



Adobe

Leveraging author-publish for AEM Screens

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Agenda

1. Overview

- AEM Screens
- Demo: content update
- Author-publish architecture
- Terminology

2. Deep dive

- Decomposing author-publish architecture, configuration and troubleshooting
 - Sync content and configuration
 - Sync commands
 - Sync command response from the device
 - Command delivery and acknowledgement
 - Device registration and switch to publish instance



Overview

A quick intro to AEM Screens and content updates in an author-publish topology

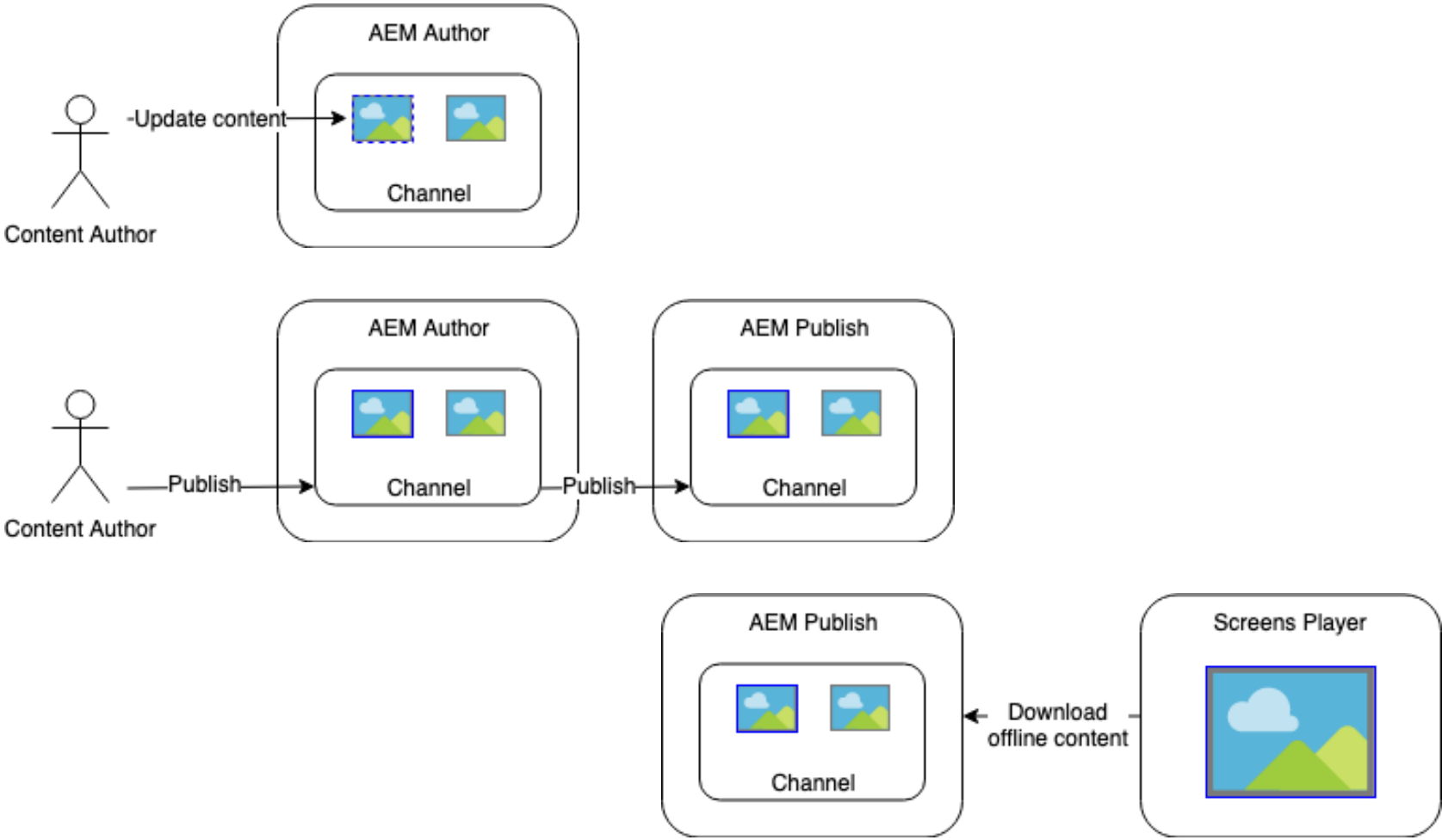
AEM Screens



AEM Screens

- Adobe's digital signage solution, part of Adobe Experience Manager
- Dynamic, interactive and data-triggered user experiences on the screens
- Experiences run without Internet connection
- Integrates with Sites to have a comprehensive digital marketing platform

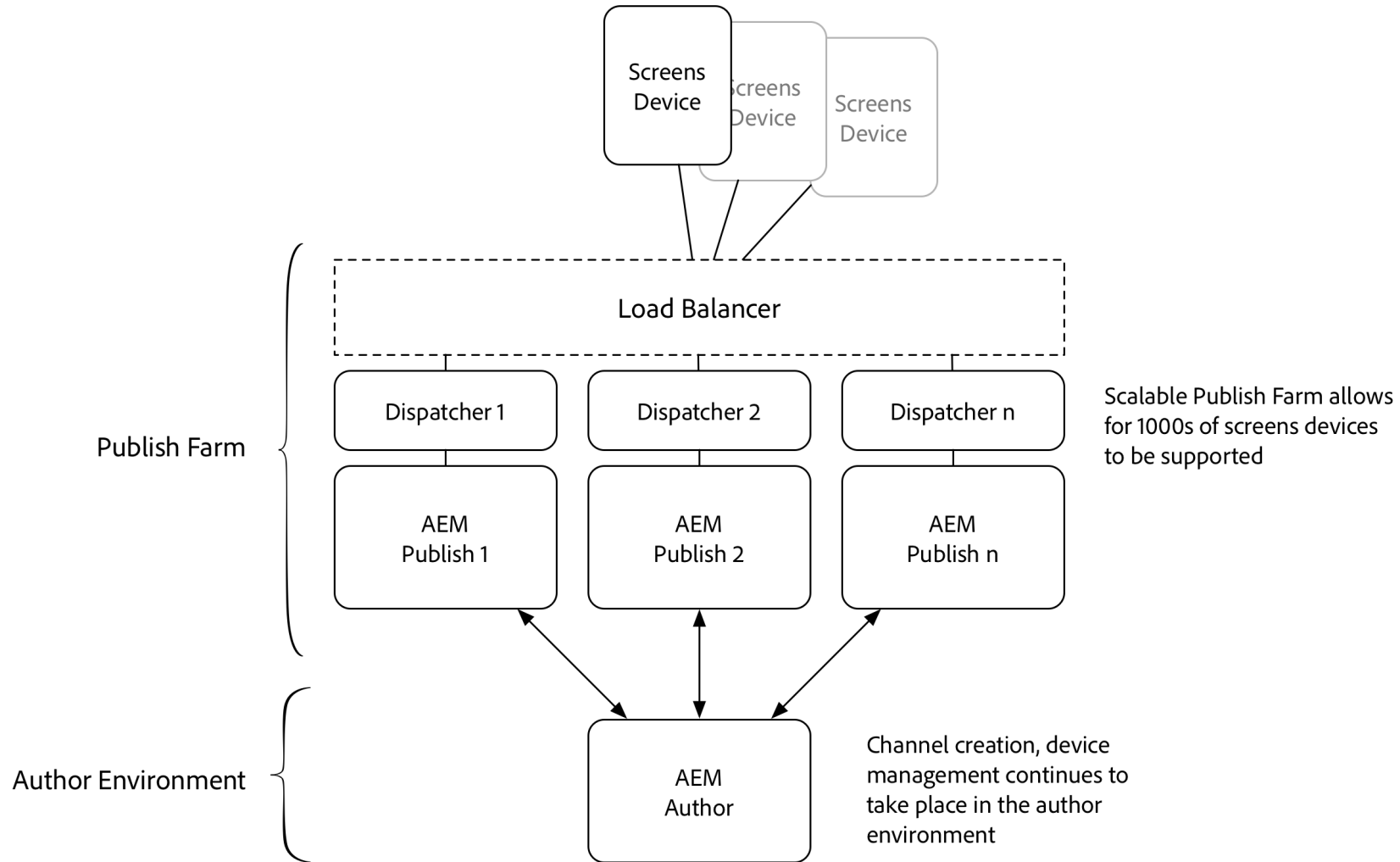
Demo: content update



Why author-publish for Screens?

