



Cloud Hands-on Workshop

Data Management

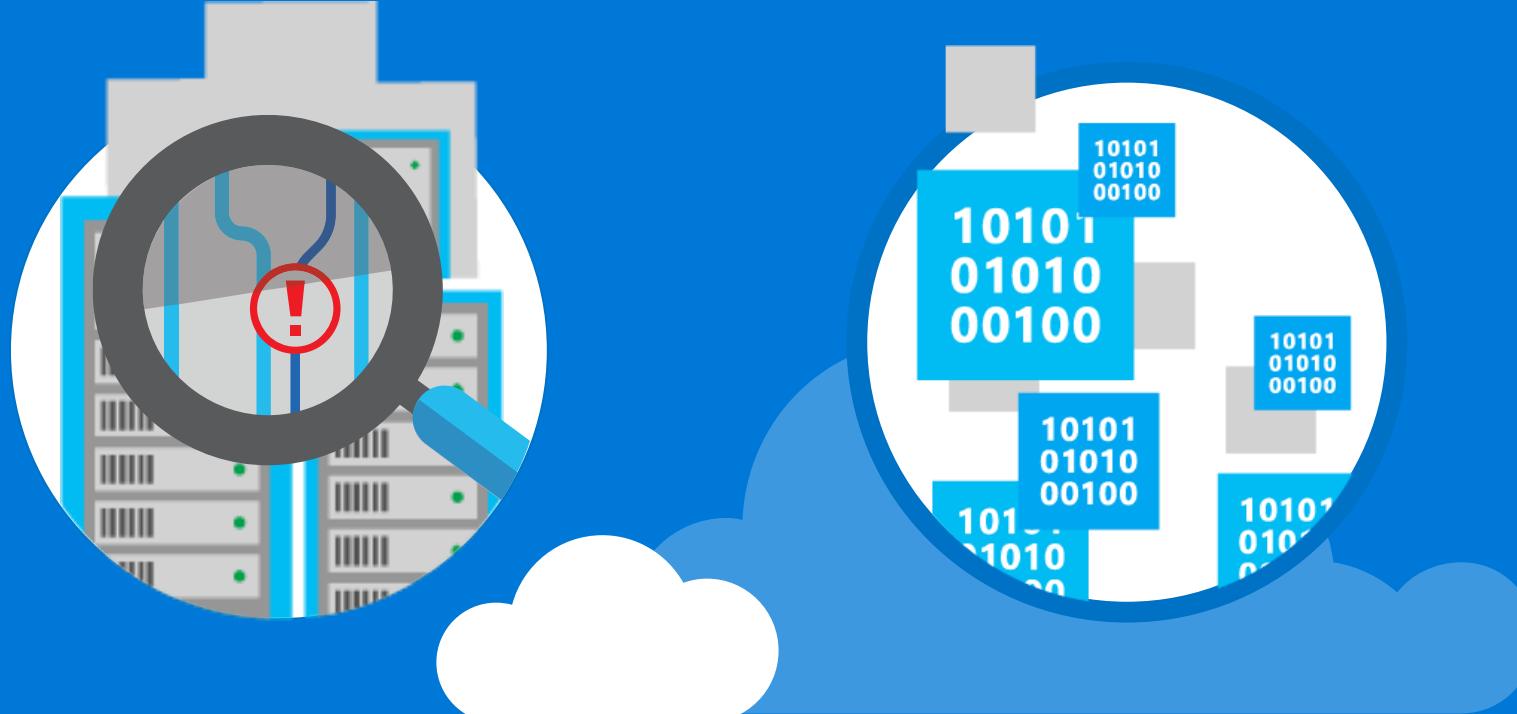
<http://tinyurl.com/y4mtabkh>



Cloud Hands on Workshop Data Management Agenda

Welcome / Overview / Lab set-up	30 minutes
SQL 2017: Mission Critical and Hyperscale Performance – Built In	60 minutes
Break	20 minutes
SQL 2017: Security and Advanced Analytics – Built In	60 minutes
Azure Data Services – Relational Workloads	60 minutes
Q&A	20 minutes

Cloud Presents Unique Security Challenges



CIOs and CISOs lack visibility and control: management is increasingly distributed and physical networks no longer define the perimeter

Cloud environments are more dynamic: resources are being spun up (and down) frequently, it's not just about VMs – there's also PaaS to consider

Enterprises bring on-premises security issues to the cloud: disconnected point solutions, noisy alerts, and advanced threats

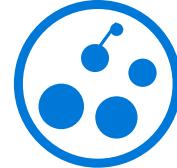
Top of mind

Data Management

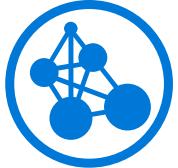
Unstructured



Semi-structured



Structured



The Journey

Reactive



Informative



Predictive



Transformative

Common topics that are 'top of mind'



Large Data Volumes



Advanced Analytics



Economics of Limited Budgets



User Expectations



Big Data



Hardware Advancements



IoT



Data Warehousing



Compliance and Sensitive Data



Storage



Stream Processing



Mission Critical



Data Quality



Self-Service



Dashboards



Operational Analytics

Hands-on Workshop Data Management



Experience 1

SQL 2017: Mission Critical and Hyperscale Performance – Built In

A. Mission Critical

Understand how to quickly and easily set up Always On Availability Groups to ensure your databases and customer-facing applications are always available.



