A Quick Start for Sequencing Kit Providers

LatchBio

How Latch enables sequencing kit providers to manage workspaces, deliver data, analyses, and interactive visualization applications to customers

Overview

We've partnered with numerous sequencing kit providers to help them service both small biotechs and top 10 pharma's like GSK and Amgen, and identified several common challenges from this experience. As a result, we curated a suite of features designed to empower kit providers to deliver their clients the most exceptional user experience.

Challenges We Observe:

- **Delayed time-to-insight for biotech clients:** Despite sequencing kit providers developing novel microfluidics and technologies for tissue sequencing to uncover disease mechanisms, significant data challenges (such as unique workflows, enormous datasets, and cloud infrastructure) have made it difficult for scientists to access meaningful insights easily. A longer time to insight creates a poor initial customer experience, potentially leading to a barrier to adoption short-term or customer churn long-term if slow bioinformatics turnaround time happens repeatedly.
- **Engineers are distracted from developing novel, differentiating algorithms** by the need to build front-end interfaces and maintain cloud DevOps: Instead of dedicating time to creating pipelines that assist biotech customers in discovering novel insights from their kit's data, bioinformatics engineers now spend over 100 hours per month on tasks like building user interfaces and maintaining AWS infrastructure.
- **Substantial investment required for compliance:** Achieving a 99.999% SLA and compliance with regulations such as SOCII Type 2, HIPAA, GDPR, and others is a significant business and engineering undertaking, typically taking between 6 months to one year. Nevertheless, this requirement is essential for many biotech customers.

Solutions Suite:

Latch provides sequencing kit providers with a suite of features that makes it easy for them to:

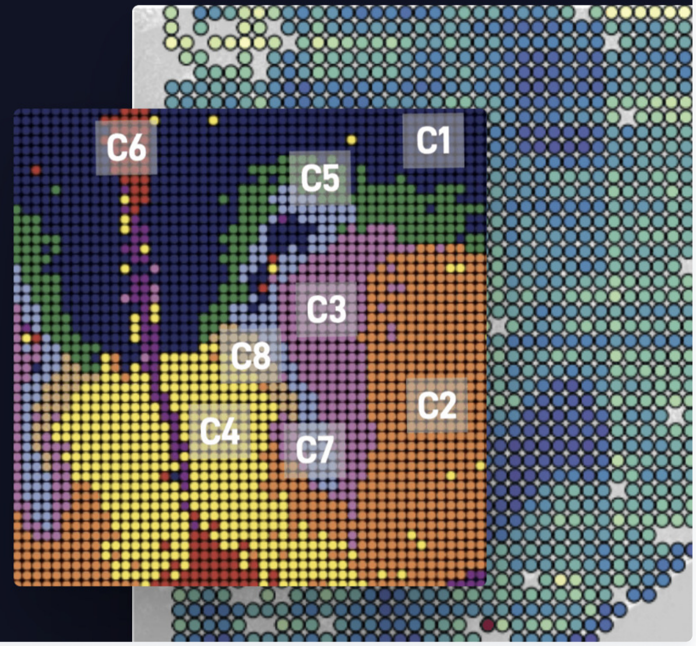
- Create and manage customer workspaces
- Deliver analyses with a user-friendly graphical interface for scientists to self-serve
- Transfer credits between customer workspaces
- Achieve compliance out-of-the-box
- And more
- Onboard customer data
- Monitor customer usage and credit consumption with an Admin dashboard
- Deliver interactive visualization applications (RShiny, Dash Apps) to customers easily, shortening time-to-insight.

AtlasXomics

How AtlasXomics is pioneering spatial omics analysis at scale

> **"Latch has enabled us to put comprehensive spatial biology data in the hands of researchers and make it easily accessible. This will have a significant impact on the field."**

Colin Ng, Vice President, AtlasXomics



Outcomes Delivered:

Using Latch, AtlasXomics, a spatial sequencing kit provider:

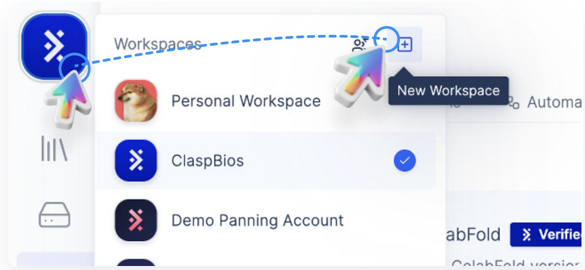
- Saved 3-4 FTEs
- Reduced the time from sample submission to accessing final insights from 3-4 weeks to just 6 days
- Strengthened partnership with enterprise pharma customers through seamless onboarding and rapid delivery experience

