

Barco CTRL

Built to grow

A guide to scalability in KVM over IT



Simplicity



Scalability



Security

Start reading



BARCO

The control room that never outgrows itself

Control rooms rarely stay the same. The organization around them grows. New data sources get added. Additional operator positions are needed. A subsidiary opens in another city. A crisis hits and a remote worker needs access to the same information as the main control room.

Most control room platforms handle this kind of growth badly. Scaling means complexity – new hardware that does not quite fit, software that needs reconfiguring, and IT teams that end up managing a patchwork of systems that were never really designed to work together at scale.

Barco CTRL takes a different approach. As a KVM over IT platform, it is built from the ground up to grow – in hardware, in software, in geography, and in the broader IT ecosystem it lives in. Scaling is not an afterthought bolted on to a system that was designed for a fixed size. It is a core design principle, present in every layer of the platform.

This e-book explores 10 ways in which Barco CTRL makes scaling a control room simpler, smarter, and more future-proof – at every stage of growth.

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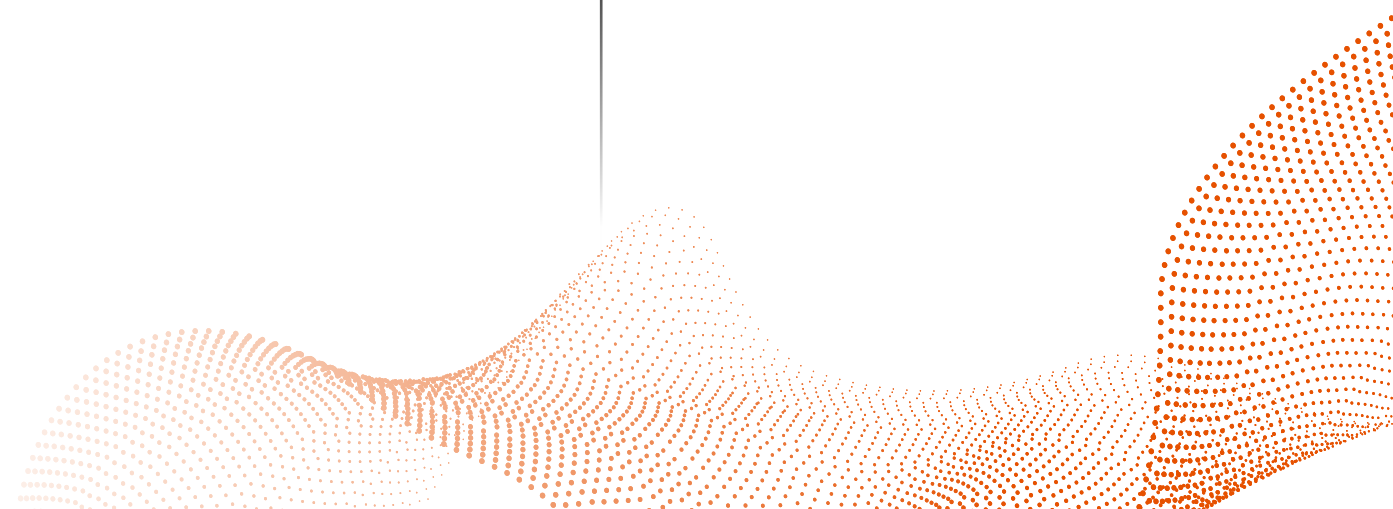
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Part 1

Scaling the hardware

1. Start small, grow big

Not every control room starts large. Some begin as a modest installation with a handful of sources and a couple of operator positions. Others start as a pilot project, with the expectation of growing significantly if the technology proves its value. Barco CTRL is designed to serve both realities.

The platform starts as small as needed and grows **by simply adding encoders for more inputs and decoders for more operator positions or video wall tiles**. There is no complex reconfiguration required, no system downtime, and no need to replace existing components when new ones are added. The new devices are discovered automatically and integrated into the existing setup.