Experience 2

SQL 2017: Security and Advanced Analytics – Built In

A. Security

Experience enterprise grade security with features that go well beyond just ACLs. Make your data secure with industry leading encryption and data masking techniques.

B. Advanced Analytics with SQL Server

Bring Advanced Analytics models into SQL Server to execute R models inside of SQL. Make them work with data from structured tables and unstructured Hadoop sources using Polybase.



Experience 3

Azure Data Services – Relational Workloads

A. Azure SQL Database

Experience the same enterprise capabilities in the Azure cloud, with elastic scale and state-of-the-art pooling features. Azure Active Directory integration, security, scale and extensibility, you have it all.

B. Azure SQL Data Warehouse

Experience Azure SQL Data Warehouse as a cloud-based, scale-out database capable of processing massive volumes of data, both relational and non-relational.

Hands-on Workshop: Data Management

Each session will have a session specific Tiny URL, and the URL expires at the end of the session.

1. Open a browser and type in the Tiny URL.
2. Once on Welcome to Hands-on Labs screen, select "I'm new here and need credentials."

Type in your name and click Request Credentials.

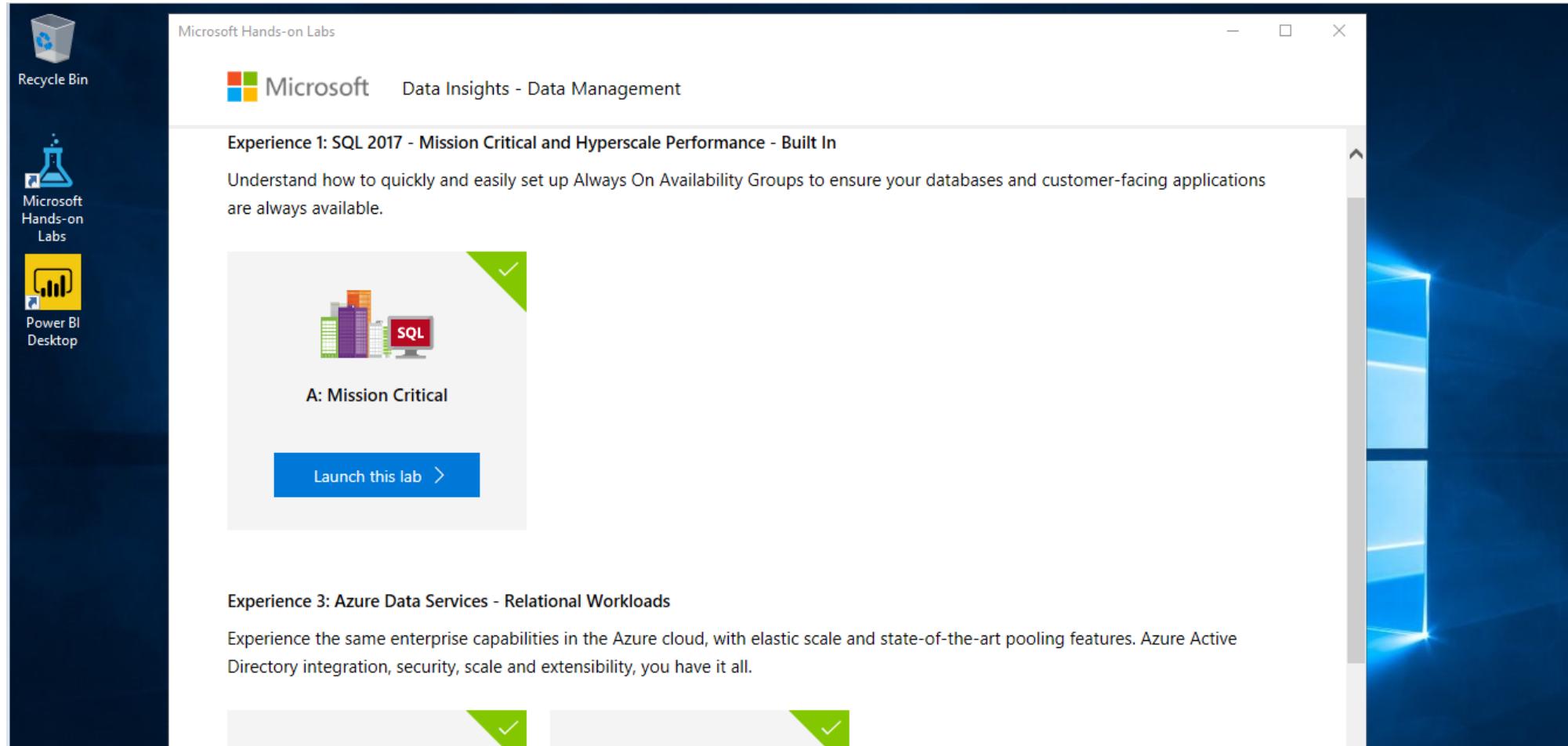
Write down the Session ID, as it is specific to you. If you are disconnected from the session, you will need this to access your lab.

