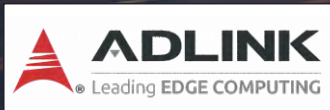


# Life on the Edge Makes IoT Simple

ADLINK's Edge IoT solutions includes  
prepackaged leading edge hardware,  
real-time data streaming software  
and micro-services

## Featured Edge IoT & Cloud Players

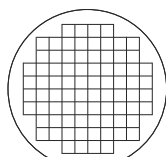


# In this Edition:

## Cover Story

In this Edition we present 12 major players in the Edge IoT & Cloud in those market segments and several partners.

- Edge IoT that allows your data to move freely: ADLINK
- AWS IoT services for industrial, consumer, and commercial solutions.
- ARM IoT Products. Technology that Removes the Complexities of IoT.
- DELL: Edge analytics enables insights that keep you ahead.
- e2mos is all about NEW BUSINESS DISCOVERY.



# e2mos

- Google Cloud - Introducing Anthos: An entirely new platform for managing applications in today's multi-cloud world.
- IBM Closes Landmark Acquisition of Red Hat for \$34 Billion; Defines Open, Hybrid Cloud Future.
- DUG Selects Intel to Build Its Latest Cloud-Based Supercomputer Tailored for Oil and Gas Exploration.
- Microsoft Azure: What is cloud computing?
- Verizon is one of the largest communication technology companies in the world.
- Vodafone British Multinational Telecommunications Conglomerate has published its IoT Barometer 2019, a Free download report.
- Vortex Edge: Connect the Unconnected, Stream Anywhere, Control the Edge with Vortex Edge from ADLINK.
- How IoT is Transforming Maintenance for Manufacturers, a sponsored by Dude Solutions.
- ADLINK Technology Accepted into Forbes Technology Council.

Daniel Dierickx  
CEO & co-Founder  
at e2mos  
Acting Chief Editor



Over 3 Decades  
Semiconductors & Computer  
Systems Market Expertise

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# Edge IoT that allows your data to move freely

Edge computing meets IoT to provide real-time data connectivity and extraction solutions so you can make the most of your data, IT OT systems, assets, and things for a real ROI

**Request Demo**



**Modular architecture. Vendor agnostic.  
Open source. IoT Made Simple.**

ADLINK IoT offers a true end-to-end Edge IoT solution that guarantees your data is available in the correct format to who needs it, where it needs to be, precisely when it needs to be there. Here's how it works:

## 1. Connect the Unconnected

Vortex Edge allows OT leaders to connect assets by tapping into native communication protocols easily to generate and capture data from any asset via pre-validated sensors and pre-configured edge devices. No programming necessary.

## 2. Stream Anywhere

Vortex Edge uses peer-to-peer data movement technology to securely move data. Once connected, data can move freely to any cloud, analytic platform, database, or even between devices. Connect once and stream to any person, place, or thing.

## 3. Control the Edge

Vortex Edge bridges the IT and OT divide with a set of integrated services for end-point monitoring, device management, visualization, analytics, and security which creates intelligent devices that can react to change and the world around them.

**Learn More**

## Our Products

### Vortex Edge®

The Edge IoT solution that includes a unique mix of edge hardware, real-time data connectivity software, and services to get your data moving in the correct format to who needs it, where it needs to be, precisely when it needs to be there.

#### Features:

- Modular architecture
- Vendor neutral integrations
- Scalable
- Based on open standards

### Vortex DDS

Secure and interoperable real-time internet-scale data sharing between devices, machines, and people that can be used to support a range of operating systems and programming languages required by a project.

#### Features:

- Real-time data sharing
- Platform, OS & language independent
- Information-centric security model
- End-to-end qualities of service

### Spectra

Software and services targeting Software Defined Radio (SDR) using Software Communications Architecture (SCA) providing commercial-off-the-shelf development tools, infrastructure, and development platforms.

#### Features:

- Supports off target test
- Full radio waveform development
- Autogenerate all SCA 4 component code
- High performance; ultra-low footprint

## IoT is All About Ecosystem

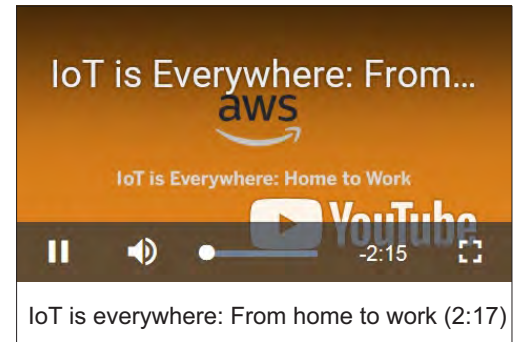
[Solution Partners](#) [Channel Partners](#) [Alliances Partner](#)



# AWS IoT

IoT services for industrial, consumer, and commercial solutions

There are billions of devices in homes, factories, oil wells, hospitals, cars, and thousands of other places. With the proliferation of devices, you increasingly need solutions to connect them, and collect, store, and analyze device data. AWS IoT provides broad and deep functionality, spanning the edge to the cloud, so you can build IoT solutions for virtually any use case across a wide range of devices. Since AWS IoT integrates with AI services, you can make devices smarter, even without Internet connectivity. Built on AWS, which is used by industry-leading customers around the world, AWS IoT can easily scale as your device fleet grows and your business requirements evolve. AWS IoT also offers the most comprehensive security requirements so you can create preventative security policies and respond immediately to potential security issues.



## Why AWS IoT

### Broad and deep

AWS has broad and deep IoT services, from the edge to the cloud. Device software, Amazon FreeRTOS and AWS IoT Greengrass, provides local data collection and analysis. In the cloud, AWS IoT is the only vendor to bring together data management and rich analytics in easy to use services designed specifically for noisy IoT data.

### Multi-layered security

AWS IoT offers services for all layers of security. AWS IoT includes preventative security mechanisms, such as encryption and access control to device data. AWS IoT also offers a service to continuously monitor and audit security configurations. You receive alerts so you can mitigate potential issues, such as pushing a security fix to a device.

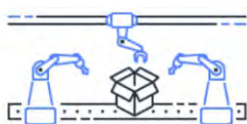
### Superior AI integration

AWS is bringing AI and IoT together to make devices more intelligent. You can create models in the cloud, and then deploy them to devices where they run 2x faster compared to other offerings. AWS IoT sends data back to the cloud for continuous improvement of models. AWS IoT also supports more machine learning frameworks compared to other offerings.

