



SeaChange BMC 30000™

The Broadcast MediaCluster 30000 Series is a cost-effective family of highly scalable broadcast video servers designed for moderate bit rate MPEG video applications. The BMC 30000 video server encodes, stores and decodes MPEG video at rates as high as 30Mb/s for broadcast television and supports up to six 30Mb/s I/O channels per node. Utilizing patented SeaChange® RAID2® technology, the BMC 30000 provides high fault resilience and performance yet requires the storage of only a single copy of each video file. To achieve low cost, the BMC 30000 is configured with a 6 drive video storage array. Customers with larger storage requirements can upgrade to 12 drives, or 200 hours of storage @ 30 Mb/s per node. Customers using BMC 30000 solutions in single- and multi-channel broadcast facilities will benefit from their low cost per channel, their inherent reliability and fault tolerance, the scalability of storage capacity, bandwidth and I/O channel count and the high storage efficiency of the RAID2 architecture.

The BMC 30000 supports a wide range of Broadcast MPEG video formats: program streams, transport streams, Long GOP, IMX, HDTV and DVB-ASI and can be equipped any SeaChange Codec or I/O card running at an aggregate bit rate of 30Mb/s.

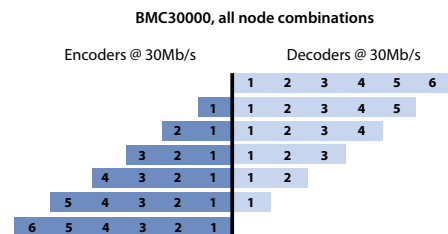
BASE SYSTEM CONFIGURATIONS

BMC 30000 solutions can be configured and scaled to satisfy a variety of requirements. For example, in on-air applications requiring high fault tolerance, a clustered configuration (3 to 7 nodes) guarantees sustained performance, even in the unlikely event of a node failure. Typically, the number of nodes in a cluster is influenced by the storage capacity and bandwidth needed as well as the number of input and output channels. Where reliability is secondary to size and cost, a standalone, single node might be the optimum choice.

- 1-node, 3-node, 4-node, 5-node, 6-node and 7-node BMC clusters (BMC 3000n)
- SeaChange Codecs and I/O cards up to 30Mb/s per channel
- 6 SCSI drives per node, RAID5 protected: 36GB, 73GB, 146GB or 300GB
- 8-port RS-422 Serial Controller Interface Kit for Broadcast Automation
- MediaCluster® interconnect cables, 3 per node
- Two A/V patch panels per node
- Redundant power supplies

INPUT/OUTPUT PROVISIONING

Provisioning BMC 30000 I/O channels is straight forward. As illustrated in the following figure all node configurations are guaranteed to support up to 6 I/O cards running at 30 Mb/s.



- Additional I/O Provisioning rules
 - The MTS 734 card is equivalent to an encoder + decoder
 - A chassis may have up to three Genesis HD Decoders, with the first Genesis HD Decoder occupying 3 standard decoder slots, the second occupying two more decoder slots, and the third occupying three more decoder slots.
- BMC 30000 Cluster Kit includes:
 - Patented RAID² n+1 file protection across BMC 3000n
 - SeaChange BOSS diagnostic and system management station
 - 9RU rackmount keyboard/monitor/mouse with KVM switch for monitoring multiple nodes
 - 8-port 10/100/1000BASE-T Ethernet unmanaged switch
 - MediaCluster interconnect patch panels (three)
- Supports SeaChange-installed hardware and software *only*

BMC 30001 OPTIONS

- Factory upgrade to 12 drive array to double storage capacity
- SeaChange BOSS diagnostic and system management station (required for Time Delay application)
- 40RU Rack, 36" deep, with side panels and castors
- Fault-tolerant UPS
- 9RU rackmount keyboard/monitor/mouse
- Space-saving 1RU keyboard/monitor/mouse with KVM switch for operating BMC 30001 and optional BOSS

BMC 3000n CLUSTER OPTIONS

- Factory upgrade to 12 drive array to double storage capacity
- 40RU Racks, 36" deep, with side panels and castors, quantity dependent on configuration
- Fault-tolerant UPS, one per node
- Space-saving 1RU keyboard/monitor/mouse with KVM switch for operating multiple nodes

PERFORMANCE PARAMETERS

- 30Mb/s maximum channel throughput (video plus audio/data)
- TCP/IP import/export rate up to 80 Mb/s for archive, file import, cluster-to-cluster transfer
- Maximum storage: 65,536 video files
- 5-second minimum video clip size for back-to-back play with no black frames; 2-second minimum video clip size with automation software support
- Fault resilience
 - A multi-node BMC 30000 system will maintain continuous operational performance in the event of any single component loss, including power supply, drive, node, or link failure, as well as input/output devices with the exception of the failed device. System performance in the event of a second component failure is not guaranteed, but can often be tolerated.
 - A BMC 30001 with RAID-5 storage supports on-air operations in the event of a hard drive failure; redundant power supplies and fans provide additional fault resilience.
- System scalability
 - The BMC 30001 is upgradeable in terms of drive size and I/O card quantity. The BMC 30001 can also be upgraded to a BMC 30003. All of these upgrades are off-line procedures.
 - The BMC 30003/4/5/6/7 supports drive size and codec upgrades during on-air operation.
 - A node may be added to the BMC 30003/4/5/6 to increase the system size during on-air operation.

- A BMC 30000 system may be upgraded to a BMC 60000 system, as an off-line procedure, with the resulting codec configuration subject to the BMC 60000 system provisioning rules.

CHASSIS SPECIFICATIONS

- 24-drive LVDS chassis
- 64-bit, 33MHz, 14 PCI/4 ISA backplane
- Connections: VGA, PS/2 keyboard, bus mouse ports
- 6RU rack-mount chassis, 10.5"H x 19"W x 24"D
- Maximum weight: approximately 125lbs, or 57kg
- Operating temperature: 10° to 30° C
- Humidity: 20% to 80% RH, non-condensing, 2000 meters maximum altitude
- Power:
 - 18.0A @ 120VAC or 9.0A @ 240VAC, 50Hz or 60Hz
 - 3 x 500W power supplies, with one power supply redundant
- Certification: UL, FCC Class A, CE

SYSTEM COMPONENTS

- 2.4GHz or faster Xeon CPU card with dual 10/100/1000 Base-T Ethernet ports
- 512MB or more system memory per node
- 8-port RS-422 Serial Controller Interface Kit (remove for 16-port upgrade)
- MediaCluster controller (IOP990) with 256MB memory, one per node
- Two-channel RAID controller, two per node
- 24 hard drives per node: 36GB, 72GB, 146GB or 300GB LVDS SCSI
- IDE Service Disk, one per node
- 56k external modem for each system
- Microsoft Windows 2003 license
- SeaChange operating software Vstrm 4.3 or higher
- SeaChange Service Disk software for system snapshots, rebuild and status
- SeaChange application software Broadcast 2.0 or higher