

TECHNICAL WORKSHOP

LiNe Clearing



BRAZILIAN
EXCHANGE
AND OTC

AGENDA

LINE CLEARING

EVOLUTION

STRUCTURAL CHANGE

NEW FEATURES

LINE CLEARING

LINE

Evolution



LINE 4.0

- ✓ Metrics evaluation for accounts classified as high frequency (approximately 6000 accounts)
- ✓ Decentralized control by account and by trading solution
- ✓ No limits or views of give-up trades at the carrying

LINE 5.0

- ✓ Metrics evaluation for all client orders (approximately 32 million accounts)
- ✓ Metrics aggregation by document (TAXID), regardless of the used solution
- ✓ Setting limits on optional accounts
- ✓ Limits set by the carrying broker to the clients
- ✓ Limits set by the executors to the clients (subject to the cap defined by the carrying broker)
- ✓ Aggregated view by the carrying broker of the executed operations performed by all executors

LINE

EVOLUTION

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✓ Negotiate blocked

✓ Net metrics positions for all accounts

✓ Configuration by Web portal

✓ Limits upload by file

Processing time

✓ 150 microseconds (median)

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✓ Negotiate blocked

✓ Reducing mode(risk and position reduction)

✓ Different behavior for transitory (master, capture, etc.) and definitive (final accounts) accounts for operations netting

✓ Configuration by Web Portal

✓ Limits upload by file

✓ API availability for systemic integration of brokers house (queries and configurations)

Processing time

✓ 80 microseconds (median)

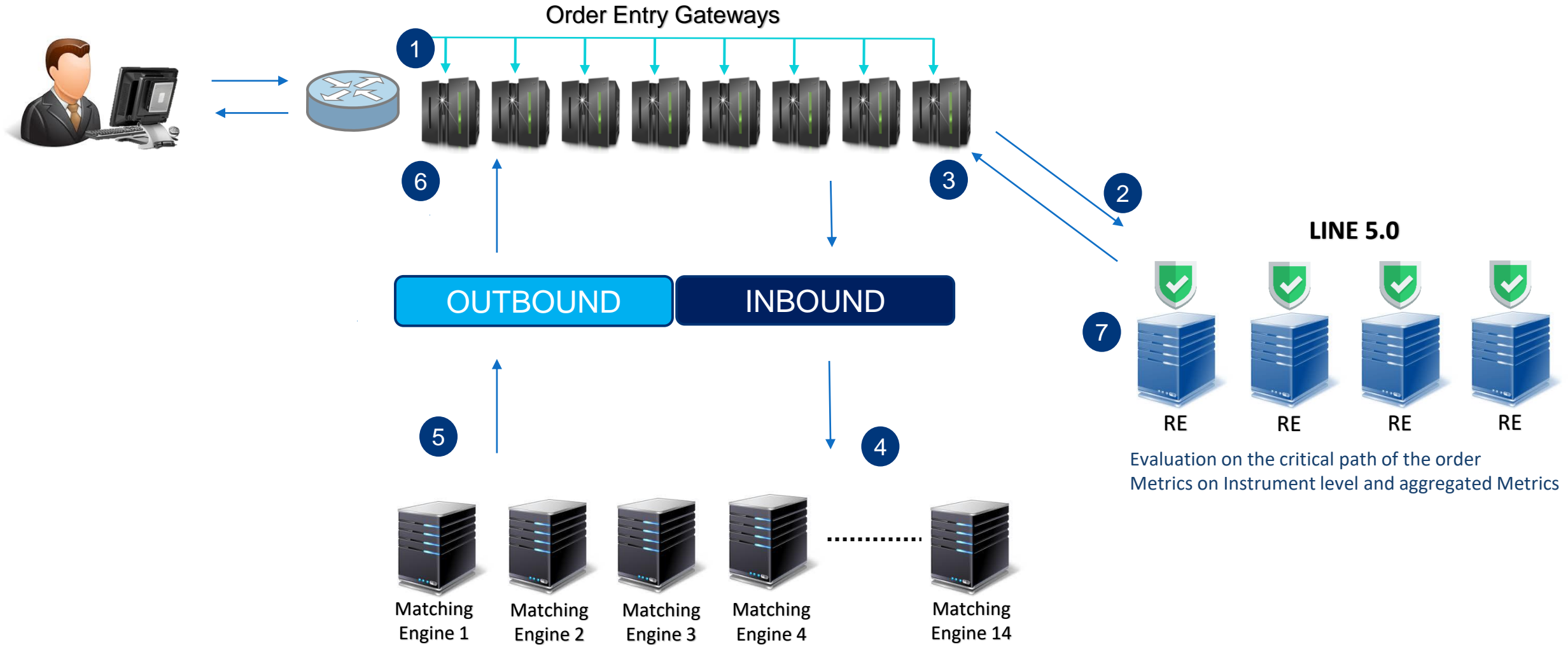
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RISK MEASURES