[Learn more →]

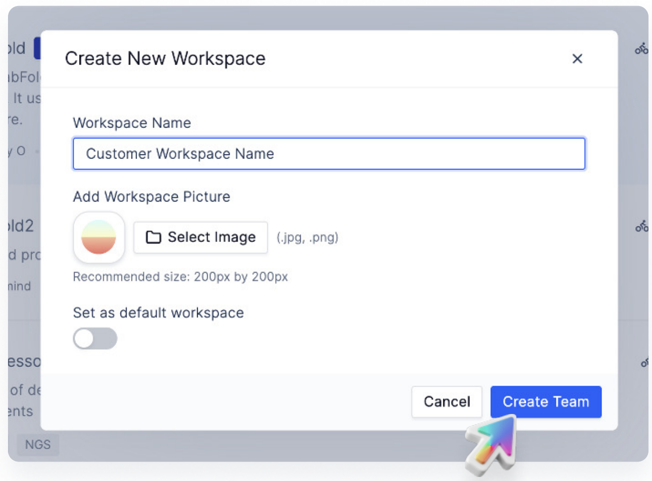
Table of Contents

Creating a Workspace for a Customer

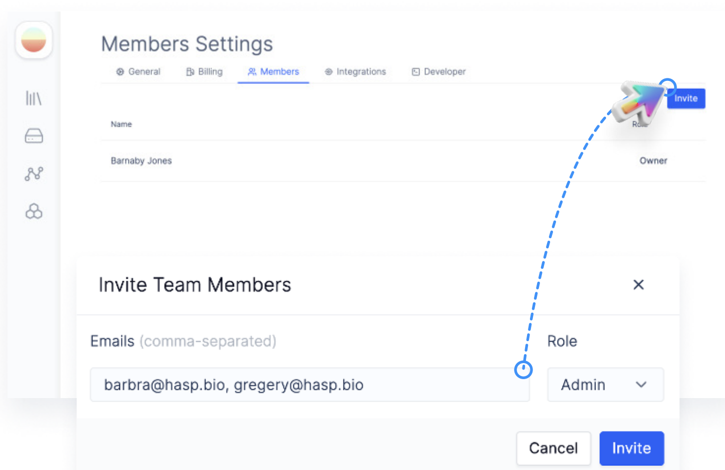
1. First **open the Workspace Dropdown** by clicking the avatar on the top left corner of the screen and **press the add New Workspace button**.



2. A modal will open up where you can fill out the name for the new customer workspace. Once filled out click **Create Team**.



3. From here you will be dropped on the workspace **Members** page. Click **Invite** to invite your customers to the team by email. More on inviting users and roles can be found here.



4. This workspace will appear in both your Avatar workspace dropdown and the Admin Overview Dashboard.

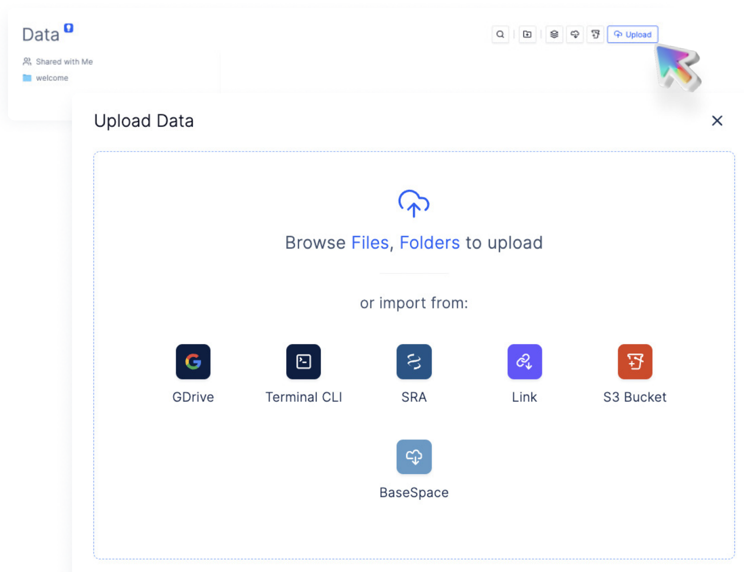
Onboarding Customer Data

There are two options for onboarding customer data to their workspace, depending on customer preference.

