
AWS
re:Invent
DECEMBER 2 – 6, 2024 | LAS VEGAS, NV

AIM344-R

Understanding the deep security controls within Amazon Q Business

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Agenda

01 What is Amazon Q Business?

02 Data privacy and protection

03 AWS Identity and Access Management (IAM)

Followed by optional sections

Amazon Q Business features

- AWS IAM Identity Center
- Admin flows
- Guardrails
- Repository connectors

01 What is Amazon Q Business?

Amazon Q

AMAZON Q BUSINESS

AMAZON Q DEVELOPER

AMAZON Q
IN QUICKSIGHT

AMAZON Q
IN CONNECT

AMAZON Q
IN SUPPLY CHAIN

Safety and security

Use pre-built guardrails for toxicity

Restrict responses to enterprise content only

Specify blocked words or phrases that never appear in responses

Define special topics and configure guardrails for such topics

Use AWS PrivateLink to access Amazon Q Business securely in your VPC environment using a VPC endpoint

Integrates with IAM Identity Center for easier management, auditability, and control

Integrated with AWS CloudTrail to record actions taken by a user, role, or an AWS service

FIPS

Support for Federal Information Processing Standard (FIPS) endpoints

AWS generative AI stack

APPLICATIONS TO BOOST PRODUCTIVITY

Amazon Q Business

INSIGHTS AND AUTOMATION

Amazon Q Developer

SOFTWARE DEVELOPMENT LIFECYCLE

MODELS AND TOOLS TO BUILD GENERATIVE AI APPS

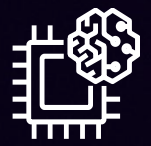
Amazon Bedrock

AMAZON MODELS | PARTNER MODELS

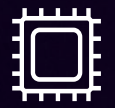
INFRASTRUCTURE TO BUILD AND TRAIN AI MODELS

Amazon SageMaker

MANAGED INFRASTRUCTURE



AWS Trainium
AWS Inferentia



GPUs

HIGH PERFORMANCE COMPUTE

Find accurate and referenceable answers

BOOST YOUR WORKFORCE PRODUCTIVITY WITH GENERATIVE AI

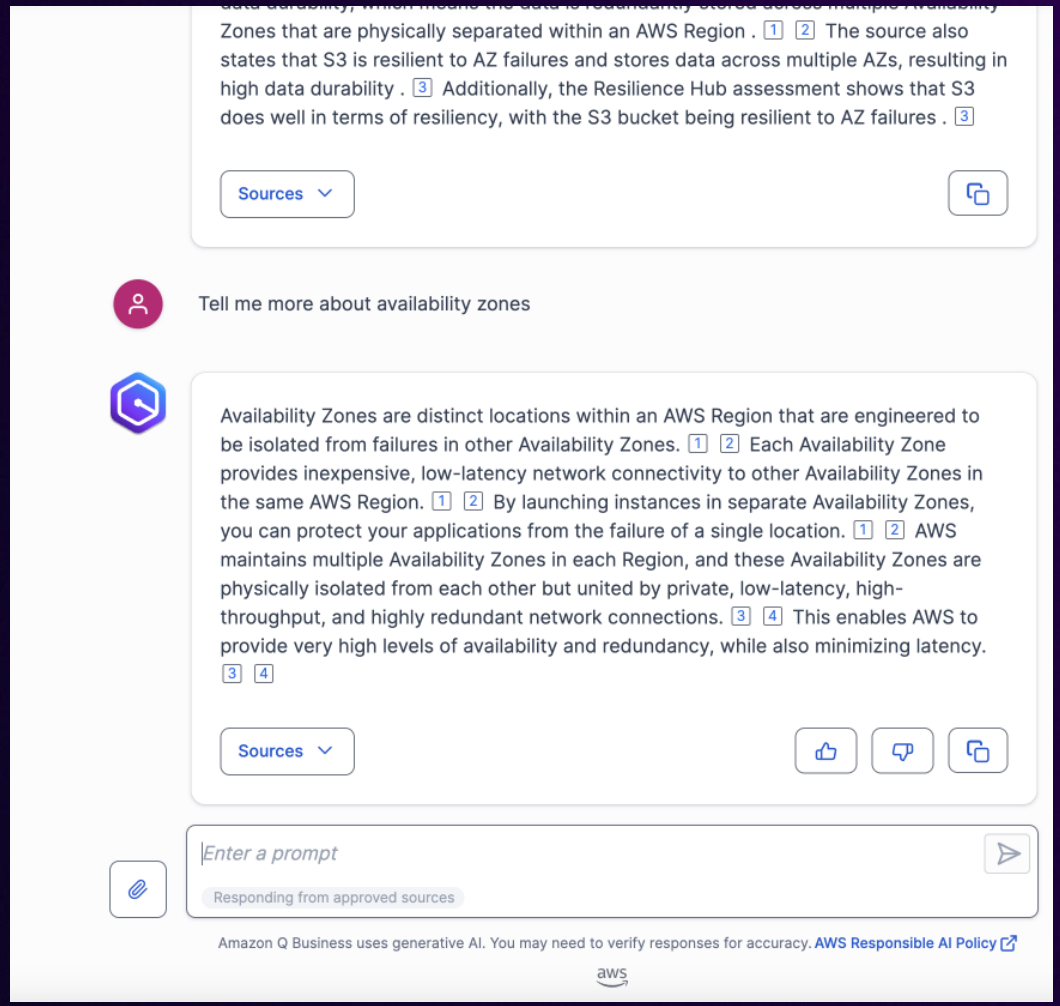
Trusted answers generated from enterprise data

In-context conversations

Source references for fact-checking

Conversation history

Tune the relevance of results with index boosting



02 Data privacy and protection

Data privacy and localization

You are always in control of your data

- Amazon Q Business uses **pre-trained LLMs** for inference
- Amazon Q Business **does not use** customer data for **service improvement** or for improving any of the **underlying** LLMs
- All customer model data usage (prompts, responses) are **isolated per customer**
- All data used in the API **remain in the AWS Region** where they were created unless you explicitly use a cross-Region feature

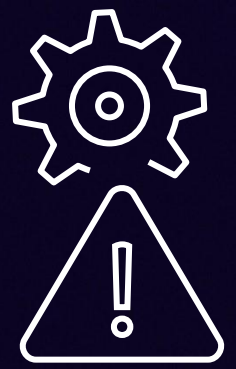
Data security

You are always in control of your data

- Customer data is always **encrypted in transit** with a minimum of TLS1.2 and AES-256 **encrypted at rest** using AWS KMS managed data encryption keys
- FIPS endpoints are available in **us-east-1** and **us-west-2** Regions
- Use your symmetric AWS KMS keys to add a **second layer of encryption** over the existing AWS-owned encryption, such as your data and any child resources in an Amazon Q Business application environment **
- Integration with **AWS Identity and Access Management (IAM)** to manage access to Amazon Q Business, manage plugins, access the AWS Console, etc.

