

# TechTalk



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## MD Speaks

# 5G

Dear Readers,

The theme for this year's Mobile World Congress (MWC) at Barcelona, the biggest mobile event of the year, is "Intelligent Connectivity". One of the most significant sub themes is 5G Connectivity. 5G will create speed, flexibility and agility to allow for far greater services and performance with higher reliability than is possible today. 5G technology will connect vehicles, aeroplanes and any other IoT enabled items in absolute real-time giving rise to a whole new set of use-cases and inventions. One of the leaders in this technology is Huawei, a Chinese company. Whether the fact that a

Chinese company could be a leader, in a field ahead of US and other Western companies, is difficult to swallow for the USA or there are genuine security concerns with Huawei products, is difficult to determine at this stage. But it is significant enough for a U.S. delegation at MWC to dissuade European telecommunication firms from investing in Huawei's 5G cellular technology, under the pretext that it could be potentially compromised by the Chinese government. Whatever happens, this is a very dangerous precedent and could well see some retaliation with China and its allies doing the same with US and European products. Moreover, it could prevent

some American influenced countries from access to 5G technology at reasonable rates. We can only hope that better sense prevails!

At Galaxy, we have the expertise to guide you through the digital journey of "Intelligent Connectivity". Please reach out to us and we will be happy to help.

Happy Reading

**Anoop Pai Dhungat**  
Chairman & Managing Director

# Future Is Now



## MWC Conference – Huawei's Foldable Phone

Firstly, something we didn't see at Huawei's MWC conference on Sunday, February 24: the Huawei Mate P30 and P30 Pro are confirmed to launch at an event in Paris on March 26. Who cares about those, though, because by far the splashiest announcement was Huawei's foldable phone, the Huawei Mate X.

The front screen is a 6.6-inch display with a 6.3-inch display on the back but, of course, they fold out into a FullView, 8-inch 2480 x 2200 screen. So the displays are always on the outside - scratch much? But Huawei, in fairness, has built a case to protect it. Note:

there's also a curved panel that juts out from one edge which houses the Leica front/rear camera etc - so it won't lie flat as a tablet.

It's 5G and there's a two-in-one power and fingerprint button on the side. Huawei say it has been working on the hinge for three years and that's there's no gap (like the Galaxy Fold) thanks to a patented hinge with over 100 components inside. It's also 5.4mm thick versus the Galaxy Fold's 6.9mm and 11mm thick when closed, versus the Fold's 17mm. Basically Huawei seems to have trounced Samsung on this front. For multi-tasking, you can have side by side browsing in two tabs or view two apps at once - Samsung had three. There's a dual, 4,500 mAh battery with 55W fast

charging and dual SIM card slots. We haven't seen it up close yet but it looked slim, slick and durable on stage - Huawei CEO Richard Yu was really prodding it around. One reservation - it does look a little plasticky. It's €2,299 which gets you 512GB of storage - that's a couple of hundred euros more than Samsung - and it will be available in the "middle of 2019". Out of the way at the top of the conference, Huawei also used the show to launch a 2019 upgrade to its MateBook X Pro laptop with a 3K touchscreen, a recessed camera in the keyboard, Huawei Share OneHop (which works well when transferring photos, videos etc between Huawei phones, tablets and laptops) and a OneTouch fingerprint power button.

The MateBook X Pro runs on an 8th-gen Intel Core processor with a Nvidia GeForce MX250 graphics card, Thunderbolt 3 and 13 hours' video playback. Rounding out the range, Huawei announced MateBook 13 and MateBook 14 laptops. The MateBook 13 will be on sale at the end of February, the MateBook X Pro and 14 will be later, in April.



## MIT and Harvard University researchers develop platform that helps users define their data privacy

In today's world of cloud computing, users of mobile apps and web services

store personal data on remote data center servers. Services often aggregate multiple users' data across servers to gain insights on or may share data with advertisers.

Traditionally, however, users haven't had the power to restrict how their data are processed and shared. A new platform developed by MIT and Harvard

University researchers ensures that web services adhere to users' preferences on how their data are stored and shared in the cloud.

