

Tech Outlook

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PROSYS 

Bringing AI into the Real World



New server platforms from Dell EMC deliver the horsepower needed to support today's artificial intelligence applications.

Once the realm of science fiction, artificial intelligence (AI) has become one of the hottest trends in the technology industry. Most people associate AI with virtual assistants such as Siri, Alexa and Cortana. There's also Sophia, a humanoid robot that's been granted citizenship by the Kingdom of Saudi Arabia.

But these "social" applications of AI only scratch the surface of what's possible with the technology. A recent discussion paper by McKinsey Global Institute notes that AI offers the greatest potential by augmenting existing analytics techniques. In analyzing hundreds of applications across 19 industries and nine business functions, the research organization found that 69 percent of use cases leveraged AI to process larger volumes of data in order to gain greater insight.

For example, organizations are already using Internet of Things (IoT) sensors to collect data related to the performance of equipment. The data can be analyzed to detect problems so that maintenance can be performed before the equipment fails. With deep learning, organizations can process

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more sensor data and add audio and video as well, making it possible to further reduce downtime while increasing productivity and extending the life of the equipment.

“AI has enormous potential to cut costs, improve decision-making and enhance customer service,” said Michael Renner, Partner Alliance Manager, ProSys. “It can optimize delivery routes to increase fuel efficiency and avoid delays. It can not only understand what customers are saying but detect their ‘emotional tone’ so that calls can be routed to the right person to maximize the quality of the experience.

“None of these things is new, but AI takes them to the next level. Organizations should be incorporating AI into their strategies and implementing IT solutions that have the processing power needed to support AI applications.”

Learning from Data

AI is not a single technology but rather an umbrella term for a number of techniques. Machine learning uses special algorithms to analyze data in real time and automatically build analytical models without being specifically programmed to do so. It is able to “learn” from the data by identifying patterns and make decisions with minimal human intervention.

Deep learning uses layers of algorithms to create a neural network that can identify more subtle correlations. It is also more autonomous than machine learning. While machine learning requires precisely defined feature sets and some degree of human supervision, deep learning operates without supervision and develops feature sets on its own.

“Both machine learning and deep learning require large datasets and considerable processing power to analyze them in real time,” said Renner. “That’s what separates AI from more traditional analytics — the ability to rapidly process large volumes of data to gain deeper insights that create competitive advantages.”

Graphics processing units (GPUs) have helped to accelerate advances in AI and machine learning. Originally developed to produce cleaner, faster graphics in video games, GPUs use parallel processing to crunch data much more efficiently than CPUs.

Field programmable gate arrays (FPGAs) also have parallel processing capabilities and can be modified after manufacture to accelerate specific workloads. FPGAs are increas-

ingly being used for machine learning, deep learning and other AI applications.

Powerful Platforms

Dell EMC is leveraging both GPUs and FPGAs in two new additions to its 14th generation PowerEdge server portfolio. The PowerEdge R940xa and PowerEdge R840 servers offer exceptional performance density with Intel Xeon Scalable processors (up to 112 processing cores) and massive memory. The four-socket servers also support FPGAs, and provide low latency with direct-attached non-volatile memory express (NVMe) drives.



PowerEdge R940xa

The PowerEdge R940xa combines up to four CPUs with four GPUs to accelerate databases for business-critical applications. Designed for in-database analytics, the PowerEdge R840 server speeds data transfers with a fully integrated ultra-path interconnect (UPI).

Dell EMC also introduced its new Ready Solution for HPC (high-performance computing), which integrates

Intel Xeon Scalable processors and Intel Arria 10 GX FPGAs into the PowerEdge R740 server. The Arria 10 GX FPGAs are also available in the PowerEdge R640 and R740SX servers.

“Dell EMC is helping organizations leverage AI by incorporating advanced Intel processors into its proven PowerEdge platform,” Renner said. “Customers can even benchmark their deep learning and HPC workloads at scale on Intel processors in the Dell EMC Innovation Lab and Dell EMC Customer Solution Centers.

