

Galaxy bags the top award in APJ from Dell - "Partner of the Year 2021"

We are excited to announce that Galaxy has been named "Dell Technologies 2021 APJ Channel Partner of the Year!"

As a partner with Dell Technologies we are able to provide our customers with the best solutions that align to their needs.

Together, we stop at nothing!



Event of the Month

Be datafied to stay digital as India's data economy accelerates with rapid cloud adoption! We were excited to participate in CIO Leadership Live - Purvesh Dharamshi from Galaxy introduced Dell Technologies' PowerStore CoE for customers to get hands-on experience, as we continue to offer IT Infra Management Services, Data Centre Solutions, Cloud deployments in BFSI, ITes, Healthcare and other verticals in India.



Anoop Pai Dhungat
Chairman & MD

MD SPEAKS

Dear Readers,

I am extremely pleased to let you know that most of us at Galaxy are now partially vaccinated and ready to serve you. Needless to say, all of us will be taking all precautions to ensure that our people and clients remain safe even while ensuring that businesses are running as usual. During the lockdowns, we have worked closely with many of our OEM principals to build a gamut of solutions to help our clients enable remote workers and also save a lot of costs once things get back to normal. Please reach out to us to know more about these solutions and we will be happy to demonstrate these to you in your environments.

At Galaxy, our constant endeavour is to keep your businesses running and growing. We have added a lot of exciting offerings to data centre, mobility, cloud, security, networking and endpoint portfolios. Do reach out to us to learn the areas where we could assist you to stay ahead of your competition by adopting cutting edge technology solutions.

Happy reading

AP Dhungat



Future Is Now

World's Fastest: Quantum Random Number Generator Sets Benchmark for Size, Performance

At roughly the size of a fingertip, the integrated photonics chip delivers random number output more than twice as fast as conventional QRNGs.

As pervasive as they are in everyday uses, like encryption and security, randomly generated digital numbers are seldom truly random.

So far, only bulky, relatively slow quantum random number generators (QRNGs) can achieve levels of randomness on par with the basic laws of quantum physics, but researchers are looking to make these devices faster and more portable.

In *Applied Physics Letters*, by AIP Publishing, scientists from China present the fastest real-time QRNG to date to make the devices quicker and more portable. The device combines a state-of-the-art photonic integrated chip with optimized real-time postprocessing for extracting randomness from quantum entropy source of vacuum states.

"Recently, the technology of integrated quantum photonics has exhibited significant advantages in terms of size reduction," said author Jun Zhang. "In this work, we further prove that such technology could be used for ultrafast, real-time quantum random number generation."

Most QRNGs today use discrete photonic and electronic components, but integrating such components within a chip remains a technical challenge.

"Quantum random numbers are unpredictable, irreproducible and unbiased, whose randomness comes from the intrinsic indeterministic nature of quantum physics," Zhang said.

The group's chip uses indium-germanium-arsenide photodiodes and a transimpedance amplifier integrated onto a silicon photonics chip that includes several couplers and attenuators. Combining these components allows the QRNG to detect signals from a quantum entropy source with significantly improved frequency response.

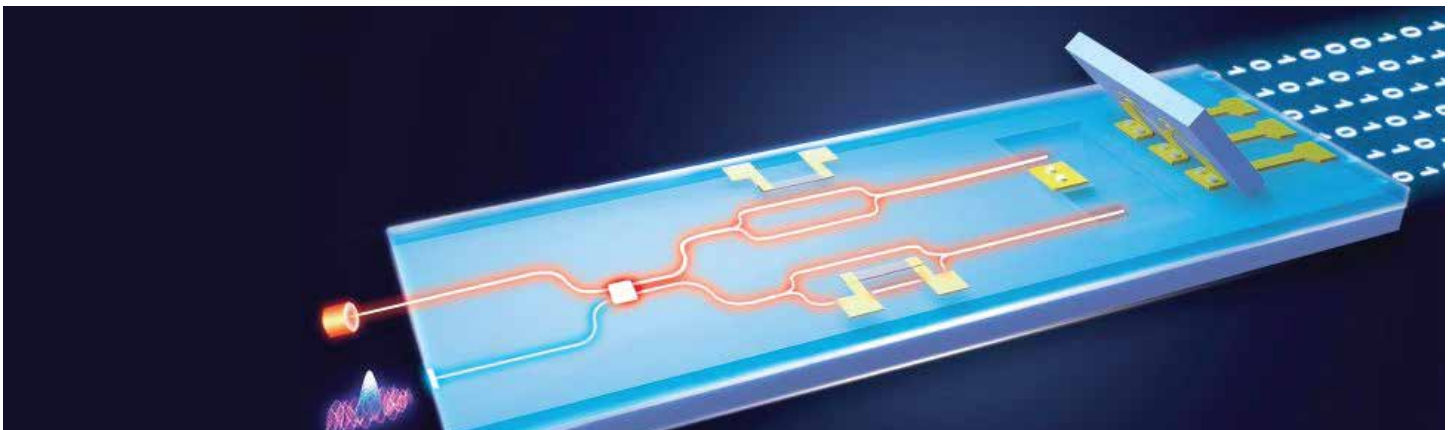
"The surprising point in our work is that the high-frequency response performance of the final photonic integrated chip is better than expected," Zhang said.

