content service provider. The Exchange is not the exclusive method to connect to Third Party Data Feeds.

Third Party Data Feed providers may charge redistribution fees. When the Exchange receives a redistribution fee, it passes through the charge to the User, without change to the fee. The fee is labeled as a pass-through of a redistribution fee on the User's invoice. The Exchange does not charge third party markets or content providers for connectivity to their own feeds.

Third Party Data Feed	Monthly Recurring Connectivity Fee per Third Party Data Feed
BM&F Bovespa	\$3,000
Boston Options Exchange (BOX)	\$1,000
Canadian Securities Exchange (CSE)	\$1,000
Cboe BZX Exchange (CboeBZX) and Cboe BYX Exchange (CboeBYX)	\$2,000
Cboe EDGX Exchange (CboeEDGX) and Cboe EDGA Exchange (CboeEDGA)	\$2,000
Cboe Exchange (Cboe) and Cboe C2 Exchange (C2)	\$2,000
CME Group	\$3,000
Euronext Optiq Compressed Cash	\$900
Euronext Optiq Compressed Derivatives	\$600
Euronext Optiq Shaped Cash	\$1,200
Euronext Optiq Shaped Derivatives	\$900
Financial Industry Regulatory Authority (FINRA)	\$500
Global OTC	\$100
ICE Data Global Index	\$100
ICE Data Services Consolidated Feed \leq 100 Mb	\$200
ICE Data Services Consolidated Feed $>$ 100 Mb to \leq 1 Gb	\$500
ICE Data Services Consolidated Feed $>$ 1 Gb	\$1,000
ICE Data Services Consolidated Feed Shared Farm \leq 100Mb	\$200
ICE Data Services Consolidated Feed Shared Farm $>$ 100 Mb to \leq 1 Gb	\$500
ICE Data Services Consolidated Feed Shared Farm $>$ 1 Gb	\$1,000
ICE Data Services PRD	\$200
ICE Data Services PRD CEP	\$400
Intercontinental Exchange (ICE)	\$1,500
Investors Exchange (IEX)	\$1,000
Miami International Securities Exchange/MIAX PEARL	\$2,000
ITG TriAct Matchnow	\$1,000
Montréal Exchange (MX)	\$1,000
MSCI 5 Mb	\$500
MSCI 25 Mb	\$1,200
NASDAQ Stock Market	\$2,000
NASDAQ OMX Global Index Data Service	\$100

NASDAQ OMDF	\$100
NASDAQ UQDF & UTDF	\$500
NASDAQ Canada (CXC, CXD, CX2)	\$1,500
NASDAQ ISE	\$1,000
Neo Aequitas	\$1,200
Omega	\$1,000
OneChicago	\$1,000
OTC Markets Group	\$1,000
SR Labs – SuperFeed <500 Mb	\$250
SR Labs – SuperFeed >500 Mb to <1.25 Gb	\$800
SR Labs – SuperFeed >1.25 Gb	\$1,000
TMX Group	\$2,500

Connectivity to Third Party Testing and Certification Feeds

The Exchange provides connectivity to third party testing and certification feeds provided by third party markets and other content service providers. Pricing for third party testing and certification feeds is for connectivity only. Connectivity to third party testing and certification feeds is subject to any technical provisioning requirements and authorization from the provider of the data feed. Connectivity to third party testing and certification feeds is over the IP network. Any applicable fees are charged independently by the relevant third party market or content service provider. The Exchange is not the exclusive method to connect to third party testing and certification feeds.

Connectivity to third party certification and testing feeds	\$100 monthly recurring fee per feed
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Connectivity to DTCC

Pricing for connectivity to DTCC feeds is for connectivity only. Connectivity to DTCC feeds is subject to any technical provisioning requirements and authorization from DTCC. Connectivity to DTCC feeds is over the IP network. Any applicable fees are charged independently by DTCC. The Exchange is not the exclusive method to connect to DTCC feeds.

