Drive business advantage from cloud to edge
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Transformation is shifting to the edge
Transformation is shifting to the edge

To get more business value from data, organizations need to analyze it near where it’s produced and consumed – at the edges of the organization’s infrastructure.

By 2023, 50% of enterprise data will be generated outside of the core

Gartner 2021 Strategic Roadmap for Edge Computing November 3, 2020

By 2025, 75% of data will be processed outside the traditional data center or cloud.

How to invest in edge computing, Nasdaq, November 2020
The challenges of multiple IT infrastructures from cloud to edge
Computing power sits in the data center, but data is generated and consumed at the edge.

This creates four main challenges:

- **Connectivity**: Bandwidth and latency constraints make processing edge-generated data in the data center too slow for real-time applications.
- **Applications management**: Utilizing multiple clouds and edge devices makes application management more complex.
- **Security**: Industrial IoT and edge devices can be soft targets for cybersecurity attacks.
- **Resource management**: Managing the whole environment from core to cloud to edge can be a burden on resources.
How cloud to edge infrastructure solves your challenges

Connectivity
Sidestep bandwidth and latency issues

Application management
Multi-cloud and edge can increase application complexity

Ensure security as you embrace edge
The proliferation of devices at the edge can increase security risk

Focus your resources on adding value
Moving to the edge can increase your IT operations & management burden
Connectivity issues linked to latency & bandwidth
Sidestep bandwidth and latency issues

If latency is stopping you getting value from devices and services at the edge:

• Don’t increase your WAN bandwidth
• Or try to use a closer data centre

Put processing power right where it’s needed at the edge

• A unified, end-to-end infrastructure with cloud workloads deployed on compact and secure Google-Certified Atos BullSequana Edge servers
• Seamless architecture from data center to cloud to edge delivers high resilience, scalability, performance, and visibility
• You can run video and IoT analysis in real time using Artificial Intelligence (AI) inference made possible by two Nvidia Tesla 4 GPUs and a powerful 16 core Intel® Xeon® D processor
Simplify application management
Simplify application management

Multi-cloud and edge can increase application complexity:
- Different versions for each type of infrastructure
- Slows down development
- Complicates management

Adopt a container-based architecture that supports multi-cloud and edge
- Google Anthos Bare Metal is a multi-cloud management solution enables seamless workload deployment and orchestration in Google Cloud, AWS, MS Azure – and out to the edge
- Run legacy and cloud-native apps at the edge but manage them with ease centrally
- Run real time analytics workloads at the branch get insight into sales, inventory, and customer behavior
- Create and deploy one application everywhere to speed time to value
Ensure security as you embrace edge
The proliferation of devices at the edge can increase security risk:

- Increased costs and complexity
- Reliant on embedded security
- Multiple, disjointed security measures

A pre-configured, end-to-end security solution in which all components are fully integrated

- Workloads are encrypted and security policy is enforced from data center to cloud to edge.
- Manage patching across the entire ecosystem centrally
- Keep devices, applications, and data secure and up to date
- Edge servers are secured physically and logically, and data is protected in motion and at rest.
Focus your resources on adding value
Focus your resources on adding value

Moving to the edge can increase your IT operations & management burden:
- Tying up your team in low value work
- Decelerating your digital transformation
- High maintenance costs

Let Atos manage your entire infrastructure for you
- We’ll take care of deployment, monitoring and maintenance from data center to cloud to edge.
- Benefit from our automated platforms, processes and economies of scale so your people can concentrate on adding business value
- Advancing your organization’s digital transformation

The expertise services we can deliver to you:

Consulting
- Product ownership, agility discipline, change management

Data Science
- Feature extraction, model development

Data Engineering
- Architecture, ETL, analytics

Experience Design and Delivery
- Journey mapping, visual design, app dev

Scalable Managed Services
- Hybrid (on-prem and cloud) management model

IaaS/PaaS
- Core infrastructure, DevSecOps, CI/CD
Overview of Atos Cloud to Edge offering
Atos enables you to drive the business value you want from your edge.