Once randomness signals are detected, they are processed by a field programmable gate array, which extracts truly random numbers from the raw data. The resulting device can generate numbers at nearly 19 gigabits per second, which is a new world record. The random numbers can then be sent to any computer via a fiber optic cable.

To boot, the group's chip measures only 15.6 by 18.0 millimeters, significantly smaller than most of current QRNG modules or instruments.

Zhang and the group hope their approach helps pave the way for QRNGs to become a more practical solution for fast and compact devices.

"Based on our present work, in the future, we will develop a low-cost single chip of QRNG with moderate random bit rate, at the level of megabits per second, for commercial uses," Zhang said. "Such a single chip could be very useful in diverse electronic systems requiring random numbers or signals and even in mobile phones to improve the security."



<https://bit.ly/3jtADqN>



Technology Focus

Key value drivers for seamless cloud transformation to navigate the pandemic-hit era

Cloud computing is just one part of a larger digital transformation. It's an essential component, but if other aspects of the finance operating model aren't considered, a transition to the cloud would fall well short of expectations.

While CIOs and CTOs are leading the dialogue, given their role the pandemic, CEOs are instrumental in orchestrating collective-action across various functions and in enabling the transition to cloud as organizationgrapple to accept 'the new normal'.

Following the outbreak last year, leading organizations across the world struggled to transition their operating models to minimize disruption and sustain the uncertain time. While the transition was crippled with challenges for most, as the dust settled, many organizations realized that their existing investment in cloud-based technologies were not adequate for business resilience.

As the second wave of COVID-19 rises disrupts livelihoods, businesses and governments alike, organizations that are yet to embark on their cloud journey, need to take active steps to embrace it. Here are a few factors that makes cloud a critical business imperative in the current times. In the days to come, I hope CEOs and other C-suite members take into consideration the numerous advantages that cloud can deliver and recognise its role in building business resilience in this rapidly evolving risk landscape.

Cloud Security

The storage and control aspects of hosting business-critical data and software in the cloud tends to be one of the top concerns for businesses to remain sceptical about cloud adoption. However, according to a new global survey of senior IT security professionals conducted by Nominet, the UK domain registry provider, 61 percent of security experts believe cloud-based data and apps are more secure than on-prem data and apps, a significant change from conventional views. Given the abrupt shift to remote working arrangements last year, most companies found that moving to the cloud helped them maintain high productivity. As data, applications & users have increased in number, the emergence of hybrid workplace models & digital transformation is forcing companies to view security differently. Additionally, organizations are now faced with security challenges such as increased attack surface, a complex threat

landscape, overburdened security teams and outdated threat detection and remediation practices.

Dependency on IT

Another misconception is that deciding to move to the cloud and timing the transition are logistical problems that the IT department must overcome. While IT is a key stakeholder, the fact is that it is business processes, data, and activities that are moving to the cloud, so how and when this happens is a business decision. Although technology is important in this journey, the most successful approach is to migrate to the cloud, with finance, HR, and operations leading the way and IT supporting them. Over 45% of IT spending on infrastructure, applications will be shifted to cloud by 2024 which is now accelerated by the pandemic.

