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re:Invent
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AIM338-R

Build machine learning models efficiently with Amazon SageMaker notebooks

Prashant Pawan Pisipati

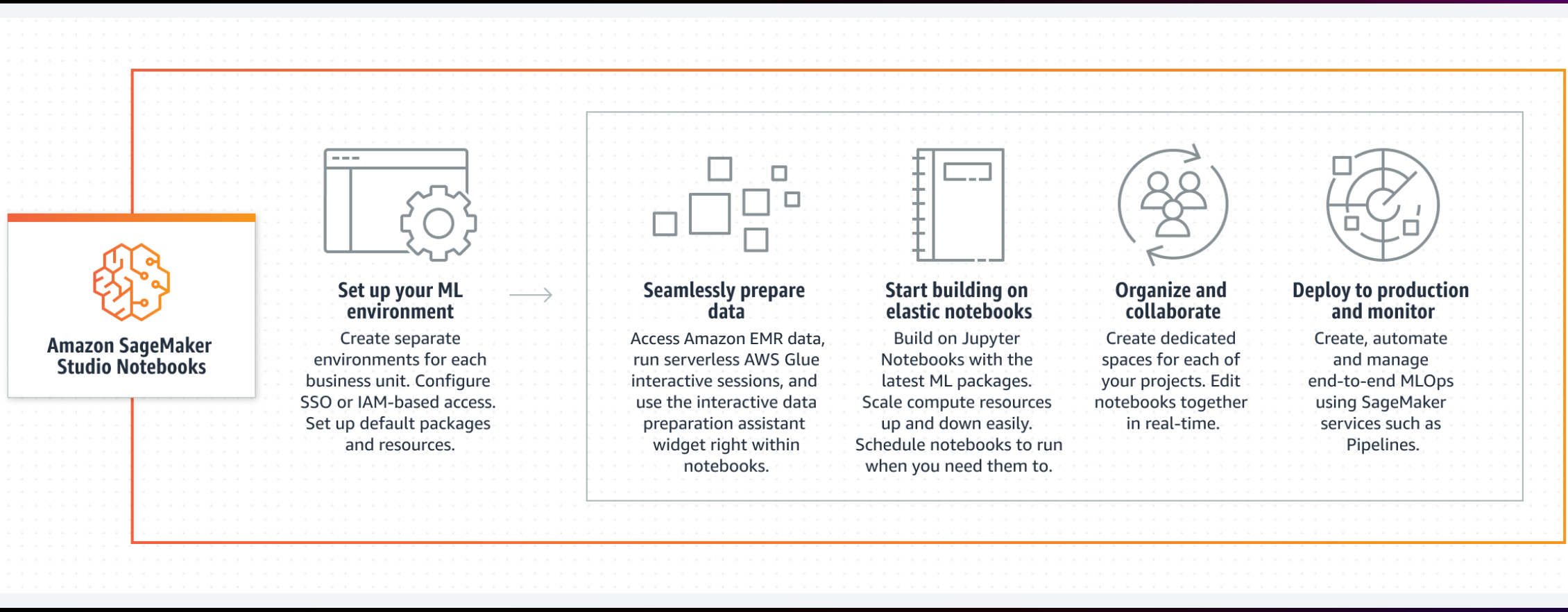
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SageMaker Studio notebooks



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SageMaker notebook instances



Amazon SageMaker Notebook Instances



Create a Jupyter Notebook in one click

Select from broad choice of CPU and GPU instances. Optionally configure network access, encryption, version control.



Build and experiment with ML models

Start coding on the latest version of Jupyter and JupyterLab, with pre-configured environments for TensorFlow and PyTorch.



Collaborate and automate

Add public and private Git repositories for version control. Write scripts to build custom environments for teams.



Deploy to production

Deploy using your own ML workflows or use the built-in AWS SDK to kick off model training jobs and host models on AWS. View Jupyter logs on Amazon CloudWatch.

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Scenario 1

Company A has multiple teams working on ML projects – marketing, risk, online personalization, and more. The central data platform team at Company A is tasked with offering a unified ML interface that includes Jupyter notebooks and data sources such as Amazon EMR clusters.

Members of each team need to share access to resources, co-edit notebooks, and version control code. The marketing and personalization teams collaborate with each other, whereas the risk team must have access to restricted data and models.

Further, the central data platform team must create a unified costs and budget report for machine learning for executives.

