



JSTTRA

Credit Replatform – TradeServ

Powered by MarkitServ

January 2022

The new home of MarkitServ, Traiana, TriOptima & Reset

Project Summary

1.

In 2018 MarkitServ and Deriv/SERV announced they would be moving aspects of their credit derivatives businesses and processes to new emerging technologies to address certain limitations of the current post-trade process by modernizing, streamlining, and simplifying the siloed design of the financial industry infrastructure that developed over 40+ years

2.

Currently MarkitServ's DSMatch platform & DTCC's Trade Information Warehouse (TIW) share mainframe systems architecture that will be replaced with cloud technology to create operational efficiencies and increase development agility while adding security through virtual separation of environments

3.

In a highly coordinated migration, the platforms are separating, as both firms upgrade technologies

4.

MarkitServ will retire its DSMatch system and replace it with a modern cloud based system architecture called TradeServ

5.

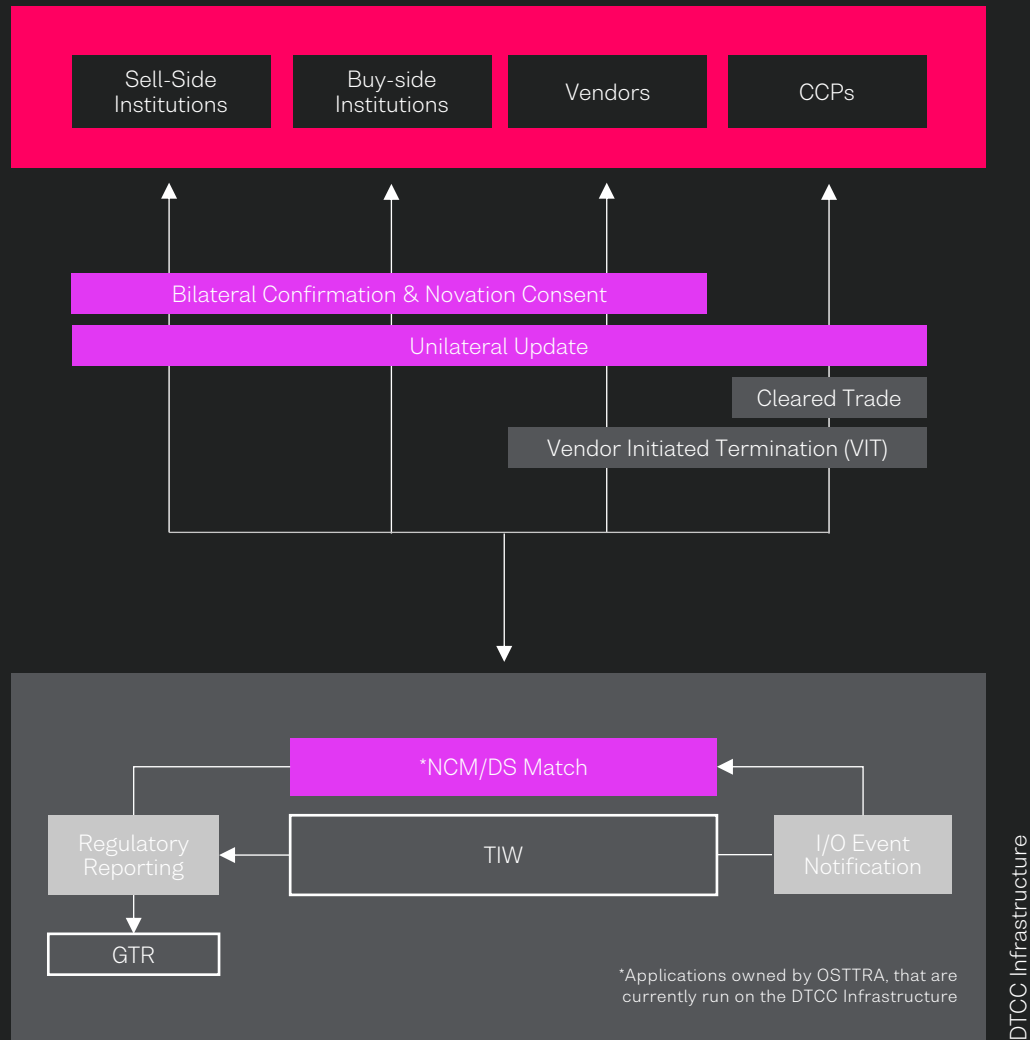
DTCC will re-platform its TIW to a cloud based system that will leverage distributed ledger technology (DLT)

6.

