



Adria Forum 2025

Resilience Redefined

How Erste Bank Migrated to New Active-Active Data Centers with Zero Downtime

Aleksandar Stanković Braineering

Zoran Gavranić Erste Bank

14.10.2025.





Resilience Redefined

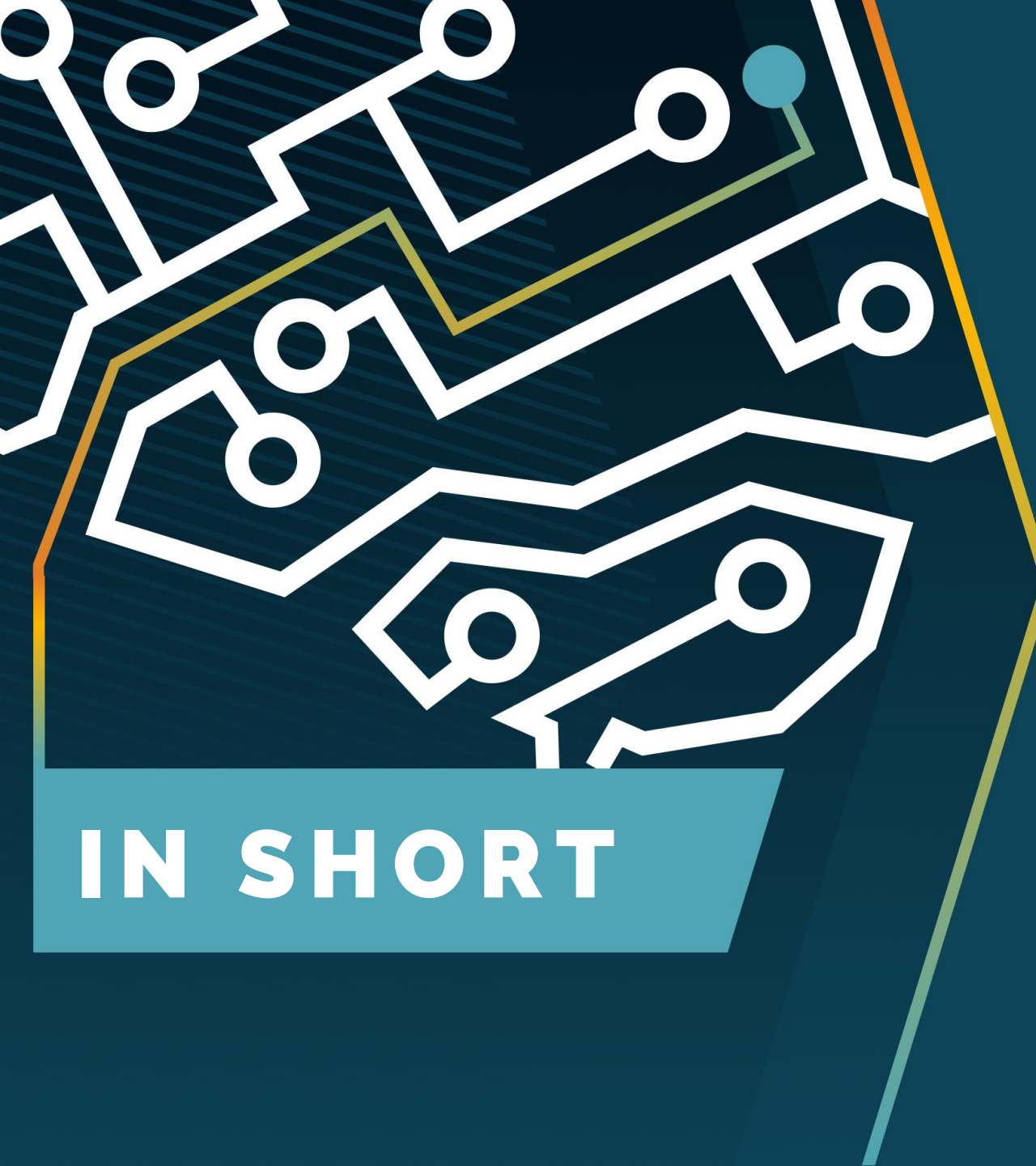
*How Erste Bank Migrated to New
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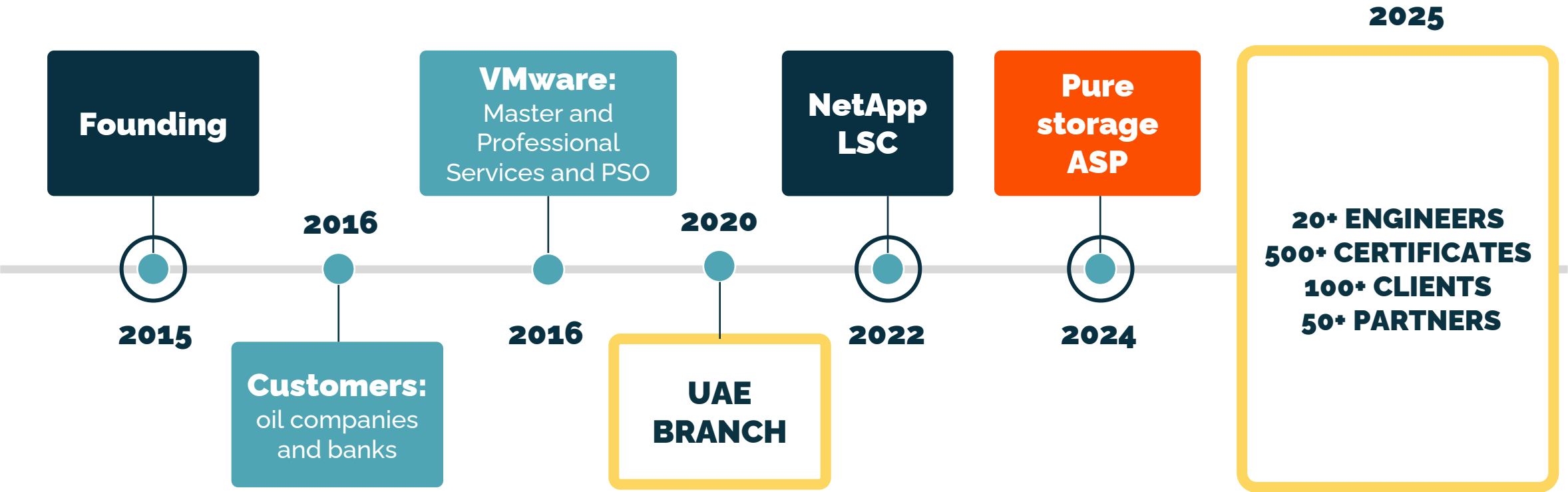