- Author-publish recommended for scalability
- Shared author / shared publish with Sites: up to 500 devices
- Shared author with Sites / dedicated Screens publish: up to 2000 devices
- On top, scale the Screens publish instances for each additional 2000 devices

Author-publish architecture



Terminology

- Author instance
 - **author content**
 - **manage devices**
- Publish instance
 - **serve published content to devices**
 - **receive device ping**
 - **serve and receive command responses**

- Publish: make content/configuration publicly available
- Activate: enable devices to connect to publish instances
- Replicate (technical): move data from one environment to another



Deep Dive

Decomposing the author-publish architecture, configurations and troubleshooting

Decomposing the author-publish architecture

Keep author and publish in sync:

- Sync content and configuration
- Sync commands
- Sync command response from the device

author -> publish

author -> publish -> device

device -> publish -> author

Keep publish cluster in sync:

- Command delivery and acknowledgement

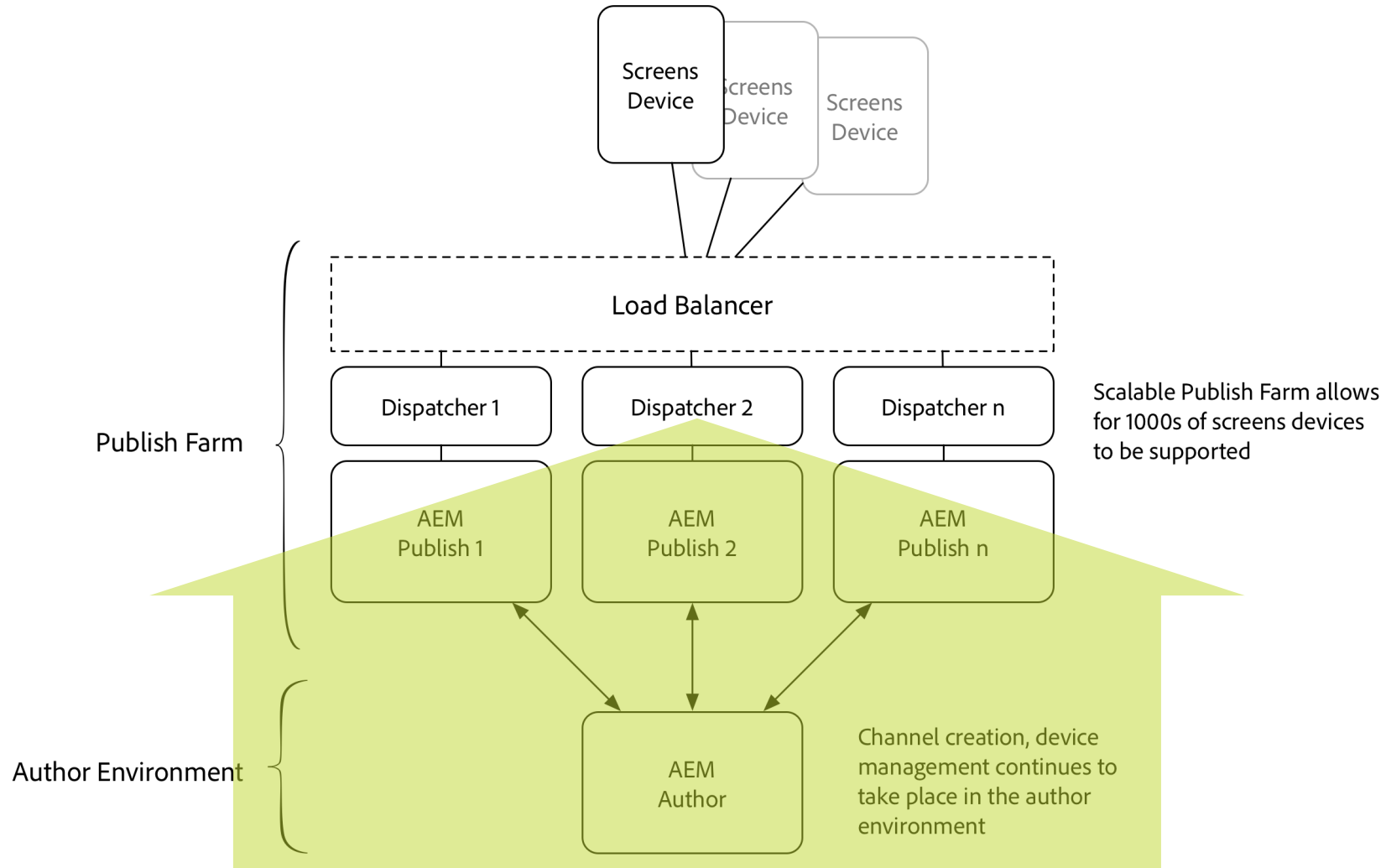
publish 1 <-> ... <-> publish n

Connect the device in the topology:

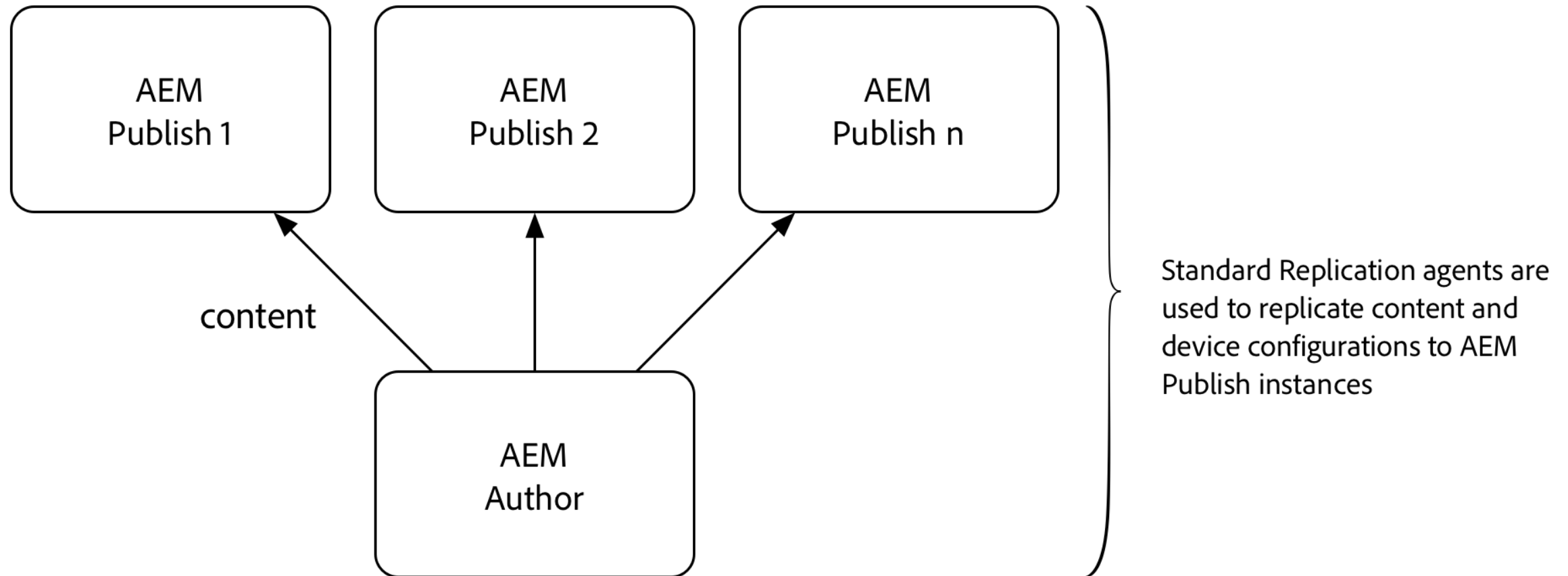
- Device registration and switch to publish instance

device -> author => device -> publish

Sync content and configuration



Sync content and configuration



Standard replication agent

- Configure it one time for each publish instance in the topology
- Check configuration or troubleshoot by:
 - Testing the connection
 - Looking at the logs
 - Observing the items in the replication queue



