



Real-time content without compromise

disguise cluster rendering



Discover the power of disguise: disguise.one

What you'll learn

Discover your complete guide to cluster rendering, built for the future of production. This ebook will cover:

- What is cluster rendering?
- Seven reasons why it's a production game-changer
- Our partnership with Epic Games and Unreal Engine
- Our integration with nDisplay
- The disguise benefit
- Set-up and components
- How to get started

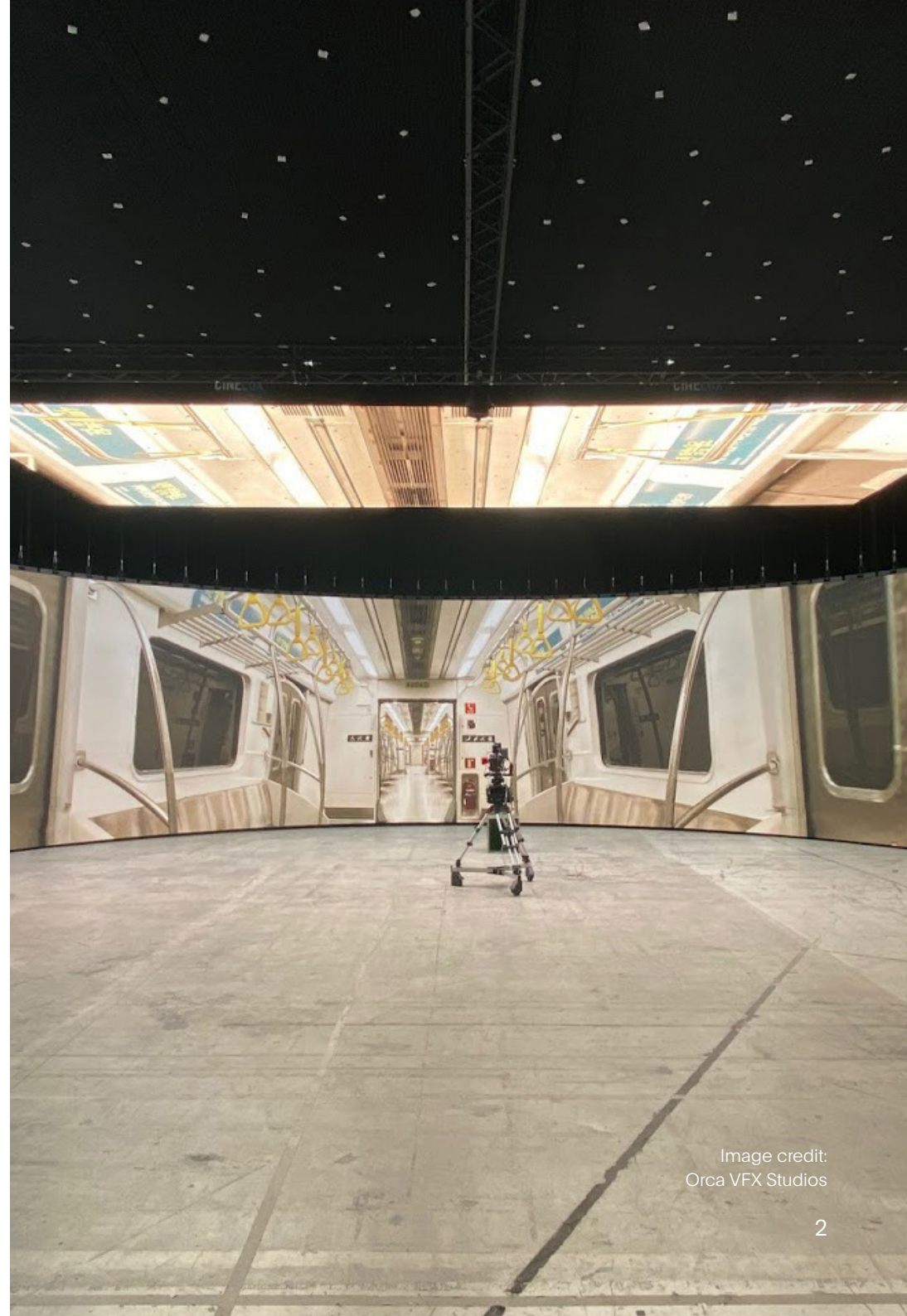


Image credit:
Orca VFX Studios

What is cluster rendering?

