

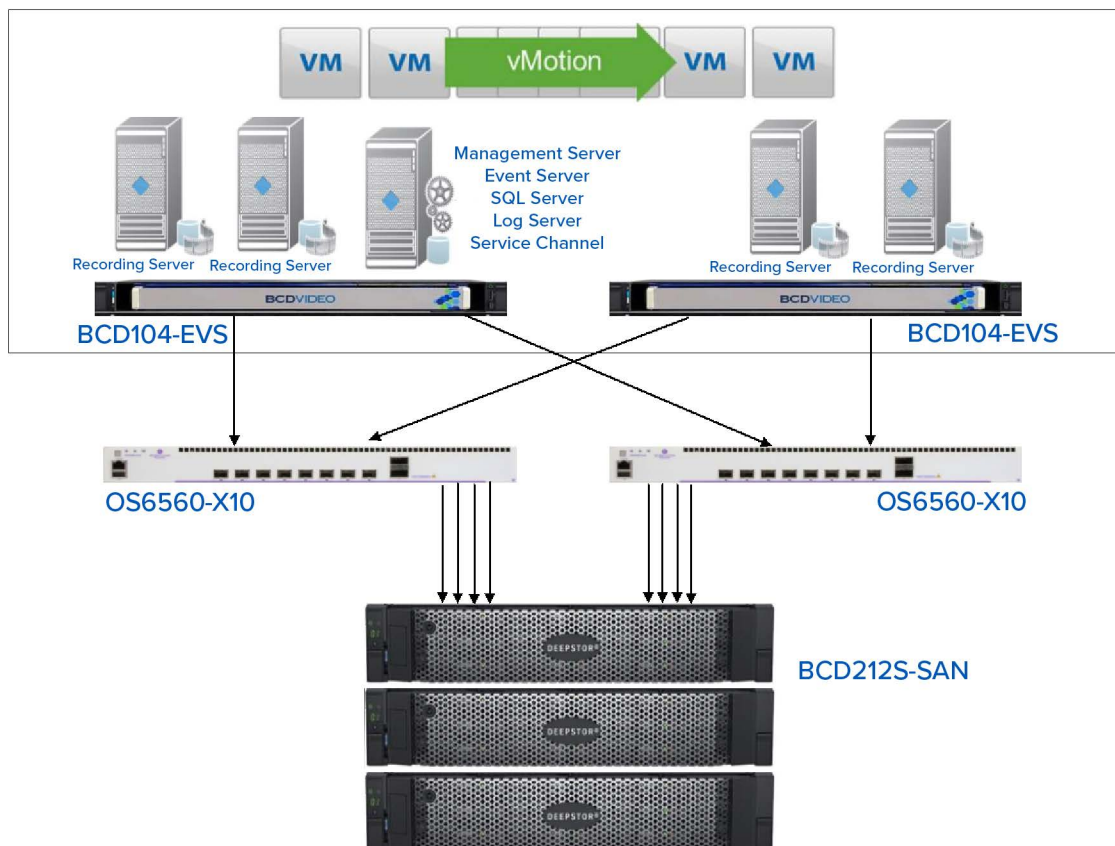
Executive Overview:

Currently, BCD offers the REVOLV platform as a high-availability solution, based on a hybrid approach to HCI. While this approach is more cost-effective than traditional HCI, it can be a difficult pitch to make for smaller and less robust physical security environments.

To achieve mobility for virtual machines, a common storage point is required. This storage point acts as a centralized storage location for all the files that make up the virtual machine and must be accessible to all nodes within the cluster. With traditional HCI and Hybrid HCI, this common storage point is based on vSAN technology, or a virtual storage array comprised of multiple nodes within the cluster.

This approach leads to costly licensing with VMWare and excessive overhead in storage. The approach for this product is to centralize the storage on the SAN and create an SSD-based array for the virtual machines, and any tier-one storage or live drives. Tier two storage is comprised of rotational drives and serves as the long-term storage for the solution. By running the virtual machine off the SAN, we can deliver a cost-effective high-availability solution, without excessive overhead.

Topology of Solution:



Server Configuration:

The tested topology consisted of dual BCD-104-EVS servers. While these were the servers used for the test, they might not be the most cost-effective for the solution. Due to the fact that the virtual machines, along with primary and secondary storage, are all SAN-based, the servers only need enough local storage to install ESXi in a high availability form factor. The only active storage in the servers consists of BOSS cards, configured in a mirror set for resilience. ESXi is then loaded onto the RAID 1 BOSS configuration. The only other requirement for the servers is four 10G SFP+ connections for iSCSI and ingress camera traffic.

SAN Configuration:

The tested SAN configuration consisted of a four-drive SSD-based RAID 6 array, and an eight-drive rotational array configured for RAID 6. The number of drives required in each array will be dependent on the number of virtual machines and required tier-one and tier-two-based retention. For both the SSD and rotational arrays, direct iSCSI mappings were made directly to the ESXi hosts.

Benefits to the Solution:

- Provides high availability for virtual machines regardless of the native capability of the software that is being deployed on the virtual machines.
- Solution avoids the excessive costs associated with vSAN licensing, and only requires Essentials + licensing to create a high-availability solution.
- Solution does not have the storage overhead associated with vSAN and HCI configurations.
- Can create a two-node highly available cluster without the requirement of a passive witness node at an independent location.
- Requires no local storage on the server, only required enough storage to deploy ESXi.
- Delivers the same benefits as REVOLV at a fraction of the cost. Entry-level solutions are targeted to be below the 70K price point. The number of virtual machines and required retention times will increase this number.
- While the tested solution only leverages two nodes, additional nodes may be added to the solution, to increase the number of virtual machines that can be deployed.

- The retention times at both tier-one and tier-two are extensible by adding expansion boxes to the SAN headend.
- Solution can be deployed leveraging any of our current server platforms, and SAN offerings.

