

# TechTalk

## Issue 44

### February 2016

## EMC Announces New Innovation in Software Defined Storage with ECS2.2

EMC Corporation recently announced the newest version of ECS (EMC Elastic Cloud Storage), v2.2 essential for organizations trying to keep up with the blazing pace of digital transformation. Built from the ground up, ECS 2.2 can provide organizations a global scale with up-to-Exabyte capacity with compelling economics and can handle the massive burden generated by object data from mobile devices, social media and the Internet of Things (IoT), that many traditional storage platforms aren't designed to handle.

Some of the new features that **EMC ECS 2.2 delivers** are:

- ECS can be deployed on certified hardware or as a turnkey appliance.
- With native support for multiple protocols (like AWS S3, OpenStack Swift, HDFS), ECS breaks down dedicated storage silos. With native NFS support, ECS can also support file data without the need for a file gateway.
- With ECS, users can search metadata across Exabyte's of unstructured data without a dedicated database. This enables data analytics that can harvest valuable insights while greatly simplifying cloud and IoT application development.
- ECS further lowers the storage overhead for cold archive scenarios. A new single-pane-of-glass view that provides complete system health can help customers to reduce operational costs.
- With "data at rest" encryption support, users can apply protection to business-critical data. ECS also fully complies with SEC 17 a-4(F) and CFTC 1.31(b)-(c) regulations.

#### IN THIS ISSUE

<b>Future is now</b>	<b>2</b>
<i>Wearable Sweet Sensors Could Track Your Health</i>	
<i>4D-Printed' Objects Change Shape after They're Made</i>	
<b>Technology Focus</b>	<b>3</b>
<i>Virtual Tape Library (VTL), A Smart Way to Take Data Backup</i>	
<b>Tech News</b>	<b>4 &amp; 5</b>
<i>Apple May Soon Sell Refurbished iPhones in India</i>	
<i>India's Smart Cities Need Smarter Security Systems</i>	
<i>HP Launches Device-as-a-Service Program in India</i>	
<b>Special Focus</b>	<b>5</b>
<i>EMC, Brocade Seek Goldmine in Unstructured Data</i>	

## Anonymous and Other Hacker Groups Wage Cyber War Against ISIS



"Remember, remember, the fifth of November," or so the folk verse goes but in 2015, everybody still has the events of the 13th of November fresh in their minds. Now another plot has taken shape in the form of the hacktivist group Anonymous' plan to strike the Islamic State of Iraq and Syria (ISIS) via its recruitment channels on the Internet.

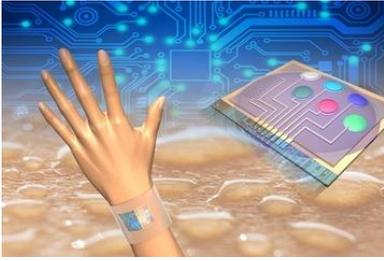
Anonymous posted the video declaring "War on ISIS" in their YouTube page shortly after the coordinated attacks in Paris. In it, the person wearing the Guy Fawkes mask threatened to hunt down ISIS saying they will not forgive the terrorist group for the atrocities they caused. Of course, ISIS answered the threat and called Anonymous "idiots."

It is believed that Anonymous will use the Distributed Denial of Service (DDoS) as its cyber-attack strategy to shut down ISIS websites. Within a week of its announcement, Anonymous has reportedly taken down about 5,000 Twitter accounts of ISIS members and sympathizers, including the account of five men it believed to be ISIS recruiters. Likewise, Ghost Security Group, another anonymous hacker group is taking part in the action to infiltrate and gather information on the activities of ISIS. The group is believed to be comprised of counterintelligence officials and computer specialists who have been successful in preventing at least 10 terror plots.

"We felt enough wasn't being done, so we wanted to put our skills to good use," DigitaShadow, an executive member of Ghost said. "We're completely independent. We survive off donations alone." Some of Ghost's members were former members of Anonymous. However, the small group of jihadi hunters denies associations with the underground hacktivist group.

# The Future is Now

## Wearable Sweat Sensors Could Track Your Health



Blood tests allow doctors to peer into the human body to analyze people's health. But in the future, there may be a less invasive way to obtain valuable information about a person's health: wearable sensors that use human sweat to look for signs of disease.