Top five things to know

- 1 **Render real-time content of the highest quality, detail and framerate** without worrying about GPU power. disguise cluster rendering gets your content onto your displays at your desired quality, without compromise.
- 2 Cluster rendering unlocks the limitations of your virtual production studio or immersive installation by **scaling out real-time content** up to an unlimited capacity.
- 3 Span your Unreal Engine content over more than one disguise server. Each machine will let you **render a fragment of your final content** frame to increase the render power.
- 4 Create content of the highest quality so your audience can enjoy visually stunning scenes **regardless of the scale of your production.**
- 5 Forget about render engine configuration, synchronisation, content distribution and system runtime state! **disguise will take care of all of that for you.**



Image credit:
Framestore,
All of it Now
and XR Stage

Cluster rendering - a game changer for production

The new RenderStream cluster rendering together with Epic's Unreal Engine will provide a step change in scale out of real-time graphics.

With near linear scaling potential in terms of complexity and resolution, the full range of Unreal Engine rendering capability can be applied to any project, at any scale, in any market that uses an LED, projection or similar display canvas with high-fidelity real-time content.

I can't wait to see what our user creative community does with it!

Ed Plowman
disguise CTO



What it looks like

Cluster rendering allows you to cut your content up into multiple slices, distributing workload across multiple machines. All slices will then be delivered to your LED screen as one coherent piece, at the highest possible quality.

“When your render node is not enough to satisfy your render needs, then clustering is what you need. It allows you to grow the size and quality of your production, simply add more nodes.”

Raed Al-Tikriti

CPO at disguise

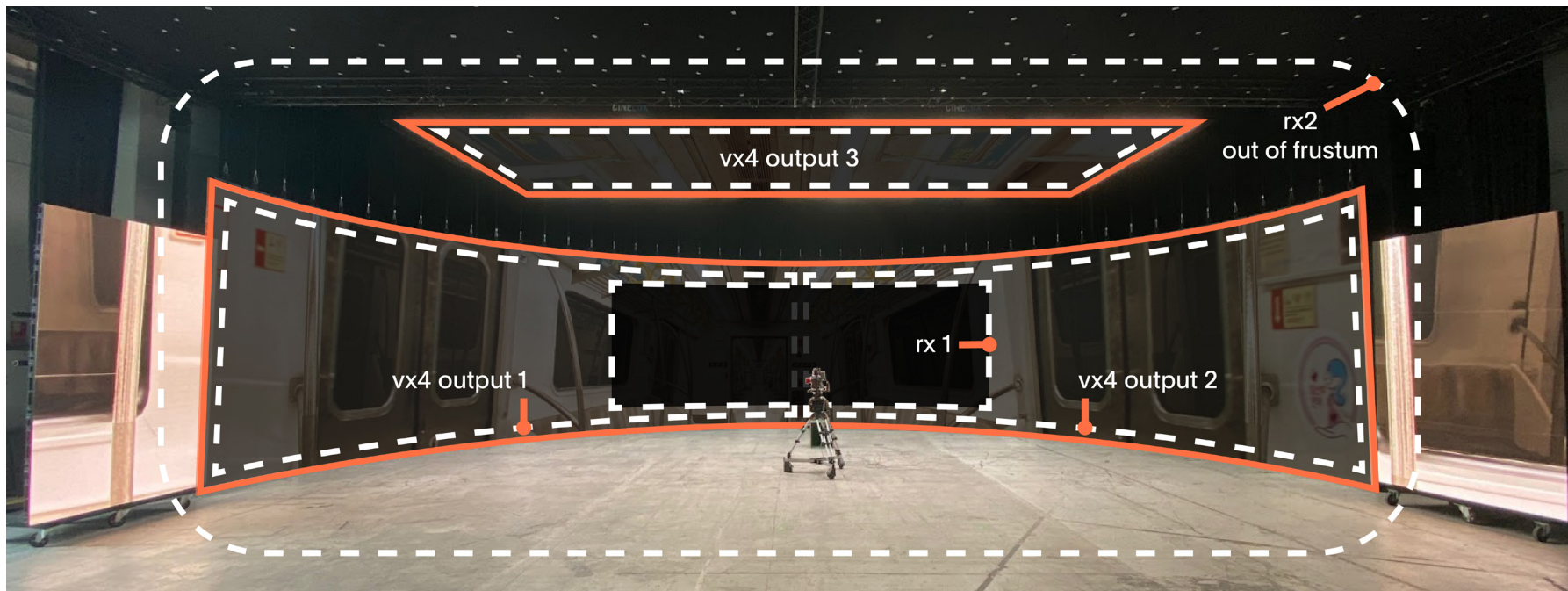


Image credit: Orca VFX Studios - Edited by: disguise

The power of cluster rendering

Seven reasons why it's a game-changer

1 **No compromise**

Enhance scalability to handle workloads with increasing pixel counts or increasing complexity, without compromising on quality, resolution or framerate.

2 **Unreal Engine nDisplay integration***

Create any content in Unreal Engine and composite it before the final output - all within the disguise workflow.

