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Marathon Technologies FTvirtual Server

Make your Windows servers fault tolerant by mirroring

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- List price: From £7,964 ($14,000)
- Made by: Marathon Technologies
- Pros: Pros: Supports standard Intel-based servers and blades, far better value than clustering and proprietary hardware solutions, easy to configure and manage, seamless fault tolerant operations which don?t require any manual intervention to activate
- Cons: Cons: Patches and hot-fixes must be applied correctly to both physical and virtual servers which will incur small amounts of downtime, no facilities for sending alerts and warnings of detected failures directly from the software
- Buying advice: Businesses on a tight budget looking for full fault tolerance for critical services should take a closer look at the Marathon solution. It requires no modifications to the Windows Server OSes or special drivers and by supporting most Intel server and blade platforms it doesn?t tie you to specific vendors either.

Fault tolerance is fast becoming a necessity rather than a luxury for many businesses relying on 24/7 operations but it has traditionally commanded a very high price. Furthermore, some solutions require proprietary hardware platforms effectively locking you in to a single vendor.

Marathon Technologies aims to change the landscape as its FTvirtual Server (FTvS) software offers a unique solution that doesn't require costly custom systems. It supports standard Intel-based platforms and is quite unique as this software solution aims to go beyond basic fault tolerance to provide continuous availability for business critical servers.

How it works
You'll need two identical Intel Pentium 4 or Xeon servers or blades; this requirement extends from the processors, memory, storage subsystems and network adapters right down to the BIOS version. On review is the latest version of this software which brings in support for dual-core Intel processors.

Each server functions as a CoServer. Between them they present a single virtual Windows server and application environment to the network. Called lockstepping,

every transaction that occurs on the virtual server is executed simultaneously on both CoServers which ensures they remain synchronised. If any component or even an entire server fails, then all operations shift to the functional component or system with no pause in services.

In a basic fault tolerant scenario both CoServers will be in the same local environment and connected directly to each other by up to two Gigabit Ethernet crossover links. There should be no other network devices such as switches in between them as all lockstepping is performed over these links. Ideally, the servers would have a minimum of four network adapters with two serving as CoServer links, one as a redirected link for virtual network services and the fourth for remote management access. Introduced in the previous version the SplitSite option allows two servers to placed up to 100 miles apart so providing site disaster tolerance.

Installation and configuration

We found FTvS easy enough to install and configure -- our thanks go to Boston Ltd for supplying a matched pair of Supermicro 1U rack servers each equipped with 3GHz Pentium 4 Hyperthreading processors, 512MB of PC3200 SDRAM and a single 80GB SATA hard disk.

Each motherboard has two embedded Gigabit Ethernet adapters and we added a third Intel Gigabit card to each server. We opted for single CoServer, redirected and management links although we could have forsaken the latter and used two CoServer links instead.

Windows Server software licensing needs to be factored into the price as each CoServer must have its own copy installed with the latest service packs applied. The next task is to install the FTvS software on CoServer 1, then CoServer 2 and in each case assign the correct roles and IP addresses to each network adapter. Our test systems housed a hard disk each, so we initially formatted them as single 80GB NTFS partitions, as FTvS allows you to create virtual disks with the first acting as the virtual server boot disk. Now you install a third copy of Windows Server which will become your virtual application server. Finally, the FTvS software is installed on the virtual server and then you're ready to go. In all this process took us less than three hours.

System management

All virtual server operations are managed from the supplied Manager utility. This can be accessed locally from either CoServer, over a Remote Desktop connection or with it installed on a remote Windows system and linked over the optional management network connection. The simple main interface shows the status of each component and has menu options for controlling the CoServers, the virtual server or the entire FTvS environment. Virtual devices are configured from a separate Device Redirector utility and it's here that you can create matching virtual hard disks on each CoServer which will be automatically mirrored in a RAID-1 array across the systems.

All three servers must be kept in step with Microsoft's patches and hot-fixes but automatic updates cannot be used. The reason for this is that they must all have exactly the same updates when operational so these are run manually and a complete systems reboot scheduled for a convenient time. We also found that the Manager software does not offer any integrated alerting system. An SNMP MIB for the virtual server is available but this will obviously only be of value to sites already using a suitable SNMP management product.

On test

To test the fault tolerant capabilities we created Web and FTP services on our virtual server. While copying a 700MB file to a Windows client we simply powered one of the CoServers off to simulate a complete system failure. This was duly noted by the management utility but our test client was completely unaware that anything had happened as the FTP transfer carried on to a successful completion.

We then created a share on the virtual server, mapped it to the client and configured the open source Iometer utility to run continuously on the mapped drive. Again, we powered a CoServer down and watched Iometer continue regardless.

Lockstepping does have an impact on overall performance and now that this wasn't being carried out we saw disk performance increase slightly. With the CoServer back in the game this then dropped back again but at no time was Iometer aware that a failure had occurred.

Conclusion

Compared with clustering and proprietary hardware solutions, Marathon is offering a cost-effective alternative that puts fault tolerant computing within the reach of SMBs as well as enterprises. It is remarkably easy to configure and use so it won't add to the management and support burden and our tests showed that in the event of any problems it provides seamless failover services that won't result in any interruption of critical services.

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