

Azure Stream Analytics Project

On-demand real-time analytics



Athens University of Economics and Business
Dpt. Of Management Science and Technology
Prof. Damianos Chatziantoniou



Open, flexible, enterprise-grade cloud computing platform

Microsoft Azure is a cloud computing service created by Microsoft for building, deploying, and managing applications and services through a global network of Microsoft-managed data centers. It provides software as a service, platform as a service and infrastructure as a service and supports many different programming languages, tools and frameworks, including both Microsoft-specific and third-party software and systems.

Microsoft Azure: Azure Stream Analytics



On-demand real-time analytics service to power intelligent action

Key capabilities and benefits

- **Ease of use:** Stream Analytics supports a simple, declarative query model for describing transformations.
- **Scalability:** Stream Analytics is capable of handling high event throughput of up to 1GB/second.
- **Reliability, repeatability and quick recovery:** A managed service in the cloud, Stream Analytics helps prevent data loss and provides business continuity in the event of failures through built-in recovery capabilities.
- **Low cost:** As a cloud service, Stream Analytics is optimized to provide users a very low cost to get going and maintain real-time analytics solutions.
- **Reference data:** Stream Analytics provides users the ability to specify and use reference data.
- **User Defined Functions:** Stream Analytics has integration with Azure Machine Learning to define function calls in the Machine Learning service as part of a Stream Analytics query.
- **Connectivity:** Stream Analytics connects directly to Azure Event Hubs and Azure IoT Hubs for stream ingestion, and the Azure Blob service to ingest historical data.

From **theory** to **practice**



Azure Stream Analytics Configuration [1] – Create Namespace

The screenshot displays the Microsoft Azure portal interface for creating a namespace. The top navigation bar shows the user's profile and account information. The left sidebar lists various Azure services, with 'New' highlighted. The main content area is titled 'Create namespace' and includes the following fields:

- Name:** An empty text input field.
- Pricing tier:** A dropdown menu set to 'Standard'.
- Subscription:** A dropdown menu set to 'Free Trial'.
- Resource group:** Radio buttons for 'Create new' and 'Use existing'. Below this, a red error message states: 'No resource groups exist'.
- Location:** A dropdown menu set to 'Australia East'.

At the bottom of the configuration area, there is a 'Pin to dashboard' checkbox and a blue 'Create' button. To the right of the 'Create' button is a link for 'Automation options'.

The right-hand side of the screen shows a 'Notifications' panel with the following content:

- Dismiss: [Informational](#) [Completed](#) [All](#)
- €170.00 credit remaining (5:33 PM)
- Subscription 'Free Trial' has a remaining credit of €170.00

Azure Stream Analytics Configuration [2] – Create Namespace

Microsoft Azure

Create namespace > Choose your pricing tier

bdsdmastersdmst@gm...
BDSMASTERSDMSTGMAIL (DE...



Create namespace

Event Hubs - PREVIEW

* Name

bdsdmasters ✓
.servicebus.windows.net

* Pricing tier

Standard >

* Subscription

Free Trial v

* Resource group ⓘ

Create new Use existing

BDSMasters ✓

* Location

West Europe v

Pin to dashboard

Create

Automation options



Choose your pricing tier

Browse the available plans and their features - PREVIEW

★ Recommended

Basic		Standard	
1	Consumer group	20	Consumer groups
100	Brokered connections	1000	Brokered connections
	Ingress events \$0.028 per million		Ingress events \$0.028 per million
	Message retention 1 day		Message retention 1 day
			Additional storage Up to 7 days
			Publisher policies
11.00 USD/MONTH/TU (ESTIMATED)		22.00 USD/MONTH/TU (ESTIMATED)	

Select

+ New

Dashboard

All resources

Resource groups

App Services

Function Apps

SQL databases

Azure Cosmos DB

Virtual machines

Load balancers

Storage accounts

Virtual networks

More services >

Azure Stream Analytics Configuration [3] – Create Namespace

Microsoft Azure

Search resources



Dashboard



+ New dashboard



Edit dashboard



Share



Fullscreen



New



Dashboard



All resources



Resource groups



App Services



Function Apps



SQL databases



Azure Cosmos DB



Virtual machines



Load balancers



Storage accounts



Virtual networks



More services

All resources
ALL SUBSCRIPTIONS



No resources to display

Try changing your filters if you don't see what you're looking for. [Learn more](#)

Create resources

Azure Health
MY RESOURCES



Marketplace

Quickstart tutorials



[Windows Virtual Machines](#)

Provision Windows Server, SQL Serv



[Linux Virtual Machines](#)

Provision Ubuntu, Red Hat, CentOS,



[App Service](#)

Create Web Apps using .NET, Java, I



[Functions](#)

Process events with a serverless coc



[SQL Database](#)

Managed relational SQL Database a



bdsmastersdmst@gm...
BDSMASTERSDMSTGMAIL (DE...



Notifications

Dismiss: [Informational](#) [Completed](#) [All](#)



Deployments succeeded

5:41 PM

Deployment to resource group 'BDSMasters' was successful.



€170.00 credit remaining

5:33 PM

Subscription 'Free Trial' has a remaining credit of €170.00

Azure Stream Analytics Configuration [4] – Setup an Event Hub

The screenshot displays the Microsoft Azure portal interface. At the top, the 'Microsoft Azure' logo is on the left, and a search bar with the text 'Search resources' is in the center. On the right of the top bar, there are icons for notifications, a dropdown menu, settings, a smiley face, and a help icon, followed by the user's email address 'bdsmastersdmst@gm...' and a profile picture.