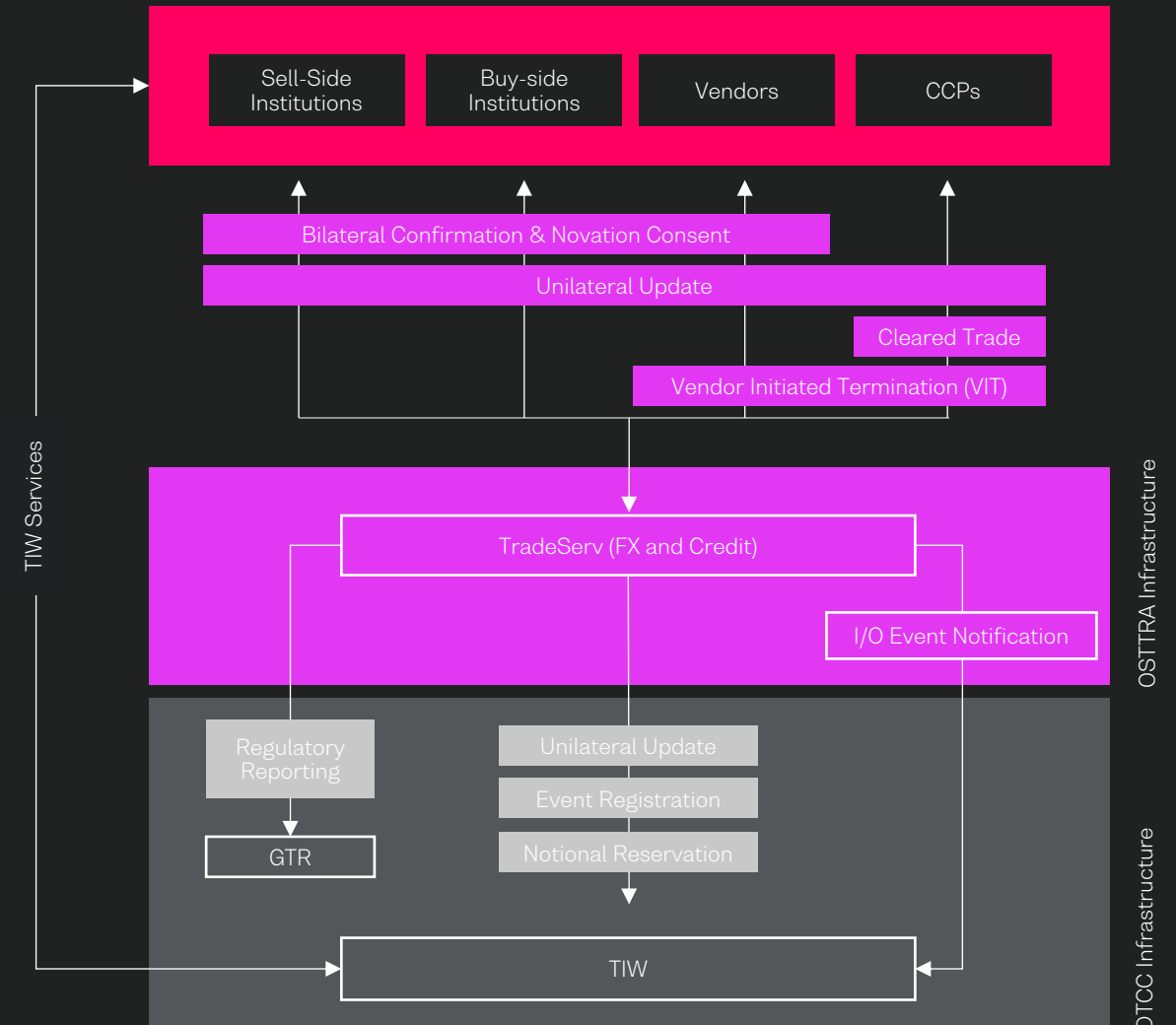
Now part of OSTTRA, MarkitServ will continue to work with Deriv/SERV to ensure that client-facing change is limited and that connectivity between our platforms remains as seamless as possible

TradeServ to TIW Interface

Current Platforms



Target Platforms



Key Platform Differences

Current Platforms (DSMatch, NCM and TIW)

Platform Architecture

DSMatch, NCM and the TIW applications run on the same mainframe platform sharing common transactions and positions.

Onboarding

All application share administrative tools, customer and industry reference data and a common onboarding process.

Target Platforms (TradeServ and new TIW)

TradeServ and the new TIW will be **separate applications and platforms**.

TradeServ will replace DSMatch and NCM and will have a new bi-directional FpML over MQ interface to the new TIW.

TradeServ will only process schema valid FpML.

Both applications will have independent administrative tools, customer and industry reference data. There will be a joint onboarding process.

Key Platform Differences

Current Platforms (DSMatch, NCM and TIW)

Business Processes

NCM supports Novation Consent, DSMatch supports Matching and Confirmation, registering the position in the TIW in an atomic action. These events are then reported to the DTCC GTR.

TIW processes cleared (TriParty) trades, and vendor-initiated termination (VIT) lifecycle events, and reports TIW initiated (I/O) events to the DTCC GTR.

TIW supports Payment, Settlement, Event Processing and Adherence.

Target Platforms (TradeServ and new TIW)

TradeServ will support Novation Consent, Matching, Confirmation and Registration of **all events** (including triparty and VITs) in the new TIW via the new FpML over MQ interface. TIW initiated events (I/O) will be submitted to TradeServ via the FpML over MQ interface.

- The TIW will notify TradeServ of updates to the Warehouse Status and provides the DTCC TRI for new positions.
- TradeServ will send a notification of the registered event (including I/O events) to the parties, enriched with the DTCC TRI and Warehouse Status.

TradeServ will additionally reserve notional in the TIW for all post trade events, which changes the Warehouse status to "Uncertain".

Regulatory Reporting to the DTCC GTR will be performed by TradeServ across **all events** and regimes. ODRF reporting is no longer supported.

The TIW continues to support Payments, Calc Flag, Settlement, Event Processing and Adherence of I/O events.

Key Platform Differences

Current Platforms (DSMatch, NCM and TIW)

Customer Interfaces

DSMatch, NCM and TIW services are accessed through the same Graphical User Interface (GUI) and DTCC MQ gateway. Transaction and MIS Reports are accessed via DTCC FTP applications.

Target Platforms (TradeServ and new TIW)

All TradeServ services will be accessed using the OSTTRA (or IHSMarkit) MQ gateway and new GUI and FTP applications.

Payments, Settlement, Calc Flag, Adherence and Triggering of TIW services will continue to be accessed using the existing DTCC MQ gateway, FTP applications and new GUI.

Testing

Industry Acceptance Testing (IAT) begins in February 2022, customers will be able to test all functionality **except** for the following, which will be available in **May 2022**

01. SEC Reporting to the DTCC GTR
02. Matching and Confirmation of the two new Master Documentation Transaction Types – European Limited Recourse Corporate and Standard European Limited Recourse Corporate
03. Post Novation Consent Clearing of EE-RP trade for Index Swaptions at LCH
04. ICELink Novation Consent and Clearing Workflows
05. Self-service user management in the new TradeServ Admin Application

Client impact



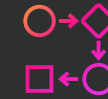
MQ
Connectivity



Schema
Validation



Graphical User
Interface



Transaction
Processing



Novation
Consent



Regulatory
Reporting



Transaction
Reports



Onboarding



Data
Migration



MQ Connectivity

Connectivity

- Today, MQ connectivity into both DSMatch and TIW is routed over DTCC lines
- For TradeServ, MQ connecting firms will have to submit and receive their CDS confirmation messages to a MarkitServ destination
- Most banks have a private lease line connection into MarkitServ, allowing connectivity for rates/equities on MarkitWire
- These existing private lines will provide access to TradeServ
- MarkitServ will be reaching out to firms individually who have MQ connections to provide additional information on this topic
- If your trades are submitted into DSMatch by a third-party provider, we are liaising with them directly
- TIW Connectivity to remain as currently implemented

MQ Connectivity Changes

Current Platforms (DSMatch, NCM and TIW)

DSMatch and NCM are accessed through the DTCC MQ gateway.

