

The power of innovation, inspiration and excellence

# Advantage

The newsletter of Qcubed – Issue 01

## Latest IBM Blade Server powers the green future

IBM's BladeCenter technology is well established and well known for its reliability, performance and power saving benefits. Offering Intel, AMD, Power5 and Cell/BE processor based Blade Servers IBM provides the most comprehensive range of Blade technology available.

More recently IBM has extended the range to include the Power6 processor providing enhanced performance, efficiency and reliability in the new JS22 Blade Server. The JS22 Blade Server has been designed to run IBM's flagship 64bit operating systems i5/OS and AIX as well as the Open Source Power Linux from Novell SuSE and Red Hat.

The JS22 is powered by an IBM POWER6 Quad Core processor running at 4.0GHz and includes IBM's PowerVM Virtualisation Management software providing processor, memory, network and I/O virtualisation on the Blade.


Features include:

- Up to 10 virtual machines per core
- Integrated Virtual Ethernet Adapter
- Calibrated Vector Cooling and IBM EnergyScale technology allowing customised power consumption of the Blade
- Unrivalled Blade performance:

AIX 5.3 – rPerf = 30.25

i5/OS – CPW = 11,000

Linux – Spec CPU2006 fp\_rate = 75

The BladeCenter JS22 Express Blade Server is a feature-rich, pre-configured blade meeting the stringent requirements of small businesses for advanced technology at an attractive price. 

<http://www-03.ibm.com/systems/bladecenter/hardware/servers/js22e/>



## Qcubed: putting inspiration to work

### Qcubed Product offerings:

IBM Hardware	IBM Software	Service offerings
Bladecenter	Tivoli Storage Manager	Infrastructure design
System x	AIX	Implementation projects
System p	i5/OS	Qcare support
System i	DB2	Performance Analysis
System Storage	Software Maintenance	Infrastructure optimisation
Hardware Maintenance Contracts		Proof of Concept and product evaluations



Qcubed Limited was formed in 2007 by a group of established IT professionals who boast some of the most valuable and respected skills in the IBM Business Partner arena. We aim to provide IT solutions, support and systems based on the IBM product portfolio.

We are specialists in designing and implementing infrastructure solutions based on IBM Systems, software and services – marrying them with carefully chosen third-party offerings from valued business partners to complement and enhance these solutions.

### Your trusted advisors


We can provide you with the advice and skills to design, manage and implement IT Solutions to meet the most complex of business challenges. With our proven knowledge and skills in IBM Bladecenter, POWER Systems and a wealth of Virtualisation solutions, Qcubed are ready to provide clear solutions and options for your organisation.

We are also able to facilitate relationships with other service providers and – if required – to provide leadership and customer representation.

### IBM Business Partner Status

We are delighted to announce that Qcubed has been appointed to IBM Business Partner status from 12th March 2008 – bringing extra benefits for our customers through our closer relationship with IBM.

Call Glenn for technical advice  
07976 157440  
Glenn.Robinson@qcubed.co.uk

Call Lyn for sales 07768 276184  
Lyn.Fowler@qcubed.co.uk 



# Could you survive the loss of critical data?

The sensitive and critical business information on your servers is protected by physical and electronic security defences. But where are those security precautions when the same data is backed up to tape, CD or DVD and taken off site? Many organisations who failed to protect data have suffered huge financial penalties, as well as loss of business and customer confidence.

More backup media go missing than organisations dare to admit, more are copied than anyone would know about. But increasing legislation and public awareness about the loss of personal and commercial data by financial institutions, retailers, and government departments is forcing many organisations to review their security practices. Tight security at the data centre and backup site is fine, but they also need to secure the spaces in between.

Most organisations understand the need to ensure that all data leaving their premises is securely encrypted – but they're not sure of the path to get there. Any solution or procedure must be simple to understand and use, and must not affect the day-to-day running of the business.

## Tape data and archive encryption using Paranoia

Paranoia has been designed for simple, straightforward and efficient implementation and use – regardless of the hardware platform, operating system and backup procedures already in place. Paranoia units are transparent to the system, so they can be integrated without requiring system changes or special training.

Paranoia takes a dual approach to tape data encryption. On one hand, if you already have tape drives that are doing what you need, then why change the tape and drive technology? By using the Paranoia in-line encryption product, you can continue to use your existing drives and the media you already own. On the

other hand, if you are concerned about the archive of tapes you have already written, then you can use Paranoia's off-line copy solution. It will convert your tapes easily to encrypted tapes without need to use your precious system resources.


