



### • v1624

- **Hardware Accelerated Virtualization**
- **Solid State Diskless Appliance**
- **Scales To 16 Cores & 128GB RAM**
- **Turn-Key Pre-installed Hypervisor**
- **Superior Price Performance**

#### Introduction

Virtualization makes specific demands of a computing platform when compared to traditional non-virtualized environments. Aggressive consolidation and modern high-performance hypervisor architectures require greater amounts of memory and more efficient memory management than general purpose servers provide. The latest processors can accelerate these virtualized environments providing close to “bare metal” performance, but only when married to suitable systems and configured correctly.

360is have taken all that we have learned in recent years deploying virtualized environments, and have worked with hardware manufacturers to bring to market an appliance specifically designed for efficient virtualization of mission critical environments.

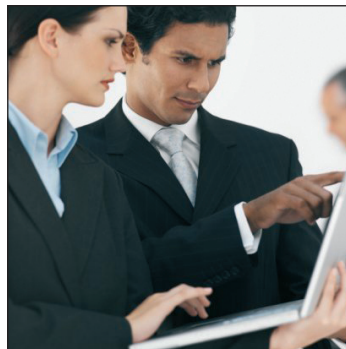
#### Business Benefits

- Better price/performance than general purpose servers
- Scalability inside the box, platform can grow as you grow
- Lower power consumption through reduced component count
- Hardware acceleration increases VMs per rack
- Solid state, diskless, operation increases reliability
- Pre-installed hypervisor provides turn-key deployment
- Comprehensive service wrapper

#### Performance

The performance of the v1624 comes from careful selection, integration, benchmarking, configuration, and field testing of industry standard components in a virtualized environment. Server vendors offer at least 4 x86 CPU types, 3 CPU core choices, tens of motherboards, and hundreds of IO options. Our engineers have identified the combination of components and settings that produce the best price/performance, reliability, and support for virtualization, and have worked with manufacturers to bring these together in one compact chassis. Each appliance is assembled from these components specifically for us.

Additionally there are a number of technologies which contribute to our superior performance and suitability for the task.



##### • Memory Management Unit

Unlike mainstream servers from HP and IBM, the v1624 has a MMU integrated with its processor. This allows direct processor-to-memory access, a key performance enabler.

##### • Nested Page Tables

NPTs allow VMs to manage virtual memory directly, using on-chip resources, not software. This reduces the time required to switch between VMs by as much as 25%, allowing you to host larger numbers of them without wasting processor power.

##### • Tagged Translation Lookaside Buffer

This feature allows more efficient switching between VMs. It means the v1624 will not “bog down” when used to virtualize workloads which demand a high rate of context switching, such as Citrix Presentation Server, larger Java applications, and interactive multiuser systems with a high rate of concurrency.

### Scalability

The v1624 appliance protects your capital investment by scaling from a single, dual core CPU, upto 4 physical CPUs and a total of 16 cores. Supporting a RAM configuration from 2GB to 128GB without the need to scrap any component along the upgrade path.

### Density & Environmental

Space and power are valuable commodities, particularly within major cities. The v1624 packs a large amount of virtualization power into a small package. Although blades may offer greater core density, the v1624's small size, large memory capacity and 16-core capability offers better virtual machine density. As a diskless, single board appliance it is also cheaper to power and cool, and is fully RoHS compliant.

### Ease Of Deployment

The v1624 is designed to be deployed in a datacenter or stand-alone rack as part of a larger virtualization project, along with other v1624s or general purpose servers. It is shipped with a turn-key setup, pre-installed hypervisor, and essential networking and storage configuration. The appliance can join your existing virtualization pool and be accepting new VMs with a few mouse clicks. 360is include an on-site installation service where our certified engineers will fully integrate the appliance with your networking and storage before handing it over to in-house systems managers.

### Field Service & Support

As a diskless single board appliance, with dual redundant PSUs, LAN adaptors, and dedicated management NIC, the v1624 is extremely reliable. When deployed as part of a pool or cluster in a virtualized environment, hardware failures do not result in significant VM downtime. Should the v1624 suffer a hardware failure, all systems have a 3-year next business day on-site contract.

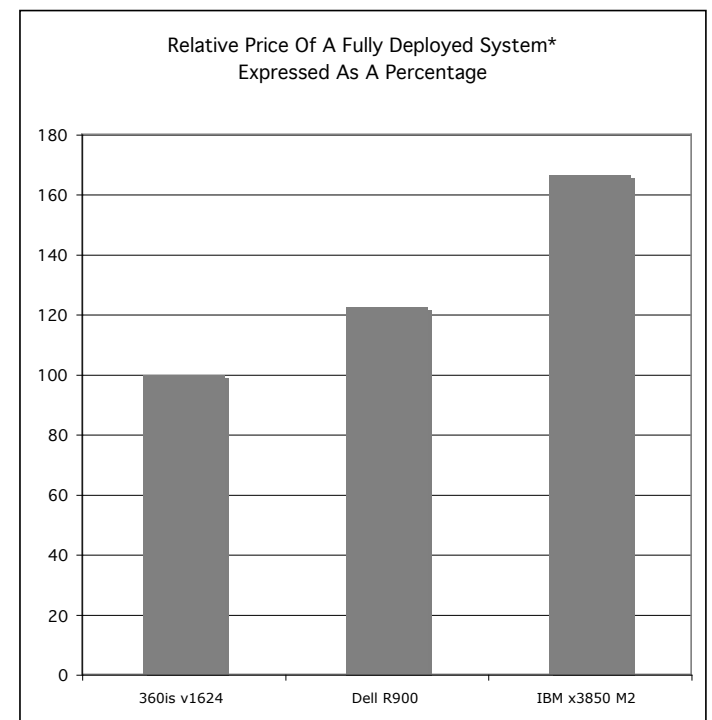
### Philosophy

The approach behind the v1624 was to use a commodity main board, strong in memory and core density, normally deployed in expensive mid-range servers, and to downsize it by removing components that were unnecessary in a virtualized environment (such as disk subsystems). Add to this a hypervisor, tuning, and turn-key configuration and you have the basis of the v1624.

### Technical Summary & Comparison

The table compares 360is v1624 against IBM x3850 & Dell R900.

	360is v1624	Dell R900	IBM x3850 M2
Cores	4	4	4
Cores <sup>max</sup>	16	16	16
RAM	64	64	64
RAM <sup>max</sup>	128	128	128
PSUs	2	2	2
NICs	2	2	2
Chassis	2U	4U	4U
Mgmt NIC	Yes	Yes	Yes
3yr NBD Onsite	Yes	Yes	Yes
Diskless	Yes	No	No
Turn-Key	Yes	No	No
Consultancy	Included	Not Included	Not Included



\* A fully deployed system is one delivered, configured, and installed with Citrix Xen Server Enterprise, and includes 1 costed consulting day on-site from each hardware vendor. 3 year hardware support is included, hypervisor software support is excluded. Calculations are based upon the 4-Core, 64GB RAM models. Prices are accurate as of vendor websites May 2008.



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