





**Tannaz Sassooni**  
Street Team Toolkit Specialist

*Tannaz has worked in visual effects and animation technology for over 14 years. At Rhythm+Hues Studios, she was a pipeline lead on films such as "The Chronicles of Narnia: The Lion, the Witch, and the Wardrobe" and "Evan Almighty". She worked at Dreamworks Animation for nine years, designing and implementing production workflows for layout, animation, modeling, and cloth and hair artists. For the last two years, she's been a member of the Shotgun Street Team's technical support group, specializing in the Toolkit platform.*



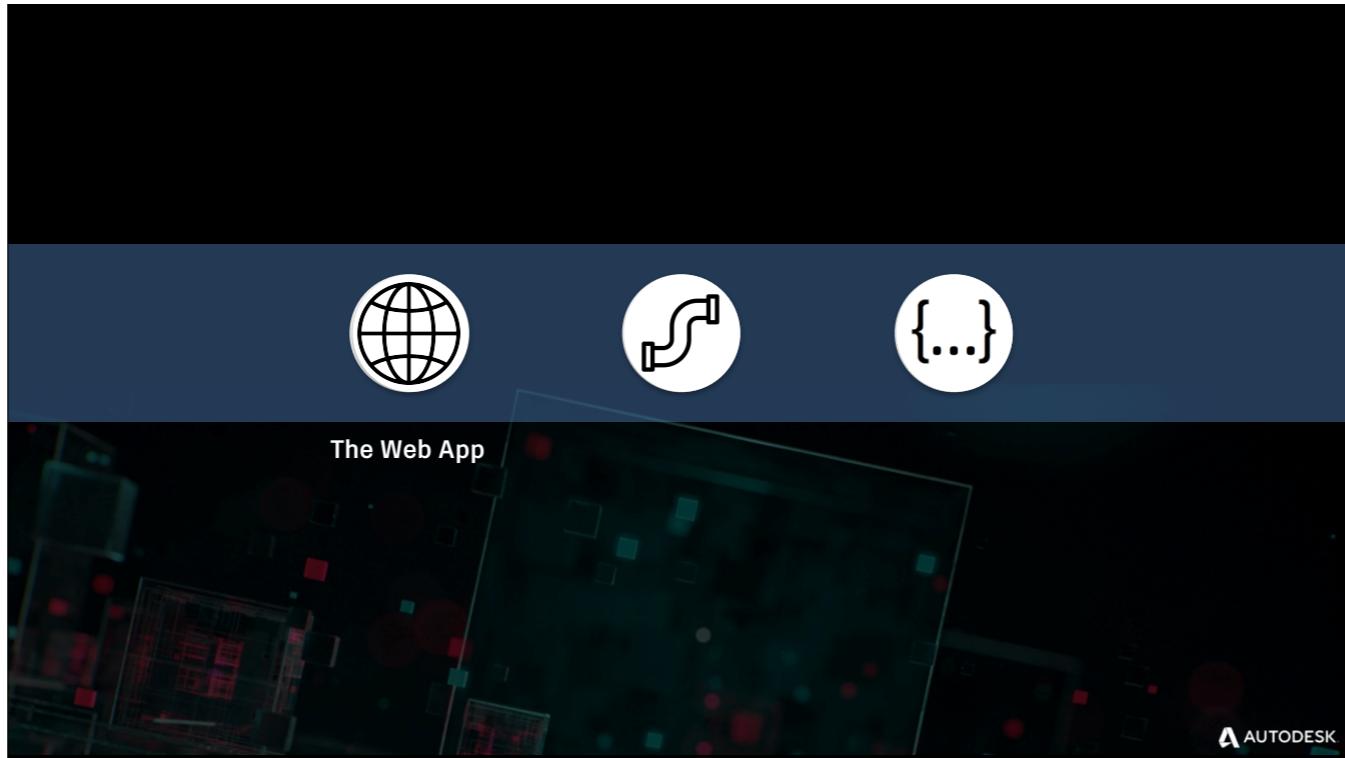


## What we will learn

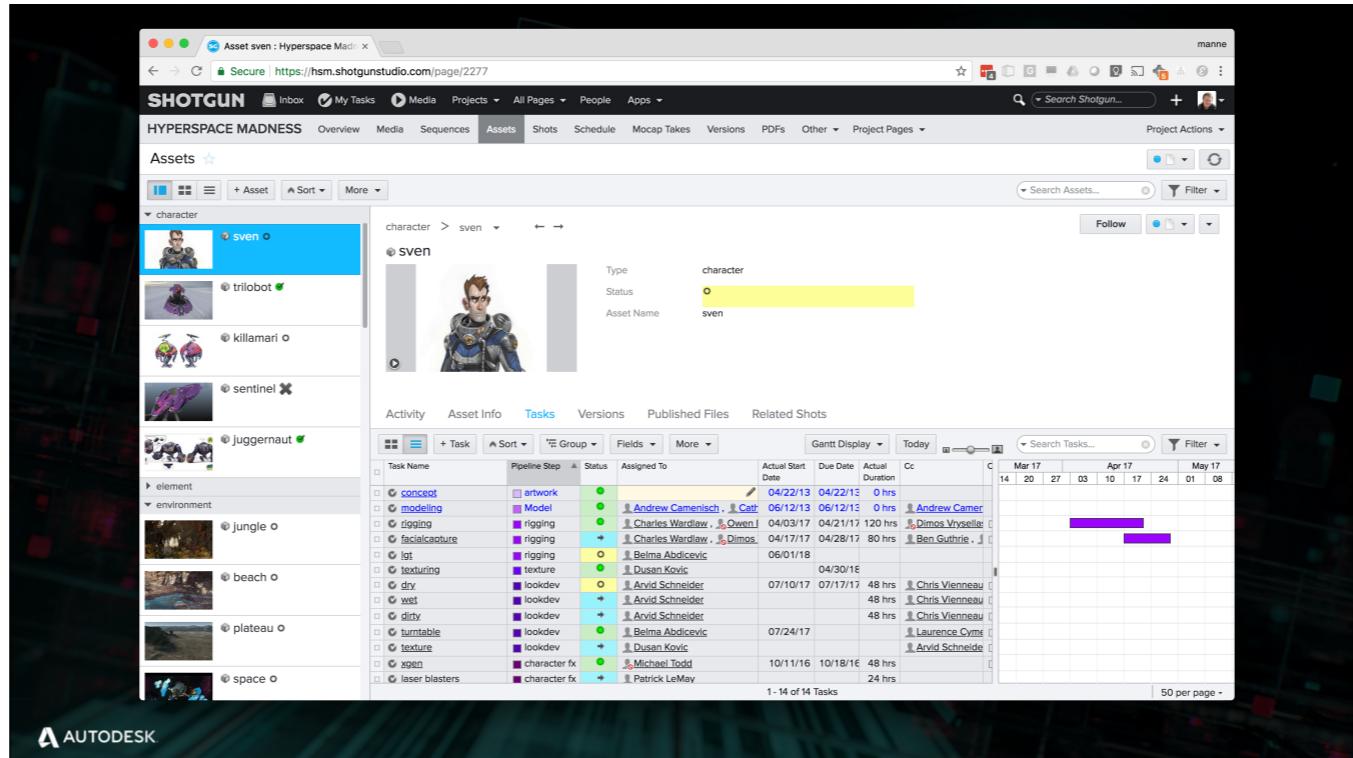
- Action Menu Items
- Event driven triggers
- Toolkit hooks
- {...} APIs

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Welcome chit chat. As we go through this series of courses, we're going to take a detailed look at all of the different ways you can write code for Shotgun. But to start, I wanted to introduce you to a few real scenarios from production to show you how useful Shotgun development can be. Over the course of this talk, we'll learn about 1, 2, 3, and 4. But first a little history

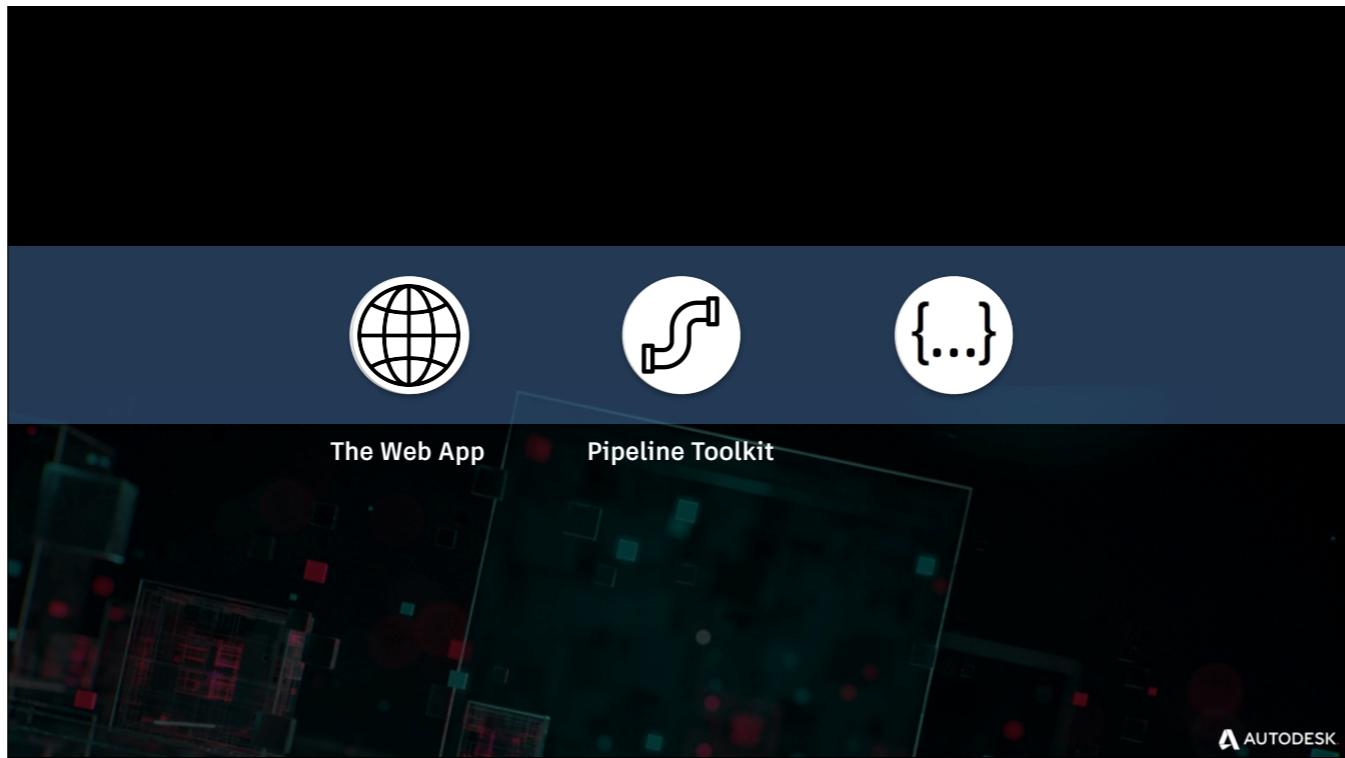


As you already know, Shotgun's web app gives you a powerful, cloud-based “source of truth” for all the minute details of tracking a CG project



