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AIM211

Accelerating content production with generative AI, featuring the NFL

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Question time

How many of you are using generative AI on a daily basis?

How many of you have implemented gen AI within your organizations?

How many of you watch Thursday night football?

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Agenda

01 What is Amazon Q and Amazon Q Business

02 NFL problem and solution deep dive

03 Proof of concept and impact

04 Key takeaways

05 What’s next for the NFL and Amazon Q?

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Amazon Q

AMAZON Q BUSINESS

AMAZON Q DEVELOPER

AMAZON Q
IN QUICKSIGHT

AMAZON Q
IN CONNECT

AMAZON Q
IN SUPPLY CHAIN

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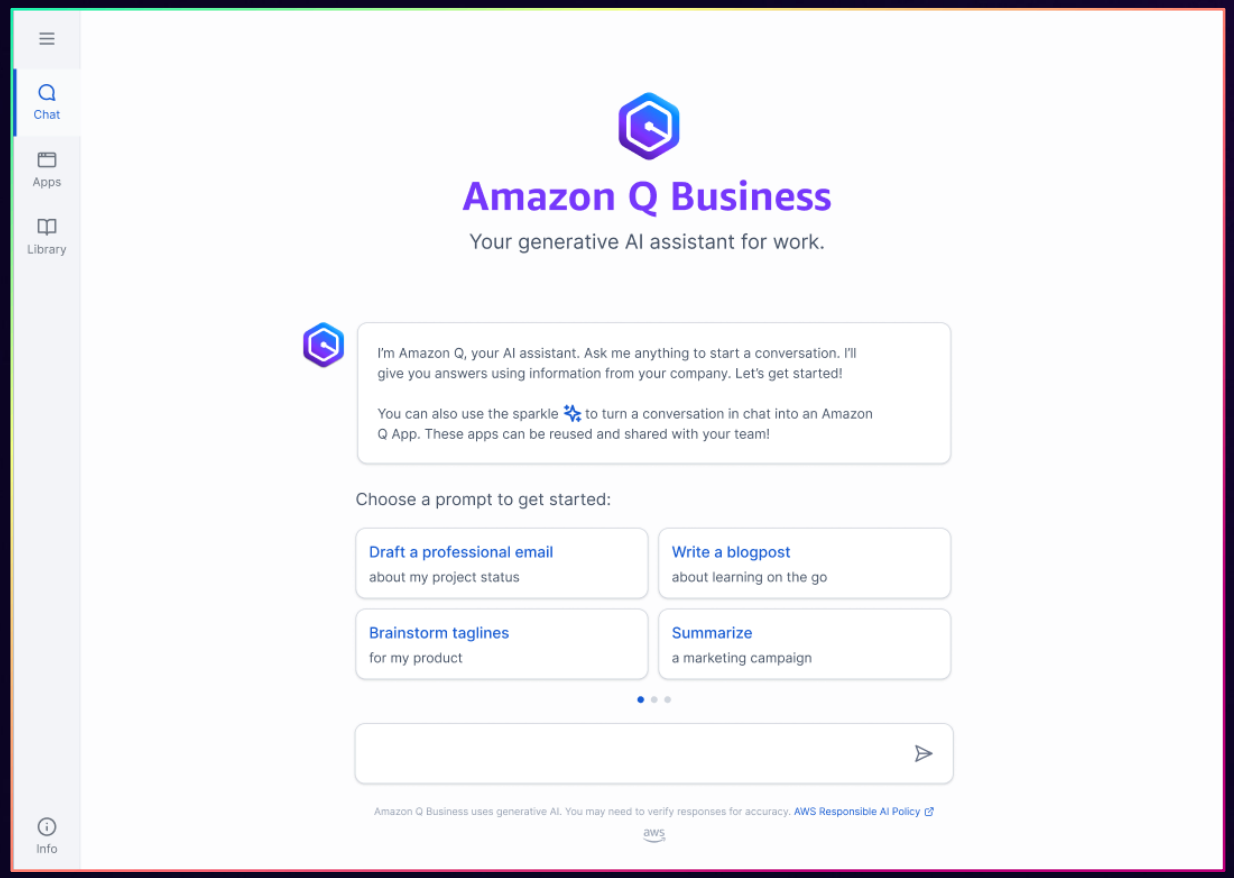
Amazon Q business overview

BOOST YOUR WORKFORCE PRODUCTIVITY WITH GENERATIVE AI



- Delivers quick, accurate, and relevant answers to your business questions, securely, and privately
- Respects existing access control, based on user permissions
- Connects to over 40 secure, popular enterprise applications and document repositories
- Enables administrators to easily apply guardrails to customize and control responses
- Streamlines daily tasks with user-created lightweight applications

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Amazon Q use cases across the organization

Customer/IT support

Reduces IT resolution time to frequently asked questions and supports queries by retrieving accurate information from the enterprise's knowledge base.