Option 1: For customers who prefer to self-serve:
Customers can bring their data to Latch using one of three options:

- Mounting their AWS S3 bucket on Latch
- Importing from their Illumina BaseSpace account.
- Uploading data from their local computer or HPC to Latch using the CLI.

Other advanced options include importing data directly from Google Drive, the Sequence Read Archive (SRA), or a FTP/HTTPS link.



Support for Azure and Google Cloud are coming early-mid Q2, 2024.

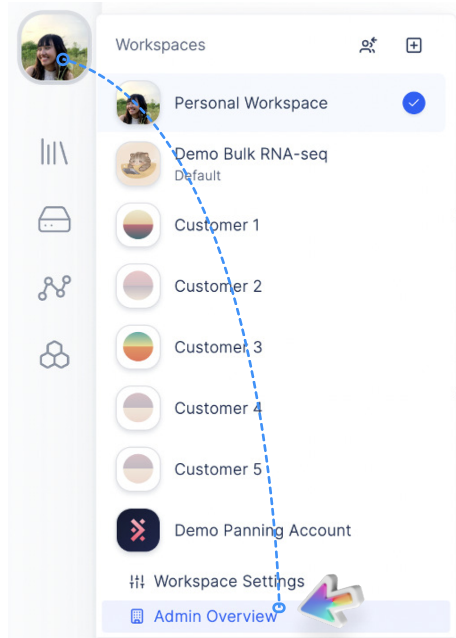
Option 2: For customers who prefer white-glove support:
After creating the customer workspace, you have Admin access, enabling you to populate their workspace with data using any of the methods mentioned above.

Alternatively, if you already have their data in your own workspace, you can:

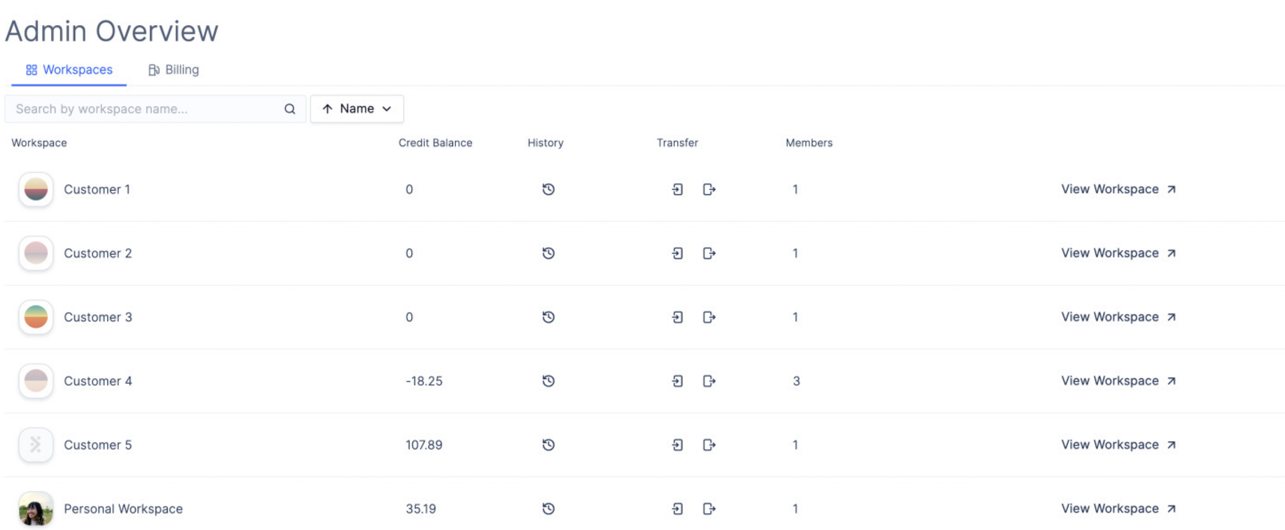
1. Share the data with the customer via a link: Similar to Google Drive, Latch enables fine-grained access control for sharing files and folders within workspaces.
2. Use the Latch CLI to copy data between workspaces: Visit example 4 from our documentation to see how to do that here.

Credits Management for Customer Workspaces

1. As the **Admin** of multiple customer workspaces, you can navigate to the **Admin Overview** page to see a comprehensive breakdown of credits history and billing information for every customer.

