

CBOEDirect Release Notes

CBOEDIR_8.5 and Infra 13.4

Oct. 29, 2010

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Overview of CD Server Work Requests

Work requests included in this release

- ❖ WR# 6573 Spread Price Calculator
- ❖ WR# 6297 TipsAdapter Elimination
- ❖ WR# 6446 Odd/Mixed Lot Enhancements
- ❖ WR# 6357 TB For COB
- ❖ WR# 6393 Trade Through Enhancements
- ❖ WR#:6539 – FAST Product Close
- ❖ WR#6638 – Short Sale Price Test
- ❖ WR#6556 – Variance Strip
- ❖ WR#6750 – QCT Enhancements
- ❖ WR#6749 – W-W Customer like AIM Trades.
- ❖ WR#6617 – NASDAQ OMX PHLX.
- ❖ WR#6818 - CFE EXTENDED TRADING HOURS

WR6573 -- Spread Price Calculator

Goal

Spread Price Calculator over the years has evolved into a piece of code which is very difficult to understand and maintain. The goal of this project is to re-write the Spread Price Calculator.

Summary of Changes

The changes are intended as a black box drop-in

WR6296 – TipsAdapter Elimination

Goal

The purpose of the project feature is to make the opening rotation of derivative products faster in the Hybrid/C2 trading session by moving the underlying product state determination and dissemination from Tips Adapter (TA) & Global server processes to Hybrid/C2 trade server processes in the BC.

The project eliminates TA process for Hybrid/C2 trading session and also the Global server dissemination of underlying product state information by -

- Hybrid/C2 BC consuming the underlying recap & last sale events directly from its corresponding local XTP
- Hybrid/C2 servicing the MDS interface requests/queries.

Note that the TA can't be completely eliminated as futures trade server(s) don't have the local XTP setup and continue to depend on the TA for underlying recap events.

Summary of changes for server side

- The Hybrid/C2 server stops consuming the underlying equity recap(i.e. quote and last sale) events from TA.
- BC's XTP publishes underlying equity recap events including the product state.
- The Hybrid/C2 server,
 - consumes and caches the above local XTP recap events in both the master and slave modes.
 - uses the product state in the recap event(s) for derivative option/strategy products opening and the remaining recap data primarily for servicing MD requests and generation of MDH.
 - by default uses the underlying product state for derivative products state transition but it can be dynamically configured (through AR commands) to stop/start the derivative products state transition based on underlying product state.
 - continues to process the derivative product state change requests from Global or SA GUI through PSS interface.
 - will not publish the consumed underlying equity product state on to TSS event channel.
- Until all BCs are upgraded, the Global continues to consume the underlying equity product state from TA and disseminate the state information to BCs.

WR 6446 – Odd/Mixed Lot Enhancements

Goal

The goal of this project is to process cross product spread (CPS) orders the same whether the stock leg is a round lot, odd lot, or mixed lot.

Summary of Changes

CBOE Session

1. Allow CPS orders regardless of the stock leg size, to utilize COB, COA and AIM.
2. Change the product creation logic to only create strategy products based on the lowest common denominator.

CBSX Session

i) Change the ‘round lot size’ parameter from ‘100’ to ‘1’.

- In effect, this will mean that there are no odd lots anymore. Therefore, the following will occur as a result of the parameter change:
 - Today, the tape print process only reports round lot values (there is a parameter used to prohibit reporting values under 100 and mixed lot trade values are rounded down). After this project, the tape print process will explicitly report round lot and mixed lot trades (volumes of 100 and above).

Example:

<u>CBSX Trades</u>	<u>Today</u>	<u>With this project</u>
500 shares	Prints 500	Prints 500
85 shares	Not reported	Not Reported
135 shares	Prints 100	Prints 135

ii) Removed any exception code that that causes odd/mixed lot orders to be treated differently than round lots.

- **MarketLotSize Trading Property** .- Replacing LotSize in those place were W_STOCK has to still consider lot sizes of 100
- **TradeServiceStockImpl** .- Removed the restriction that causes odd lots to only trade with quotes and quote-like orders (however, this too may occur automatically as a result of setting the round lot parameter to a value of ‘1’?).
 - a)
- **OrderBookSideItem**: Upon completion of this project, quotes and quote-like orders in CBSX should still cancel when their size goes under 100. (CBSX market makers are required to quote in round increments).

iii) Turn off the odd lot auction.

iv) Inbound market data for CBSX should continue to be read correctly in terms of round lots where the value of '1' equates to 100 shares.