Risk and compliance

Improves compliance by helping employees find the latest policies and procedures quickly, using your own enterprise data.

Knowledge management assistant

Assistant for the knowledge management system for organizations, improving the quality and consistency of information sharing, reducing the time and effort required to resolve issues, and improving employee productivity.

Human resources

Expedites the onboarding process for new hires by efficiently finding the most pertinent documentation. Reduces the burden associated with navigating and sifting through voluminous amounts of content.

Operations

Knowledge retention by enabling easy access to information in complex systems, machinery, or equipment to support operators and technicians

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NFL Media at a glance

- Headquarters in Los Angeles
- NFL Network launched in 2003
- Media presence includes Red Zone, NFL.com, NFL+, NFL Channel, and more!
- 250+ producers, editors, and content creators in media group

NFL MEDIA

NFL NETWORK

NFL.COM

NFL+

NFL CHANNEL

NFL REDZONE From NFL NETWORK

NFL PRO

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Problem – How do we become more efficient?

People

Finding information in hours

Staff seasonality

Technology

3-5 hours onboarding training each seasons

Air time at risk

Workflow

Hundreds of complex workflows

Ever-evolving workflows and best practices

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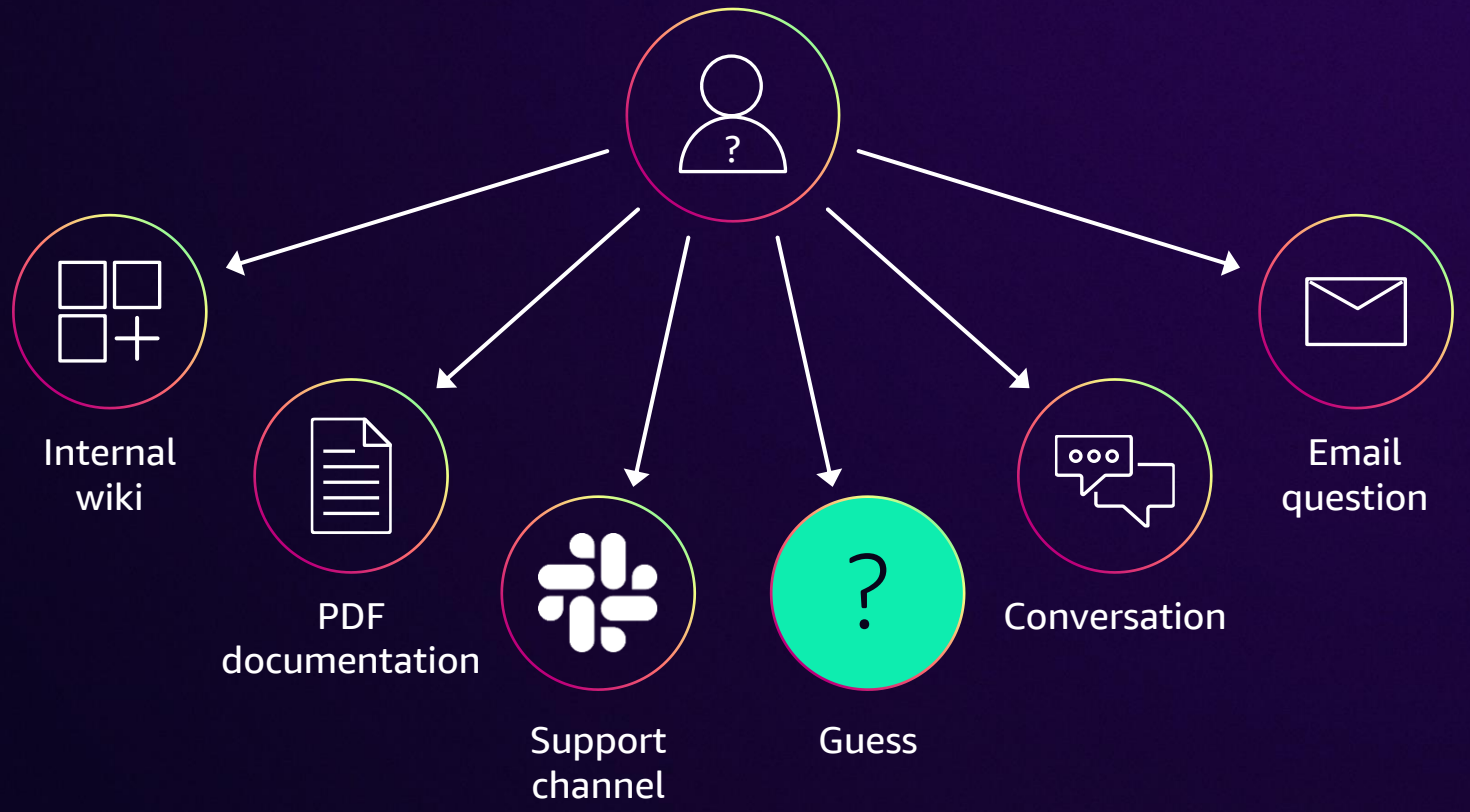
NFL's world pre-Amazon Q Business