IN SHORT

- **About Braineering IT Solutions** - Who we are and what we do
- **Erste Bank - The Starting Point** - Initial architecture and business/regulatory challenges
- **Our Solution: Metro Stretch Cluster** - Transitioning to an Active-Active infrastructure with Pure & VMware
- **Why Pure Storage?** - Simplicity, performance, and true Active-Active capabilities
- **Why Commvault?** - Integrated data protection and regulatory compliance
- **Customer Experience** - Erste Bank's perspective and lessons learned
- **Key Takeaways** - Summary of benefits and strategic impact



Brief History of Braineering



Solution Portfolio



Braineering
Custom and Turnkey Solutions

Next Gen. Infrastructures

Software Defined Data Centre
Hyper Converged Infrastructures
Microservices – Containers
HPC/ML/AI

Data Services

Storage Systems
Archiving

Business Continuity

Backup and DR
Metro Cluster Solutions

Advanced Networking and Security

Next Gen. Firewall
Web Application Firewall
Microsegmentation
Data Centre Networking and SDN

Digital Workspace

Mobility and VDI
Cloud Security
Zero Trust / Zero Day Security



BrainOps
Operations and Development

DevOps

Eliminate or drastically decrease manual steps in provisioning infrastructure. Automation services, based in industry-leading automation platforms, will help your operations, development, testing, and QA teams fit together perfectly.



BeCloud
Cloud Services

Public Cloud Provider - MSP

BeCloud® operates on the “as a Service” model, delivering hosted services over the internet for a monthly fee, enabling you to see your IT as an operational expense.



BrainTech
Education and Knowledge

Knowledge transfer

BrainTech ®
Smart IT

Consulting

In all areas of the Solution Portfolio offering

IT solutions to excel your business

Delivering powerful enterprise IT solutions to your hands

Make your business excel or your ideas come true with knowledge, powerful IT solutions, and creative engineering.



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AS-IS Infrastructure in 2022 – The Breaking Point

Critical EoL Milestones:

2022: Production data storage reaching End of Life — no support extension possible

2023: Network switches for Virtual Infrastructure become EoL

2024: Storage switches for Virtual Infrastructure become EoL

Technology Obsolescence:

Existing network switching based on FCoE (Fibre Channel over Ethernet) is deprecated

– some other technology must be implemented

Strategic Planning:

Replacements already included in long term budget in next 5 years.

Architecture Dilemma:

Option A: Keep AS-IS architecture and just replace EoL devices

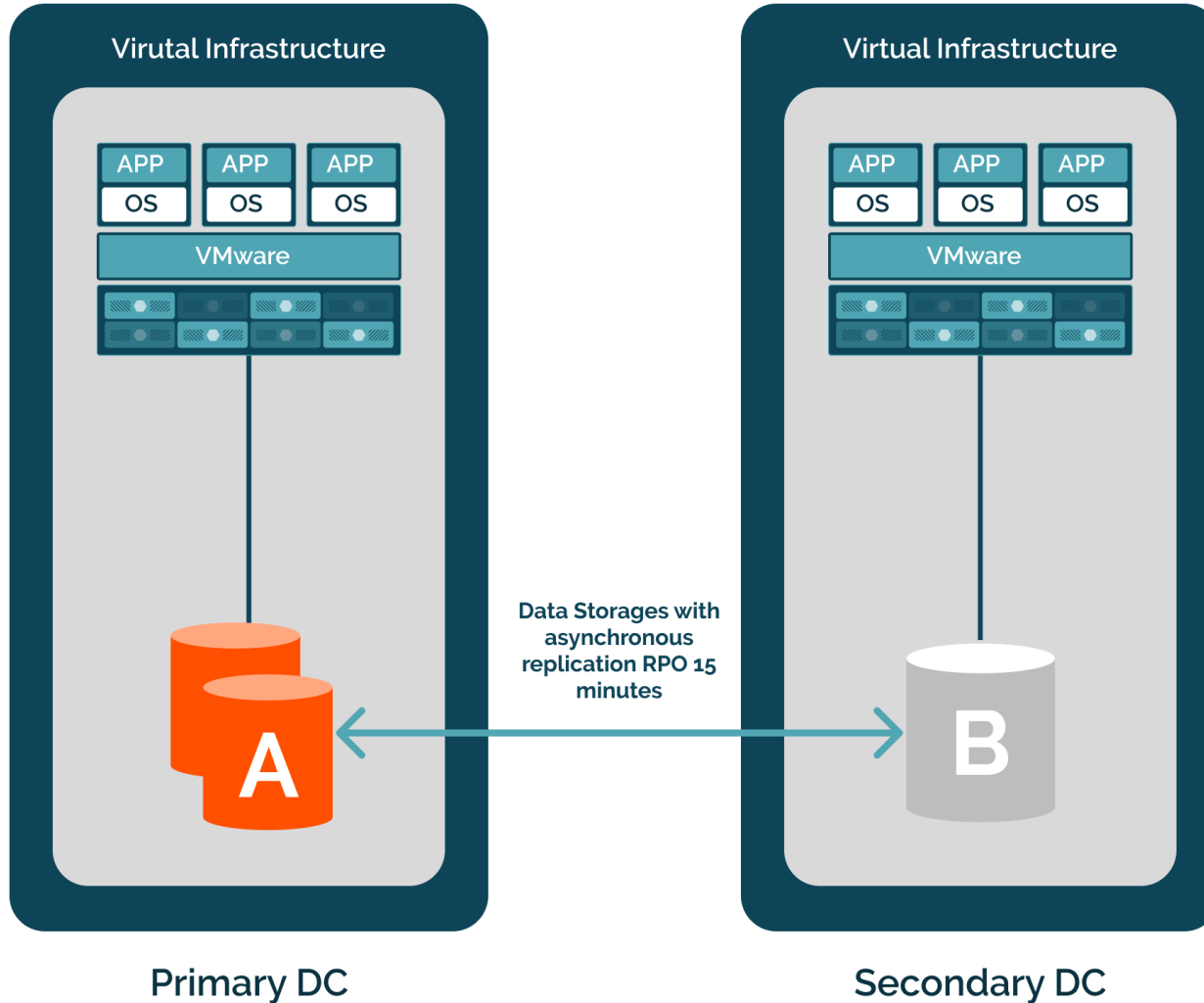
Option B: Redesign infrastructure with modern technology to achieve:

Disaster Avoidance: Zero RTO/RPO with ActiveCluster, automatic failover

Cloud Readiness: Seamless transition between on-prem and cloud workloads

Secure Data Protection: Rapid recovery in case of cyberattacks

AS-IS Local Virtual Infrastructure in 2022



Two physically separate data centers:

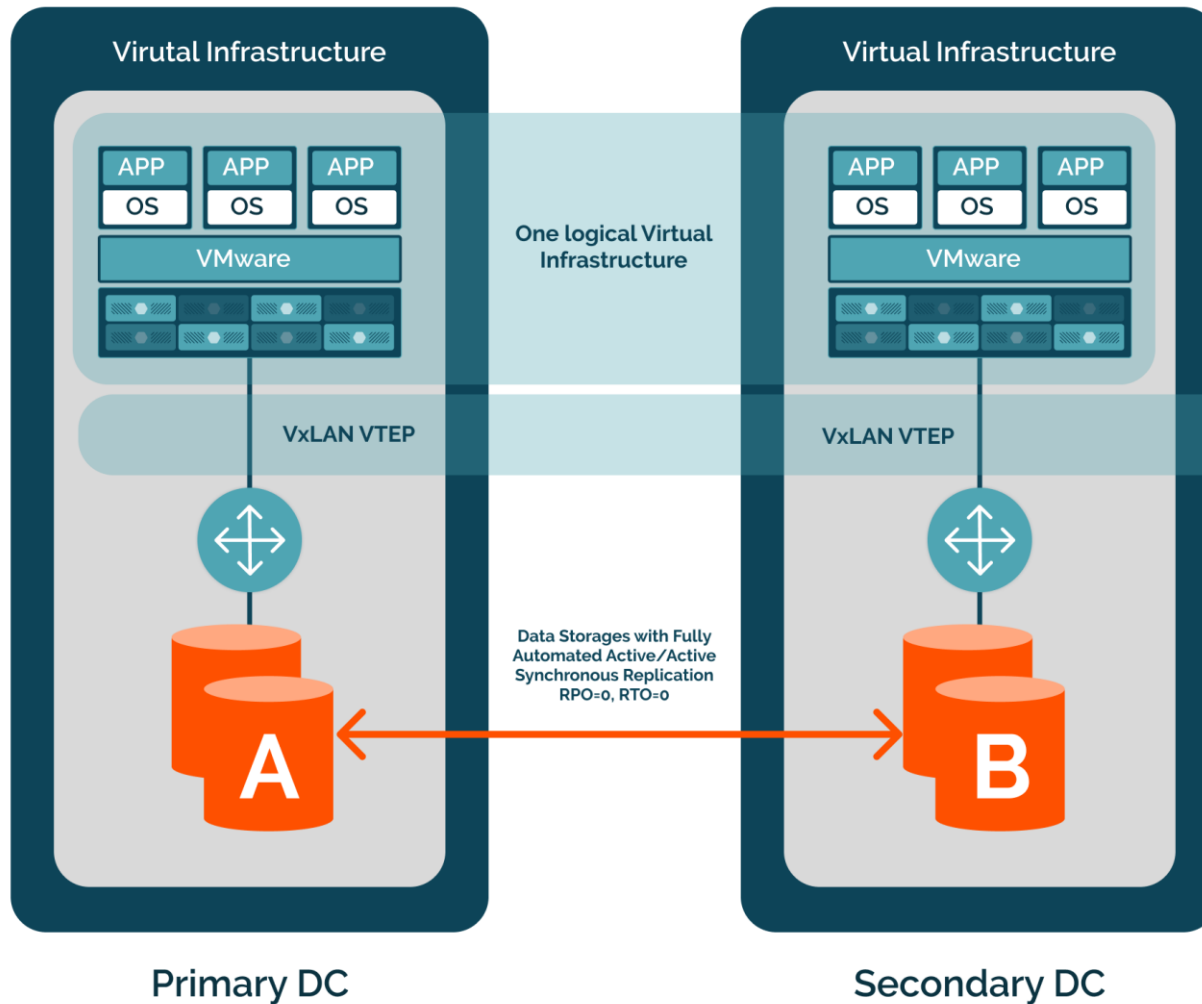
- Asynchronous storage replication between sites
 - **RPO** (Recovery Point Objective): 15 minutes
 - **RTO** (Recovery Time Objective): 6 hours (manual effort required)
 - Only **BCA** (mission-critical) solutions are replicated
 - Non-BCA workloads are recovered from backup, taking multiple days
- High risk of data loss during planned migrations or failover events
- Virtual infrastructure is **not cloud-ready** — lacks flexibility and scalability