“The Dell Ready Solution for HPC enables organizations to implement AI applications more rapidly. It’s a workload-optimized system that’s been tested and validated to reduce risk and lower total cost of ownership.”

McKinsey Global Institute estimates that AI has the potential to create \$3.5 trillion to \$5.8 trillion in annual value across the global economy. That’s about 40 percent of the \$9.5 trillion to \$15.4 trillion total value enabled by all data analytics techniques.

To remain competitive, organizations should begin preparing now to capitalize on AI. Dell EMC facilitates that with high-performance servers that can rapidly analyze structured and unstructured data to provide insights that drive business outcomes.

News Briefs

Windows Server 2019 Preview Available

A preview version of Windows Server 2019 is now available through Microsoft's Insiders program, with the full version of the server operating system expected to be launched in the second half of 2018.

The announcement was made in a blog post by Erin Chapple, Director of Program Management, Windows Server. According to Chapple, the new release will offer better support for hybrid cloud workloads, Linux workloads and hyper-converged infrastructure.

To support hybrid cloud workloads, Server 2019 will make it easier to connect on-premises software with Microsoft cloud services, such as Azure Backup and Azure File Sync. As part of improved Linux support, Microsoft also committed to helping customers move their Linux scripts to Windows while using industry standards such as OpenSSH, Curl and Tar. Microsoft also is promising to simplify the management and day-to-day activities on HCI environments.

Chapple noted that Server 2019 is built on the "strong foundation" of Windows Server 2016, which was made generally available in October 2016. The new release will also have the same licensing model as Server 2016, although the company says price increases are likely.

Blockchain Spending Expected to Double

Worldwide spending on blockchain solutions is forecast to reach \$2.1 billion in 2018, more than double the \$945 million spent in 2017, according to the inaugural Worldwide Semiannual Blockchain Spending Guide from International Data Corp. (IDC). IDC expects blockchain spending to grow at a robust pace over the 2016-2021 forecast period with a five-year compound annual growth rate (CAGR) of 81.2 percent and total spending of \$9.7 billion in 2021.

"Interest and investment in blockchain and distributed ledger technology (DLT) is accelerating as enterprises aggregate data into secure, sequential and immutable blockchain ledgers, transforming their businesses and operations," said Bill Fearnley, Jr., IDC research director, Worldwide Blockchain Strategies.

The U.S. is expected to see the largest blockchain investments, accounting for more than 40 percent of worldwide spending through the forecast period. The banking industry is expected to lead spending in the U.S. with \$754 million this year. Blockchain lends itself to a number of common use cases in the financial services market, including regulatory compliance, cross-border payments and settlements, custody and asset tracking, and trade finance and post-trade/transaction settlements, according to IDC.

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COMPLIANCE MODERNIZATION

Automating and improving regulatory compliance efforts can reduce risk and create value.

After two decades of prodigious regulatory reform, it should be abundantly clear that organizations cannot rely upon a single individual using a variety of manual, paper-based processes to manage compliance efforts. That’s why compliance modernization and automation efforts are likely to be areas of focus in the near term for many organizations.

The General Data Protection Regulation (GDPR), which went into effect in May, adds significantly to the burden of compliance professionals. Organizations are already attempting to meet the requirements of hundreds of corporate governance regulations, many of which involve dozens of separate obligations. For example, the Volcker Rule, which is just a single section of the 843-page Dodd-Frank financial reform legislation of 2010, includes 383 questions that are broken down into 1,420 sub-questions.

Despite the load, many organizations continue to be highly dependent on manual compliance processes involving email reminders, spreadsheet logs and three-ring binders full of documentation. These outdated techniques not only increase the risk of data entry errors and misreporting, they are woefully insufficient for maintaining visibility into modern cloud and virtualized workloads.