The main dashboard area is titled 'Dashboard' and includes several navigation options: '+ New dashboard', 'Edit dashboard', 'Share', 'Fullscreen', 'Clone', and 'Delete'. On the left side, there is a vertical navigation menu with the following items: 'New', 'Dashboard', 'All resources', 'Resource groups', 'App Services', 'Function Apps', 'SQL databases', 'Azure Cosmos DB', 'Virtual machines', 'Load balancers', 'Storage accounts', and 'Virtual networks'. At the bottom of this menu is a 'More services >' link.

The central dashboard is divided into several sections:

- All resources ALL SUBSCRIPTIONS:** A table with one entry for 'bdsmasters' under the 'Event Hub' category.
- Quickstart tutorials:** A list of five tutorials:
 - Windows Virtual Machines:** Provision Windows Server, SQL Server, SharePoint VMs.
 - Linux Virtual Machines:** Provision Ubuntu, Red Hat, CentOS, SUSE, CoreOS VMs.
 - App Service:** Create Web Apps using .NET, Java, Nodejs, Python, PHP.
 - Functions:** Process events with a serverless code architecture.
 - SQL Database:** Managed relational SQL Database as a Service.
- Azure Health MY RESOURCES:** A section with a heart icon and a pulse line.
- Marketplace:** A section with a shopping bag icon.
- bdsmasters EVENTHUB:** A section on the right showing the 'Active' status with a small grid icon.

Azure Stream Analytics Configuration [5] – Setup an Event Hub

Microsoft Azure bdsmasters

bdsmasters
Event Hub - PREVIEW

Search (Ctrl+/)

Event Hub Delete

Essentials ^

Resource group (change)
BDSMasters

Status
Active

Location
West Europe

Subscription name (change)
Free Trial

Subscription ID
c885008c-b53b-4ac6-a359-9b379088ac92

Connection Strings
Connection Strings

Throughput Units
1

NAMESPACE CONTENTS
0 EVENT HUBS

PRICING TIER
STANDARD

NAMESPACE STATUS
ACTIVE

THROUGHPUT UNITS
1 UNIT

Metrics [Edit](#)

Throughput Units
100
90
80
70
60
50

Azure Stream Analytics Configuration [6] – Setup an Event Hub

Microsoft Azure bdsmasters > Create Event Hub

Search, Notifications, Back, Settings, Feedback, Help, User Profile (bdsmastersdmst@gm..., BDSMASTERSDMSTGMAIL (DE...))

Create Event Hub

bdsmasters - PREVIEW

* Name

eventhubbdsmasters ✓

Partition Count ⓘ

3

Message Retention ⓘ

1

Archive

On Off

Time window (minutes)

5

Size window (MB)

300

Create

Azure Stream Analytics Configuration [7] – Setup an Event Hub

Microsoft Azure

Search resources

Dashboard

New dashboard Edit dashboard Share Fullscreen

All resources ALL SUBSCRIPTIONS

bdsmasters Event Hub

Quickstart tutorials

- Windows Virtual Machines Provision Windows Server, SQL Serv
- Linux Virtual Machines Provision Ubuntu, Red Hat, CentOS
- App Service Create Web Apps using .NET, Java, I
- Functions Process events with a serverless coc
- SQL Database Managed relational SQL Database a

Azure Health MY RESOURCES

Marketplace

Dashboard

All resources

Resource groups

App Services

Function Apps

SQL databases

Azure Cosmos DB

Virtual machines

Load balancers

Storage accounts

Virtual networks

More services

Notifications

Dismiss: Informational Completed All

- Event Hub creation 5:45 PM
Successfully created Event Hub eventhubbdsmasters
- Deployments succeeded 5:41 PM
Deployment to resource group 'BDSMasters' was successful.
- €170.00 credit remaining 5:33 PM
Subscription 'Free Trial' has a remaining credit of €170.00

Azure Stream Analytics Configuration [8] – Create a Send Policy

Microsoft Azure All resources > bdsmasters - Event Hubs

Search (Ctrl+/)

- Overview
- Access control (IAM)
- Tags
- Diagnose and solve problems

SETTINGS

- Shared access policies
- Scale
- Properties
- Locks
- Automation script

ENTITIES

- Event Hubs

+ Event Hub



Search to filter items...


NAME	STATUS	MESSAGE RETENTION	PARTITION COUNT
eventhubbdsmasters	Active	1	3

Azure Stream Analytics Configuration [9] – Create a Send Policy

Microsoft Azure « eventhubbdsmasters - Shared access policies > Add new shared access policy

PREVIEW


Add new shared access poli...  

* Policy name
BDSMastersSend 

Claim

- Manage
- Send
- Listen

Create

bdsmastersdmst@gm...
BDSMASTERSDMSTGMAIL (DE... 

Azure Stream Analytics Configuration [10] – Create a Send Policy

Microsoft Azure bdsdmasters - Event Hubs > eventhubbdsdmasters - Shared access policies

Search, Notifications, Settings, Feedback, Help icons, User profile: bdsdmastersdmst@gm... BDSMASTERSDMSTGMAIL (DE...)

eventhubbdsdmasters - Shared access policies
Event Hub - PREVIEW

Event Hub SAS key creation 6:13 PM
Successfully created Event Hub SAS key BDSMastersSend

+ Add

Shared access policies

Search to filter items...