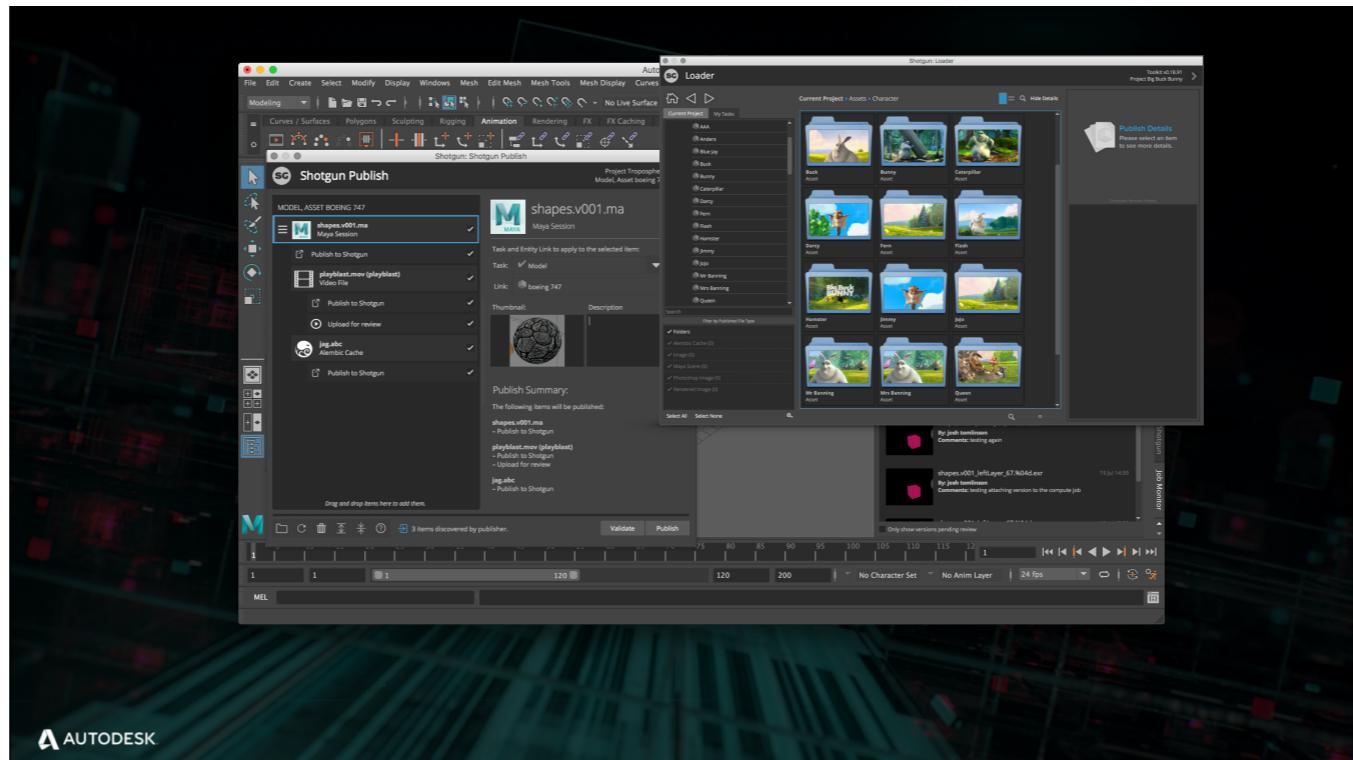
from casting, to tracking progress, to managing assets, you can find everything in the web app.

We started with the web app, but quickly, studios wanted even more from their Shotgun data. Now that we have all this data, why not use it to drive the filenames and directory structure for artists' files on disk? Why not track publishes back in Shotgun?

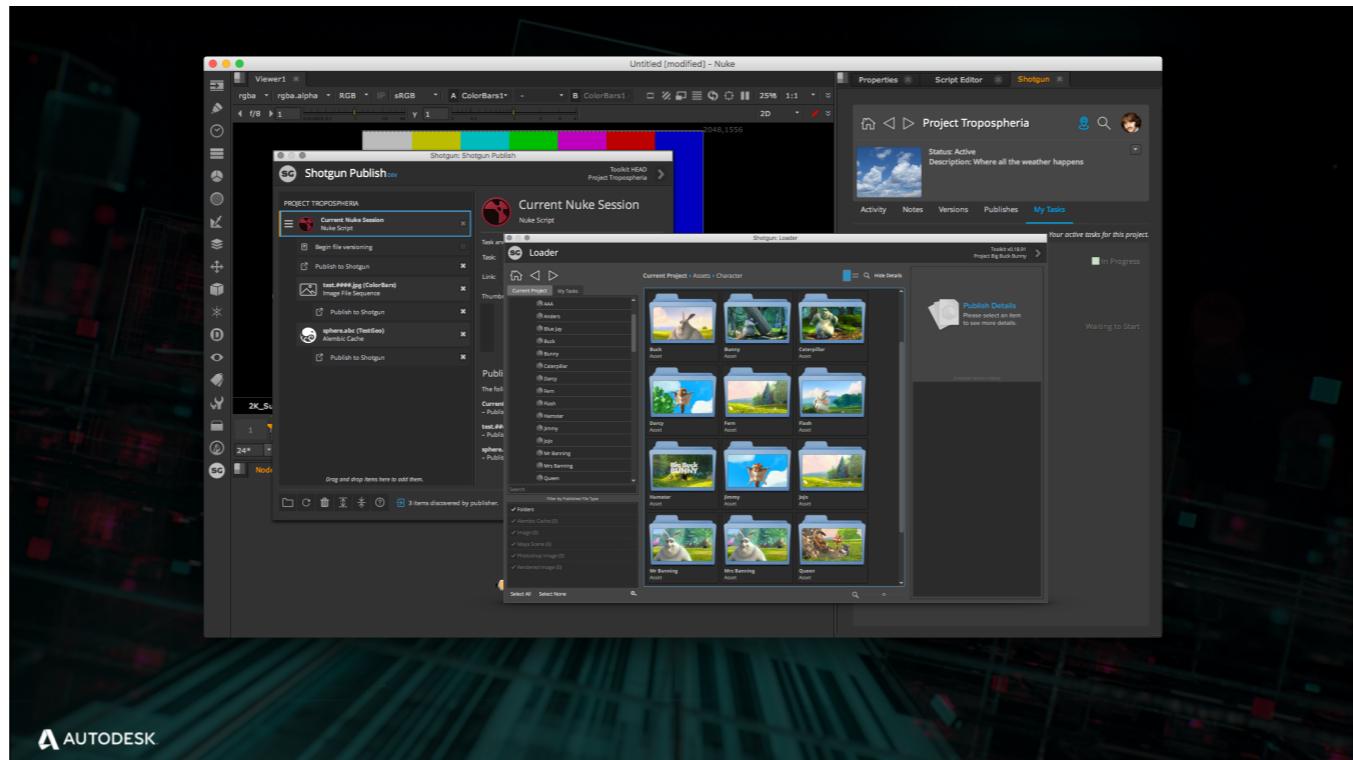


Out of those desires came our Pipeline Toolkit: plugin integrations into widely used DCCs that extend the Shotgun experience into the artist workflow and give you the foundation for a basic publish pipeline. With Toolkit, an animator can automatically save their Maya file to the right place in the Workfiles app, or when a character rigger is ready to share their latest version of a rig, they can publish it with the Publisher app. It will be tracked in Shotgun, and other artists can pick it up within their own DCCs with the Loader app.

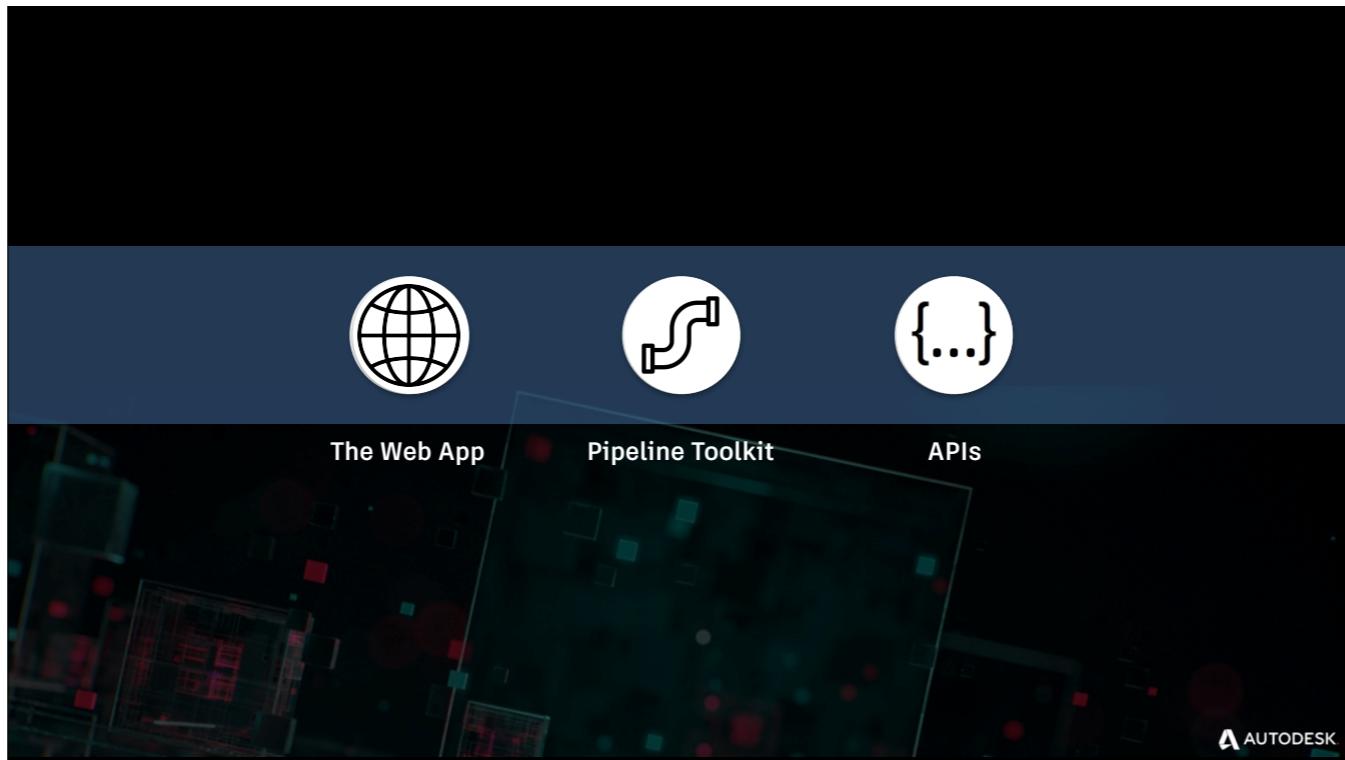
Toolkit was a significant extension of Shotgun usage. But, as we've all experienced, studio workflows are not one-size-fits-all - in fact, pretty much no two studios run exactly the same way. Even with the rich customizations that the Shotgun web app and Toolkit offer, sometimes you need to extend functionality even further.