*RPO: Maximum tolerable period of data loss

**RTO: Maximum acceptable downtime duration

***BCA: Business Critical Activity

TO-BE Local Virtual Infrastructure



- Two data centers remain, but act as **one logical data center**
- **Synchronous storage replication** ensures real-time data availability across both sites
 - RPO is 0 because of two online copies of data – concept of Disaster avoidance rather than Disaster recovery. Virtual machines will be active in both data centers, and if one data center fails, their replicated copy will be activated automatically.
 - In case of a disaster recovery situation, RTO will be 0 and will be automatic.
- **All workloads replicated** – not just BCA
- **No data loss risk** during site migration or failure
- **Backup solution with full awareness of ActiveCluster topology**
- **Cloud-ready architecture:**
 - VxLAN-based networking enables seamless VM communication across DC and cloud
 - No user-visible difference whether workloads run locally or in the cloud

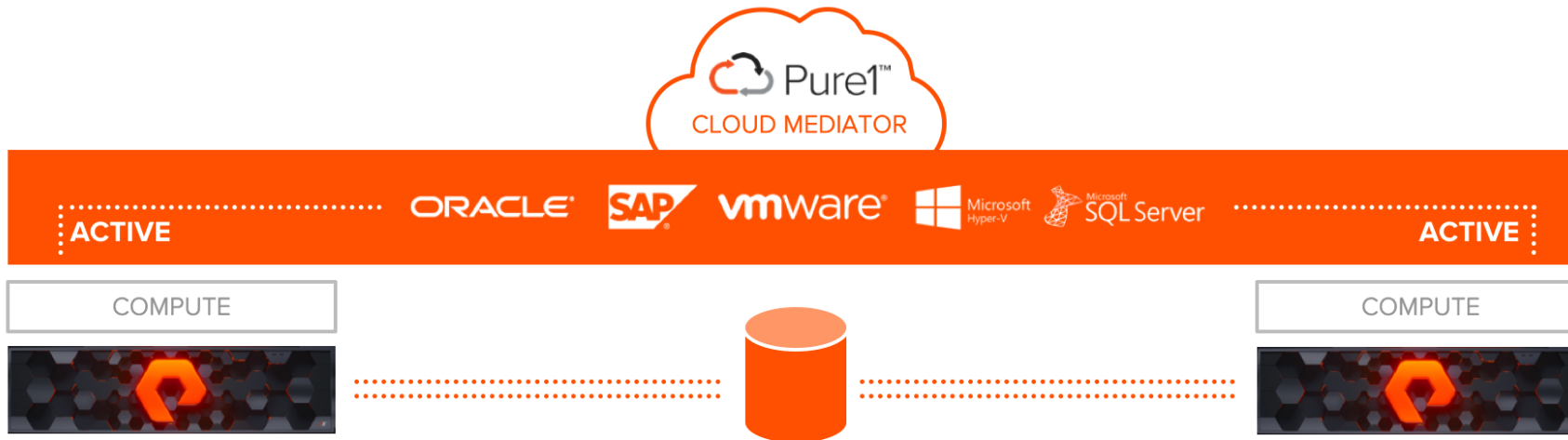
DISASTER AVOIDANCE CONCEPT

Approach to Disaster Avoidance Concept

Active-Active Metro Cluster architecture

- VMware Metro Cluster with Pure Storage ActiveCluster
- Network stretching via VXLAN
- Backup with full awareness of ActiveCluster topology

Purity **FA** ActiveCluster



Multi-Site Active / Active

Zero RPO, Zero RTO, Zero \$€¥£, Zero Additional HW

vmware®
by Broadcom

 **PURESTORAGE®**

 **Commvault®**

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Why vmware® ?

by Broadcom

Recognized by Gartner as a leader in virtualization platforms (Magic Quadrant for Virtualization – decommissioned in 2017, because of market maturity)

Virtualization Resilience at the Core:

It delivers integrated high availability at the virtualization layer, enabling true Active-Active vSphere infrastructure across two sites.