Transition from legacy systems to cloud

Most large corporations have migrated from legacy data centres to data lakes in recent years more so, post the pandemic. Even though warehouses are still useful for many structured data applications, deploying modernised platforms for a number of new business models can go a long way in helping organizations govern data more efficiently. While data centres, data lakes, and cloud-based platforms offer better performance at a lower cost and high scalability, cloud can enable data modernization practices by automating data pipelines, providing access to advanced tools or resources and higher flexibility.

The broader digital transformation

Cloud computing is just one part of a larger digital transformation. It's an essential component, but if other aspects of the finance operating model aren't considered, a transition to the cloud would fall well short of expectations. The cloud is a tool, not a destination. It is crucial for process optimization and allows vital developments such as artificial intelligence and robotics, all of which must be prioritised.

Cloud is now an imperative and not a matter of choice anymore and in today's demanding yet highly uncertain business environment, only organizations that embrace cloud will be the ones to emerge stronger.



<https://bit.ly/2Ugzet4>

Iraje PIM/PAM

Privileged Access Management (PAM) refers to systems that secure, control, manage and monitor the accounts of users who have elevated permissions to critical, corporate assets.

Enterprises have a host of critical assets that include Operating Systems, Databases, Database Management Tools, Routers, Switches, Firewalls, Applications, Cloud Infra, Client Server Applications, Browser consoles and others. These superuser accounts generally have virtually enabled unlimited privileges, or ownership, over a system. Superuser account privileges may allow:

- Read, copy, alter data, change security settings, delete accounts, run programs.
- Enable or remove file shares, switch off the logs, run programs.
- Change configuration and schemas
- Alter config settings, change user privileges.

Iraje Privileged Access Manager

Iraje PAM protects enterprise assets from the growing risk of cyber security and data breaches through password compromises. Iraje PAM helps business manage, monitor, and control privileged users to avoid super user password compromises which can lead to massive cyberattacks and data breaches for enterprises.

Architecture Highlights

Zero Trust Security

This solution being a single point of compromise, extreme care is taken in hardening the OS, encrypting the communication, and ensuring Zero Trust Security in true sense. The PAM OS is completely locked and its admin credential changes automatically every hour which ensures that no one has access to the PAM OS and its safe and secure.

Fail Safe Architecture

The solution architecture has to be fail safe in order to ensure the 24*7 user access is seamless and uninterrupted. The software is designed to ensure availability at all times and redundancy in terms of HA server for failover and DR server for site outage as well.

Application Server

Application Server – This is the first point of access for users to login, do the 2-factor authentication and get role-based access to target devices through Single Sign On. The session recording, discovery and collaboration features are available on this.

Vault Server

This is where all the passwords are securely vaulted in the database and all the configurations are stored along with the text logs and the BCP configuration.

Don't let your organization be vulnerable!
Galaxy offers various cybersecurity solutions to keep your company safe, to talk to our experts email us at marketing@goapl.com





A new supercomputer has joined the top five most powerful devices around the world.

The latest update to the list of the world's 500 most powerful supercomputers saw only one new entry in the top 10, confirming that although these devices are still improving their performance, the pace of innovation is slowing down.

Perlmutter, a US-based supercomputer located at the Department of Energy's Lawrence Berkeley Laboratory, entered the June edition of the Top500 list in fifth position, bumping Nvidia's Selene device to sixth place. At 64.6 petaflops, Perlmutter is the most notable change to the list; it also fared well in the Green500 list, which focuses on the energy efficiency of supercomputers, claiming number six spot thanks to a power efficiency of 25.55 gigaflops per watt.

In total, there were only 58 new entries in the Top500 list. This is not far off the record-low of 44 new entrants registered last November, and indicates a slowdown compared to earlier years. In 2007, for example, 300 new devices made it to the ranking.

This is mostly blamed on the impact of the COVID-19 crisis, which drove investment in commercial high-performance computing systems to an all-time low.

The authors of the list admitted that the latest edition "saw little change", with Japan's Fugaku supercomputer still retaining a strong lead in the number-one spot. Fugaku came online last March and boasts a record-breaking 442 petaflops – meaning that it is three times more performant than the nearest competitor, IBM's Summit, which is hosted at the Oak Ridge National Laboratory and claims 148.8 petaflops. A product of a partnership between Riken and Fujitsu, Fugaku uses Fujitsu's custom ARM processor, which has enabled the device to reach peak performance of over an exaflop. "Such an achievement has caused some to introduce

this machine as the first 'exascale' supercomputer," said the Top500 authors.