POLICY	CLAIMS
BDSMastersSend	Send

Navigation sidebar with icons and menu items:

- Search (Ctrl+ /)
- Overview
- Diagnose and solve problems
- SETTINGS
 - Shared access policies (selected)
 - Properties
 - Locks
 - Automation script
- ENTITIES
 - Consumer groups
- SUPPORT + TROUBLESHOOTING
 - New support request

Azure Stream Analytics Configuration [11] – Create a Send Policy

Microsoft Azure

bdsmasters - Event Hubs > eventhubbdsmasters - Shared access policies > Policy: BDSMastersSend



bdsmastersdmst@gm...
BDSMASTERSDMSTGMAIL (DE...)



Policy: BDSMastersSend
PREVIEW

Save changes Discard changes Regen prim key Regen sec key ... More

Policy name

BDSMastersSend

Claim

Manage

Send

Listen

PRIMARY KEY

ECXx62wts5SsrMtl3LKXwH0C6ilthSc0mSS9wbpsi4l=

SECONDARY KEY

JrCPc9/LEvnhPJRIWT+43LjJsJ1Sim4epDaKjBjilPM=

CONNECTION STRING-
PRIMARY KEY

Endpoint=sb://bdsmasters.servicebus.windows.net;/Sh...

CONNECTION STRING-
SECONDARY KEY

Endpoint=sb://bdsmasters.servicebus.windows.net;/Sha

Azure Stream Analytics Configuration [12] – Create a Security Access Signature

Event Hubs - Signature Generator



Hub

Namespace	<input type="text" value="bdsmasters"/>
Hub Name	<input type="text" value="eventhubbdsmasters"/>
Publisher	<input type="text" value="Laptop"/>
Mode	<input type="text" value="Http"/>

Credentials

Sender Key Name	<input type="text" value="BDSMastersSend"/>
Sender Key	<input "="" type="text" value="62wts5SzMtI3LKXwH0C6lthSc0mSS9wbpsi4I="/>
Token TTL (minutes)	<input type="text" value="43200"/>

Signature

```
SharedAccessSignature sr=https%3a%2f%2fbdsmasters.servicebus.windows.net%2feventhubbdsmasters%2fpublishers%2flaptop%2fmessages&sig=%2b0dltpkLnFX32W7zhq2hZ35Gf1rcxyOKIUfhvpSMOw%3d&se=1497798957&skn=BDSMastersSend
```

Generate

Azure Stream Analytics Configuration [13] – Update the Data Generator

```
<html>
<head>
  <script src="js/lodash.js"></script>
</head>
<body>
<input type="button" value="Send Data" onclick="sendDummyData()" />
<div id="status" style="display: inline-block;"></div>
<script type="text/javascript">
function sendDummyData () {
  /*****/
  /** CONFIG **/
  /*****/
  .....
  //Use the signature generator: https://github.com/sandrinodimattia/RedDog/releases
  var sas = "SharedAccessSignature sr=https%3a%2f%2fbdsmasters.servicebus.windows.net%2feventhubbdsmasters%2fpublishers%2flaptop%2fmessages&sig=%2bodltpkLnFX32W7zhq2h235Gf1rcxyOKIUfH";
  var serviceNamespace = "bdsmasters";
  var hubName = "eventhubbdsmasters";
  var deviceName = "Laptop";

  /*****/
  /** GENERATOR **/
  /*****/
  var atms = [{"atm_code":1,"area_code":20},{ "atm_code":2,"area_code":17},{ "atm_code":3,"area_code":18},{ "atm_code":4,"area_code":19},{ "atm_code":5,"area_code":16},{ "atm_code":6,"area

  var customers = [{"card_number":5446210381593272,"first_name":"Eugene","last_name":"Mason","age":67,"gender":"Male","area_code":8},{ "card_number":3534633361736454,"first_name":"Ange

  var jsonData;

  var RND_Customer    = 0;
  var RND_ATMCode     = 0;
  var RND_CardNumber  = 0;
  var RND_Type        = 0;
  var RND_Amount      = 0;

  setInterval(function() {
```

Azure Stream Analytics Configuration [14] – Feed the Event Hub with Data

Sent: { "ATMCode": 19, "CardNumber": 5602246755688900, "Type": 1, "Amount": 47 }

Elements Console Sources Network Performance >>

View: [Icons] Preserve log Disable cache Offline No thro...

Filter [] Regex Hide data URLs

All XHR JS CSS Img Media Font Doc WS Manifest Other

Name	Stat...	Type	Initiator	Size	Time	Waterfall	20.00▲
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	139 ...	[Waterfall bar]	
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	155 ...	[Waterfall bar]	
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	170 ...	[Waterfall bar]	
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	126 ...	[Waterfall bar]	
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	133 ...	[Waterfall bar]	
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	149 ...	[Waterfall bar]	
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	110 ...	[Waterfall bar]	
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	105 ...	[Waterfall bar]	
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	120 ...	[Waterfall bar]	
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	181 ...	[Waterfall bar]	
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	133 ...	[Waterfall bar]	
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	162 ...	[Waterfall bar]	
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	132 ...	[Waterfall bar]	
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	116 ...	[Waterfall bar]	
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	128 ...	[Waterfall bar]	
<input type="checkbox"/> messages	201	xhr	Generato...	291 B	109 ...	[Waterfall bar]	