Seeking Value

In a recent Deloitte poll of regulatory compliance professionals, corporate board members and C-suite executives, 55.5 percent described their current compliance and regulatory efforts as merely foundational — they aren’t modernized nor do they create any value.

“Whether you work in a sector still evolving compliance leading practices or a highly regulated industry accustomed to frequent regulatory requests, now is the time to consider modernizing your compliance program,” said Tom Nicolosi, Deloitte Risk & Financial Advisory principal, Deloitte & Touche LLP.

To effectively address compliance demands, organizations must adopt a holistic approach. Analysts estimate that organizations attempting to implement individual solutions

for each regulatory challenge will spend 10 times more on compliance projects than those that take a comprehensive approach. Discrete solutions lead to duplication of effort, as well as the risk that one compliance “team” will deal less effectively with a specific compliance thread — such as security — than another team, thereby creating gaps in the overall endeavor.

Getting Automated

Additionally, organizations must take advantage of compliance software built on a knowledge base of existing regulations, with tools for automated monitoring and reporting tasks, self-assessments, control analysis, action planning, provisioning, patching and more. A new survey by SWIFT and Dow Jones Risk & Compliance finds that 54 percent of global compliance professionals plan to increase spending on technology to manage regulatory monitoring, reporting and compliance — so-called “RegTech” — in the next three to five years. In addition to automating manual processes to reduce errors, RegTech is now evolving to actively identify and mitigate emerging threats.

“Technology can play a key role in providing new and enhanced capabilities that strike a balance between preventing criminal activity, meeting regulatory requirements and containing costs,” said Paul Taylor, Director of Compliance Services, SWIFT. “The most sophisticated financial crime compliance solutions help mitigate risks and boost efficiency in several ways, from managing workloads to automating payments monitoring and reducing false positives, enabling compliance teams to focus on more strategic risk policy and financial crime prevention work.”

However, truly effective compliance modernization involves more than just installing a new piece of software. Deloitte defines the process as a functional transformation that elevates compliance professionals, aligns compliance programs with business goals, and better leverages compliance-related data for predictive insights that better inform decision-makers.

Leveraging Analytics

Compliance has traditionally involved the analysis of historical, transactional data to identify what went wrong in order to make corrections. Deloitte says modern compliance efforts should leverage predictive analytics to anticipate problems before they occur. Emerging RegTech tools accomplish this by integrating artificial intelligence, machine learning, data mining and predictive modeling to gather and assess historical data in order to spot patterns that might point to potential risks or opportunities to enhance the customer experience.

When faced with the challenges posed by the myriad industry and government regulations, organizations tend to focus on the burdens: the cost of compliance, the potential

penalties for non-compliance and the additional load on overworked IT departments. These are all legitimate concerns. However, compliance also presents significant opportunities to generate measurable value.

Compliance requirements ask for accurate information, timely dissemination of facts, preservation of records, protection of confidentiality and the certification of business-specific practices. The ability to demonstrate compliance can increase an organization’s value to potential customers and partners. What’s more, compliance modernization and automation can create competitive differentiation through improved operational intelligence, faster threat mitigation and better customer satisfaction.