The screenshot shows the Microsoft Hands-on Labs landing page. At the top, there's a navigation bar with links for Microsoft, Technologies, Documentation, Resources, a search bar, and a user profile for Amanda. Below the navigation bar, there's a blue header bar with links for Hands-on Labs, Virtual Classes, Self-paced Labs, Request In-person Session, Help, Partner Portal, and Dashboard. The main content area has a heading 'Welcome to Hands-on Labs' and a sub-instruction 'Select an option below to get started with this Hands-on lab.' There are two radio buttons: one selected for 'I'm new here and need credentials.' and another for 'I have already been assigned credentials.'

This screenshot shows the 'I'm new here and need credentials' step. It features a heading 'Welcome to Hands-on Labs' and a sub-instruction 'Select an option below to get started with this Hands-on lab.' Below this, there are two radio buttons: one selected for 'I'm new here and need credentials.' and another for 'I have already been assigned credentials.' A text input field contains the nickname 'Amanda S' and a green button labeled 'Request Credentials'. A note at the bottom states: 'Note: The nickname will only be used by your session facilitator to identify the credentials assigned to you for troubleshooting purposes.'

This screenshot shows the final step where the session details are provided. It has a heading 'Welcome to Hands-on Labs' and displays the 'Your Session Id: user142084' and 'Your Password: Imm3rslon99'. Below these, a blue button says 'Open your connection file >'. A note at the bottom states: 'When connecting via Remote Desktop, click Yes to security prompts to continue.'

Hands-on Workshop: Data Management



- Lab tiles found on desktop of RDP connection
- Lab menu can be access with desktop icon



Mission Critical

12:45
Tuesday, September 15

Cloud Hands-on Workshop Data Management



Experience 1 SQL 2017: Mission Critical and Hyperscale Performance – Built In

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Experience 2 SQL 2017: Security and Advanced Analytics – Built In

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Experience 3 Azure Data Services – Relational Workloads

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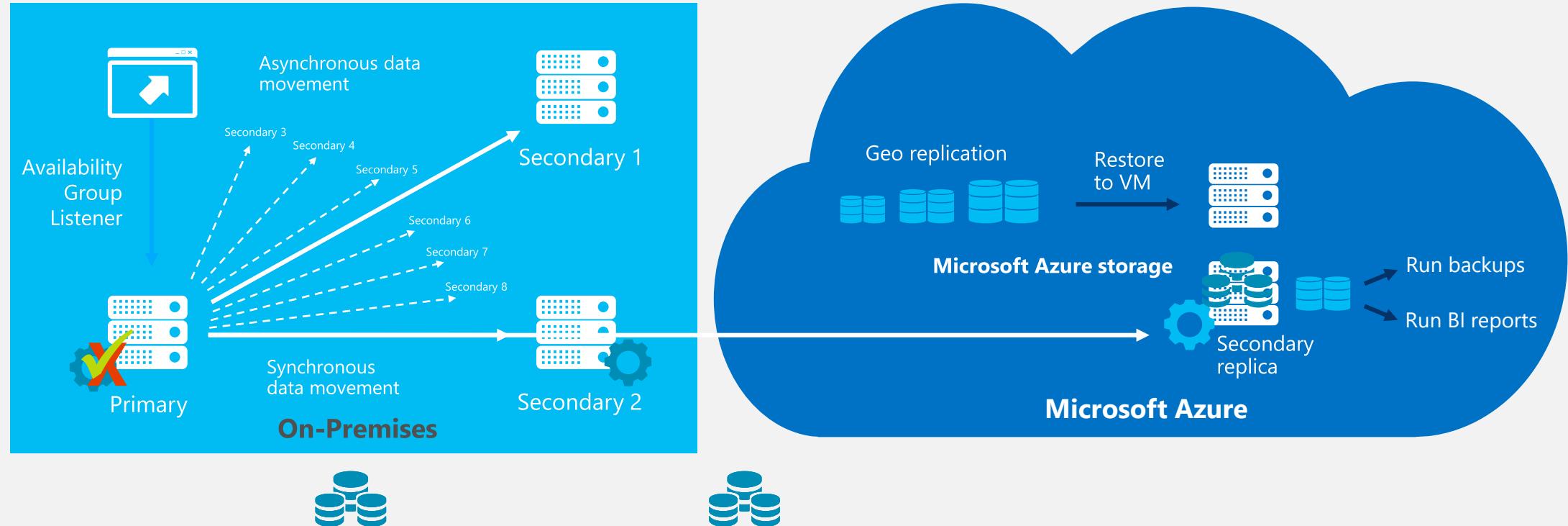
B. Azure SQL Data Warehouse

Experience Azure SQL Data Warehouse as a cloud-based, scale-out database capable of processing massive volumes of data, both relational and non-relational.