### Proven at scale

AWS IoT is built on a scalable, secure, and proven cloud infrastructure, and scales to billions of different devices and trillions of messages. AWS IoT integrates with services such as AWS Lambda, Amazon S3, and Amazon SageMaker, so you can build complete solutions, such as an application that uses AWS IoT to manage cameras and Amazon Kinesis for machine learning.

## AWS IoT solutions



### Industrial

AWS IoT customers are building industrial IoT applications for predictive quality and maintenance and to remotely monitor operations.

[Learn More](#)



### Connected home

AWS IoT customers are building connected home applications for home automation, home security and monitoring, and home networking.

[Learn More](#)



### Commercial

AWS IoT customers are building commercial applications for traffic monitoring, public safety, and health monitoring.

[Learn More](#)



## AWS IoT #1 IoT Cloud Platform

AWS IoT listed as #1 IoT cloud platform in Eclipse IoT's 2019 IoT Developer Report.

[Download the report](#)



## ARM IoT Products

### Technology that Removes the Complexities of IoT

Arm removes the complexities of IoT with a complete IoT products and pre-integrated subsystems that enable customers and partners to rapidly design and deploy flexible IoT solutions.

### Connect and Manage your IoT at Scale

To succeed in harnessing the transformative impact of IoT, companies need solutions that can fully address the complexity and fragmentation that exists today: device diversity, security, power efficiency, standard-based communications and scalability. Arm provides software solutions and pre-integrated subsystems that meet these needs and enable customers and partners to design and deploy flexible IoT solutions quickly.

### Pelion IoT Platform

#### A Device-to-Data Platform for Connected IoT [MORE](#)

The Pelion IoT Platform is a flexible, secure, and efficient foundation spanning connectivity, device, and data management. It accelerates the time to value of your IoT deployments by helping you easily connect trusted IoT devices on global networks, invisibly administer them, and extract real-time data from them to drive competitive advantage.



#### Connectivity Management

Connectivity Management allows easy, secure, and cost-effective connection of IoT devices on multiple network standards with a single global mobility contract.



#### Device Management

Device Management enables secure and reliable onboarding, connection, updates, and lifecycle management of different types of connected devices deployed on premises or over cloud.



#### Data Management

Data Management makes the trusted data from IoT devices and relevant enterprise data accessible for predictive insights that drive dynamic optimization and new revenue opportunities.

### IoT Device Products



#### Mbed OS

Mbed OS is an open-source, embedded operating system which includes all the necessary features to facilitate the development of IoT connected products, including standards-based security and connectivity stacks, an RTOS, and drivers for sensors and I/O devices.



#### IoT SoC Solutions

System on Chip (SoC) designers now manage the creation of increasingly complex IoT chips. They need to integrate many IP components, all with the right level of security. Arm's range of IoT SoC solutions provide designers with a solid foundation for building SoC, integrating processors, security, system IP and connectivity in one kit. Designers can build upon this kit, enabling them to accelerate time to market securely and efficiently.



#### Kigen SIM Solutions

Arm Kigen provides SIM solutions designed to unlock cellular connectivity for the IoT. It includes device and server side software solutions enabling full integration of SIM functionality to modern IoT SoC designs, and flexible remote provisioning for MNOs, OEMs and IoT platform providers.

### Layered Security for Your Connected IoT Devices

A layered approach to securing IoT devices is essential. An effective IoT device network needs a secure foundation with defense-in-depth built into its core, which extends throughout the system. Our portfolio of security IP, firmware, software and partnerships provide effective counter-measures against today's threats and help customers secure devices from chip-to-cloud. [MORE](#)

## Edge analytics enables insights that keep you ahead

Edge IoT data can be a powerful source of insight. Learn how modern organizations stay competitive by moving analytics to the edge.

### Read Forrester Report

PDF - 17 Pages

#### Executive Summary

Many organizations have embraced internet-of-things (IoT) solutions to optimize operational processes, differentiate products and services, and enhance digital capabilities. However, as companies deploy a diverse array of IoT projects and use cases — each with specific requirements — many encounter challenges with using centralized cloud-based and data center analytic strategies. To transform large streams of IoT data into insights in a fast, secure, and cost-effective way, organizations must revisit their IoT architecture, skills, and strategies.

In the fall of 2018, Dell Technologies and VMware commissioned Forrester Consulting to evaluate organizations' IoT strategies with a focus on understanding their interest in, and adoption of, edge IoT for analytics — a technique that takes analytic computations for certain IoT use cases out of the cloud or data center and moves it as close to the data sources as is necessary and feasible to enable real-time decisions, reduce costs, and mitigate security and compliance risks. To explore this topic, Forrester conducted an online survey with 300 global information technology (IT) and operations technology (OT) professionals with responsibility over IoT decisions at their companies.

#### KEY FINDINGS

##### >> Organizations face limitations with IoT data analysis in the cloud.

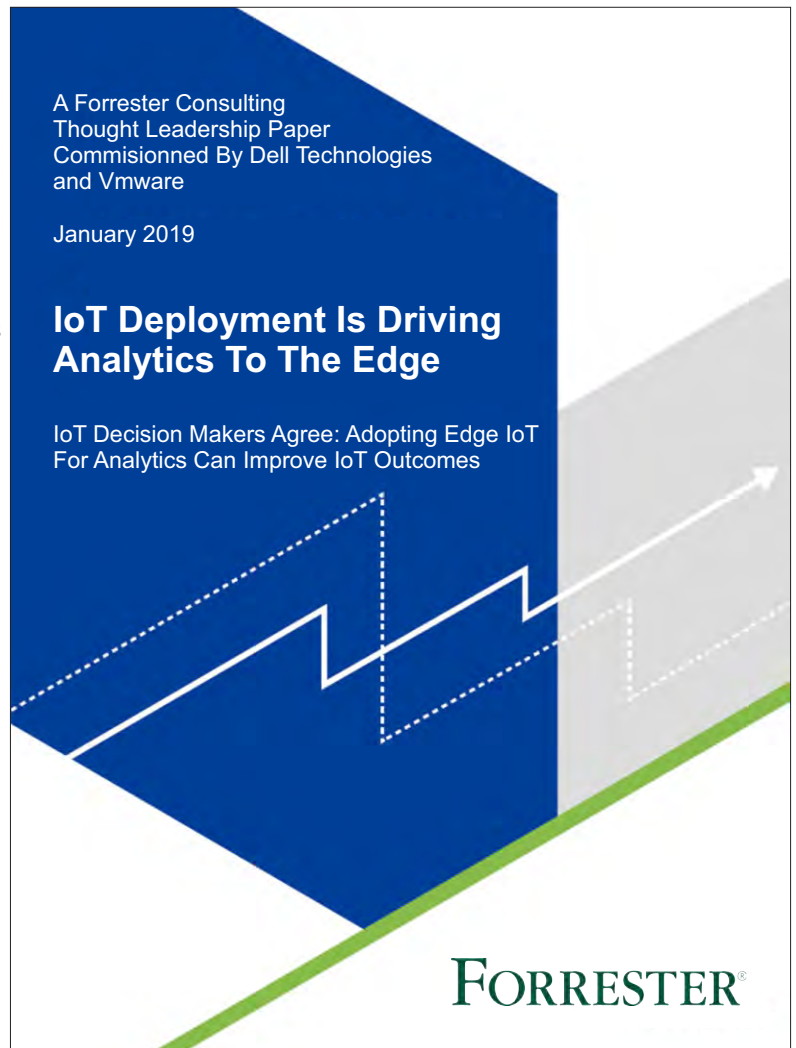
Many firms have used cloud platforms to analyze their IoT data by applying advanced analytics models and leveraging clouds' extensive processing power, connectivity, and storage capabilities. However, survey respondents identify limitations to cloud analytics which are particularly important for successful IoT use case deployment including: security or compliance concerns, high data transit costs, and lack of real-time analytic capabilities.