If it's not possible to send a response over MQ then DSM adds the request to an internal dead letter queue.

Note: It's not possible to send a response over MQ if the request is badly formed or is missing information needed to identify the outbound queue and/or construct a valid response

Target Platforms (TradeServ and new TIW)

Direct UAT and Production connectivity to OSTTRA required via Private leased line, VPN or Web SSL.

TradeServ allows submitters to receive an email notification when an error response cannot be delivered over MQ.

Note: TradeServ makes every effort to send a response over MQ. If the FpML request is schema invalid or not well-formed then the soap header is parsed independently to retrieve the details needed to send an FpML response.

Schema Validation

Schema Validation

- The structure of the FpML messages are defined by XML schemas
- Today a small number customers submit schema invalid FpML which is accepted by DSMatch, this will need to be corrected when submitting to TradeServ
- TradeServ will validate that the FpML submitted by firms conforms to the XML Schema
- Transactions which are not schema valid will be rejected, and submitters notified via FpML message over MQ
- Where a confirmation Exception FpML message cannot be constructed, submitters can opt to receive an email notification
- MarkitServ have reached out to affected firms to assist in this process

FpML Messaging Changes

Current Platforms (DSMatch, NCM and TIW)

- DSMatch attempts to process requests that don't conform to the referenced FpML schema. For example, elements provided in the wrong order or incorrectly formatted dates.
- DSMatch notifications are identified as coming from "DTCC"
- The DSMatch FpML representation for Swaption trades where ISDA Matrix provisions are elected, is not schema valid
- The Message ID on notifications related to GUI/CSV submissions indicates the Input Method, Environment (UAT/Production), Submitting GUI User or O-Code.
- The DSMatch notification of registration indicates that the transaction has been both confirmed and registered with TIW. This includes the DTCC TRI and warehouse state fields.

Target Platforms (TradeServ and new TIW)

- TradeServ supports the same messaging versions i.e., FpML 4.9 with V10 and V11 wrappers, however FpML requests that fail schema validation will be rejected. Firm should ensure they can submit schema valid messages.
- TradeServ notifications to be identified as coming from "MarkitSERV"
- ISDA provisions on Swaption trades to be indicated using the contractualTermsSupplement tag
- The Message ID on notifications related to GUI/CSV submissions will only indicate the Input Method and TradeServ generated User Id
- By default, the legacy choreography is preserved by sending a notification upon successful registration of the confirmed transaction. Firms can elect to also receive a notification of confirmation, that omits the warehouse state.

Further details on [Documentation Portal](#)

Graphical User Interface

GUI & Logins

- Both DSMatch and TIW share the same graphical user interface (GUI) providing users with access to confirmation, reporting, clearing, warehousing and payment information
- A new and enhanced TradeServ GUI will replace the current DSMatch one, enabling users to better manage credit confirmation, clearing and regulatory reporting
- The TradeServ GUI will offer users an enhanced experience, allowing for...
 - Improved navigation to quickly filter and sort transactions
 - Introduction of workspaces to save views etc.
 - Easier and quicker access to MIS reports and downloads
- Your username for TradeServ will remain the same, but users when logging in for the first time will be requested to reset their passwords

GUI Changes

User Accounts

- All user accounts will be migrated to TradeServ.
 - Multiple accounts with the same email address will be consolidated into a single account
 - Multiple accounts across different firms will be migrated as-is (for example fund admin accounts across multiple institutions/firms)
 - Users will receive an email from OSTTRA, prior to Go Live with their TradeServ user account details and new URL

Authentication

- User authentication will be managed via IHS Markit's Secure Access Management (SAM), a shared/centralised user authentication application.
 - Users will be automatically directed to IHS Markit's SAM application to authenticate for both **UAT** and **Production** environments
 - Users will be prompted to login using their **email address rather than their username**
 - Users will be emailed an activation code by SAM in order to verify their email address, and will be prompted to set a password
 - Users' setup to use their company's Single Sign-on (SSO), will be redirected to their company SSO site/portal to authenticate
 - Once authenticated, either through a company's SSO or SAM's username/password, users will be presented with the TradeServ portal
 - Where an email address is linked to multiple user accounts, users can toggle between accounts (via username), instead of logging out and back in again
 - When a user account is toggled to, only data that the user account if permission for can be viewed

GUI Changes

Preparing to use SAM

- Some firms may need to whitelist SAM's URL
<https://login.samexternal.net>
- Users may need to add IHSMarkit@ihsmarkit.com to their safe senders list to receive relevant emails
- SAM emails may need to be IP Whitelisted, contact mserv_uat@markitserv.com for more information

Authorisation

- Users are given access to view transaction data through Functional Groups which replace the DSMatch Ocodes, in concept
- Functional Group access will be migrated based on user access permissioned by Ocodes
- Users will have access to data across all Functional Groups in a single view, unlike DSMatch where only one Ocode can be selected at a time

Customer Interfaces – GUI Usability Changes

The screenshot displays the TradeServ interface with the following annotations:

- 1**: Navigation between Novation Consent, Confirmation and Admin applications (top left)
- 2**: Status dashboard to filter transactions, which can be expanded or hidden (left sidebar)
- 3**: Context specific actions (dropdown menu in the table)
- 4**: Search counterparty directory by Institution or Legal Entity (top right)
- 5**: Schedule or download reports (top right)
- 6**: Add or remove columns (table header)
- 7**: Save workspaces (top right)
- 8**: Submit transactions via CSV upload or form capture (top right)
- 9**: Drag and drop, sort, filter or pin columns to the left. Expand or reduce column width (table header)
- 10**: Self-service user management (bottom right)

Navigation between Novation Consent, Confirmation and Admin applications

Status dashboard to filter transactions, which can be expanded or hidden

Context specific actions

Search counterparty directory by Institution or Legal Entity

Schedule or download reports

Add or remove columns

Save workspaces

Submit transactions via CSV upload or form capture

Drag and drop, sort, filter or pin columns to the left. Expand or reduce column width

Self-service user management

CSV Upload Changes – RP Assignment

Ref	Legacy	Target	Rationale
1	DS Match expects trade details for the new leg of the RP Assignment to be provided using the columns labelled “New”	TradeServ expects the trade details and workflow fields for the new leg of the RP Assignment to be provided in the same columns as for the EE Assignment.	TradeServ no longer needs to support outside events and so trade economics for the old leg don't need to be provided.
2	DS Match only requires trade details for those fields that can change between the old and new leg. For other fields DS Match carries forward values from the old position onto the new leg.	TradeServ requires all the trade details for the new leg of the RP Assignment to be provided in the same columns as for the EE Assignment.	TradeServ CSV Upload does not support enrichment based on trade state and so all economics need to be provided (as they are for FpML submission).
3	DS Match allows workflow fields to be provided for the old and new legs of the RP Assignment.	TradeServ only supports workflow fields for the new leg of the RP Assignment.	The TIW no longer supports the update of workflow fields on the old position when an Assignment is registered.