Mission Critical



AlwaysOn Availability Groups



- Peace of mind with Mission Critical resiliency
- Quickly and easily establish an availability group using existing on-premises hardware

- Provides the knowledge that data is being written to each server within an availability group



Mission Critical



Temporal

CurrencyRateID	FromCurrencyCode	ToCurrencyCode	AverageRate	AverageRate
9558	USD	CNY	8.2	8.2866
9559	USD	EUR	1.785	1.356
9560	USD	GBP	0.7058	0.7048
9561	USD	JPY	120	134.613
9562	USD	MXN	9.1152	9.112
9563	USD	SAR	3.7504	3.7452
95364	USD	VEB	1087.90	1087.8399
9565	USD	ARS	2.1499	2.1509
9566	USD	AUD	1.9406	1.9415
9567	USD	BRL	2.4857	2.487

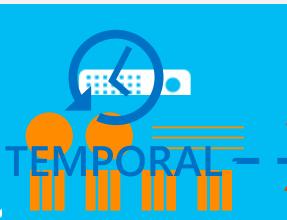


Asynchronous data movement
On-Premises

CurrencyRateID	FromCurrencyCode	ToCurrencyCode	Rate	SysStartTime	SystemEndTime
9565	USD	ARS	3.5291	2016-01-30 00:00:00.000000	2016-01-31 00:00:00.000000
9559	USD	EUR	1.1576	2016-01-30 00:00:00.000000	2016-01-31 00:00:00.000000
9560	USD	GBP	0.6307	2016-01-30 00:00:00.000000	2016-01-31 00:00:00.000000
9560	USD	GBP	0.6297	2016-01-29 00:00:00.000000	2016-01-30 00:00:00.000000
9559	USD	EUR	0.9886	2016-01-29 00:00:00.000000	2016-01-30 00:00:00.000000
9565	USD	ARS	3.5308	2016-01-29 00:00:00.000000	2016-01-30 00:00:00.000000
9565	USD	ARS	3.5491	2016-01-28 00:00:00.000000	2016-01-29 00:00:00.000000
9559	USD	EUR	0.9892	2016-01-28 00:00:00.000000	2016-01-29 00:00:00.000000
9560	USD	GBP	0.6298	2016-01-28 00:00:00.000000	2016-01-29 00:00:00.000000
9560	USD	GBP	0.6292	2016-01-27 00:00:00.000000	2016-01-28 00:00:00.000000



CurrencyRateID	FromCurrencyCode	ToCurrencyCode	Rate	SysStartTime	SystemEndTime
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9560	USD	GBP	0.6292	2016-01-27 00:00:00.000000	2016-01-28 00:00:00.000000



NO HISTORICAL CONTEXT

Geo replication

Restore to VM



- Built-in support for point in time information on data
- Temporal Tables are much easier to implement than database triggers, and can be used for storing historical data or for auditing.



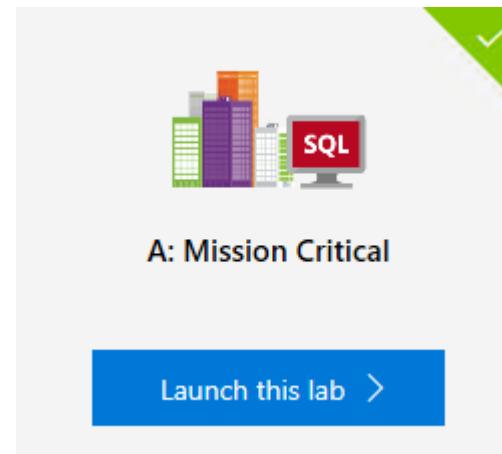
— Experience 1: SQL 2017: Mission Critical and Hyperscale Performance – Built In —

A. Mission Critical

Understand how to quickly and easily set up Always On Availability Groups to ensure your databases and customer-facing applications are always available.