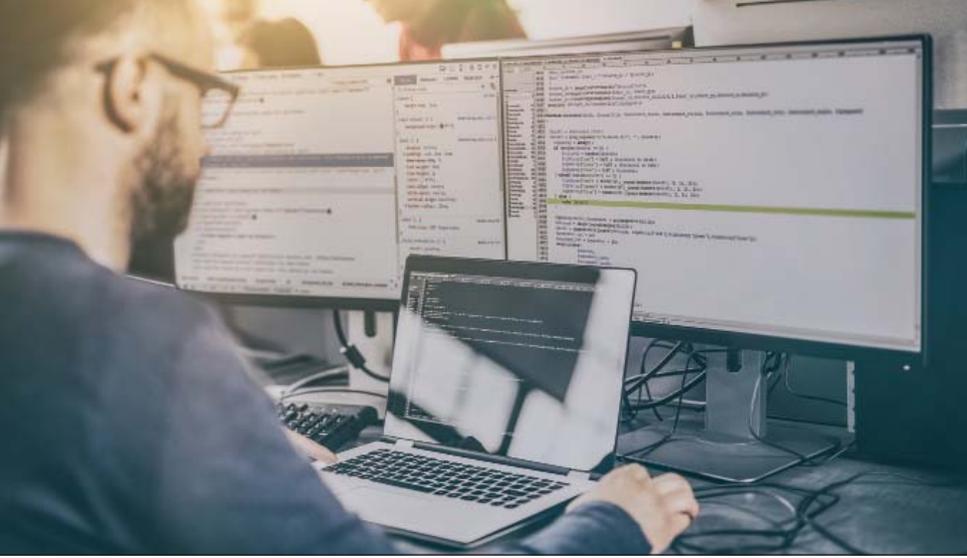
“Transforming a backward-looking, fragmented regulatory compliance program into something predictive and streamlined can be daunting,” said Nicole Sandford, Deloitte Risk & Financial Advisory partner, Deloitte & Touche LLP. “But leveraging things like robotic process automation to improve efficiency and advanced analytics to unearth new insights offer ‘quick wins’ that can start building momentum for compliance modernization efforts.”

Website Standards Updated

As of the first of the year, government agencies and all companies with whom they do business must be compliant with revised federal requirements for website accessibility. Changes to Section 508 of the Workforce Rehabilitation Act of 1973 create new guidelines for ensuring that websites and other digital information channels are navigable for users with disabilities.

The updates require websites to be accessible for people with disabilities who use screen readers and other assistive technology. To ensure a standardized approach to accessibility, websites must adhere to Web Content Accessibility Guidelines (WCAG) 2.0, a set of international rules designed to make all web content accessible for people with a range of physical, cognitive and learning disabilities.

According to these guidelines, web content consists of all information in a web page or web application, including natural information such as text, images and sounds, along with code or markup that defines structure and presentation. For example, photos with important information must include so-called “alt tags” describing the image. Blind and visually impaired users can access that information through the use of screen reader applications that convert text to speech.



Outsourcing Cybersecurity

Organizations are turning to managed security service providers for help in boosting data security and regulatory compliance.

Organizations continue to make significant investments in cybersecurity. According to the latest forecast from Gartner, Inc., worldwide spending on information security products and services will reach \$86.4 billion in 2017, an increase of 7 percent over 2016. Cybersecurity spending is expected to grow to \$93 billion in 2018.

Despite these investments, the number of cybersecurity incidents has not declined. On Sept. 7, 2017, credit reporting agency Equifax reported that it had suffered a massive data breach that exposed the sensitive information of as many as 143 million consumers. The WannaCry ransomware worm hit thousands of organizations in May 2017 in a coordinated global cyberattack.

Many of these incidents could have been prevented by the timely application of security patches and updates. According to a recent alert from the U.S. Computer Emergency Readiness team, about 85 percent of successful security breaches — including the

Equifax hack — involve systems that have not been patched.

Many organizations simply lack the manpower and expertise to keep up with security updates and other fundamental maintenance tasks. This has led to increasing adoption of managed security services, in which organizations turn over the management of security systems and controls to a team of third-party experts. Outsourcing to a managed security service provider (MSSP) can improve an organization's security posture and facilitate regulatory compliance while reducing the burden on in-house IT teams.

"Rising awareness among CEOs and boards of directors about the business impact of security incidents and an evolving regulatory landscape have led to continued spending on security products and services," said Sid Deshpande, principal research analyst at Gartner. "However, improving security is not just about spending on new technologies. As seen in the recent spate of global security incidents, doing the basics right has never been more important."