Exascale computations can perform a quintillion calculation each second, and are expected to significantly speed up applications ranging from precision medicine to climate simulation. China, the US and the EU have all unveiled aggressive goals to achieve exascale computing systems in the next few years.

In Japan's Research Organization for Information Science and Technology (RIST), Fugaku is set to advance a selected 74 scientific projects, many of which aim to accelerate research to combat the COVID-19 pandemic, such as early detection of disease or high-speed and high-precision drug discovery simulations.

Competing behind Fugaku, the rest of the list's top 10 remained largely the same, with IBM's Sierra in third place following the company's Summit supercomputer. China saw a significant drop in the number of devices it can claim on the list. From 212 Chinese machines featuring on the previous iteration, the country now accounts for 186 supercomputers on the Top500 list.

"There hasn't been much definitive proof of why this is happening, but it is certainly something to note," said the list's authors.

Despite the drop, China still dominates the Top500: the next biggest competitor, the USA, lags behind with 123 systems on the list. This has led some researchers to conclude that the gap between the two countries is rapidly closing.

It remains true, however, that the performance of Chinese supercomputers is far outstripped by other systems. The USA has an aggregate performance of 856.8 petaflops per second, while China's machines produce on average 445.3 petaflops per second.

In another noteworthy development, the Top500's authors highlighted the marked increase in the use of AMD processors, especially among the few new entries. The company's EPYC processors power half of the 58 new contestants, and three of the devices included in the top 10 – Perlmutter, Selene and Germany's Juwels Booster Module.

Compared to the same time last year, AMD noted that EYMC systems also power five times more supercomputers throughout the entire list.

"We are committed to enabling the performance and capabilities needed to advance scientific discoveries, break the exascale barrier, and continue driving innovation," said Forrest Morrod, senior vice president of the data center and embedded systems group at AMD.

In terms of system interconnects, the authors observed little change, with ethernet used in around half of the systems. A third of the supercomputers leveraged Infiniband and less than a tenth relied on OmniPath. Custom interconnects accounted for 37 systems.

<https://zd.net/3h8Obq5>





Gartner says worldwide IaaS public cloud services market grew 40.7% in 2020

The worldwide infrastructure as a service (IaaS) market grew 40.7 per cent in 2020 to total US\$ 64.3 billion, up from US\$ 45.7 billion in 2019, according to Gartner, Amazon retained the No.1 position in the IaaS market in 2020, followed by Microsoft, Alibaba, Google and Huawei.

“Hyperscale providers are continuing to build distributed cloud and edge solutions that extend the public cloud’s reach into private and on-premise locations, addressing the needs of organisations relating to data sovereignty, workload portability and network latency. This fact, coupled with reliance on the public cloud by a majority of organisations during the pandemic, drove another year of double digit market growth in 2020,” said Sid Nag, Research Vice President, Gartner.

In 2020, the top five IaaS providers accounted for 80 per cent of the market and nearly 90 per cent all IaaS providers exhibited growth.

Amazon continued to lead the worldwide IaaS market with US\$ 26.2 billion of revenue in 2020 and 41 per cent market share. Amazon’s 28.7 per cent growth was slightly slower than that of the market, with their sales growth primarily reflecting increased customer usage.

Microsoft maintained the No. 2 position in Gartner’s IaaS market share with nearly 60 per cent growth, reaching US\$ 12.7 billion in revenue in 2020. The global healthcare crisis and disruption in workplace environments during the pandemic era drove increased demand from existing Microsoft Azure customers to migrate mission-critical workloads, such as from healthcare applications with AI-assisted bots, digital twins in manufacturing and e-commerce in retail.

The dominant IaaS provider in China, Alibaba, grew 52.8 per cent in 2020 with revenue surpassing US\$ six billion, up from US\$ four billion in 2019. In 2020, Alibaba saw its highest growth rate in the education vertical at 105 per cent, driven by downloads of Alibaba’s enterprise communication and collaboration platform DingTalk among employees and students working and studying from home.



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