##### >> Some companies are taking a customized approach to analytics.

While just a minority (29%) of firms have expanded their analytics strategies to include edge IoT for analytics, many others indicate they will likely follow soon — 22% have plans to implement in the next 12 months; another 38% express interest.

##### >> Low latency requirements signal an edge IoT for analytics opportunity.

It may not always be clear which use cases would benefit most from edge IoT for analytics. Respondents in our research rated a variety of criteria according to how important each is in their decision to deploy edge IoT for analytics. Topping their list were requirements for real-time response and impact on customers' experience — the greater the importance of these factors for any given use case, the greater the likelihood that edge IoT makes sense for that use case.

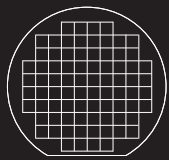


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to Accelerate the Success of Vendors of Hi-end HW & SW  
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addressing all Major Market Segments**

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**Creating New Products is an Art, Finding New Customers is New Bizz**

**e2mos is Connecting the Sales Teams of Vendors  
DIRECTLY with the Key Contacts of Their Next Customers  
For Almost 20 years With Outstanding Success**

**Our 2 Top SERVICES  
is What You Need to « Make-the-Difference »  
More Customers and Stronger Market Presence**

### **Meet and Engage with More New Customers**

#### **Here is how it works:**

1. We search New Customers for the Products that you want
2. We identify Directly the Right Key Contacts
3. We submit you the info you with details for your approval
4. If Qualified we organize the Meeting

**Great Customer Relationship  
Over 40 Years Non-Stop**

Why would e2mos know better than the current sales teams in place? Because our Experts are doing it everyday the all day long, while current Sales Teams at Vendors are doing it from time-to-time with limited resources, and as such they cannot build-up a fast growing Expertise

### **Market Penetration Boost Massive Global Reach**

**Enhance your Presence in the  
Global Market  
Catapult your Product News to  
More Decision Makers**

Creating Good Content is not an issue  
Key to Success is Reaching the Right  
Contacts in Abundance Periodically

**We work on our Database Everyday  
as we perform Global Telemarketing**

**Discover our 6 e-magazines  
High Focus Dedicated Website Each**

**Semi Update World**

**Embedded Systems World**

**aiworld**

**Telecom COTS World**  
Broadband Broadcast IoT AI Convergence

**IoT World**

**ATCA World**





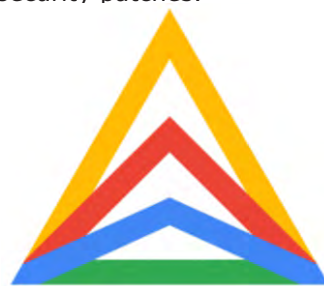
## Introducing Anthos: An entirely new platform for managing applications in today's multi-cloud world

Let's face it, even in the best of cases, enterprise IT can be rigid, complex and expensive. When we talk to customers with extensive on-prem investments, they tell us they want to take advantage of the cloud's scalability, innovative services and geographic scope, but they're worried about getting locked into the wrong provider. Why is it, they ask, that they still can't write once, run anywhere?

Today, we're excited to introduce Anthos, Google Cloud's new open platform that lets you run an app anywhere—simply, flexibly and securely. Embracing open standards, Anthos lets you run your applications, unmodified, on existing on-prem hardware investments or in the public cloud, and is based on the Cloud Services Platform that we announced last year.

Now, we're making Anthos' hybrid functionality generally available both on Google Cloud Platform (GCP) with Google Kubernetes Engine (GKE), and in your data center with GKE On-Prem. Anthos will also let you manage workloads running on third-party clouds like AWS and Azure, giving you the freedom to deploy, run and manage your applications on the cloud of your choice, without requiring administrators and developers to learn different environments and APIs.

Throughout it all, Anthos is a 100% software-based solution. You can quickly get up and running on your existing hardware—with no forced stack refresh. Anthos leverages open APIs, giving you the freedom to modernize any place, any time and at your own pace. Because Anthos is based on GKE, our managed Kubernetes service, you automatically get the latest feature updates and security patches.



Anthos

### Introducing Anthos Migrate: Cloud migration and modernization made easy

We're also excited to announce Anthos Migrate, coming soon to beta, which auto-migrates VMs from on-premises, or other clouds, directly into containers in GKE with minimal effort. This unique migration technology lets you migrate and modernize your infrastructure in one streamlined motion, without upfront modifications to the original VMs or applications. Through this transformation, your IT team is free from managing infrastructure tasks like VM maintenance and OS patching, so it can focus on managing and developing applications. Migrating also lets you take advantage of other integrations within Anthos.

### Early Anthos customer success stories



HSBC

SIEMENS

Global enterprise customers in a number of industries are already using Anthos as a flexible, portable, software-based solution on which to build hybrid and multi-cloud environments.

For HSBC, one of the largest banking and financial services organizations in the world, a managed cloud environment that reduces the complexity and costs of big data analytics is essential to its hybrid cloud strategy.

"At HSBC, we needed a consistent platform to deploy both on-premises and in the cloud," says Darryl West, Group CIO, HSBC. "Google Cloud's software-based approach for managing hybrid environments provided us an innovative, differentiated solution that was able to be deployed quickly for our customers."