WR 6357 – TB For COB

Goal

The goal of the system changes for this project is to allow the floor brokers to be able to trade the public customer ('C' origin) COB, and without first trading with the legs of the complex order if they are at the same price points. As per the rules of CBOE, complex orders are allowed to trade in open outcry at the same net price as legs as long as there is no customer interest on the COB or all the legs of BBO at the execution price or better. If there is customer interest at the BBO on all the legs, then the floor broker must trade with all that customer interest on the top of the individual book at the same price, using the TA button, before trading the spread product in the open outcry. If COB has orders at the same price as leg, legs are given priority. So this enhancement allows brokers to trade customer COB orders while at the same price as the legs. This will enable the floor broker to trade with the COB, if the COB price is equal to or better than the leg BBO price.

Functionality changes

1. Enabling TB button from PAR
2. Trading TB request orders with Customer COB only
3. Make Trading TA and TB request orders for complex orders same.
4. Fix TA request for an ongoing COA auction.

Summary of changes

CD Changes

1. The TB request for a Complex Order will trade, if there are customer orders in the COB that are marketable and the customer order/s resting in COB are equal to or better than the DSM.
2. The TB request will trade out the customer orders, even if aggregated with professional orders.
3. If the TB request will be returned back to PAR
 - a. If the leg market moved such that the leg market is better than the COB or a professional order is at top of the COB.
4. COA and TB Button
 - a. COA auction for professional complex order should be unaffected, if an OPPOSITE side order is sent from PAR using TB button which is marketable with both the same side orders, TB button should fail and the order should return to PAR.

- b. For an ongoing COA for a Customer or Professional order, if a SAME side order is sent from PAR with TB button which is marketable with opposite side COB order, the auction should end prematurely and auctioned order will be given first preference in trading allocations.
- 5. TA and TB for BOB classes with MQ
 - a. TA or TB orders from PAR will trade with resting Customer only if the MQ are resting at same price point as quotes or order on the Legs.
 - b. If manual quotes are at a better price, TA request will be rejected back to PAR.
- 6. TB for simple order during Auction.
 - a. During an ongoing auction of a Professional simple order which is at a better price than resting customer order in same side, an Opposite side simple order sent from PAR using TB button if marketable should be routed back to PAR.

PAR Changes

- 1. TB Button will be activated for Complex Orders, if there are customer orders in the COB that are marketable with the PAR Order, and the customer order/s resting in COB are equal to or better than the DSM based on the leg market.
- 2. TB button will be activated for BOB classes also if all the checks are passed, even if manual quotes exist on the individual leg BBO.
- 3. Once activated, TB Button should not be deactivated while the PAR ticket is open, even if the COB or DSM changes. So, it is possible for the trade engine to fail the TB attempt.
- 4. PAR will subscribe to MDX for each product to get a breakdown between customer and professional interest in the COB to decide activation of the TB Button.

Turning on – TB Button for COB

- 1. There are no new properties added to turn on/off this feature.
- 2. This functionality will be available at the time of BC install.
- 3. After all BCs have been rolled out, PAR client will be rolled out.
- 4. Once PAR Servers are rolled out, TB button on PAR can be used to trade Customer COB.

WR 6393 – Trade Through Alert Enhancements

Goal

The goal of the system changes for this project is allow new types of Trade Through evaluations for simple orders and complex orders. For simple orders, Trade through Processing was done for opposite side market only. Now trade through of same side market will be identified for simple order which could be potentially auto-closed. For complex orders, Trade through processing was done with respect to the leg prices of opposite side only. Now complex order trade through will also be evaluated against the resting complex order and quote in the COB and Leg BBO of the same side. Trade through alerts for the cross product spreads will be evaluated against the resting COB only.

Functionality changes

1. Simple Orders TT Alerts, Complex Order TT Alerts and Cross Product Order TT Alerts are listed in below matrix, of when they get generated.