Sweat is a rich source of chemical data that could help doctors determine what is happening inside the human body, scientists explained in a new study. Perspiration is loaded with molecules, ranging from simple electrically charged ions to more complex proteins, and doctors can use sweat to diagnose certain diseases, uncover drug use and optimize athletic performance, they said.

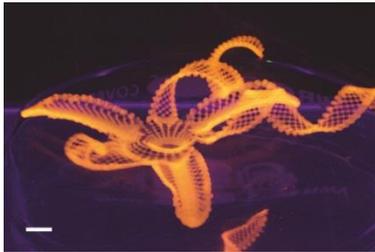
"Sweat is pretty attractive to target for noninvasive wearable sensors, since it's, of course, very easy to analyze — you don't have to poke the body to get it — and it has a lot of information about one's health in it," said study senior author Ali Javey, an electrical engineer at the University of California, Berkeley.

Commercially available wearable sensors, like the Fitbit and the Apple Watch, track users' physical activities and some vital signs, such as heart rate. However, they do not provide data about a user's health on a molecular level. Now, scientists say "smart" wristbands and headbands embedded with sweat sensors could sync data wirelessly in real time to smartphones using Bluetooth.

Previously, studies of sweat largely relied on perspiration collected off the body in containers that was later analyzed in a lab. Now, researchers have devised a soft, flexible, wearable sensor array to continuously monitor changes in four molecular components of sweat and to provide real-time tracking of a person's health. These devices might one-day help athletes track their performance and enable doctors to continuously monitor the health of their patients to better personalize their medication, the scientists said. This could help tell athletes to take liquids or warn them they are going through heat shock. The invention uses five sensors to simultaneously track levels of glucose, lactate, sodium and potassium, as well as skin temperature. This data is fed to a flexible board of microchips that processes these signals and uses Bluetooth to wirelessly transmit data to a smartphone. All of these electronics could be incorporated into either a wristband or headband.

The researchers tested the device on 26 men and women who pedaled indoors on stationary bikes or ran outdoors on tracks and trails. Sodium and potassium in sweat could help check for problems such as dehydration and muscle cramps. Glucose could help keep track of blood sugar levels. Lactate levels could indicate blood flow problems, and skin temperature could reveal overheating and other problems. In the long term, the researchers hope to conduct large-scale studies with their device on many volunteers. The data such work gathers could help researchers better understand what levels of various molecules in sweat mean for athletic performance and human health.

## 4D-Printed' Objects Change Shape after They're Made



By mimicking the way orchids, calla lilies and other plants bend and twist, scientists have created shape-shifting "4D-printed" structures that they say could one day help heal wounds and be used in robotic surgical tools.

Nowadays, 3D printing allows items to be created from a wide variety of materials — plastic, ceramic, glass, metal and even stranger ingredients such as chocolate and living cells. The machines work by depositing layers of material, just as ordinary printers lay down ink — except 3D printers can also print flat layers on top of each other to build 3D objects. Now, scientists say they recently developed innovative 4D-printing methods that involve 3D-printing items that are designed to change shape after they are printed.

"Other active research teams exploring 4D printing require multiple materials printed together, with one material that stays rigid while another changes shape and acts like a hinge," said study co-senior author Jennifer Lewis, a materials scientist at Harvard University. The researchers wanted to create 4D-printed structures that were created more simply, from one kind of material instead of several. They sought, looking at plants, whose tendrils, leaves and flowers can respond to environmental factors such as light and touch. For instance, "pinecones can open and close depending on their degree of hydration — how wet they are," Lewis said.