METRICS	CONFIGURED BY
✓ Maximum order size (quantity / financial)	Participants
✓ Long and short position per instrument	B3 / Participants
✓ Forward Contracts Exposure	B3 / Participants
✓ Cash Settlement Exposure	Participants
✓ Risk Increase	Participants
✓ Day trade Stop loss	Participants

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CURRENT ARCHITECTURE



Evaluation on the critical path of the order
Metrics on Instrument level and aggregated Metrics



Next Steps

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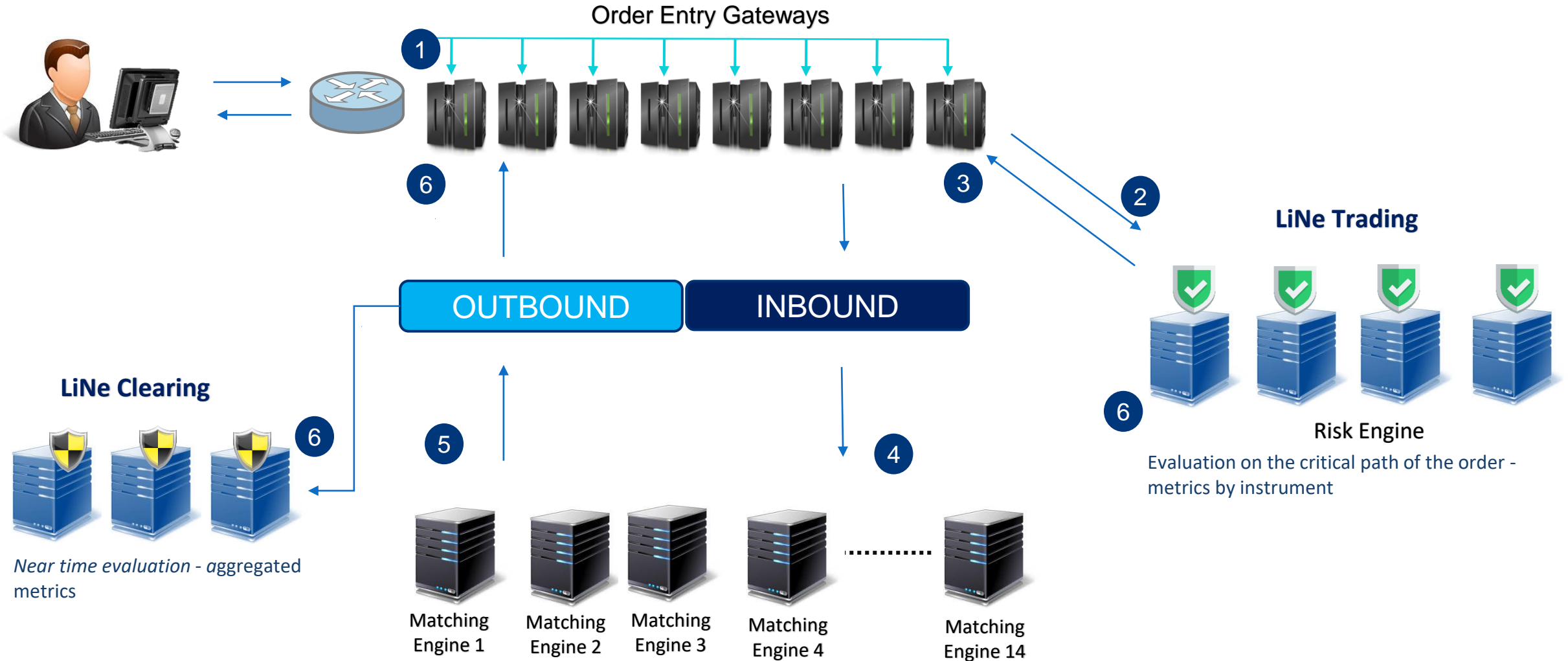
STRUCTURAL CHANGE