Trade through Alerts Matrix

Trade Through Alerts	Simple Orders	Complex Orders	Cross Product	Constant Values
Same Side Book Trade Through	Yes	Yes	Yes	11
Opposite Side Book Trade Through	Yes	Yes	Yes	7
Same Side Firm Quote Trade Through	Yes			13
Opposite Side Firm Quote Trade Through	Yes	Yes		6
Same Side NBBO Trade Through	Yes			12
Opposite Side NBBO Trade Through	Yes			2
Same side Customer COB Trade Through		Yes	Yes	17
Opposite side Customer COB Trade Through		Yes	Yes	16
Same side Professional COB Trade Through		Yes	Yes	15
Opposite side Professional COB Trade Through		Yes	Yes	14
Same side Complex Leg Trade Through		Yes	Yes	19
Opposite side Complex Leg Trade Through		Yes	Yes	18
Same side Complex Leg NBBO Trade Through		Yes	Yes	21
Opposite side Complex Leg NBBO Trade Through		Yes	Yes	20
		Existing Trade Through types		

Summary of Changes

1. A new struct ManualFillStructV2 was introduced with the new fields required for new Alerts.
2. New method acceptManualFillV2(...) was added on 'ManualOrderMaintenanceService' to accept manual fills with the new Manual Fill Struct.
3. New TT Alerts types have been added to 'cmiConstants.idl'.
 - a. `SAME_SIDE_BOOK_TRADE_THROUGH = 11; // Opp-Side today = 7`
 - b. `SAME_SIDE_NBBO_TRADE_THROUGH = 12; // Opp-Side today = 2`
 - c. `SAME_SIDE_FIRM_QUOTE_TRADE_THROUGH = 13; // Opp-Side today = 6`
 - d. `OPPOSITE_SIDE_PROFESSIONAL_COB_TRADE_THROUGH = 14;`
 - e. `SAME_SIDE_PROFESSIONAL_COB_TRADE_THROUGH = 15;`
 - f. `OPPOSITE_SIDE_CUSTOMER_COB_TRADE_THROUGH = 16;`
 - g. `SAME_SIDE_CUSTOMER_COB_TRADE_THROUGH = 17;`
 - h. `OPPOSITE_SIDE_COMPLEX_LEG_TRADE_THROUGH = 18;`
 - i. `SAME_SIDE_COMPLEX_LEG_TRADE_THROUGH = 19;`
 - j. `OPPOSITE_SIDE_COMPLEX_LEG_NBBO_TRADE_THROUGH = 20;`
 - k. `SAME_SIDE_COMPLEX_LEG_NBBO_TRADE_THROUGH = 21;`
4. In SBTAlert Table, currently the field 'comments' is empty, this will be populated with a corresponding valid text with prices, sides and product key, describing why the TT alert was generated.

Turning on TT Alerts:

1. There are no new properties added to turn on/off this feature.
2. REG-Dev PAR data load needs to be installed before PAR server rolls.

3. CDB, DWH, Market Replay– No dependency on rollout order, each of these apps can be rolled out at any point in time.
4. CBOEDirect, Par client – no dependencies on rollout order, can be rollout out any time.
5. PAR Adapter, PAR Server will be loaded together at the end after all other applications mentioned above have been rolled out.
6. The functionality gets turned on as and when the PAR Adapter and PAR Server start getting installed.
7. No CD Client rollout is required for this release.

WR#:6539 – FAST Product Close

Goal:

The goal of this project is to remove the GC dependency and execute the product state changes that occur on a timer basis in a timely fashion.

Objective:

The objective of this project is to modify the system such that the product state changes that occur on a timer are triggered on the bc directly rather than triggering on the GC and the GC making remote procedure calls to the bc's to execute the state changes.

This change will impact the pre-open, open and close state changes that occur on a timer basis.

Summary of Changes:

Currently the product state changes are triggered on the GC and the GC in turn makes remote procedure calls to the bc to execute the state changes. If the GC gets busy, crashes, hangs or slows down for any reason the state changes may not execute in a timely fashion.

The above situation cause trades to occur outside the normal trading hours causing a liability issue for the firms & CBOE, in addition these trades would need to be busted which can turn into a time consuming event.

Strategy:

This project is to allow setting product state changes timer to be on the BC which is currently on the Global process, and it is global process responsibility to call each BC to set product state when the timer is up. This implementation is not optimal due to the call to each BC is done sequentially and sometimes causing delay on the product closing at the end of trading day.

The new implementation is to allow the product state changes triggered within BC itself, so each BC will set the product state and one does not depend to the other BC.