20 requests | 5.7 KB transferred

Azure Stream Analytics Configuration [15] – Create a Listen Policy

The screenshot shows the Azure portal interface for configuring a shared access policy. The breadcrumb navigation at the top reads: **Microsoft Azure** < **eventhubbdsmasters - Shared access policies** > **Add new shared access policy**. The main title of the configuration pane is **Add new shared access poli...** with a close button (X) and a preview icon. Below the title, the text **BDSMastersSend - PREVIEW** is visible. The configuration section includes a *** Policy name** field containing **BDSMastersListen** with a green checkmark. Under the **Claim** section, there are three checkboxes: **Manage** (unchecked), **Send** (unchecked), and **Listen** (checked). A blue **Create** button is located at the bottom of the configuration pane. The right side of the screen is a large blue area, likely a preview or a placeholder for the policy's effect. The top right of the portal shows a search icon, a notification bell with a '2', a help icon, a settings gear, a smiley face, and a question mark. The user profile in the top right is **bdsmastersdmst@gm...** with the email address **BDSMASTERSDMSTGMAIL (DE...**.

Azure Stream Analytics Configuration [16] – Create a Listen Policy

Microsoft Azure bdsmasters - Event Hubs > eventhubbdsmasters - Shared access policies

Search, Notifications (3), Settings, Feedback, Help, bdsmastersdmst@gm..., BDSMASTERSDMSTGMAIL (DE...)

eventhubbdsmasters - Shared access policies
Event Hub - PREVIEW

Event Hub SAS key creation 6:18 PM
Successfully created Event Hub SAS key BDSMastersListen

Search (Ctrl+/)

+ Add

Shared access policies

Search to filter items...

POLICY	CLAIMS
BDSMastersListen	Listen
BDSMastersSend	Send

Navigation icons: Home, Overview, Diagnose and solve problems, Settings, Entities, Support + Troubleshooting

- Overview
- Diagnose and solve problems
- SETTINGS
 - Shared access policies
 - Properties
 - Locks
 - Automation script
- ENTITIES
 - Consumer groups
- SUPPORT + TROUBLESHOOTING
 - New support request

Azure Stream Analytics Configuration [17] – Create a Listen Policy

The screenshot displays the Azure portal interface for configuring a Listen Policy. The breadcrumb navigation shows the path: **Microsoft Azure** > **bdsmasters - Event Hubs** > **eventhubbdsmasters - Shared access policies** > **Policy: BDSMastersListen**. The user's profile is identified as **bdsmastersdmst@gm...** with the email **BDSMASTERSDMSTGMAIL (DE...**.

The main configuration area is titled **Policy: BDSMastersListen** and is in **PREVIEW** mode. It includes a toolbar with the following actions: **Save changes**, **Discard changes**, **Regen prim key**, **Regen sec key**, and **More**.

The configuration details are as follows:

- Policy name:** BDSMastersListen
- Claim:** Manage, Send, Listen
- PRIMARY KEY:** ZeHoaWZuqhclUeHuagXaiHbfjuqnt2liZ6RdDm7N8Gs=
- SECONDARY KEY:** Y3JFqsYzbM6pO7FLPHWN9xdXVvpujz5a1oAVHYv6UE...
- CONNECTION STRING-PRIMARY KEY:** Endpoint=sb://bdsmasters.servicebus.windows.net;/Sh...
- CONNECTION STRING-SECONDARY KEY:** Endpoint=sb://bdsmasters.servicebus.windows.net;/Sh...

Azure Stream Analytics Configuration [18] – Setup a Storage Account

Microsoft Azure New > Storage > Create storage account



Create storage account

The cost of your storage account depends on the usage and the options you choose below.

[Learn more](#)

* Name ⓘ

bdsmastersstorage ✓
.core.windows.net

Deployment model ⓘ

Resource manager Classic

Account kind ⓘ

General purpose ▼

Performance ⓘ

Standard Premium

Replication ⓘ

Read-access geo-redundant storage (RA-... ▼

* Storage service encryption (blobs and files) ⓘ

Disabled Enabled

Pin to dashboard

Create

Automation options

Azure Stream Analytics Configuration [19] – Setup a Storage Account

The screenshot displays the Microsoft Azure portal interface. At the top, the 'Microsoft Azure' logo is on the left, and a search bar with the text 'Search resources' is in the center. On the right, there are icons for notifications, a dropdown menu, settings, a smiley face, and a help icon, followed by the user's email address 'bdsmastersdmst@gm...' and a profile picture.

The main dashboard area is titled 'Dashboard' and includes several action buttons: '+ New dashboard', 'Edit dashboard', 'Share', 'Fullscreen', 'Clone', and 'Delete'. The dashboard is divided into several tiles:

- All resources** (ALL SUBSCRIPTIONS): A list of resources including:
 - bdsmastersStream**: Stream Analytics job
 - bdsmasters**: Event Hub
 - bdsmastersstorage**: Storage account
- bdsmasters EVENTHUB**: A tile showing the Event Hub resource with a status of 'Active' and a small grid icon.
- bdsmastersstorage**: A tile showing the Storage account resource with a status of 'Available' and a storage icon.
- bdsmastersStream STREAMING JOB**: A tile showing the Stream Analytics job with a status of 'Active' and a gear icon.
- Azure Health** (MY RESOURCES): A tile with a heart icon and a pulse line.
- Marketplace**: A tile with a shopping bag icon.