Closing the Skills Gap

Maintaining a strong security posture is increasingly challenging given the widening cybersecurity skills gap. In a recent survey by the Information Systems Security Association (ISSA) and Enterprise Strategy Group (ESG), 70 percent of cybersecurity professionals said that the shortage of qualified cybersecurity professionals is getting worse and having a negative impact on their organizations.

MSSPs can help close this gap by leveraging economies of scale. An MSSP's team of experts perform a common set of security tasks for multiple customers and utilize remote monitoring and management tools to increase efficiency.

Many managed services providers (MSPs) offer basic security services as part of their offerings. This may include managed firewalls, antimalware and spam blocking, as well as the application of patches and security updates to servers and desktop systems. Remote monitoring and management allows MSPs to detect security breaches and take action to mitigate the threat.

True MSSPs typically provide a broader suite of services. In addition to the basics, the

MSSP may offer intrusion detection and prevention, content filtering, email security, encryption and data loss prevention, secure remote access, and mobile device management. Outsourcing to an MSSP frees organizations from making investments in security appliances, software and monitoring, and maintaining in-house security skill sets.

But the real value lies in the expertise the MSSP brings to the table. The best MSSPs employ security specialists who are certified in a broad range of security products from a variety of vendors. This gives them the freedom to select best-of-breed solutions and offer a turnkey service that mitigates common security threats.

“Customers want solutions that solve problems, rather than mere alerts to a potential problem,” said Frost & Sullivan Digital Transformation Research Director Adrian Drozd.

The Compliance Conundrum

MSSPs will perform a thorough review of the IT environment and run security scans to gain a baseline of the organization’s security posture. They will also sit down with stakeholders throughout the organization to understand the threats that pose the greatest risk to the business. Only then can they develop a cybersecurity strategy that precisely meets the organization’s needs.

Because security is not a “set and forget” proposition, MSSPs handle modifications and upgrades of critical applications and network devices, and perform regular security reviews. MSSPs can also generate detailed reports on how the security infrastructure is performing, which can improve compliance with regulations such as Sarbanes-Oxley, HIPAA and the Payment Card Industry Data Security Standard. In fact, the increasing need for compliance with regulatory requirements is helping to drive the adoption of managed security services.

However, confusion over regulatory policies remains an issue in many industries due to variations in liability for security breaches. Some organizations believe they won’t be targeted by a cyberattack, and that if one does occur, any costs and regulatory penalties will be limited.

These organizations continue to be reluctant to outsource to MSSPs due to budget constraints and doubts about ROI benefits. MSSPs should educate these organizations about the tangible benefits of outsourcing cybersecurity, as well as the damages that a serious data breach can entail.

Security products continue to improve in capability, yet there is no evidence of a decline in the number and variety of network attacks. At the same time, an increasing number of regulatory mandates are forcing organizations of all sizes to boost data security and privacy.

Outsourcing to an MSSP allows organizations to improve security, comply with regulations, reduce costs and concentrate on core business processes. As security challenges continue to grow unabated, managed security services become increasingly attractive.



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Servers optimized for ultimate performance

Drive faster insights and maximize performance with the new the PowerEdge R940xa and PowerEdge R840, part of the 14th generation Dell EMC PowerEdge server portfolio.

Rapidly transform data insights into business outcomes with the Dell EMC PowerEdge R940xa, which is designed to accelerate databases for business-critical applications without cloud fees and security risks. It improves application performance by combining up to four CPUs with four graphics processing units (GPUs) in a powerful 1:1 ratio, and it enables low-latency with direct-attached non-volatile memory express (NVMe) drives.

Drive faster insights to better engage with customers and accelerate innovation with the Dell EMC PowerEdge R840 server, which is designed for in-database analytics. The R840 server minimizes latency with more direct-attached NVMe drives than other market available options and speeds data transfers with a fully integrated ultra-path interconnect (UPI).

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