A new trading property (RolloutFlagByBC) on the session level will be introduced to control the implementation during rollout. If this trading property is enabled for a particular session, a timer will be created in the BC where session is configured. The timer is created for each session element for the session for each timer type (Auto pre open, Auto Open and Auto Close) if automatic state changes is set to be true in the trading session configuration.

User will be able to change the auto product state change timer intra day on the session element level, this changes is only applicable for the business day when the changes is made.

WR# 6638 – Short Sale Price Test

Goal

The goal of this project is to make CBOEdirect systems changes to comply with SEC short sales regulations.

Summary of changes for server side

- When a class is triggered for short sale processing, XTP will send short sale indicator to CBOEdirect.
- Market Data History will have a new entry when Short sale trigger is turned on and later when it is turned off by the XTP system.
- Marketable short sale order in CBSX will be cancelled by the system, If the class is in short sale trigger mode.
- If a class is in short sale trigger mode, Marketable quote with short sale marking, will be cancelled by the system. Resting quote for the user and series will also be cancelled.
- CBSX paired crossing orders will be accepted as long as orders crossing price is better than the NBB.
- When short sale trigger is on for a class, Derived spread market for buy-write orders will be calculated with a penny better than the National Bid.
- CPS market order splitting will not be done, if a class is in short sale trigger mode.

WR# 6556 – Variance Strip

Goal

The goal of the Variance Strips project is to trade strips of SPX options in a single trade.

Summary of changes for server side

Summary of changes for server side

1. Added new subsession *W_MAIN.basket*.
2. Added new Boolean trading property *VarianceStripIndicator*.
3. Variance Strip Trades should not be cleared by CTMR
4. Added new trade type *VARIANCE_STRIP_TRADE* = (char) 'V';
5. Prohibit MKT and GTC orders for Variance Strip Product.
- 6 **Prefix for Benchmark** (BNMT) will be attached to each of the SPX trades, both the trade engine and PAR will use that prefix to ensure that we don't trigger STOP and STOP LMT orders based on the SPX trades.
7. Variance Strip Orders Cannot route to PAR.i.e it will be configured to be as all electronic trading.
- 8 Added following new tables for Variance Strip using following scripts , ask DBA to create new tables.
Tables should be created on all BC's and all schema's
 - 1) createBasketProduct
 - 2) createBasketProductComponent
 - 3) createBasketTradeRelation
9. cleanupserver script changes for the above added tables.

WR# 6750 – QCT Enhancements

Goal

Allow crossing of QCT orders only if the price is better than the customer book

Summary of changes for server side

Simple QCT Order

Simple QCT orders should be allowed to cross only if the price is **better** than the price of resting customer order in the book. If the price is equal to or worse than the resting customer order, then the QCT order must be cancelled

Complex QCT Order

- In the trade of complex QCT orders, each leg must print at a standard increment price for the specific series.
- Complex QCT orders should be allowed to cross only if the price of the matched order is **better** than the price of resting complex customer order in the COB. If the price is equal to or worse than the resting customer complex order, then the complex QCT order is cancelled.
- If Matched order is at the DSM, each individual leg trades of Complex QCT orders must occur at a price which is better than the price of the resting public customer order on the respective legs.

WR# 6749 – W-W AIM like Customer AIM

Goal

Trade W-W orders like Customer AIM

Summary of changes for server side

- If the Primary order (PO) and matched order (MO) both are of 'W' origin, then AIM auction should not be started and PO should be traded with MO. It should behave the same way AIM trade happens when PO and MO both are of 'C' origin.
- If PO is of 'W' origin and MO is of 'C' origin **OR** PO is of 'C' origin and MO is of 'W' origin, then also AIM auction should not be started and PO should be traded with MO.
- If MO is a priced as a **market order** then for all the below origin combinations of PO and MO, AIM auction should be started and processed normally.
 - PO is 'W' origin and MO is 'W' origin
 - PO is 'C' origin and MO is 'W' origin
 - PO is 'W' origin and MO is 'C' origin

WR# 6617 – NASDAQ OMX PHLX

Goal

Add PHLX and BYX to the available exchanges in Stock. This is a follow up with the mapping codes for Linkage Router REDI.

Summary of changes for server side

Added the mapping values for PHLX and BYX for REDI in the linkage server.

WR# 6818 – CFE/COF EARLY OPEN and MKTORDER Prohibition

Here is the summary on what we will be changing. Please review and update in case I miss anything.

