

3º Workshop – New B3 Data Center

Migration Plan and Status



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SUMMARY

Schedule

External Transition

Index of Reservation and Provision of Services

Time Synchronization Service

Parallel Production

Migration Plan

Co-location Clients Migration

Workshop Summary

SCHEDULE

Project schedule



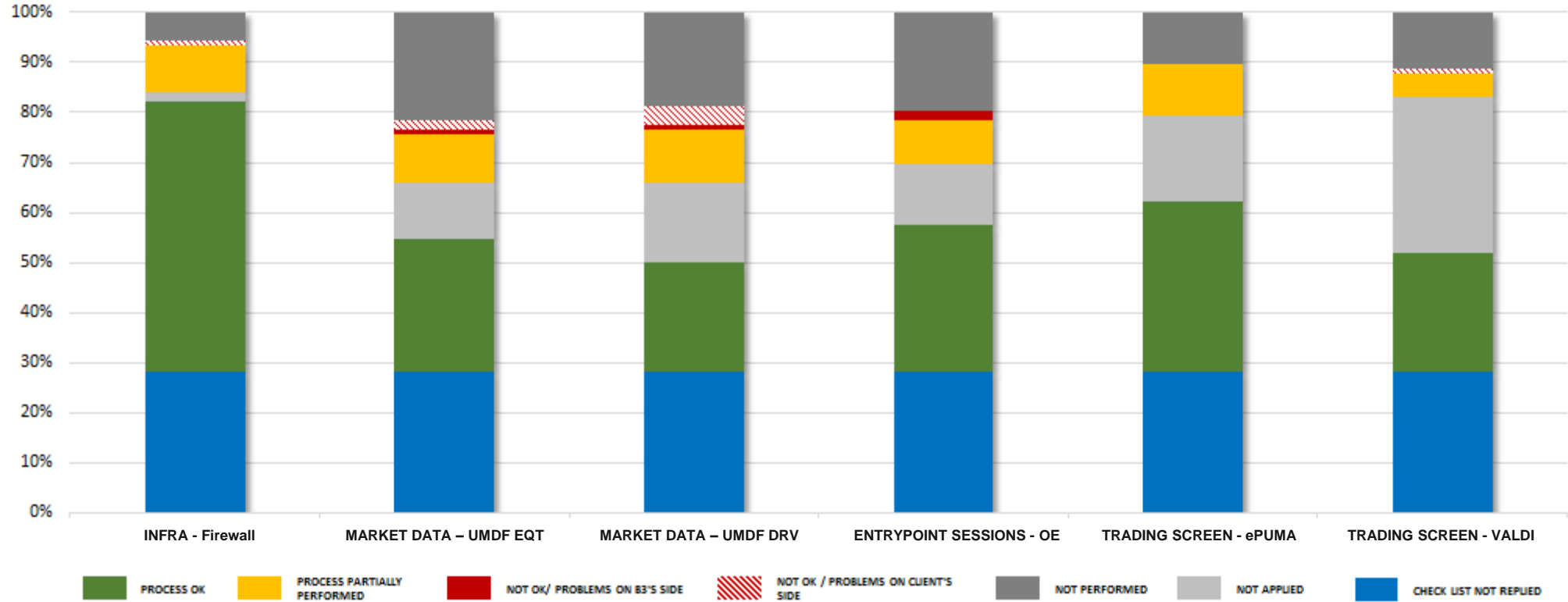
External Transition

Declaratoy Spreadsheet

[B] ³ BRASIL BOLSA BALCÃO		NEW DATA CENTER PROJECT OF B3 Checklist and Status Project Report		Fill Date	Participant:	
				24/out	Firm code:	
#	Scenarios	Validation questions	Status	Issue Origin (only last report) Issue on participant side (v) Issue on B3 side (X)		If the status is different from OK-T, the participant has to explain with few words what issue was experienced, (Last Report)
1	INFRASTRUCTURE - Firewall	Were the range Ips applied in the Firewall rules of participant to access the New Data Center environment (SPA)?	NOK			
2	INFRASTRUCTURE - Links	Have you prepared your RCB/RCCF model to accomodate the new distribution of Data Centers of B3?	OK-T			
3	INFRASTRUCTURE - Configurations	Was the routing configured on the network equipment to access SPA environment ?	NA			
4	INFRASTRUCTURE - Co-location	Is your application hosted in B3 Co-location? Ifso, were you able to perform connectivity tests in SPA environment?	OK-T			
5	MARKET DATA - UMDf EQT	Were you able to join all UMDf Equities 2.0 channels in SPA environment?	OK-T			
6	MARKET DATA - UMDf DRV	Were you able to join all UMDf Derivatives 2.0 channels in SPA environment?	OK-T			
7	MARKET DATA - Pumalink TCP (Replayer)	Were you able to connect Pumalink TCP sessions in SPA environment? Ifso, were you able to recover any data?	OK-P			
8	MARKET DATA - Pumalink TCP (Conflated)	Were you able to connect Pumalink TCP sessions in SPA environment? Ifso, were you able to join all Market Data channels?	OK-P			
9	ENTRYPOINT SESSIONS - OE	Did you send orders through order entry sessions using IP addresses in SPA environment?	OK-T			
10	ENTRYPOINT SESSIONS - Drop Copy	Did you receive messages on Drop Copy sessions using IP addresses in SPA environment?	OK-P			

Market Validation

Processes Overview



Index of Reservation and Provision of Services

% of reservation per category

- **1/2 Trading Racks: 82%**
- **1/4 Web Racks: 35%**
- **1/2 Storage Racks: 20%**

More Details:

http://www.bmfbovespa.com.br/en_us/services/trading/data-center/data-center/

Co-location Migration

Time Synchronization Service

TIME SYNCHRONIZATION SERVICE

- GTT Partnership
- Ensuring equal service to all participants
- Access to the GPS Antenna
 - Cross Connect Will Be Charged By B3
- Time Server Service
 - NTP
 - PTP

More Details, Contact

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PARALLEL PRODUCTION

Parallel Production Strategy

Parallel Production Strategy

Production (Current Data Center)	Parallel Production (New Data Center)	MOCK Tests (New Data Center)
Order Entry Real and test Instruments	Order Entry New test instruments	Order Entry Real and test Instruments
Market Data Production	Market Data Production + Parallel Production	Market Data Production
Drop Copy Production	Drop Copy Parallel Production	Drop Copy Production
Sessions <ul style="list-style-type: none"> XPIL0001 / XPILA700 CPIL0002 / CPILA800 DPIL0100 / DPIL5001 	Sessions <ul style="list-style-type: none"> PXPIL0001 / PXPILA700 PPIL0002 / PCPILA800 DPIL0100 / DPIL5001 	Sessions <ul style="list-style-type: none"> XPIL0001 / XPILA700 CPIL0002 / CPILA800 DPIL0100 / DPIL5001

Required Infrastructure Settings

068/2017 – SSN – Parallel Production IPs Disclosure (06/20)