3 **Scale out**

Cluster rendering lowers the barrier of entry to production. Start small and add more rx machines to support your content as your production increases in size or complexity, increasing render power.

4 **Near linear scaling**

Scaling content is near linear for each server that's added. You can increase the amount of pixels or framerates rendered with each rx machine added.

5 **Synchronisation**

disguise takes care of output synchronisation and latency compensation across the system so you don't have to.

6 **Bidirectional workflow**

Reach in to any of our third-party integrations and make changes directly from the disguise timeline.

7 **Highest-quality video content**

Enjoy high-fidelity, uncompressed scenes from your render engine with 10-bit HDR video quality and a full ACES pipeline end-to-end.

*We are working on adding cluster rendering support for leading third party render engines. At the time of publication, cluster rendering support is only available for Unreal Engine.

Delivered in partnership with Epic Games and Unreal Engine

In 2020 Epic Games awarded disguise a MegaGrant to revolutionise production workflows and enhance the interoperability between disguise and Epic's Unreal Engine. Our partnership with Epic allowed us to embark on groundbreaking new research to dramatically empower how real-time video content is delivered across various applications.

Working closely with Epic has enabled us to develop our cluster rendering solution to support Unreal Engine's nDisplay capabilities.

How we manage nDisplay

disguise cluster rendering removes the need to manually configure the nDisplay cluster by allowing it to be automatically set up through the disguise interface.

Speed up and simplify your workflow

Our software will work out automatically how complex your content is and how much render power you need to process the pixel count.

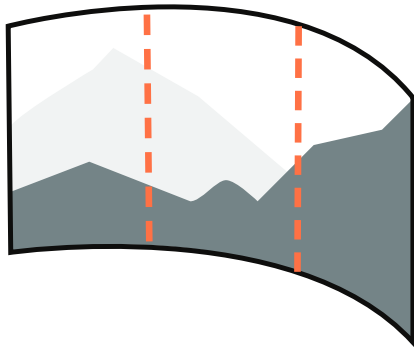


UNREAL ENGINE

The disguise benefit

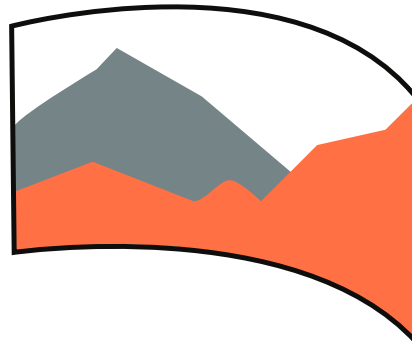
Cluster however **you** want

What makes our solution unique is that our system allows you to split up your content on screen more flexibly than ever. When building your render clusters, you can:



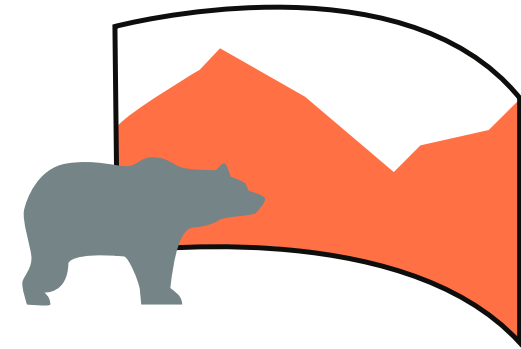
Cluster by splitting up the canvas

Split your canvas horizontally or vertically and render each piece on a different node.



Cluster by objects


You can also choose to render background objects on one node and foreground objects on a different node. This lets you focus rendering power on the more photorealistic objects to maximise on the details of the scene.



Cluster by plates (xR only)

In an xR workflow, you also have the option to render your front and back plate on different nodes.

With no limitations in the workflow, you can keep adding render nodes without changing delivery hardware, to divide up whatever strategy you want.

A woman in a white dress and face mask stands in a virtual forest environment, surrounded by crew members on a film set. The scene is lit with a blueish tint, suggesting a digital or virtual setting. The woman is the central focus, standing on a path. Several people are visible around her, some wearing masks, indicating a production environment. The background shows tall trees and a misty atmosphere.

“The value of having disguise as a partner during the production phase for our Blink test project was enormous. And I’m really really grateful for everything that was brought to the table by the company and the team. It was disguise who gave me the confidence that we can do this.”