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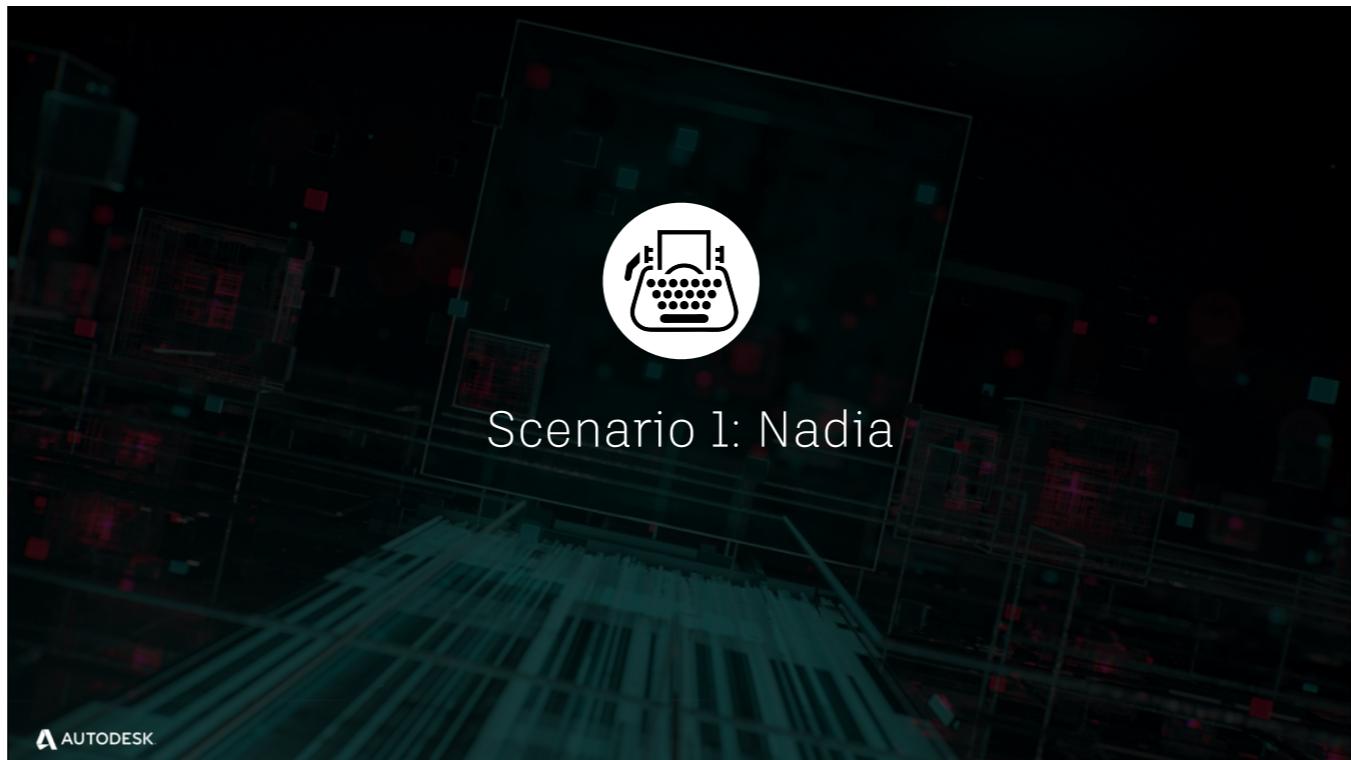
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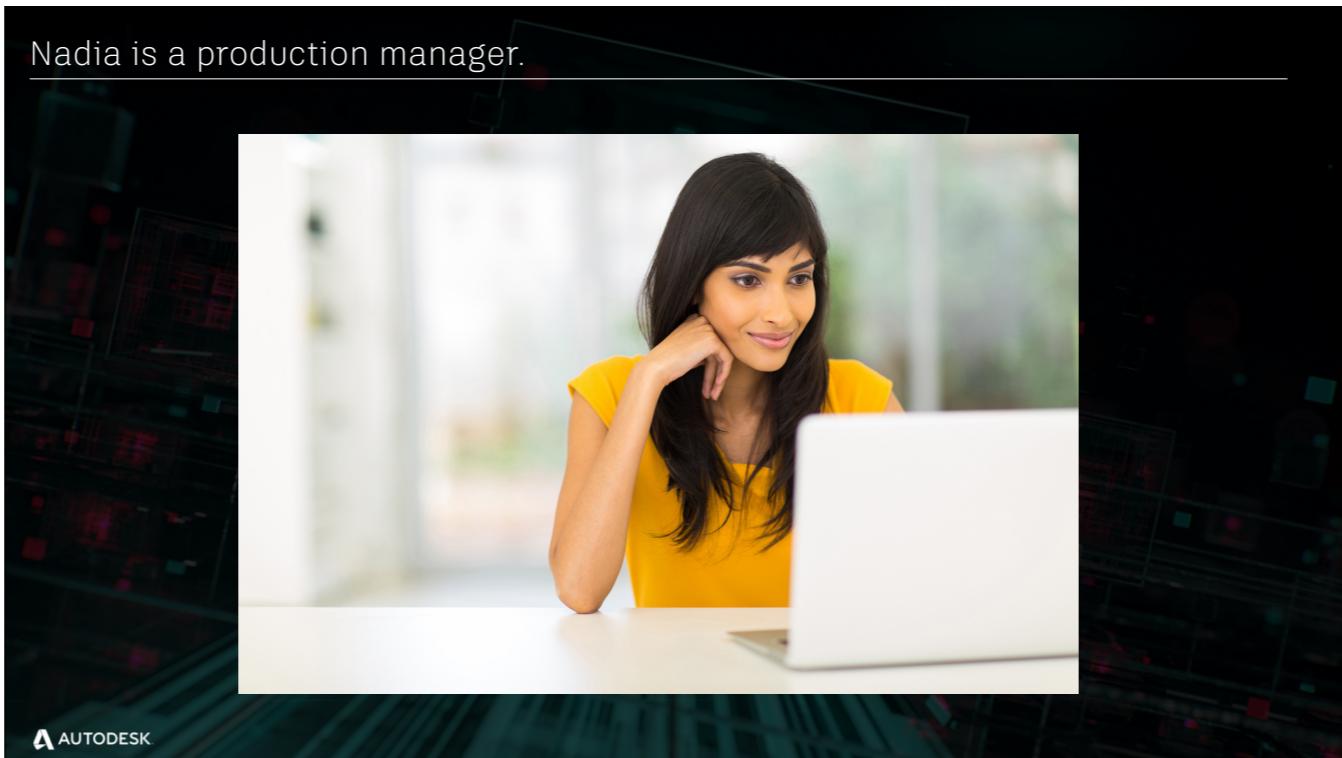
And that's where APIs come in. The various Shotgun APIs give you the power to use the out-of-the-box products as a starting point and customize to your heart's content. You can automate repeatable tasks, build triggers, integrate Shotgun into your studio's existing tools, and more.



We're going to dive deeper into each of these facets of Shotgun development over the course of the day, but right now, I want to go through some scenarios, in order to touch quickly on some of the different ways you can interface with Shotgun in your development to build better pipelines.



Nadia is a production manager.



Nadia is a production manager at a vfx vendor studio. Her show has some shots in production, and they're ready to begin delivering things to the client. The client has asked to see renders in quicktime in addition to the exr sequences her artists are rendering. They have very specific naming conventions, and she wants to keep all of their media organized on disk in per-shot folders.

Nadia is a production manager.

*"I need a button to automate client deliveries, right in Shotgun."*

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She's noticed that this manual process is tedious and time consuming for her coordinators, so she wants to provide them with an automated way to do it, right from within Shotgun.