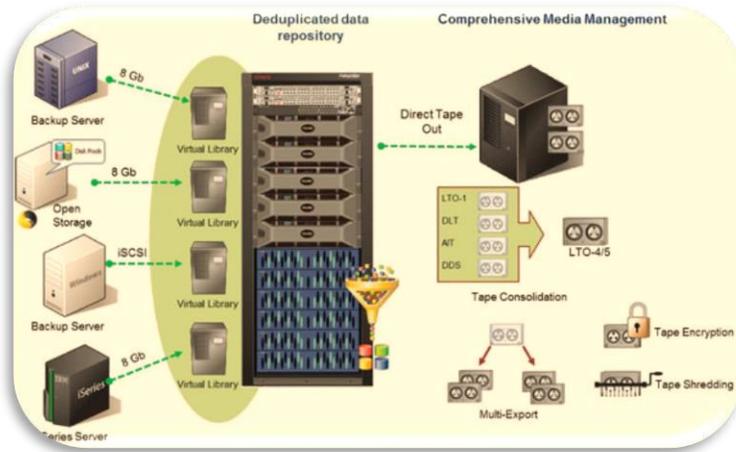
Similarly, "tendrils coil up as part of their structure becomes woody and shrinks, leading to stresses that cause the wiry structure to bend and twist," said study co-senior author L. Mahadevan, an applied mathematician and physicist at Harvard University. Plant structures largely consist of fibers of a material known as cellulose. Lewis and her colleagues devised 3D-printed structures made of stiff cellulose fibers embedded in a soft hydrogel, the same kind of material from which soft contact lenses are made. This hydrogel swells up when immersed in water.

The researchers can control the directions in which these fibers are oriented within the printed structures. In turn, the orientations of these fibers control the way in which these structures swell when they are immersed in water, much like how cellulose fibers control the way plants flex because of pressure exerted by fluids inside them, the researchers said. In essence, the scientists can use the orientation of cellulose fibers in the structures to program how the objects change shape. The scientists found that they could make the structures they created shift into cone, saddle, ruffle and spiral shapes minutes after they were soaked in water. They had flat sheets bend and twist into complex 3D structures resembling orchids and calla lilies.

In the future, plant-inspired 4D-printed structures could be seeded with living cells to help heal wounds, or find use in "soft micro-grippers for robotic surgical tools," Lewis said. "Another application of interest is smart textiles, which change shape or permeability in response to humidity, temperature and so on. We are pursuing some of these applications in my lab now."

# Technology Focus

## Virtual Tape Library (VTL), A Smart Way to Take Data Backup



Tape technology remains the most cost effective backup solution till date. With current tape technology, tape media have a lifetime of 30 years or more and therefore are the number one choice for data archival. In recent years disk based backup gained popularity due to a drop in disk prices and due a lesser need for manual intervention. The performance of disk based backup is generally consider faster and individual file restores from disk are significantly faster due to faster seek times.

A virtual tape library (VTL) is a disk based backup system which appears to the backup host as a real tape library system. Backup streams are however written to and restored from disk. The biggest advantage of a VTL over other disk based backup solutions is its seamless integration into an existing tape backup infrastructure. Backup applications, policies, licenses etc. need not change due to a VTL emulating an existing tape library system.

### Benefits of a Virtual Tape Library (VTL) system

**Improved backup and restore times:** Disk based backup offers faster backup and restore times. Sequential access of data is still maintained by VTL system by writing the backup data to disk in a sequential manner. When compared to other disk-to-disk backup (D2D) solutions, virtual tape libraries are high performance solutions with access to the virtual devices over the storage area network (SAN) while a D2D system utilizes a NAS network. VTL devices can be accessed over iSCSI, Fiber Channel (FC) and an InfiniBand network.

**Reduced tape media handling:** Handling of tape media is greatly reduced, hence lesser manual intervention is required. Only data needed for archival purposes would have to be transferred to a physical tape, reducing the amount of tape media that is eventually needed.

**Easy integration and Interoperability:** Tape libraries and drives from leading manufacturers are emulated. From a backup application's point of view nothing needs to change, and to it there isn't a difference between a virtual tape and a physical tape library. The integration of the VTL solution into the backup environment is seamless and non-disruptive.

**Multiple VTL instances:** Multiple VTL instances can be created and one or more VTL instances can be dedicated to a host. Each backup server would direct its backups to its own VTL instance, removing the need for tape library sharing and backup stream multiplexing. Also multiple simultaneous backup streams improve overall backup throughput.

**Dynamic disk allocation:** Storage is allocated to a virtual cartridges on demand removing the need for pre allocation of disk space. Additional disk storage can be configured at a later point of time to increase the available storage capacity. Additionally disk storage can be categorized into storage pools and virtual cartridges can be associated with a storage pool. For example a WORM pool can be created for virtual cartridges with WORM property enabled.