1. Changes need to be done for both CFE_MAIN and COF_MAIN.

2. Adding new subsessions CFE_MAIN.extended and COF_MAIN.extended in order to give the choice of putting only certain symbols to extended trading hours. The current subsessions during rollout will not be updated with extended trading hours. It will be up to help desk and the management to decide when that is needed.
3. Extended opening sub-session will be configured to AUTO PREOPEN at 7:20am and AUTO CLOSE at 3:15pm.
4. Use a configurable trading property to check market order processing time to make sure we reject market orders that are not in regular trading hours. Default trading property value for session to accept market orders will be 8:30 am – 3:15pm. Any symbols/classes that require a different time range such as INDEX, ect closing at 3:15pm can have its own settings instead of picking the default.
5. IPD work will be needed to support the new sub-session.

Overview of CD Server Bug Fixes

Bug Fixes Included in This Release

	PITS Number	SEDL Number	Worked By	Description
1	26631		Jess Heit	After a HyTS is bounced, the first class will remain in an OPEN state, instead of being Halted.
2	27634		Jess Heit	Stop an order caught in the “Nothing Done” process from stopping the job. Continue going, and log the bad order. *in progress
3	29515		Jess Heit	Add cancel reasons when an AIM auction ends early. *in progress
4	39345	9018	Paulo Esquivel	Replace cancel reason from USER to NOT WITHIN NBBO when DoNotRoute Orders and Quotes are canceled due to this reason automatically.
5	31383		Luis Montiel	Removed check for TP auction min max order size from OrderValidationHybridInternalStrategy.validateStrategyOrderAuctionParameters to let the broker processor take care of the order instead of raising exception. Add check in BrokerProcessorSpreadHybridImpl.processOrderWithoutActiveAuction to validate if auction can start based on requirements and TP auction min max order size if not just do normal processing.

Overview of Infra changes in this release

Work requests included in this release – Infra 13.4 WR 6731

Branches Included in Infra 13.4 (*[branch_name] followed by description*)

[infra_13.1_OutlierMonitor_MS_Negotiation] Implement Master-slave negotiation in the OutlierMonitor.

[infra_13.1_eccles_dn_startup_optimization] Startup is currently slow when dependent AMQBroker nodes are not available. Decouple startup dependency on remote broker availability.

[infra_13.1_Flag_Control_Message_Publishing] build an API for applications to control message publishing in a given channel

[infra_13.1_eccles_dn_refactor_phase1] Phase 1 includes 1) moving data into Channel Node class, and 2) removing dead methods

[infra_13.1_eccles_dn_refactor_phase2] Phase II includes inlining the startup information for the DN

[infra_13.1_eccles_dn_refactor_phase3] Phase III includes introduction of threaded nodes.

[infra_13.1_kothuri_xtp_gc_extentsmapchanges] include XTP-GC in XTP extent maps for C2 and DR

[infra_13.1_kothuri_outbound_ORB_TTE] outbound_ORB_TTE emit point will pass the last used entity ID down the lane before resetting it to zero

[infra_13.1_eccles_dn_refactor_phase4] Removing RTServer references. Tightening up more concurrency code in the factories. Final cleanup stage

[infra_13.1_kothuri_Correlix_work] new TTE Service Context is placed in the outgoing replies from the CAS

[infra_13.1_tharp_cmdConsUtil_openTopicConn] Add EventTransport cmdConsUtil remote function

[infra_13.1_eccles_dn_refactor_phase5] Updated setContext to include new variables missed in phase4. This is the last development branch for dn refactor.

[infra_13.1_eccles_grizzly_measuring_stick] Added TTE emit points inside the grizzly stack

[infra_13.1_sec_utils] updated security utilities for security user table's new columns

[infra_13.1_pw_autoregistration_fixes_for_v3] FoundationFramework fix for testing SMA. Process property not being specified and to add PW implementation to SMSServer.xml

[infra_13.1_fix_getProcessName_for_Infra13_4] fix getProcessName method in FoundationFramework to test for either null property or the lack of a property

[infra_13.2_C2_cas_PW_Node_Name] fix .setenv to point PW_NODE_NAME to the correct FE pair and correct PW_NAMES to ProcessWatcherIGC instead of the OrbNames.