*** Enterprise index only*

Governance and auditability support



Comprehensive monitoring and logging capabilities

- Track **usage metrics** and build customized dashboards using Amazon CloudWatch
- **Monitor API activity** and **troubleshoot issues** as you integrate other systems into your applications using AWS CloudTrail, supporting application, data-source and index events
- Compliance standards: GDPR, HIPAA BAA

03 AWS Identity and Access Management (IAM)

Amazon Q Business – IAM

ALLOW A USER TO CONVERSE WITH AMAZON Q BUSINESS

```
"Statement": [
   {
    "Effect": "Allow",
    "Action": [
     "qbusiness:ChatSync",
     "qbusiness:ListMessages",
     "qbusiness:ListConversations",
     "qbusiness:DescribeExperience",
     "qbusiness:DeleteConversation"
    ],
    "Resource": [
     "arn:aws:qbusiness:<REGION>::<ACCOUNT>:application/<APPLICATION ID>”

    ]
   }
```

Amazon Q Business – IAM

ALLOW A USER TO MANAGE PLUG-INS IN A CHAT APPLICATION

```
"Statement": [
   {
    "Effect": "Allow",
    "Action": [
     "qbusiness:CreatePlugin",
     "qbusiness:ListPlugins",
     "qbusiness:GetPlugin",
     "qbusiness:UpdatePlugin",
     "qbusiness:DeletePlugin"
    ],
    "Resource": [
     "arn:aws:qbusiness:<REGION>::<ACCOUNT>:application/<APPLICATION ID>”

    ]
   }
```

Amazon Q Business – IAM

ALLOW A USER TO MANAGE A SPECIFIC PLUG-IN IN A CHAT APPLICATION

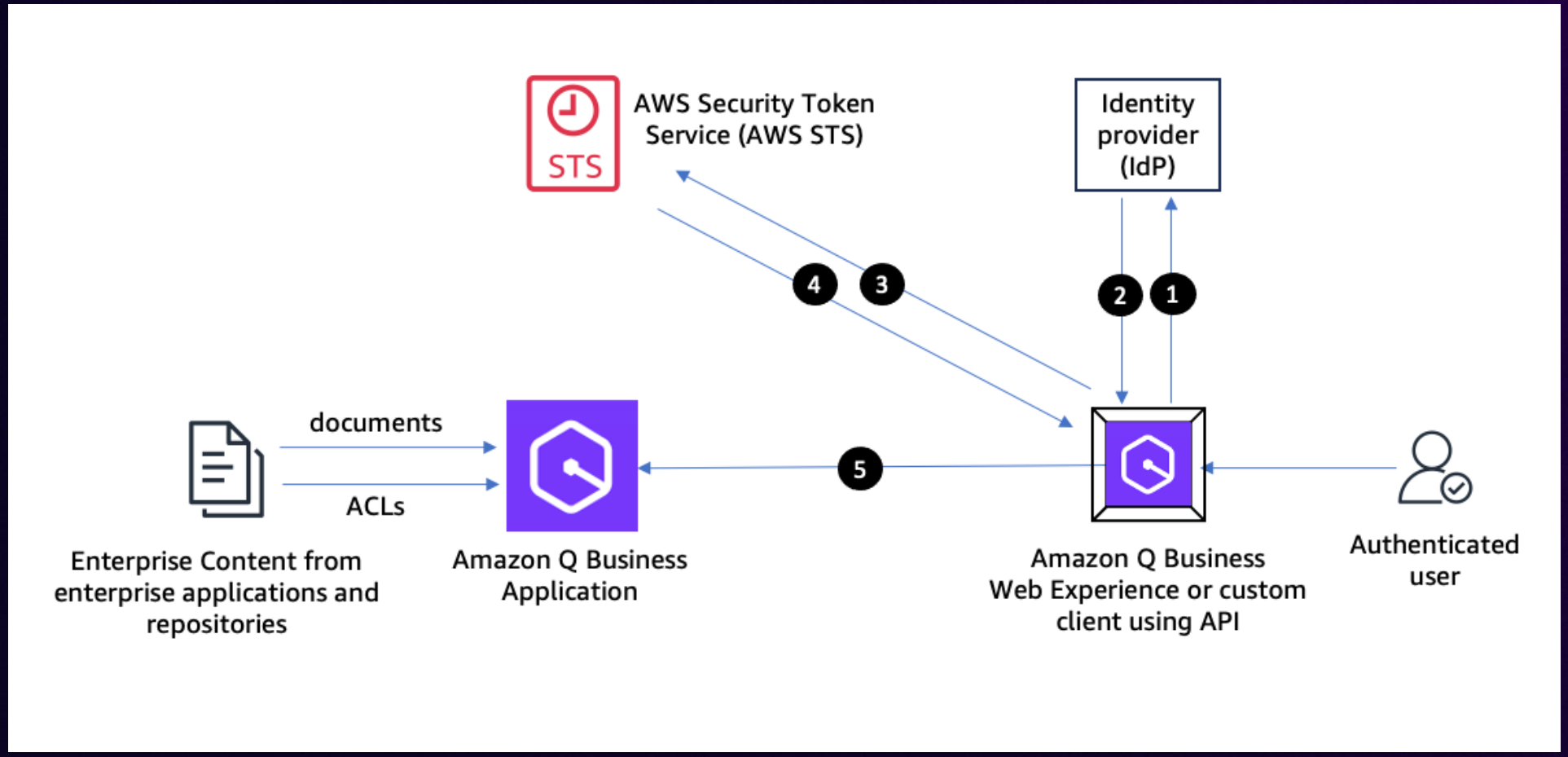
```
"Statement": [
   {
    "Effect": "Allow",
    "Action": [


      "qbusiness:GetPlugin",
      "qbusiness:UpdatePlugin",
      "qbusiness:DeletePlugin"
    ],
    "Resource": [
      "arn:aws:qbusiness:<REGION>::<ACCOUNT>:application/<APPLICATION ID>”,
      "arn:aws:qbusiness:<REGION>::<ACCOUNT>:application/<APPLICATION ID>/plugin/<PLUGIN ID>”
    ]
   }
```

