

DELL UNVEILS PROGRAMMES TO ENABLE THE ARM-BASED SERVER ECOSYSTEM AND ACCELERATE DEVELOPMENT AND TESTING OF ARM-BASED APPLICATIONS AND SOLUTIONS

- Dell enables customers and the developer community through:
 - Promoting open development environments and collaboration with remoteaccessible clusters of ARM-based servers via Dell Solution Centers and partnership with Texas Advanced Computing Center (TACC), which will be available to developers worldwide
 - Delivering Dell ARM-based servers to select hyperscale customers and partners

BRACKNELL, United Kingdom, 29th May 2012 - Dell today announced it is responding to the demands of our customers for continued innovation in support of hyperscale environments, and enabling the ecosystem for ARM-based servers. The ARM-based server market is approaching an inflection point, marked by increasing customer interest in testing and developing applications, and Dell believes now is the right time to help foster development and testing of operating systems and applications for ARM servers.

Dell is recognised as an industry leader in both the x86 architecture and the hyperscale server market segments. Dell began testing ARM server technology internally in 2010 in response to increasing customer demands for density and power efficiency, and worked closely with select Dell Data Center Solutions (DCS) hyperscale customers to understand their interest level and expectations for ARM-based servers. Today's announcement is a natural extension of Dell's server leadership and the company's continued focus on delivering next generation technology innovation.

As part of this effort, Dell is enabling customers and partners to develop on ARM servers in three ways:

- 1. Continuing delivery of the Dell "Copper" ARM server to select customers and partners.
- 2. Delivering servers to key ecosystem partners such as Canonical and Cloudera, to support their development activities.
- 3. Enabling continued software and ecosystem testing and development by providing remote-accessible Copper server clusters deployed in Dell Solution Centers, and through its deep partnership with <u>Texas Advanced Computing Center</u> (TACC).

Customers have expressed great interest in understanding ARM-based server advantages and how they may apply to their hyperscale environments. Dell believes ARM infrastructures demonstrate promise for web front-end and Hadoop environments, where advantages in performance per dollar and performance per watt are critical. The ARM server ecosystem is still developing, and largely available in open-source, non-production versions, and the current focus is on supporting development of that ecosystem. Dell has designed its programmes to support today's market realities by providing lightweight, high-performance seed units and easy remote access to development clusters. The Dell "Copper" ARM server seed unit programme will support software development and verification with a small number of customers worldwide ranging from the leaders in the hyperscale industry to smaller customers in focused web environments. At present, the Dell "Copper" ARM server is not generally available. Dell will continue to help enable ecosystem development, and bring ARM servers to general availability at the appropriate time.

Dell is working to enable software development for ARM-based server solutions, together with other leading industry partners such as Canonical and Cloudera. The partnership with these companies, and soon others in Dell's <u>Emerging Solutions Ecosystem</u>, will help customers and the industry scope and test new applications.

Dell is staging clusters of the Dell "Copper" ARM server within the Dell Solution Centers and with TACC so developers may book time on the platforms. Dell also will deliver an ARM-supported version of Crowbar, Dell's open-source management infrastructure software, to the industry in the future.

Supporting Quotes:

"Dell has a long history of addressing customer needs by delivering relevant innovation across the server portfolio, and within its Data Center Solutions business. Today Dell is delivering this same innovation focus to the ARM server market, working hand-in-hand with customers and the community to enable development and testing of workloads for leadingedge hyperscale environments. We recognise the market potential for ARM servers, and with our experience and understanding of the market, are enabling developers with the right systems and access for the current state of the ARM server market maturity."- Forrest Norrod, vice president and general manager, Server Solutions, Dell

"Ubuntu is the prevalent OS for scale-out workloads such as Hadoop, Condor, Memcached and edge-of-the-network web servers. The latest release, Ubuntu 12.04 LTS, is the first widelycertified enterprise platform with full support for ARM. That combination makes Ubuntu a great fit for the first generation of ARM servers. Canonical - the company behind Ubuntu - is delighted to support Dell in bringing hyperscale ARM server products to market." - Mark Shuttleworth, founder of Ubuntu and leader of Canonical product and design

"As the leader in Apache Hadoop and Big Data systems, we are continuously seeking new technologies that can help our Big Data platforms operate at the next level of efficiency. We are very excited about the ARM based server line from Dell, as this technology will allow our customers to pack more processing heft into a smaller data centre footprint and do so with a significantly lower energy consumption profile." - Amr Awadallah, co-founder and CTO of Cloudera

"Within data centres, the need to improve performance per watt while decreasing power consumption will continue to be strong area of concern for data centre developers, and forcing them to find ways of incorporating density optimised servers into the data centres. We saw Dell's DCS division become an early innovator and subsequent market leader with customised server solutions stemming from deep engagement with hyperscale customers. Dell is smartly extending this strategy to help foster the ARM ecosystem while providing a robust, reasonably priced testing and development platform with its new Dell Copper ARM server." - Matt Eastwood, Group Vice President, IDC Enterprise Platforms. "We are excited to see the growing enthusiasm and demand in the customer and developer communities for energy efficient server solutions based on ARM processor technology. Dell's programme creates a platform for the industry that demonstrates the benefits of ARM processor based system-on-chips in servers, and also enables the opportunity to develop new applications and solutions to address the divergent requirements of cloud based computing. Given Dell's extensive experience and expertise in the hyperscale market, we're delighted to be partnering with them at the leading edge of energy efficient server innovation to make this a reality."- Lance Howarth, EVP marketing at ARM

"Dell's approach to maturing the ARM server ecosystem is the right one, and Marvell is very pleased to collaborate with them. Today's data centres run the distinct risk of over-extension due to the rising popularity of connected lifestyles and the resulting explosion in unstructured data. A key component of Marvell's all-encompassing cloud-services platform, the Marvell(r) ARMADA(r) XP series of multi-core processors, represents a benchmark in security, scalability, performance and power conservation - ultimately offering a vast amount of headroom to cloud service providers looking to reinforce their capacities for the long haul." - Paul Valentine, vice president of marketing for the Cloud Services and Infrastructure (CSI) Business Unit of Marvell Semiconductor, Inc.

Additional Information:

Dell "Copper" ARM Server

About Dell

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