

# Azure Stack: intelligence and data at the Edge of the Cloud



By Mark Nouris

You can call the Tech industry anything you want except “boring”. Each wave of innovation that comes crashing in - opening up exciting new opportunities - immediately sets off a lively debate between different camps with different visions of what it means and where it will go.

Case in point: the polemical fireworks sparked by the arrival of the Cloud. With some oversimplification, we might say it's been a debate between “public cloud purists”, pundits pushing everyone to go “all in”, and “hybrid pragmatists”, who bought into the paradigm but didn't believe that big public clouds were the answer to everything.

As things have played out, the hyperscales have indeed grown fast, but CIOs have continued to invest in industrialized private clouds, on premises or hosted by a partner. In the meantime, the market has been changing, first with cloud agnostic technologies and now a new trend called “edge computing”.

In this context, Microsoft launched Azure Stack, a unique hybrid solution which - with the help of select partners including Atos - extends Azure into the local data center. Azure Stack is an important opportunity for many customers, as I'll explain in this post, but first let's look at how the market has changed.

## Evolution of the Cloud market

While the clash between “public cloud purists” and “hybrid pragmatists” has provided lots of (sometimes thought provoking) entertainment, the arguments have become more nuanced as the market has evolved.

Open source collaboration on “cloud agnostic” technologies has already changed the terms of the debate. Docker has won over developers worldwide, with Kubernetes becoming the leading container execution framework. Many global companies have standardized on Cloud Foundry, a multi-cloud application platform supported by major industry players including Atos.

Now, edge computing may be the game changer. According to analyst Janakiram MSV, writing in [Forbes magazine](#):

“Cloud computing is going through a fundamental shift in which the traditional model of accessing highly centralized resources is replaced by a distributed, decentralized architecture. This new paradigm called edge computing brings the core building blocks of cloud - compute, storage and networking - closer to the consumers.”

The biggest issue driving edge computing is network latency.

IoT is the obvious use case - everything from self-driving cars to smart machines for manufacturing. Waiting the 100 milliseconds or so it usually takes for information to travel each way to and from distant data centers simply isn't acceptable. A public cloud outage would be even worse!

Other use cases with low latency tolerance include things like streaming augmented reality experiences to smartphones as well as data driven artificial intelligence.

The great advantage of edge computing is to minimize latency, by bringing public cloud capabilities to the edge.

A second big issue driving edge computing, at least outside the United States, is “data sovereignty”.

In many countries there are laws or regulations requiring data storage within national borders. Sometimes data can't even be hosted in local facilities of foreign providers, due to US claims of extraterritorial jurisdiction as in the Dublin emails case opposing Microsoft and the US government.

For non American clients, storing sensitive data locally - under their sole control - ensures that it is subject only to the national jurisdiction of their own countries.

So what about Azure Stack in this evolving market?

[Julia White](#), Microsoft's corporate VP for Azure marketing, recently said that she sees Azure Stack as a “super-powerful” version of an edge system.

Let's take a closer look.

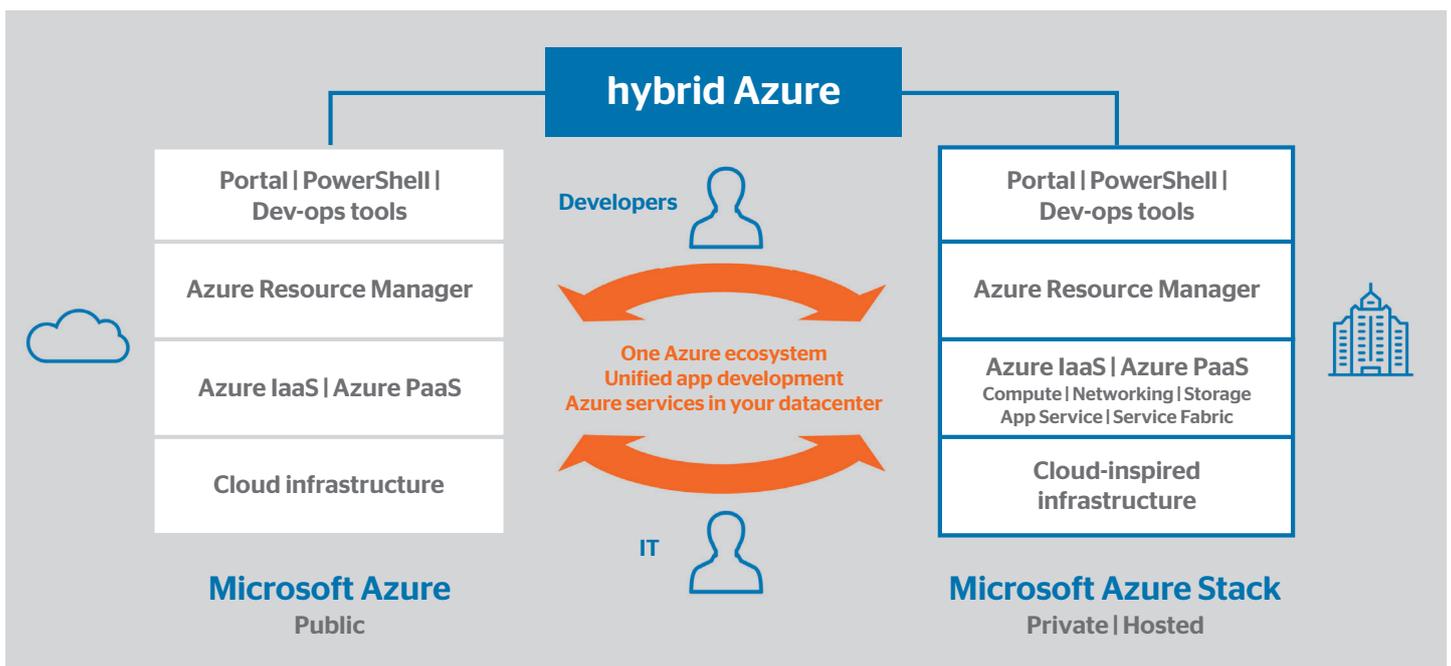
## Azure Stack: an “extension” of Azure into the local data center