04 IAM Identity Center

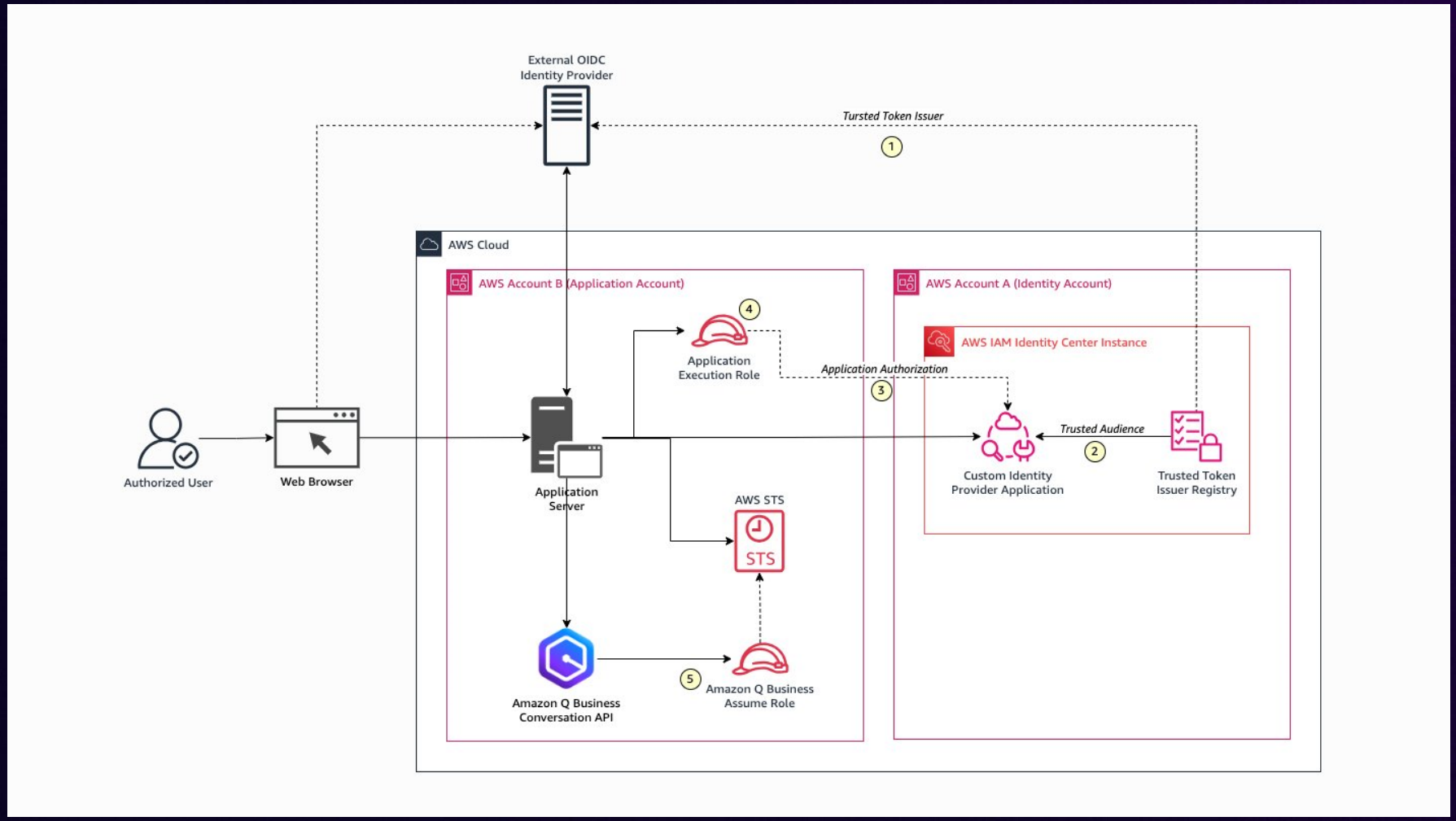
Authentication workflow

AUTHENTICATION VIA IAM FEDERATION



Authentication workflow

AUTHENTICATION VIA TRUSTED IDENTITY PROPAGATION



Guide to choosing a user access mechanism

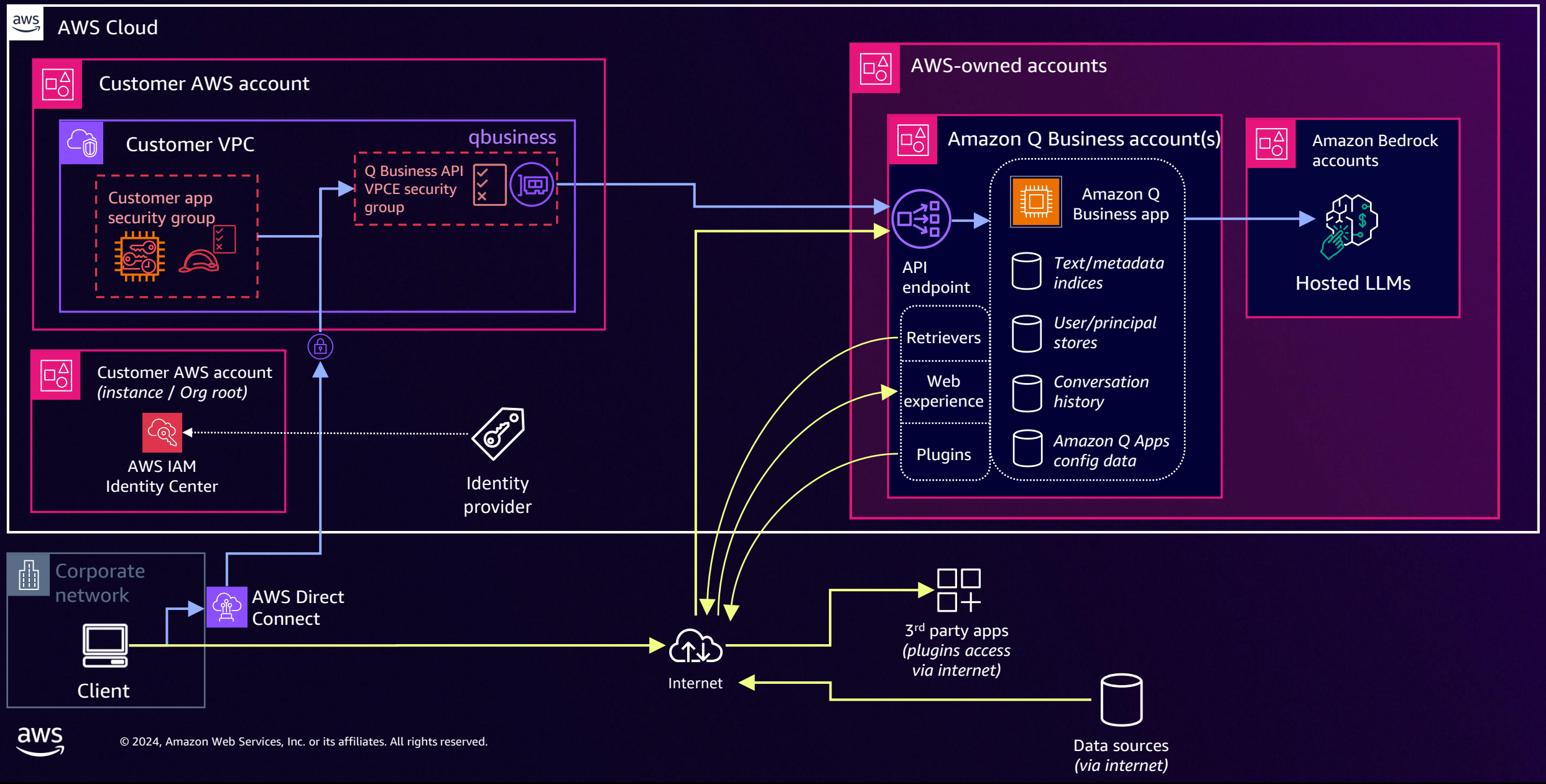
HOW THE CHOICE AFFECTS YOUR SUBSCRIPTION COSTS

Access Mechanism	Configuration	App1 in AC1 Reg1	App2 in AC1 Reg1	App3 in AC1 Reg2	App4 in AC2 Reg2
IAM Identity Center (Org)	Per AWS Org	$$	---	---	---
IAM Identity Center (Instance)	Per account/region	$$	---	$$	$$
IAM Federation	Per account/IDP	$$	---	---	$$