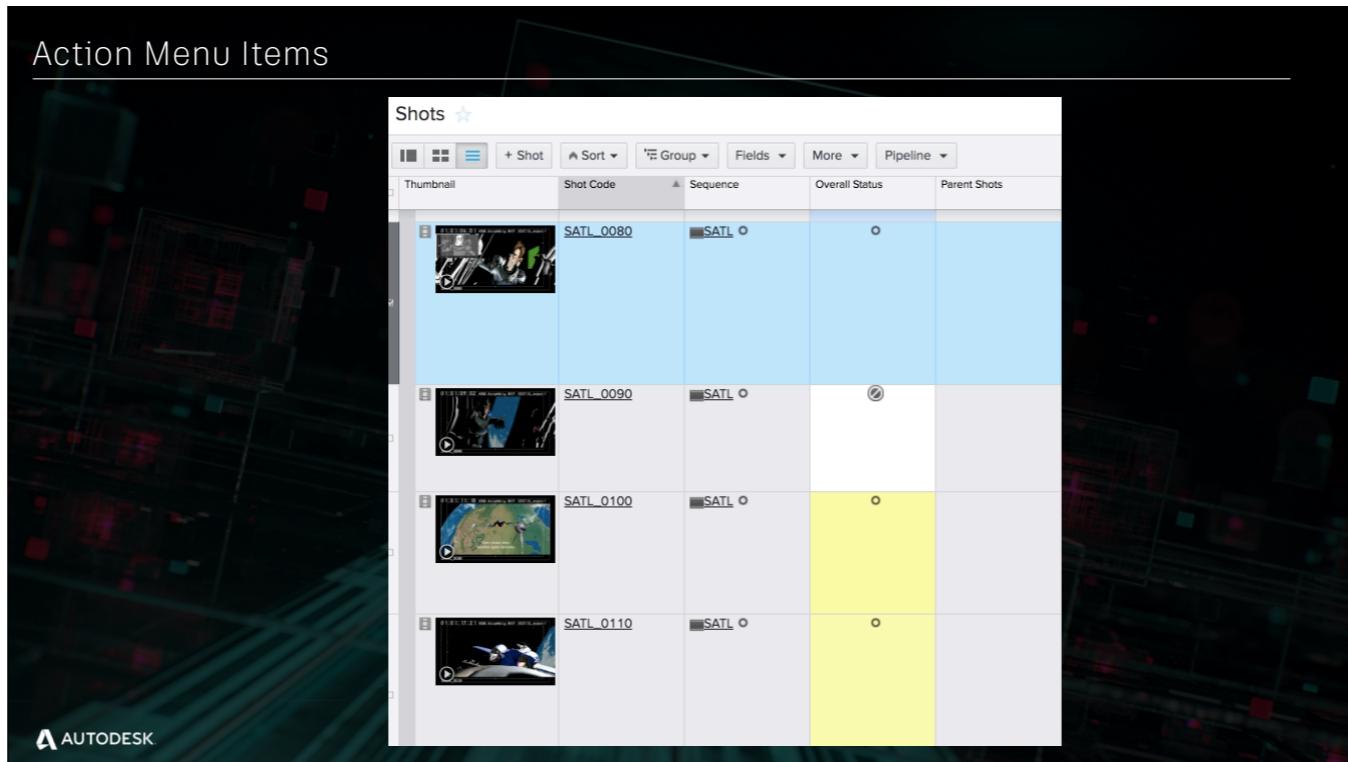
## Action Menu Items

- Add Custom Scripts to right-click context menus
- Entity-specific

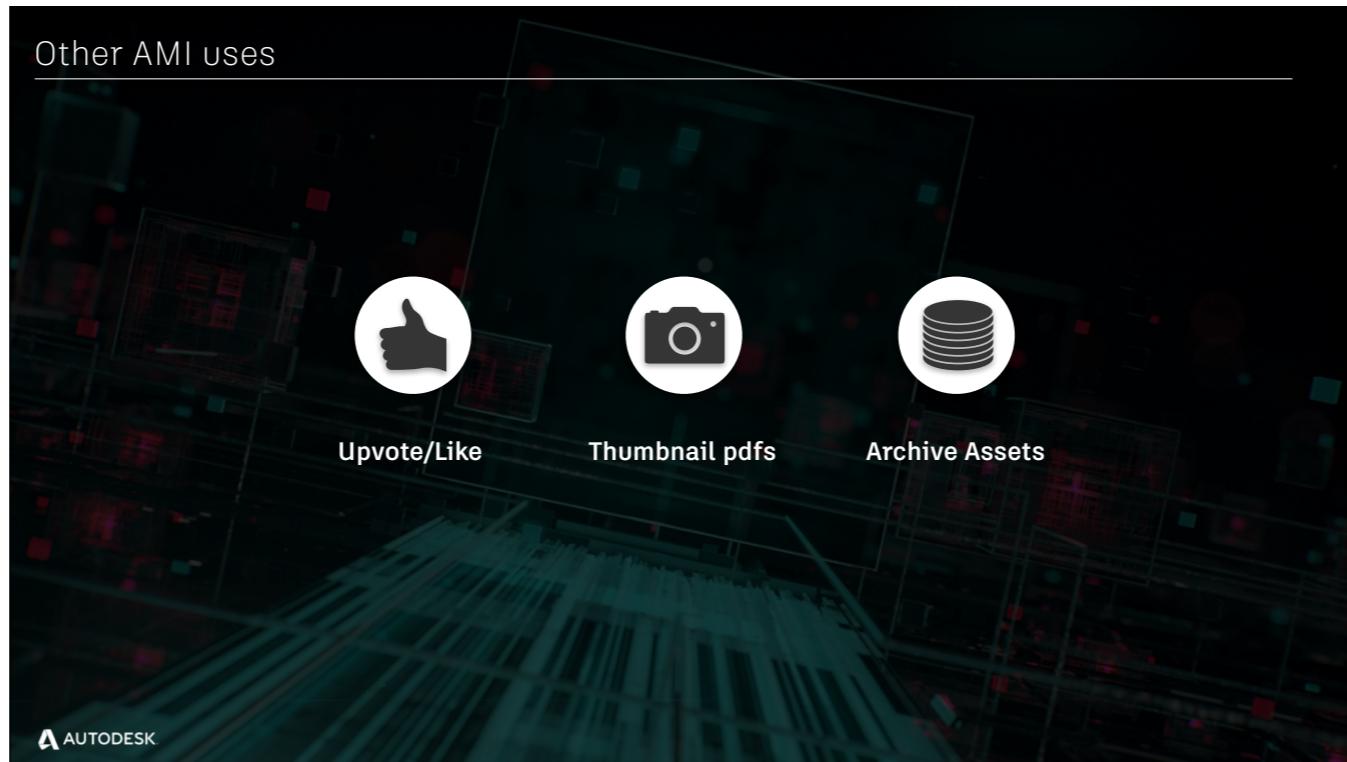
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**Enter action menu items. With action menu items, or AMIs, you can add custom scripts to the right-click menus on entities, which can run arbitrary python code.**

## Action Menu Items



Nadia had her pipeline TD set up an AMI so that when you right-click on a Shot entity in Shotgun, you'll have a "Prep for Client" menu item. When you choose it, the exr file sequence will be converted to quicktime, it will copy and rename both the exrs and the quicktime to match the client's naming convention, and it will place these copies in a per-shot folder within a designated client outbox folder.



AMIs are super useful; you might also use AMIs for

**Upvote/like system**

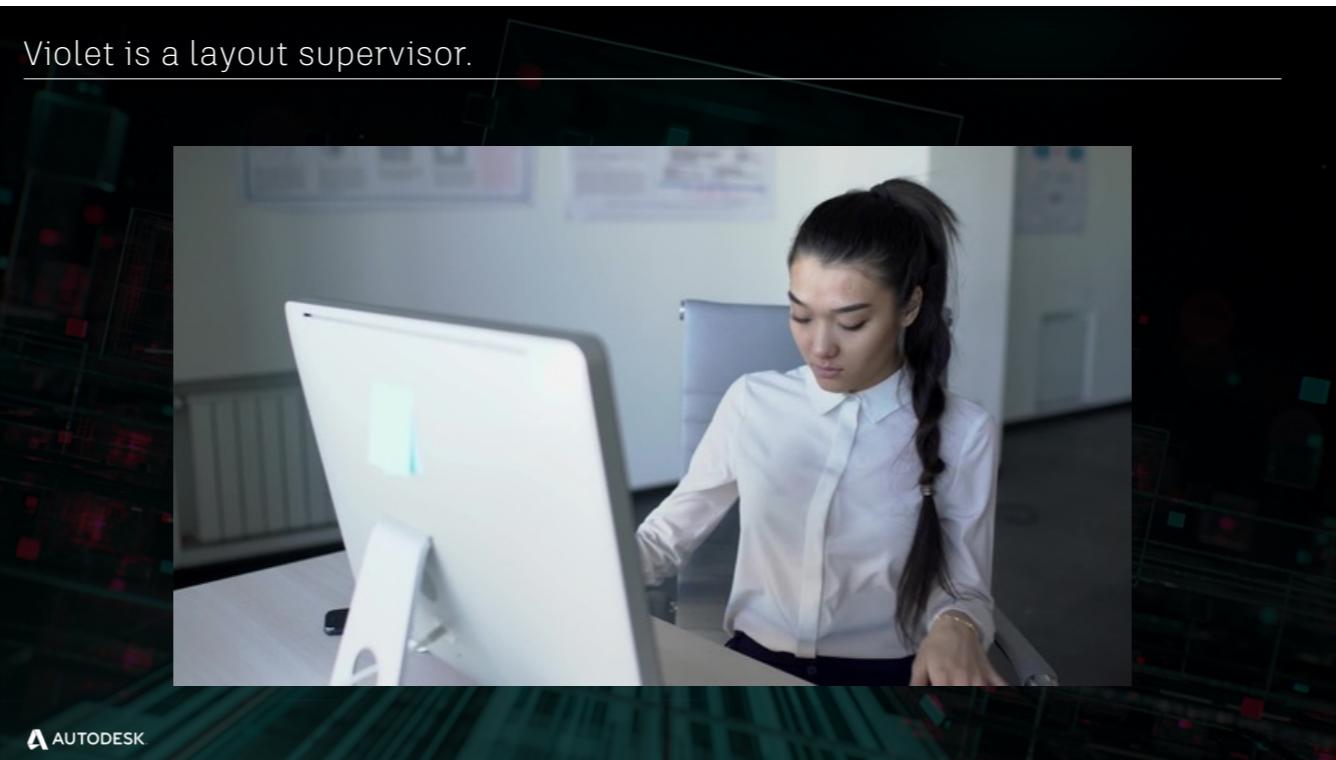
**Generate thumbnails pdf from selection**

**Archiving old assets**



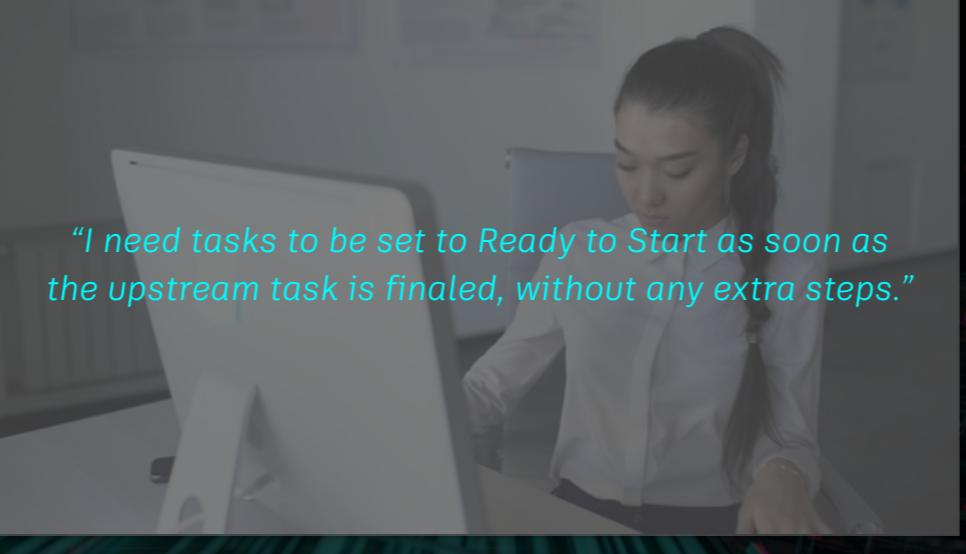
**So now that Nadia's all set with her AMI solution, let's continue.**

Violet is a layout supervisor.