In a paper being presented at the USENIX Networked Systems Design and Implementation conference, the researchers describe a platform, called Riverbed, that forces data center servers to only use data in ways that users





twith the cloud directly. Instead, a Riverbed proxy runs on a user's device to mediate communication. When the service tries to upload user data to a remote service, the proxy tags the data with a set of permissible uses for their data, called a "policy." Users can select any number of predefined restrictions; the proxy tags all the data with the selected policy.

In the datacenter, Riverbed assigns the uploaded data to an isolated cluster of software components, with each cluster processing only data tagged with the same policies. Riverbed monitors the server-side code to ensure it adheres to a user's policies. If it doesn't, Riverbed terminates the service.

Riverbed aims to enforce user data preferences, while maintaining advantages of cloud computing, such as performing large-scale computations on outsourced servers. In 2016, the European Union passed the General Data Protection Regulation (GDPR), which states that users must consent to their data being accessed, that they have the right to request their data be deleted, and that companies must implement appropriate security measures. For web developers, however, these laws provide little technical guidance for writing sophisticated apps that need to leverage user data.

Primarily, Riverbed leverages the fact that the server-side code of an app can run atop a special "monitor" program —

programs that track, regulate, and verify how other programs manipulate data. The monitor creates a separate copy of the app's code for each unique policy assigned to data. Each copy is called a "universe." The monitor ensures that users who share the same policy have their data uploaded to, and manipulated by, the same universe. This method enables the monitor to terminate a universe's code, if that code attempts to violate the universe's data policy.

This process incorporates a custom interpreter, a program that compiles programming language into code that's understood by a computer. Interpreters are also used to help runtime programs implement low-level commands into an original program as it runs. The researchers modified a traditional interpreter to extract defined policies from incoming user data and labels certain variables with specific policy direction. Labels will, for instance, denote whitelisted web services for data sharing or restrict persistent storage — meaning the data can't be stored when the user stops using the web service.

In their paper, the researchers' evaluated Riverbed on several apps, demonstrating the platform keeps data secure with little overhead. Results show that more than 1,000 universes can squeeze onto a single server, with added computation that slows down the service by about 10 percent. That's fast and efficient enough for real-world use.



## Microsoft fixes web server DDoS bug

Microsoft has fixed a bug that could have led to distributed denial of service (DDoS) attacks on its web server software. The flaw lay in the way that Internet Information Server (IIS) processed requests sent using HTTP/2. Ratified in 2015, HTTP/2 is an enhanced version of the original HTTP standard that includes better flow control and handles a wider variety of

connections between clients and servers.

Flow control in HTTP/2 enables a client computer to describe how it wants to receive information from the sender so that it can work more efficiently.

For example, you might ask your browser to stream a high-bandwidth video, but then pause the video halfway through.

With HTTP/2, the browser can use flow control to pause the delivery and buffering of the video and concentrate on

downloading something else that is suddenly more important, such as a real-time ticker update. To manage flow control, HTTP/2 uses a feature known as a SETTINGS frame. Clients can specify any number of SETTINGS frames, and this is the root of the problem that Microsoft found in IIS — too many frames can overload the server, maxing out CPU usage at 100%.

### Microsoft reported:

In some situations, excessive settings can cause services to become unstable and may result in a temporary CPU usage spike

until the connection timeout is reached and the connection is closed. The flaw meant that attackers with a botnet of zombie computers, or hacktivists with a following of willing helpers, could have brought IIS servers – which as of January 2019 hosted 25% of all web domains, according to Netcraft – to their knees. Microsoft fixed the

**What to do?**

To access this feature, customers can

download the cumulative updates KB4487006, KB4487011, KB4487021, and KB4487029. The fix allows administrators to set two parameters in the registry: `Http2MaxSettingsPerFrame` and `Http2MaxSettingsPerMinute`. If the number of SETTINGS frames surpasses either of these two limits, IIS will kill the connection: When appropriately set, [the] two limits together help to terminate the malicious connection violating those limits and form

a threshold for legitimate connections.