Five different ways to get an answer; some good, some not so good

Not all paths taken by the workforce get reliable answers

Time to find a solution varies - 5mins to 24hrs - depending on which path you've chosen



Not guaranteed to get a current or correct answer down any given path

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Our Amazon Q Business – Requirements

- ✓ Single trusted and interactive repository of all technical operations data

- ✓ Tool that supports content creator time spent on creative content, not procedural activities

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What attracted us to Amazon Q Business

- ✓ TurnKey, fully managed gen AI solution
- ✓ Breath and depth of connector
- ✓ Simple to deploy and maintain
- ✓ Easy to update
- ✓ Security, security, security

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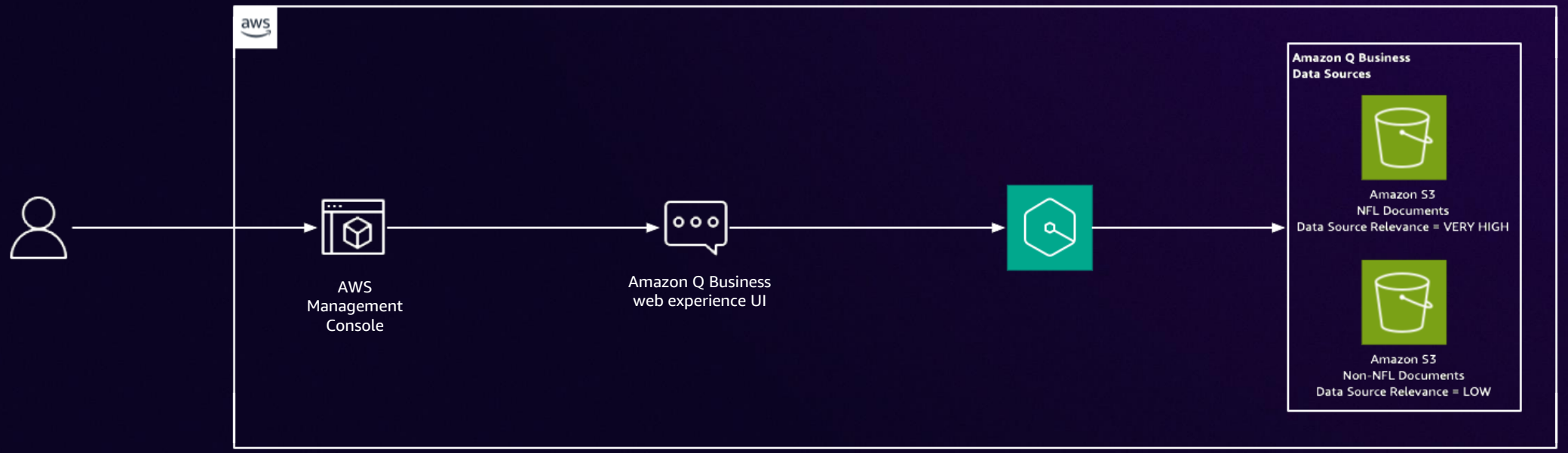
First steps

Built our first Amazon Q Business app in minutes to begin testing

Quickly moved from single data source to 2 data sources to allow for data source relevance tuning

25% of PoC spent in the early 2 data source configuration before expanding to add more data sources

5 concurrent Amazon Q Business apps at various points of the PoC testing out different configurations separately