This means organizations can make a modest initial investment and expand with confidence, knowing the platform will scale with them – all the way from a single control room to a global, multi-site network. The starting point does not limit the destination.

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2. No hardware complexity

Scaling a system that requires many different hardware variants is a logistical headache. Which encoder works with which source? Which decoder is compatible with which version of the software? As the system grows, these questions multiply – and the answers become harder to track.

Barco CTRL eliminates this problem by design. **The entire platform is built around just three hardware types: one encoder, one decoder, and one server** (with a second server variant for larger installations). Every encoder handles any type of source. Every decoder handles any type of destination. There are no premium variants, and no compatibility matrices to consult.

When the system needs to grow, the decision is simple: how many encoders and decoders do you need? That's it. This streamlined approach reduces procurement complexity, simplifies spare parts logistics, and means that anyone in the IT team can understand the hardware architecture of the control room without specialist training.

3. One decoder, multiple use cases

One of the most practical scalability challenges in a control room is deciding how to allocate hardware as the system grows. Do you need a different decoder for the video wall than for the operator desk? Do you need to stock multiple hardware variants as spares?.

With Barco CTRL, the answer is straightforward. The same decoder – the SAN-050 – can drive either an operator workstation or up to four full HD video wall tiles. This means that **as the system grows, the same hardware can be redeployed flexibly based on where it is needed most.** A decoder that is serving an operator desk today can become part of a video wall expansion tomorrow, without any hardware swap.

For organizations planning a phased rollout, this flexibility is particularly valuable. Procurement is simpler, spare parts management is easier, and the system can adapt to changing needs without the cost and complexity of maintaining separate hardware pools for different use cases.



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4. Preventing downtime at any scale

As a control room grows, the stakes around uptime grow with it. A small installation serving a handful of operators is important. A large, multi-site system serving dozens of operators across critical infrastructure is something else entirely. Downtime at that scale has real consequences.

Barco CTRL takes a comprehensive approach to preventing failure. **Redundancy options are available for critical server components**, meaning that if this hardware device fails, a spare takes over and the system continues to operate seamlessly. This redundancy scales with the installation – it is as relevant in a large multi-site deployment as it is in a single control room.

On the software side, all services run in containers on the server. If one service malfunctions, it does not bring down the complete system. The same logic applies at the decoder level, where a single source issue cannot take the entire hardware device offline.

Coupled with comprehensive health monitoring, the result is a platform designed to stay running, whatever the scale.

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Scaling the software and ecosystem

5. Flexible licensing

Hardware scalability is only half the equation. A platform that makes it easy to add devices but difficult to manage the licensing around them creates a different kind of friction. Barco CTRL keeps licensing as simple as the hardware.

The model is straightforward: one source, one license. Organizations pay for exactly what they use, and scaling up is a matter of adding licenses rather than navigating complex tier structures or negotiating new contracts. Scaling back down is equally simple. This flexibility is particularly valuable for organizations that grow in phases, or whose control room needs fluctuate over time.

Licenses are also fully transferable, which means that as the infrastructure evolves – through migrations, reconfigurations, or site expansions – the licensing investment moves with it. There is no penalty for change, and no sunk cost that locks an organization into a configuration that no longer fits their needs.

6. Software-first architecture and one-click upgrades

In a hardware-centric platform, scaling up often means a hardware refresh cycle. New features require new devices. Upgrades require maintenance windows. Growth creates technical debt that accumulates over time.

Barco CTRL is built differently. At its core, it is a software platform. The hardware – minimal by design – is the vehicle; the software is where the value lives. This means that **new capabilities are delivered through software updates, not hardware swaps**. The system you deploy today will gain features over time without requiring new boxes in the rack.

Keeping that software current is equally frictionless. Updates are rolled out system-wide from a central location in a single action, with minimal downtime – typically no longer than a proverbial coffee break for a complete system update. At any scale, the process is the same. Whether the installation has ten decoders or a hundred, the update process does not become more complex as the system grows.

Staying current is built into the platform, not bolted on.