PHASE I – SEGREGATION LINE TRADING AND LINE CLEARING

- ✓ Removal of aggregated metrics from the critical order path
- ✓ Processing reduction in the OE GW (Risk Engine will receive Execution Report from matching engine)
- ✓ Behavior change: Violating any metric in line Clearing will immediately turn the entity into protect mode

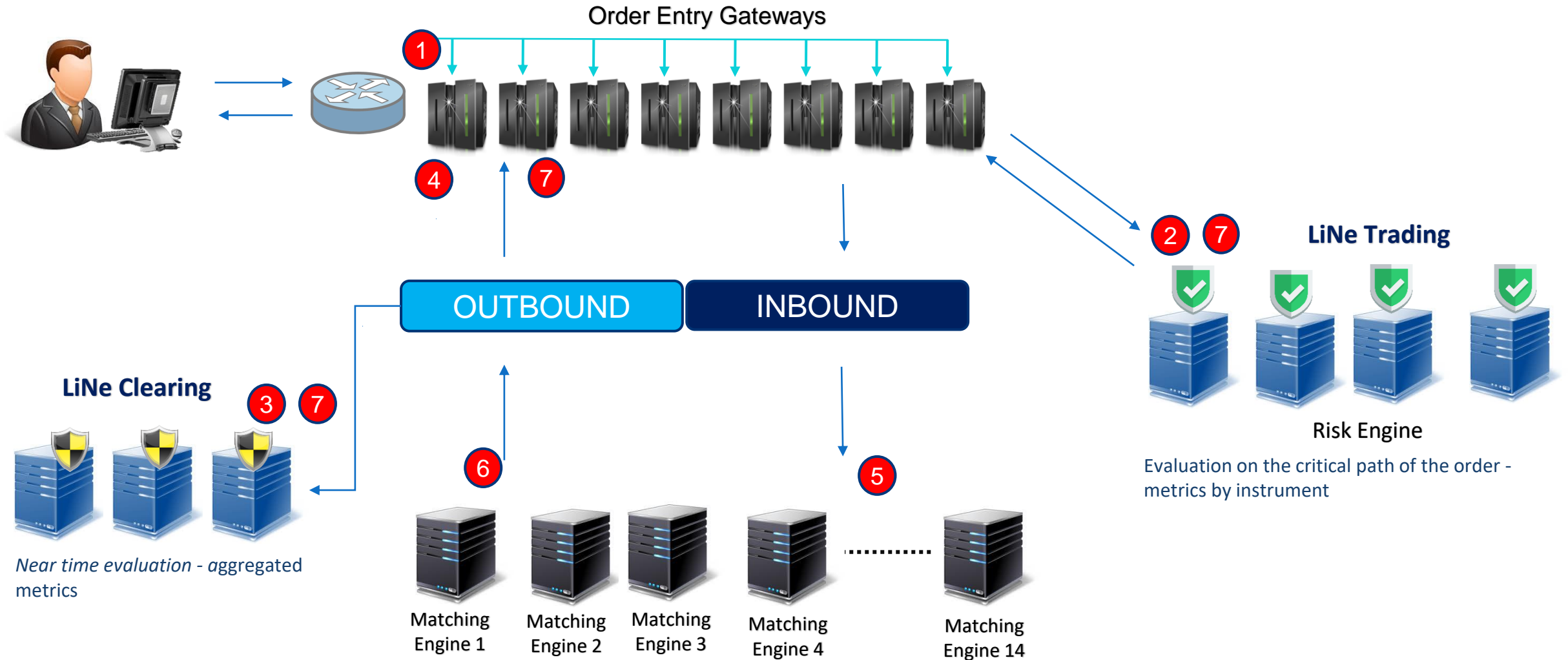
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ARCHITECTURE PHASE I