Example Scenario:

Party 00001 confirms 5M Trade with Party 00002 then novates 1M to Party 00003

DSMatch CSV Upload:

Activity	Transaction Type	Originator ID	Submitter Role	Floating Rate Amount	Master Document Date	New Master Document Date	Desk ID	New Desk ID	Post Trade Transaction Date	Affected Notional Amount	Post Trade Payment Amount
New	Trade	00001		5,000,000	2004-01-01		Desk 1				
New	Trade	00002		5,000,000	2004-01-01		Desk 2				
New	Assignment	00001	OR		2016-05-04		Desk 3		2018-02-03	1,000,000	200,000
New	Assignment	00002	RP			2016-05-04	Desk 2	Desk 2B	2018-02-03	1,000,000	
New	Assignment	00003	EE	1,000,000	2016-05-04		Move Desk 3	Remove Desk 3	Move Desk 03	1,000,000	200,000

TradeServ CSV Upload:

Activity	Transaction Type	Originator ID	Submitter Role	Floating Rate Amount	Master Document Date	New Master Document Date	Desk ID	New Desk ID	Post Trade Transaction Date	Affected Notional Amount	Post Trade Payment Amount
New	Trade	00001		5,000,000	2004-01-01		Desk 1				
New	Trade	00002		5,000,000	2004-01-01		Desk 2				
New	Assignment	00001	OR		2016-05-04		Desk 3		2018-02-03	1,000,000	200,000
New	Assignment	00002	RP	1,000,000	2016-05-04		Desk 2B		2018-02-03	1,000,000	
New	Assignment	00003	EE	1,000,000	2016-05-04		Desk 3		2018-02-03	1,000,000	200,000

Transaction Processing

Workflows

- Only once a transaction (new or post trade event) is legally confirmed on TradeServ, will it be submitted to the TIW to be registered which differs from today's process where trades are matched, confirmed and registered in one step
- In the future state, where TradeServ needs to register the transaction at the TIW, TradeServ will introduce 2 messages
 - TradeServ will respond with a confirmation message prior to the successful insertion into the TIW (opt in)
 - TradeServ will then also update with a secondary message inclusive of DTCC TRI once registered
- For post trade events TradeServ will 'reserve' the applicable notional at the TIW until such time that transaction is confirmed
- TradeServ will be sun setting the following transaction types
 - Backloads, Increase, Outside Assignment, Outside Termination, Self Trades
- TradeServ will also introduce new error codes that state the reason for submission failure

TradeServ to TIW Interface: Registration of Events

Registration is the means by which all trades and subsequent lifecycle events are reflected in the TIW. The following events will be registered:

Bilateral Trade and PTEs.

TradeServ registers transactions with the TIW once they have been legally confirmed (and not before). The registration request references the reservation created upfront to lock the position record.

Unilateral Update

As with Bilateral PTEs, a unilateral PTE is first reflected on TradeServ before being registered with TIW.

Cleared Trades and VITs

In the case of cleared trades and VITs, where a legal confirmation doesn't apply, the transactions are registered and then confirmed. This allows transactions that are rejected by TIW to be resubmitted by the Clearing House without the need to Disable the transaction on TradeServ. Since there is no delay between client submission and registration a reservation isn't created.

TIW Initiated Events (I/O Events)

- TIW is responsible for processing industry events on behalf of participants for bilateral and cleared positions which in turn triggers trade lifecycle events.
- TIW registers the lifecycle event and informs TradeServ which in turn reflects the transaction and sends a notification of registration to participants.
- Event processing is skipped for positions that have a Warehouse Status of Uncertain

TradeServ to TIW Interface: Reservation of Notional

Reservations are currently **only** used to ring fence notional during Novation Consent. Reservations **will now** be leveraged for all bilateral PTEs.

1. TradeServ receives a valid PTE for confirmation
2. TradeServ submits a reservation request to the TIW for the unconfirmed bilateral PTE
3. TIW sets the warehouse status to “Uncertain,” generates a “Reservation Id” and reserves the required notional, echoing this back to TradeServ
4. Upon confirmation of the PTE, TradeServ submits a registration event for the confirmed PTE to the TIW referencing the “Reservation Id”
5. TIW will register this event, lift the reservation and revert the warehouse status to “Certain,” if no other reservations are present

Bilateral PTEs

Reservations for match flow PTEs behave as follows:

- Amendment / Exercise / Exit reservations are mutually exclusive and as such lock the TIW position.
- Termination and Assignment reservations ring fence a portion of notional of the underlying TIW position and can co-exist for a given deal.
- A Termination / Assignment reservation can be partially lifted when the associated PTE is registered. This allows multiple unconfirmed PTEs for the same deal to share the same reservation
- A reservation expires after 30 days for Exit, and 14 days for other PTEs
- The TIW resets the expiry time whenever the reservation is modified.

Novation Consent

The legacy behavior is preserved for Novations consented on ICELink or OSTTRA’s MarkitSERV Novation Consent Manager.