The left sidebar contains a navigation menu with the following items: 'New', 'Dashboard', 'All resources', 'Resource groups', 'App Services', 'Function Apps', 'SQL databases', 'Azure Cosmos DB', 'Virtual machines', 'Load balancers', 'Storage accounts', 'Virtual networks', and 'More services >'. The bottom right corner of the image shows the page number '24'.

Azure Stream Analytics Configuration [20] – Import the Reference Data

Microsoft Azure All resources > bdsmastersstorage > Blob service



Blob service
bdsmastersstorage

+ Container Refresh

New container

* Name ✓ Access type ⁱ ▼

OK Cancel

c885008c-b53b-4ac6-a359-9b379088ac92

NAME	LAST MODIFIED	ACCESS TYPE	LEASE STATE
You don't have any containers yet. Click '+ Container' to get started.			

Azure Stream Analytics Configuration [21] – Import the Reference Data

The screenshot displays the Microsoft Azure portal interface for configuring an 'Upload blob' operation. The breadcrumb navigation at the top reads: Microsoft Azure > All resources > bdsmastersstorage > Blob service > bdsmasterscontainer > Upload blob. The user's email address, bdsmastersdmst@gm..., is visible in the top right corner.

The interface is divided into three main sections:

- Left Panel (Navigation):** Shows the 'Blob service' for 'bdsmastersstorage'. It includes a 'Container' button and a 'Refresh' button. Under 'Essentials', there is a search box for containers and a list with one entry: 'bdsmasterscontainer'.
- Middle Panel (Container View):** Displays the 'bdsmasterscontainer' details. It includes an 'Upload' button, 'Refresh', 'Delete container', 'Properties', and 'Access' options. The location is 'bdsmasterscontainer'. There is a search box for blobs and a message stating 'No blobs found.'
- Right Panel (Upload Blob Configuration):** Shows the configuration for uploading a blob. The 'Files' section has a text input containing '"Area.json"'. The 'Blob type' is set to 'Block blob' and the 'Block size' is set to '4 MB'. An 'Upload' button is located at the bottom of this panel.

Azure Stream Analytics Configuration [22] – Import the Reference Data

Microsoft Azure All resources > bdsmastersstorage > Blob service > bdsmasterscontainer > Upload blob

Blob service
bdsmastersstorage

+ Container Refresh

Essentials ▾

Search containers by prefix

NAME

bdsmasterscontainer ...

bdsmasterscontainer
Container

Upload Refresh Delete container Properties Access

Location: bdsmasterscontainer

Search blobs by prefix (case-sensitive)

NAME

Area.json

Upload blob

Files 990 B |
Selected https://bdsmastersstorage.blob.core.windows.net/bdsmasters...

Blob type Block blob ▾

Block size 4 MB ▾

Upload

Upload Completed for Area.json 6:45 PM

Azure Stream Analytics Configuration [23] – Setup a Stream Analytics Job

The screenshot displays the Microsoft Azure portal interface for configuring a new Stream Analytics job. The breadcrumb navigation at the top reads: Microsoft Azure > New > Internet of Things > New Stream Analytics Job. The main configuration panel is titled "New Stream Analytics Job" and contains the following fields:

- Job name:** A text input field containing "bdsmastersStream" with a green checkmark on the right.
- Subscription:** A dropdown menu showing "Free Trial".
- Resource group:** A section with two radio buttons: "Create new" (unselected) and "Use existing" (selected). Below the radio buttons is a dropdown menu showing "BDSMasters".
- Location:** A dropdown menu showing "West Europe".

At the bottom of the configuration panel, there is a checked checkbox labeled "Pin to dashboard", a blue "Create" button, and a link for "Automation options". The top right of the portal shows a search icon, a notification bell with a "1", a help icon, a settings gear, a smiley face, a question mark, and a user profile for "bdsmastersdmst@gm... BDSMASTERSDMSTGMAIL (DE...)" with a profile picture icon.

Azure Stream Analytics Configuration [24] – Setup a Stream Analytics Job

The screenshot displays the Microsoft Azure portal interface. On the left is a navigation sidebar with categories like 'New', 'Dashboard', 'All resources', and various service types. The main area is a dashboard with several tiles: 'All resources' (listing 'bdsmastersStream' as a Stream Analytics job and 'bdsmasters' as an Event Hub), 'bdsmasters EVENTHUB' (status: Active), 'bdsmastersStream STREAMING JOB', 'Azure Health MY RESOURCES', and 'Marketplace'. A 'Notifications' panel on the right shows two messages: a successful deployment at 6:25 PM and a credit update at 6:19 PM.

Microsoft Azure

Search resources

Dashboard

New dashboard Edit dashboard Share Fullscreen

All resources

bdsmastersStream Stream Analytics job

bdsmasters Event Hub

bdsmasters EVENTHUB

Active

bdsmastersStream STREAMING JOB

Azure Health MY RESOURCES

Marketplace

Notifications

Dismiss: Informational Completed All

Deployments succeeded 6:25 PM
Deployment to resource group 'BDSMasters' was successful.