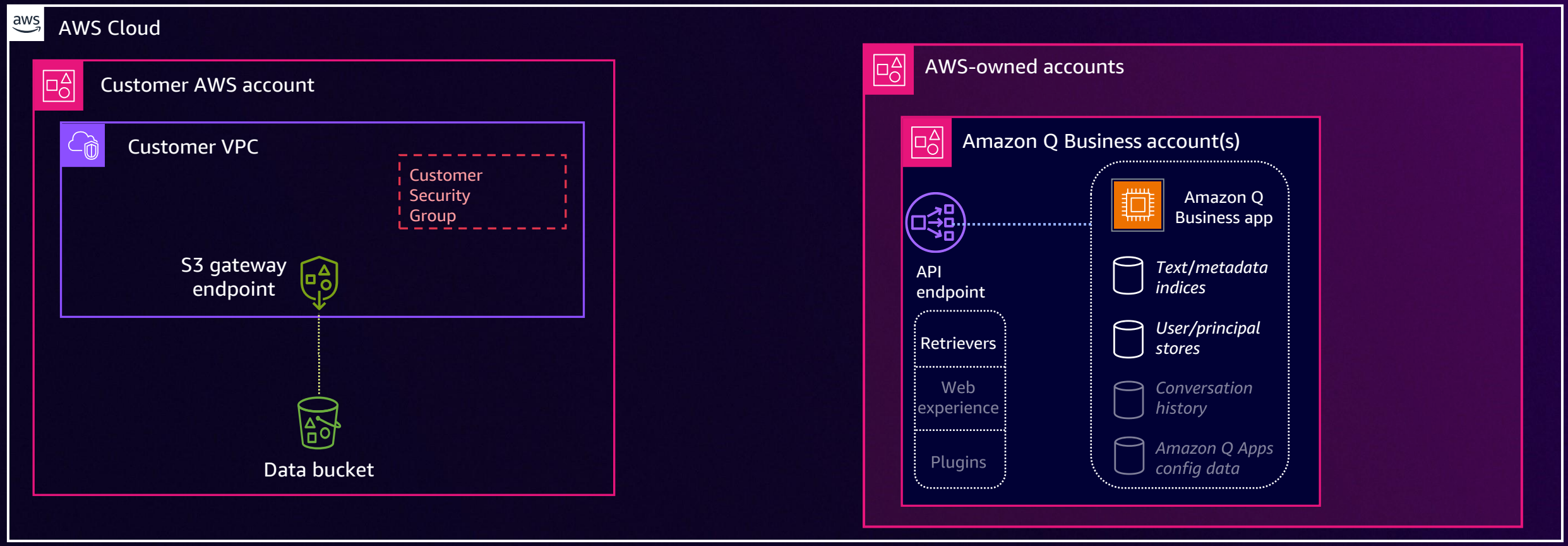
1. Use AWS Organizations with IAM Identity Center
2. Use an IAM Identity Center instance
   - Proofs of concept or temporary trials
   - IAM Identity Center is not yet deployed in your AWS Organization and you do not wish to delay
   - You want application(s) to be outside of the AWS Organization instance of IAM Identity Center
   - Your organization does not have a single identity provider or store with the userbase you need
3. Use IAM Federation if IAM Identity Center is not an option