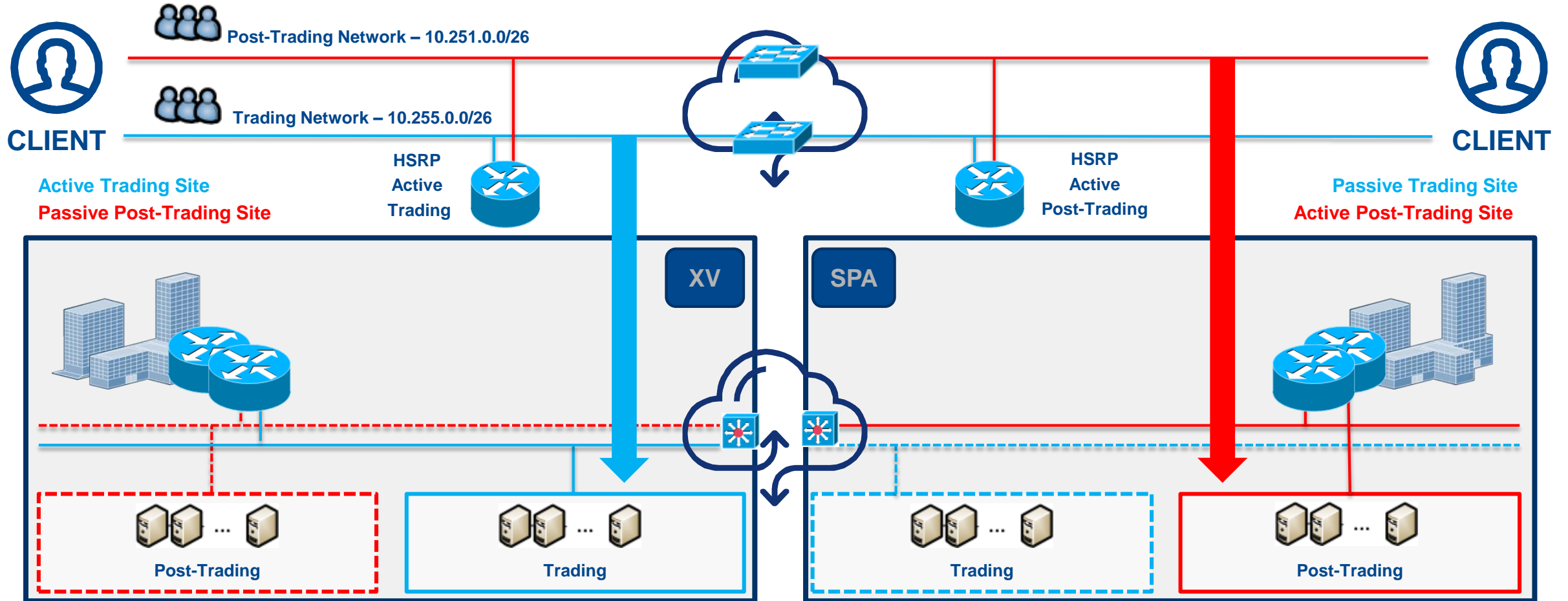
Trading Services

- Order Entry (EQT/DRV)
- Drop Copy (EQT/DRV)
- Valdi Trader EMS – SLC and SLE
- ePUMA – OE, MD, RelayX, Portal, Web Service
- PUMALINK Replayer and Historical Replayer 2.0 (EQT/DRV)
- UMDF 2.0 (EQT/DRV)
- UMDF Conflated
- Admin Session

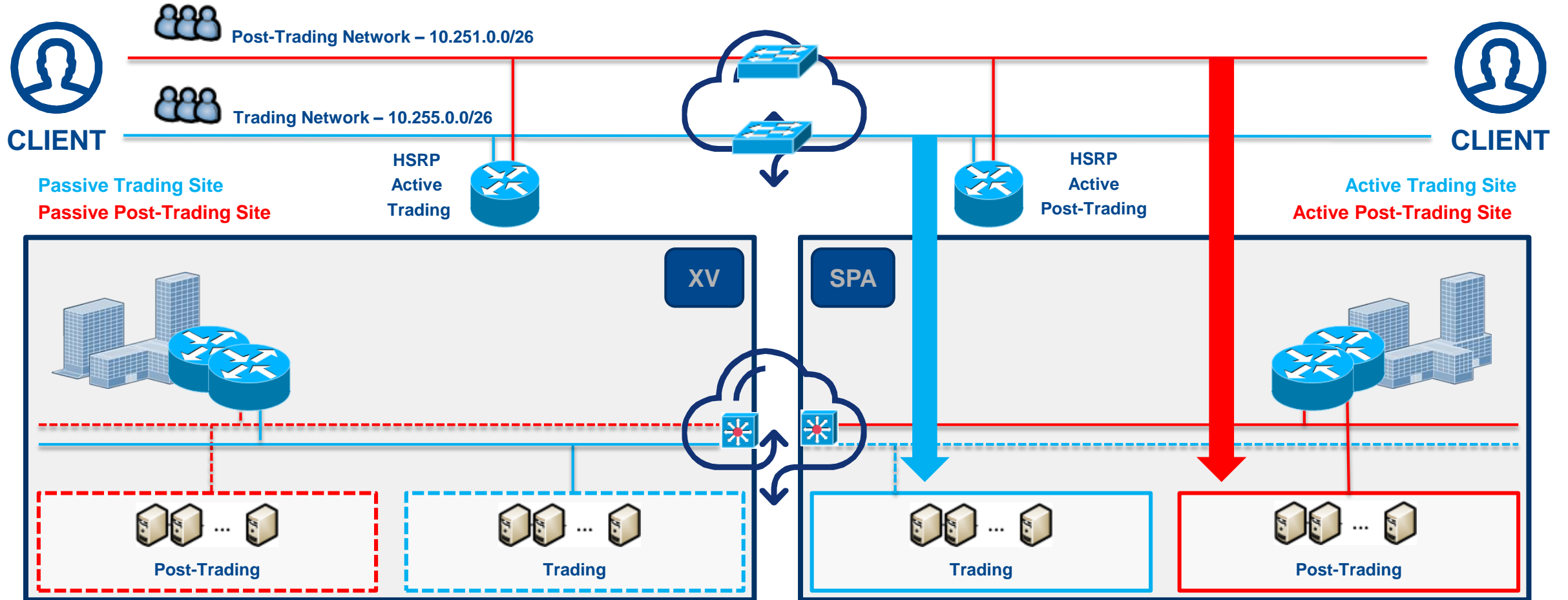
PARALLEL PRODUCTION

Infrastructure Settings

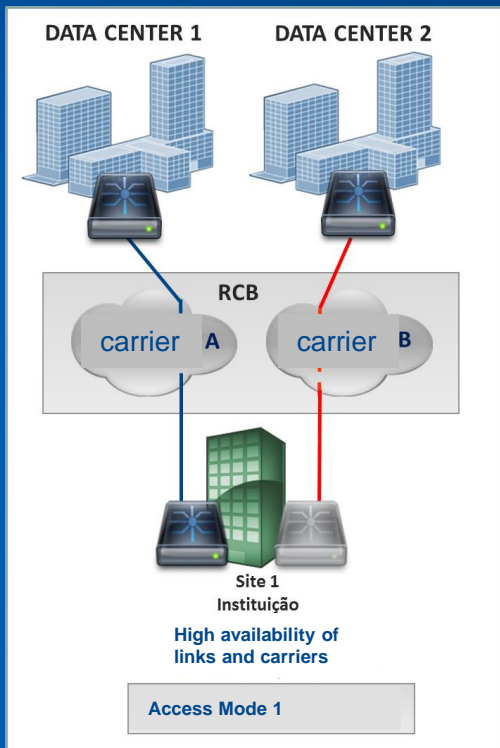
RCB (via XV DE NOVBEMBRO DC)