E1:

1. Create an AlwaysOn Availability Group and add a Listener
2. Exploration and Automatic Failover
3. Temporal Tables



30 minutes to complete this story—do not proceed to the next story

Q&A @ 45 minutes

Security



Cloud Hands-on Workshop Data Management



Experience 1

SQL 2017: Mission Critical and Hyperscale Performance – Built In



Experience 2

SQL 2017: Security and Advanced Analytics – Built In



Experience 3

Azure Data Services – Relational Workloads

A. Mission Critical

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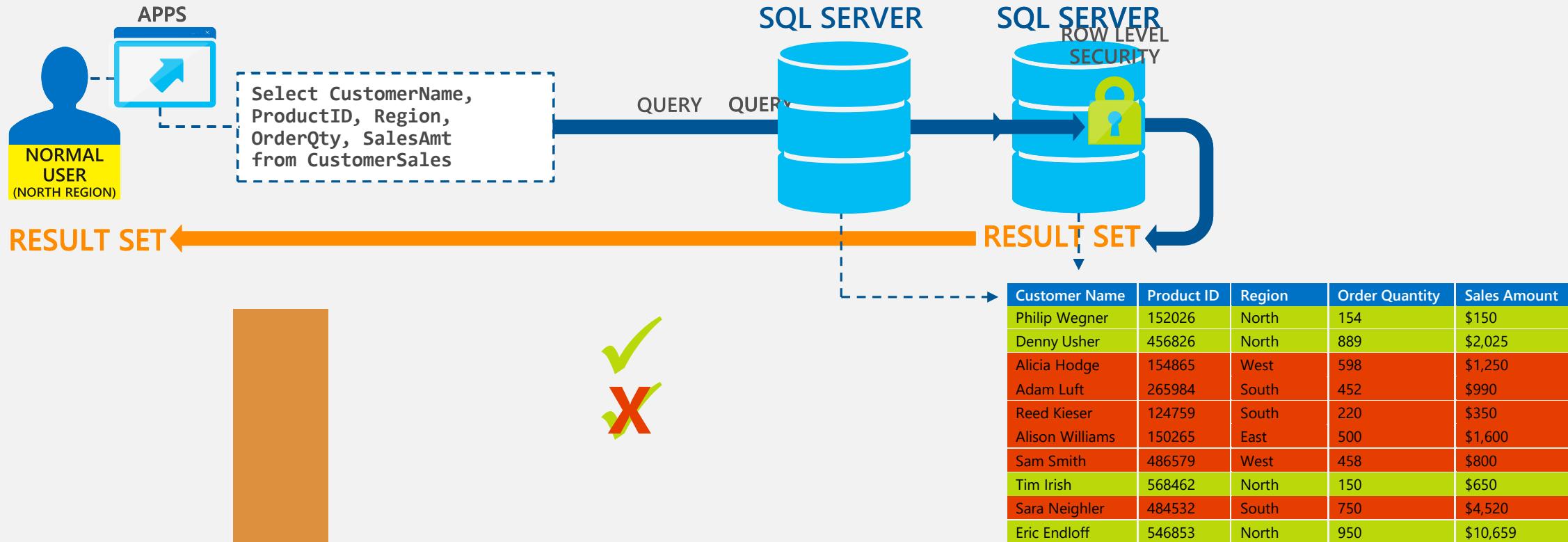
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Security and Advanced Analytics