**Data deduplication:** The VTL extended edition supports inline data deduplication with support for backup data streams from leading backup applications. With data deduplication, store terabytes of backup data for a fraction of the storage cost.

**Data compression:** Data compression decreases disk capacity requirements with translates to lesser storage costs. Data can be compressed prior to storing on disk, the compression algorithm used is fast and can achieve 2:1 compression ratios.

**Disaster Recovery:** With the VTL extended edition replication virtual tape data to one or more remote VTL servers for disaster recovery. Auto replication to a remote server is supported for automatic disaster recovery management

**Tape Import/Export:** Data from a virtual tape can be easily exported to a physical tape either manually or can be triggered by backup application. Storage pool thresholds enable retention of exported virtual tape data for certain periods of time (tape caching).

Please call Galaxy's Backup Consultants to help you reduce the backup window and achieve your desired RTO

# Tech News

## Apple May Soon Sell Refurbished iPhones in India



Apple may have filed an application with the Government of India for the import and sale of refurbished iPhones in the country. In addition, it may also be planning to set up a facility in the country that will renovate used mobiles shipped from China. According to a report by the Indian Express, the company has stated in its application, "Apple would like to seek the government's approval to import and sell its certified pre-owned iPhones in India; manufacture and sell its certified pre-owned iPhones in India."

As per the Indian Express' report, Apple had earlier requested the government to import one lakh used iPhones and 2.5 lakh iPads, to explore the refurbished electrical and electronic equipment market. However, their request was turned down by the Environment Ministry's Technical Review Committee (TRC) who said that it would add to India's e-waste. It also said that refurbished electrical and electronic

equipment had a shorter functional life and became obsolete faster, which would increase e-waste. However, it reasoned that it may allow imports that were less than three years old and could be used for at least five more years. There is also a fear that relaxation of rules regarding import of refurbished or remanufactured products may amount to transfer of waste from developed to developing countries. But Apple has reportedly claimed in its application that it's certified were not "standard refurbished mobile phones" as they are made by the device's original manufacturers. It claims that the phones go through the same standards of quality testing as new devices. Not only that, but they also carry a one-year warranty along with a new serial and IMEI number. Apple did not elaborate on its business plan or targets, but said that the quantity of devices that would be imported would vary in hundreds of thousands of units on a yearly basis. Regarding the manufacturing of CPO devices, it has stated that the "initial scope would be in low hundreds of thousands units on a yearly basis."

Apple may have also filed an application with the Department of Industrial Policy and Promotion to open its Apple Stores in India. The move comes after the government's liberalization of Foreign Direct Investment rules on single-brand retail in November. Earlier rules required companies to have a certain percentage of manufacturing in India in order to operate retail outlets.

## India's Smart Cities Need Smarter Security Systems



The Government of India announced its list of the first 20 cities that will get central funding under the Smart Cities program. These 20 cities are from the list of 97 that had been chosen for the project in August. The concept of smart cities as a means to enhance citizen's quality of life has been increasingly recognized by the Modi Government and policy makers in the last one year. While the cities are getting smarter, it is also estimated that within the same timeframe, there will be millions of connected devices that will transform the way we live and work. The result is: the cyber security threat is expected to increase manifold in the coming months. The need of the hour therefore is the use and implementation of robust cyber security solutions and practices to make smart cities safer.

In the Journal of Advanced Research authored by Adel S. Elmaghraby (July 2014), cyber criminals are introducing new sophisticated viruses on a regular basis, that exploit security vulnerabilities, the most recognizable formats of cyber-attacks include personal data theft, copyright infringement, fraud and virus sharing, and the most important being attacks against government property and information. With cities adopting more technological solutions to become smarter, the chances of the city becoming more vulnerable to a cyber-attack is higher. The need for cities to develop tactics and counter-measures to best prepare against possible cyber-attacks and educate citizens on how to react while under attack is vital, he said.

Elaborating on this Koichiro Koide, MD, NEC India explained, "Ensuring and maintaining safety and security of a nation is crucial for citizens, as well as to attract business growth and investment opportunities to boost the economy. As one of the first companies to promote the Smart City concept, NEC believes that ICT is crucial to create a sustainable and secure society," he said.