5 Mb connection to DTCC	\$500 monthly recurring fee
50 Mb connection to DTCC	\$2,500 monthly recurring fee

MARKET DATA REVENUE SHARING CREDIT¹²

Cross Order: Tape A Securities	50% tape revenue credit per qualifying trade (applicable to any Cross Order, as defined in NYSE Arca Rule 7.31-E(g), where the ETP Holder or Sponsored Participant represents all of one side of the transaction and all or a portion of the other side)
Cross Order: Tape B Securities	50% tape revenue credit per qualifying trade (applicable to any Cross Order, as defined in NYSE Arca Rule 7.31-E(g), where the ETP Holder or Sponsored Participant represents all of one side of the transaction and all or a portion of the other side)
Cross Order: Tape C Securities	A percentage of ETP Operating Revenue (“ETPOR”) associated with Cross Orders in Tape C Securities shall be eligible for sharing with ETP Holders. ETPOR is defined as operating revenue that is generated by ETP Holders and consists of transaction fees and market data revenue that is attributable to ETP Holders’ Cross Order executions. ETPOR shall not include any investment income or regulatory monies. The sharing of ETPOR shall be based on each ETP Holder’s pro rata contribution to ETPOR and the amount shared shall not exceed ETPOR.
Late Payment of Dues, Fees, Fines and Charges ¹³	
Number of Times Late Within Previous Twelve Months:	Amount of Charge
1	\$250 or 1.0% of Invoice Amount, Whichever is Greater
2	\$500 or 1.5% of Invoice Amount, Whichever is Greater

¹² LMMs will not be eligible for a market data revenue credit in securities for which they are registered as the LMM except for executions against Directed Fills. Open orders (e.g., GTC Orders) will not be eligible for a market data revenue credit if such orders are executed after the trading date on which they were entered.

¹³ Transaction fees are excluded from the late payment of dues, fees, fines and charges.

NYSE ARCA MARKETPLACE: GENERAL

I. BILLING DISPUTES

All fee disputes concerning fees billed by the Exchange must be submitted to the Exchange in writing and must be accompanied by supporting documentation. All fee disputes must be submitted no later than sixty (60) days after receipt of a billing invoice.

II. Aggregate Billing of Affiliated ETP Holders

(a) For purposes of applying any provision of the Schedule of Fees and Charges for Exchange Services (“Schedule of Fees”) where the charge assessed, or credit provided, by the Exchange depends upon the volume of a ETP Holder's activity, a ETP Holder may request that the Exchange aggregate its eligible activity with the eligible activity of its affiliate(s).

(1) A ETP Holder requesting aggregation of eligible affiliate activity shall be required to certify to the Exchange which affiliate it seeks to aggregate prior to receiving approval for aggregation, and shall be required to inform the Exchange immediately of any event that causes an entity to cease to be an affiliate. The Exchange shall review available information regarding the entities and reserves the right to request additional information to verify the affiliate status of an entity. The Exchange shall approve a request, unless it determines that the certificate is not accurate.

(2) If two or more ETP Holders become affiliated on or prior to the sixteenth day of a month, and submit the required request for aggregation on or prior to the twenty-second day of the month, an approval of the request by the Exchange shall be deemed to be effective as of the first day of that month. If two or more members become affiliated after the sixteenth day of a month, or submit a request for aggregation after the twenty-second day of the month, an approval of the request by the Exchange shall be deemed to be effective as of the first day of the next calendar month.

(b) For purposes of applying any provision of the Schedule of Fees where the charge assessed, or credit provided, by the Exchange depends upon the volume of a ETP Holder's activity, references to an entity (excluding references to DMMs and where otherwise not permitted on the Price List) shall be deemed to include the entity and its affiliate(s) that have been approved for aggregation.

(c) For purposes of this Schedule of Fees, the term “affiliate” shall mean any ETP Holder under 75% common ownership or control of that ETP Holder.