We simplify application management and deployment, manage edge-to-core-to-cloud infrastructure as one, enforce your security policy everywhere, and run the whole environment for you as a managed service.
## Overview of Atos Cloud to Edge offering

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<th>Simplified applications</th>
<th>Google Anthos Application management platform</th>
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<td>Develop, deploy, and manage legacy and cloud-native applications anywhere</td>
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<th>Harmonized infrastructure</th>
<th>Google Anthos Bare Metal Multi-cloud orchestration</th>
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<td>Manage edge devices, data center, and multiple public clouds – as one</td>
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<th>BullSequana Edge</th>
<th>Powerful AI inference</th>
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<td>BullSequana S series</td>
<td>Exceptional scalability</td>
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<th>Data center</th>
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| Public clouds             | GCP, AWS, Azure |

| Integrated security       | Integrated end-to-end security |

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<th>Managed services</th>
<th>Atos Managed Services People, platforms, processes, automation</th>
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<td>Free-up your talent from infrastructure management</td>
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Trusted partner for your Digital Journey
Edge to Cloud data flow
Simplifying modern data pipelines

- **Codeless Real-time** data ingestion, inference & transfer
- Streaming Data Capabilities from **Edge to Multi-Cloud**
- **On-premise** advantages with **Cloud** flexibility

**μEdge swarm**
Wireless gateways (5G, LTE, Wi-Fi, LoRA)
Data collection

**Edge / Fog**
Streaming Data Platform
K8s Compute for Ingestion, AI Inference & Transfer

**Multi-Cloud**
Storage & Analysis

- Fully managed private cloud storage
  1.5ms away from any hyperscalers
- No core-cloud data transfer cost
- No cloud-ingress cost

On-Prem Data Lakes

AI / ML
Model Building

Analytics and Dashboards

Atos

Trusted partner for your Digital Journey
Our offering

BullSequana Edge

• Hyperconverged server
• Gives you powerful AI inference and real-time analytics independently of the data center
• Run a wide range of data analytics and computer vision applications, keeping data safe and secure
• Two T4 Nvidia GPUs and Intel® Xeon® D 2187NT CPU for real-time video data processing
• Google-certified – Anthos on Bare Metal Google Certification (Anthos Ready) giving you full access to Google’s support, services, and updates
• BullSequana Edge named as an Edge AI Innovator 2020 by Gartner
Our offering

**BullSequana S series**

- Google-certified – Anthos on Bare Metal Google Certification (Anthos Ready) giving you full access to Google’s support, services, and updates
- A powerful hyperconverged device designed for enterprise AI workloads
- Combine business computing and analytics in a single server architecture
- Accelerate data-intensive streamed or analytics workloads
- Exceptionally scalable, offering 2 to 32 Intel® Xeon® processors in a single server
- 20% lower cost in large cluster virtualization
- 30% better price-to-performance for small-to-medium SAP Hana deployments
Our offering

Managed Service is at the core of Atos Edge computing
Simplifying adoption so you can focus on value

Customer Challenges

• Distributed computing
• Security and accessibility
• Control and management
• Scale
• Resilience
• Capital

Atos Edge Managed Services (OPEX)

• Setup
• Service Management
• Platform Management
• Connectivity Management
• Device Management
• Data Management
• Application Technical Management
• Security Management
• Compliance Management
• Cybersecurity
• Inventory Management

Business Benefit

Solution is a plug-n-play service, customer focuses on business, not technology

IT Benefits

Fully managed Edge HW and SW from the cloud with local IT services support
Use cases
Cloud to edge in action: Predictive Maintenance on roller-coasters

**Far edge**
25 millions data points every second

**Edge**
Streaming Data Platform

**Outcomes-as-a-Service**
10% increase ride availability
Challenge
Retail chains rely on point of sale (POS) systems to do business. For security reasons, those POS systems often act like individual datacenters to ensure sensitive customer information is contained and protected. The larger the chain, the more locations they have—and the more individual datacenters.