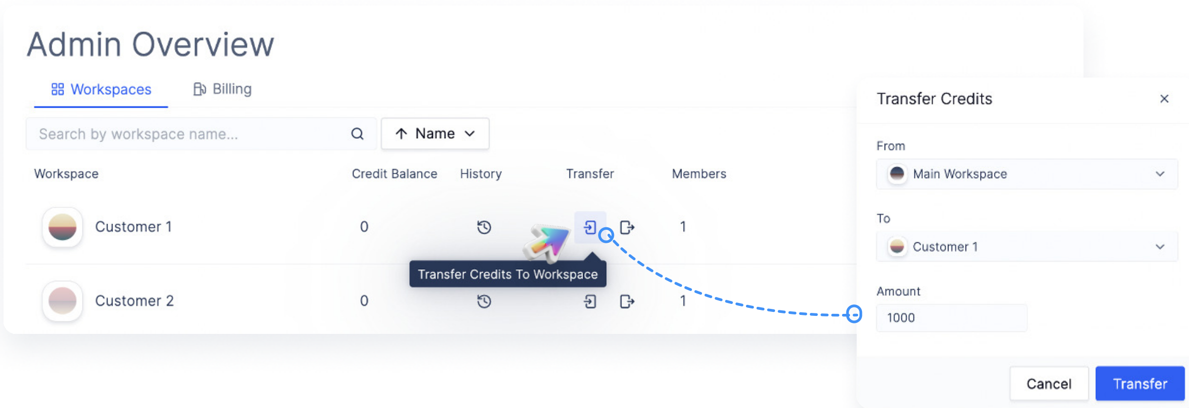


2. The dashboard gives you an overview of all the customer workspaces you are an Admin of, their credit balance, and number of members within each workspace. Clicking on the **View Workspace** link will take you to that customer's workspace directly.



Credits Management for Customer Workspaces Cont.

3. To transfer credits to a customer's workspace, select **Transfer Credits To Workspace**, and specify the amount you want to transfer.



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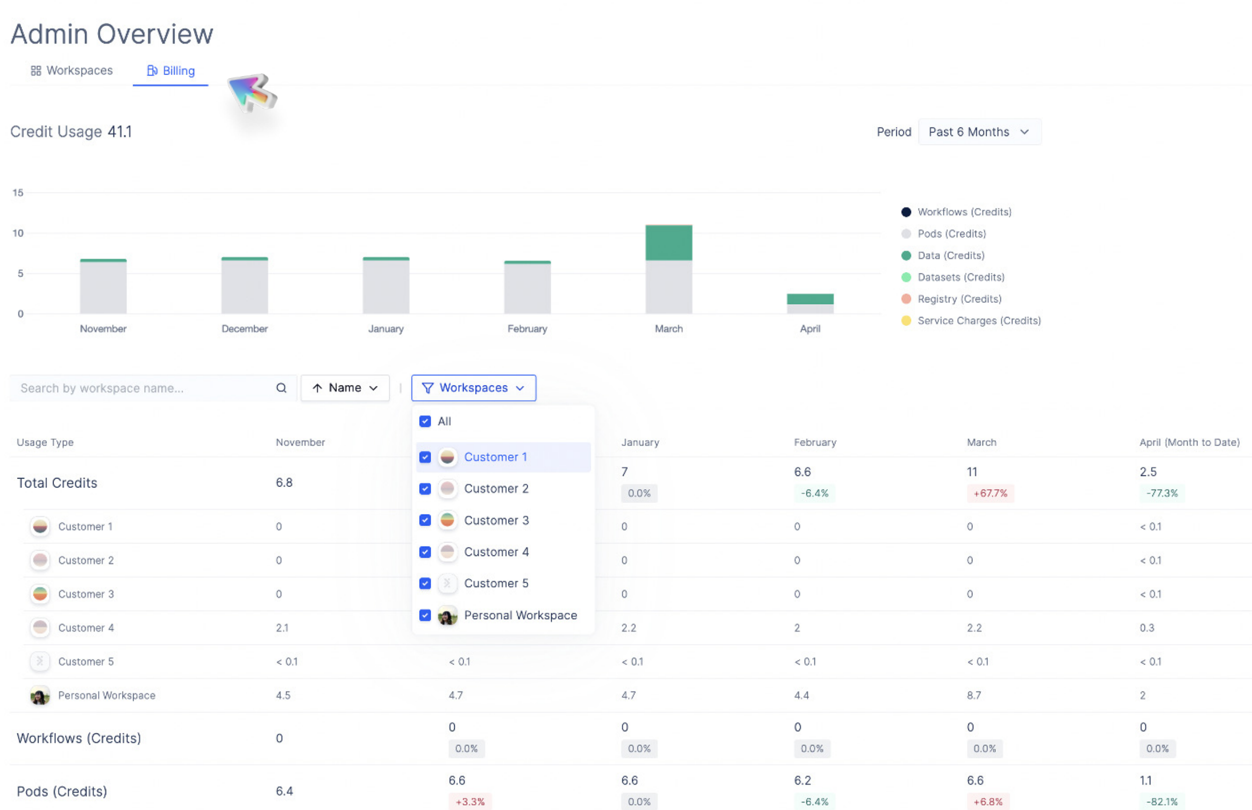
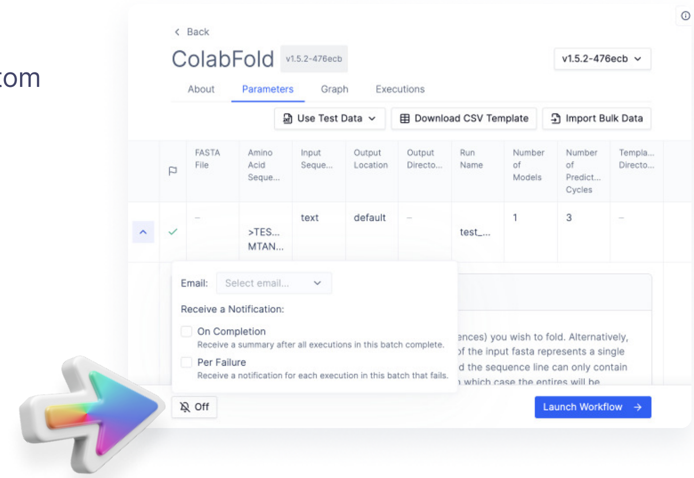
4. Click on **Billing** to access an overview of credit consumption across all workspaces. By default, you'll see the total sum of credits used across all workspaces. For more detailed insights, easily drill down into individual workspace usage by applying the **Workspaces** filters.