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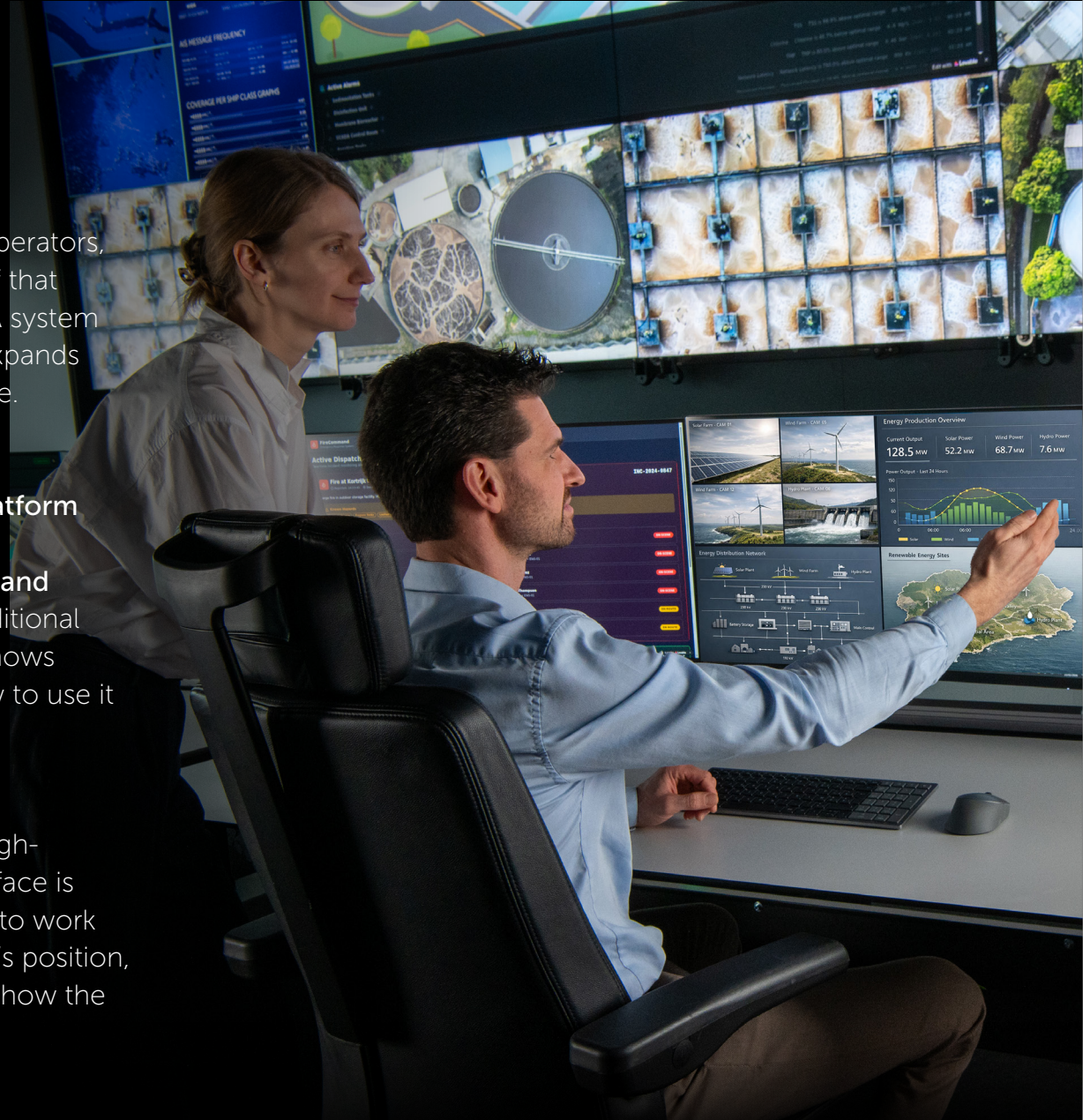
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7. Scaling without retraining

When a control room platform grows – more operators, more sites, more use cases – the human side of that growth matters as much as the technical side. A system that requires extensive retraining every time it expands creates a hidden cost that compounds over time.