In order to update each of these POS terminals, the chain could tackle each datacenter individually, which is complex to coordinate and very costly.

Solution
Using BullSequana Edge servers in each location & Google Anthos platform, retailers can push out updates to all its stores from a single location. This ensures consistency of deployment for every location while also providing visibility of every cluster in every point of sale. In addition, the individual POS BullSequana servers can run independently without network access be disrupted.

Benefit
Retailers can easily modernize your existing applications, build new ones, and run them flexibly and securely with the Anthos hybrid and multi-cloud platform.
About
• Moro is one of the largest cloud providers in the UAE
• Multi cloud provider with Tier-3 datacenter in the region.

Use Case
• Launch of Google Anthos Cloud services in partnership with Google and Atos
• First of its kind fully solar powered data center in UAE
• Go to market around Anthos as a service, running on Baremetal and Vmware offerings to end-users

Solution
8xBullSequana S200 servers for Phase-1 along with Atos Cloud services

Our Added value
• Google Fellows – Limited Google expertise available globally. There are only 40 official google cloud fellows worldwide and we have 3 working in Atos.
• BullSequana hardware is certified to run for Anthos Baremetal as well as on Vmware. Helps the CSP to offer Baremetal as Vmware based solution to its end-user
• For Anthos stack, we can provide a factory integrated rack of servers-networks-storage completely certified to run on Anthos
• Our security solutions around Key Management System and IAM could play an additional value add for the CSP while onboarding new customers.
Retailers want to process payments, run video surveillance, and make customer-specific offers locally in real time.

Manufacturers need to process industrial Internet of Things (IoT) data instantly to optimize robotic production lines and maximize quality.

Telcos want to develop offerings that incorporate edge processing to empower smart cities and autonomous vehicles.

Energy and utilities need to monitor and manage remote infrastructure like pipelines and sub-stations and respond instantly to anomalies.
Governments and authorities need edge for their smart cities programs to reduce traffic congestion and emissions, save energy and improve safety.

Transportation businesses are using edge in vehicle tracking, journey planning, fare collection, autonomous vehicles and video security.

Hospitality hotels and restaurants are using edge to improve data security and to optimize operations in real time.

Health organizations use edge to monitor equipment location, optimizing asset utilization and improving patient care.

Other examples of use cases
What’s different about Atos?
What’s different about Atos?

• BullSequana Edge has received Anthos on Bare Metal Google Certification (Anthos Ready) giving you full access to Google’s support, services, and updates.

• Atos is a Google Cloud Certified Partner with over 1,000 technical certifications worldwide, and as a leading Google Cloud Premier Partner, Atos now has 10 Cloud Partner Specializations.

• Proven expertise in delivering complete, pre-configured, end-to-end solutions spanning data center, edge, cloud, networks, security, application management, and managed services

• Leading platform technologies for on-premises and edge – BullSequana S and BullSequana Edge, certified to run Anthos Bare Metal and on Vmware

• Offering a complete and pre-configured Google Anthos stack with a factory integrated rack of servers-networks-storage, all completely certified to run Anthos

• Key Management System and IAM security for complete data center to edge holistic security solutions

• Scale and reach in enabling customers’ modernization and digital transformation – recognized global leader in digital transformation with 110,000 employees in 73 countries

• Leading security and cybersecurity capabilities and services
Other links & Contact details
Thank you

Your contact
mehdi.kasmi@atos.net

Other links
https://atos.net/en/solutions/bullsequana-edge
https://atos.net/en/solutions/enterprise-servers/bullsequana-s
https://cloud.google.com/anthos
https://cloud.google.com/anthos/clusters/docs/bare-metal/1.6/concepts/about-bare-metal
https://atos.net/en/solutions
https://cloud.google.com/anthos/docs/resources/partner-platforms?hl=it
Drive business advantage from cloud to edge.