**Violet is a layout supervisor on an animated feature. Her artists are rapidly going through shots, and currently, she's got a PA spending time going through and switching the Anim task on each shot to "Ready to Start" every time the Layout task is set to "Final".**

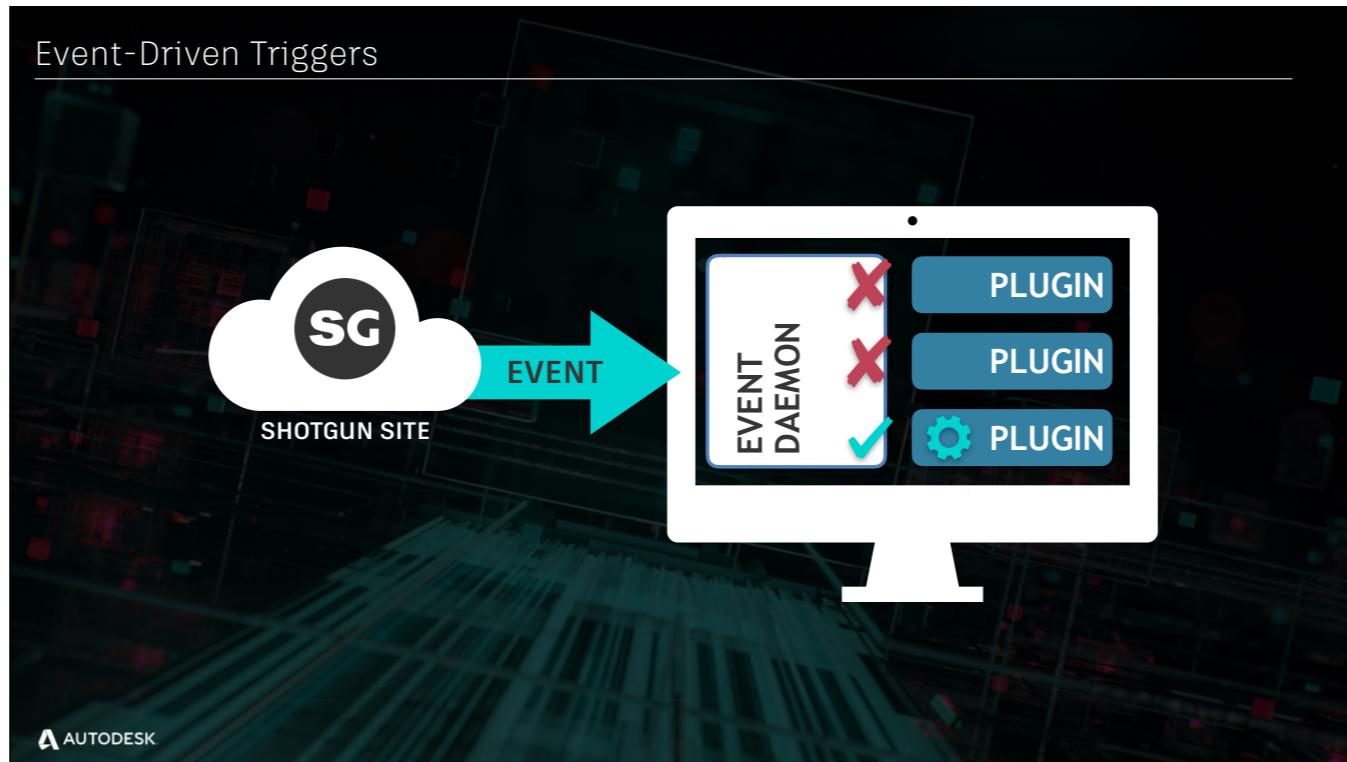
Violet is a layout supervisor.



*"I need tasks to be set to Ready to Start as soon as the upstream task is finaled, without any extra steps."*

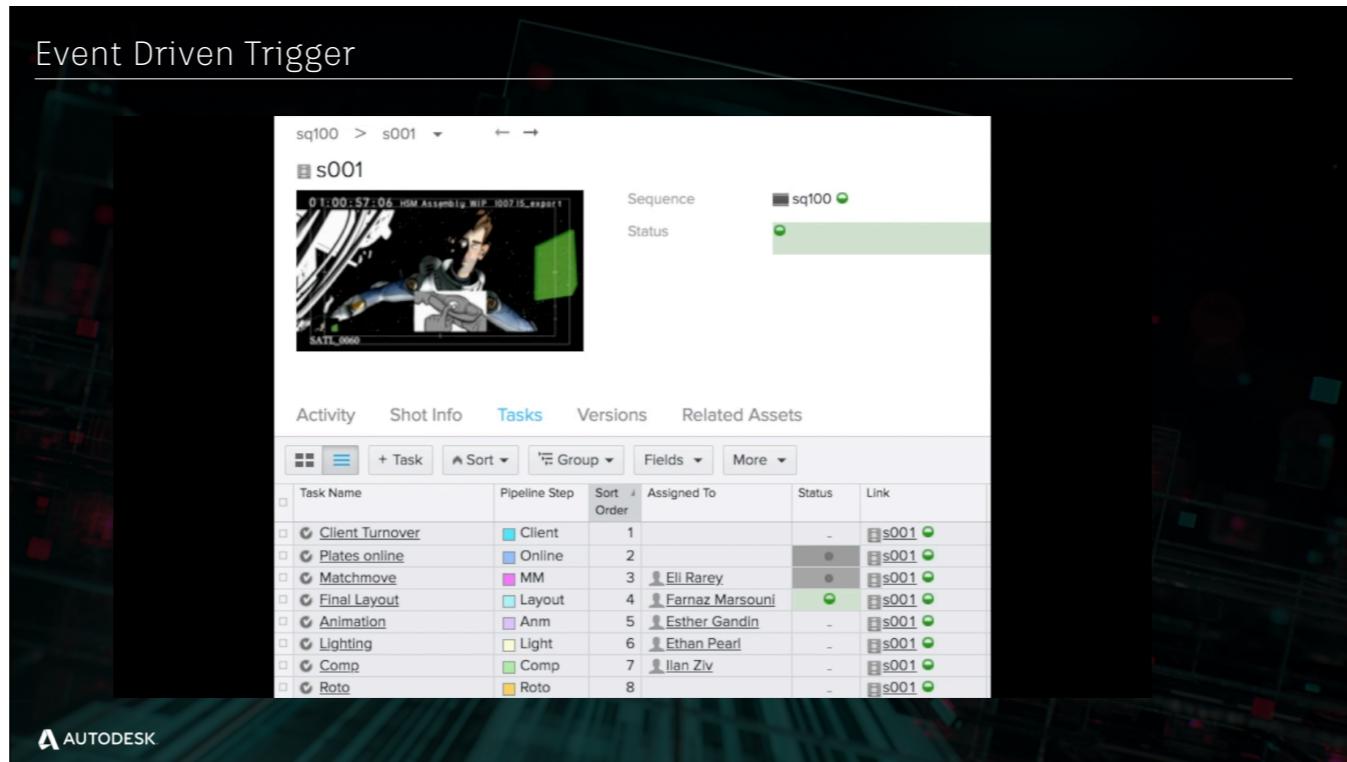
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She wants this process to be automated, but it would defeat the purpose if her PA had to run an AMI just to set the status on Anim. It should just happen automatically, she thinks to herself, whenever a Layout task is finaled.



For Violet, we have event-driven triggers. Shotgun logs every event that takes place on your site: logins, values being set on fields, entities created, deleted, etc.

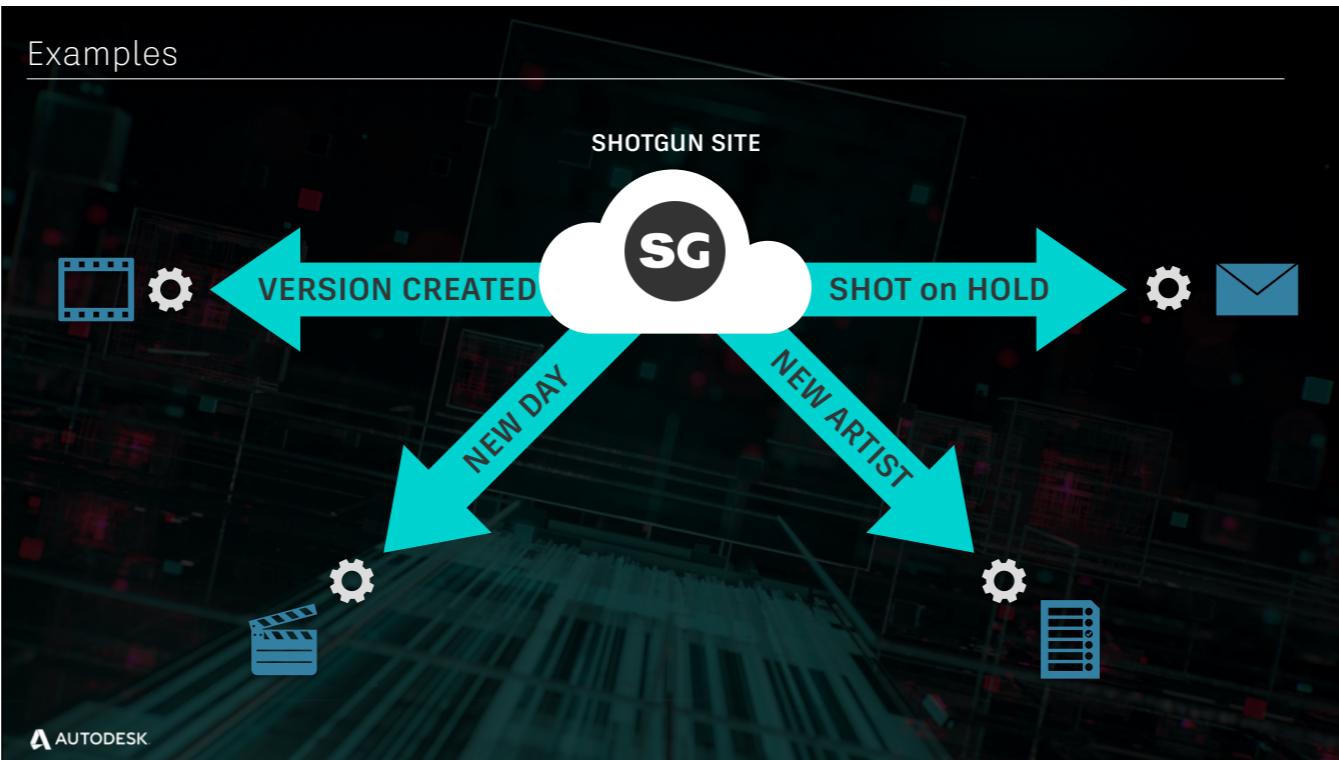
We offer a framework with which you can spin up a daemon locally that monitors the stream of events  
CLICK  
and runs plugins when it sees events that fit filters that you can specify.