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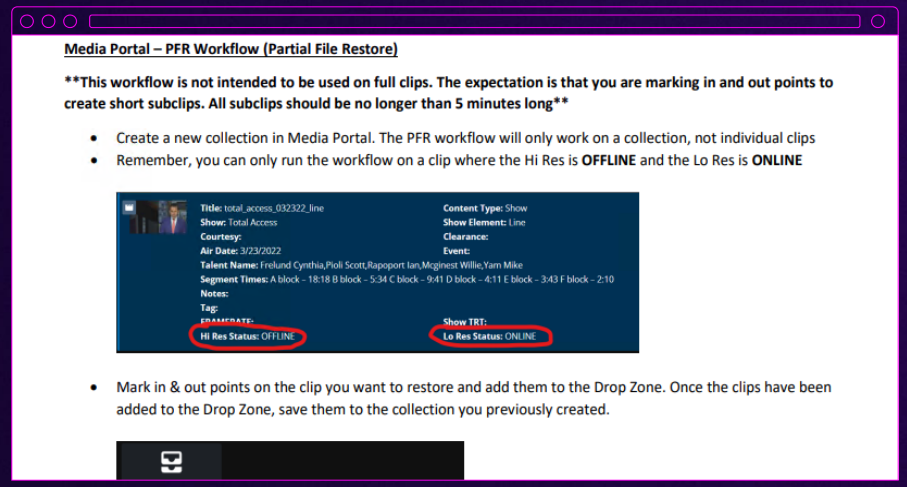
Transforming the data

- Majority of our legacy documentation was heavily reliant on screenshots with fairly sparse text
- Decision made early on to rewrite documentation in more verbose natural language and provide additional context
- Spent 2 days doing initial audit and rewriting of documentation
- 10% of total PoC time spent on data transformation and refinement
- 20% jump in accuracy from data transformation

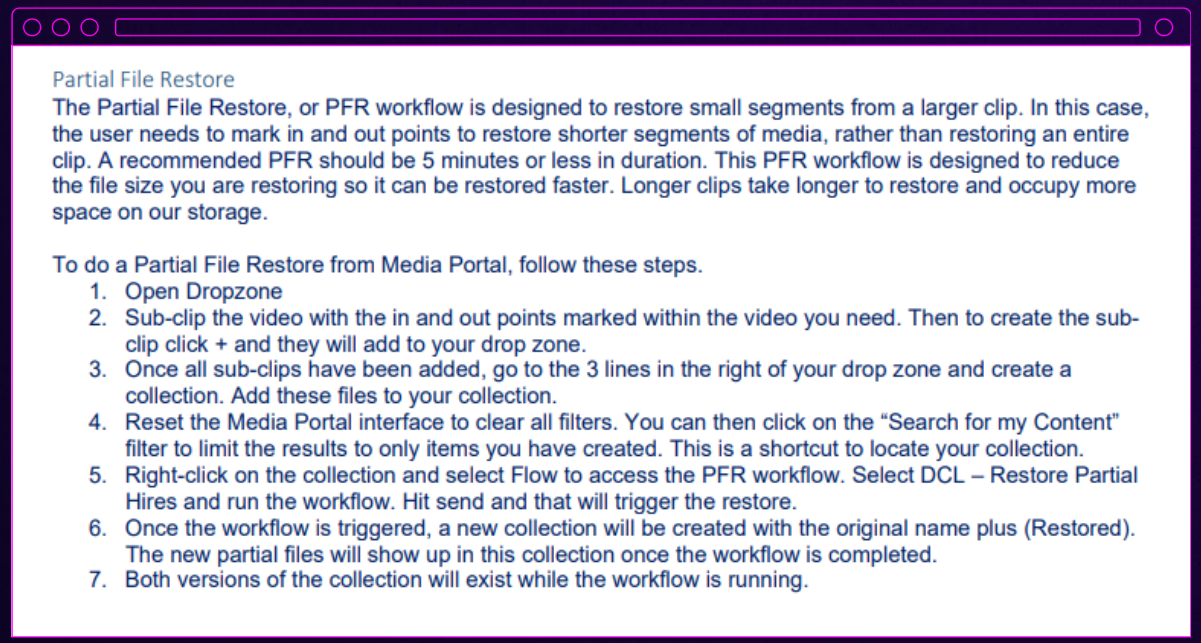


Media Portal – PFR Workflow (Partial File Restore)

****This workflow is not intended to be used on full clips. The expectation is that you are marking in and out points to create short subclips. All subclips should be no longer than 5 minutes long****

- Create a new collection in Media Portal. The PFR workflow will only work on a collection, not individual clips
- Remember, you can only run the workflow on a clip where the Hi Res is **OFFLINE** and the Lo Res is **ONLINE**

- Mark in & out points on the clip you want to restore and add them to the Drop Zone. Once the clips have been added to the Drop Zone, save them to the collection you previously created.