Row Level Security



- Granular access level protection on data
- Bullet 2

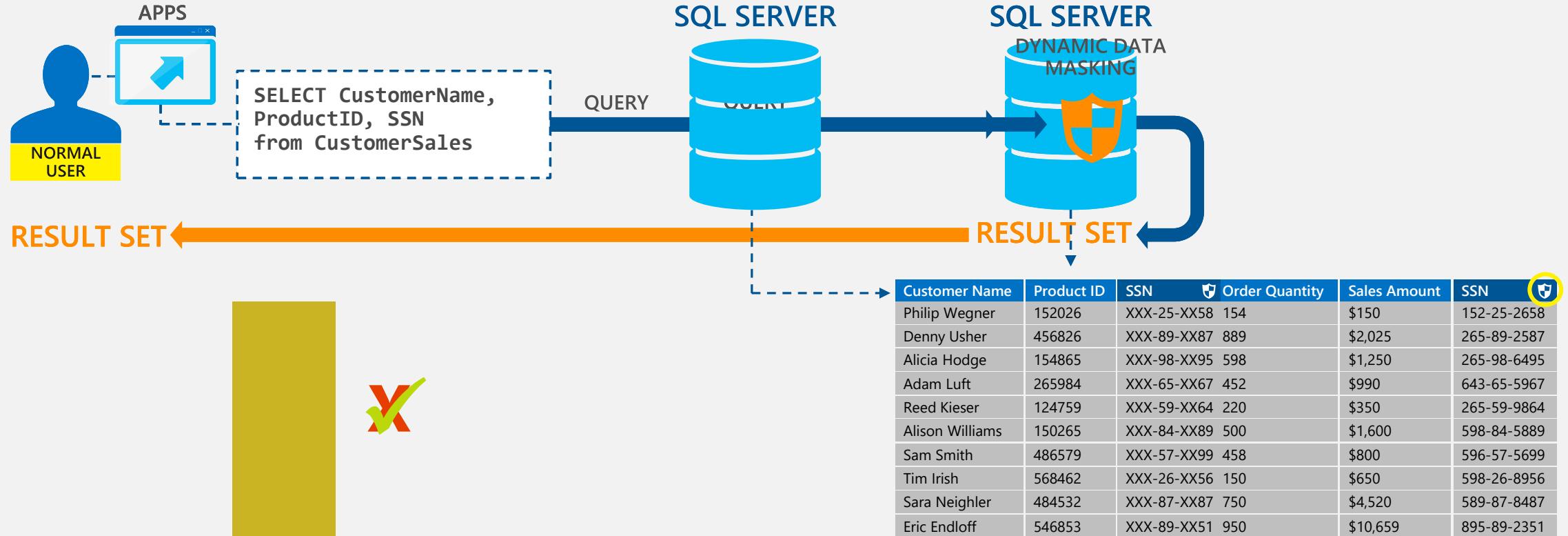
- Bullet 3
- Bullet 4



Security and Advanced Analytics



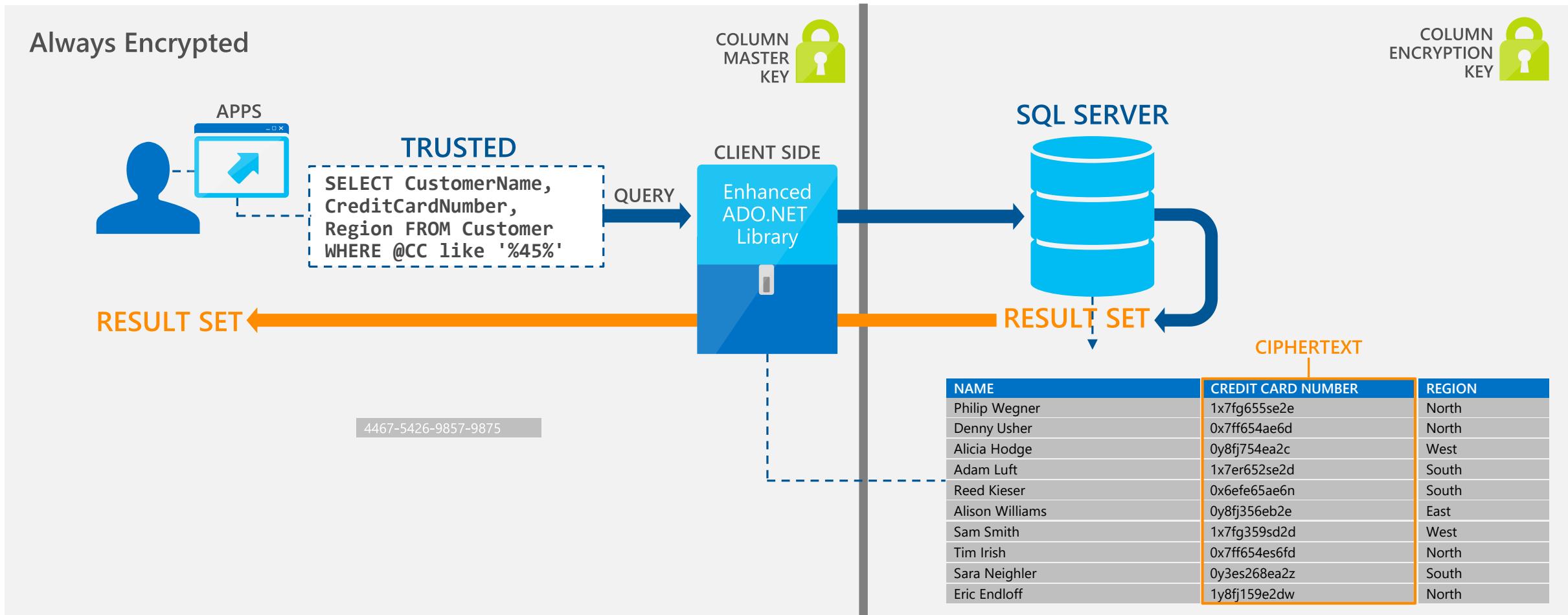
Dynamic Data Masking



- Protecting sensitive data
- Bullet 2
- Bullet 3
- Bullet 4



Security and Advanced Analytics



- Securing data at rest and over the wire
- Bullet 2

- Bullet 3
- Bullet 4



Experience 2: SQL 2017: Security and Advanced Analytics – Built In

A. Security

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B. Advanced Analytics with SQL Server

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E2A:

1. Enable Row Level security
2. Configure Dynamic Data Masking
3. Configure Always Encrypted

30 minutes to complete this story—do not proceed to the next story

Q&A @ 45 minutes

Advanced Analytics with SQL Server

A photograph of a person's hands typing on a laptop keyboard. A blue semi-transparent overlay covers the middle portion of the image, displaying a blurred screenshot of a data analysis interface with various charts and tables.