Transaction Processing Changes

	Current Usage	Target Usage	Decided By
Increase	An Increase event is used to raise the notional amount of a deal.	An Increase event should be submitted as an Amendment.	OSTTRA
Full Termination	A Full termination event is used to reduce the notional amount to 0. This functionality is now deprecated on DSMatch.	A full Termination should be submitted as a Partial Termination.	OSTTRA
Backload	Backload is used to convert paper confirmations to electronic confirmations. The Backload Effective Date indicates the date the electronic confirmation supersedes the paper confirmation.	Backload event will no longer be supported. Upon migration any historical trades that were backloaded will be replaced by Trade events with a Backload Effective Date.	DTCC
Outside Events	Outside events are used to confirm an Assignment or Termination of a deal that's off platform. The new leg of the confirmed outside Assignment is registered with TIW.	Outside Terminations and Assignments will no longer be supported. Upon migration, any historical new deals resulting from a confirmed Outside Assignment will be replaced as a new Trade.	OSTTRA
Self-trade	<p>Self-trades are deals where the two parties are identified by the same account ID, examples include</p> <ul style="list-style-type: none"> • Trade events where buyer and seller are the same • Assignment events where the buyer and seller are the same on the old leg or the new leg • Fee Amendment of Assignment where EE and OR are the same 	Self trades will no longer be supported. Upon migration, any historical self trades will not be supported.	DTCC
Disable	<ul style="list-style-type: none"> • Disables are agreed and actioned at set times daily or upon request to DSMatch support teams • Termination and Assignments can be disabled in a different order to the original confirmation • TIW initiated confirmations can be Disabled 	<ul style="list-style-type: none"> • Disables will be automatically actioned following mutual agreement between the two parties via the TradeServ GUI • All lifecycle events must be disabled in reverse chronological order of confirmation • Confirmed I/O Events generated by the TIW can no longer be Disabled 	OSTTRA and DTCC

Workflow Processing Changes

	Current Behaviour	Target Behaviour	Decided By
Event Processing	DSMatch rejects PTEs received during credit event processing or the auction phase of restructuring events.	TradeServ accepts PTEs during event processing, and the TIW will accept reservation and registration requests from TradeServ during event processing.	DTCC
Registration	TIW allows the notional to be over terminated resulting in a negative notional amount. In such a case the warehouse status is set to "Illogical Notional"	TIW no longer allows a position to have a negative notional amount. It rejects a reservation or registration request for a Termination or Assignment, if there is insufficient notional.	DTCC
Unconfirmed Assignment	Termination, Assignment or Exercise events that reference the new leg of an Unconfirmed Assignment are processed as Pending. Workflow Updates that reference the Unconfirmed new leg are accepted.	TradeServ rejects PTEs against new leg of Unconfirmed Assignment Note: Review of legacy transactions indicates that PTEs processed as Pending are subsequently withdrawn.	OSTTRA
Workflow Update	The counterparty receives notifications of workflow updates against unconfirmed post trade event. Note: The legacy notification omits the TRN supplement of the underlying PTE, so it's not thought to be consumed.	The counterparty only receives notifications of workflow updates for a confirmed post trade event. Note: Above aligns with behaviour for Workflow Update of Trade.	OSTTRA
RP Workflow Fields	A Remaining Party (RP) can provide workflow fields for both the old and the new leg of an Assignment.	Workflow fields for the old leg of the RP Assignment will not be supported. If submitted, they will be ignored, and not migrated.	DTCC
MW (ANT) New Trade Workflow	Trades confirmed in MarkitWire, that are not successfully cleared at the Clearing House are submitted into DSMatch for bilateral confirmation.	This process will be deprecated, firms will have to re-submit bilateral trades, which fail to clear directly into TradeServ.	OSTTRA
Bulk Novations and Account Swings	These processes are managed as an event in conjunction with Operations teams.	Bulk Assignment and Amendment events can be performed via CSV upload with support from Operations teams, however management via an event will not be available post Go Live in 2022.	OSTTRA

Workflow Processing Changes: Clearing Workflows

Current Behaviour

Unconfirmed inter-dealer bilateral trades that are subsequently cleared and submitted to the TIW by the clearing house, with the same **TRN** as the unconfirmed bilateral trade, are systematically modified upon receipt of the cleared trade by TradeServ.

Notifications of the modification are sent to the submitter and counterparty.

In the case of dealer-client bilateral trades, the unconfirmed bilateral trades are cancelled, and all notifications to the counterparty are suppressed.

Target Behaviour

The systematic action on the unconfirmed bilateral events, will be standardised on TradeServ across both inter-dealer or client-clearing scenarios.

Upon receipt of a cleared trade from the clearing house, if an unconfirmed bilateral trade is identified with the same TRN for the referenced participant, it will be cancelled allowing the cleared trade to be processed successfully.

This will result in a cancellation notification to the submitter and a cancel-allege notification to the counterparty for the bilateral trade.

Business Validation

Current Behaviour

Error Management

- Termination with a decrease in notional of 0 is permitted.
- For non-standard MDTTs, DSMatch accepts Trade/Assignment/Amendment submissions that omit a Fixed Rate and Single/Initial Payment
- DS Match cross-checks that the MDTT is applicable to Index related to RED ID for the following MDTTs – TRX, IOS, PrimeX, PO, MBX, IBOXX
- ISDA Fixed Recovery provision is not permitted for the following MDTTs:
StandardUSMunicipalRevenue,
StandardUSMunicipalGeneralFund,
StandardUSMunicipalFullFaithAndCredit
- DS Match supports certain MDTTs which are no longer needed.

Target Behaviour

- Termination with a decrease in notional of 0 is **not** permitted.
- All Trade and Amendment submissions across all sub-products, except CDSFixedRecovery must provide either a Fixed Rate or Single/Initial Payment.
- TradeServ cross-checks that the MDTT is applicable to Index for **all** STS index MDTTs. Note: A small number of legacy deals will fail new validation when Amended.
- ISDA Fixed Recovery provision is permitted on all Matrix trades. This aligns with the ISDA Physical Settlement Matrix
- Trade / Amendment events that reference the following MDTTs are rejected:
 - TRX/TRXII, iTraxxCJ, iTraxxCJTranche, iTraxxEuropeDealer, iTraxxEuropeNonDealer. Related indices have now matured
 - NCRMBS, iTraxxSDI75Dealer, iTraxxSDI75NonDealer, SP, and CDXEmergingMarketsDiversifiedTranche. These MDTTs have never been used to confirm deals.

Business Validation: Error Management

Current Behaviour

Error Management

- DSMatch returns a distinct error code that identifies the validation rule that has failed.
- DSMatch accepts in Error transactions that fail business validation and rejects submissions that fail system validation.
- Note: Transactions that are accepted in error appear in the Daily Error Report and can be viewed and corrected via the GUI.

Target Behaviour

- TradeServ provides more general error codes and different messages to DSMatch. Firms to review error code changes if they have implemented automated resolution based on one or more error codes. **See next page.**
- Certain business errors cause the submission to fail schema validation and will therefore be rejected upfront, and as a result cannot be viewed or corrected via the GUI.