Partial File Restore

The Partial File Restore, or PFR workflow is designed to restore small segments from a larger clip. In this case, the user needs to mark in and out points to restore shorter segments of media, rather than restoring an entire clip. A recommended PFR should be 5 minutes or less in duration. This PFR workflow is designed to reduce the file size you are restoring so it can be restored faster. Longer clips take longer to restore and occupy more space on our storage.

To do a Partial File Restore from Media Portal, follow these steps.

1. Open Dropzone
2. Sub-clip the video with the in and out points marked within the video you need. Then to create the sub-clip click + and they will add to your drop zone.
3. Once all sub-clips have been added, go to the 3 lines in the right of your drop zone and create a collection. Add these files to your collection.
4. Reset the Media Portal interface to clear all filters. You can then click on the “Search for my Content” filter to limit the results to only items you have created. This is a shortcut to locate your collection.
5. Right-click on the collection and select Flow to access the PFR workflow. Select DCL – Restore Partial Hires and run the workflow. Hit send and that will trigger the restore.
6. Once the workflow is triggered, a new collection will be created with the original name plus (Restored). The new partial files will show up in this collection once the workflow is completed.
7. Both versions of the collection will exist while the workflow is running.

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Structuring your data for the best results

Name	Data source type	Type of data	Data source relevance tuning
NFL	Amazon S3	NFL-authored docs	Very high
Admin	Amazon S3	ACL-protected admin docs	Medium
Playground	Amazon S3	Experimental “lab”	Medium
NFL.com	Webcrawl	Current NFL news	Low
Vendor	Amazon S3	Vendor-authored docs	Low
Temp	Amazon S3 (30-day lifecycle)	Docs only needing to be referenced a short time	Low

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Testing the solution

- Test scripts: 100 questions and answers
- Human-in-the-loop validation
- Response deep dive
- Document gaps and resolution
- 8% jump in accuracy in single update cycle thanks to a model update under the hood
- Improved from ~70% accuracy to 93% accuracy over lifecycle of the POC

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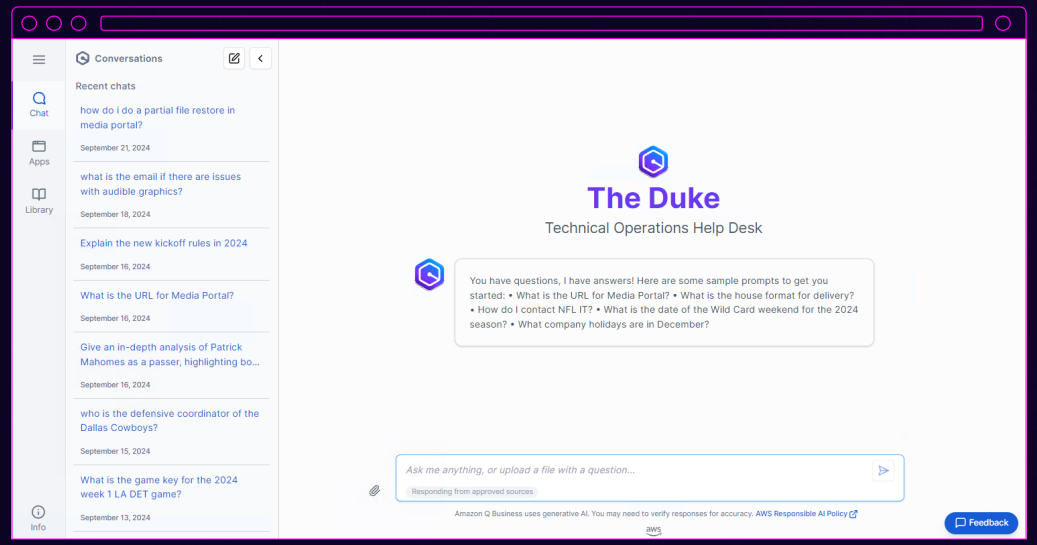
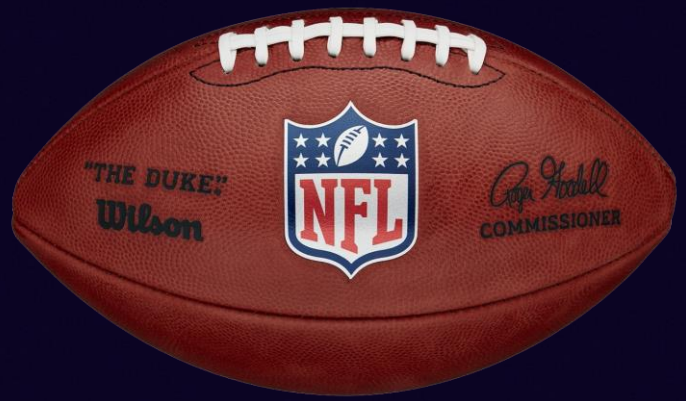
Introducing The Duke