Cloud Hands-on Workshop Data Management



Experience 1

SQL 2017: Mission Critical and Hyperscale Performance – Built In



Experience 2

SQL 2017: Security and Advanced Analytics – Built In



Experience 3

Azure Data Services – Relational Workloads

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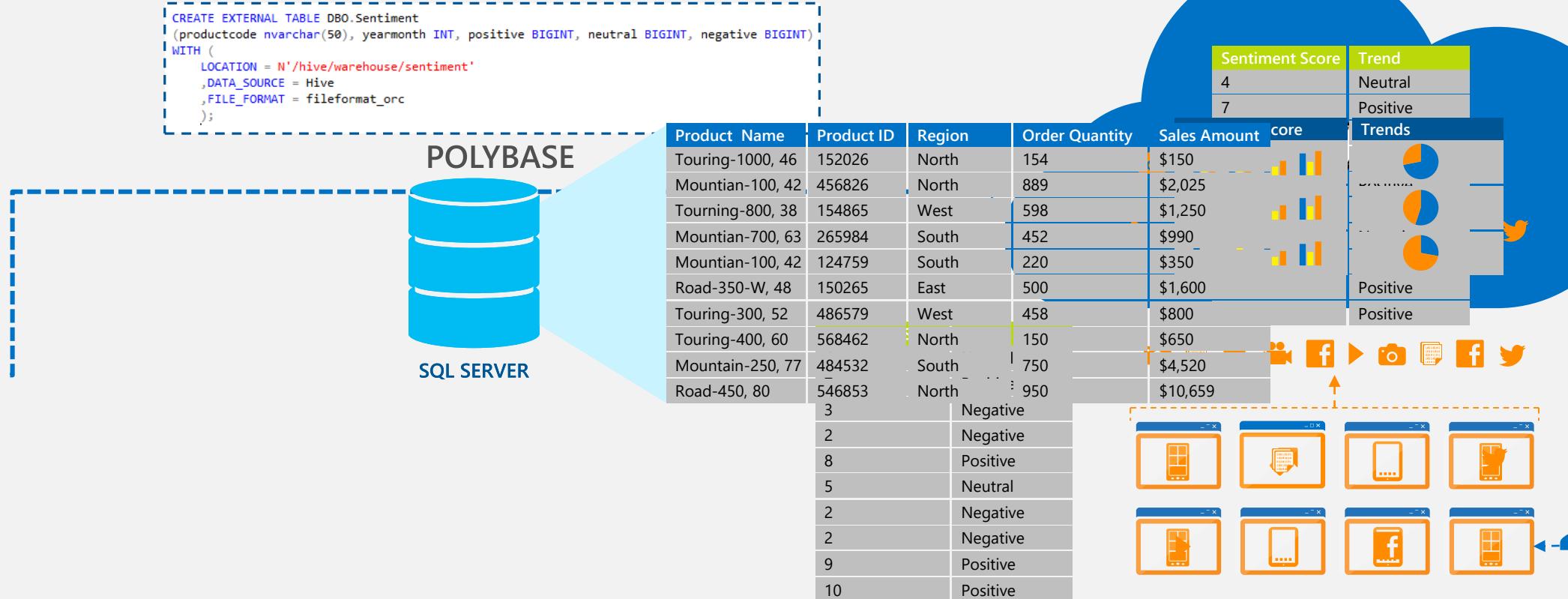
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Security and Advanced Analytics