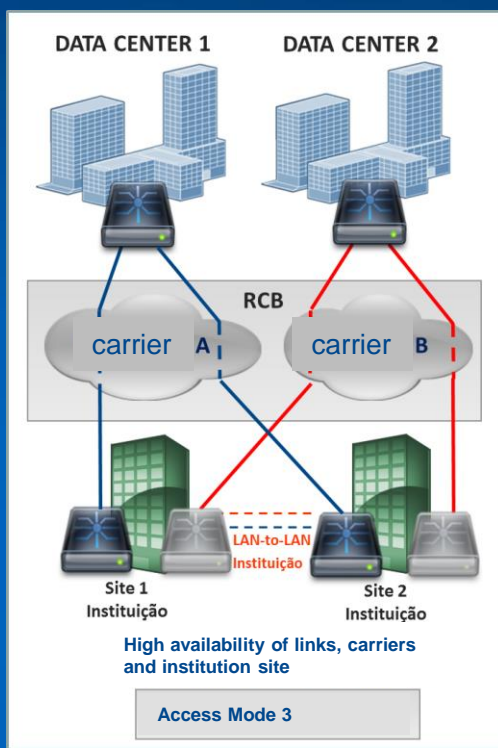
RCB (via SANTANA DE PARNAÍBA DC)



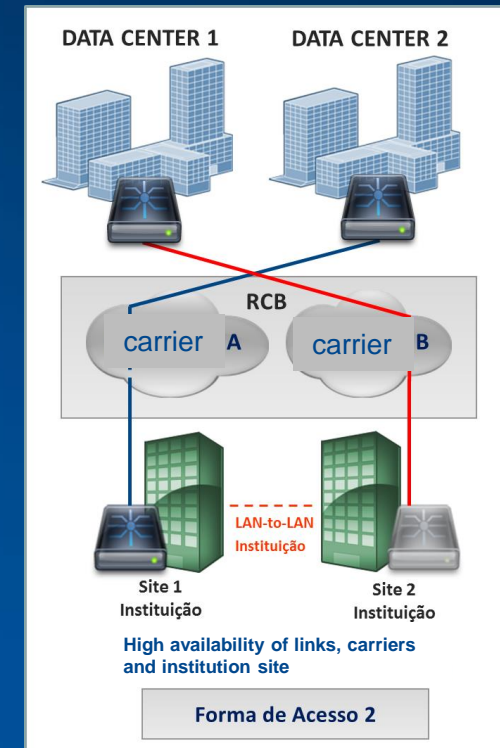
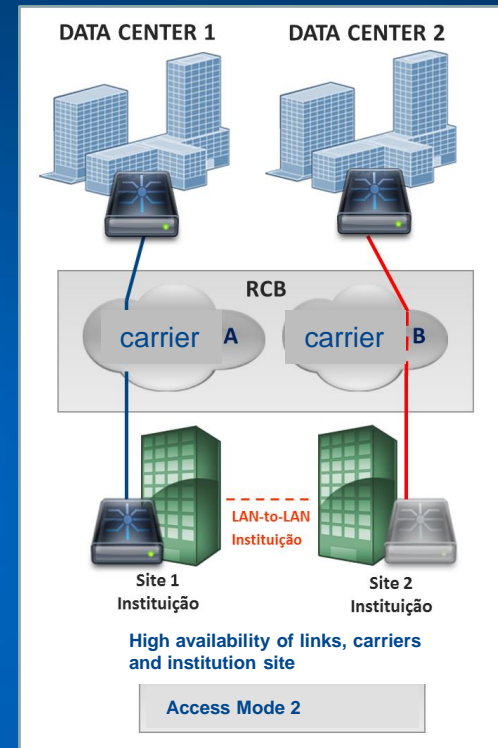
ACCESS MODE 1



ACCESS MODE 3

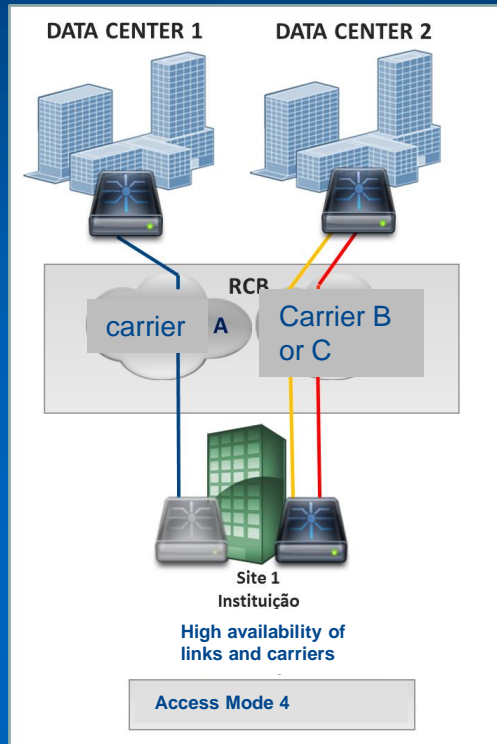
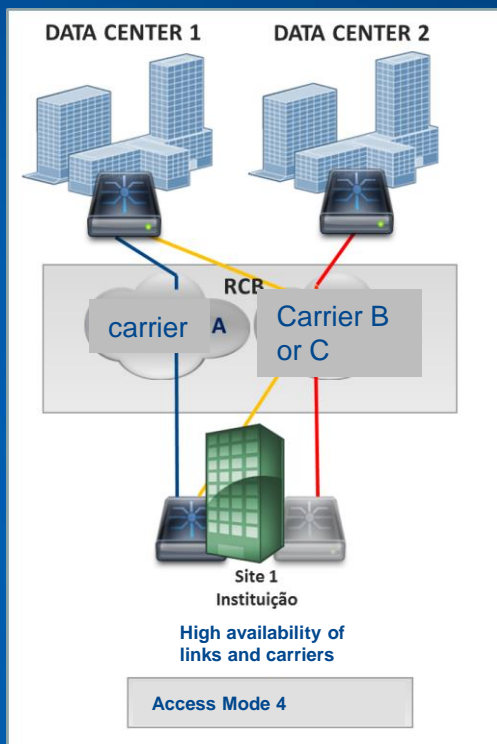


ACCESS MODE 2

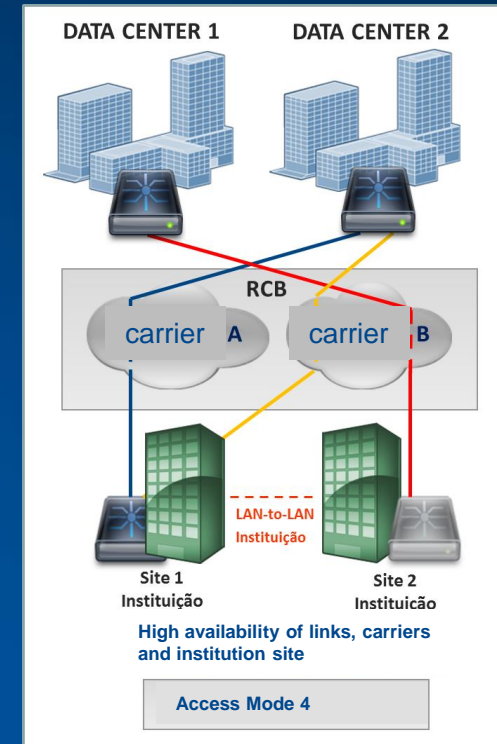
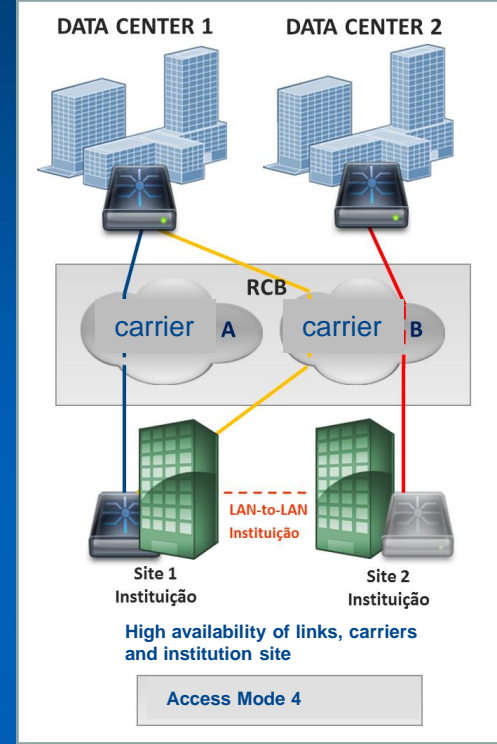


