Origin Application

VELOCIX™

The Velocix Origin Application (VxOA) is a highly scalable recording, storage, processing, and multi-screen distribution platform for live, on-demand and time-shifted video content. With its advanced features, including low-lag delivery, cloud-based digital video recording (CDVR), integrated just-in-time packaging, and dynamic DRM encapsulation, the Velocix Origin is able to support the world's most demanding video applications.

Supported Applications

Live	On-Demand	Catch-up
Deliver live video services to a wide range of consumer devices.	Stream file-based video content instantly, at the click of a button.	Record live shows and let consumers watch them on-demand.
Restart	**Shared-Copy CDVR**	**Private-Copy CDVR**
Enable consumers to start a live program over from the beginning.	Make shared recordings of live video content based on user requests.	Make unique recordings of live video content for each requesting user.

Live Services

With integrated support for low-lag delivery of live video content, Velocix Origin Application is ideally suited for streaming broadcast TV shows, sporting events, and news programs to a growing array of connected devices. VxOA can ingress content in a single container format and package it on-the-fly to suit the consumer's viewing device, while also applying the appropriate digital rights management (DRM) to protect content as it is being streamed. Open, standards-based interfaces enable the Velocix Origin to seamlessly integrate into wide range of live video workflows.

On-Demand Services

File-based video content can be quickly ingressed into the VxOA platform to support on-demand services. With its highly scalable storage platform based on open-source Ceph, the Velocix Origin Application is capable of hosting exceptionally large content libraries. Storage is modular and scales independently from origin output, delivering significant cost savings as content capacities grow.
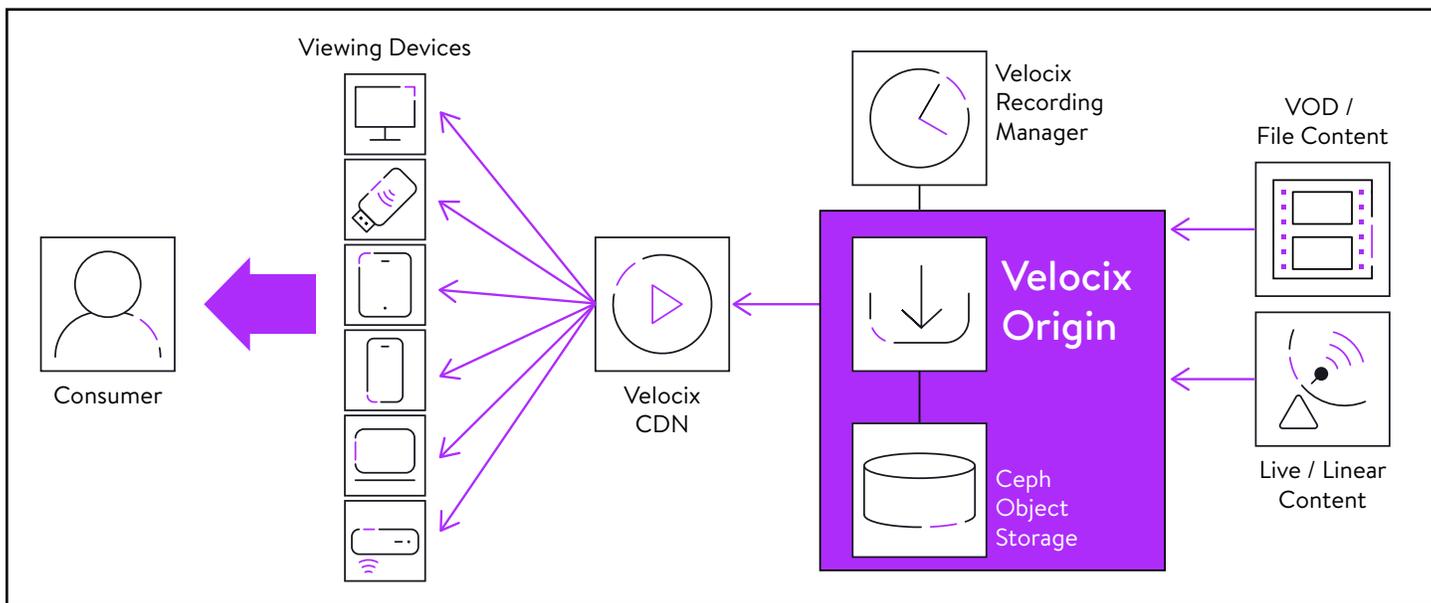
Time-Shifted Services

