



Ixia Network Emulation: AXA Technologies' Proof of Concept Succeeds

Summary

Ranked #15 on Fortune's Global 500 list, the AXA Group is one of the world's largest insurance companies with more than \$1 trillion in assets under its management. AXA's operations are dispersed geographically with major operations in Europe, North America, and Asia. AXA Technologies, the technology provider for the AXA group of companies, launched proof of concept (POC) testing to validate that its proposed data center storage and recovery plan would meet the company's changing business requirements.

Client Profile

As the AXA Group grew, so too did its global data requirements. Prompted by the business need to conduct real-time data backups and recovery versus relying upon tape backups, AXA Technologies initiated a proof of concept study to verify that real-time backup and recovery between geographically disparate data centers would prove successful. With limited time to roll out the POC, the team needed to identify a means of fully testing the plan without having to invest time and money in using actual network connections between data centers.

Project Initiative

To streamline data storage and recovery processes, the AXA team's goal was to consolidate operations into four regional data centers worldwide. In addition to running the applications that handle the core business, these data centers would also function as remote disaster recovery sites.

Before commencing this undertaking, AXA needed to validate that its business requirements would be met, and to test new technologies to be deployed as part of the solution. The assessment included:

- Testing the results of real-time I/O operations including backups and recovery to a new data center 600km away from the primary data center
- Assessing both synchronous and asynchronous data backup processes
- Verifying that the service provider's service level promise for performance between data centers was sufficient

The Solution

Working closely with Ixia Professional Services experts, the AXA team detailed the configuration of its various data centers and designed a test plan that would allow application performance between data centers to be measured under multiple network condition profiles. The POC setup, shown below, utilized Hitachi Universal Replicators (HURs), two routers, and two Ethernet switches.

The test process was as follows:

1. A virtual environment that would precisely emulate the conditions of the new network was created.
2. Pre-move baseline performance levels were established.
3. Projected latency and impairments were injected into the virtual network environment.

Company

The AXA Group

Key Issues

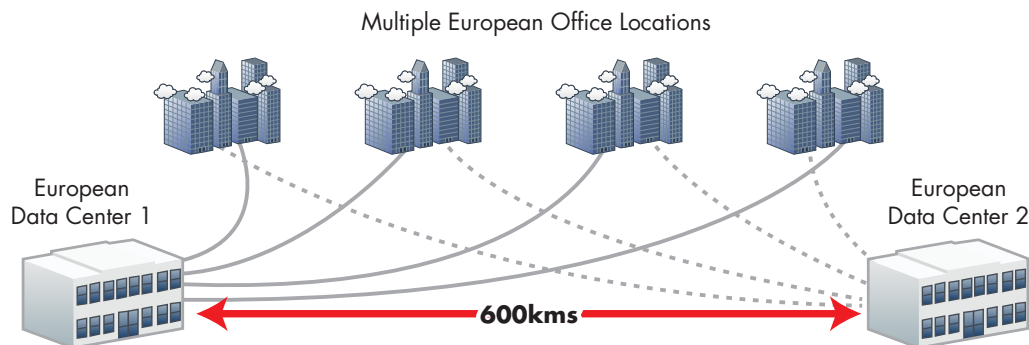
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Results

In record time the teams were able to confirm that the deployment of the new data center and backup methodology could meet AXA business requirements

"The Ixia Team's expertise and technology were a key part of the success of our project. By implementing Ixia's recommendations and leveraging the full feature set of the device, we were able to validate the solution on multiple levels. We're now going to deploy our data center consolidations worldwide with the assurance that we'll meet all of the business requirements."

— Hugo Espinoza, AXA Technologies



Data Backup and Recovery Validation

The AXA team implemented the following as a baseline network profile for testing purposes:

- 600 Kilometer distance
- 12 Millisecond latency in each direction
- 500 Mbps bandwidth
- 64KB data drop threshold

Next the following impairments/scenarios were tested to represent real-world network conditions/possibilities:

- Link failure
- Packet drops/lost
- Cyclic Redundancy Check (CRC) corruption
- Frame duplication
- Simulation test 2, 3, and 4 in parallel

For each scenario, AXA observed and documented the HUR behavior, including verification of its ability to recover from the error condition, and ensured that data had been copied to the remote site.

Service Level Validation

In addition to the test strategy for the proof of concept, AXA Technologies wanted to ensure that the service level for

latency assured by its carrier would not impact the system. They checked with the carrier, France Telecom, on the amount of latency that was “guaranteed” between the two locations 600km apart. The service guarantee was only 22ms! Therefore, the network engineers increased the delay setting on the Ixia Network Emulator from 12ms up to 30ms, to cover 22ms from the carrier plus 8ms from their own switches and routers.

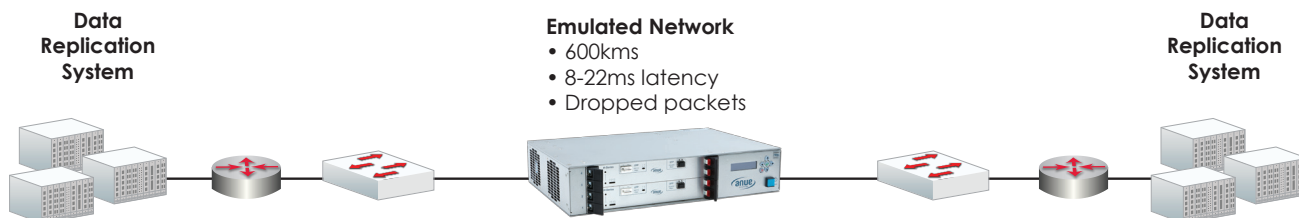
In their testing, they gradually upped the delay amount to 40ms in order to safely validate that its backup storage solution would perform acceptably under the service level guarantee.

Customer Value

In record time the teams were able to confirm that the deployment of the new data center and backup methodology could meet AXA business requirements, including:

- Acceptable transaction response times
- Successful recovery from errors
- Data integrity

The successful testing with Ixia network emulation of the new data center connectivity and backup meant that AXA's worldwide project could move forward with the assurance that the technologies and architecture selected will perform as required.



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