05 High-level administration flows

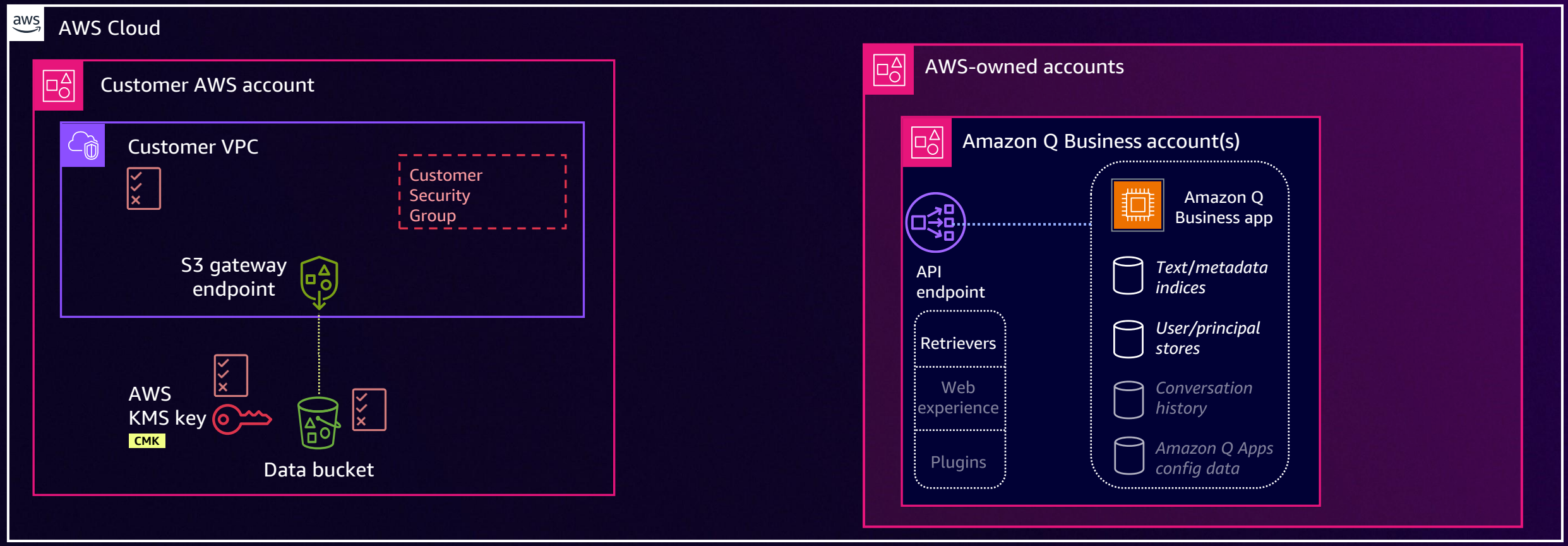
Amazon Q Business architecture overview



Native retriever flow – Amazon S3



Native retriever flow – Amazon S3



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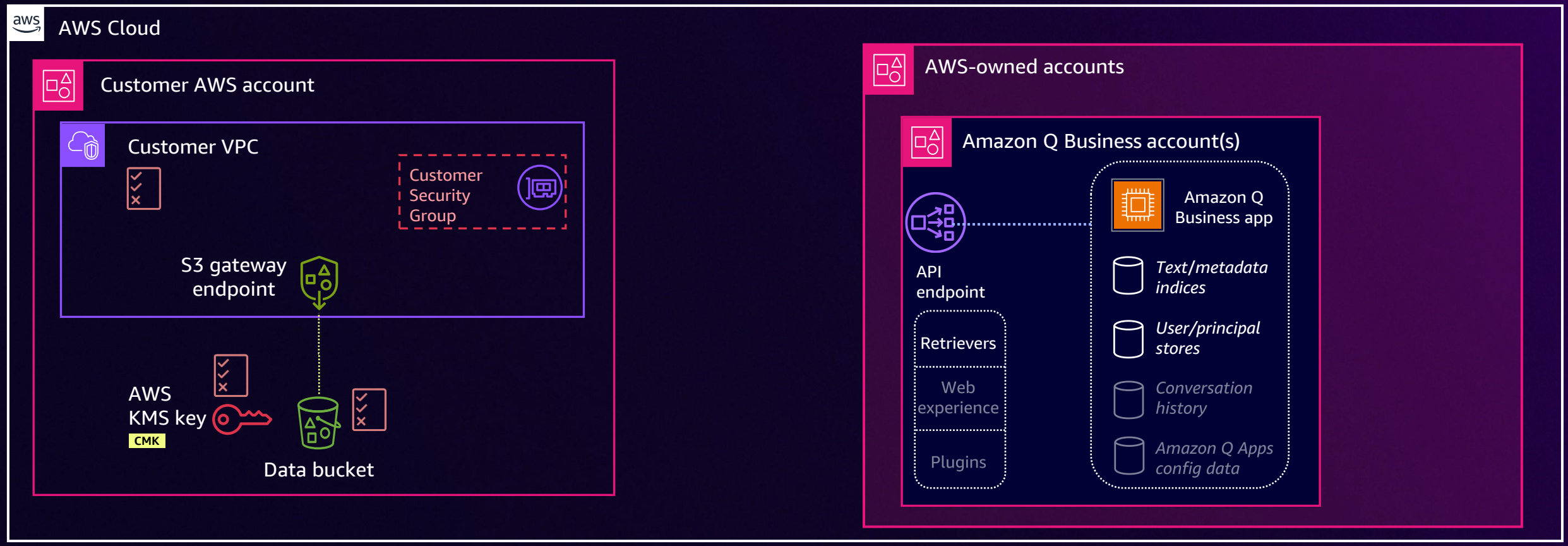
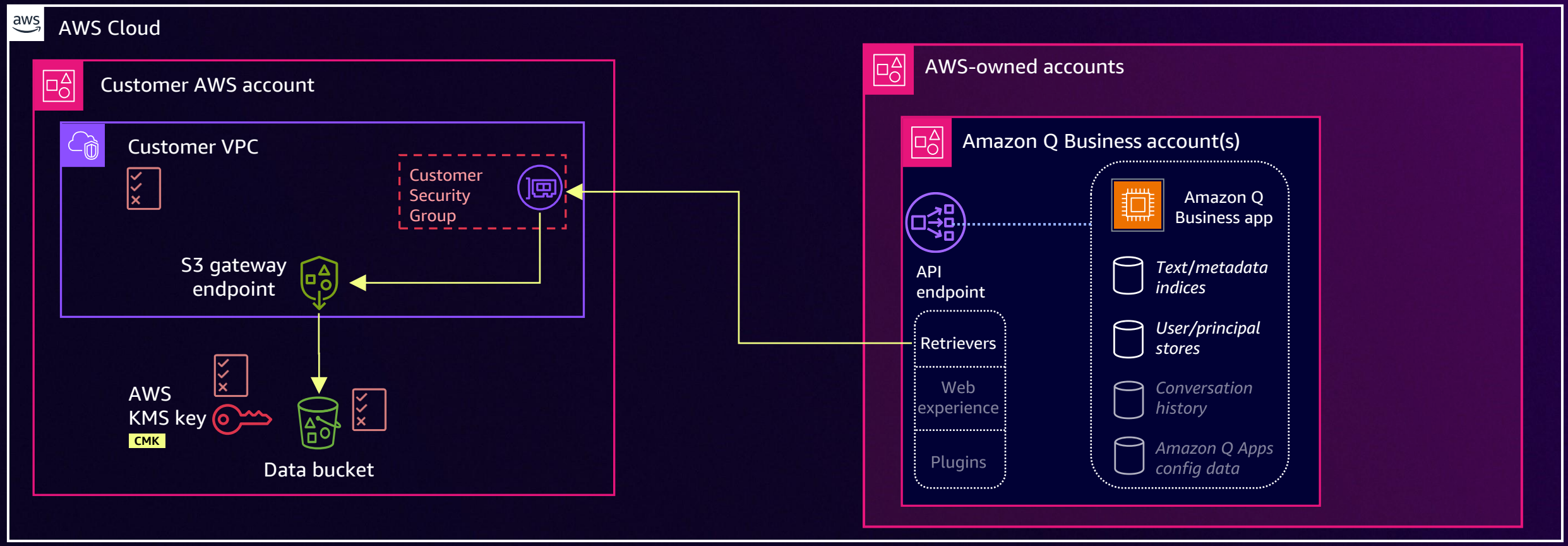
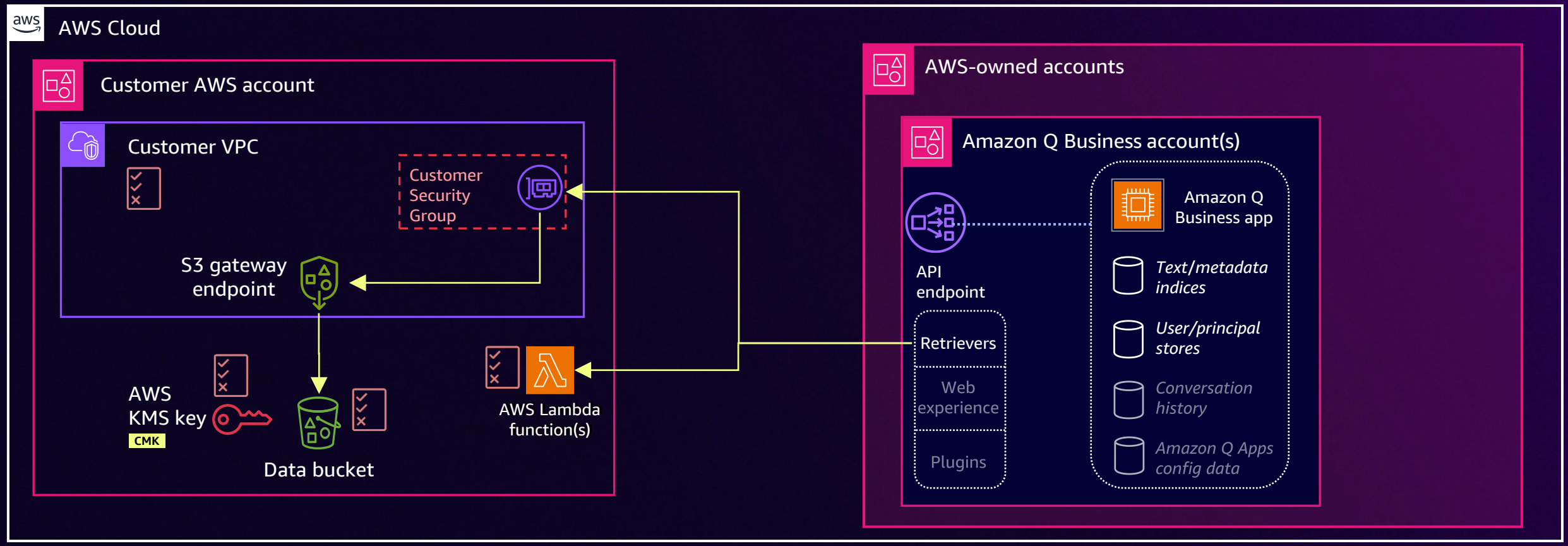


Native retriever flow – Amazon S3



Native retriever flow – Amazon S3



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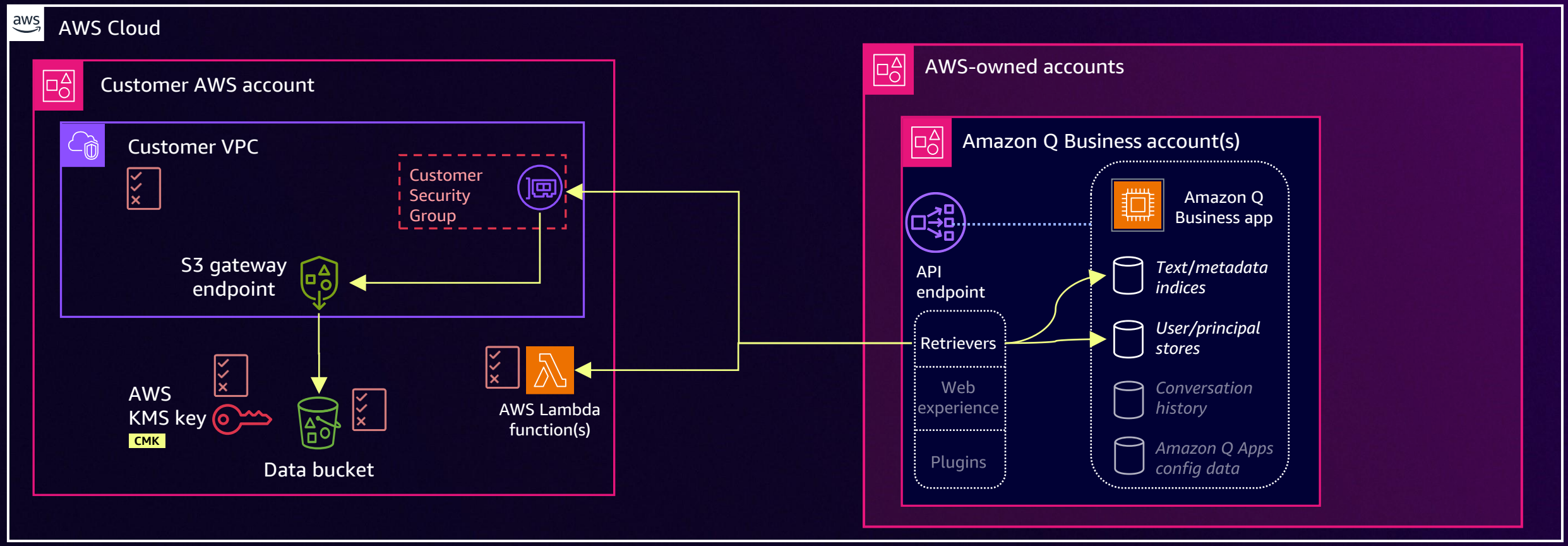