<p>Until Nov/10</p>	<ul style="list-style-type: none"> ➤ Data center 1 = XV de Novembro Data center (Active Trading) – FEED A ➤ Data center 2 = Santana do Parnaíba Data center (Active Post-Trading) - FEED B
<p>After Nov/11</p>	<ul style="list-style-type: none"> ➤ Data center 1 = XV de Novembro Data center – NEW FEED B ➤ Data center 2 = Santana do Parnaíba Data center (Active Post-Trading and Trading) – NEW FEED A

ACCESS MODE 4



ACCESS MODE 4



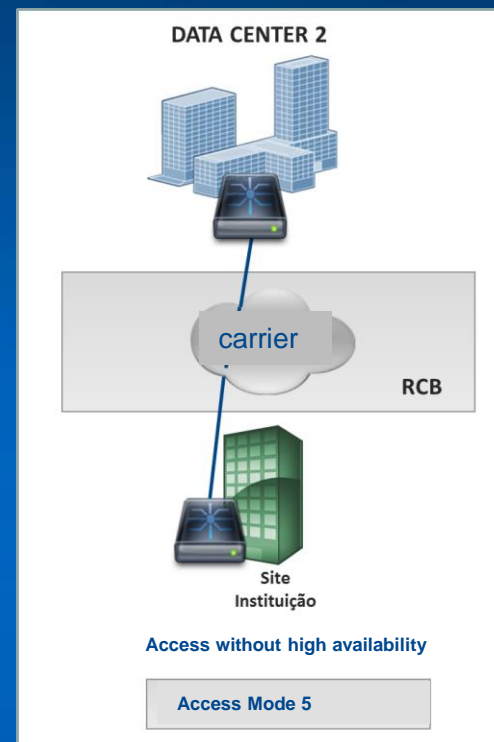
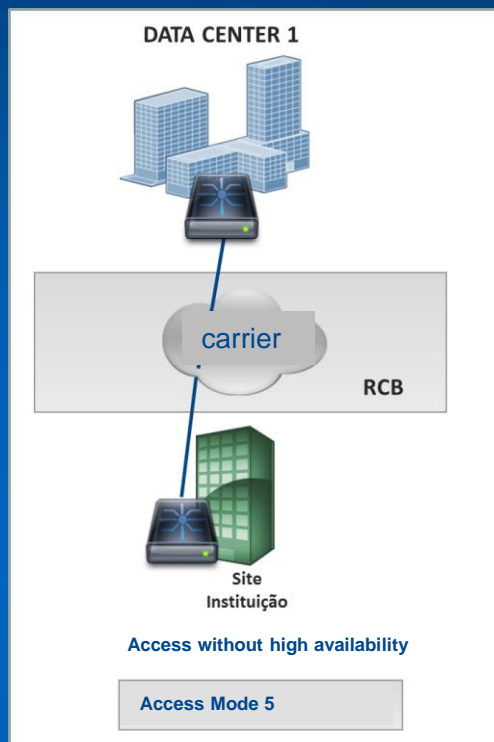
Until Nov/10

- Data center 1 = XV de Novembro Data center (Active Trading) – FEED A
- Data center 2 = Santana do Parnaíba Data center (Active Post-Trading) - FEED B

After Nov/11

- Data center 1 = XV de Novembro Data center – NEW FEED B
- Data center 2 = Santana do Parnaíba Data center (Active Post-Trading and Trading) – NEW FEED A

ACCESS MODE 5



Until Nov/10

- Data center 1 = XV de Novembro Data center (Active Trading) – FEED A
- Data center 2 = Santana do Parnaíba Data center (Active Post-Trading) - FEED B

After Nov/11

- Data center 1 = XV de Novembro Data center – NEW FEED B
- Data center 2 = Santana do Parnaíba Data center (Active Trading and Post-Trading) – NEW FEED A

Necessary Infrastructure settings

069/2017 – SSN – Routers Settings(22/06)

Router 1 (Link SPA) – Roll in*

RP – 179.127.211.252

Group – 233.252.14.0/24 (New Feed A)

Router 2 (Link XV) – Roll in / Roll out

RP – 200.19.55.252

Group – 233.252.15.0/24 (New Feed B)

* This configuration should be applied since the first mock session of the project, held on

07/08/2017

Necessary Infrastructure settings

069/2017 – SSN – Firewall Configurations (22/06)

Grant permission for new PUMA networks on the filters (routing, firewall).

- Market Data Network - 179.127.210.0/23 *
- Order Entry Network - 179.127.212.0/22 *

*** This configuration should be applied since the first mock session of the project, held on 07/08/2017**

Necessary Infrastructure Settings

077/2017-SSN – Link Priority Change for SPA (19/07)

Mock Testing Sessions: 21/10 and 04/11

Before Mock: Change the main link for DC SPA. (HSRP Settings)

After Mock: Return the main link to XV DC

Definitive Migration – Mandatory: (Nov/11) *

Change the main link to connect to the DC SPA permanently

* If the change is not made until this date, the participant will access the DC SPA trading platform through DC XV, resulting in a latency increase or even partial or full unavailability

Necessary Infrastructure Settings

Attention Points:

- Adaptation and capability of the RCB modality (s) contracted for the new priority paths to access the applications in the data centers of B3 as from 11/11.
- Maintain the current settings and accesses (backup) on the network and security devices for the old trading services (Order Entry and Market data).
- Validate from the DC SPA Co-lo the access to the current trading services (Order Entry and Market data)

Necessary Infrastructure Settings (Referred to the current feeds and the new)

	SERVICE	ROUTER 1 (LINK DC XV)	ROUTER 2 (LINK SPA)
RP	CURRENT PUMA	200.19.54.252	200.19.55.252
GROUP	UMDF 2.0 Equities and UMDF 1.6 Derivatives	233.252.8.0/24 (CURRENT A FEED)	233.252.9.0/24 (CURRENT FEED B)
	UMDF 2.0 DERIVATIVES	233.252.10.0/25 (CURRENT FEED A)	233.252.10.128/25 (CURRENT FEED B)

	SERVICE	ROUTER 1 (LINK DC XV)	ROUTER 2 (LINK SPA)
RP	NEW PUMA	200.19.55.252 (*)	179.127.211.252
GROUP	UMDF 2.0 Equities and Derivatives	233.252.15.0/24 (NEW FEED B)	233.252.14.0/24 (NEW FEED A)