Stretch Cluster design:

Shared compute, network, and storage across both data centers
Unified resource pool — VMs can live migrate (vMotion) between sites

Automated, Zero-Downtime Failover:

Built-in vSphere HA and DRS provide fully automated site failover—no manual intervention needed, no service disruption.

Seamless Networking:

VXLAN integration ensures uninterrupted VM connectivity between sites and cloud environments.

No downtime during planned migrations or failure scenarios
Ideal for mission-critical workloads requiring 24/7 availability



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Why PURESTORAGE® ?

Gartner MQ Leader recognized for both vision and execution.

NVMe-Native Architecture:

Built exclusively with NVMe (no SATA/SAS legacy)
High performance and ultra-low latency for business-critical workloads

ActiveCluster:

Synchronous replication
Symmetric active-active design
True zero RPO and RTO with automated failover
Simultaneous I/O from both sites

SafeMode Protection:

Immutable snapshots for ransomware recovery
Snapshot retention is enforced even against admin-level deletion



Why Commvault®?

Gartner MQ Leader in Enterprise Backup and Recovery Software Solutions for over a decade

Deep integration with Pure Storage:

Snapshot management and backup via native Pure Storage APIs
Full awareness of ActiveCluster topology

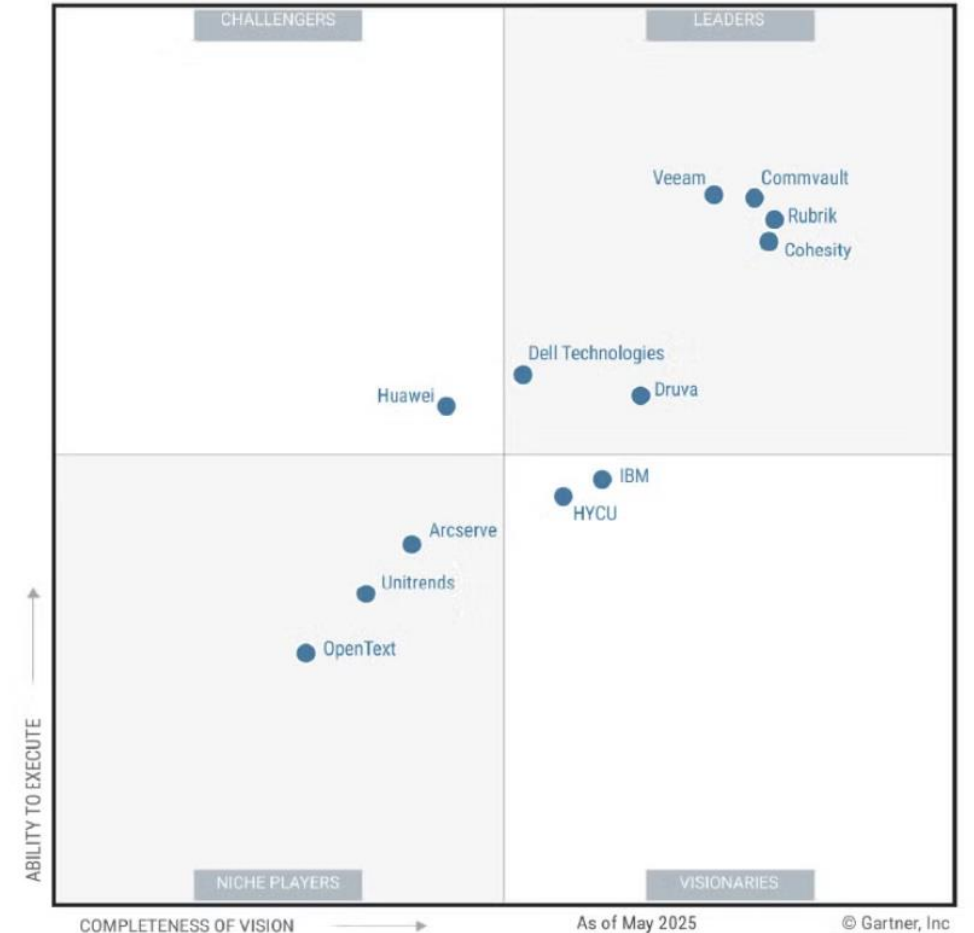
Seamless integration with VMware:

vSphere-native backup & recovery
Agentless VM protection
Full support for vCenter, vSAN, and vSphere tagging

Centralized policy-driven protection across hybrid environments

Supports ransomware recovery strategies with air-gapped and immutable backup options