## Security specific to your organisation

Paranoia is available for in-line attachment to a wide range of SCSI and Fibre media drives and devices. By implementing a solution that requires no software installation on the server, Paranoia provides data encryption that is completely transparent to the attached server and media drive. To enhance and customise our solution further, each Paranoia unit has an encryption

microprocessor which is specific to you as an organisation. Because of this, data encrypted with Paranoia can only be read by another Paranoia unit with your organisation-specific hardware signature and user keys. This shields you from failures in data protection, disaster recovery and compliance.

## It doesn't have to be difficult

Many organisations are considering the IBM LTO-4 drive with its built-in data encryption solution, but there are some points to take into account. One consideration is that this solution relies on a single key for a tape, so the key is very important and needs careful guarding. Because of this, IBM changes the keys for each tape to minimise this weakness, but that calls for a complex and involved key management solution. IBM recommends two separate servers to hold these keys, as their loss would mean loss of access to the data. This also means that you will need a similar configuration at the DR site in order to recover the data.

Another consideration with LTO4 is that, in a disaster recovery scenario, you must rebuild your system to a point where you can begin to recover your data. As Paranoia does not rely on any resources your system(s) can be rebuilt from a bootable tape, saving significant recovery time. 

Paul Howard, DISUK Limited



# Is PowerVDC just another thin client?

Today, when virtualisation, centralisation and consolidation are important processes in IT infrastructures, it's no surprise that more and more companies are looking at server-based computing solutions. A logical next step is to phase out fat PC clients and replace them with thin clients.

There are many different thin clients at the moment, some use Windows XPe, some use WinCe, and others use a Linux version as an operating system. Viruses have been already been discovered for Windows XPe and Windows Ce thin and ultra-thin clients.

This increases the risk in traditional thin-client environments, but the operating system is needed to run the client for the application the device connects to.

## But does it really need the operating system?


Not in the case of the PowerVDC – and that's what makes this thin client unique. We prefer to call it an ultra-thin client, or even better, a virtual display client (VDC). This device only has a BIOS which enables the VDC to connect to an appliance in the network. Here's a summary of the impact this solution can have in your environment.

- **No IT knowledge needed at the desktop.** PowerVDC is a stateless device, so there will be no management whatsoever at the desktop. Under normal circumstances, if new software clients are developed you might be forced to do a hardware upgrade at the desktop – perhaps replacing units, adding memory, changing processor and/or adding fans. But with the PowerVDC solution, in worst case, you would only need to upgrade the appliance, which is handled centrally.

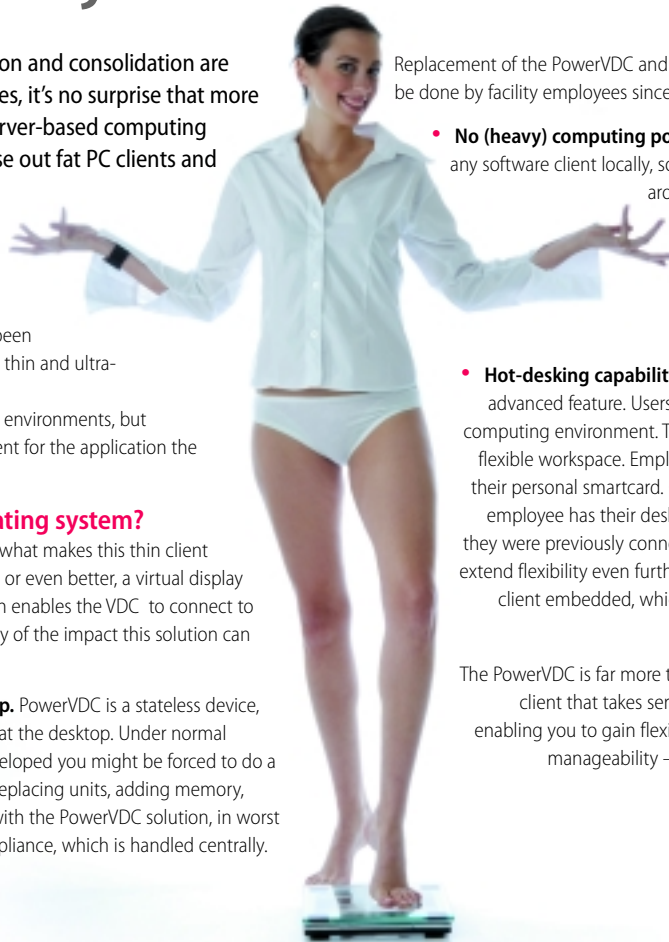
Replacement of the PowerVDC and expansion of the number of deployed units can be done by facility employees since it's a plug-and-play solution.