Error Codes

Error Code	Error Message Name	Description
E001		Unable to generate or route FpML response. Email sent to address associated with inbound queue. This occurs if TradeServ is unable to retrieve basic details from request using Xpath.
E002		Schema validation errors. So long as the OTC_RM block provided within the soap header is well-formed and populated correctly, then a standard FpML error message listing the parser errors will be returned over MQ.
E003	CoreIdentifierError	One of the core platform identifiers is invalid (e.g. Trade Reference)
E005	RefDataEntitlementError	Entitlement for addressed entity or related party cannot be identified or is not active. For example, the Party Id is not entitled to submit the specified product.
E006	RefDataValidityError	The reference for the provided entity cannot be validated against entity reference data. For example, the specified Party Id is not a valid/recognised Id.
E007	BusinessWorkflowError	Requested business action or events not supported in relation to current state of trade/transaction. For example a Trade cannot be withdrawn (cancelled) once it has been confirmed
E009	TIWRegistrationRejection	Failure to register a trade event with the TIW. System errors returned by TIW that firms can elect to receive.
E100	DataIntegrityError	A field that appears in the FpML header and body has different values e.g Trade Reference. This supplements integrity checks enforced by schema validation.
E150	DataTypeError	Field value incompatible with field data type e.g. an alphanumeric value in a numeric field.
E200	DataValidityError	Invalid field value for example an unsupported business centre, currency or transaction type.
E250	BusinessValidationError	Field value doesn't obey conditionality rules, business rules or is inconsistent with underlying trade/transaction.
E010	TIWReservationError	Business errors encountered when reserving notional. TradeServ doesn't check whether there is sufficient notional but instead defers this validation to the TIW

Matching

Current Behaviour

Match Score

DSMatch calculates the match score for a pair of candidate transactions as follows:

$$\text{Match Score \%} = 100 - (\text{Numerator} / \text{Denominator}) * 100$$

Where:

Numerator - is the sum of weights of fields that mismatch

Denominator - is the sum of weights of fields on the request

Target Behaviour

For reasons of performance, TradeServ calculates the match score using the same equation but with a Denominator fixed as the sum of weights of fields for the sub-product.

The Match Scores generated by TradeServ are comparable to DSMatch. The highest match score continues to identify the closest match and the ranking of matching candidates by match score is the same.

Best Match Score

The match score of the closest candidate for matching is displayed for unconfirmed transactions on the GUI search results:

- a) DSMatch displays a Best Match Score for Unconfirmed and Alleged transactions
- b) DSMatch updates the transaction record and matching candidates/scores at the same time

a) TradeServ only displays a Best Match Score for Unconfirmed transactions

b) TradeServ updates the transaction record and matching candidates/scores independently. As a consequence, they can be briefly inconsistent when viewed through the GUI

Matching

Current Behaviour

Matching Candidates

DSMatch restricts matching candidates based on Product Type

DK Action

A party can flag an alleged transaction as unexpected by submitting a DK (aka Don't Know) action.

Target Behaviour

TradeServ further excludes Trades of disparate sub-products.

As such CDSRecoveryLock and CDSFixedRecovery trades would be considered matching candidates for a CDSSingleName Trade but CDSonABS, CDSonLoans and CDSSwaption would not.

DK actions will not be supported or migrated.

Novation Consent

Novation Consent (NC)

- The current Novation Consent Module (NCM) that facilitates consent and conformation will also be transitioned over to TradeServ technology
- The new NCM will be launched in parallel and on the same underlying technology as TradeServ
- The new application will mirror all the current services that are available today
- Your username for the new NCM will remain the same, but users when logging in for the first time will be requested to reset their passwords

Novation Consent

Identify and select confirmed trade to Novate

Capture novation details inline. Required fields highlighted to direct users.

Toggle between Novation consent and Confirmation processes

TRANSFEROR

REC...	TRANSFEROR REFERENCE NUMBER	NCM ID
<input type="checkbox"/>	PD_CDSIT	NCM20211124 0006813056
<input type="checkbox"/>	PB_CDSSN_24112021	NCM20211124 0006813053

TRANSFEREE

REC...	TRANSFEROR REFERENCE NUMBER	NCM ID
<input type="checkbox"/>	PD_CDSIT	NCM20211124 0006813056
<input type="checkbox"/>	PB_CDSSN_24112021	NCM20211124 0006813053

SEARCH CRITERIA

Define the details of trade to search the internal system.

Product Type: Choose
 Sub Product Type: Choose
 Originator Id: Type to search
 Counterparty Id: Type to search

SEARCH RESULTS

TRADE REFERENCE NUMBER	ORIGINATOR
<input type="checkbox"/>	PD_CDSIT_CP NCM 01 Entity 03
<input checked="" type="checkbox"/>	PD_CDSIT NCM 01 Entity 01 DN
<input type="checkbox"/>	34FF0083402D47239D086357... DTCC00000831
<input type="checkbox"/>	34FF0083402D47239D086357... DTCC00000831
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DEFINE DETAILS

COMMON

Originator ID: 50001111 (NCM 01 Entity 01 DN)
 Counterparty ID: 50003333 (NCM 01 Entity 03)

TRADE INFORMATION

TRADE IDENTIFIERS

DTCC TRI: 20211124.6798404372
 Block Reference Number:
 Trade Reference Number: PD_CDSIT
 Trade Reference Number Supplement:

NOVATION DETAILS

Transferor: 50001111 (NCM 01 Entity 01 DN) **SELLER**
 Transferee: Type to search
 Remaining Party: 50003333 (NCM 01 Entity 03) **BUYER**
 Old Notional Amount: 100,000.00
 Old Notional Currency: USD
 Full Assignment: YES NO
 TIW Available Notional Amount: 100,000.00 (USD)
 Novation Amount:
 Novation Currency: USD
 Novation Trade Date: 11/24/2021
 Novation Effective Date: 11/25/2021
 Full First Calculation Period Applicable (Y/N): NOT APPLICABLE APPLICABLE