The screenshot shows a configuration panel for a replication agent. At the top left is a green toggle switch. The title is "Default Agent (publish-1)". Below the title is a description: "Agent that replicates to the default publish instance." The main status text reads: "Agent is **enabled**. Replicating to <http://localhost:4503/bin/receive?slings:authRequestLogin=1>". Below this, it says "Queue is **idle**". At the bottom, there are two buttons: "View log" and "Test Connection".

Default Agent (publish-1)
Agent that replicates to the default publish instance.

Agent is **enabled**. Replicating to <http://localhost:4503/bin/receive?slings:authRequestLogin=1>

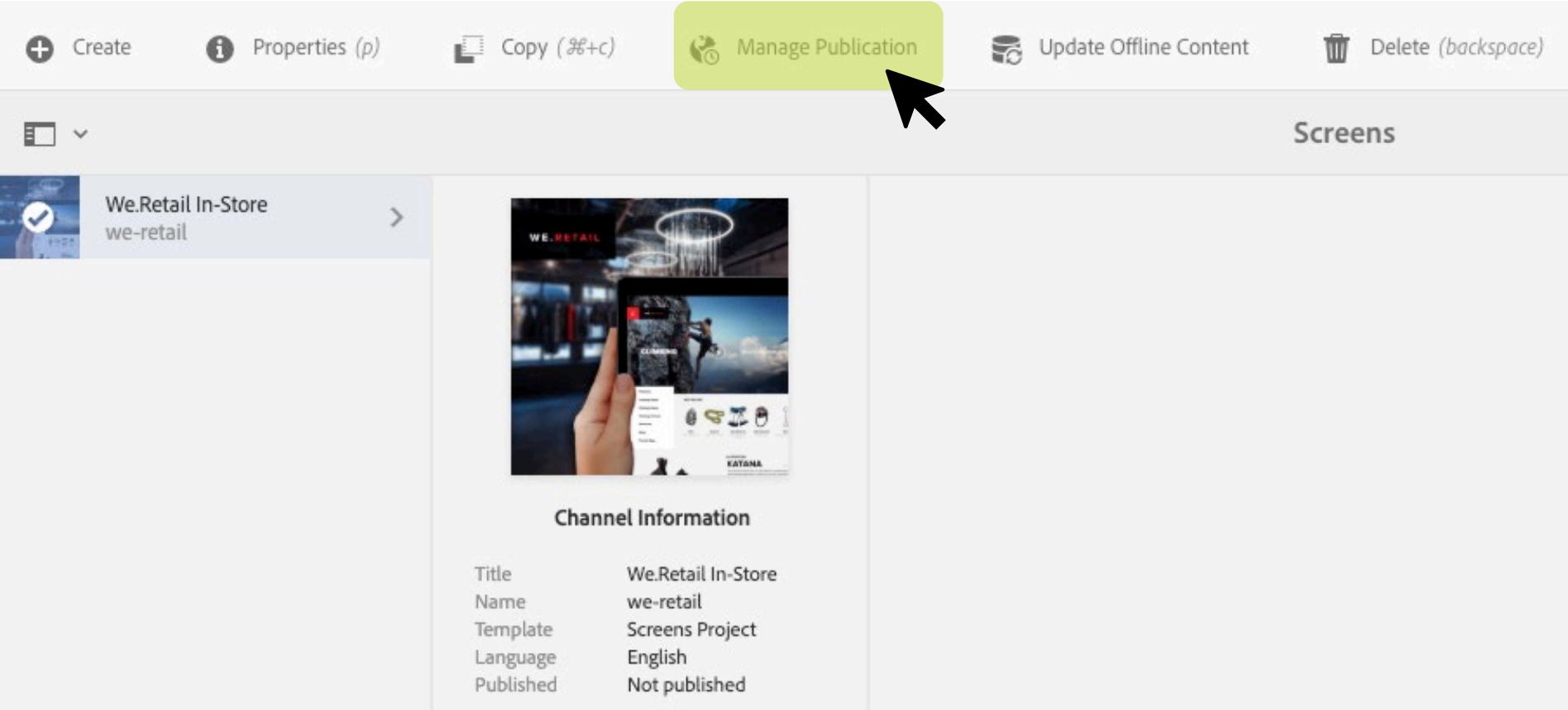
Queue is **idle**

[View log](#)

[Test Connection](#)

First publish the whole project

- Always, after the project structure is in place, but before activating devices and publishing bits of content

