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On the Radar: ADDC transforming the architecture of the data center

Making edge computing practical

Summary

Catalyst

The shift to use more cloud computing, particularly the rise of the edge cloud, has changed the data center market. The concept that a data center must be certain physical size and configuration is being challenged as the growth in data at the edge increases, and the laws of physics means transporting all the data to a central location becomes impractical. Couple this with the demand for real-time, or near real-time, analysis of this data and the entire cloud and data center architecture is transformed. ARNOUSE Digital Devices Corporation (ADDC), has developed a new platform that enables a credit card sized computer to be deployed in a ruggedized form providing the equivalent computational capability in a significantly smaller form factor.

Key messages

- ADDC provides a new compact format for delivering IT capacity, its platform requires less power, cooling, and space than traditional rack systems.
- ADDC is a ruggedized device that be deployed in environments not traditionally considered viable for computing equipment.
- ADDC platforms are fully backward compatible with all previous generations providing investment protection.

Ovum view

ADDC has identified the market direction is towards a more federated cloud environment, where the edge and core are connected, but will vary in size and compute capacity. This new cloud environment will require the architecture to be capable of being deployed in any environment; from a store room in a retail outlet to city center HQ, and requires the smallest possible form factor. While not every deployment will require the ADDC form factor, it remains applicable to all uses cases, and as such provides organizations with the choice of where the data center can be located.

Recommendations for enterprises

Why put ADDC on your radar?

While the cloud computing revolution has changed the perspective on the economics of running a data center, ADDC has equally changed this equation by altering the cost equation of what a data center is. Typically, a corporate data center was measured in terms of the power it consumed, the cooling required, the floor space needed, and the location it was to be deployed in. ADDC provides the equivalent computational capacity in a faction of the footprint of a traditional data center, which means that a data center can be placed in previously inaccessible locations. Ovum considers this flexibility will enable some organizations to deploy compute much closer to the data, and therefore provide more real-time capability.

Highlights

ADDC's full line of products are centered around its credit-card sized X86 computer and its compute platform, branded as a BioDigitalPC. The BioDigitalPC comes in many different capabilities and is upgraded to a new generation, every 18 to 24 months, with latest embedded chipsets from Intel or AMD. All ADDC BioDigitalPC are backward compatible and the company just released its 6th generation card (the "PC11"). The BiodigitalPC card is a complete mother board which contains a CPU, memory, and storage as well as the latest trusted platform module (TPM). The card is fully covered with rugged epoxy resin for maximum security and waterproofing. The BioDigitalPC plugs into various types of peripherals via a standard 100-pin connector and an associated docking station. The connector comprises four USB 2.0, one USB 3.0, one Display Port, two peripheral component interconnect express (PCIe) connections, and a 5V power-in connector. The purpose of the docking station is to breakout the BioDigitalPC's connections to input/output (I/Os) that can be used as server blades (like the SR-60), embedded computers, highly dense compute solutions, or desktops. The eco-system supporting ADDC includes many different docking stations and readers, that are available from ADDC and its licensed OEMs.

Background

ADDC, was founded by Michael Arnouse in 2002 and has its headquarters in New York. ADDC created a new interchangeable patented compute platform. Currently, ADDC operates three locations located on both US east and west coasts and has representation in over 57 countries. ADDC has been granted 19 utility patents, with additional patents pending. ADDC products are proudly ‘Made in the USA’.

Current position

The BioDigital ecosystem of card, readers/docking stations provide a compute capability in the smallest form factor available. When the ADDC ecosystem is deployed, customers benefit from a reduced total cost of ownership, minimized overhead associated with logistics and maintenance, power savings, and overall installations cost savings. ADDC demonstrates its commitment to support its ecosystem by providing 24/7 support and help desk resources, and through the development of new solutions around nearly any x86 operating system and peripherals.

The ADDC product has been used by the military in the US and Europe and is currently expanding to the commercial vertical markets. Its focus is on three areas:

1) Standard Rack-based servers: The traditional rack-based solutions found in most data centers consume a significantly amount of power and space, and are typically under-utilized making them a relatively expensive approach to deliver IT resources. ADDC can provide a higher-density solution for both the on- or off-premises data centers for bare metal use in a faction of the floor space.

2) Mobile data centers: With the rise of edge computing, and satellite office locations such as retail outlets etc. the ADDC form factor is an ideal solution that can be installed in just about any location.

3) Integration solutions: Working with partners ADDC is looking to develop a series of solutions that are applicable to a multitude of vertical markets, including automotive, insurance, banking, education, transportation, government, real estate, energy/utilities, retail, manufacturing, telecommunications, medical, oil & gas, and others. The form factor of ADDC makes its use case ideal for situations where a traditional data center is impractical due to either power or space restrictions.

Data sheet

Key facts

Table 1: Data sheet: ADDC

Product name	BioDigitalPC server blade	**Product classification**	Data center
Version number	6th generation	**Release date**	Feb 2019
Industries covered	Government Information Technology Healthcare Financial Services Retail Education Private Sector	**Geographies covered**	North America,,central America, UK,France Benelux, Middle East
Relevant company sizes	Small	**Licensing options**	Perpetual Subscription On Demand
URL	https://www.ADDC.net	**Routes to market**	Direct, channel, OEM
Company headquarters	1983 Marcus Ave. Suite 104 Lake Success, NY 11042	**Number of employees**	n/a

Source: Ovum

Appendix

On the Radar

On the Radar is a series of research notes about vendors bringing innovative ideas, products, or business models to their markets. Although On the Radar vendors may not be ready for prime time, they bear watching for their potential impact on markets and could be suitable for certain enterprise and public sector IT organizations.

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We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Ovum's consulting team may be able to help you. For more information about Ovum's consulting capabilities, please contact us directly at consulting@ovum.com.

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