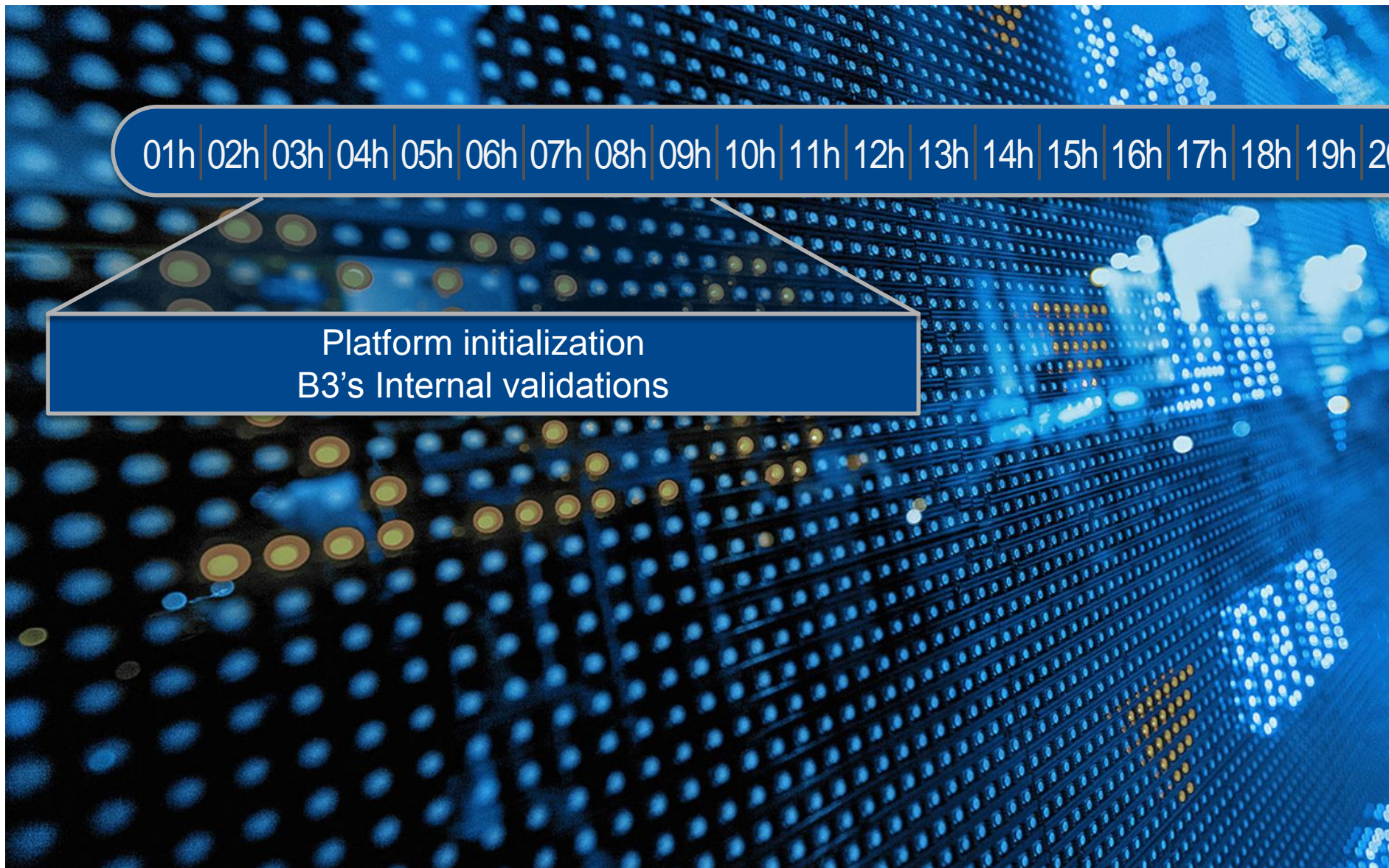
(*) Changes (roll-in/roll-out) to MOCK tests and the definitive migration in Nov/11.

Necessary Infrastructure Settings

ACCESS MODE	SERVICE	NETWORK INFRASTRUCTURE
UEC (DMA 2)	Order Entry / DropCopy / Supervisionated Session Market Data (UMDF and Conflated)	<p>(1) Market data: Change the current accesses to Switch 1 (FEED A) and Switch2 (FEED B) from BVMF to Switch 1 (New FEED B) and to Switch 2 (New FEED A). Configure new RP (179.127.211.252) on the client switch connected to Swich2 (NEW FEED A) and on the Mocks (roll in / roll-out) and DAY D engine RP (200.19.55.252) configured on the client switch connected to the Switch 2 for the Switch of the client connected to Switch 1. Allow the new prefixes of the market data network. (Release on the filters -root, ACL, firewall, etc.)</p> <p>(2) Order Transmission: Make change in the negotiation traffic output prioritization from Switch 1 to Switch 2. Enable the new order entry server ranges. (Release on the filters -root, ACL, firewall, etc.)</p>
PRAÇA (DMA 4)	Order Entry / DropCopy / Supervisionated Session Market Data (UMDF and Conflated)	<p>(1) Market data: Set up new PR (179,127,211,252) in Participant Swich1 (NEW FEED A). Allow new prefixes from Market data network. (Release on the filters -root, ACL, firewall, etc.)</p> <p>(2) Order Delivery: Allow new order entry server ranges. (Release on the filters -root, ACL, firewall, etc.)</p>
RCB	Order Entry / DropCopy / Supervisionated Session Market Data (UMDF and Conflated) e-PUMA Valdi Trader	<p>(1) Market data: Change CPE1 (FEED A) and CPE2 (FEED B) for CPE1 (New FEED B) and CPE 2 (New FEED A). Configure new RP (179.127.211.252) in CPE2 (NEW FEED A) and in the Mocks (roll in / roll-out) and DIA D move the RP (200.19.55.252) configured in CPE2 to CPE1. Allow new prefixes of the market data network. (Release on the filters -root, ACL, firewall, etc.)</p> <p>(2) Order Transmission: Make change in the prioritization of trade traffic output from CPE1 to CPE2. Allow new ranges of order entry servers. (Release on the filters -root, ACL, firewall, etc.)</p>
SPA (CO-LO)	Order Entry / DropCopy / Supervisionated Session Market Data (UMDF and Conflated)	<p>(1) Market data: configure in RP 1 (179.127.211.252) - NEW FEED A. And configure in RP2 (200.19.55.252) - NEW FEED B. Allow the new network data prefixes from Market data. (Release on the filters -root, ACL, firewall, etc.)</p> <p>(2)Sending of Orders: Prioritization of negotiation traffic output by swich1. Allow new ranges of order entry servers. (Release on the filters -root, ACL, firewall, etc.)</p>