Koide added that biometric recognition technologies such as fingerprint and face recognition will serve an important role in providing services that are highly secure and convenient. For example, NEC's biometric technology is used in 40 countries worldwide for fighting crime, preventing fraud and improving public safety. Its face recognition technology is independently recognized as among fastest and most accurate facial matching software according to latest tests done by National Institute of Standards and Technology (NIST).

A quick analysis of the National Cyber Security Policy of India 2013 reveals that it is suffering from many shortcomings. There are no Cyber Security Disclosure Norms in India that may require individuals and companies to share details of cyber-attacks and cyber breaches, said a report by the Civil Liberties Protection In Cyberspace (CLPIC). The report added that there is also an urgent need to formulate the Cyber Security Policy of India 2015 as the Cyber Security Trends are very alarming in India. Even there is no implementable Telecom Security Policy of India as on date and telecom related issues are getting complex day by day, it said.

However the Modi government said that efficient urban mobility and public transport, IT connectivity, e-governance and citizen participation will assured in these cities. The government also said that Rs 3 lakh crore will be spent in the next five years to develop the towns to provide world class infrastructure, sustainable environment and smart solutions. In such a scenario, experts believe, as cities bring new services online which feature multiple systems, and greater connectivity they are setting up even bigger targets for cyber crusader. Cities will have to increase their investment in ensuring the digital safety of their cities and data of their citizens.

# Tech News

## HP launches Device-as-a-Service Program in India



After announcing its Device-as-a-Service (DaaS) program globally in June last year, HP has announced the launch of this program for the Indian market. Aimed to help enterprises in the Asia Pacific to keep their PC infrastructure up to date, this is a third party delivery of a workspace to end users via a utility or subscription service model.

Enterprises and organizations can pay one price per seat on a monthly basis over a period of three to four years instead of paying upfront cost of buying new PCs. Under this service, they will get PC configuration and software installation, onsite break-fix, data migration, and proactive support. HP will also take care of the disposal of old PCs, eliminating the need to have different contracts for different needs.

Indian businesses are innovating to serve a vibrant, diverse workforce and are transforming to become more competitive nationally and globally. HP offers services and solutions that grow with enterprises and organizations, enabling them to leapfrog whole technologies, connect across geographies in India and even global market", explains Rajiv Srivastava, managing director, HP India.

In India, HP DaaS has been first implemented with Maruti Suzuki. HP says it is actively working in education, healthcare and banking industries and with start-ups.

"Digital transformation is key for businesses to stay ahead of the curve and deliver best-in-class services to customers. Each dealer can better identify the options that match the requirements and aspirations of our customers and address their queries more effectively and provide impeccable experience," says Rajesh Uppal, Executive Director, IT, Maruti Suzuki India Limited.

Before the India launch, DaaS has been available in Australia, Singapore, China, Hong Kong, Malaysia and Thailand.

# Special Focus

## EMC, Brocade Seek Goldmine in Unstructured Data



The surge in unstructured data and unpredictable workloads have been applying constant pressure on the traditional data center design, storage and networks to move away from legacy old 'Scale Out' storage environment to 'Scale Up' architecture to meet the demand.

At a time when heavy traffic of data is generated through IP networks is pushing the boundaries of storage and network vendors to bringing out solutions around software defined datacentres.

In order to tap this growth, EMC and Brocade have expanded their sixteen-year partnership, extending it from block storage network solutions to IP based Ethernet switches named Brocade VCS Ethernet fabric solutions to EMC's Connectrix family of network switches. With this they will be creating industry's first network switch designed for IP storage.

Rajesh Janey, President for India & SAARC operations at EMC Data Storage Systems said, "EMC started its operation in India 15 years ago, and we have been partnered with Brocade for last sixteen

years. Over the period, we both have worked together on transformation projects across the verticals. We are the OEM and we do not resell, Brocade's solution is branded and sold it as Connectrix by the EMC."

As per the OEMs alliance, EMC will sell and support Brocade solution under its Connectrix family portfolio. The key areas for both the companies are around VDI, hybrid Cloud and large data analytics.

Brocade has pioneered and focused in areas like Fiber channel network, Ethernet switches, Routing, campus networks and have been making developments and IP in new areas like SDN and NFV. The company claims 90% of the Data center across the world is run on Brocade technology that includes large mission critical telcos, media, technology and financial institutions.