- **No (heavy) computing power on the desktop.** PowerVDC is not running any software client locally, so power consumption is a miserly 4 watts. This is around 3% of the power consumption of a PC, and about 10% of the power consumption of a traditional thin client. The energy savings will not only show up in the desktop area, but also in your company's climate control systems.
- **Hot-desking capability using smartcard technology.** This is another advanced feature. Users carry a smartcard that gives them access to the computing environment. This provides your organisation with the ultimate flexible workspace. Employees can have their desktop wherever they use their personal smartcard. Once the smartcard is inserted into the VDC, the employee has their desktop instantly, exactly how they left it – whether they were previously connected on the same or another VDC unit. This can extend flexibility even further as the BIOS of the PowerVDC has a Cisco VPN client embedded, which makes it perfect for people working at home.

## Have we answered the question?

The PowerVDC is far more than just another thin client. It is a virtual display client that takes server-based computing an important step further, enabling you to gain flexibility, enhanced security, mobility, sustainability, manageability – and a significant reduction in IT costs too. 

Eric Nelemans, Product Manager,  
cards OEM Solutions



# A workflow solution to improving customer service

Organisations know that they can service their customers more efficiently through automated Internet or Intranet systems as opposed to paper based manual processes. This article outlines a solution architecture that has been successfully deployed bringing considerable business benefits. It can reduce development time, save costs and can easily be extended to deliver other solutions.

Many organisations invest in bespoke Internet solutions. Though Java and .NET frameworks have reduced the effort of developing web applications, these solutions require considerable time and effort to build and deploy. An alternative approach integrates Workflow, industry leading web application servers, and CRM systems to automate processes across organisations.

## An elegant, integrated internet solution architecture

CRM systems provide the repository for customer documents, messages and calls. Workflow is work (tasks) and flow (how it is actually executed); CRM systems are evolved from workflow application, but focussed on a customer relationship with a company. Application servers power most CRM systems, Work flow engines, BPM solution and rule engines.

**Example solutions for this architecture include:** A customer making an application to open an account in a bank, a customer paying his council tax bill, a project manager reviewing and signing off the timesheet; all of these are tasks performed in pre-defined way but with some business logic required for reviewing the contents. In the case of banking applications a credit check process may be required for example

**These can all be programmed and created as reusable objects in the following framework:**

The CRM system is used to record a customer relationship with a company and certain workflows are executed to keep the relationship alive. The interaction mechanism can be via web, email, documents sent in post, call front office, fax, mobile technologies etc. Web services and XML technologies provide us with the ability to receive and send responses on many transport mechanisms.

Electronic forms technologies can be used to build client web applications

using HTML, PDF and flash, and using appropriate middleware can be automated to synchronise data between core systems and client applications.

We can build applications that capture data in a logical sequence ensuring that the information entered is valid and complete. Also, some of the workflow

Documents can be emailed to the customers securely using document certification, digital signatures etc. If a business process reverts to paper for any reasons, technologies are available to capture the user supplied data in a two dimensional barcode, which can then be faxed to the contact centre. This approach significantly reduces the data entry overhead.

Combining the strengths of workflow systems, eform technologies and developing custom Java applications we can create any client application or forms without compromising design &



systems' provide the ability to take the forms offline to save their information locally or the form with the data packet can be stored by the company in secure databases. On submission, the data entered by the customer (XML format) can be integrated to the core systems e.g. CRM, bespoke back office data stores.

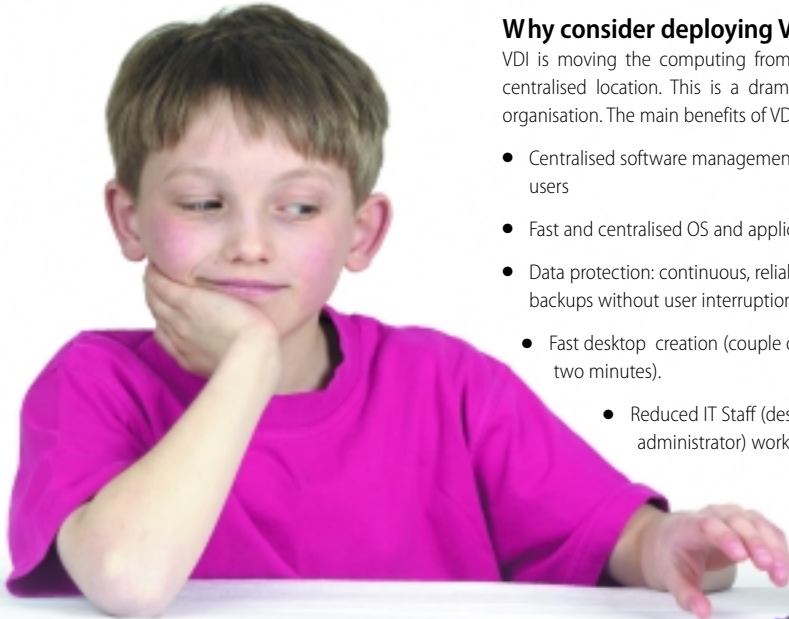
When data is submitted to the core system, we need to process it in stages. The workflow systems can automate the data processing (business process management). For legal reasons, the output document can be sent to eCRM or EDRM systems for archiving automatically. Some workflow systems provide a dashboard and interactive monitoring systems to monitor the application currently being processed.

brand guidelines. In designing such a system, it is important to determine the boundaries and strengths of each of the software components that it will comprise. We should consider factors such as performance, resiliency and security.