06 Guardrails

Controls and guardrails

CUSTOMIZE AND CONFIGURE THE END USER CHAT EXPERIENCE

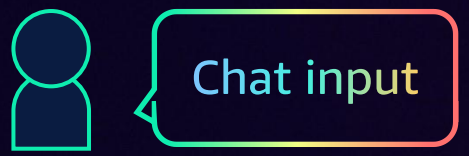
Global controls

- Applies to **all conversations**
  - Use of base LLM knowledge *(query/fallback)*
  - Personalize responses *(IDC only)*
  - Allow file uploads
  - Blocked words *(20 phrases)*

Topic-level controls

- Applies to **specific topics** *(max of 2)*
  - Name
  - Description
  - Example chat message *(max of 5)*
  - Rules *(max of 5)*
    - Behavior *(block or restrict to ENT data)*
    - Sources *(if ENT data)*
    - User groups *(include/exclude)*

Controls and guardrails flow



Controls and guardrails

- Toxicity filter**
- Special topics
- Words/phrases

** on output only

Chat output

Controls and guardrails flow

Controls and guardrails

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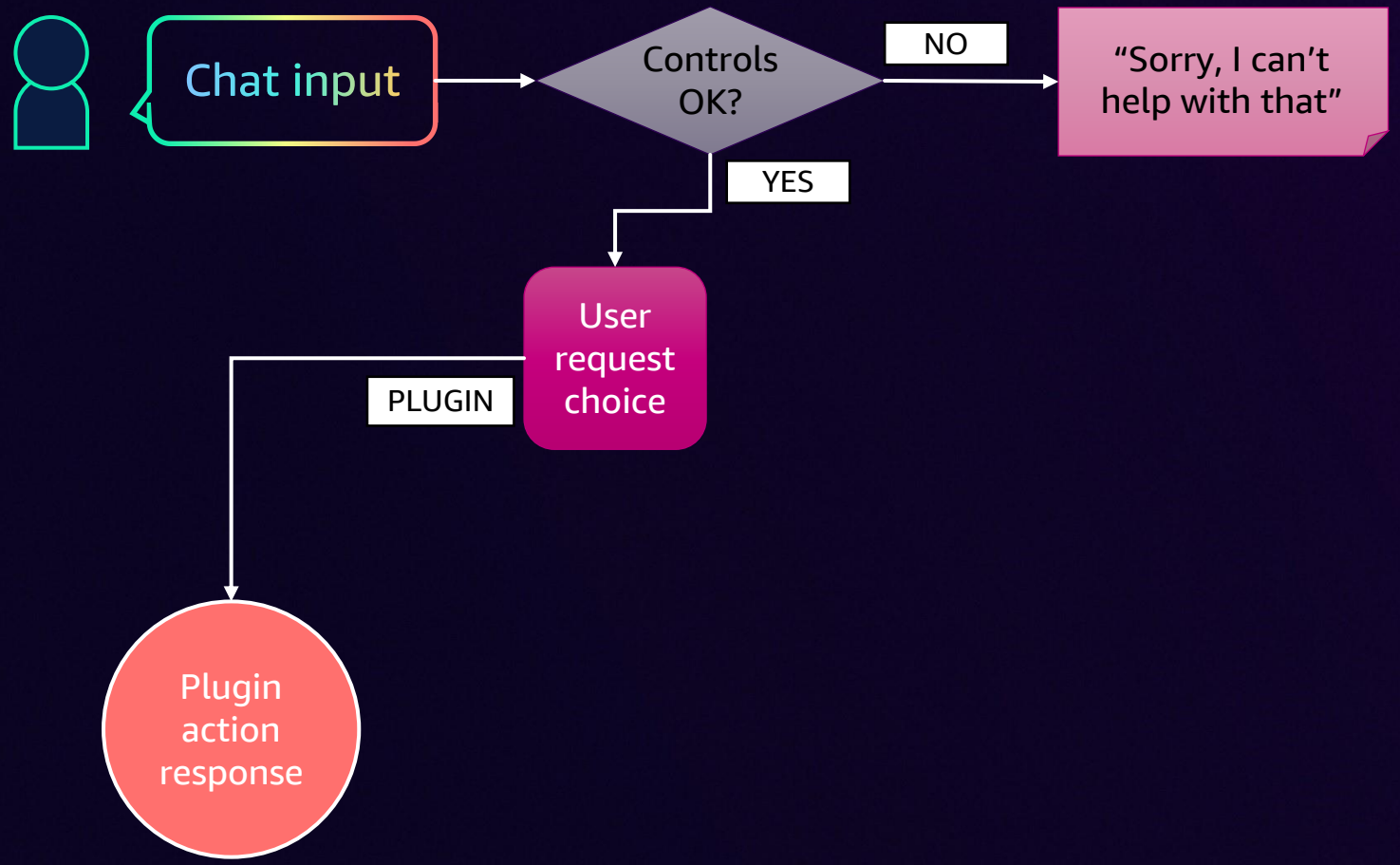
Chat output