[infra_13.2_C2_CAS_fix_JAVA_HOME] set \$JAVA_HOME=/usr/local/jdk1.6.0_18

[infra_13.2_kothuri_ChannelAdmin_logEachConnection] log each AMQBroker it is attempting to contact. If a Connection Set is defined but not used, don't include it in this derivation job

[infra_13.2_eccles_directthread_production] A production-ready implementation of the direct thread experiment. This version will allow swapping implementations via -D and provides a more graceful shutdown.

[infra_13.2_jia_test7mds] a minor correction of the host name for extent maps

[infra_13.2_basketweaver_map] add more sub extents for Market Buffers to BasketWeaver node

[infra_13.2_misc_changes2] miscellaneous script fixes & config changes

[infra_13.2_XTP_alarms] Create a new LogDispatcher event channel agent for XTP

[infra_13.2_LogService_updates] New Log Service updates

[infra_13.2_eccles_bugfix_directThread_bytebuffer] A quick patch to use ByteBufferType.HEAP instead of ByteBufferHeap.HEAP_VIEW, to reduce a promotion bug.

[infra_13.2_fix_IIOPProtocolParser] Fix IIOPProtocolParser::execute - it references ourContainer which may be null. The null condition happens in cmdConsUtil which always attempts IIOP first even if the port turns out to be TIOP. The target process closes the connection, which ultimately causes a NullPointerException exception.

[infra_13.2_LogService_updates2] Add additional content to the log message event

Overview of CD Client changes in this release

Installation procedures – SACAS hosts

QA steps

On installation day after end of trading, deliver planned INFRA and SBT releases and scripts to designated SACAS and SAGUI boxes.

Client group steps

Refer to *CASProductionInstallation.doc* and follow the implementation procedures.
(SACAS should already be configured to use JDK 1.6.0_14).

GUI group steps

Install SAGUI on one box (possibly 2 or 3 boxes) so that SACAS can be verified.

Verification

Verify that each SACAS rolled out is visible in Patrol.

Use new SAGUI to log on and ensure that it receives data from SACAS. In particular, check the User Management Window, the Product Class Groups window, and the Product Definition window.

On the first day of SACAS rollout, check all files (.log, .debug) for errors, exceptions and high system alarms.

Fallback

Follow the standard backout procedure.

Installation procedures – CAS hosts

Denendancy

There is a new IDL method in CAS for strategy normalization which causes dependency to rollut all FE's before rolloing out any CAS servers.

For Order provider CAS Servers, following additional property should be correctly set depending upon short sale indicator settings in setContext.engine file. This value would be false for now but would be changed to true once industry applies short sale rule.

```
export IS_SHORT_SALE_SWITH_ON=true
```

QA steps

On installation day after end of trading, deliver planned INFRA and SBT releases and scripts to designated CAS boxes.

On installation day after end of trading, install new configureCAS.ksh onto each CAS box being upgraded.

Client group steps

Refer to *CASProductionInstallation.doc* and follow the implementation procedures.

WR# 6446 Odd/Mixed Lot Enhancements. Make sure ACL for 8.5 Global is updated to support this change.

Verification

Verify that each CAS rolled out is visible in Patrol.

If today's rollout included a floor cas (cas0014, cas0015, cas0016, cas3005), use a Trader GUI to connect to it and make a trade using a test symbol. Ensure that the MarketDisplay window uses MDX. If possible, do two tests, one with a product in session W_MAIN and one with a product not in W_MAIN.

On the first day of CAS rollout, Infrastructure group verifies that CAS is getting status via the ExternalQuoteStatus and ExternalOrderStatus channels.

On the first day of CAS rollout, check all files (.log, .debug) for errors, exceptions and high system alarms on the CAS host and on the appropriate FE pair.

Fallback

Stop CAS and Infra processes.

Client Group will change the run_dir and v2cas* directories to previous release.

Operations will start Infra and CAS processes via Patrol.

Installation procedures – FIXCAS hosts

QA steps

On installation day after end of trading, deliver planned INFRA and SBT releases and scripts to designated FIXCAS boxes.

On installation day after end of trading, install new configureCAS.ksh onto each FIXCAS box being upgraded.

Client group steps

Refer to *CASProductionInstallation.doc* and follow the implementation procedures.

Verification

Verify that each FIXCAS rolled out is visible in Patrol.

On the first day of FIXCAS rollout, run a FIX script to connect to the FIXCAS and make a trade using a test symbol. If possible, do two tests, one with a product in session W_MAIN and one with a product not in W_MAIN.