Don't forget, though, that these settings aren't turned on by default, even after you install the update – a suitable registry tweak is needed to enable this DDoS mitigation.

```

port socket, sys, os
cat "[Remote DDoS Address" + sys.argv[1]
cat "injecting " + sys.argv[2];
! Attack():
! = os.fork()
! socket.socket(socket.AF_INET, socket.SOCK_STREAM)

```

## Dell EMC First to Qualify External Enterprise Storage Arrays for VMware Cloud Foundation

As digital transformation initiatives become pervasive across every industry, organizations are often turning to cloud solutions to help increase business agility. In fact, over 93% of companies are deploying their workloads across two or more clouds, which can create IT complexity arising from multiple operational silos and disparate management and orchestration tools. VMware Cloud Foundation can help address this complexity by providing a consistent operations experience across clouds (both public and private). Not surprisingly, VMware Cloud Foundation is becoming an increasingly important part of our customers' IT infrastructure and operations strategy. Dell EMC has qualified the interoperability of Dell EMC PowerMax and Dell EMC Unity external storage arrays with VMware Cloud Foundation. Dell EMC continues to lead the way being the first vendor to qualify external storage solution for VMware Cloud Foundation.

### Enterprise Storage meets Cloud Operating Model

VMware Cloud Foundation provides the simplest path to consistent cloud operations through an integrated software platform that is the foundation for both private and public cloud environments.

combine the benefits of VMware Cloud Foundation with Dell EMC storage, which has been the backbone of most companies' high value mission-critical workloads for the better part of the last three decades. VMware Cloud Foundation now delivers improved flexibility supporting new storage classes – both NFS and Fibre Channel (FC) – with Dell EMC Storage solutions (in addition to VMware vSAN, which is included in VMware Cloud Foundation).

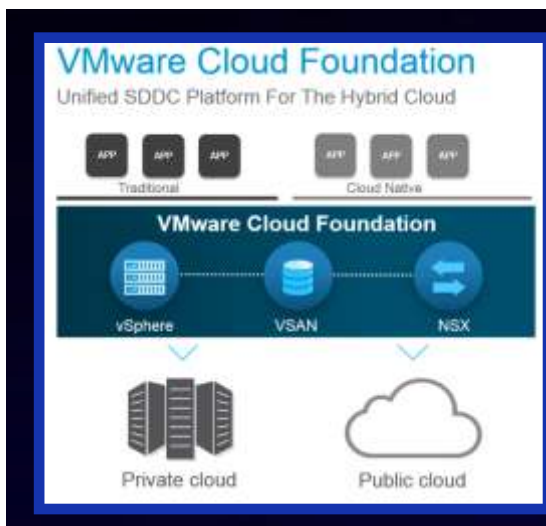
This jointly qualified solution offers the following benefits:

- ▶ **Reduce TCO:** Leverage existing Dell EMC storage investments and skill sets along with the agility of software-defined services for compute, network and security available in VMware Cloud Foundation
- ▶ **Provide independent storage scaling:** Offer greater flexibility for scaling storage independent of compute to meet varied application workloads demands, e.g. transactional application workloads demanding very high IO density solutions
- ▶ **Extend the reach of VMware Cloud Foundation:** Embrace specific application use cases that rely on unique external storage-specific functionality (e.g. high availability enterprise storage architectures, Machine Learning-based

data reduction capabilities etc.) that isn't available within Cloud Foundation today.

Customers have the flexibility to set up different workload domains managed by VMware Cloud Foundation. One workload domain could utilize Dell EMC Unity (NFS and FC support from a single storage system) as its storage platform, supporting moderately scalable application use cases such as Microsoft SQL Server, SharePoint, Exchange etc. Yet another workload domain could be set up to utilize Dell EMC PowerMax as the storage platform, supporting mixed workload consolidations of several demanding applications. The management domain will continue to be powered by VMware vSAN.

The qualification of Dell EMC Unity and PowerMax for VMware Cloud Foundation is an important milestone in VMware and Dell EMC's long history of collaboration, dating back to VMware's early days. Today, Dell EMC Storage not only integrates with core storage enablement primitives offered by VMware but also supports VVols and VASA for the next-generation VMware environments enabling finer control at the VM-level, streamlining storage operations and offering policy-based management to facilitate the cloud operating model on-prem. It also offers additional integrations via Virtual Storage Integrator (VSI) plug-ins to ensure a complete integrated user experience across the VMware and Dell EMC platforms.