€170.00 credit remaining 6:19 PM
Subscription 'Free Trial' has a remaining credit of €170.00

Azure Stream Analytics Configuration [25] – Setup a Stream Analytics Job

The screenshot displays the Microsoft Azure portal interface for configuring a Stream Analytics job. The top navigation bar shows the user's name 'bdsmastersdmst@gm...' and the job name 'bdsmastersStream'. The left-hand navigation pane includes sections for 'Overview', 'Activity log', 'Access control (IAM)', 'Tags', 'Diagnose and solve problems', 'SETTINGS' (with 'Locks'), 'JOB TOPOLOGY' (with 'Inputs', 'Functions', 'Query', and 'Outputs'), and 'Outputs'. The main content area features a search bar and a toolbar with 'Start', 'Stop', and 'Delete' buttons. Below the toolbar, the 'Created' section provides details for the resource group 'BDSMasters' in the 'West Europe' location, including the subscription name 'Free Trial' and the subscription ID 'c885008c-b53b-4ac6-a359-9b379088ac92'. A 'Job Topology' section is visible at the bottom, showing three columns: 'Inputs' (0), 'Query' (with a code icon), and 'Outputs' (0), all indicating 'No results'.

Microsoft Azure bdsmastersStream

bdsmastersStream
Stream Analytics job

Search (Ctrl+/)

Start Stop Delete

Created

Essentials ^

Resource group (change)
[BDSMasters](#)

Status
Created

Location
West Europe

Subscription name (change)
[Free Trial](#)

Subscription ID
c885008c-b53b-4ac6-a359-9b379088ac92

Send feedback
[UserVoice](#)

Created
Friday, May 19, 2017, 6:24:40 PM

Started
-

Last output
-

Job Topology

Inputs	Query	Outputs
0	<>	0
No results.		No results.

Azure Stream Analytics Configuration [26] – Setup a Stream Analytics Job

Microsoft Azure bds mastersStream > Inputs > New input

Inputs
bds mastersStream

+ Add

NAME	SOURCE TYPE	SOURCE
Empty		

New input

- * Input alias: arearef
- * Source Type: Reference data
- * Import option: Use blob storage from current subscription
- Storage account: bds mastersstorage
- Storage account key:
- Container: bds masterscontainer
- Path pattern: Area.json
- Date format: yyyy/MM/dd

Create

Azure Stream Analytics Configuration [27] – Setup a Stream Analytics Job

Microsoft Azure bdsmastersStream > Inputs

Inputs
bdsmastersStream

+ Add

NAME	SOURCE TYPE	SOURCE	
arearef	Reference	Blob storage	...

Notifications

Dismiss: [Informational](#) [Completed](#) [All](#)

- Successful connection test** 6:48 PM
Connection to input 'arearef' succeeded.
- Added input** 6:48 PM
Added input 'arearef' to Stream Analytics Job 'bdsmastersStream'.
- €170.00 credit remaining** 6:46 PM
Subscription 'Free Trial' has a remaining credit of €170.00

Azure Stream Analytics Configuration [28] – Setup a Stream Analytics Job

Microsoft Azure bdsmastersStream > Inputs

Inputs
bdsmastersStream

+ Add

i Inputs can't be edited while a job is running. You can stop the job to add or edit inputs.

NAME	SOURCE TYPE	SOURCE	
areaRef	Reference	Blob storage	...
atmRef	Reference	Blob storage	...
BDSMastersInput	Stream	Event hub	...
customerRef	Reference	Blob storage	...

bdsmastersdmst@gm...
BDSMASTERSDMSTGMAIL (DE...)

Azure Stream Analytics Configuration [29] – Setup a Stream Analytics Job

Microsoft Azure bds mastersStream > Outputs > New output

Outputs
bds mastersStream

NAME	SINK
Empty	

New output

- * Output alias:
- * Sink:
- * Import option:
- Storage account:
- Storage account key:
- Container:
- Path pattern:
- Date format:

Create

Azure Stream Analytics Configuration [30] – Setup a Stream Analytics Job

Microsoft Azure bds mastersStream > Outputs

Outputs
bds mastersStream

+ Add

NAME	SINK	
BDSMastersOutput	Blob storage	...

Notifications

Dismiss: [Informational](#) [Completed](#) [All](#)

- i** Successful connection test 6:52 PM
Connection to output 'BDSMastersOutput' succeeded.
- i** Added output 6:52 PM
Added output 'BDSMastersOutput' to Stream Analytics Job 'bds mastersStream'.
- i** Successful connection test 6:48 PM
Connection to input 'arearef' succeeded.
- i** Added input 6:48 PM
Added input 'arearef' to Stream Analytics Job 'bds mastersStream'.
- i** €170.00 credit remaining 6:46 PM
Subscription 'Free Trial' has a remaining credit of €170.00

Azure Stream Analytics Configuration [31] – Setup a Stream Analytics Job

The screenshot displays the Microsoft Azure portal interface for a Stream Analytics job. The top navigation bar shows 'Microsoft Azure' and the job name 'bdsmastersStream'. The left sidebar contains navigation options: Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, SETTINGS (Locks), JOB TOPOLOGY (Inputs, Functions, Query, Outputs), and a search bar.

The main content area shows the job's status as 'Stopped'. It includes controls for Start, Stop, and Delete. Below the status, there are links for 'Essentials' and 'Job Topology'. The 'Job Topology' section is expanded, showing a flow from 4 Inputs to a Query to 2 Outputs.