Edgar Dias, Regional Director & Country Manager - India & SAARC at Brocade said, "In 2016 unstructured data will be surpassing the structured data. That is an opportunity. This requires certain requirement from network. The networks of old, that were thinking of unstructured data as an afterthought has to redesign to be able to support this massive explosion of unstructured data in enterprise."

In the IP storage environment, the key criteria for enterprise that they are looking at are performance, security, data protection, compliance and automation. As the enterprise networks have become more complex, there is a need to drive agility, automation and configuration in the network. To bridge the gap, it has launched industry first scale out IP storage switch. It will allow the data centers to move from scale out to scale up environment.

The Connectrix VDX-6740B is a high performance, low latency IP storage switch that provides connectivity for a broad array of EMC high-end and mid-range NAS and iSCSI storage platforms. The new switch redefines agility with superior automation and simplicity, achieved through zero-touch, self-forming fabrics.

# About Galaxy

- ✚ One of the most respected Information Technology integrator of the best of breed products and solutions for Enterprise Computing, Storage, Networking, Security, Automation, Application Delivery, ERP and Business Intelligence.
- ✚ An ISO 9001:2008 organization, founded in 1987.
- ✚ Committed team of over 200 skilled professionals.
- ✚ PAN India presence.
- ✚ Trusted IT services provider to more than a 1000 companies.
- ✚ Experienced consultants certified on a wide spectrum of technologies.
- ✚ The Galaxy Technology Innovation Centre, a state-of-the-art integrated hardware and software laboratory, allows customers a hands-on look at the latest storage, backup, security, application delivery and virtualization technologies.
- ✚ Customer list includes many of India's leading corporations, banks and government agencies.
- ✚ Four business units collaborate to provide a full spectrum of services and ensure smooth projects. Together, they provide our customers with truly end to end professional IT Services.

## Galaxy Business Solutions

System integrators of best of breed technologies to deliver solutions to the problems and challenges that confront enterprises

## Galaxy Technology Services

Skilled pool of resources consistently maintains and delivers enterprise class service levels

## Galaxy Network Solutions

One of India's most trusted active and passive networking specialists

## Galaxy BI Consulting Services

Helps organizations to deliver and leverage business intelligence to create substantial business impact

## NEWSLETTER COMPILED BY

### Galaxy Office Automation Pvt. Ltd.

A-23/24, Ambika Towers , Ground Floor, Off Jijamata Road, Nr. Pump House, Andheri (E), Mumbai – 400093, India.



Phone: 91-22-42187777

Fax: 91-22-421877760

E-mail: [galaxyinfo@goapl.com](mailto:galaxyinfo@goapl.com)

[www.goapl.com](http://www.goapl.com)

## VISION

*"To become the most preferred technology solution partner by listening to our customers, anticipating their needs and providing reliability, flexibility, responsiveness and innovative products and services. Achieving market leadership and operating excellence in every segment of our company."*

## MISSION

*"Total customer satisfaction; through innovative insights, quality service and excellence in technology deployment."*

## VALUE PROPOSITION

*"We understand the need of a common vendor for all your IT needs. Hence, we are committed to long-term partnerships by delivering on our commitments."*

## MD Speaks

"Dear Readers,

*Last month, the first conference on Startup India, where the Prime Minister addressed a host of startup entrepreneurs, was held with much fanfare. There have been a number of points in the action plan which, once implemented, will surely boost such ventures and generate employment and wealth. Among the more significant ones are a compliance regime based on self-certification, tax benefits and simplification of the startup process and exit. There are others which involve government funds, incubators and the likes but to my mind, once the regulatory and tax environment is made startup friendly, everything else will automatically fall into place. The success of Silicon Valley is largely because of non-interference by the Government rather than the other way round.*

*One thing that I would like to have seen, was some simplified process of closing a failed business. All startups are not going to be successful and if there is no easy exit route for a failed startup, it will really take a brave entrepreneur to take the plunge. This will effectively nullify the benefits and incentives provided to start a new venture. I am hopeful that this will also be addressed in the action plan.*

*Over the past few years, we've seen a lot of successful startups either set up office outside India or move their offices outside India, simply because they saw a commercial and operational advantage of doing so. Once the action plan is implemented, there is no reason for this to happen. Let's hope this happens in the very near future!"*