Siemens, the largest industrial manufacturing company in Europe, is excited for the insight GKE On-Prem will bring to their complex, hybrid environment.

"Anthos is a great fit for us. It gives us a unified management view of our hybrid deployment and a consistent platform to run our workloads across environments," says Martin Lehofer, Head of Research, Siemens.

... to next page





# Introducing Anthos: An entirely new platform for managing applications in today's multi-cloud world

... from previous page

## Building a multi-cloud ecosystem

Many of our customers have existing software and infrastructure investments, yet still want the freedom to invest in their cloud future. We're working closely with our ecosystem of partners to support these customers, launching with more than 30 hardware, software and system integration partners ready to help customers leverage Anthos right out of the gate.

"We know that hybrid and multi-cloud approaches represent the future for many of our customers," says Kip Compton, SVP, Cloud Platforms and Solutions at Cisco. "Our customers want to develop and deploy their applications anywhere—on-prem, in the public cloud, or in multiple public clouds—seamlessly and securely. We're excited to make that possible by integrating Cisco's industry-leading data center, networking, and security technologies with Anthos and growing our partnership with Google Cloud."

Using Anthos, **Cisco will deliver the freedom of hybrid to enterprise customers**, helping them get up and running quickly in the cloud based on integrations between Anthos and Cisco's data center, networking, and security technologies, including Cisco HyperFlex, Cisco ACI, and Cisco Stealthwatch Cloud and Cisco SD-WAN. This combination offers businesses all the benefits of a fully-managed service like GKE combined with Cisco's infrastructure capabilities.

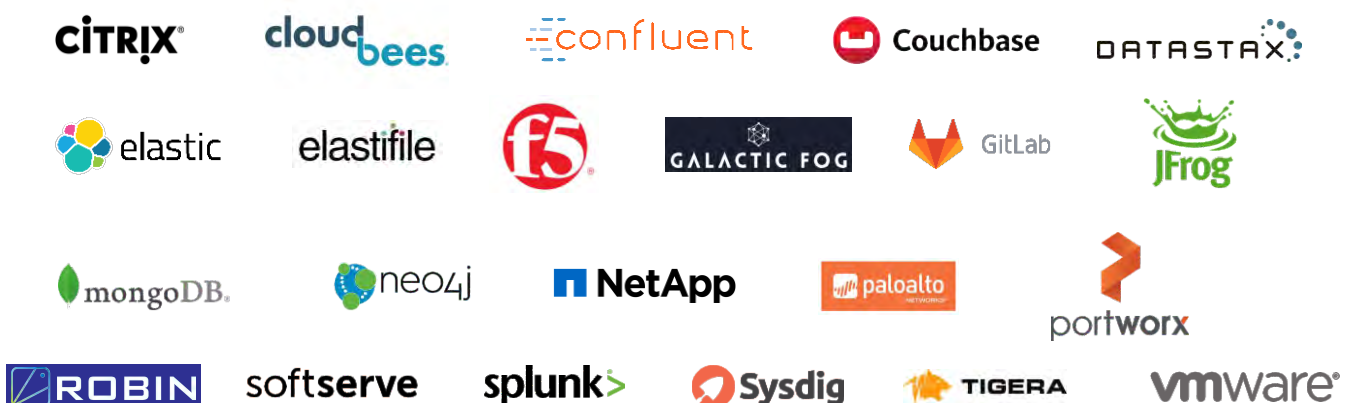


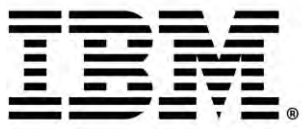
In addition, **partners** such as VMware, Dell EMC, HPE, Intel, and Lenovo have committed to delivering Anthos on their own hyperconverged infrastructure for their customers. By validating Anthos on their solution stacks, our mutual customers can choose hardware based on their storage, memory, and performance needs.

**System integrators** are also on tap to help you modernize and extend your applications using Anthos. We're excited that partners including Accenture, Arctiq, Atos, Cognizant, Deloitte, HCL Technologies, NTT Communications, Tata Consultancy Services, Wipro, and WWT are building services and solutions to help you to incorporate Anthos into your environment.



Finally, we are working closely with enterprise software providers to integrate their offerings with Anthos' unique capabilities. To date, more than 20 **ISVs** have already committed to integrating their software with Anthos:





Red Hat

## IBM Closes Landmark Acquisition of Red Hat for \$34 Billion; Defines Open, Hybrid Cloud Future

- Acquisition positions IBM as the leading hybrid cloud provider and accelerates IBM's high-value business model, extending Red Hat's open source innovation to a broader range of clients
- IBM preserves Red Hat's independence and neutrality; Red Hat will strengthen its existing partnerships to give customers freedom, choice and flexibility
- Red Hat's unwavering commitment to open source remains unchanged
- Together, IBM and Red Hat will deliver next-generation hybrid multicloud platform

ARMONK, N.Y. and RALEIGH, N.C., July 9, 2019 /PRNewswire/ -- IBM (NYSE: IBM) and Red Hat announced today that they have closed the transaction under which IBM acquired all of the issued and outstanding common shares of Red Hat for \$190.00 per share in cash, representing a total equity value of approximately \$34 billion.

The acquisition redefines the cloud market for business. Red Hat's open hybrid cloud technologies are now paired with the unmatched scale and depth of IBM's innovation and industry expertise, and sales leadership in more than 175 countries. Together, IBM and Red Hat will accelerate innovation by offering a next-generation hybrid multicloud platform. Based on open source technologies, such as Linux and Kubernetes, the platform will allow businesses to securely deploy, run and manage data and applications on-premises and on private and multiple public clouds.

"Businesses are starting the next chapter of their digital reinventions, modernizing infrastructure and moving mission-critical workloads across private clouds and multiple clouds from multiple vendors," said Ginni Rometty, IBM chairman, president and CEO. "They need open, flexible technology to manage these hybrid multicloud environments. And they need partners they can trust to manage and secure these systems. IBM and Red Hat are uniquely suited to meet these needs. As the leading hybrid cloud provider, we will help clients forge the technology foundations of their business for decades to come."

"When we talk to customers, their challenges are clear: They need to move faster and differentiate through technology. They want to build more collaborative cultures, and they need solutions that give them the flexibility to build and deploy any app or workload, anywhere," said Jim Whitehurst, president and CEO, Red Hat. "We think open source has become the de facto standard in technology because it enables these solutions. Joining forces with IBM gives Red Hat the opportunity to bring more open source innovation to an even broader range of organizations and will enable us to scale to meet the need for hybrid cloud solutions that deliver true choice and agility."