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PROTECTED MODE



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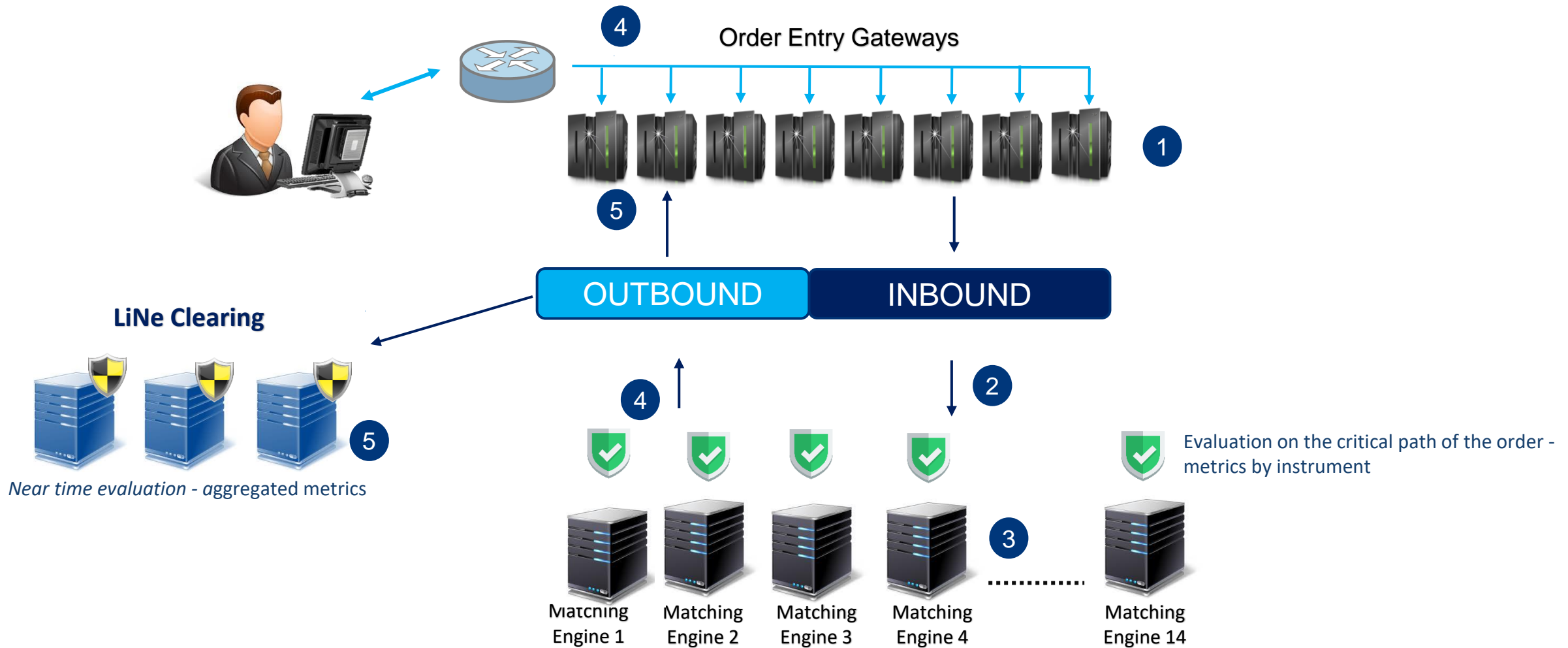
STRUCTURAL CHANGE