On the first day of FIXCAS rollout, check all files (.log, .debug) for errors, exceptions and high system alarms.

Fallback

Stop FIXCAS and Infra processes.

Client Group will change the run_dir and v2fixcas* directories to previous release.

Operations will start Infra and FIXCAS processes via Patrol.

Installation procedures MDCAS hosts

QA steps

On installation day after end of trading, deliver planned INFRA and SBT releases and scripts to designated MDCAS boxes.

On installation day after end of trading, install new configureCAS.ksh onto each MDCAS box being upgraded.

Client group steps

Refer to *CASProductionInstallation.doc* and follow the implementation procedures.

Verification

Ensure that Infra System and MDCAS processes start successfully when Operations starts them.

On the first day of MDCAS rollout, check all files (.log, .debug) for errors, exceptions and high system alarms.

Fallback

Follow the standard backout procedure.

Installation procedures – CFIX hosts

QA steps

On installation day after end of trading, deliver planned INFRA and SBT releases and scripts to designated CFIX boxes.

On installation day after end of trading, install new configureCAS.ksh onto each CFIX box being upgraded.

Client group steps

Manual.

Verification

On the first day of CFIX rollout, check all files (.log, .debug) for errors, exceptions and high system alarms.

Fallback

Follow the standard backout procedure.

Implementation Plan

Key Dependencies

- ❖ XTP must be rolled out before all BCs. With BC rollout, a special flag on XTP needs to be turned on to send primary exchange quotes for equities
- ❖ ParServer and clients must be rolled out after all BCs
- ❖ CASes depend on a new process CurrentMarketBridge to get correct current market data for Future sessions.
- ❖ A new ACL needs to be load with GC rollout
- ❖ CFIX needs to be upgraded before CD 8.5 rollout.

Pre-Rollout Requirements

There are three BC tables introduced by Variance Strip Project. Those tables need to be created on all BCs for all sessions. The definitions of these tables are defined by following scripts:

- a) sql/createBasketTradeRelation.sql
- b) sql/createBasketProductComponent.sql
- c) sql/createBasketProduct.sql

Day 1 GC Rollout

- ❖ The GlobalServer will have a new switch turned on.

-DtriggerAcceptUnderlyingProductStateChanges=true

- ❖ TradingProperty: **MarketLotSize**

Add MarkeLotSize trading property to all sessions by running following scripts
addOddMixedLotTradingProperties

Then verify MarketLotSize set to 100 for W_STOCK, and 1 for all other sessions by running
getTradingProperty <session> default MarketLotSize

❖ TradingProperty: **RolloutFlagByBC**

Run the following script to initialize RolloutFlagByBC trading property:

```
initProdStateTimerProperty -run
```

Then verify the property is set properly:

```
getTradingProperty W_MAIN default RolloutFlagByBC
```

Result:

Results from "get":

BC=0;rollout=0:

ClassKey = 0

Sequence = 2

❖ Create W_MAIN.basket subsession.

Run the following script on prdgc01a from run_dir to create the subsession:

```
configureBasketTemplate
```

To verify, loginDb GLOBAL and do query on trading_session_template to make sure the entry described below exists.

FYI: the above script is just a wrap to the following command:

```
tssClient createTemplate W_MAIN.basket W_MAIN 06:10:00 08:30:00 15:02:00 false
```

❖ Define Variance Strip Indicator Trading properties

Run the following script to define this property:

```
addVarianceStripTradingProperty
```

To verify, run the script:

Run the following query to verify the new trading properties are set to false:

```
for i in $ALL_SESSION_NAMES;
do
    getTradingProperty $i default VarianceStripIndicator
done
```

- ❖ Load CSV file.

Run the following command from run_dir to load CSV file:

```
TradingPropertyServiceClient setPropertyDefinitions properties/TradingPropertyDefinitions.csv
```

Day 2 Rollout to XTP-BCs

- ❖ Rollout to XTP-BCs does not have to be on Day 2, which could be done even way before GC rollout. But XTP rollout has to be finished before any BC rollout. After rollout, XTP_BC will start publish the new underlying events(recap quote and last sale) on BestOfRest channel. There will be no consumers for those events at the moments.