Building complex applications and the effort to maintain and enhance them could be costlier than initially thought, so simple architecture, clear cut products with their own strengths (not necessarily the same vendor) could be made to work together to provide an agile architecture. ■

# 500 into 1 will go – with VDI

Centralising up to 500 desktops on 1 physical server with container technology




## Why consider deploying VDI?

VDI is moving the computing from the end-user to a centralised location. This is a dramatic change in any organisation. The main benefits of VDI include:

- Centralised software management for all desktop users
- Fast and centralised OS and application patching
- Data protection: continuous, reliable desktop data backups without user interruption
- Fast desktop creation (couple of clicks, less than two minutes).
- Reduced IT Staff (desktop administrator) workload.

application. This deployment enabled Cox to avoid a large development effort, and allowed them to deploy its application on Virtuozzo Containers virtual environments in a couple of weeks. Benefiting from the templating and other efficiencies with OS virtualisation, Cox was able to deploy 60 virtual desktops on an average server: Dell 2850 with 2.8 GHz dual-core processors and 4 GB



RAM. A single administrator was able to manage and update the configuration in addition to many additional administrative duties. 

For more information on Parallels® Virtuozzo Containers VDI solutions and case studies, visit [www.parallels.com](http://www.parallels.com)

## What is Virtual Desktop Infrastructure (VDI)?

VDI is a new approach to desktop computing that combines all of the benefits and flexibility of server virtualisation with the power and personalisation of traditional desktop computing. VDI is an integrated solution of hardware, software and management tools to provide a replacement for standard desktop deployments. **In the simplest terms, VDI places user desktops on a centralised server.**

VDI is a combination of 5 technology components, one being virtualisation.

In order of user to centralised server these are:

1. End user access
2. Connection broker (manages end user to server connections)
3. Virtualised desktop instance
4. Virtualisation engine (to create the desktops)
5. Management tools.

## Why are containers a great VDI technology?

The key concept for OS virtualisation (containers) is that it deploys a single OS, allowing applications and virtual desktops to run with native performance, as there is no guest OS overhead. For VDI, a single OS is not only possible, it is preferred.

The benefits increase dramatically when you consider the applications. Containers also have the capability to install an application just once on a server and then deploy templates in each virtual environment that link down to the host copy application.

## Parallels Virtuozzo Containers – a VDI success story

**Cox Communications:** The customer-support branch of Cox needed a solution to its growing issue with an internal proprietary call centre application. In addition, Cox had a large and growing remote workforce that needed access to the application.

Cox deployed Virtuozzo Containers in a VDI configuration to allow the remote users to connect into a specific

## Steve Bradshaw joins the team at Qcubed



With nearly 20 years of IBM system experience covering development, solution design implementation and support, it is fair to say that Bradshaw loves the IBM midrange systems.

So, if you would like advice on performance, monitoring, integration, security, application modernisation or just to ask a "How do I do the something ..." then please contact him at [Steve.Bradshaw@qcubed.co.uk](mailto:Steve.Bradshaw@qcubed.co.uk).

## Products and Services

### Products

#### Qcare

- Flexible Support Contract
- Operating System Upgrades
- Health Checks
- Proof of Concept and product evaluations.

#### IBM Hardware

- BladeCenter
- System x
- System i
- System p

- System Storage
- Hardware Maintenance Contracts.

#### IBM Software

- DB2
- Tivoli Storage Manager
- Systems Director
- AIX
- i5/OS
- Passport Advantage
- Software Maintenance.

### Services

- IBM Leasing
- Infrastructure Design
- Implementation Programmes
- Storage, Server and Desktop Virtualisation
- Performance Optimisation
- Capacity Workload Analysis and Planning
- Linux and Open Source Implementation
- LPAR Design and Implementation.

### Complementary Offerings

- Paranoia tape data encryption
- Parallels VDI
- Virtual Desktop Client
- Workflow and Web-centric software development.



#### Qcubed Limited

t: +44 (0) 7976 157440  
+44 (0) 7768 276184

e: [sales@qcubed.co.uk](mailto:sales@qcubed.co.uk)  
w: [www.qcubed.co.uk](http://www.qcubed.co.uk)