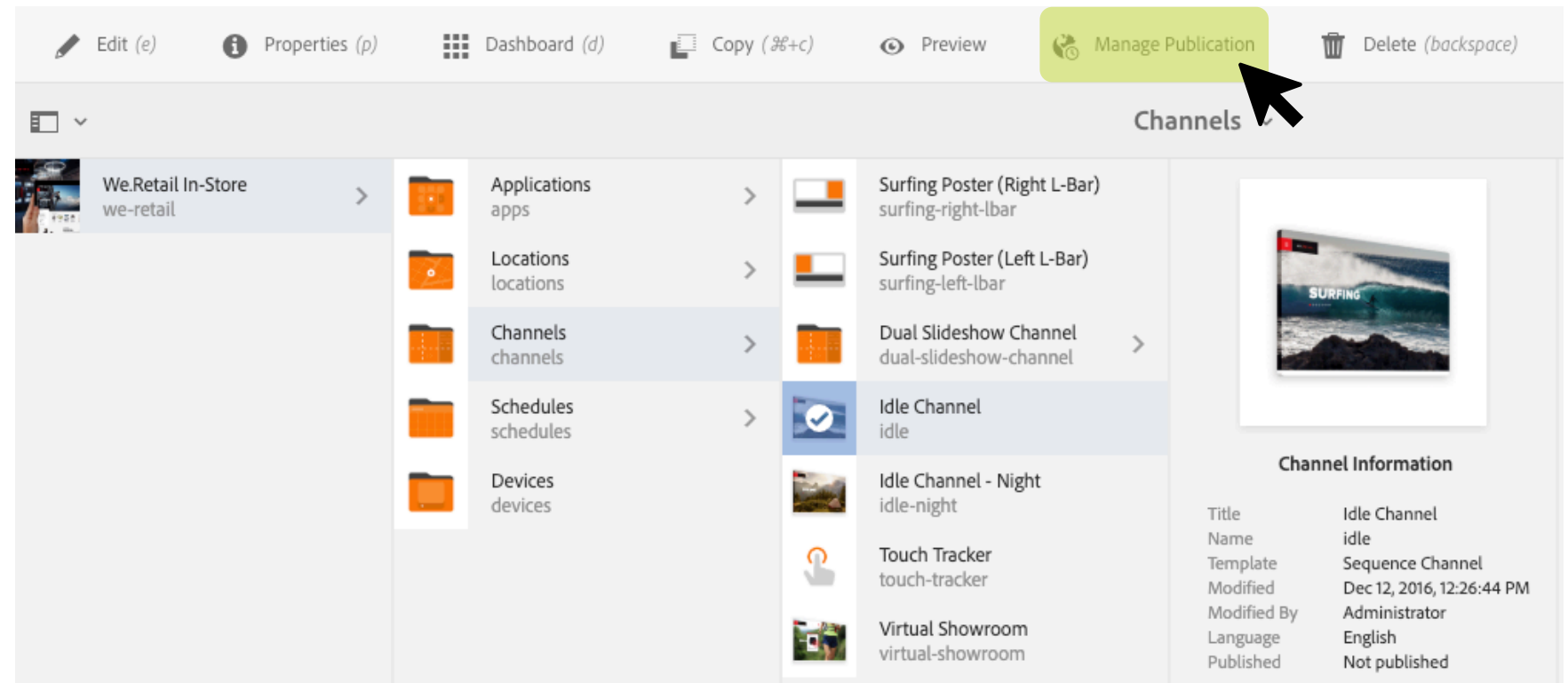


The screenshot shows the Adobe Experience Manager (AEM) interface. At the top, there is a toolbar with several icons and labels: 'Create', 'Properties (p)', 'Copy (⌘+c)', 'Manage Publication' (highlighted with a green box and a mouse cursor), 'Update Offline Content', and 'Delete (backspace)'. Below the toolbar is a header area with a dropdown menu icon and the word 'Screens'. The main content area is divided into two sections. On the left, there is a sidebar with a checkmark icon and the text 'We.Retail In-Store we-retail'. On the right, there is a preview of a mobile application screen showing a hand holding a smartphone displaying a retail interface. Below the preview is a 'Channel Information' table.

Channel Information	
Title	We.Retail In-Store
Name	we-retail
Template	Screens Project
Language	English
Published	Not published

Publish every content and configuration change

- Content updates in channels
- Channel/device reassignment
- Change device properties



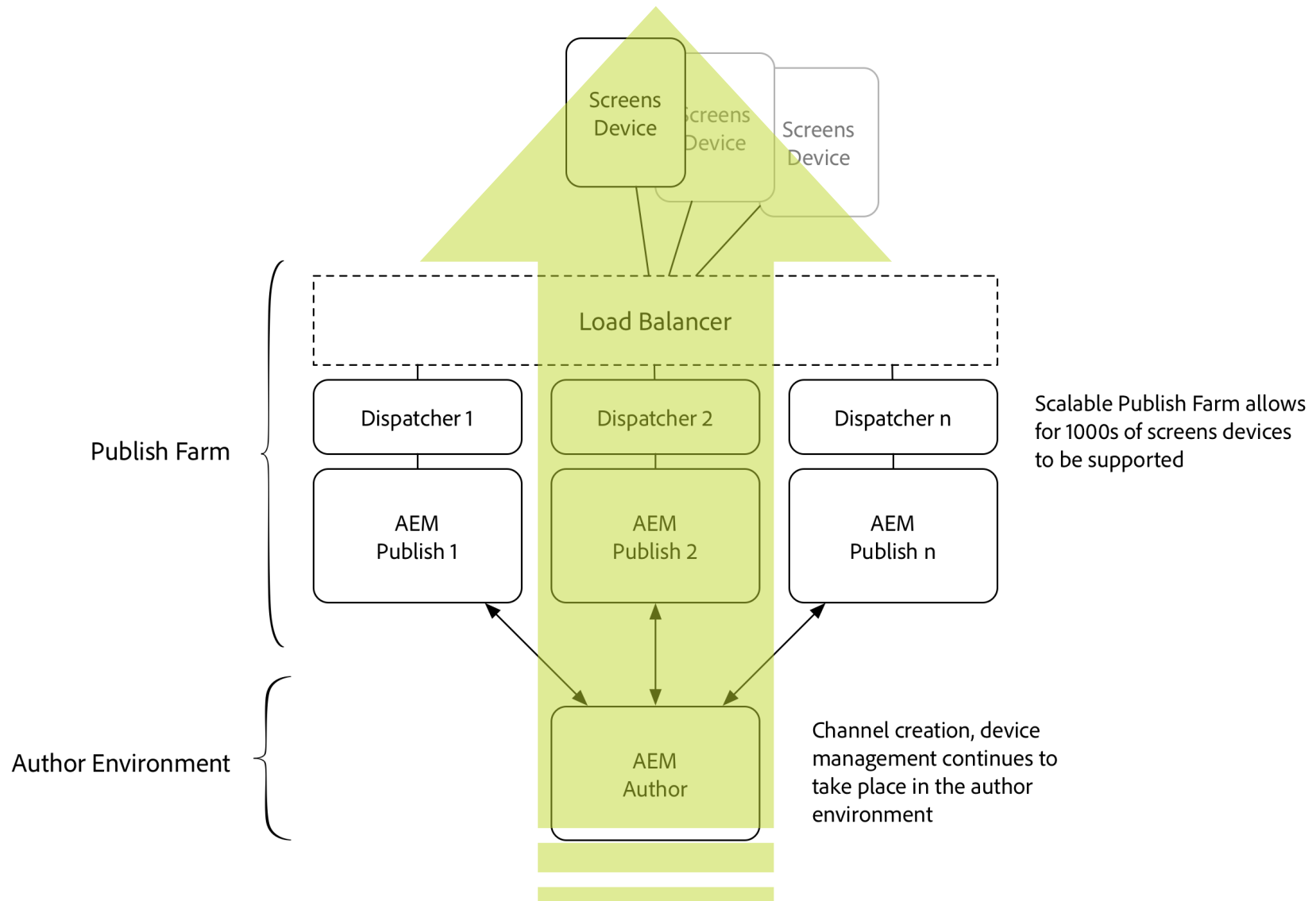
The screenshot shows the Adobe Experience Manager (AEM) interface. At the top, there is a navigation bar with several icons and labels: Edit (e), Properties (p), Dashboard (d), Copy (⌘+c), Preview, **Manage Publication** (highlighted in green with a mouse cursor), and Delete (backspace). Below the navigation bar, the main content area is titled 'Channels'. On the left, there is a navigation tree with a dropdown menu. The tree includes: We.Retail In-Store (we-retail), Applications (apps), Locations (locations), Channels (channels), Schedules (schedules), and Devices (devices). The 'Channels' folder is expanded, showing a list of channels: Surfing Poster (Right L-Bar) surfing-right-lbar, Surfing Poster (Left L-Bar) surfing-left-lbar, Dual Slideshow Channel dual-slideshow-channel, Idle Channel idle (selected with a blue checkmark), Idle Channel - Night idle-night, Touch Tracker touch-tracker, and Virtual Showroom virtual-showroom. On the right side of the main content area, there is a 'Channel Information' section with a thumbnail image of a surfing poster. The information table is as follows:

Channel Information	
Title	Idle Channel
Name	idle
Template	Sequence Channel
Modified	Dec 12, 2016, 12:26:44 PM
Modified By	Administrator
Language	English
Published	Not published