## Special Focus



### Atos installs its first supercomputer in India at Institute of Technology (IIT-BHU), as part of HPC agreement with Government

Atos, a global leader in digital transformation, today announces the installation of its first supercomputer in India. The BullSequana, which is the first supercomputer to be installed as part of the Indian Government's National Supercomputing Mission (NSM), was officially inaugurated at IIT-BHU in Varanasi by the Prime Minister of India, Narendra Modi. Named 'Param Shivav', this supercomputer is the first of several to be installed across India as part of a major 3-year agreement between C-DAC (Centre for Development of Advanced Computing), an organization within the MeitY (Ministry of Electronics & Information Technology, India) and Atos. It is part of the NSM (National Supercomputing Mission) – a 7-year plan of INR 4500 crores (~650M\$) led by the Government of India which aims to

create a network of over 70 high-performance supercomputing facilities for various academic and research institutions across India.

The supercomputer is equipped with the latest processors and accelerators on the market, to provide optimal performance and improved energy efficiency. It will be used for academic projects and research.

"We are proud that our BullSequana supercomputer is empowering researchers at the IIT-BHU to accelerate their digital simulation projects. This installation marks the start of a strategic relationship and partnership between France and India and cements our position as the leading supercomputing provider in India for HPC," said Pierre Barnabé, Chief Operating Officer, Big Data & Security at Atos.



# Tech News



## Ericsson and VMware form alliance to simplify network virtualization for CSPs

- ▶ Ericsson and VMware have signed a five-year alliance agreement to simplify network virtualization for Communication Service Providers (CSP)
- ▶ The alliance will provide industry-leading experience for CSPs deploying and running a combination of Ericsson applications and VMware's vCloud NFV platform, enabling telco-grade services for the networks of today and tomorrow

▶ The companies have established a VNF Certification Lab to ensure industrialized software deployment and operational best practices, enabling increased efficiency and faster time to revenue for CSPs

Ericsson and VMware have signed a global alliance agreement that will simplify deploying and running a combination of Ericsson applications and VMware's vCloud NFV platform for CSPs. The alliance agreement solidifies the close cooperation between the two companies, ongoing since 2012, and enables CSPs to accelerate time to revenue for new telco-grade services.

The alliance includes technical collaboration and interoperability testing

Functions, Billing and Charging solutions, Automation and Orchestration, with VMware's vCloud NFV platform to provide CSPs with faster, more cost effective and tested virtualized solutions. These solutions are increasingly critical as CSPs move to multi-cloud strategies to streamline costs and optimize resources.

To enable CSPs to efficiently deploy and operate commercial virtualized networks, the two companies engage in technical collaborations e.g. in the Cloud Core and Cloud Communication domain, to jointly help secure optimized performance and platform utilization for high volume workloads. And have furthermore invested in a Certification Lab, where Ericsson's VNF and VMware vCloud NFV platform interoperability is tested, certified, system verified, optimized and documented.

Today, Ericsson and VMware have more than 50 CSPs running live production mobile networks with Ericsson VNFs on a VMware vCloud NFV platform.

Ericsson and VMware will be showcasing solutions at Mobile World Congress 2019 in Barcelona.

## About Galaxy

Galaxy Office Automation Pvt. Ltd. helps customers grow their businesses by integrating best-in-class IT solutions, products and services. Our objective is to understand customers' businesses, analyse their issues and address them through our subject matter experts. We have over three decades of experience in integrating technology solutions across industries, the ability to transact across various geographies and over 250 professionals certified in different technologies.

This puts us in the best position to design and implement IT infrastructure solutions that deliver cost-effective, agile, and scalable solutions to meet customers' business and technology needs.

- ▶ PAN-India presence with 9 offices across 8 cities in India and 1 in Singapore
- ▶ 250+ Highly skilled professionals
- ▶ ISO 9001: 2015, 27001: 2013 & 9001: 2013 certified
- ▶ 279 Crores i.e. \$40 million revenues in FY 2017-18
- ▶ Consistently profitable since inception

- ▶ Wide range of solutions and professional services across areas such as Data Center, Enterprise Mobility, Networking, Cyber Security, Internet of Things, End Points, Robotic Process Automation & Support Services
- ▶ Proven track record across enterprises as well as mid-market customers in verticals such as BFSI, Manufacturing, Automobile, Healthcare and IT/ITeS