## CLICK

So in Violet's case, her TD can spin up an event daemon and write a plugin whereby any time the Layout task on a shot has its status set to "Final", the corresponding animation task will automatically have its status set to "Ready to Start"

## Examples



You can do a lot with event-driven triggers. You could..

Notify artists if a shot goes on hold or OOP

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Add Versions to smart playlists at creation time

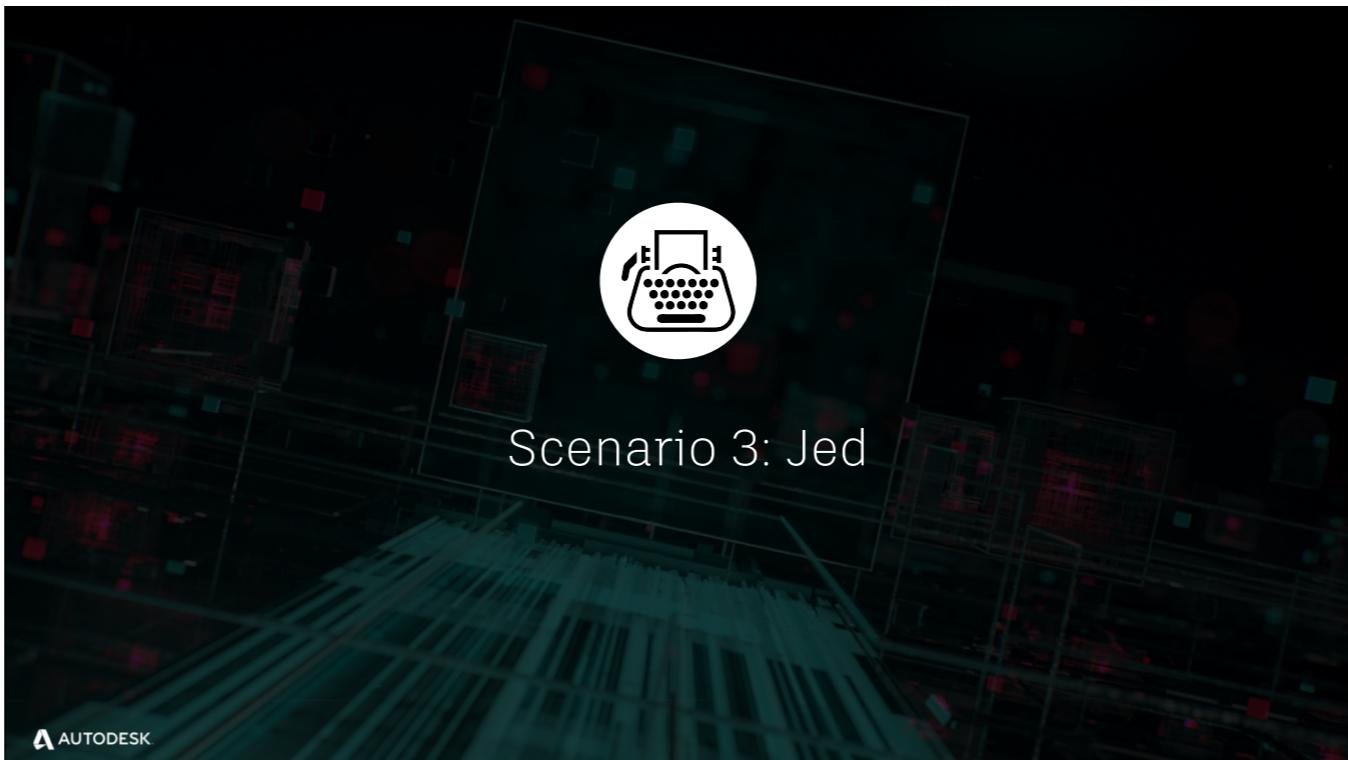
**CLICK**

Create a daily playlist for the team to see their colleagues' latest work

**CLICK**

Assign artists to a project when they're assigned to a task on the project

**CLICK**



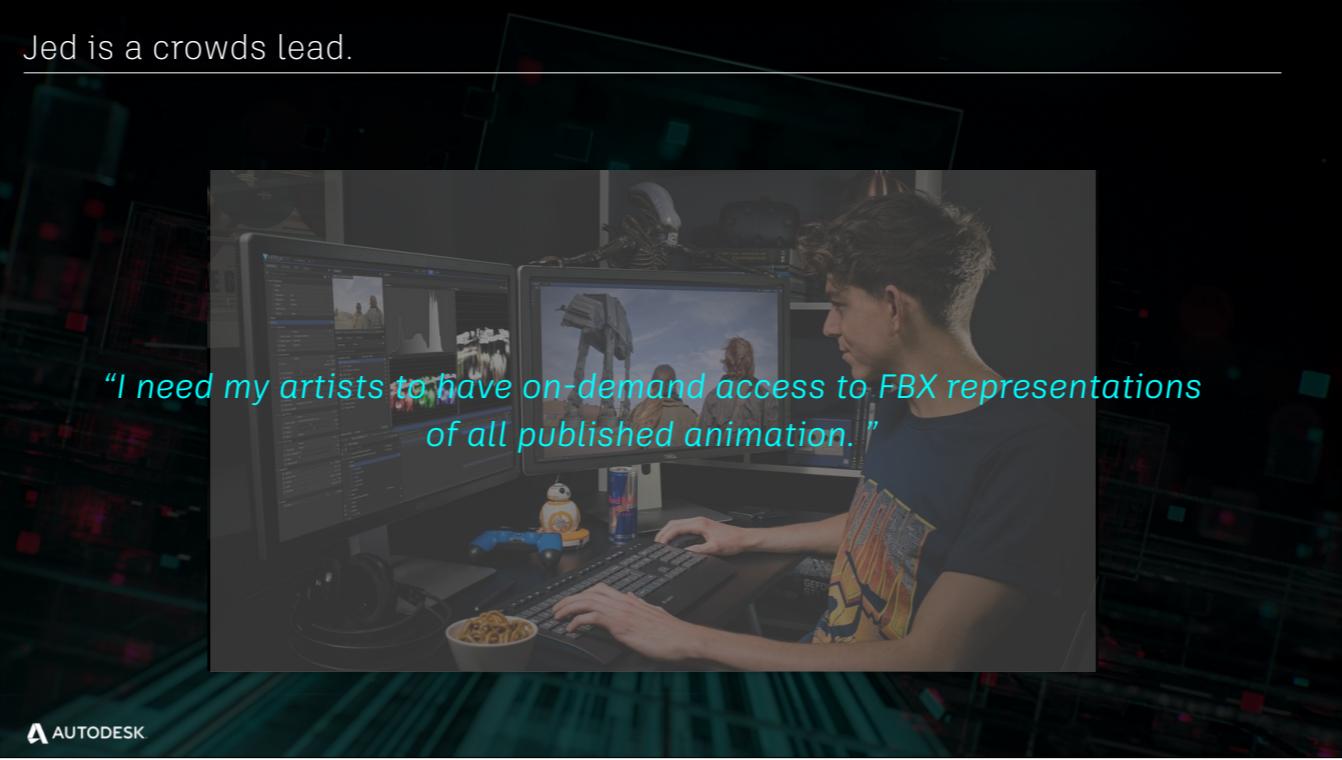
**Violet's all set with her event-driven trigger. Let's talk about Jed.**

Jed is a crowds lead.



**Jed is a crowds lead. The animation team on his show is using the Toolkit Publisher to publish animation as Alembic caches.**

Jed is a crowds lead.



*"I need my artists to have on-demand access to FBX representations of all published animation."*

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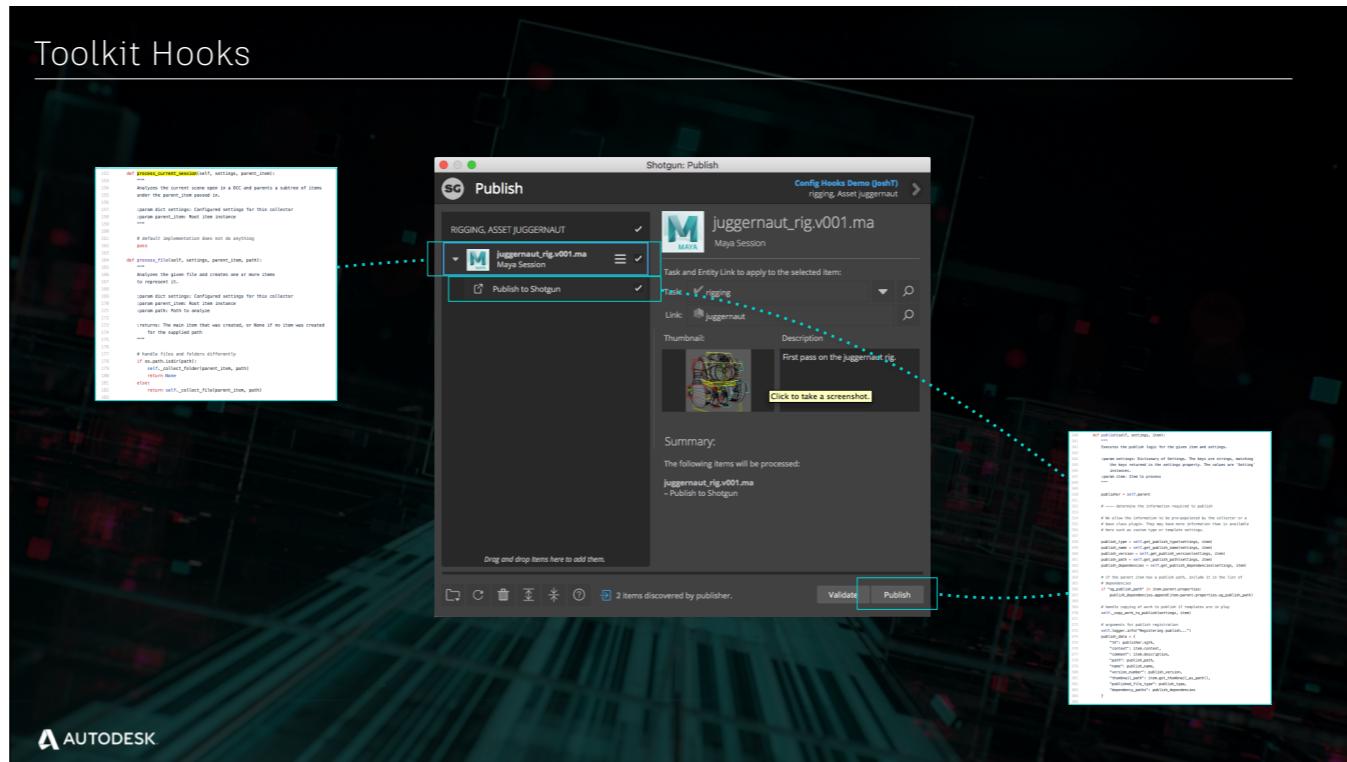
He wants his crowds artists to be able to pull animation into their Massive sessions, which requires the geometry to be in the FBX file format. He wants the FBX files to be readily available, without artists having to take time to generate them on the fly.