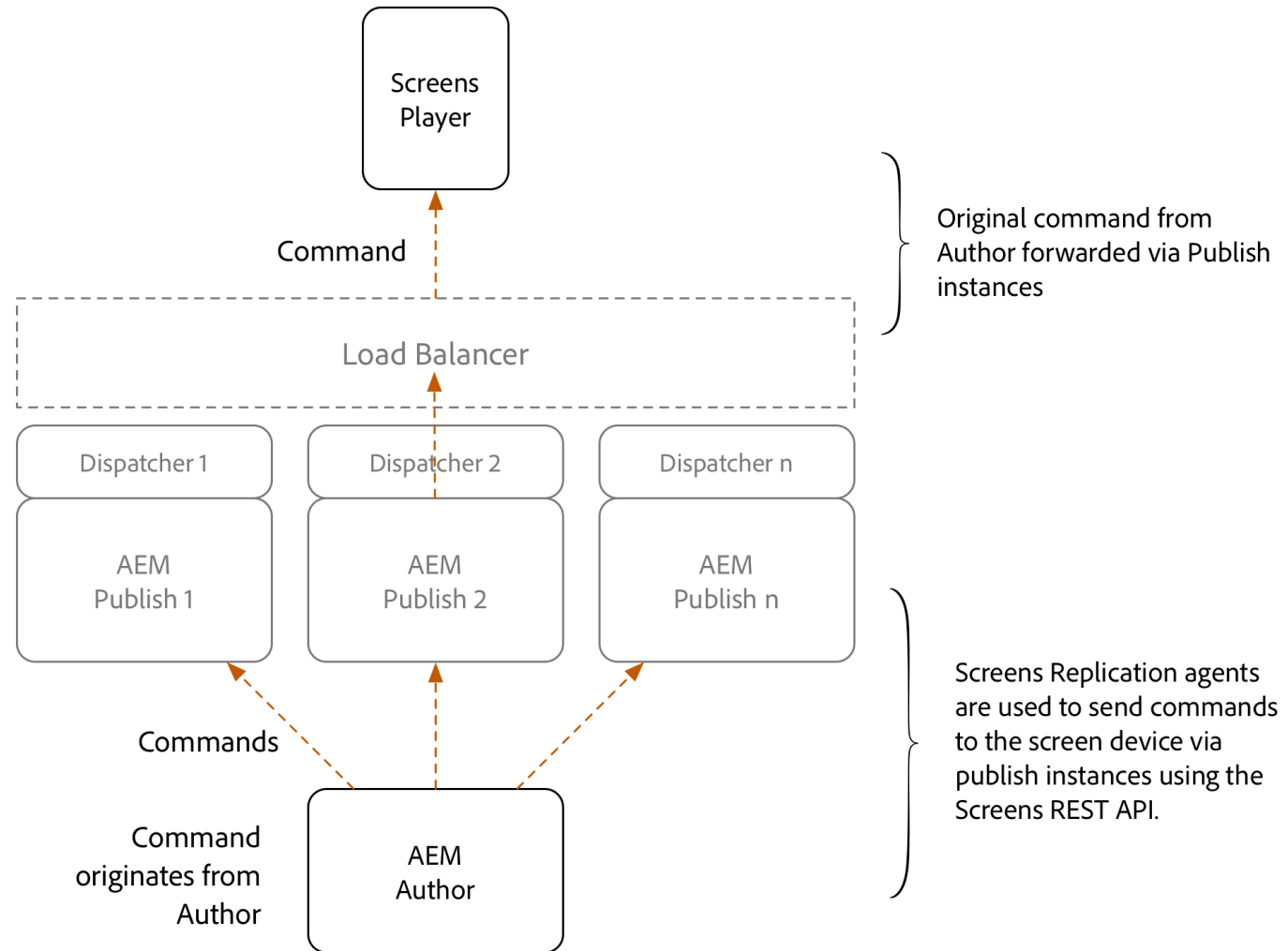
Device commands

- A command is a request for the device to perform an action and, in some cases, send back a response
- Devices can receive commands like:
 - **Take screenshot**
 - **Collect logs**
 - **Clear cache**
 - **Restart player**
 - **Update device**

Sync commands



Sync commands



Screens replication agent

- Configure it one time for each Screens publish instance in the topology

Screens Replication Agent (screens-2)
Replicate device commands to the publish instances

Agent is **enabled**. Replicating to **screens://http://localhost:4504**

Queue is **blocked - 1 pending**

Agent is ignored on normal replication

[View log](#)

[Test Connection](#)

Settings [Edit](#)

Replication Queue

Refresh Clear Force Retry Pause

	Time	Type	User	Size	Path
1	2019-08-21 17:25:22	Activate		114	/home/u

Agent Settings

Settings Transport Proxy Extended Triggers Batch

Name: Screens Replication Agent
informative name of this agent

Description: Replicate device commands to the publish instances

Enabled:

Serialization Type: Screens Replication Agent

Retry Delay:
time in milliseconds

Agent User Id: admin
Leave empty to use system user. This user's keystore will be used for SSL connections.

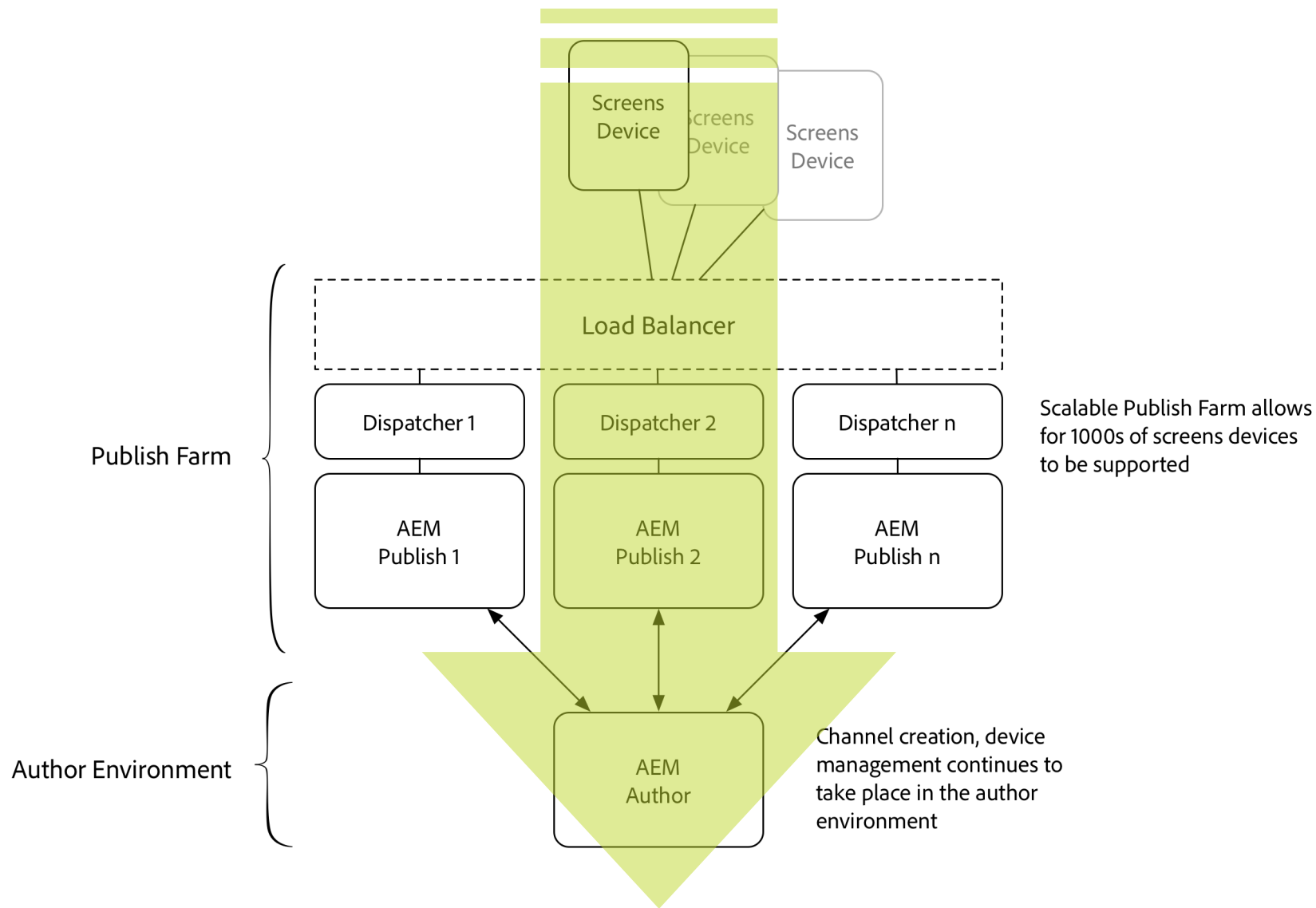
Log Level: Debug

Use for reverse replication:

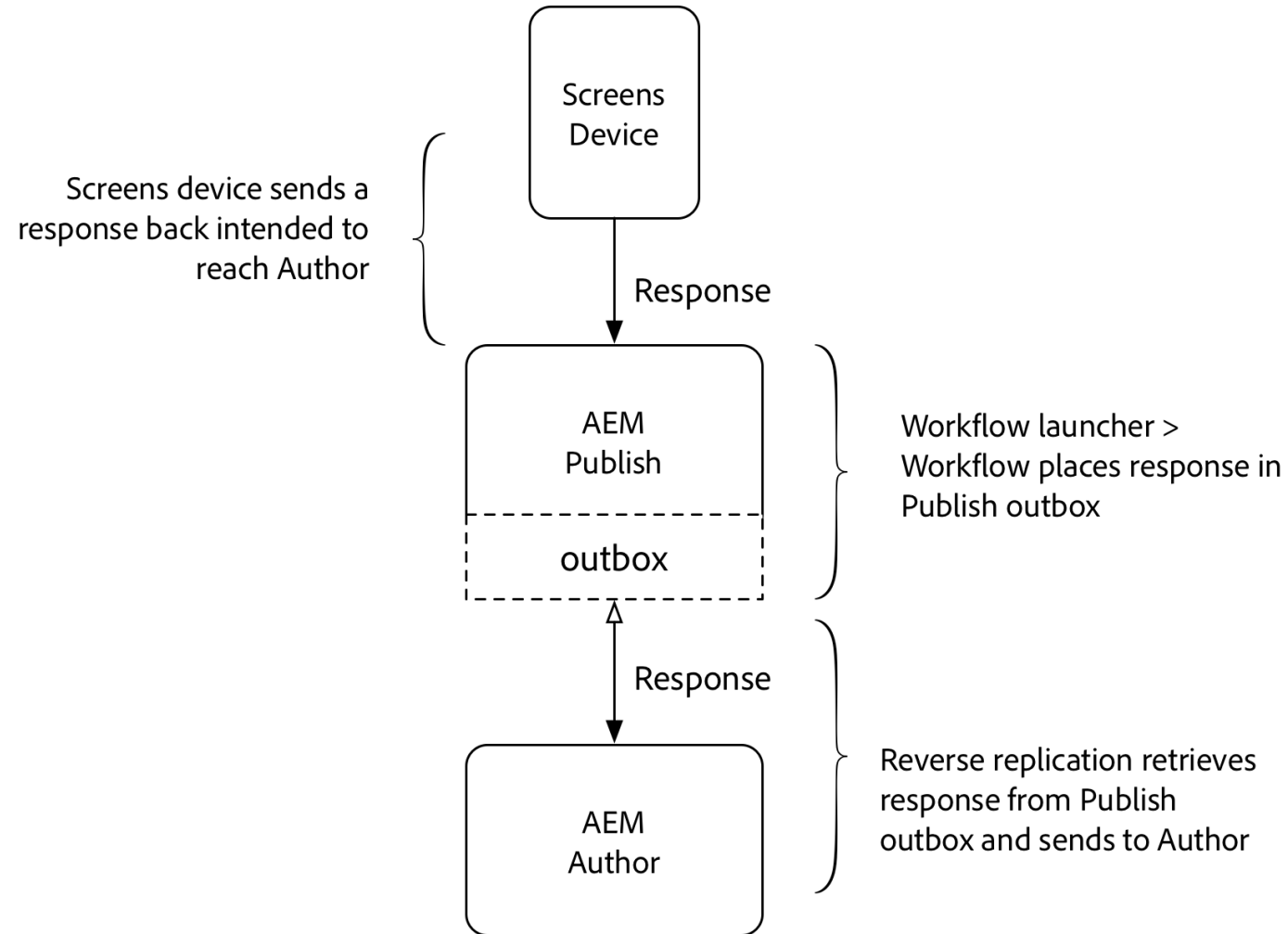
Alias update:

OK Cancel

Sync command response from the device



Sync command response from the device



Reverse replication agent

- Configure it one time for each publish instance in the topology
- Configure both ends: replication agent on author and outbox on publish
- Check workflow archive/failures to see workflow to put response in the outbox completed

Reverse Replication Agent (publish-reverse-1)
Agent that **retrieves reverse replicated content** from the default publish instance's outbox.

Agent is **enabled**. Replicating to **http://localhost:4503/bin/receive?slingsling:authRequestLogin=1**

Queue is **idle**

Agent is ignored on normal replication

Agent is used for **reverse replication**

[View log](#)

[Test Connection](#)

Reverse Replication (outbox)
Agents that **stores reverse replicated content in the outbox.**