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Requirements for Scenario 1

- Requirement 1 – unified ML interface that includes Jupyter notebooks and multiple data sources such as Amazon EMR clusters
  - Set up organizational boundaries and access controls
  - End user interface for accessing notebooks/ML IDE/data sources
- Requirement 2 – each team needs to share access to resources, co-edit notebooks, and version control code
  - Enable shared spaces for each project
  - Enable real-time and async collaboration
- Requirement 3 – create a unified costs and budget report for machine learning for executives

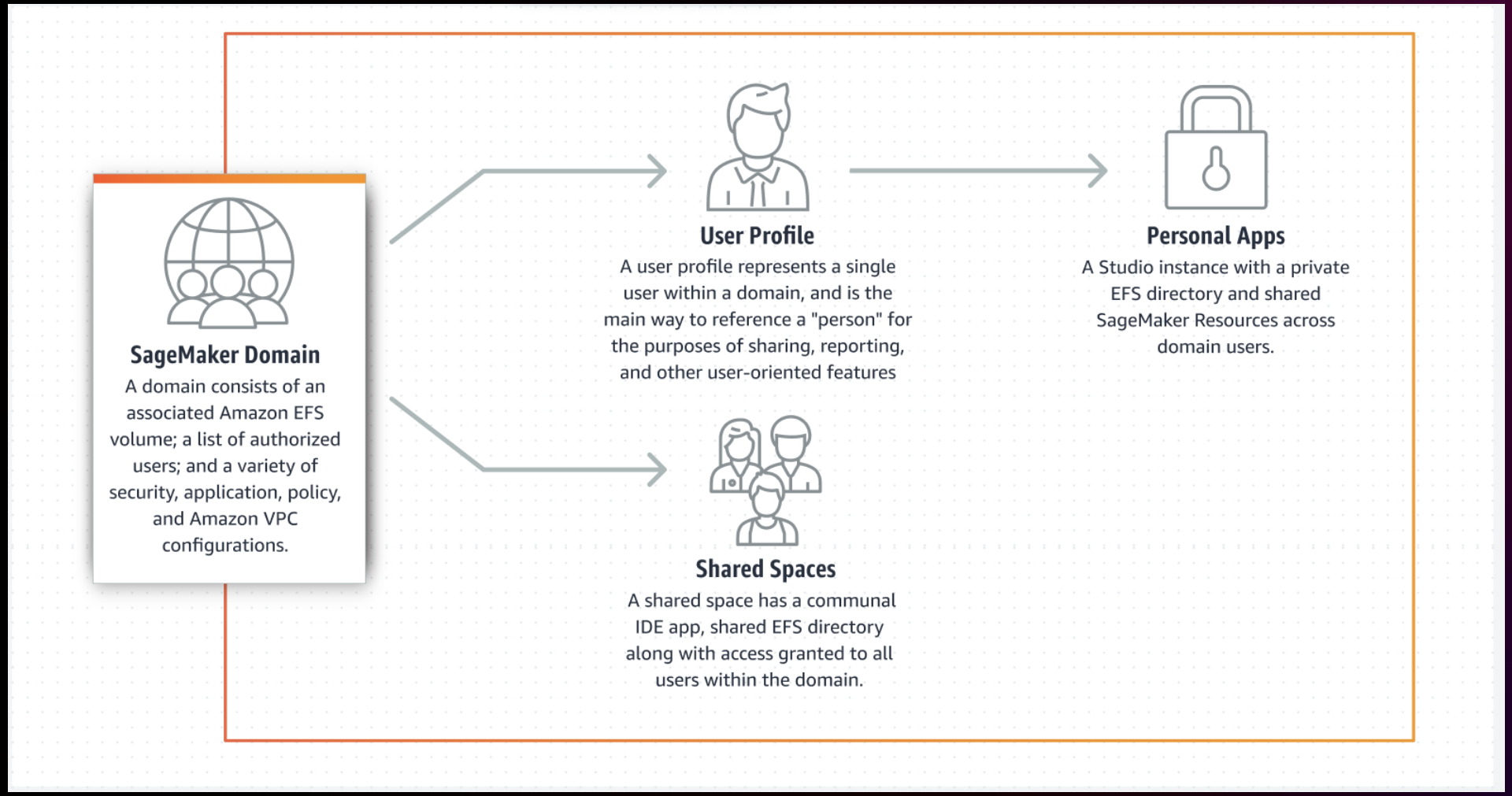
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SageMaker Studio domains and spaces