Designed for compliance-driven environments like financial institutions

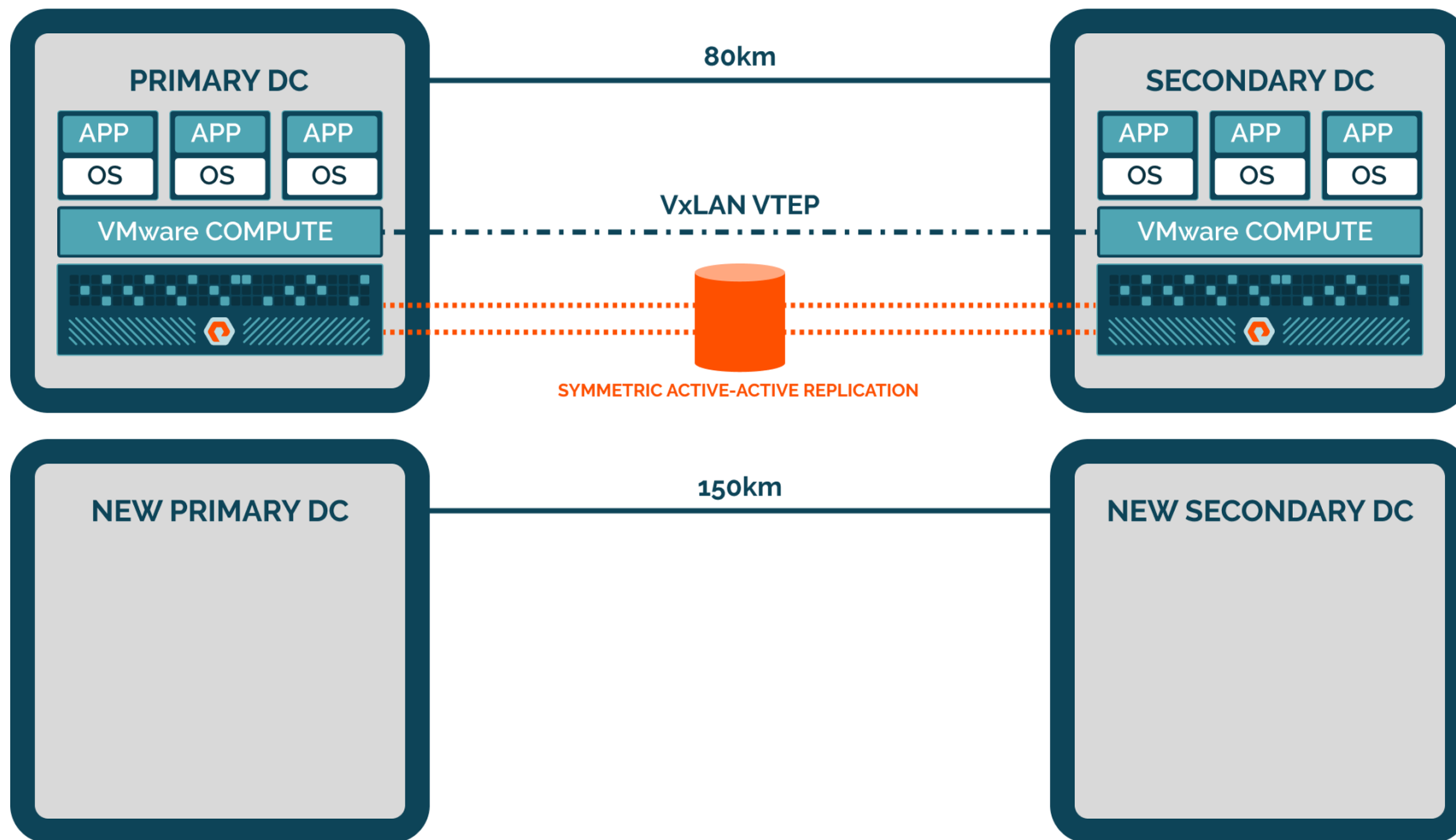


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How



Migrated to New Active-Active Data Centers with Zero Downtime



2023 Implemented Disaster avoidance Active-Active Metro Cluster architecture

- VMware Metro Cluster with Pure Storage ActiveCluster
- Network stretching via VXLAN