Barco CTRL eliminates this cost entirely. **The platform extends the same interface and the same user experience across the complete control room and beyond** – including new operator positions, additional sites, and remote locations. An operator who knows how to use Barco CTRL at one desk knows how to use it everywhere.

This consistency is not just a convenience. In high-pressure environments, familiarity with the interface is a safety factor. When a crisis requires operators to work from a backup location or step into a colleague's position, the last thing they should have to think about is how the system works. With Barco CTRL, they never do.



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8. Open APIs for third-party integrations

A control room that can only grow within its own boundaries is not truly scalable. Real scalability means being able to bring in new tools, new systems, and new data sources as the operational environment evolves – without rebuilding the platform from scratch each time.

This is what it means to scale within an IT ecosystem rather than alongside it: the platform becomes more powerful as the world around it grows, not more isolated.

Barco CTRL integrates with third-party video management systems and other platforms through open APIs. This means that **as the organization's technology ecosystem grows, Barco CTRL grows with it**. New tools can be connected without workarounds or middleware compromises, and the system is fully prepared for technologies that do not yet exist today.

The API library also allows integrators and operators to build custom workflows and automations on top of the platform – extending its capabilities in ways that are specific to their operational context.

Part 3

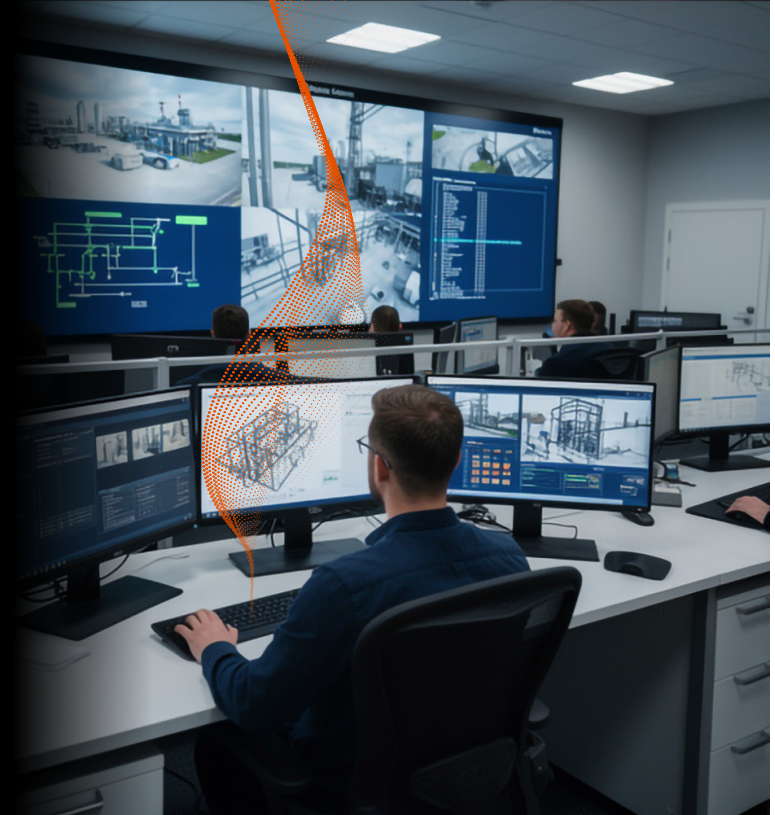
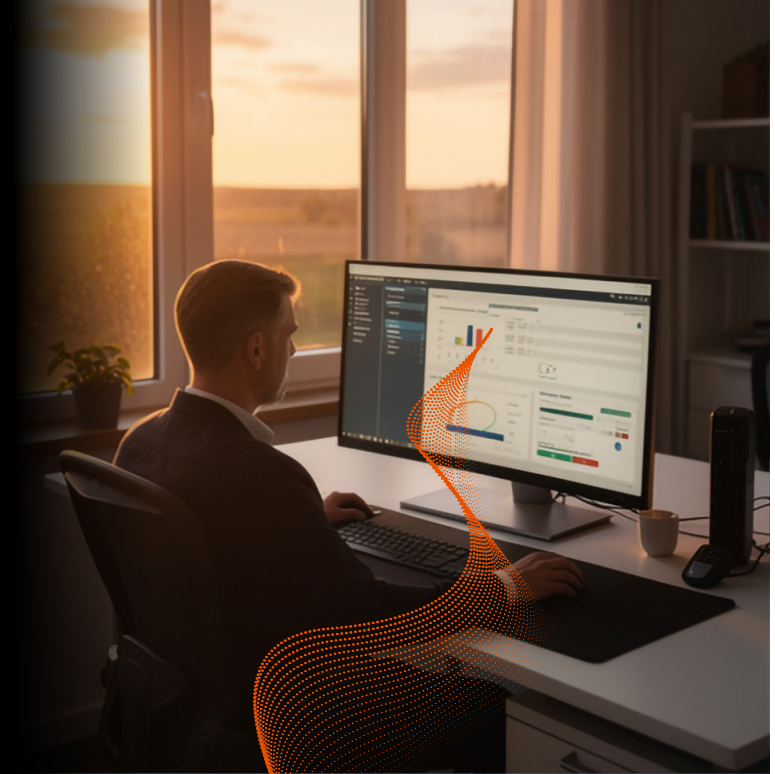
Scaling beyond the control room