## Toolkit Hooks

- Commonly customized steps
- Separated from the main code
- Small scripts, easy to modify without forking
- App, engine, and even core hooks



Enter hooks. Our Toolkit apps have been designed with “hooks” - bits of the logic that’s separated from the main code, so that they can be easily overridden and extended.



**Enter hooks. Our Toolkit apps have been designed with “hooks” - bits of the logic that’s separated from the main code, so that they can be easily overridden and extended.**

**Commonly customized steps [CLICK]**

**Separated from the main code**

**Small scripts, easy to modify without forking [CLICK]**

**App, engine, and even core hooks**

## Examples

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- File conversion to/from in-house formats
- Add needed commandline args when you launch software
- Add an action to the Shotgun Panel to generate an reference image plane in Maya



## Examples of hooks

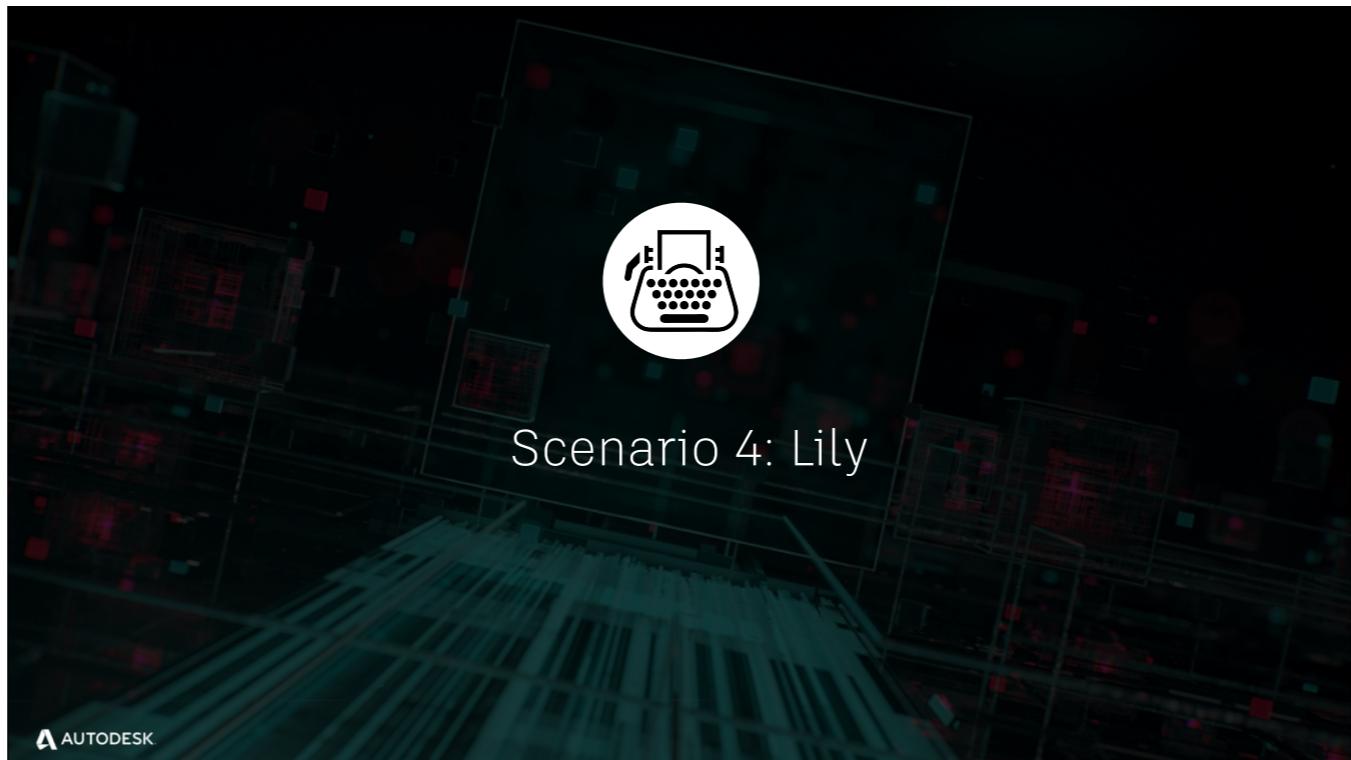


## Examples of hooks

**CLICK:** File conversion to/from in-house formats

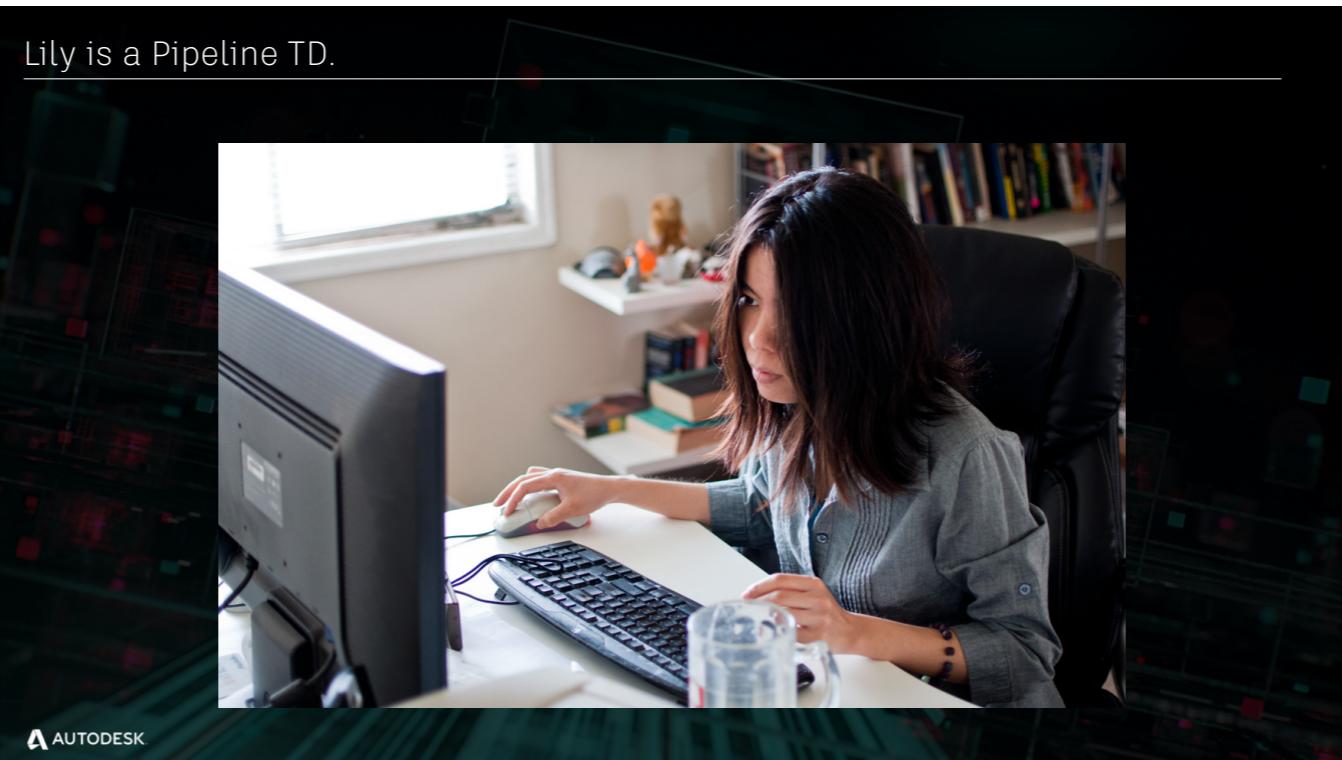
**CLICK:** Add command line args when you launch software