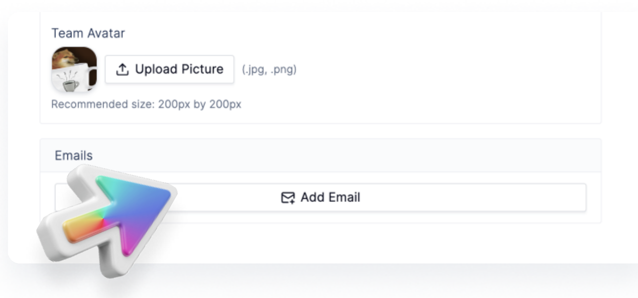
Setting up Workflow Email Notifications

1. **To enable notifications** for a set of executions, **click on the Notification Bell button** at the bottom left of the Workflow Parameters page.

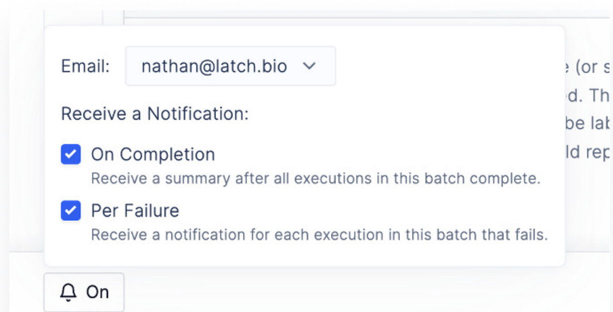


2. **If you don't have an email setup** for that Workspace, click the Add an Email button. This will take you to the General Settings page. **Go to the bottom of the page and click Add Email.**

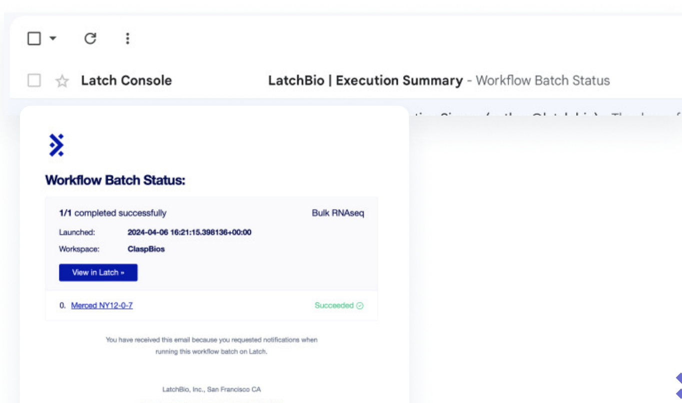
   Enter and verify the email you want to use.