Agent is **enabled**. Replicating to **repo://var/replication/outbox**

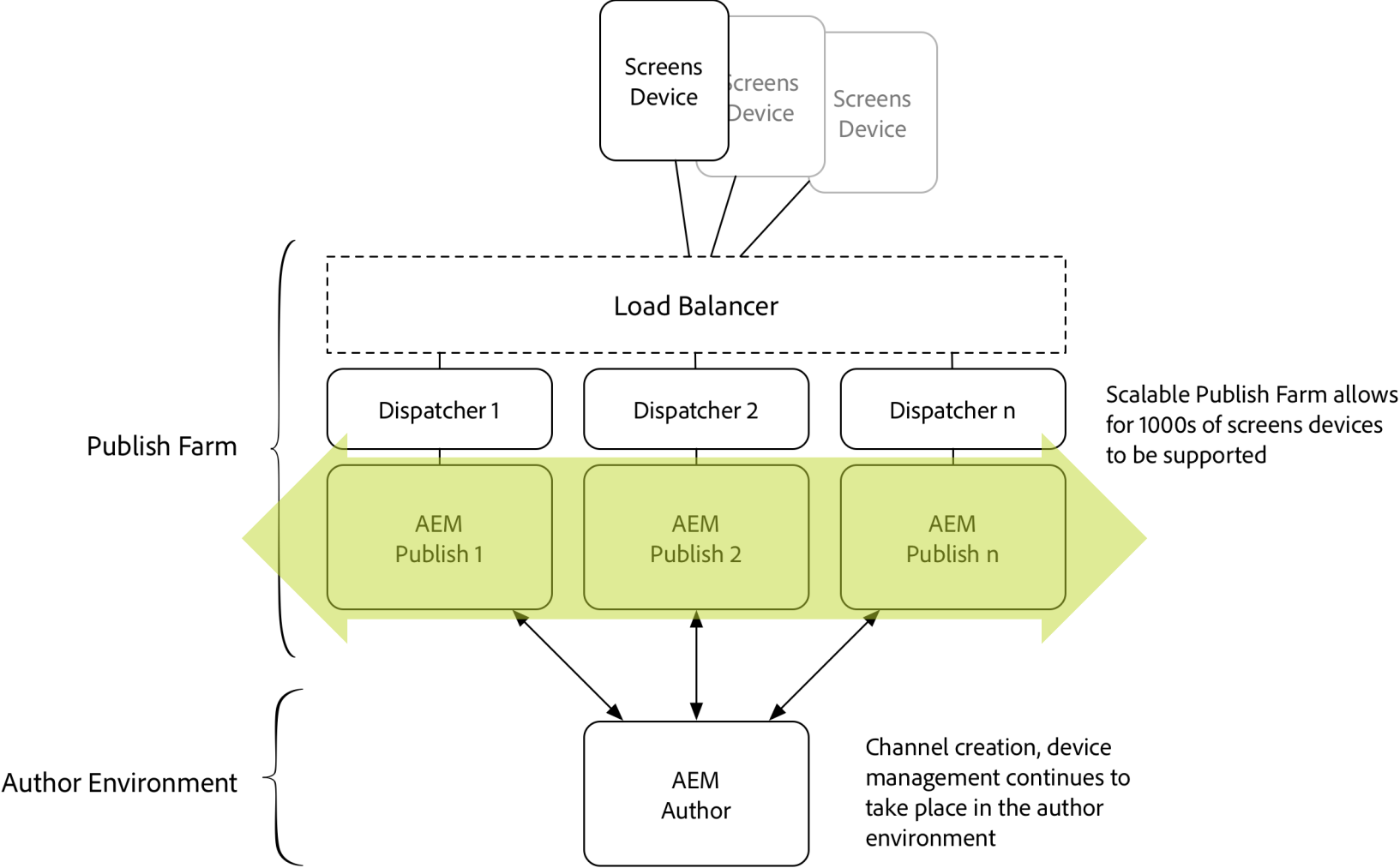
Queue is **idle**

Agent is ignored on normal replication

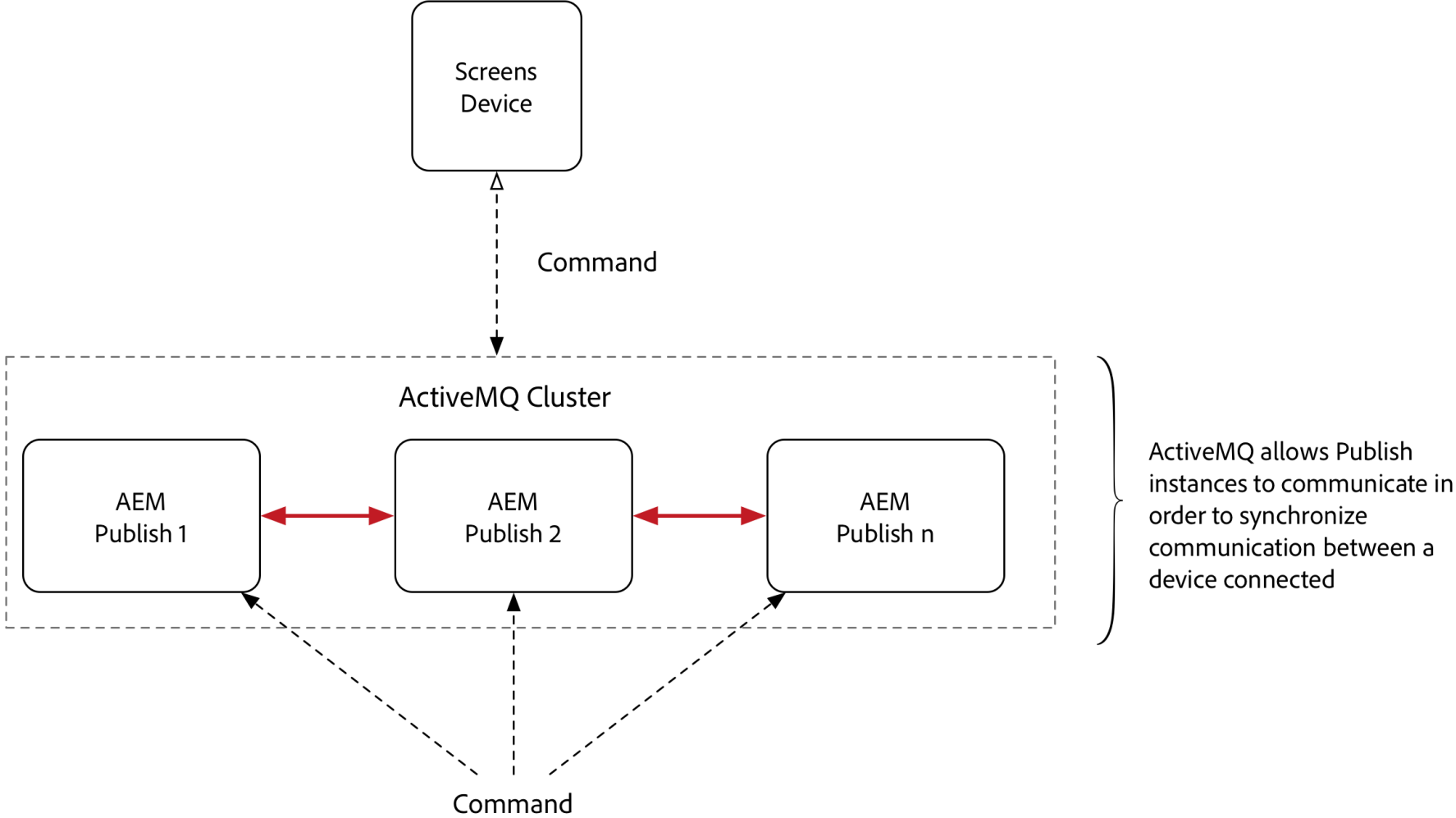
Workflow Archive

<input type="checkbox"/>	Status	Initiator	Start Time	End Time	Model	Payload
<input checked="" type="checkbox"/>	COMPLETED	workflow-service (screens-we-retail-zysphbroe77v1r821ua7aqsis26sgnk3pjfk)	8/21/19 5:25 PM	8/21/19 5:25 PM	Publish to Author Binary Transfer	/home/users/screens/we-retail/devices/k1NdAkN6WXqnEgBnVB6/profile_screens/screenshot

Command delivery and acknowledgement



Command delivery and acknowledgement

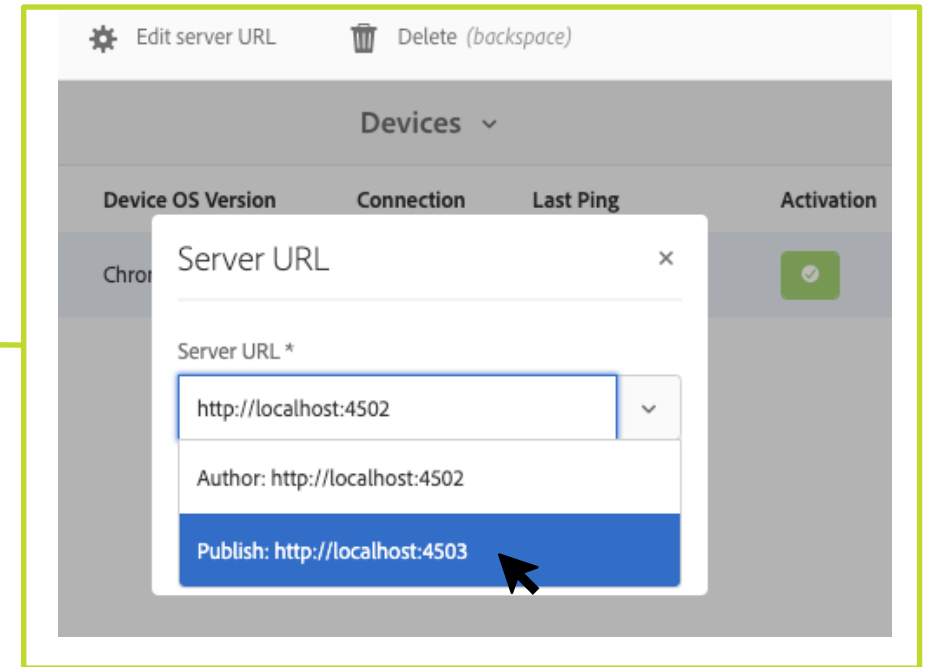
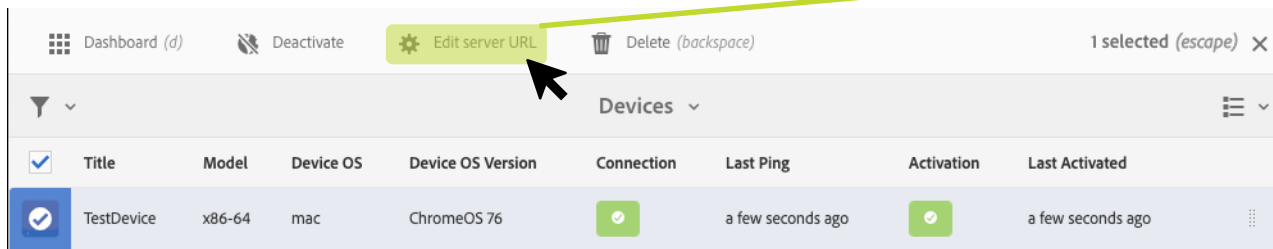
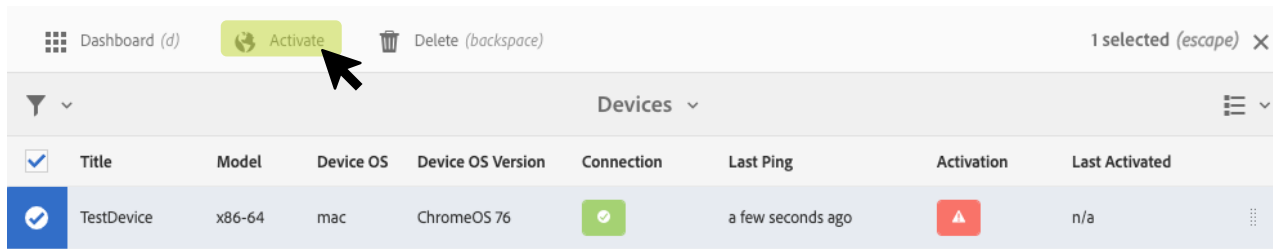