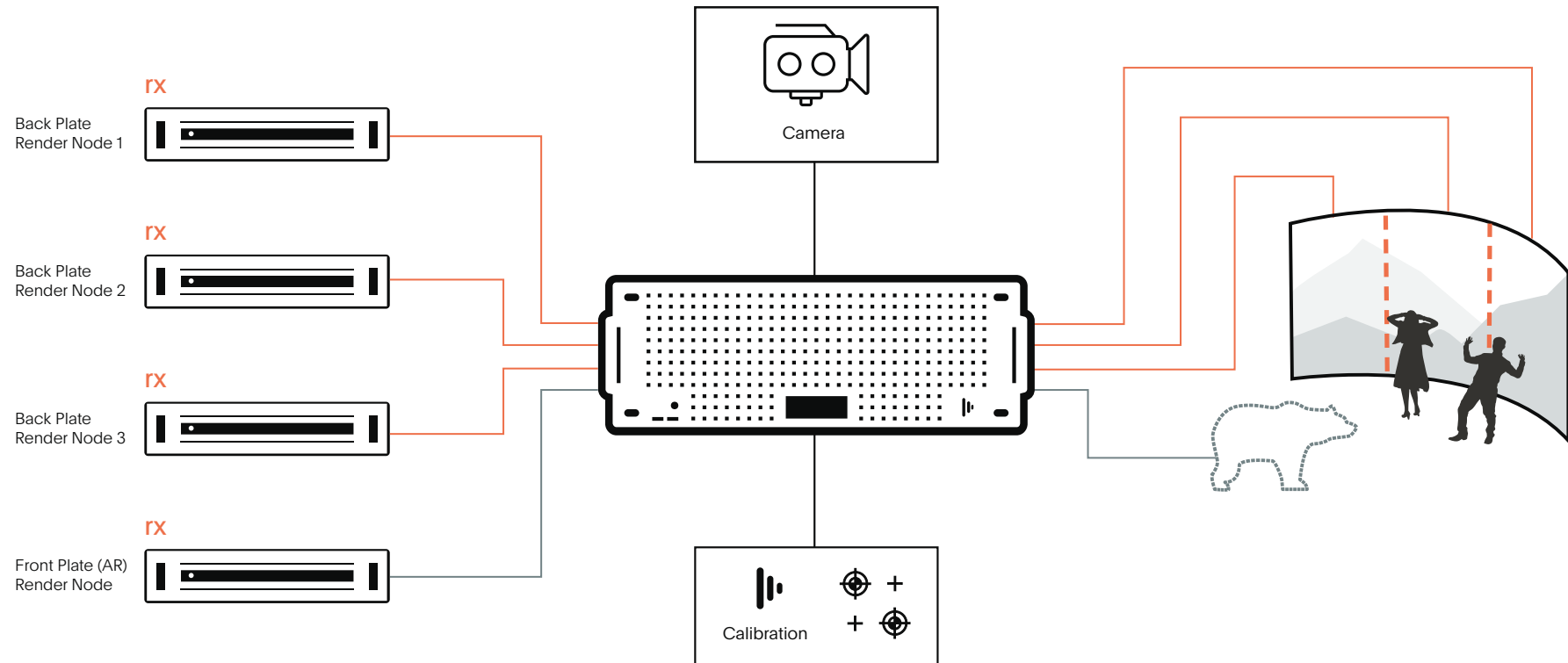
Michael Ralla


VFX Supervisor for Framestore Los Angeles

Image credit:
Framestore,
All of it Now
and XR Stage

Cluster rendering: set-up and components

Add multiple rx nodes to scale out your rendering depending on the size of your production .





“This is going to be a virtual production game changer. Adding cluster rendering functionality and the ability to scale processing to an already impressive xR workflow is exactly what we’ve been looking for.”

Boum Creative

Image credit:
Framestore,
All of it Now
and XR Stage

What you need to get started

disguise server

Choose from our existing range of servers depending on the scale and complexity of your project, to coordinate, combine and map outputs. Our pro range is engineered to playback video of the highest quality and at any scale. Discover more [here](#).

rx nodes

Networked together, each rx node will render only a portion of the overall content. Outputs from each node will then be combined to create larger content canvases. Discover the rx, engineered for scale-out rendering [here](#).

RenderStream

The perfect infrastructure to enable the rx, RenderStream allows seamless integration of real-time content from third-party render engines from the disguise software. Find out more [here](#).

Our expert technical solutions team can help to build a bespoke solution based on your needs and project requirements. [Book a demo with them to learn more.](#)



Real-time rendering at scale

Get started today!

- [Get your free Designer licence here](#)
- [Book a demo to learn more here](#)

About disguise

The disguise technology platform enables creative and technical professionals to imagine, create and deliver spectacular live visual experiences at the highest level.

Combining real-time 3D visualisation-based software with high performance hardware, disguise delivers challenging creative projects at scale and with confidence. Its new award-winning Extended Reality (xR) workflow is empowering users to bring to life immersive visual experiences that inspire and engage remote audiences everywhere.