3. **Go back to the Parameters page**, select the email you want to get notified at, and then **enable which notifications you would like to receive**.



3. You will now receive email notifications for any executions run in that batch from *noreply@latch.bio via amazonses.com.*



Releasing Workflows to Customer Workspaces

Latch provides an easy way for Admins to release specific workflow versions from one workspace to another.

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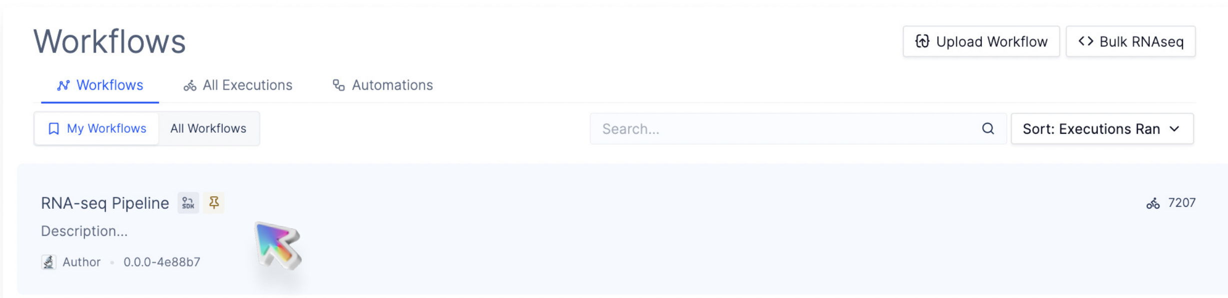
1. Navigate to **My Workflows** on the Latch Workflows page. Be sure to verify that you are in your company's workspace. Double-click on your workflow of interest (for example, RNA-seq Pipeline in the screenshot below)



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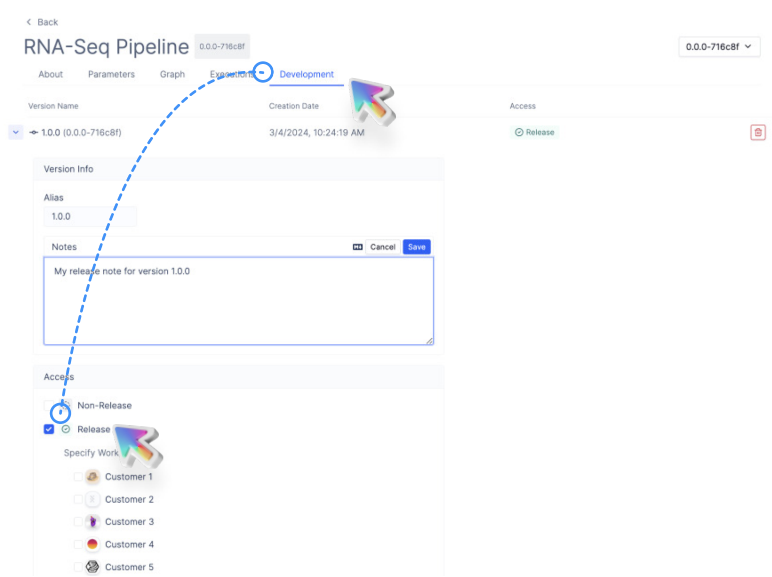
2. Navigate to the **Development** tab. Here, you can write release notes, and select customer workspaces that you want to release that workflow version to.

   From the customer perspective, if they navigate to **My Workflows** in their workspace, they will see the RNA-seq Pipeline.