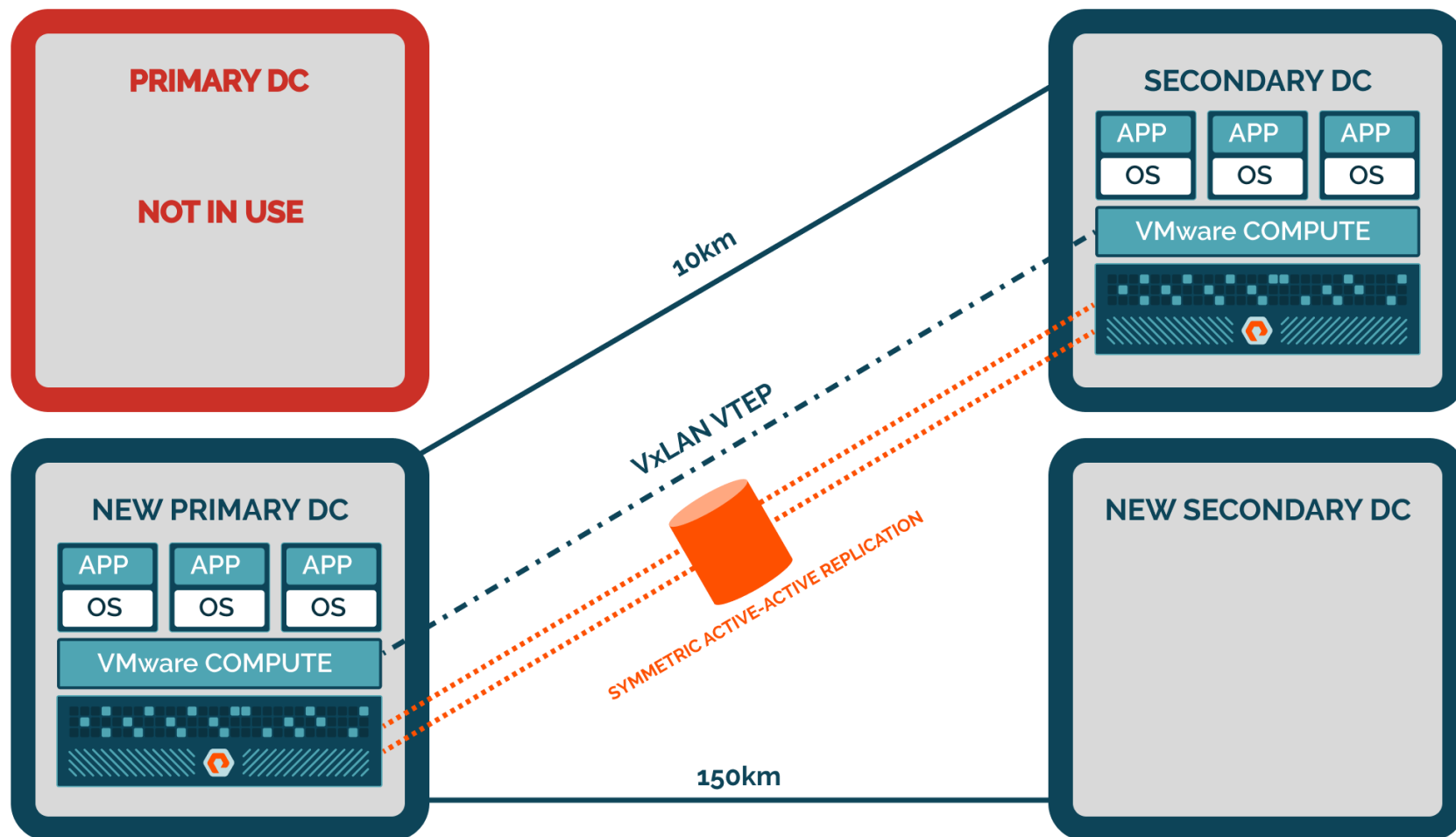
2025 Data center migration

- Primary DC to NEW Primary DC
- Secondary DC to New Secondary DC

How



Migrated to New Active-Active Data Centers with Zero Downtime



Migration – Phase 1 (June 2025)

Objective: Decommission the old Primary DC (Novi Sad) and bring up the new Primary DC (Belgrade)

Step-by-step process:

- **Migrate all VMs** from the Primary DC Novi Sad to the existing Secondary DC in Belgrade
- Operate for two weeks from Secondary DC Belgrade without interruption
- Physically relocate equipment to the new Primary DC Belgrade (lift and shift)
- Decommission the Novi Sad data center