- In production August 2024
- 300 users
- 6 data sources
  - 5 Amazon S3-based
  - 1 Webcrawler (NFL.com)
- Used daily
- 99.8% user thumbs up feedback

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Testimonials

> The Duke has allowed our team to all be on the same page more efficiently! In the past we relied on different groups around the building to help us get our answer, now we get our answer in 1 minute rather than upwards of 1 day.

Kallyn Stewart
Senior Producer, Digital

> The Duke has allowed users to become more self-sufficient, and as a result, more efficient in answering technical and broad institutional questions. It helps save time, energy and allows multiple groups to focus on their immediate goals, dealing less with support issues. It also provides a vast center of information for individuals to increase their understanding of our systems, workflows and become more educated on how our facility operates.

Zach Arnstein
Senior Manager, Production

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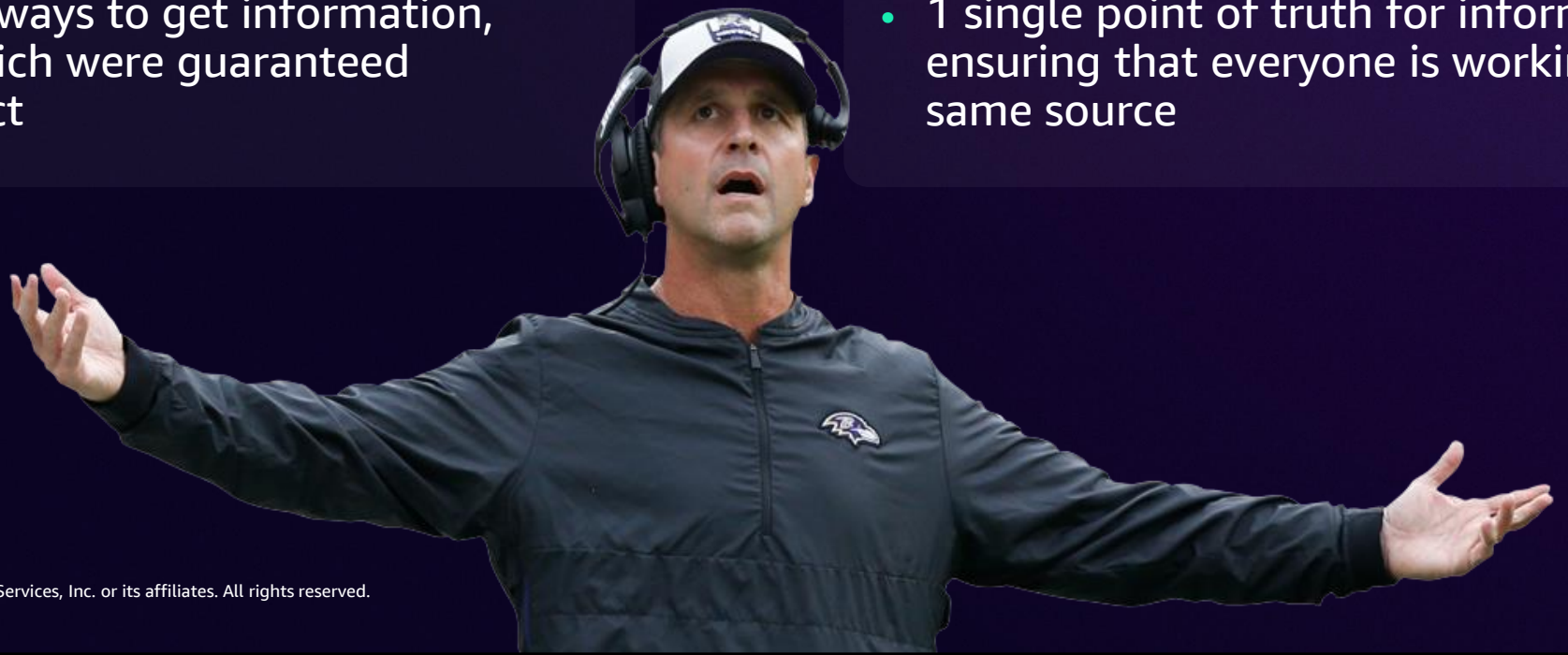
Impact post implementation

