

# Broadbus

## Company Overview

### Introduction

On-demand television services, such as today's video on-demand (VOD), subscription video on-demand (SVOD), and the fast approaching Television OnDemand™ (TOD®), are enhancing the consumer entertainment experience and creating increased cash flow for cable operators and content owners alike. Yet, as cable Multiple System Operators (MSOs) continue to deploy these profitable services, the need for more robust server systems to support growing on-demand content libraries, along with tomorrow's massive streaming and ingest requirements, is quickly becoming apparent.

Broadbus was founded to address the needs of the cable industry as it migrates from the increasing demands of basic VOD to the future of TOD, a world in which totally nonlinear viewing is the norm and customers enjoy increased choice, convenience, and control over their programming. Our

mission reflects a belief that any successful TOD model must address the needs of stakeholders across the creation, distribution and consumption spectrum. And it is driven by the realization that the on-demand future we collectively envision will require video servers with capacity and power far beyond that of current generation systems.

The Broadbus team has extensive experience designing and deploying the type of scaleable servers required to make TOD a market reality. Our fourth generation, solid-state memory (DRAM) based B-1™ video servers solve the scale, space, power consumption and live ingest issues required to stream diverse content in dynamic on-demand environments. Designed to integrate seamlessly with legacy VOD/SVOD systems, the B-1 enables MSOs to gradually and profitably respond to the expanding market for on-demand services.



### The Path to Television On-Demand

TOD is a logical next step for VOD, enabling cable operators to provide on-demand delivery of live and pre-recorded broadcast television services, as well as movie and subscription-based content. TOD also provides subscribers with an exciting new capability: access to vast libraries of video archives — far more than could be carried on broadcast television channels — and the ability to search for subjects of interest, choose a program, and immediately begin streaming the program to their TVs.

TOD enables new business models

in which content owners, programmers, and MSOs can each participate in the benefits associated with on-demand programming, using rules-based control over programming that is collectively managed by, and profitable for, all. MSOs gain the ability to provide considerably more content over their networks during expanded viewing “windows,” while offering subscribers PVR functionality across an enormous breadth of content, without the need for a digital set top box upgrade. Most importantly, because the on-demand delivery of network,

off-network, and syndicated content will require the permission of those who license it to the cable industry, TOD enables compliance with the constantly changing licensing and syndication rules of television. Unlike current standalone PVRs, whose proliferation disrupts current advertising-subsidized industries, TOD allows operators, networks, syndicators and advertisers to offer new exciting on-demand services to subscribers, while maintaining and enhancing longstanding business models based on content licensing and advertising.

### The Broadbus Solution

Today's conventional, hard-disk based VOD servers are not well suited for deploying new TOD services. Intended for streaming small amounts of video content to customers, they were not designed to handle the simultaneous streaming, propagating and ingesting of numerous “live” network feeds. With the new focus on revenue-generating, on-demand services, the industry requires a new server solution that scales as the VOD market grows and as new video-based services such as SVOD, headend-based personal video recording, and ultimately, full-scale TOD grow in demand.

In contrast to traditional VOD server architectures, Broadbus' approach removes the limitations of streaming data directly from a hard drive by streaming out of solid state DRAM. With its revolutionary server architecture, the Broadbus B-1 is ideally suited to address the content ingest and propagation issues created by TOD. By absolutely “decoupling” the streaming functions from storage, stream count and storage size can be scaled independently and storage can be placed in the network where it can be leveraged in the most cost-effective way.

Key innovations in the Broadbus system are an asymmetrical multi-processor architecture, high-density memory system and a unique addressing scheme to handle large amounts of DRAM. With the B-1, program content “in demand” is stored in a large DRAM array that supports significantly more simultaneous video streams in a single rack than existing VOD servers. Also, leveraging DRAM enables cable operators to directly benefit from their rapidly declining costs. The B-1 is designed to be carrier-class, with fewer moving parts and therefore more reliable than existing servers. Total cost of ownership for cable operators is lowered significantly through the flexibility of configuration, scaling and management. A chassis and blade solution, the B-1 may be easily upgraded in the future to support more streams by adding new modules without disrupting existing customers and services.



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