Red Hat will continue to be led by Jim Whitehurst and its current management team. Whitehurst is joining IBM's senior management team, reporting to Ginni Rometty. IBM will maintain Red Hat's headquarters in Raleigh, North Carolina, its facilities, brands and practices. Red Hat will operate as a distinct unit within IBM and will be reported as part of IBM's Cloud and Cognitive Software segment.

Both companies have already built leading enterprise cloud businesses with consistent strong revenue growth by helping customers transition their business models to the cloud.

IBM's cloud revenue has grown from 4 percent of total revenue in 2013 to 25 percent today. This growth comes through a comprehensive range of as-a-service offerings and software, services and hardware that enable IBM to advise, build, move and manage cloud solutions across public, private and on-premises environments for customers. IBM cloud revenue for the 12-month period through the first quarter of this year grew to over \$19 billion. The Red Hat acquisition is expected to contribute approximately two points of compound annual revenue growth to IBM over a five-year period.

Red Hat's fiscal year 2019 revenue was \$3.4 billion, up 15 percent year-over-year. Fiscal first quarter 2020 revenue, reported in June, was \$934 million, up 15 percent year-over-year. In that quarter, subscription revenue was up 15 percent year-over-year, including revenue from application development-related and other emerging technology offerings up 24 percent year-over-year. Services revenue also grew 17 percent.

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## IBM Closes Landmark Acquisition of Red Hat for \$34 Billion; Defines Open, Hybrid Cloud Future

### The Hybrid Cloud Opportunity

Digital reinvention is at an inflection point as businesses enter the next chapter of their cloud journey. Most enterprises today are approximately 20 percent into their transition to the cloud. In this first chapter of their cloud journey, businesses made great strides in reducing costs, boosting productivity and revitalizing their customer-facing innovation programs. Chapter two, however, is about shifting mission-critical workloads to the cloud and optimizing everything from supply chains to core banking systems.

To succeed in the next chapter of the cloud, businesses need to manage their entire IT infrastructure, on and off-premises and across different clouds – private and public – in a way that is simple, consistent and integrated. Businesses are seeking one common environment they can build once and deploy in any one of the appropriate footprints to be faster and more agile. IBM's offerings have evolved to reflect new customer needs and drive greater growth. The acquisition of Red Hat further strengthens IBM as the leader in hybrid cloud for the enterprise.

"As organizations seek to increase their pace of innovation to stay competitive, they are looking to open source and a distributed cloud environment to enable a new wave of digital innovation that wasn't possible before. Over the next five years, IDC expects enterprises to invest heavily in their journeys to the cloud, and innovation on it. A large and increasing portion of this investment will be on open hybrid and multicloud environments that enable them to move apps, data and workloads across different environments," said Frank Gens, Senior Vice President and Chief Analyst, IDC. "With the acquisition of Red Hat, and IBM's commitment to Red Hat's independence, IBM is well positioned to help enterprises differentiate themselves in their industry by capitalizing on open source in this emerging hybrid and multicloud world."

The collective ability of IBM and Red Hat to unlock the true value of hybrid cloud for businesses is already resonating among customers moving to the next chapter of digital reinvention.

"Delta is constantly exploring current and emerging technology as we transform the air travel experience," said Ed Bastian, CEO, Delta. "We've been working with both IBM and Red Hat for years to deliver on that goal, and as they together build the next generation IT company, they will be an essential part of our digital transformation."

"As a long-standing partner of Red Hat and IBM, we look forward to capabilities that these two companies will bring together," said Michael Poser, Managing Director and CIO, Enterprise Technology & Services, Morgan Stanley. "We know first-hand how important and impactful cloud technology contributes to unlocking business value."

### IBM Reinforces Commitment to Open Source and Red Hat Neutrality

IBM and Red Hat have deep open source values and experience. The two companies have worked together for more than 20 years to make open source the default choice for modern IT solutions. This includes the importance of open governance and helping open source projects and communities flourish through continued contribution.

With Red Hat, IBM has acquired one of the most important software companies in the IT industry. Red Hat's pioneering business model helped bring open source – including technologies like Linux, Kubernetes, Ansible, Java, Ceph and many more – into the mainstream for enterprises. Today, Linux is the most used platform for development. Red Hat Enterprise Linux alone is expected to contribute to more than \$10 trillion worth of global business revenues in 2019. By 2023, an additional 640,000 people are expected to work in Red Hat-related jobs.

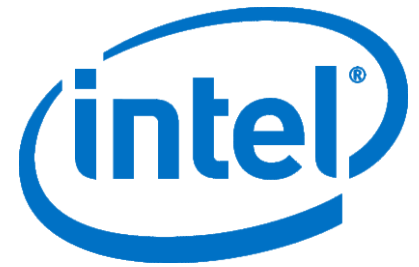
IBM has committed to scaling and accelerating open source and hybrid cloud for businesses across industries, as well as preserving the independence and neutrality of Red Hat's open source heritage. This includes its open source community leadership, contributions and development model; product portfolio, services, and go-to-market strategy; robust developer and partner ecosystems, and unique culture.

Red Hat's mission and unwavering commitment to open source will remain unchanged, and Red Hat will continue to offer the choice and flexibility inherent to open source and hybrid IT environments. Red Hat also will continue to build and expand its partnerships, including those with major cloud providers, such as Amazon Web Services, Microsoft Azure, Google Cloud and Alibaba.

IBM and Red Hat also share a strong commitment to social responsibility and a sense of purpose for applying technology and expertise to help address some of the world's most significant societal challenges. Together, the two companies have committed to expanding this longstanding commitment through new joint initiatives, addressing education and skills, civic and societal needs and Science, Technology, Engineering, and Math (STEM) workforce development. For more information visit: <https://ibm.com/blogs/corporate-social-responsibility/2019/07/be-open-and-change-the-world/> -- <https://newsroom.ibm.com/> and <https://www.ibm.com/redhat>.