Pre Amazon Q Business

- 5 minutes to 24 hours trying to find the answer to a technical question
- 3-5 hours spent on training sessions at the beginning of the season
- 6 different ways to get information, none of which were guaranteed to be correct

Post Amazon Q Business

- **10 seconds** finding answer to technical questions
- 1 hour spent on a single training session at the beginning of the season
- 1 single point of truth for information, ensuring that everyone is working from the same source



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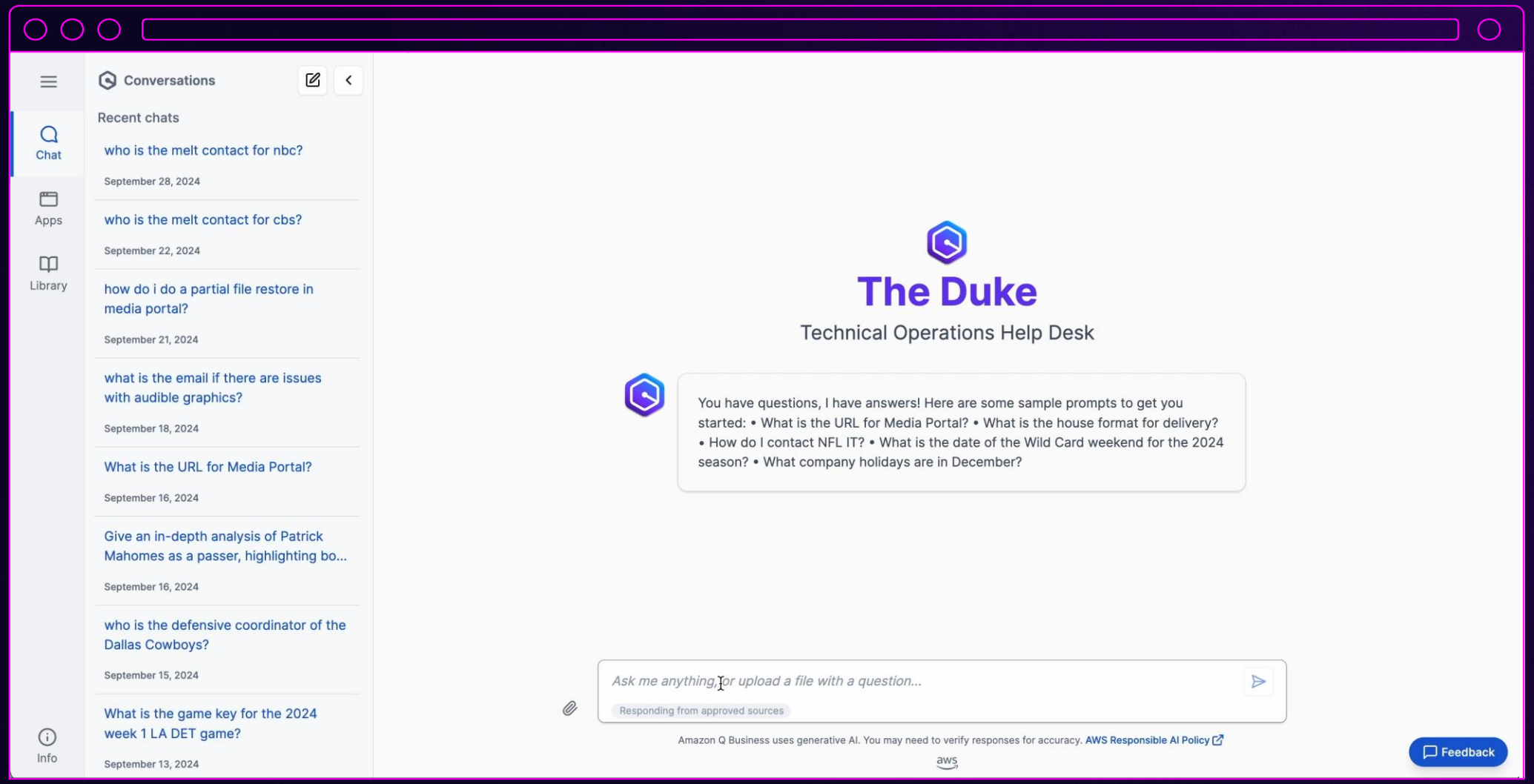
The Duke demo