VxOA supports operator-directed live video recording applications, including catchup and restart services. Live content is captured using network-based origin resources, enabling time-shifted recordings to be played back instantly on any connected device. Interactive controls, including pause, rewind, and fast-forward, may be conditionally disabled by the operator at show or segment level to comply with negotiated content rights agreements. Circular buffers are also supported, allowing consumers to rewind live TV.

Cloud DVR

Operators can offer consumers the ability to record live content to personal cloud storage for later viewing using VxOA's cloud-based digital video recording capabilities. Velocix supports private-copy and shared-

copy recording, or a mix of both, to align with various regulatory considerations. VxOA's highly efficient shared-copy implementation, clusters consumer recording requests to generate a single instance of content that may be accessed by multiple consumers. Private-copy scenarios take advantage of VxOA's high ingress density and storage scaling by recording a separate instance of content for each individual consumer. Additionally, Velocix Origin Application features advanced de-duplication software that dramatically improves the economics associated with private-copy cloud DVR.

Solution Design

Cloud DVR

Advanced Cloud DVR features include private and shared-copy recording, sliding windows, circular buffers, configurable policy tiers, and data de-duplication.

Flexible Scaling

Best in class ingress, storage, and egress density, paired with modular, independent scaling reduces operator's total cost of ownership and improves platform flexibility.

Low Lag

Innovative low lag optimizations deliver faster start-times, improved responsiveness, and better time synchronization between viewing screens.

Exabyte Storage Scaling

Ceph open-source software-defined object storage, supports exabyte capacity levels and beyond, delivering the highest reliability at the lowest cost.

Just In Time Packaging

Integrated JIT packaging enables content to be stored once and played on any device. Content is adapted in real-time to suit the consumer's viewing device.

Supported Container Formats

CMAF	MPEG-DASH
HLS	Smooth Streaming

Dynamic DRM Protection

VxOA integrates with third-party key services to support on-the-fly content encryption using the industry's leading DRM technologies.

Supported DRM Technologies

Playready	Widevine
Fairplay	Nagra
Verimatrix VCAS	

100% Software + Open APIs

Origin software can be installed on bare metal or virtualized. Open standards-based APIs make it easier to integrate with other ecosystem components.

Advanced Capabilities

Resiliency features, advanced advertising support, management by device profile, visual trick modes, and multilingual audio support are all natively supported.

Benefits

| Cost Efficiency ▶ | Save expense on origin storage by using a single content format to support delivery to all screens. VxOA's JIT packaging and dynamic DRM features automatically adapt content to suit the consumer's viewing device. |

| Quality of Experience ▶ | Improve start times and time synchronization between screens using VxOA's innovative low lag implementation. Never miss a recording or playback request with Velocix's resilient ingress and egress architecture. |

| Scalability ▶ | Take advantage of highly scalable and cost efficient software-defined storage to expand content libraries and cloud DVR space. Use VxOA's high density output performance to support more origin sessions per rack unit. |

| Content Rights Compliance ▶ | Ensure adherence to local regulations for cloud DVR recording and storage using VxOA's support for both private and shared-copy models. Apply both models simultaneously to create a more cost efficient hybrid CDVR solution. |

| Flexibility and Openness ▶ | Easily integrate the Velocix origin into multi-vendor best-of-breed architectures using published APIs. Seamlessly connect to the market's leading CMS systems, back office solutions, advertising platforms, and content delivery networks. |

In Summary

The Velocix Origin Application is a powerful software solution that delivers the performance and advanced features required to launch live, on-demand, and time-shifted streaming video services. It forms the foundation of Velocix's market leading cloud DVR solution and offers the recording and storage scalability necessary to support large scale private-copy deployments. With features like JIT packaging and dynamic DRM, VxOA provides a cost efficient platform that seamlessly integrates into operator's content distribution workflows.

Contact a Velocix salesperson to learn more.

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