Migration

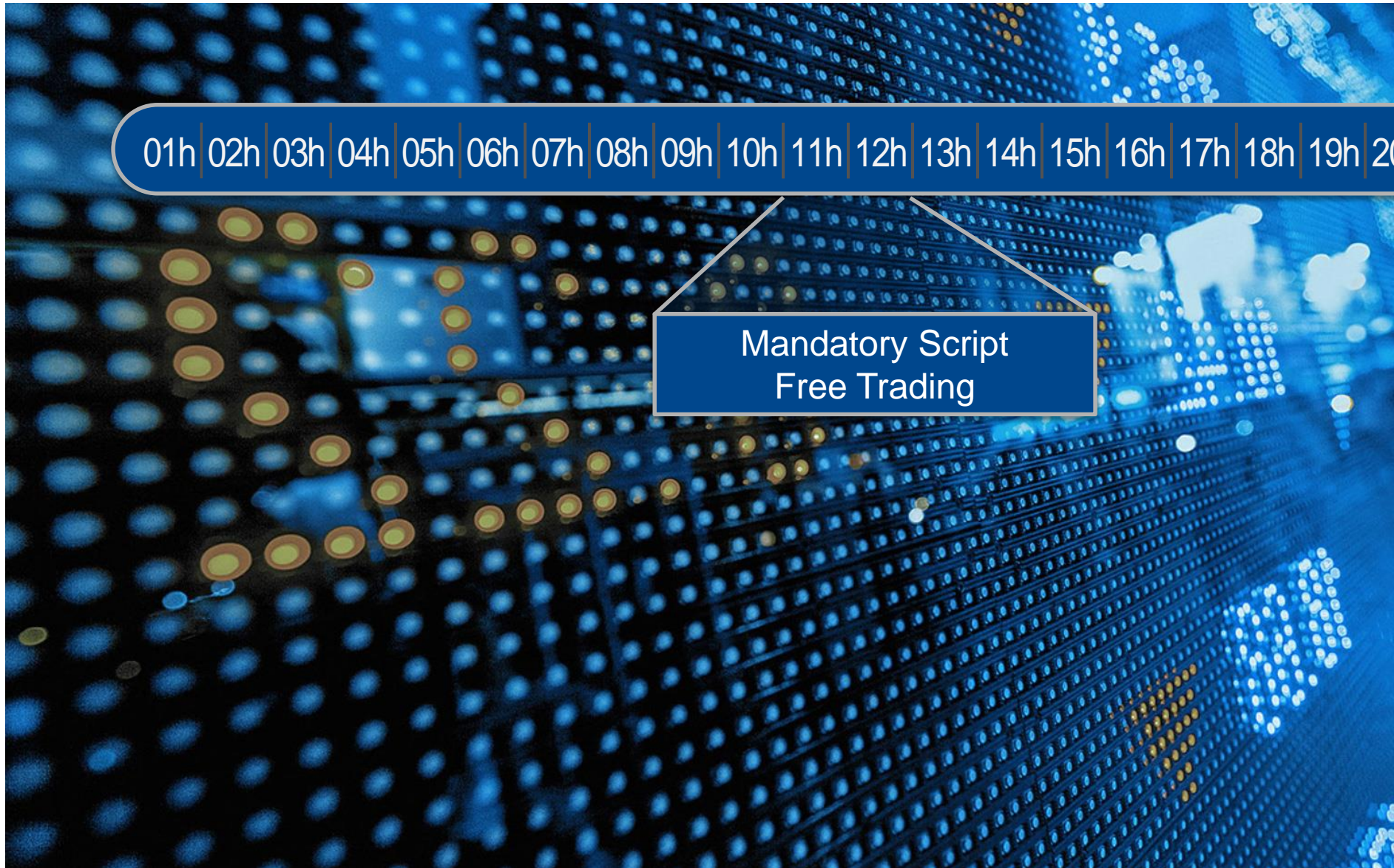
Activities Timeline



01h | 02h | 03h | 04h | 05h | 06h | 07h | 08h | 09h | 10h | 11h | 12h | 13h | 14h | 15h | 16h | 17h | 18h | 19h | 20h | 21h | 22h | 23h

Platform initialization
B3's Internal validations











01h | 02h | 03h | 04h | 05h | 06h | 07h | 08h | 09h | 10h | 11h | 12h | 13h | 14h | 15h | 16h | 17h | 18h | 19h | 20h | 21h | 22h | 23h

Platform Shutdown
Go Live Preparation



01h | 02h | 03h | 04h | 05h | 06h | 07h | 08h | 09h | 10h | 11h | 12h | 13h | 14h | 15h | 16h | 17h | 18h | 19h | 20h | 21h | 22h | 23h

**End of migrations
GO / NO GO Notification**

Validation Scope

Access to hosted components in the

New Data Center (SPA):

- Order Entry Gateway
- Drop Copy Gateways
- UMDF 2.0 Equities, UMDF 2.0 Derivatives, UMDFTCP
- ePUMA, Firmsoft, Smartclick and LiNe Portals
- Trading Screens: ePUMA and Valdi Trader



Services hosted in XV DC will no longer be available





01h | 02h | 03h | 04h | 05h | 06h | 07h | 08h | 09h | 10h | 11h | 12h | 13h | 14h | 15h | 16h | 17h | 18h | 19h | 20h | 21h | 22h | 23h

Test instruments validation

Validation Scope

Access to components hosted in the New Data Center (SPA):

- Order entry gateways
- Dropcopy Gateways
- UMDF 2.0 Equities, UMDF 2.0 Derivatives, UMDFTCP
- ePUMA Portals, Firmsoft, Smartclick, LiNe



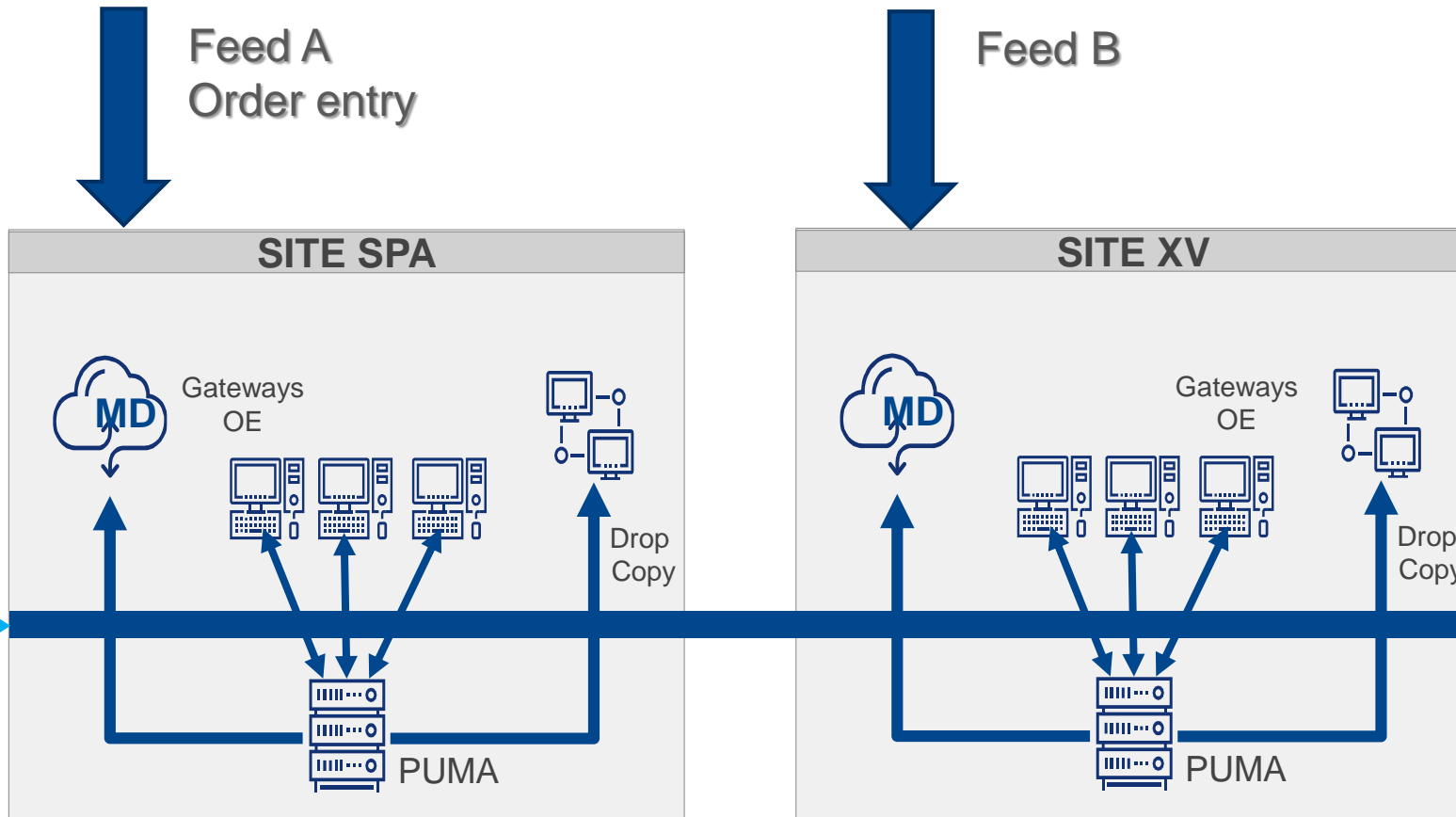
ePUMA and Valdi Trader Trading Screens will be not available on Sunday