REQUIRED FIELD REVIEW

Novation Consent

	Current Behaviour	Target Behaviour
Functional (TRI-Rename)	TRI Renames can be initiated on the completed novation in NCM	TRI Renames to be performed directly on the confirmed Assignment within the Confirmation Application.
Improvement	C-only novations are being sent for clearing, when a Clearing House is provided. These get rejected by Clearing House due to a missing DTCC TRI.	C-only novations will no longer be sent for clearing.
FpML Message Version	Messaging versions 2.4, 3.0 and 4.0 supported.	Only messaging version 4.0 (OTC_RM_NC_4-0 and OTC_Matching_NC_4-0) is supported and any previous versions will be rejected.
Directory	“Contact List” directory available on GUI, listing the name/institution/email/last logged in details of users who have access to NCM	“Contact list” is not supported due to GDPR restrictions.
RP Dispute	When an RP disputes the Clearing House value provided by EE during affirmation, the OR is required to modify the trade, to allow the EE to update the Clearing House value and resolve the CCP Dispute.	A dispute by the RP will be directly routed directly to EE for action, removing the OR from the CCP Dispute resolution. This new workflow is only available when all 3 parties are on NCM.
EE Consent Timestamp	EE Consent timestamp was not available on GUI/Reports.	EE Consent timestamp will now be available on GUI and Reports. A new field “EE Consent Timestamp” has been added to the report.

Regulatory Reporting

Regulatory Reporting

- The majority of regulatory reports sent to the DTCC Global Trade Repository (GTR) plus the additional services associated (jurisdiction determination, RCP determination USI/UTI generation) are performed by DSMatch
- For a small number of transactions, those that have been through event processing the TIW sends the applicable reports
- To ensure a common approach and no duplication of build, it has been agreed by that TradeServ will take on regulatory reporting of all transactions providing a single source to reconcile, simplifying the process for participants that utilise this service

Workflow Processing Changes: Regulatory Reporting

Current Behaviour

DSMatch sends regulatory reporting messages for both sides of the trade in one message.

Regulatory Reporting to the DTCC GTR is performed by DSMatch and the TIW.

Regulatory reporting support was implemented before the UTI Market Practice was created, and therefore does not validate per the market practice rules.

Reporting Update **only** allows the following change when PTEs are NOT present on the position:

- Updates to UTI/USI prefix and value across all jurisdictions
- Addition or removal of jurisdictions

Report Update ALL allows addition or removal of jurisdictions.

The Collateralised field is not defaulted on CFTC trades when the Real Time reporting flag was not applied to the trade.

Target Behaviour

TradeServ sends separate regulatory reporting messages per side, per jurisdiction.

Regulatory Reporting to the DTCC GTR will be performed by TradeServ across **all events** and regimes, including events generated by the TIW (I/O Events).

Validation will be applied to the USI/UTI fields on New Trades, Reporting Update and Assignment New Leg. Refer to Appendix for validation rules.

Reporting Update allows the following change when PTEs are present on the position:

- Updates to UTI/USI prefix and value across all jurisdictions
- Addition or removal of jurisdictions

The Collateralisation field is defaulted across all jurisdictions using the following rule: Where no value is provided, refer to participant preference, otherwise default to "Fully."

Validation Rules for UTI and USI Prefix and Value

TradeServ will apply the following validation to the USI/UTI fields on New Trades, Reporting Update and Assignment New Leg.

- UTI Prefix

- Up to 20 Characters
- May consist of alphanumeric and any special characters

- USI Prefix

- Must be exactly 10 characters long
- May consist only of digits 0-9 and uppercase letters A-Z only, i.e. no special characters allowed
- Must begin with 3 digits in the range 101 – 119
- Must not begin with the digit zero (0)
- Must not begin with or contain the letter O
- Must not begin with or contain the letter I

- USI/UTI Value

- Up to 32 Characters
- May consist of digits 0-9, uppercase letters A-Z and only the following special characters are permitted: colon, hyphen ('-'), period ('.'), underscore('_')
- USI Value must not start or end with a special character
- Sequences of multiple consecutive special characters are not permitted

Note: Where TradeServ generates a UTI the prefix will be "9J6AQFVC2C". This 10-character value is generated using an algorithm on www.UTIPrefix.org using the MarkitSERV LLC LEI 549300V2LQD6SX1WIG70 as input. This follows the ISDA best practice. Where TradeServ generates a USI it will use the USI Prefix provided by the RCP, as DSMatch does today, or "1010000236" if one is not available.

Transaction Reports

Transaction Reports

- The current DTCC Full Position Reconciliation Report (FPRR) contains both confirmed, unconfirmed and allege transactions
- In the future state with the TIW not knowing of a transaction until it has been legally confirmed on TradeServ the FPRR will only include confirmed transactions
- TradeServ will be creating its own position report that will contain all trades or PTEs that are unconfirmed, alleged, or confirmed
- If firms wanted continue to use the DTCC FPRR they will need to combine it with the unconfirmed/allege transaction report produced by TradeServ
- As per the current reporting functionality available on DSMatch, TradeServ will allow participants be to download or have sent to them reports containing unconfirmed and alleged transactions

Transaction and Position Reports

DSMatch Report Name	TradeServ Report Name	Purpose	Accessible Via	Deviation from DSMatch
Deriv/SERV Position Recon. Report	Full Position Recon Report	Captures all active positions, and inactive positions for 5 business days. Reflects the latest transaction on the position irrespective of status.	GUI and FTP Delivery	Will additionally consist of all Alleged transactions for PTEs (DSMatch reports only capture alleges for the new RP vs. EE trade of an Assignment). Refer to Appendix for field changes.
<ul style="list-style-type: none"> Position Recon Unconfirm report Recon Allege Report 	Unconfirmed Position Recon Report	Captures alleged or unconfirmed transactions	GUI and FTP Delivery	Combined two separate reports
Novation Consent Step-Out Recon Report	Novation Consent Step-Out Recon Report	Captures consents initiated over a 5 business day period when accessed via the GUI	GUI and FTP Delivery	FTP report which only captures new consents will be generated daily vs. every two hours
Credit Daily Activity Report	Credit Daily Activity Report	Captures all transaction as of extraction date and time	GUI only	None
D/S Overwritten Report	TradeServ Overwritten Report	Captures data that is overwritten on a receipt of a transaction, where applicable	GUI only	None