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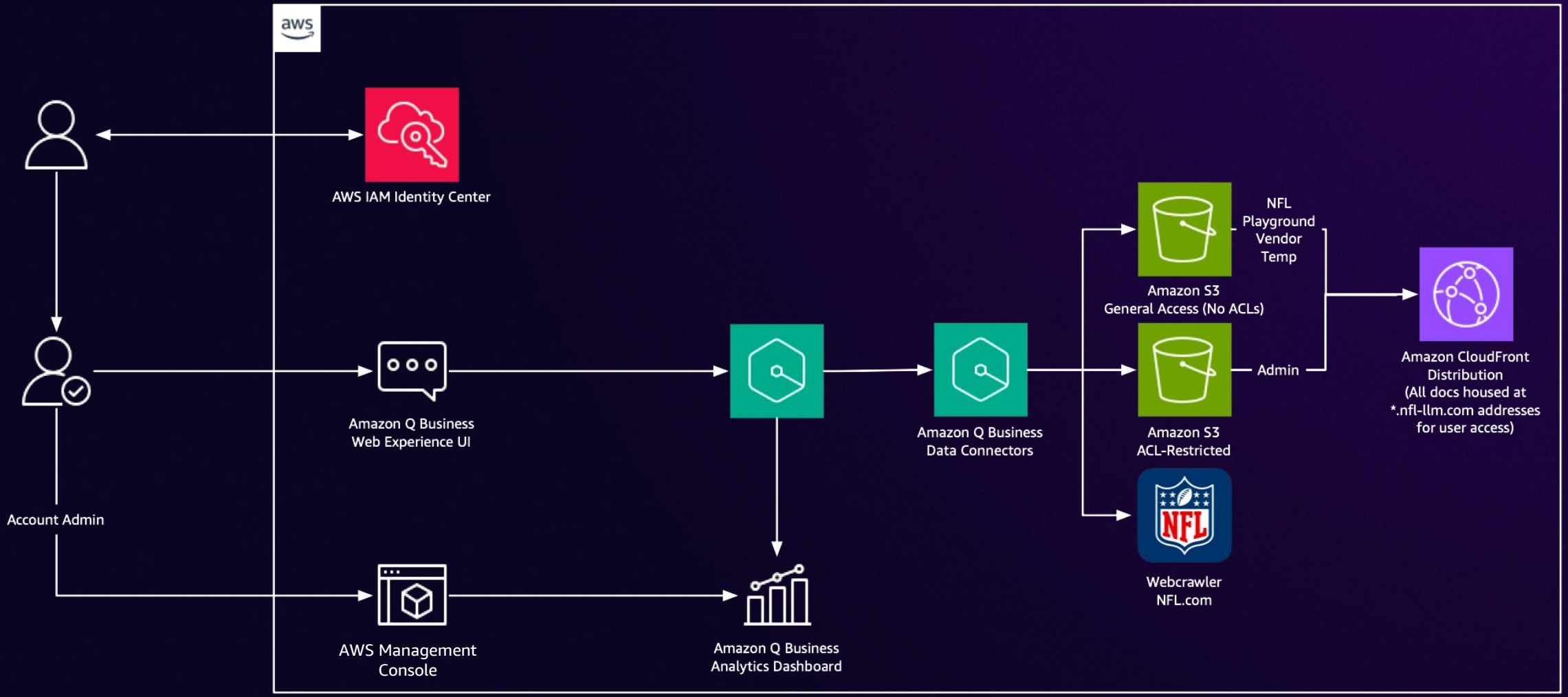
Architecture today



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Coaching the workforce

- 200+ registered users within the first month of deployment
- In training sessions, very few users had any real exposure to or experience with LLMs
- Had to train users on what makes a good prompt
- With a little training and The Duke in their hands, users use Duke to efficiently get answers
- Saving approximately 5 hours a day, reducing barriers to allow content creators more time in the creative space

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Key takeaways

- Easy to deploy your first Amazon Q Business application in minutes
- Can start small and scale quickly
- You don’t need perfect data to prove out the solution
- Don’t be afraid to rework your data
- Many considerations for how to structure your data sources; there is no one-size-fits-all approach
- Your workforce needs more training using LLMs than you think

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What’s next for The Duke?

- Expanding adoption of Amazon Q Business to additional business units within NFL for use cases within The Duke
- Other NFL business units testing use cases within separate apps as well
- Always looking for new data and use cases to incorporate into The Duke to allow workforce to be more efficient
- Develop integration for The Duke into custom UI
- Exploring new features that are being rolled out

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