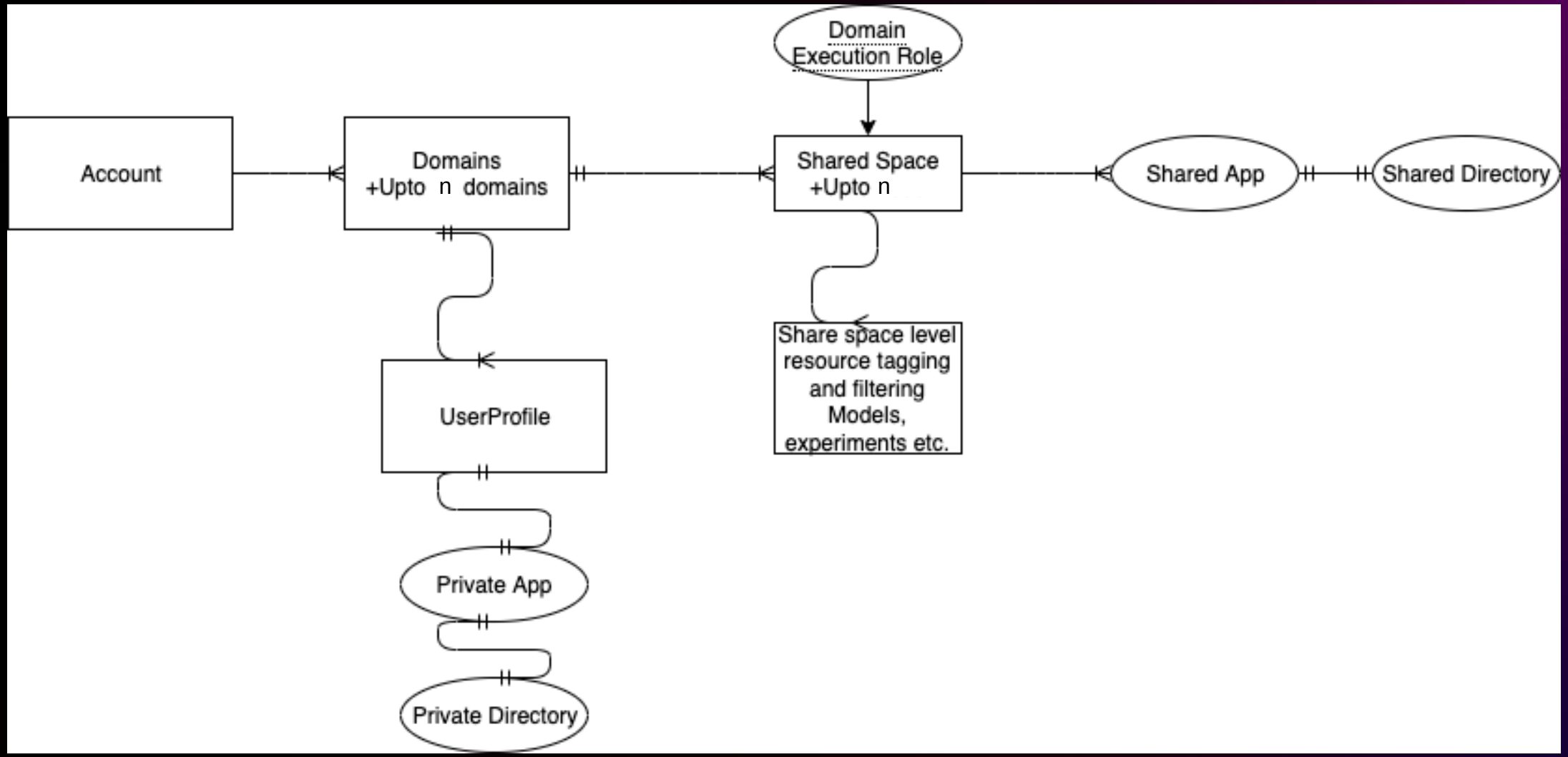
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Requirement 2

- Each team needs to share access to resources, co-edit notebooks, and version control code
  - Enable shared spaces for each project
  - Enable real-time and async collaboration

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SageMaker Studio domains and spaces