**CLICK:** Add an action to the Shotgun Panel to generate a reference image plane in Maya



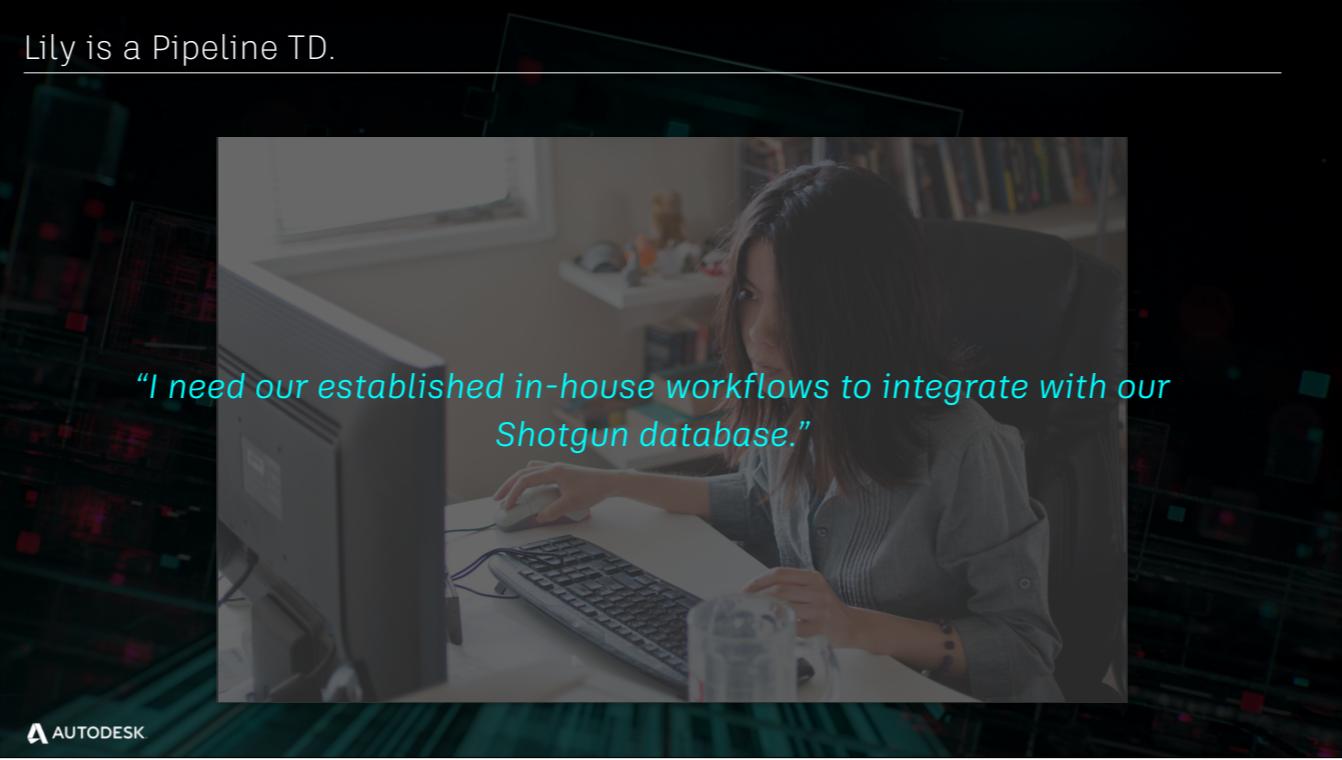
**Finally, let's talk about Lily.**

Lily is a Pipeline TD.



**Lily is a pipeline TD. She works at a large studio, with lots of custom code and established user experiences.**

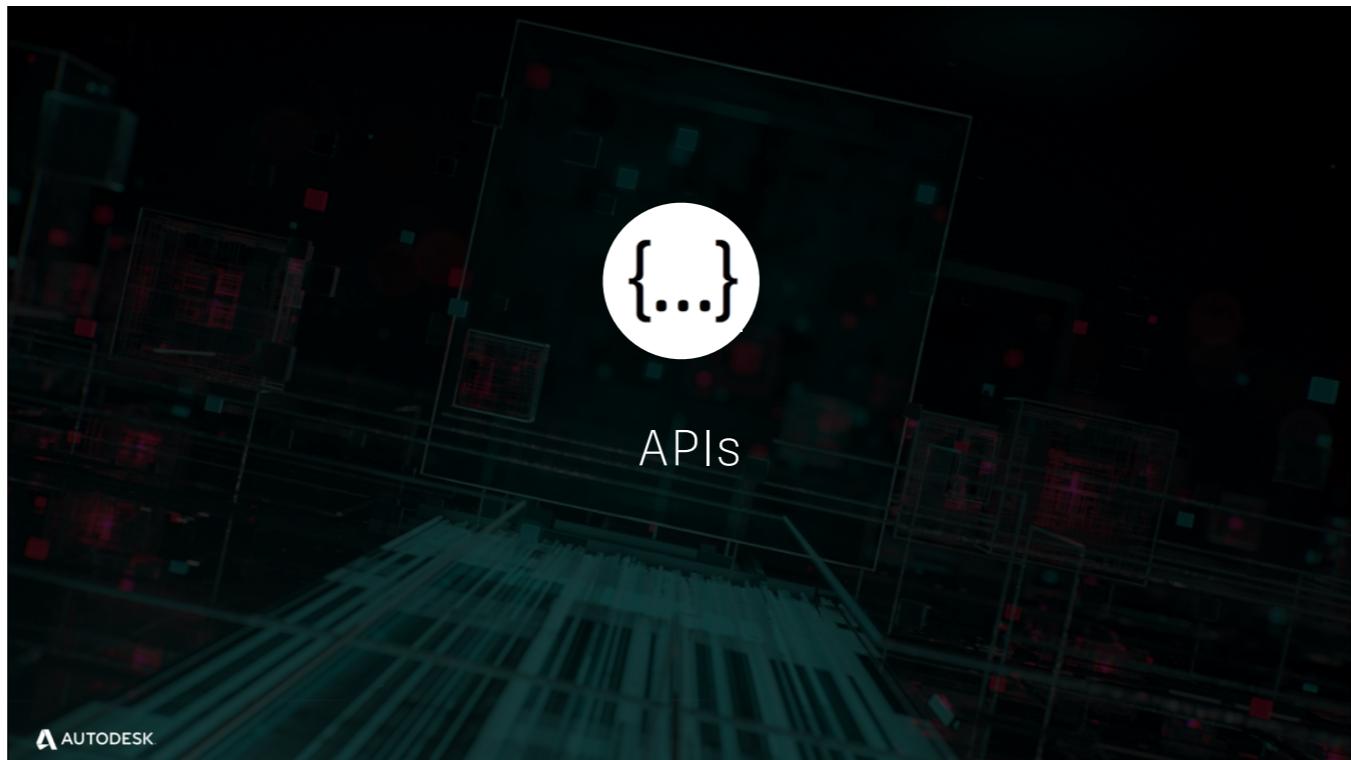
Lily is a Pipeline TD.



*"I need our established in-house workflows to integrate with our Shotgun database."*

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For her, the challenge is getting her studio's in-house tools to access and modify her Shotgun data, and writing apps that fit into her existing pipeline.



**For Lily, we have a small handful of APIs, as well as tools to get her started on custom app development.**

## APIs

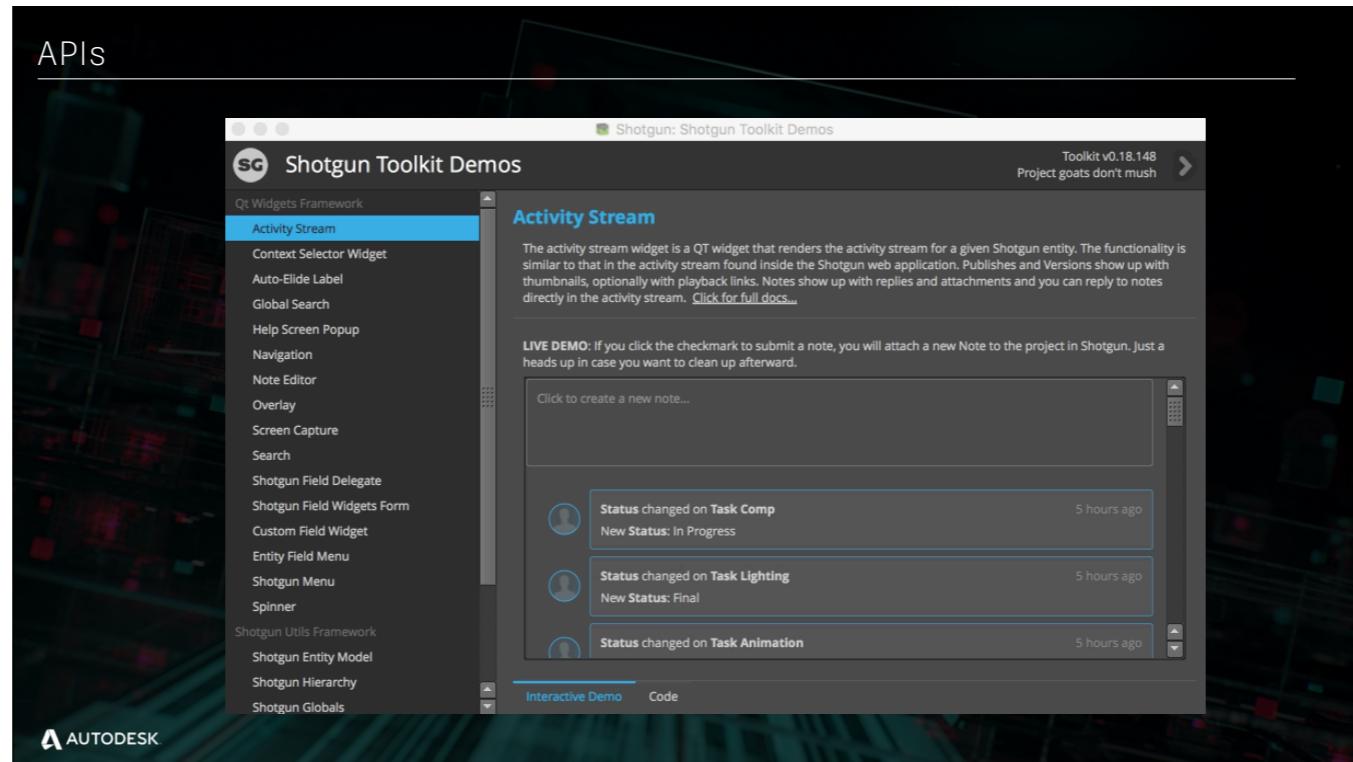


We start with a simple Python-based API for accessing Shotgun and integrating with other tools. CRUD methods give you raw access to data going in and out of Shotgun

On top of that, the Toolkit platform allows pipeline TDs to quickly build configurable tools that can run across applications

REST: Just in the past few months, we've released a REST API. It has functional parity with the Python API, but gives you full data access to Shotgun for cases when the python API isn't the right choice, for example if you want to write something in javascript, go or C++

## APIs



Since Lily needs to write some custom apps, we offer a couple other helpful starting points: we have a starter app, which will give you a framework to build your app upon, and the demo app, which includes examples of common UI elements as well as their underlying code.



So, with all these scenarios, the big takeaway is that with these touchpoints, Shotgun can make one TD feel like ten. With AMIs, event driven triggers, and Toolkit hooks, we've laid the groundwork, so that very quickly, you can extend and integrate Shotgun workflows, both for production management and artists, without having to start from scratch. And even when you are starting from scratch, you have rich, intuitive APIs to get you going.



**In the next half hour, Patrick Boucher is going to walk you through some examples of using our APIs, but before I hand it over to Patrick, are there any questions?**