Controls and guardrails flow



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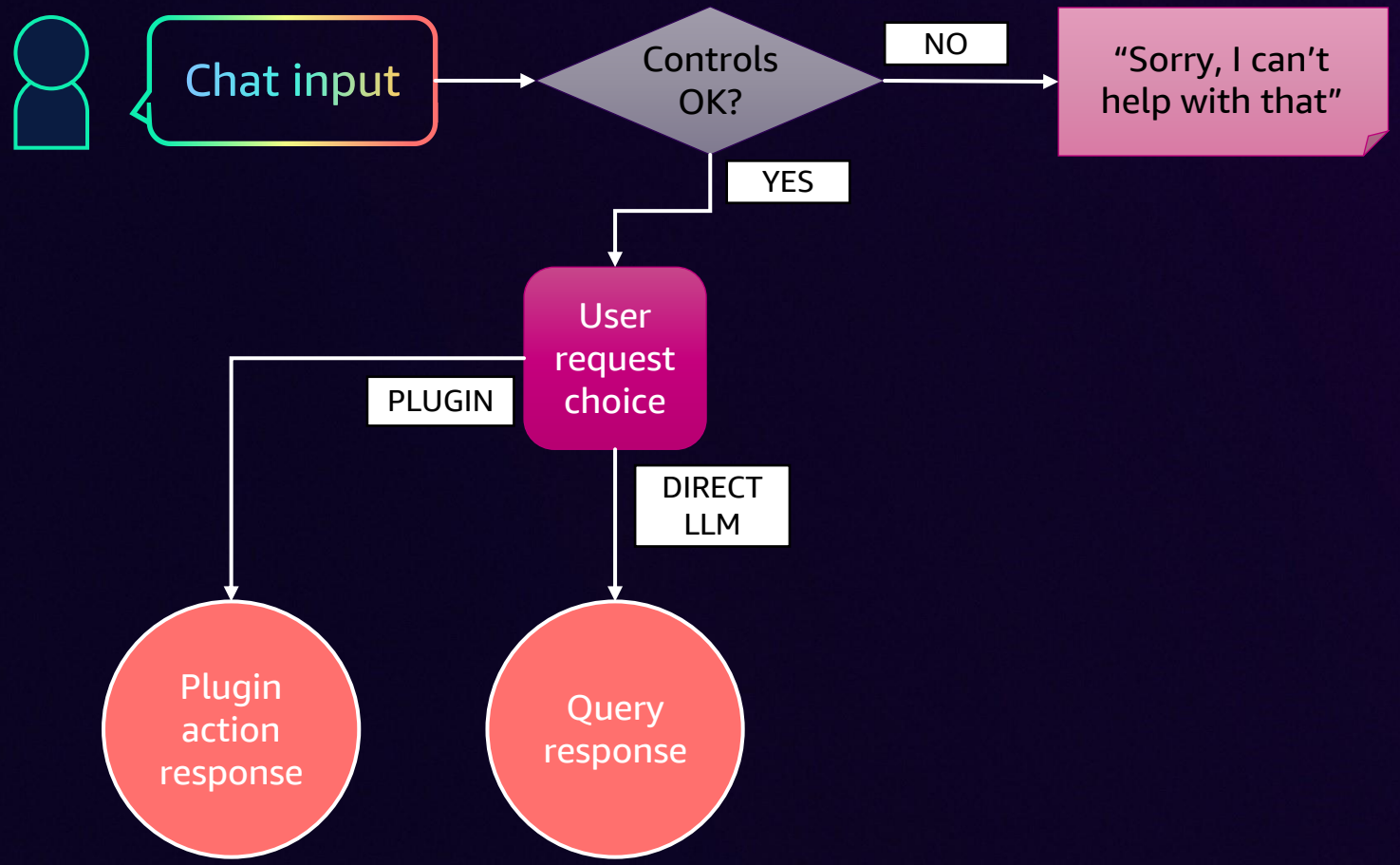
Chat output

Controls and guardrails flow



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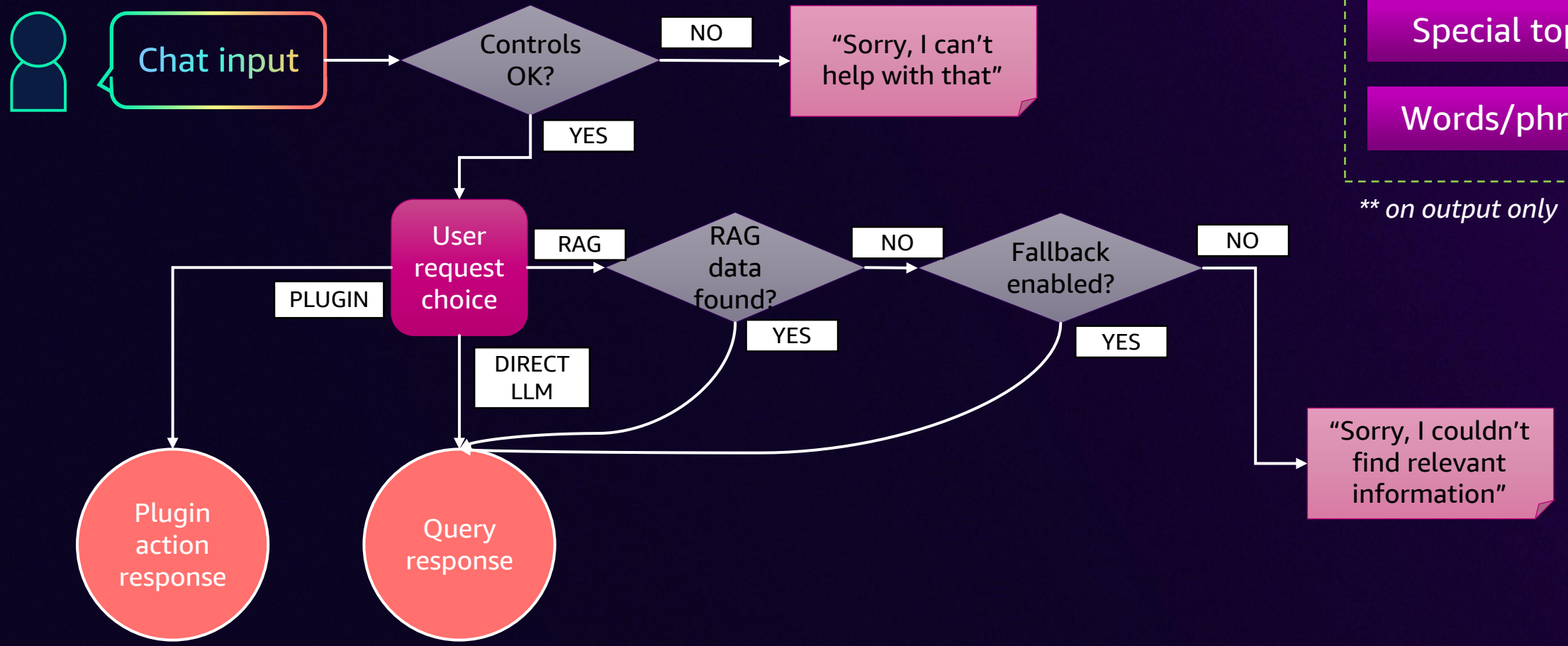
Chat output