# DUG Selects Intel to Build Its Latest Cloud-Based Supercomputer Tailored for Oil and Gas Exploration



## Intel Images: Intel Tailors High-Performance Computing System for the Geophysics Community

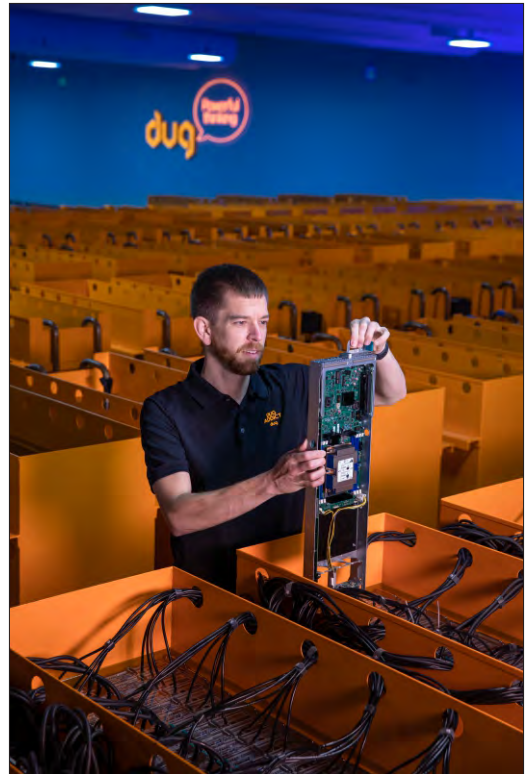
May 17, 2019 | Source Intel

DownUnder GeoSolutions\* (DUG) on Thursday announced its new Intel-based high-performance computing (HPC) system tailored for the geophysics community. The system was unveiled in a ceremony that took place at the Skybox\* Houston data center, where the supercomputer will be housed.

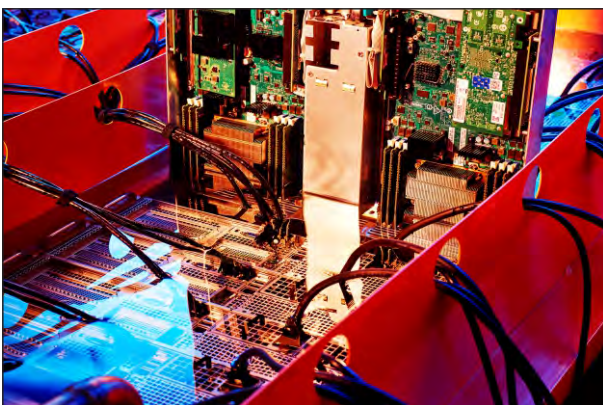
Harnessing the power of Intel technology, the 250 petaflop (single-precision) supercomputer, known as "Bubba," will join other DUG data centers around the world to form DUG's McCloud service a global network of cloud-based high-performance computing systems used by the oil and gas industry for geophysics research and exploration.

The supercomputers that make up the DUG McCloud global network feature over 40,000 Intel® Xeon® processor-based nodes, and are some of the most powerful, energy-efficient HPC systems in the world that are optimized for geophysical research. Geophysical research relies heavily on advanced computing resources to obtain a more detailed picture of the earth's subsurface. Intel Xeon processors deliver companies like DUG highly optimized computing, artificial intelligence and analytics capabilities for advanced simulation and modeling.

Like other supercomputers in the DUG McCloud global network, Bubba is housed in a purpose-built facility that leverages immersive cooling technology. The computing nodes are submerged in more than 700 specially designed tanks filled with polyalphaolefin dielectric fluid. The facility features 10 20-foot tall cooling towers with over 13 miles of pipes to cool the system.



Mark Lommers, DownUnder GeoSolutions (DUG) chief engineer, submerges an Intel Xeon-based computing node in an immersion system at the Skybox Data Center in Houston. DUG on Thursday, May 16, 2019, announced its new Intel-based high-performance computing system tailored for the geophysics community. (Credit: DownUnder GeoSolutions)



Intel Xeon-based computing nodes are submerged in DownUnder GeoSolutions's (DUG) specially designed immersion system tank in DUG's Perth McCloud installation. DUG on Thursday, May 16, 2019, announced its new Intel-based high-performance computing system tailored for the geophysics community. (Credit: DownUnder GeoSolutions)



Dr. Matthew Lamont (left), DownUnder GeoSolutions (DUG) managing director, and Phil Schwan, DUG CTO, stand among the cooling tanks that make up the "Bubba" supercomputer at the Houston Skybox data center. DUG on Thursday, May 16, 2019, announced its new Intel-based high-performance computing system tailored for the geophysics community. (Credit: DownUnder GeoSolutions)

**MORE:** <https://newsroom.intel.com/news/dug-selects-intel-build-latest-cloud-based-supercomputer/#gs.slyozn>

# What is cloud computing?

## A beginner's guide

Simply put, cloud computing is the delivery of computing services—including servers, storage, databases, networking, software, analytics, and intelligence—over the Internet (“the cloud”) to offer faster innovation, flexible resources, and economies of scale. You typically pay only for cloud services you use, helping you lower your operating costs, run your infrastructure more efficiently, and scale as your business needs change.



## Top benefits of cloud computing

Cloud computing is a big shift from the traditional way businesses think about IT resources. Here are seven common reasons organizations are turning to cloud computing services:

### Cost

Cloud computing eliminates the capital expense of buying hardware and software and setting up and running on-site datacenters—the racks of servers, the round-the-clock electricity for power and cooling, and the IT experts for managing the infrastructure. It adds up fast.

### Global scale

The benefits of cloud computing services include the ability to scale elastically. In cloud speak, that means delivering the right amount of IT resources—for example, more or less computing power, storage, bandwidth—right when they're needed, and from the right geographic location.

### Performance

The biggest cloud computing services run on a worldwide network of secure datacenters, which are regularly upgraded to the latest generation of fast and efficient computing hardware. This offers several benefits over a single corporate datacenter, including reduced network latency for applications and greater economies of scale.

### Security

Many cloud providers offer a broad set of policies, technologies, and controls that strengthen your security posture overall, helping protect your data, apps, and infrastructure from potential threats.

### Speed

Most cloud computing services are provided self service and on demand, so even vast amounts of computing resources can be provisioned in minutes, typically with just a few mouse clicks, giving businesses a lot of flexibility and taking the pressure off capacity planning.

### Productivity

On-site datacenters typically require a lot of “racking and stacking”—hardware setup, software patching, and other time-consuming IT management chores. Cloud computing removes the need for many of these tasks, so IT teams can spend time on achieving more important business goals.

### Reliability

Cloud computing makes data backup, disaster recovery, and business continuity easier and less expensive because data can be mirrored at multiple redundant sites on the cloud provider's network.

## Types of cloud computing

Not all clouds are the same and not one type of cloud computing is right for everyone. Several different models, types, and services have evolved to help offer the right solution for your needs.