With general availability in September 2017, Microsoft can now propose - with qualified partners - a unique hybrid solution that in effect extends Azure into the local data center or other client locations.

In parallel, Amazon Web Service (AWS) and VMware also announced a hybrid cloud, in a slightly different model responding to different customer situations and needs. Under the AWS/VMware solution, a VMware private cloud that needs extreme scalability or global reach can “reach up” to run VMware software and applications on AWS bare metal servers, as an extension of a private domain onto the public cloud.

With Azure Stack, Microsoft “extends” Azure “down” into the data center providing Azure services locally, including advanced capabilities such as serverless computing (Azure Functions), distributed microservices architectures (Azure Service Fabric), and container management (Azure Container Service) in on-premises environments.

Azure Stack was designed for total consistency with Azure. As illustrated in the graphic, the upper layers are identical while the bottom layer is adapted to different physical infrastructures.



This consistent design translates into business value. Clients can rapidly develop innovative new applications (or refresh older ones) in the same way, whether the apps run on Azure or Azure Stack. The Azure Resource Manager enables the same application model, self-service portal, and APIs. Clients also have access to software from the Azure Marketplace ecosystem.

In addition, clients can adopt common operational practices across Azure and Azure Stack, deploying and operating services using the same administrative experiences and tools with similar look and feel.

By the way, Azure Stack services are billed on a per usage basis...just like Azure.

It just goes to show, as Microsoft's leading engineers like to say: “Cloud is not a location; it's a state of mind.”

## Microsoft qualified platforms and support

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Azure Stack is delivered as production integrated systems with pre-integrated software and hardware, in collaboration with selected partners. Each provides an offering that meets Microsoft's requirements for the platform, because a clearly defined hardware specification is indispensable for building the Stack as an extension of the Azure public cloud.

In addition, Microsoft has these platforms in its labs for testing new software and updates before release, significantly reducing the risk of updates causing issues when applied.

Atos has worked closely with Dell/EMC to provide a Microsoft qualified hyperconverged infrastructure platform, which has many advantages in terms of performance, cost and ease of use.

Delivery and support is entirely coordinated by Atos, calling upon our partners Dell/EMC and Microsoft as needed. Atos is the single point of contact, ensuring an integrated and consistent customer experience.

## Continuing the conversation

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Azure Stack is a remarkable achievement - putting intelligence and data at the edge of the cloud, in the location best suited to the client's needs for business innovation and for compliance.

My next post in this conversation about the Stack will focus on security, a critical domain where Microsoft and Atos have a very strong joint value proposition for clients.



### About Mark Nouris

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Mark Nouris is currently the Global head of the Atos Canopy Orchestrated hybrid cloud business. Before this, he headed up the Infrastructure, Data Management's Manufacturing, Retail and Transport sectors in Atos for the Benelux & The Nordics. At the same time, he successfully managed the Philips Account from June 2013 until the end of 2016. He joined Atos in this capacity in May 2011, coming from a ten year career at HP where he held a multitude of leadership roles in Sales, Pre Sales and Business management roles. His last role was the Global Head of the Managed Services Business of HP Services. Prior to that he held several IT roles in the Healthcare and Oil & Gas industry. Mark graduated in electronic engineering and Business IT.

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