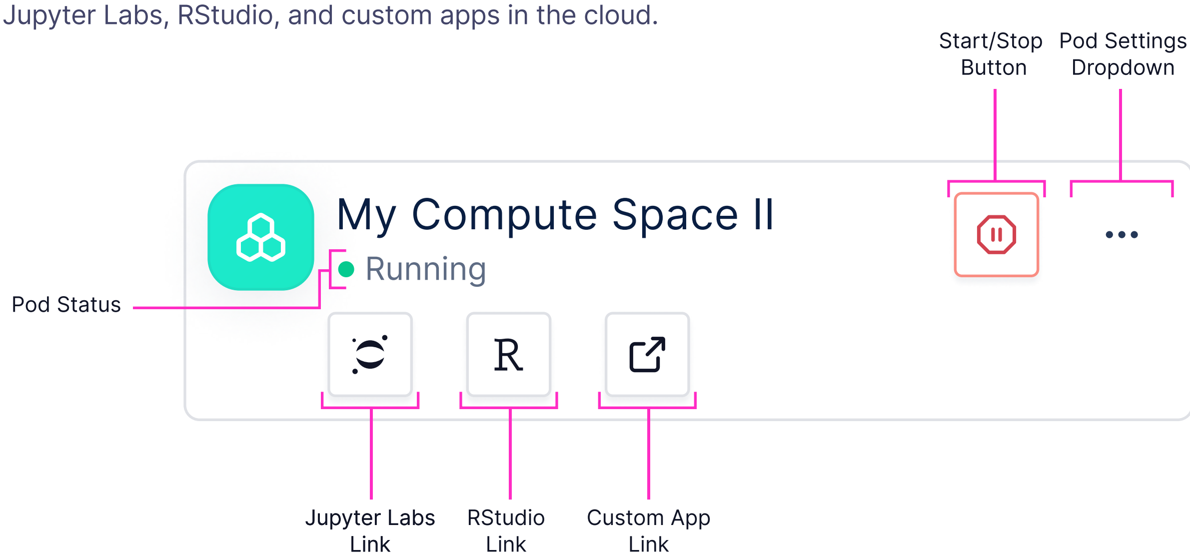
Hosting Interactive Applications

As a kit provider, you want to create a magical first-time experience for your customers. Interactive visualization applications on Latch is a powerful way to shorten the loop between raw sequencing data and true biological insights.

*Learn how AtlasXOmics **leveraged Latch Pods to deliver interactive RShiny Apps** to customers and enable biologists to visualize and interrogate spatial transcriptomics data!*

Part 1: Get your application up and running inside Latch Pods

Pods are virtual computing environments that allow you to run analysis tools like Jupyter Labs, RStudio, and custom apps in the cloud.



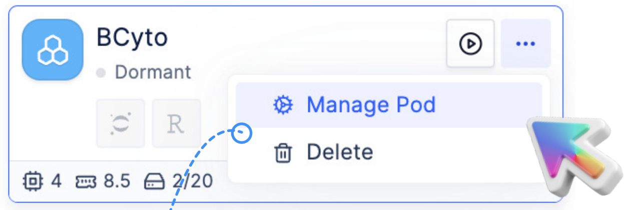
***You can hide or show** these links by going to the Pods setting page and toggling them off in the Pod Quick Links section.*

1. First, in your company workspace, create a new Latch Pod following the instructions here.
2. Latch Pods simplifies hosting a variety of custom applications such as Dash Apps, RShiny, Streamlit, and more on Latch by exposing the running application on port 5000. Follow the instructions here to learn how to deploy your application.

Hosting Interactive Applications Cont.

Part 2: Deliver the interactive application to a customer workspace

1. Click on your Pod of interest on the Pods page, and select **Manage Pod.**



2. Navigate to the bottom of the Pod's settings page and select **Create Template.**

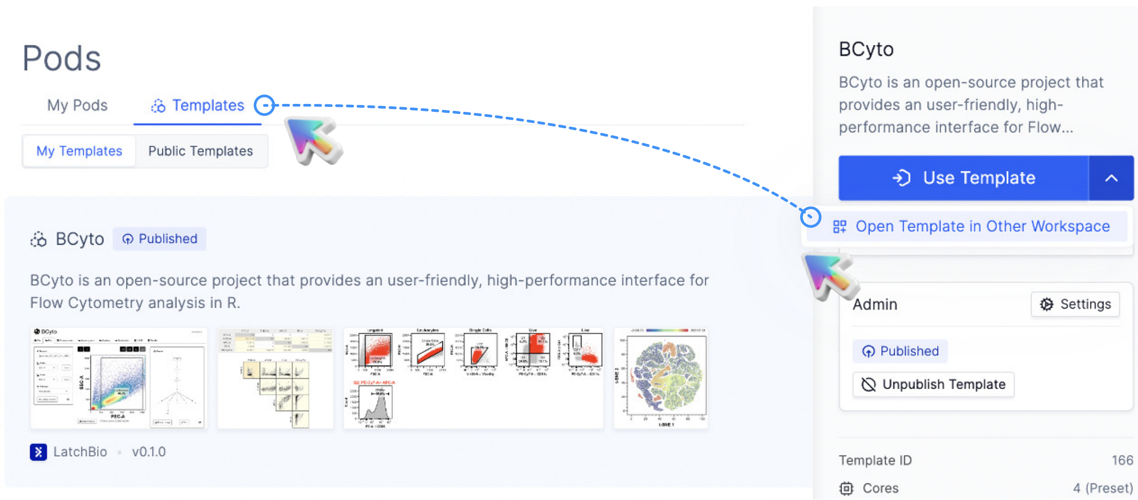
   A Pod Template is a snapshot of the Pod's setup, including all files, scripts, and dependencies. Pod Templates make it easy to share the complete setup of a Pod across workspaces, so you don't waste time setting up a Pod from scratch in every new workspace.