Job Details:

- Status: Stopped
- Resource group: BDSMasters
- Location: West Europe
- Subscription name: Free Trial
- Subscription ID: c885008c-b53b-4ac6-a359-9b379088ac92
- Created: Friday, May 19, 2017, 6:56:50 PM
- Started: Sunday, May 21, 2017, 5:40:28 PM
- Last output: Sunday, May 21, 2017, 6:01:09 PM

Job Topology:

Inputs	Query	Outputs
4	<>	2
areaRef		BDSMastersOutput
atmRef		BDSMastersPowerBI
See more		

Azure Stream Analytics Configuration [32] – Run a Stream Analytics Job

Microsoft Azure bdsmastersStream > bdsmastersStream

bdsmastersStream
Query

Save Discard Test

Inputs (4)

- areaRef
- atmRef
- BDSMastersInput
- customerRef

Outputs (2)

- BDSMastersOutput
- BDSMastersPowerBI

Need help with your query? Check out some of the most common Stream Analytics query patterns [here](#).

```
1 SELECT
2     CAST([atmRef].[area_code] AS BIGINT) AS AtmAreaCode,
3     CAST([customerRef].[area_code] AS BIGINT) AS CustomerAreaCode,
4     COUNT (*),
5     System.Timestamp AS Time
6 INTO
7     [BDSMastersPowerBI]
8 FROM
9     BDSMastersInput
10 INNER JOIN [customerRef]
11     ON CAST([customerRef].[card_number] AS BIGINT) = CAST([BDSMastersInput].[CardNumber] AS BIGINT)
12 INNER JOIN [atmRef]
13     ON CAST([atmRef].[atm_code] AS BIGINT) = CAST([BDSMastersInput].[ATMCode] AS BIGINT)
14 WHERE CAST([atmRef].[area_code] AS BIGINT) != CAST([customerRef].[area_code] AS BIGINT)
15 GROUP BY CAST([atmRef].[area_code] AS BIGINT), CAST([customerRef].[area_code] AS BIGINT), SlidingWindow(P
```

Your query could be put in logs that are in a potentially different geography.
Missing some language constructs? [Let us know!](#) (Powered by UserVoice - Privacy Policy)

Azure Stream Analytics Configuration [33] – Run a Stream Analytics Job

The screenshot shows the 'Start job' configuration page in the Microsoft Azure portal. The breadcrumb navigation at the top left reads 'Microsoft Azure bdsmastersStream > Start job'. The page title is 'Start job' with the sub-label 'bdsmastersStream'. On the right side of the header, there are icons for search, notifications, a dropdown menu, settings, a smiley face, and a help icon, along with the user profile 'bdsmastersdmst@gm...' and 'BDSMASTERSDMSTGMAIL (DE...)'.

The main content area features a 'Job output start time' configuration section with three buttons: 'Now' (highlighted in blue), 'Custom', and 'When last stopped'. At the bottom left of the configuration area, there is a blue 'Start' button.

The left sidebar contains a vertical menu of icons for various Azure services, including Home, Storage, Virtual Machines, SQL, and others. The right side of the screen is a large, solid blue area, likely representing a video player or a placeholder for a video recording.

Azure Stream Analytics Configuration [34] – Run a Stream Analytics Job

The screenshot displays the Microsoft Azure portal interface for a Stream Analytics job. The top navigation bar includes the Microsoft Azure logo, the job name 'bdsmastersStream', and user information 'bdsmastersdmst@gm...'. The left sidebar contains navigation options such as Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Locks, and Job Topology. The main content area shows the job's status as 'Starting' with controls for Start, Stop, and Delete. Below this, the 'Essentials' section provides details about the resource group (BDSMasters), status (Starting), location (West Europe), subscription name (Free Trial), and subscription ID (c885008c-b53b-4ac6-a359-9b379088ac92). The 'Job Topology' section illustrates the data flow from 4 inputs (areaRef, atmRef) through a query to 2 outputs (BDSMastersOutput, BDSMastersPowerBI).

Microsoft Azure bdsmastersStream

bdsmastersStream
Stream Analytics job

Search (Ctrl+*/*)

Start Stop Delete

Starting

Essentials ^

Resource group (change)
[BDSMasters](#)

Status
Starting

Location
West Europe

Subscription name (change)
[Free Trial](#)

Subscription ID
c885008c-b53b-4ac6-a359-9b379088ac92

Send feedback
[UserVoice](#)

Created
Friday, May 19, 2017, 6:56:50 PM

Started
Friday, May 26, 2017, 5:45:10 PM

Last output
Sunday, May 21, 2017, 6:01:09 PM

Job Topology

Inputs	Query	Outputs
4 ↗	<>	2 ↗
areaRef		BDSMastersOutput
atmRef		BDSMastersPowerBI
See more		

Azure Stream Analytics Configuration [35] – Run a Stream Analytics Job

The screenshot displays the Microsoft Azure portal interface for a Stream Analytics job. The top navigation bar shows 'Microsoft Azure' and the user 'bdsmastersStream'. The left sidebar contains navigation options: Overview (selected), Activity log, Access control (IAM), Tags, Diagnose and solve problems, SETTINGS (Locks), and JOB TOPOLOGY (Inputs, Functions, Query, Outputs). The main content area shows the job 'bdsmastersStream' in a 'Running' state. It includes controls for Start, Stop, and Delete. The 'Essentials' section provides details: Resource group (BDSMasters), Status (Running), Location (West Europe), Subscription name (Free Trial), and Subscription ID (c885008c-b53b-4ac6-a359-9b379088ac92). The 'Job Topology' section shows 4 inputs (areaRef, atmRef) and 2 outputs (BDSMastersOutput, BDSMastersPowerBI).

Notifications panel header with search, settings, and user profile icons. The user profile is identified as 'bdsmastersdmst@gm...' and 'BDSMASTERSDMSTGMAIL (DE...'.