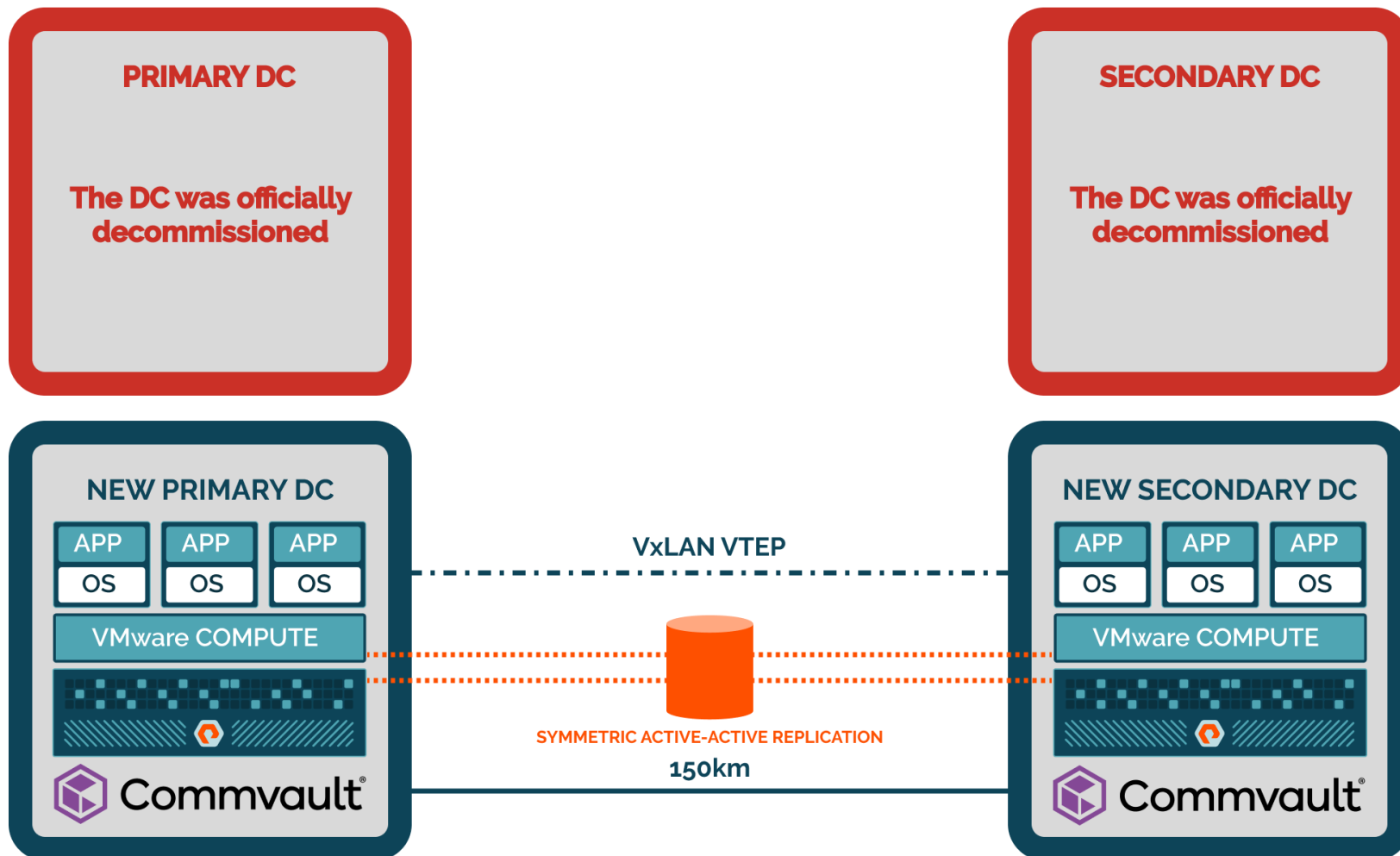


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Migrated to New Active-Active Data Centers with Zero Downtime



Migration – Phase 2 (July 2025)

Objective: Decommission the old Secondary DC (Belgrade) and bring up the new Secondary DC (Kragujevac)

Step-by-step process (same as phase 1):

- Migrate all VMs from the Secondary DC Belgrade to the NEW Primary DC Belgrade
- Operate for one week from NEW Primary DC Belgrade without interruption
- Physically relocate equipment to the new Secondary DC Kragujevac (shift and lift)
- Decommission the old Secondary DC Belgrade
- Change legacy backup solution with full awareness of ActiveCluster topology



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Experience – In Their Words?



Zoran Gavranic • 1st
Head of IT Infrastructure at Erste Banka Srbija
2mo • Edited •

Hey darling, what should we do this weekend?
Well... how about migrating our local primary data center from Novi Sad to the new data center in Belgrade?
Trust me — it's super fun! Okay, maybe not as fun as Darko Dražović's posts, but still pretty awesome! 🤗🎸

Joke aside, after months of detailed planning, careful preparation, equipment installation, and thorough testing, we've successfully completed the migration of our primary data center to its new location. Before the physical move, we activated all services from the primary site at the disaster recovery (DR) location. For two full weeks, everything ran smoothly — with zero impact on functionality or performance — ensuring seamless continuity and reducing risk during the migration. This project is a key part of our broader data center consolidation strategy. With one more migration ahead, we're moving steadily toward completing a major infrastructure milestone.

Big thanks to our amazing internal team for their professionalism, commitment, and teamwork — and a special shout-out to our invaluable partners: [Saga Beograd](#), [Braineering IT Solutions](#), and [Mainstream](#). Your expertise and support made all the difference. We truly couldn't have done this without you!
[#DataCenterMigration](#) [#ITInfrastructure](#) [#DisasterRecovery](#) [#DigitalTrar](#)



Zoran Gavranic • 1st
Head of IT Infrastructure at Erste Banka Srbija
1w •

Since relocating a data center is so much fun, we thought — why not do it again? And what better way to spend a few days than in lovely Kragujevac, right? 😊
After successfully relocating our primary data center a few weeks ago, we've now completed the migration of our Disaster Recovery (DR) site as well. This marks the final step in our physical data center consolidation initiative. In less than a year, together with our fantastic vendors ([Saga Beograd](#), [Braineering IT Solutions](#), [Mainstream](#)), we've managed to relocate three data centers — a complex and demanding project that required precision, dedication, and great teamwork. While I usually avoid singling anyone out — this time I have to make an exception. A huge shoutout to [Aleksandar Novakovic](#), whose commitment and effort were instrumental in making sure this challenging task was executed flawlessly. 🙌🙌
Massive thanks to everyone involved — it's been a great team effort from start to finish! 💪
[#datacenter](#) [#migration](#) [#DR](#) [#infrastructure](#) [#teamwork](#) [#ITtransformation](#) [#pr](#)



Key Takeaways

With the right **disaster avoidance architecture**, downtime is no longer a risk — it's an avoidable event.

Choosing the right **technology stack** and trusted **vendors** makes even complex data center migrations seamless.

You can **migrate, relocate, and decommission** data centers without disrupting business operations.

Active-Active infrastructure delivers continuous availability, not just recovery. Regulatory compliance, cyber resilience, and cloud readiness can all be achieved in parallel.

Resilience Redefined – Create your path to Disaster Avoidance with us.

Thank you!

Check out more about our services:
<https://braineering.com/services>

Contact us:

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