Controls and guardrails flow



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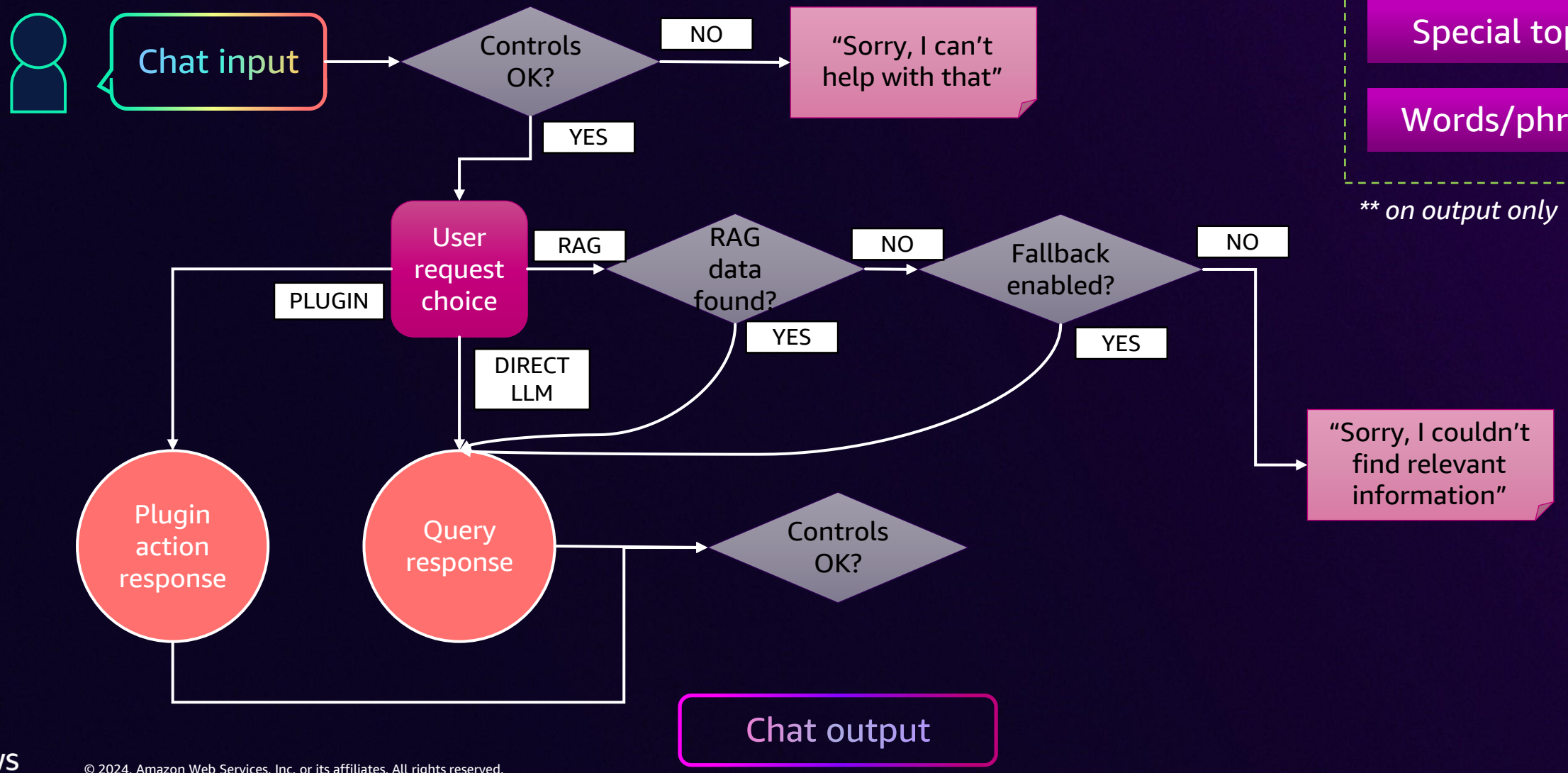
Controls and guardrails flow



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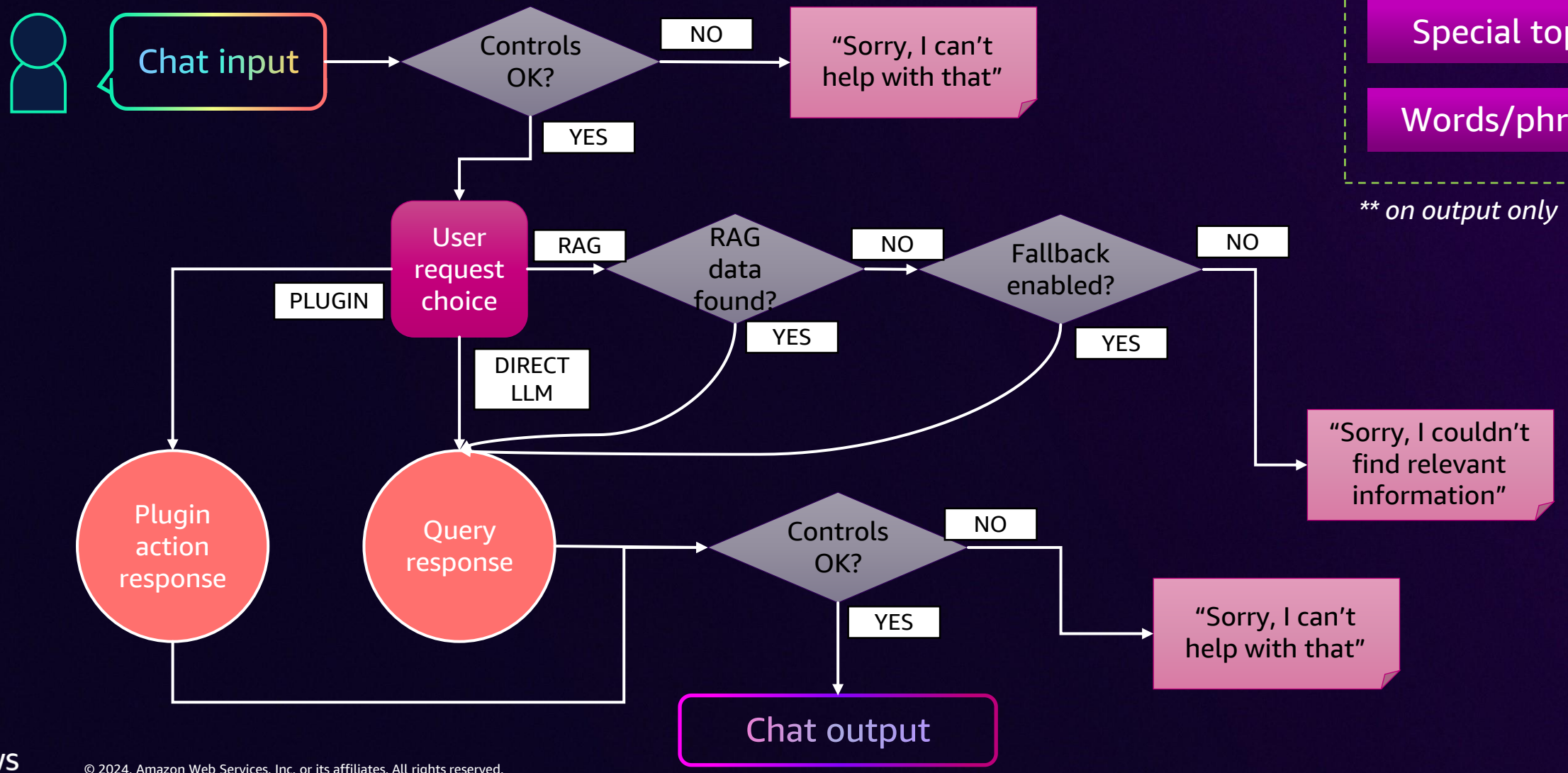

Controls and guardrails

- Toxicity filter**
- Special topics
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** on output only

07 Repository connectors

Safety and security

AMAZON Q BUSINESS IS AWARE OF ENTERPRISE USER PERMISSIONS

Connector security

VARIATIONS OF CONNECTOR SECURITY AND DATA CONFIGURATIONS

	Amazon S3	Confluence (cloud)	Jira	Microsoft Teams	Salesforce online	Slack
Authentication	AssumeRole	Basic, OAuth2	Basic	OAuth2	OAuth2	Token
Credentials	n/a	User/pass, app key/secret	Jira ID, Jira token	Client ID + secret	URL + keys + secrets	Workspace ID + bot **or** user token
Identity crawl	No	Yes	No	Yes	Yes	Yes
ACL crawl	Yes	Yes	Yes	Yes	Yes	Yes
Metadata crawl	Yes	Yes	Yes	Yes	Yes	No
Entities	Document	Space, page, blog, comment, attachment	Projects, issues, comments, attachments, worklogs	Wiki, channel posts/files, 2 x chat, 4 x meeting	~20 entities	Pub/priv channels, 4 x messages

Thank you!

Please complete the session survey in the mobile app

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