Day 3 Rollout to One Stock BC

- ❖ Rollout to one Stock BC. The key point here is that Stock BC has to be rolled out earlier than any Option BC. There is an IDL change between Stock BC and Option BCs.

Day 4 Rollout to Rest Stock BCs

- ❖ Rollout to rest Stock BCs.

Day 5 Rollout to One Hybrid BC

- ❖ Rollout to one hybrid BC. HybridTradeServers will pick up the new underlying events published by XTP_BC. HybridTraderServers process the underlying events and make decisions to open/halt product states or do nothing.

It should be pointed out HybridTradeServers will continue to receive the same instructions from GlobalServer during this period of rollout phase.

Day 6 Rollout to B-Side of This Hybrid BC

- ❖ Rollout to the slave side of the hybrid BC.

Day 7 Rollout to Rest of Hybrid BCs

- ❖ Continue rollout to rest BCs.

Day 8 Rollout to Future Session BCs

- ❖ When 8.5 rolls out to Future session BCs (CFE_MAIN, COF_MAIN, ONE_MAIN), there is special consideration: enable a new process CurrentMarketBridge for each of those sessions.

Day 9 Rollout to FEs

Note: FE is installed using script setContext.main(vobs\server\properties\). In 8.3 this script generates setenv(for GC, BC and FE) with jdk1.6 update 18. For 8.3 FE Rollout FE must use jdk1.6 update 14. Manullay rollback this change from setenv file to use jdk1.6 update 14.

Day 10 Rollout to CASes

Post Rollout Requirements

- ❖ After rollout is completed on all BCs. Do a minor to remove the switch on GlobalServer:

-DtriggerAcceptUnderlyingProductStateChanges=true

After this switch is removed, GlobalServer will no longer send product open/halt instructions to HybridTradeServers based on underlying product state changes.

- ❖ Turn on Fast Product Close Features

Fast Product Close Features are turned off by default during the rollout. After all the BCs rolled out, this feature can be turned on by BCs. And this turnon/off of this feature is controlled by a trading property named RolloutFlagByBC, which can be set by SAGUI.

- ❖ Turn on Odd Lot Enhancement Features

Please refer to Appendix A for detail on how to turn on Old Lot Enhancement Features.

❖ Turn on Variance Strip Features

After all BC rollout, Variance Strip features can be turned on. Please refer to Appendix B to details.

Failover Considerations

Normal Failover

No special considerations in the normal failover situation.

Hybrid BC Restart

Underlying product states are not persisted. They will be lost when Hybrid BC restarts. If the restarts happen before 8:30 AM (product open), we would like to open the options product state by underlying product state change. But if the restarts happen after 8:30 AM (in trading state), we would like to disable this function of opening options product by underlying product state.

After Hybrid BC restart, run following command to set Hybrid BC in the correct mode:

```
openDerivatesBasedOnUnderlying <HybridTradeServer> <set | display>
```

Appendix A – Odd Lot Enhancement Configurations

Overview

Odd lots will be allowed to trade as regular orders in W_STOCK and the CP orders will be allowed to include odd lots quantities.

Prerequisite

The CAS and BC installation for W_MAIN and W_STOCK must be completed prior to start the rollout as there are updates in both components.

Phase I

BC Server

1. Disable the odd lot auction for a subset of products. This can be done at the end of business day.

```
setTradingProperty W_STOCK <Class> equity AuctionEnabled "1,true;2,true;4,true;5,
true;4,true;6,true;7,false"
```

2. Update the lot from 100 to 1 for W_STOCK.

```
setTradingProperty W_STOCK <Class> equity LotSize 1
```

Phase II

Once all stock products have the odd lots disabled. The cross product properties have to be updated to allow odd lots for cross products.

Global Server

Disable full normalization for W_STOCK in setContext.main.

```
STOCK_FULL_LOT_NORMALIZATION_REQUIRED=false
```

Hybrid BC Server

Update TradableValidationService.xml

```
<equityLegRatioQuantity>1</equityLegRatioQuantity>
```

```
<optionLegRatioQuantity>1</optionLegRatioQuantity>
```

Important note: HelpDesk has to cancel all the CPX products so they can be recreated using the lowest denominator(for example: from 2:100 to 1:50).

Appendix B – Turn on Variance Strip Features

- From SA GUI set the following Routing Property “AllElectronicTradingClass” for Class to true
- From SA GUI set the following Trading Property “VarianceStripIndicator “ for Class to true