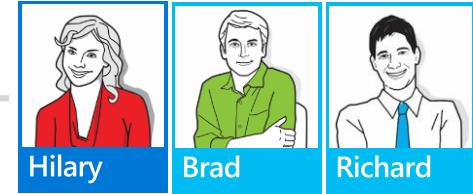
Polybase



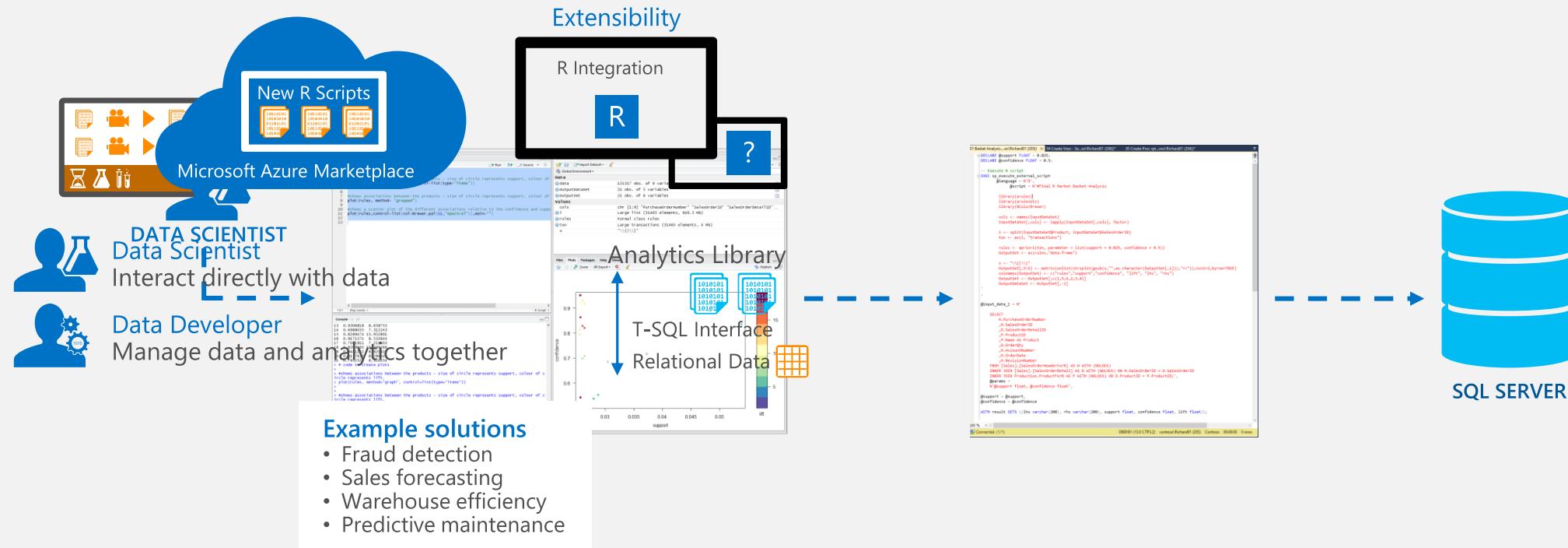
- Combining structured and unstructured data
- Bullet 2
- Bullet 3
- Bullet 4



Security and Advanced Analytics



R-Integration



- Data Science where data lives
- Bullet 2

- Bullet 3
- Bullet 4



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E2B:

1. Leveraging Hadoop data using Polybase
2. Executing R models in SQL Server

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Q&A @ 45 minutes

Azure Data Services



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Azure Data Services



Elastic Pools



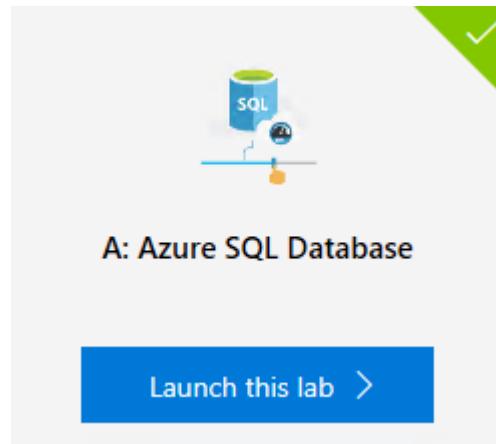
Experience 3: Azure Data Services – Relational Workloads

A. Azure SQL Database

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E3A:

1. Configure Azure SQL Database
2. Configure Secure Authentication to Azure SQL
3. Leveraging Elastic Pools in Azure DB
4. Configure Performance Recommendations and Threat Detection



30 minutes to complete this story—do not proceed to the next story

Q&A @ 45 minutes

Cloud Hands-on Workshop Data Management



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Experience 2

SQL 2017: Security and Advanced Analytics – Built In



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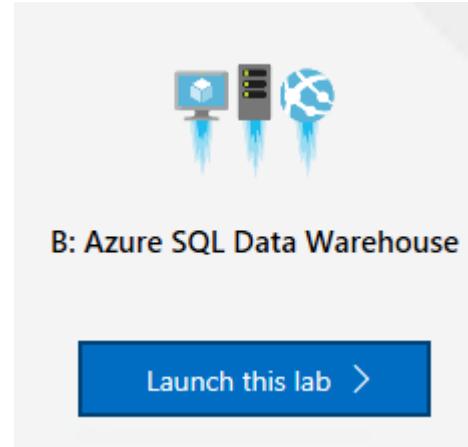
Experience 3: Azure Data Services – Relational Workloads

B. Azure SQL Data Warehouse

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E3B:

1. Create an Azure SQL Data Warehouse
2. Configuring and Implementing Auditing



30 minutes to complete this story—do not proceed to the next story

Q&A @ 45 minutes

Next steps... engage



Engage the cloud on your terms

Ask your **account representative** about **next steps**

- Proof of Concept
- Architectural Design Session
- FastTrack
- Microsoft Learning

Evaluate trial versions and
Training:

[SQL Server 2017](#) >

[Azure SQL Database](#) >

[Azure Certification Training](#) >

[Azure Online Training](#) >

Questions?

Your account representative can provide more information on anything you've seen here today