PHASE II – AFFINITY OF RISK ENGINE BY MATCHING ENGINE

- ✓ Change in architecture of LiNe Trading
- ✓ Affinity of risk engine per Matching Engine
- ✓ Line-level FIFO guaranteed.
- ✓ Eliminate the use of dedicated Risk Engine

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ARCHITECTURE PHASE II





NEW FEATURES

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NEW FEATURES

New CAP for maximum order size

- ✓ Global CAP at instrument level
- ✓ CAP at document level

Start of day position

- ✓ Start of day positions (open interest and settlement cycle) will be considered when calculating the consumption of Line Clearing measures
- ✓ It will allow netting between positions/operations present in the portfolio and trades and orders of the day

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NEW FUNCTIONALITIES

New aggregated metric: potential short uncovered balance | SPVD

Objective: to limit the financial value of short sales per investor

Variables considered in the metric:

Intraday

- ✓ Ask orders
- ✓ Sell-trades
- ✓ Buy-trades (final accounts)
- ✓ Option exercises (buy and sell)

Start of day positions

[settlement/maturity on T+0, T+1 or T+2]

- ✓ Cash market operations
- ✓ Option exercises
- ✓ Equity forward contracts
- ✓ Securities Lending Positions

Netting between buying transactions and sell-trades/ask orders:

- Final accounts: there is netting
- Transitory accounts: no netting

There is no netting of balances bought and sold on different days

Measure evaluated in near time

Limit assignment is mandatory per document

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NEW FUNCTIONALITIES

New risk metrics per instrument *inline*

- ✓ Maximum risk per instrument in real time

New aggregated risk metrics where orders will not be considered for limit evaluation

- ✓ New metric will only take trades into consideration

Real time post-trading integration

- ✓ Accounts will have limit calculation updated after allocations (i.e.: master accounts)

Risk management by clearing member

- ✓ Monitoring and manual activation of protected mode to trading participants

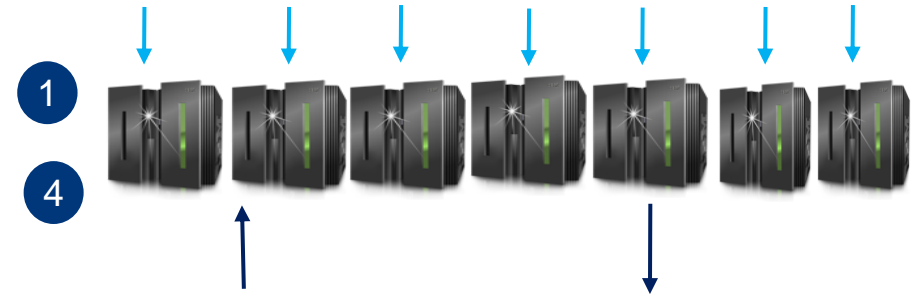
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INTEGRATION WITH POST-TRADING

Post Trading

Trading

Order Entry Gateways



Evaluation on the critical path of the order - metrics by instrument



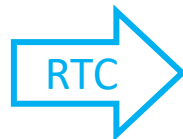
Matching Engine 1 Matching Engine 2 Matching Engine 3 Matching Engine 4 ... Matching Engine 14

LiNe Clearing



Near time evaluation - aggregated metrics

Position allocated on the Clearing





Schedule

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SCHEDULE

PHASE I – SEGREGATION LINE TRADING AND LINE CLEARING

- ✓ Removal of aggregated measures from the critical order path (Potential RTT reduction)
- ✓ Less processing in the trading GW (Risk Engine will receive Execution Report from trading core)

Parallel Production (optional)

- Metrics Segregation

Go-Live Production

- Metrics Segregation

3Q21

4Q21



Thank you!

Diretoria de Negociação Eletrônica
Superintendência de Projetos de Negociação

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