ROLLBACK STRATEGY

ROLLBACK STRATEGY

PUMA – Rollback Strategy and Disaster Recovery

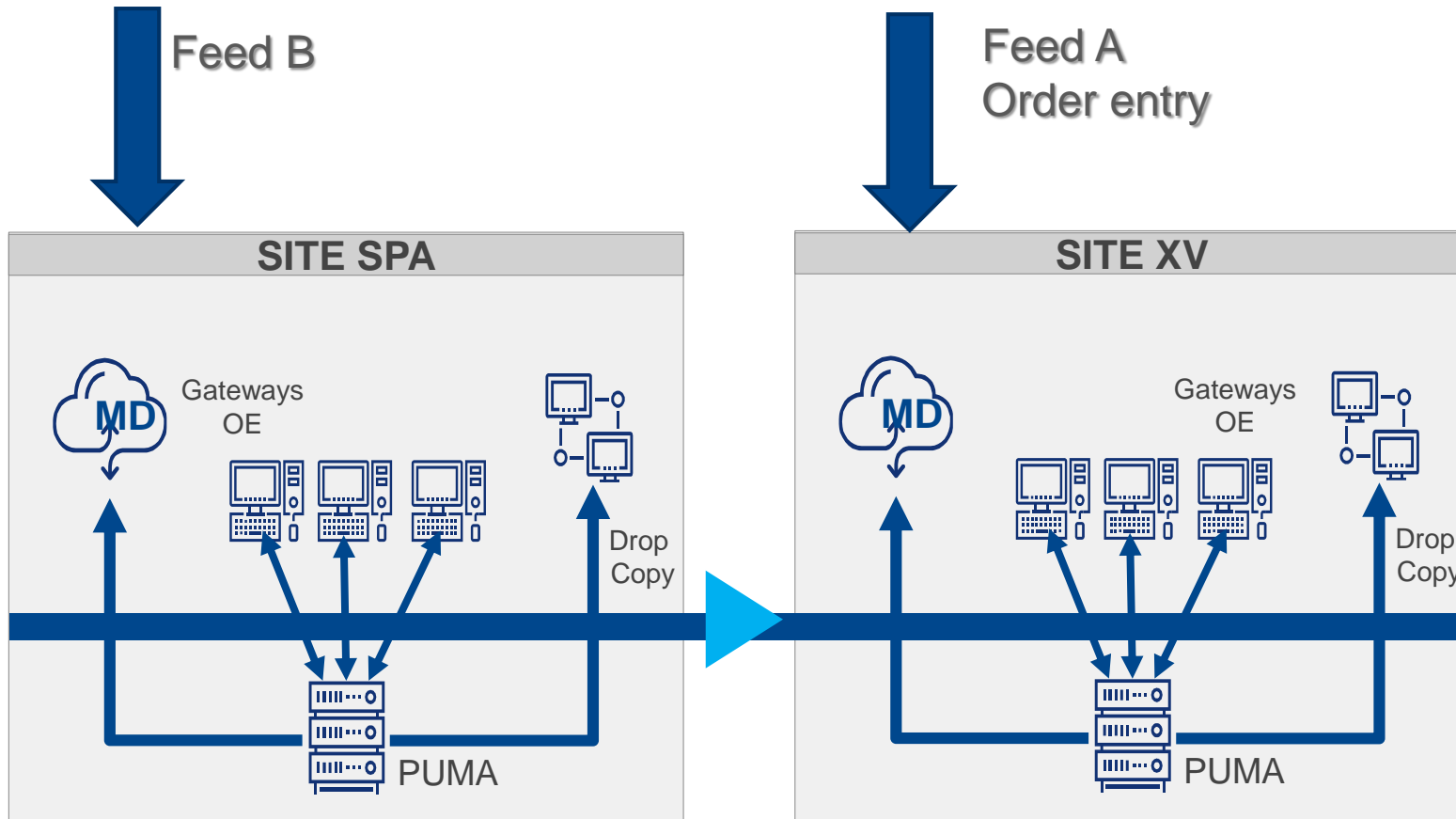
Necessary actions in case of triggering



	Order Entry	Market Data
DC SPA	179.127.212.0/22	179.127.210.0/23
	200.19.50.0/23	200.19.49.0/24
Recovery Plan	177.54.221.0/24	200.19.61.0/24
	177.54.208.0/23	177.54.210.0/24
Disaster Recovery	177.54.223.0/24	177.54.216.0/24