First, you need to determine the type of cloud deployment, or cloud computing architecture, that your cloud services will be implemented on. There are three different ways to deploy cloud services: on a public cloud, private cloud, or hybrid cloud.

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## What is cloud computing? ... from previous page

### Public cloud

Public clouds are owned and operated by a third-party [cloud service providers](#), which deliver their computing resources, like servers and storage, over the Internet. Microsoft Azure is an example of a public cloud. With a public cloud, all hardware, software, and other supporting infrastructure is owned and managed by the cloud provider. You access these services and manage your account using a web browser.

### Private cloud

A private cloud refers to cloud computing resources used exclusively by a single business or organization. A private cloud can be physically located on the company's on-site datacenter. Some companies also pay third-party service providers to host their private cloud. A private cloud is one in which the services and infrastructure are maintained on a private network.

### Hybrid cloud

Hybrid clouds combine public and private clouds, bound together by technology that allows data and applications to be shared between them. By allowing data and applications to move between private and public clouds, a hybrid cloud gives your business greater flexibility, more deployment options, and helps optimize your existing infrastructure, security, and compliance.

## Types of cloud services: IaaS, PaaS, serverless, and SaaS

Most cloud computing services fall into four broad categories: infrastructure as a service (IaaS), platform as a service (PaaS), serverless, and software as a service (SaaS). These are sometimes called the cloud computing "stack" because they build on top of one another. Knowing what they are and how they're different makes it easier to accomplish your business goals.

### Infrastructure as a service (IaaS)

The most basic category of cloud computing services. With IaaS, you rent IT infrastructure—servers and virtual machines (Vms), storage, networks, operating systems—from a cloud provider on a pay-as-you-go basis

[Learn more about IaaS](#)

### Platform as a service (PaaS)

Platform as a service refers to cloud computing services that supply an on-demand environment for developing, testing, delivering, and managing software applications. PaaS is designed to make it easier for developers to quickly create web or mobile apps, without worrying about setting up or managing the underlying infrastructure of servers, storage, network, and databases needed for development.

[Learn more about PaaS](#)

### Serverless computing

Overlapping with PaaS, serverless computing focuses on building app functionality without spending time continually managing the servers and infrastructure required to do so. The cloud provider handles the setup, capacity planning, and server management for you. Serverless architectures are highly scalable and event-driven, only using resources when a specific function or trigger occurs.

[Learn more about serverless computing](#)

### Software as a service (SaaS)

Software as a service is a method for delivering software applications over the Internet, on demand and typically on a subscription basis. With SaaS, cloud providers host and manage the software application and underlying infrastructure, and handle any maintenance, like software upgrades and security patching. Users connect to the application over the Internet, usually with a web browser on their phone, tablet, or PC.

[Learn more about SaaS](#)

[Browse a dictionary of common cloud computing terms](#)

## Uses of cloud computing ... to next page

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## What is cloud computing? ... from previous page

### Uses of cloud computing

You're probably using cloud computing right now, even if you don't realize it. If you use an online service to send email, edit documents, watch movies or TV, listen to music, play games, or store pictures and other files, it's likely that cloud computing is making it all possible behind the scenes. The first cloud computing services are barely a decade old, but already a variety of organizations—from tiny startups to global corporations, government agencies to non-profits—are embracing the technology for all sorts of reasons.

Here are a few examples of what's possible today with cloud services from a cloud provider:

#### Create cloud-native applications

Quickly build, deploy, and scale applications—web, mobile, and API. Take advantage of [cloud-native](#) technologies and approaches, such as containers, [Kubernetes](#), microservices architecture, API-driven communication, and DevOps.

#### Store, back up, and recover data

Protect your data more cost-efficiently—and at massive scale—by transferring your data over the Internet to an offsite cloud storage system that's accessible from any location and any device.

#### Stream audio and video

Connect with your audience anywhere, anytime, on any device with high-definition video and audio with global distribution.

#### Deliver software on demand

Also known as software as a service (SaaS), on-demand software lets you offer the latest software versions and updates around to customers—anytime they need, anywhere they are.

#### Test and build applications

Reduce application development cost and time by using cloud infrastructures that can easily be scaled up or down.

#### Analyze data

Unify your data across teams, divisions, and locations in the cloud. Then use cloud services, such as machine learning and artificial intelligence, to uncover insights for more informed decisions.

#### Embed intelligence

Use intelligent models to help engage customers and provide valuable insights from the data captured.

### [How to choose a cloud provider](#)

### Microsoft and cloud computing

Microsoft is a leading global provider of cloud computing services for businesses of all sizes. To learn more about the Microsoft cloud platform, our [Kubernetes on Azure](#) offering, our [serverless application platform](#), and how Microsoft Azure compares to other cloud providers, see [What is Azure?](#) and [Azure vs. AWS](#).



# Verizon is one of the largest communication technology companies in the world.



With over 150 locations, Verizon is a global leader delivering innovative communications and technology solutions that improve the way our customers live, work, learn and play.

Founded in 2000, the company operates America's most reliable wireless network and the nation's premier all-fiber network, and delivers integrated solutions to businesses worldwide. With brands like Yahoo, TechCrunch and HuffPost, the company's media group helps consumers stay informed and entertained, communicate and transact, while creating new ways for advertisers and partners to connect. [ABOUT VERIZON](#)

## Facts about the company:

**\$131B**

Annual revenue  
in 2018 revenues

**139.4K**

Employees  
in 150 global locations

**16**

Fortune rank  
as of 2019



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## IoT Products and Services

### Verizon Connect

With more than 3,500 dedicated employees in 15 countries, Verizon Connect delivers leading mobile technology platforms and solutions that put automation and connected data to work for customers and help them be safer, more efficient and more productive.

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### Smart Communities

Verizon partners with each city to design infrastructure, systems and processes that elevate the way they provide services in new and cost-effective ways.

[MORE](#)

### Grid Wide Solutions

Our smart energy and water solutions provide a managed, cloud-based IoT platform that doesn't have a large capital cost for IT investments.

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### Mobile Commerce

Our broad offering of mobile smart kiosks, tablets and other POS products can help create faster, safer, loyalty-driving experiences.

[MORE](#)

## ThingSpace

The Internet of Things (IoT) is transforming every aspect of our world. Innovation is happening in real time. Enterprises, entrepreneurs, municipalities and individuals are looking for ways to manage, scale and monetize IoT solutions and applications in accelerated timeframes. ThingSpace offers a single point of entry for development, connectivity, testing and automation tools for IoT.