Full Position Recon Report – Field Name Changes

Column	DSMatch	Trade Serv	Rationale
GR	JFSA Branch BIC	Branch BIC	Initially these fields were utilised for ESMA only, and subsequently utilised for FCA, CFTC and other jurisdictions.
GV	ESMA Beneficiary Prefix	Beneficiary Prefix	
GW	ESMA Beneficiary Party To The Trade	Beneficiary Party To The Trade	As a result of the above, a decision was taken to remove the ESMA prefix to allow reuse across jurisdictions, as applicable.
GX	ESMA Collateral Portfolio Code	Collateral Portfolio Code	
GY	ESMA Compression	Compression	
GZ	ESMA Commercial Activity/Treasury Financing	Commercial Activity/Treasury Financing	
HA	ESMA Intragroup	Intragroup	
HB	ESMA Trading Capacity	Trading Capacity	
HC	ESMA Branch Location Country Code	Branch Location Country Code	
HU	Canada Inter Affiliate	Inter Affiliate	
IC	ESMA CFI Code	CFI Code	
ID	ESMA Instrument ID	Instrument ID	
IE	ESMA MIC Code	MIC Code	
IF	ESMA Counterparty LEI ID	Counterparty LEI ID	
IG	ESMA Counterparty Country Code	Counterparty Country Code	
IJ	CFTC PLI Code	Counterparty Non-Disclosure Id	

Full Position Recon Report – Field Value Changes

Column	Reporting Field	Trade Serv Format	DSMatch Format
P	Warehouse Current State Notional Amount	Display up to 5 decimal places. No padding of 0s	Padding of 0s present
BL	Attachment Point	Up to 2 decimal pts	5 dps with padding of 0s
BM	Exhaustion Point	Up to 2 decimal pts	5 dps with padding of 0s
CL	Reference Price	Up to 7 dps. No padding with 0s required	5 dps with padding of 0s. Default to 0
CV	Original Principal Amount	Up to 7 dps. No padding with 0s required	Default to 0 when blank. 5 dps with padding
CW	Initial Factor	Up to 9 dps. No padding with 0s required	Default to 0 when blank. 9 dps with padding
DW	Strike Price	Up to 7 dps, no padding of 0	5 dps. Padding of 0s present. Default to 0 for Non-Swaption
EC	Recovery Price	No default to 0	Default to 0
EE	Sub-Product	Follows Trade Serv GUI Sub-product Types	OPTIONS, ELCDS, FRCDS etc.
HK	Floating rate for initial calculation period	Up to 5 dps. No Padding with 0s.	Padding of 0s and Default to 0 where not applicable
HM	Initial fixing amount	Up to 4 dps. No Padding with 0s.	Padding of 0s and Default to 0 where not applicable
CD	Push Status	Map to Blank	Represents the way in which the transaction was pushed to the warehouse e.g., manual or automatic applicable only for Backloaded trades.
CI	Unconfirmed notional	Up to 5 decimal places. No padding with 0 and default to zero	Fixed 5 decimal places, includes padding with 0
DG	Calc Flag	Field mapped to blank	Represents the way in which the transaction was pushed to the warehouse e.g., Y / N - manual or automatic applicable only for Backloaded trades
DH	Current Factor	Field mapped to blank	Represents the ratio of the outstanding principal to original face value displayed with up to 5 decimal places
EL	Mid-Market Price - Type	Enumeration: Price, Percentage, Level	Additional field BasisPoints present in DSMatch
EM	Mid-Market Price - Value	Up to 8 decimal places. No default to zero and padding with zero	Default to zero present. Padding with zero i.e., 123.00000000
EO	Counter Mid-Market Price – Type	Enumeration: Price, Percentage, Level	Additional field BasisPoints present in DS Match
EP	Counter Mid-Market Price - Value	Up to 8 decimal places. No default to zero and padding with zero	Default to zero present. Padding with zero i.e., 123.00000000

Onboarding

Onboarding

- Current onboarding to both DSMatch and TIW is administered and performed by MarkitServ on behalf of both institutions
- MarkitServ and Deriv/SERV have new processes in place to onboard clients to the new TradeServ platform and the new TIW separately
- Both organisations are committed to develop operational and technical guidelines to ensure that onboarding steps are performed as seamlessly as possible
 - Onboarding requests will be initiated to MarkitServ and the two operations teams will have clearly defined handover steps to ensure cases are processed in a timely fashion and that all account details are aligned on TradeServ and the TIW
 - Account data will be reconciled between the parties on a daily basis to ensure that both systems are kept in sync

Data Migration

Data Migration

- In a coordinated effort both organisations will be migrating production data into their new environments
- TradeServ account reference data will be migrated along with active users and their permissions
- Historic transaction data for Credit will be stored in an 'offline database' in order to satisfy data retention requirements and service requests for exports by firms and respond to adhoc queries by regulators and auditors
- Active Positions, Transactions and history will be migrated to TradeServ
- Inactive Positions, Transactions and history up to one year after maturity will be migrated to TradeServ
- UAT data will not be migrated

Position Differences

Current Platforms (DSMatch, NCM and TIW)

Target Platforms (TradeServ and new TIW)

Position Record and Record Status

DS Match and TIW maintain and share a sided position record. The position **can** be over terminated resulting in Warehouse Status of “Illogical Notional.”

The TIW maintains both active and inactive positions. Positions are made inactive **45 days** after a deal is fully terminated, novated or matured.

A position can be reactivated for a couple of days to perform any post trade event.

TradeServ maintains sided **transactions**, whilst TradeServ and TIW maintain separate position records. The TIW holds the golden position record. The notional amount of a position cannot be less than zero in either application.

Positions will be made inactive **1 day** after a deal is fully terminated, novated or matured, if no outstanding payments remain, and immediately once exited from the TIW.

A position can be reactivated to only perform a **Fee Amendment or Disable**; however, a Termination, Amendment and Exit can be performed on I/O events initiated in the TIW.

Position Maintenance

- Positions to be migrated

- All Active positions, and **only** Inactive positions 1yr prior to Go Live (i.e. Aug 2021)

- Positions which will not be migrated

- Any positions facing Lehman or against de-activated accounts
- Confirmed positions with an 'illogical notional' warehouse status reason

- Active Positions which **require firms to take action** to facilitate migration

- Confirmed events resulting in an 'illogical notional' reason (e.g. duplicate termination events)
- 'Aged' Unconfirmed events which are unlikely to be confirmed
- Unconfirmed events on matured, fully terminated, novated or expired positions
- Positions with invalid unconfirmed events (e.g. transactions rejected due to a business validation error)
- Positions with unconfirmed disables



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