PUMA – Rollback Strategy and Disaster Recovery

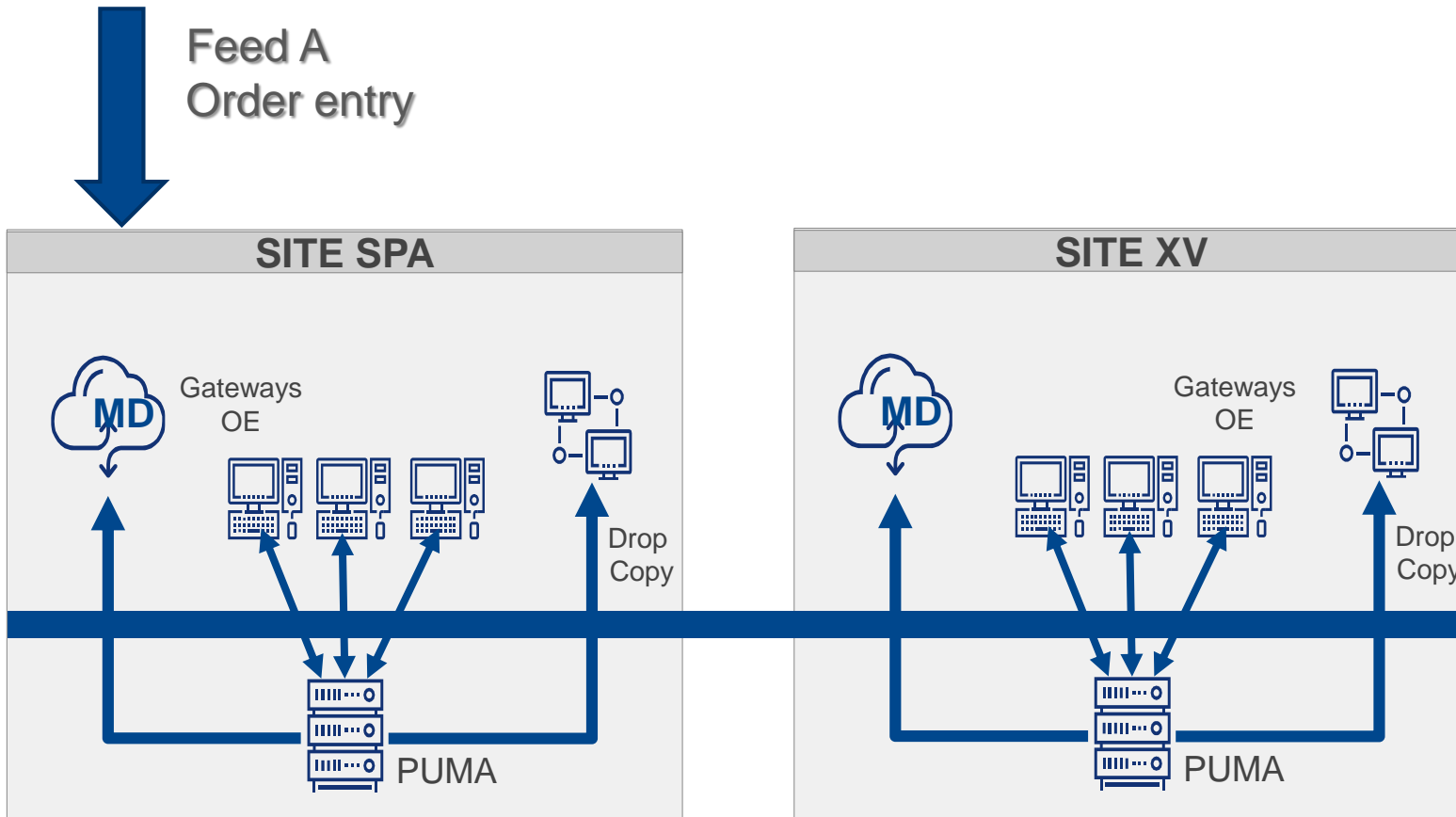
Necessary actions in case of triggering



	Order Entry	Market Data
DC SPA	179.127.212.0/22	179.127.210.0/23
	200.19.50.0/23	200.19.49.0/24
Recovery Plan	177.54.221.0/24	200.19.61.0/24
Disaster Recovery	177.54.208.0/23	177.54.210.0/24
	177.54.223.0/24	177.54.216.0/24

PUMA – Rollback Strategy and Disaster Recovery

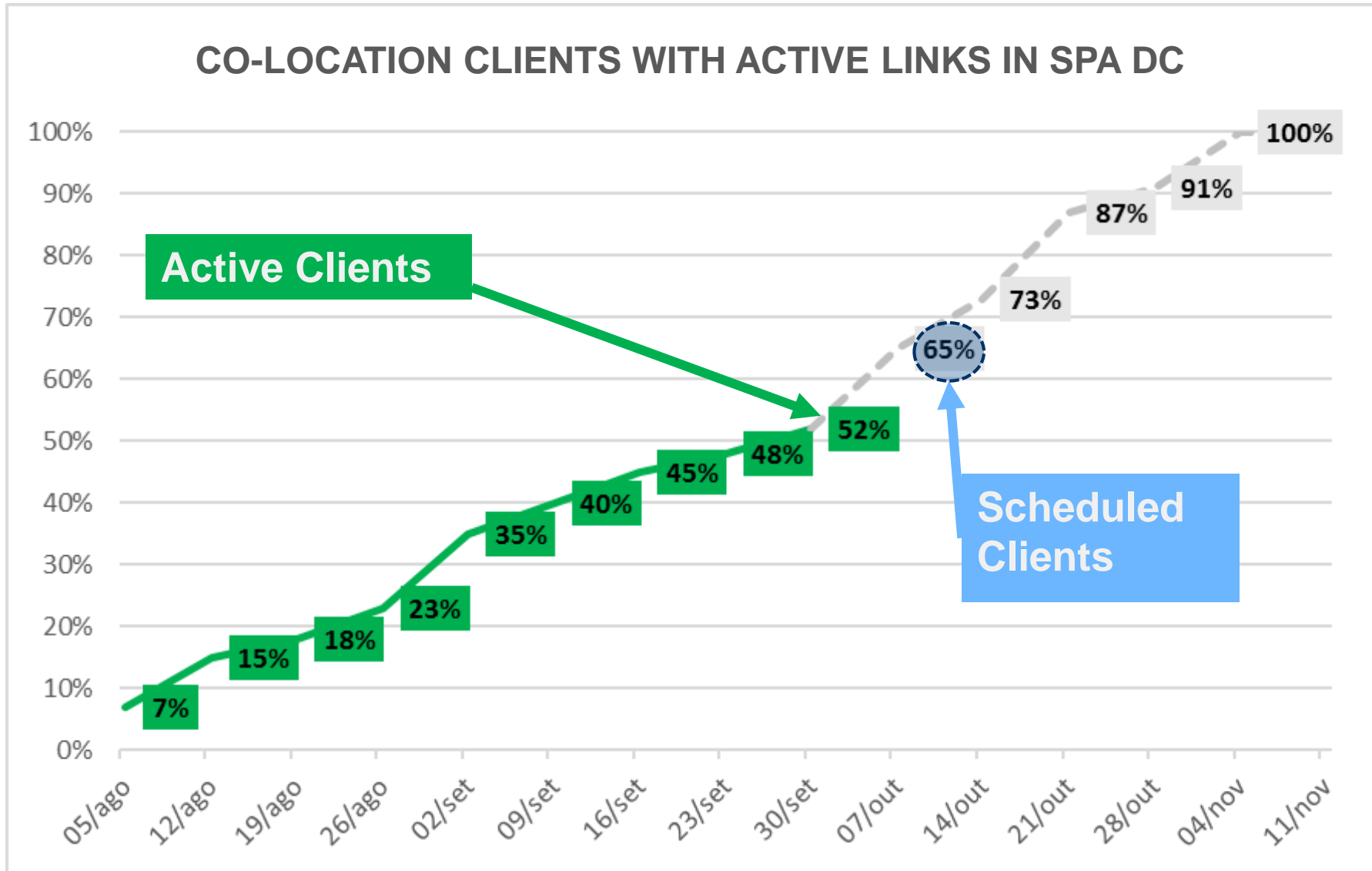
Necessary actions in case of triggering



	Order Entry	Market Data
DC SPA	179.127.212.0/22	179.127.210.0/23
	200.19.50.0/23	200.19.49.0/24
Recovery Plan	177.54.221.0/24	200.19.61.0/24
Disaster Recovery	177.54.208.0/23	177.54.210.0/24
	177.54.223.0/24	177.54.216.0/24

Co-location Migration

Equipment Movement



EQUIPMENT MOVING ON WEEKEND

- Requirements:
 - Internal and external connectivity Validated
 - Installation of equipment in the New Data Center
 - Participation in at least one Mock Test
 - Requests will be reviewed and approved individually
- The moving is responsibility of the participant, but should be scheduled with B3 team



Workshop Summary

Attention Points

11/11/2017 is coming!

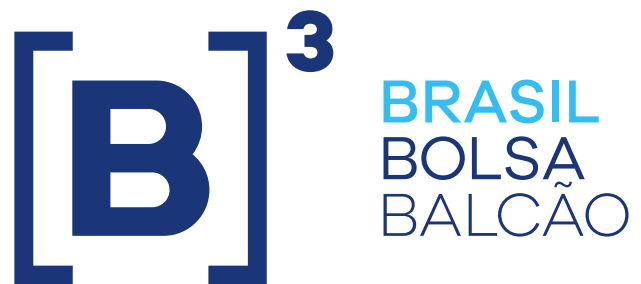
Necessary infrastructure settings and it's validations

**Mock Tests:
Oct/21, Nov/04 and Nov/11**

**Migration Scheduling
(Nov/11 and Nov/12)**

Co-location Hosting Agreement and Market Data Distribution Agreement

**More details:
<http://datacenterdabolsa.com.br/en>**



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