Topology with multiple publish instances

- Configure topology discovery
- Configure ActiveMQ Artemis cluster
- Check setup and troubleshoot on the publish instances by:
 - Connector status on: <http://localhost:4503/system/console/topology>
 - ActiveMQ Artemis cluster status on: <http://localhost:4503/system/console/mq>
 - Sending a test message in the cluster
 - Restart broker

Device registration and switch to publish instance

- Steps to do on the author instance:
 1. Register the device
 2. Activate the device
 3. Edit server URL for the device to point to publish instance



Troubleshoot device running in author-publish

- Check setup and troubleshoot by:
 - Checking connection status
 - Checking activation status

▲ ERROR Error: Device with id screens-we-retail-zysphbroe77vr821ua7aqsis26sgnk3pjfk does not exist on all publish instances in topology

STATUS Check Topology

Available using next Screens FP (Sept 2019)

- Checking local or remote ping
- Checking topology

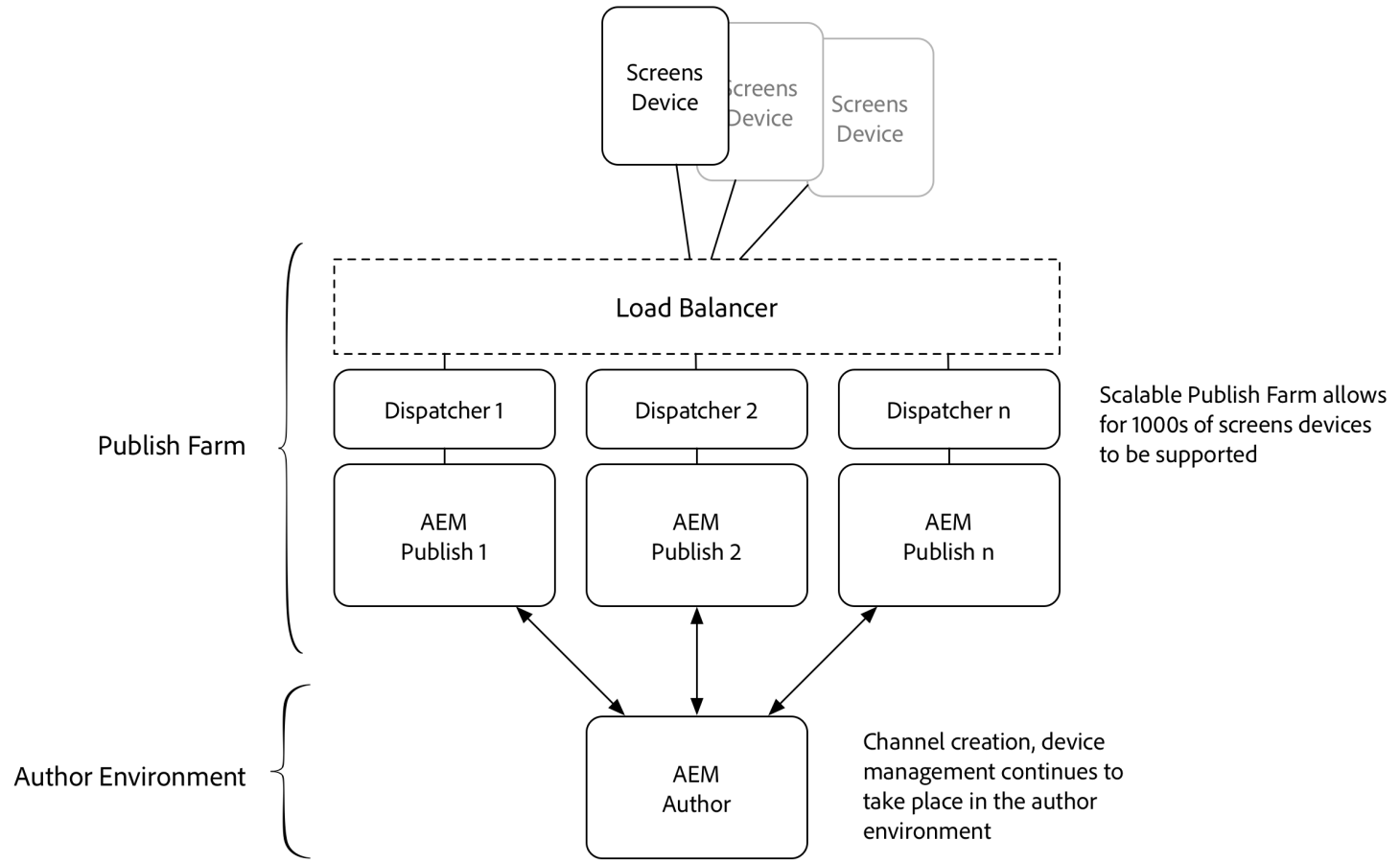
Remote Ping a few seconds ago ✓

Last Activated ▲ Changes detected which require a new activation of the device.

<input type="checkbox"/>	Title	Model	Device OS	Device OS Version	Connection	Last Ping	Activation	Last Activated
<input type="checkbox"/>	TestDevice	x86-64	mac	ChromeOS 76	✓	Device has not been activated.	▲	n/a

So do you want to scale?

- Set up AEM in an author-publish topology and configure it accordingly to provide scale for Screens



Thank you!

Any questions?

References

- Screens author-publish architecture: <https://helpx.adobe.com/experience-manager/6-5/screens/using/author-publish-architecture-overview.html>
- Screens author-publish setup: <https://helpx.adobe.com/experience-manager/6-5/screens/using/author-and-publish.html>
- Screens kickstart guide: <https://helpx.adobe.com/experience-manager/6-5/screens/using/kickstart-for-aem-screens.html>
- AEM replication: <https://helpx.adobe.com/experience-manager/6-5/sites/deploying/using/replication.html>



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