   Follow the on-screen prompts to complete the creation of your Pod Template.

   Depending on how large your Pod is, creating a template may take 5+minutes.

Hosting Interactive Applications Cont.

3. Once template creation is complete, navigate to the **Templates** page, select and your template of interest, and click **Open Template in Other Workspaces**



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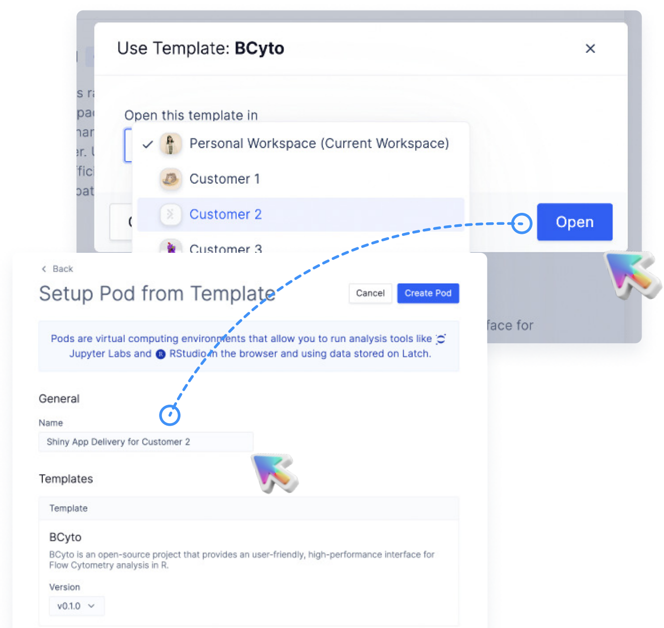
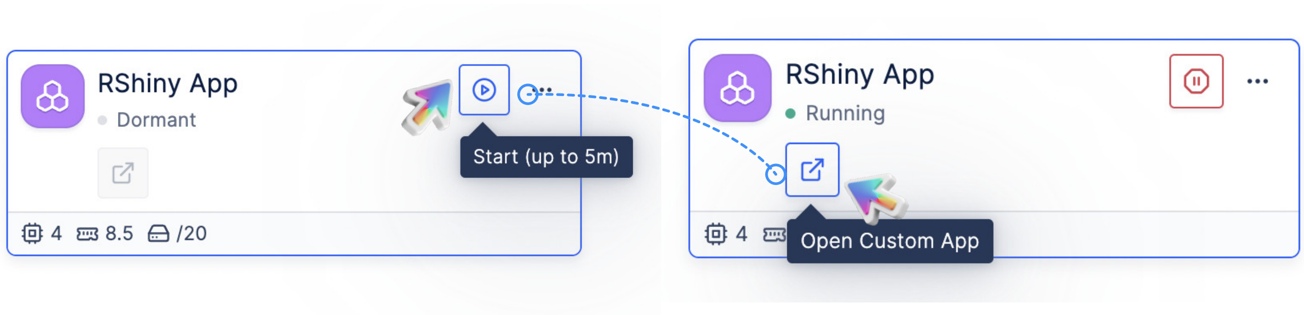
4. Follow the on-screen flow to select the customer workspace of interest. Click **Open.**

   This will open up the settings page for a new on in that customer's workspace. Provide the Pod with a name, and click **Create Pod.**



Hosting Interactive Applications Cont.

5. Congratulations! You've finished setting up an RShiny application in the customer workspace. Now, the customer only needs to click **Start** to start the Pod, and then click on the **Custom App** button when the app is running!



Note: You also have the option to turn on the Pod for the customer and disable auto shut-off to ensure the Pod remains on 24/7. However, the trade-off is incurring unnecessary costs during periods when the customer is not using the application.