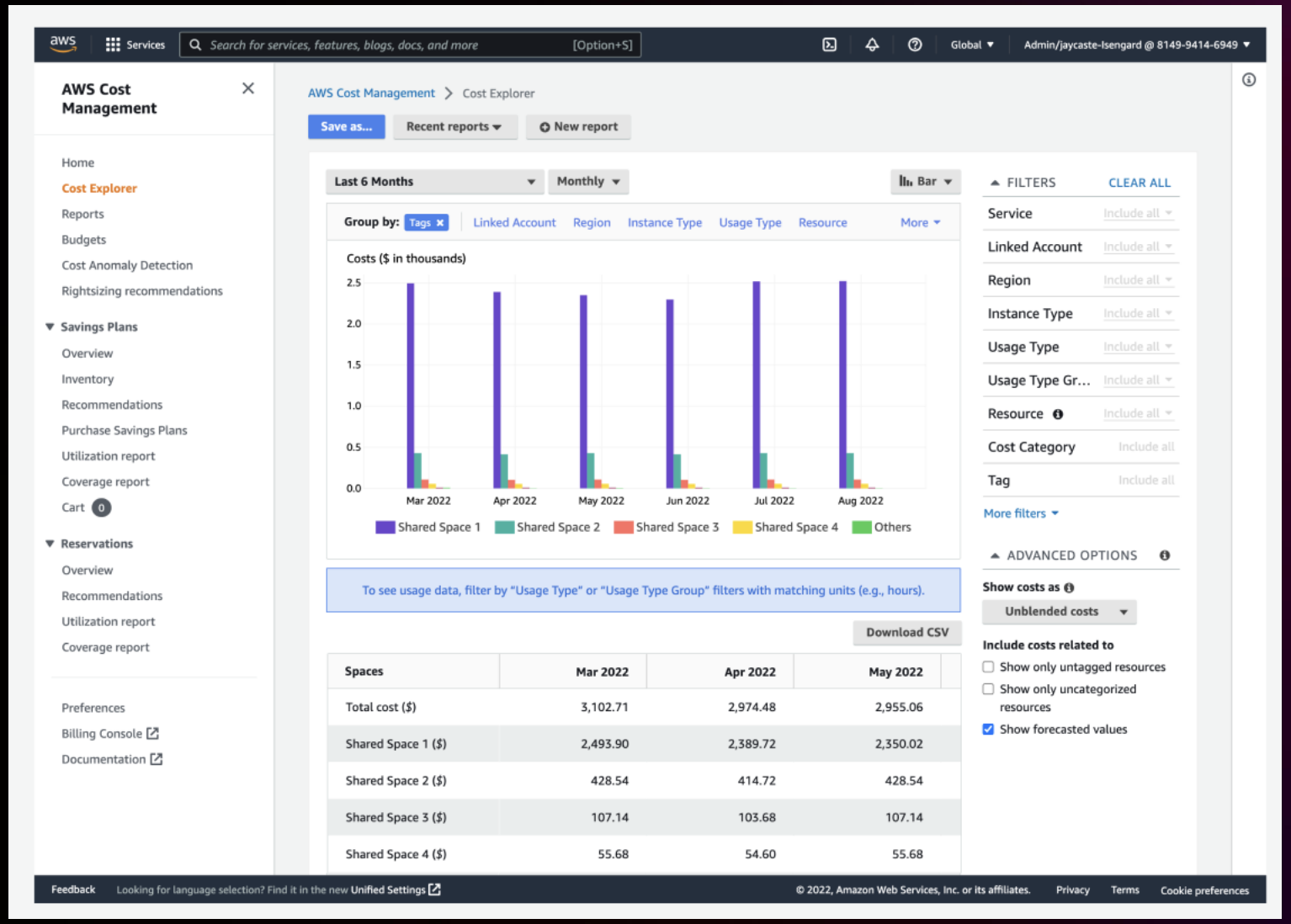
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Requirement 3

Create a unified costs and budget report for machine learning for executives

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SageMaker Studio cost reports



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Scenario 2

Company B has a small team of data scientists that wants a cloud-based notebooks solution to add to their homegrown ML platform. Each member of the team is likely to be working on a different problem at any given time. However, the team also collaborates to build common tools that are useful across projects. The team jointly owns access controls and cost management for their projects.

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Requirements for Scenario 2

- Requirement 1 – extend existing on-premises ML platform to cloud-based notebook solution
- Requirement 2 – each member will mostly likely work on a separate project
- Requirement 3 – wants to build common tools and best practices across teams
  - Use version control and collaborate using code repositories
- Requirement 4 – joint ownership

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Thank you!

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