ThingSpace offers cellular IoT connectivity services with global reach, making it simpler for customers to implement, secure and manage their solutions.

[Learn more](#)

## British Multinational Telecommunications Conglomerate

Vodafone plc is a British multinational telecommunications conglomerate with headquarters in London and Newbury, Berkshire. It predominantly operates services in the regions of Asia, Africa, Europe, and Oceania. Among mobile operator groups globally, Vodafone ranked 4th in the number of mobile customers as of 2018.

Date de fondation: Sep 16, 1991 · Newbury, England

**Products & Services:** <https://www.vodafone.com/content/index.html>

## Our IoT Barometer 2019

The Future is exciting.

## Ready?

This is our sixth Internet of Things (IoT) Barometer. Since the previous edition, we've seen a significant acceleration in adoption.

The number of companies using IoT has risen to over a third (34%) and the scale and importance of IoT projects has grown. This surge has been driven by a range of factors — but key has been a breaking down of the barriers to entry.

When IoT was still a new technology, companies were often forced to develop their own solutions. Now, many companies become IoT adopters when they upgrade or replace systems. When it comes time to get rid of that old heating, ventilation and air conditioning (HVAC) system or to update your fleet tracking solution, the options often include IoT functionality by default. Organisations are also starting with off-the-shelf solutions, particularly smaller businesses with less IT resources. IoT enablement platforms and high-performance connectivity options like Narrowband-IoT (NB-IoT) are making implementation easier, and 5G will soon drive even greater adoption.

Companies are seeing the benefits of IoT and choosing to do more with it. Almost every adopter says their projects are delivering results, and over half say that the benefits are significant. These benefits range from cost reductions to improved safety; from increased responsiveness to entirely new revenue streams. Unsurprisingly, the companies that are seeing the biggest advantages are those that are the most committed to the technology. But it's not all or nothing — there are benefits to be gained throughout the journey, from first steps to the most highly sophisticated, fully integrated solutions.

The future of IoT is very exciting. But it isn't just a technology for uber-innovative startups. Most IoT projects aren't about creating headlines; they're about delivering bottom-line results. I believe that we've already passed the tipping point and IoT has entered the mainstream. 74% of adopters believe that within five years companies that haven't adopted IoT will have fallen behind. For many companies, it's no longer a case of whether or not to implement IoT, but how.

Since the first edition back in 2013, the Vodafone IoT Barometer has been an invaluable source of information for companies thinking about IoT. As the market has evolved, we've changed our focus from adoption to sophistication. This year, we've taken that a step further and developed the Vodafone IoT Sophistication Index. In addition to helping show the benefits of investing in IoT, it enables you to compare how you are doing relative to other companies like yours. Read on to discover more.

Stefano Gastaut, Chief Executive Officer, Vodafone IoT



**Download the Report**



# Vortex Edge

## IoT Solutions and Technology

*A Business Unit of Adlink and Formerly PrismTech*

Connect the Unconnected,  
Stream Anywhere,  
Control the Edge  
with Vortex Edge  
from ADLINK

Transportation

Industrial  
Automation

Defense  
and Aerospace

Modeling  
and Simulation

Robotics

Farming  
and Agriculture

IT and Networks

Smart Energy  
and Utilities

Smart Cities

Healthcare  
and Medical Devices



**Discover Everything**

# How IoT is Transforming Maintenance for Manufacturers



When you hear about the Internet of Things (IoT), the first thing that comes to mind is probably some application of technology. You may think of smart home devices, such as digital thermostats or Amazon's Echo, or even more advanced technology in the form of machine learning and artificial intelligence could come to mind. But what exactly is IoT, and why are we talking about how it relates to manufacturing? IoT's use in manufacturing is a lot simpler than you think, and it's all connected with data.

**Download the guide  
now to learn more!**

Sponsored by:



## About Dude Solutions

Dude Solutions is a leading software-as-a-service (SaaS) provider of operations management solutions to education, government, healthcare, senior living, manufacturing and membershipbased organizations. For nearly two decades, Dude Solutions has inspired clients to create better work and better lives. We combine innovative, user-friendly technology with the world's smartest operations engine, empowering operations leaders to transform the most important places in our lives. Today, more than 10,000 organizations use our award-winning software to manage maintenance, assets, energy, safety, IT, events and more.

For more information, visit [www.dudesolutions.com](http://www.dudesolutions.com).

# ADLINK Technology Accepted into Forbes Technology Council

Forbes Technology Council is an invitation-only community for world-class CIOs, CTOs, and technology executives

San Jose | 2019/05/02

[ADLINK Technology](#)'s Toby McClean, VP of IoT Technology and Innovation, has been accepted into Forbes Technology Council, an invitation-only community for world-class CIOs, CTOs, and technology executives.



Toby McClean was vetted and selected by a review committee based on the depth and diversity of his experience. Criteria for acceptance include a track record of successfully impacting business growth metrics, as well as personal and professional achievements and honors.

"We are honored to welcome Toby McClean and ADLINK into the community," said Scott Gerber, founder of Forbes Councils, the collective that includes Forbes Technology Council. "Our mission with Forbes Councils is to bring together proven leaders from every industry, creating a curated, social capital-driven network that helps every member grow professionally and make an even greater impact on the business world."

As an accepted member of the Council, Toby has access to a variety of exclusive opportunities designed to help him reach peak professional influence. He will connect and collaborate with other respected local leaders in a private forum. Toby will also be invited to work with a professional editorial team to share his expert insights in original business articles on Forbes.com, and to contribute to published Q&A panels alongside other experts.

Finally, Toby will benefit from exclusive access to vetted business service partners, membership-branded marketing collateral, and the high-touch support of the Forbes Councils member concierge team.

"I'm looking forward to participating in a community focused on progressing technology for the betterment of industry and society," said McClean. "ADLINK's goal is to provide unique insight to the valuable discussions and commentary being offered, particularly in the areas of advancing and understanding the contributions AI and edge computing."

## ABOUT FORBES COUNCILS

Forbes Councils is a collective of invitation-only communities created in partnership with Forbes and the expert community builders who founded Young Entrepreneur Council (YEC). In Forbes Councils, exceptional business owners and leaders come together with the people and resources that can help them thrive.

For more information about Forbes Technology Council, visit [www.forbestechcouncil.com](http://www.forbestechcouncil.com).  
To learn more about Forbes Councils, visit [www.forbescouncils.com](http://www.forbescouncils.com).