9. The connected control room

Critical operations do not always happen in one place. Offshore drilling rigs need to stay connected to onshore facilities. Distributed utility networks span entire regions. Emergency response centers need to share situational awareness with field teams hundreds of kilometers away. The control room, in other words, needs to scale beyond its own walls.

The Connected Control Room, developed through a strategic partnership between Barco and Extreme Networks, makes this possible. By combining Barco CTRL with Extreme Networks' SD-WAN technology and Secure Fabric switching, **organizations can securely share critical control room information across multiple locations – regardless of geographic distance through satellite communication.**

The same platform also serves as a robust disaster recovery solution. When primary connections between control rooms and emergency operations centers fail, the Extreme Networks SD-WAN provides backup connectivity that keeps operations running. Remote experts can access and interact with a full control room environment from anywhere, maintaining complete operational capability without being physically present. Distance stops being a constraint.



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10. Federation – one network, many locations

The Connected Control Room enables sites to share information across geography. Federation takes this one step further. **Multiple autonomous Barco CTRL installations at different locations can be linked together, allowing them to share sources and operate as if they were one single, coherent system.**

For organizations managing distributed operations – utility networks, transportation authorities, security operations spread across a region or a country – this transforms what used to be a collection of isolated control rooms into a unified operational network. Operators at any site can access sources from any other site, share information across locations, and coordinate responses as if the distance between them did not exist.

Each installation in a federated network remains fully autonomous and independently managed. There is no single point of failure that can take down the whole network. Security boundaries are maintained between sites, and each location retains control over its own resources while benefiting from the shared awareness the federation enables. It is the most powerful expression of what it means to build a control room that scales without limits.



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Conclusion: scale is not a size, it is a capability

The question of scale in a control room is not really about how big the system is today, but rather about whether the platform can handle whatever tomorrow brings – more sources, more operators, more sites, more complexity – without requiring a fundamental rethink of the architecture.

Barco CTRL is built around that capability. From the simplicity of its hardware lineup to the flexibility of its licensing, from the reach of the Connected Control Room to the unified operational picture that federation enables, every layer of the platform is designed to grow without friction.

As a KVM over IT solution, **Barco CTRL does not scale in spite of the IT ecosystem around it – it scales with it.** New tools, new sites, and new requirements become opportunities rather than obstacles.

Ready to see Barco CTRL
in action?

[Request your personal demo](#)

and discover how Barco CTRL
simplifies your control room
from day one.

**And wherever the
operation needs
to go next,
Barco CTRL is
ready to follow.**