- Notifications
- Dismiss: Completed All
- i** Streaming Job started successfully. 5:46 PM
Started Streaming Job 'bdsmastersStream' successfully.
 - i** 1 new update 5:41 PM
The following updates are now available: DocumentDB customers, welcome to Azure Cosmos DB
 - i** €165.52 credit remaining 5:41 PM
Subscription 'Free Trial' has a remaining credit of €165.52

From software configuration to coding

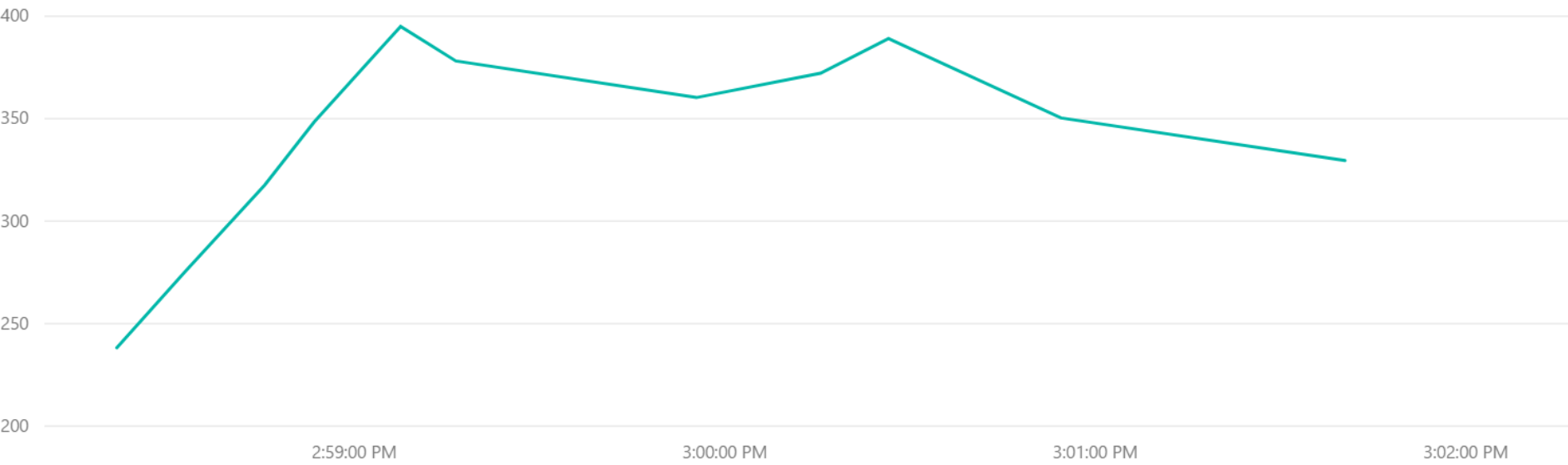
Queries' Execution [1]

Query 1: Show the total 'Amount' of 'Type = 0' transactions at 'ATM Code = 21' of the last 10 minutes. Repeat as new events keep flowing in (use a sliding window).

```
SELECT
    SUM(CAST([BDSMastersInput].[Amount] AS BIGINT)) AS TotalAmount,
    System.Timestamp AS Time
INTO
    [BDSMastersOutput]
FROM
    BDSMastersInput
WHERE CAST([BDSMastersInput].[Type] AS BIGINT) = 0 AND
    CAST([BDSMastersInput].[ATMCode] AS BIGINT) = 21
GROUP BY SlidingWindow(minute, 10)
```

```
[
  {
    "totalamount": 376,
    "time": "2017-05-21T10:24:23.9850000Z"
  },
  {
    "totalamount": 392,
    "time": "2017-05-21T10:24:30.0030000Z"
  },
  {
    "totalamount": 382,
    "time": "2017-05-21T10:24:57.7490000Z"
  },
  {
    "totalamount": 422,
    "time": "2017-05-21T10:26:04.0340000Z"
  },
  {
    "totalamount": 398,
    "time": "2017-05-21T10:26:05.7910000Z"
  }
]
```

Queries' Execution [2] – Query 1

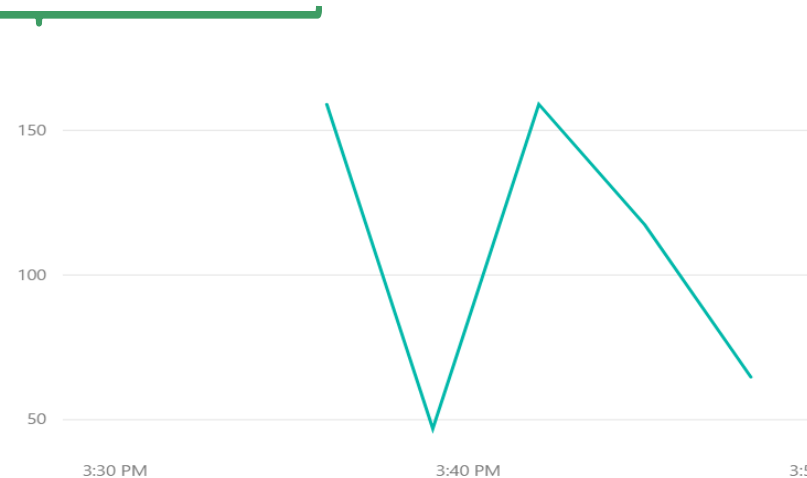


Queries' Execution [3]

Query 2: Show the total 'Amount' of 'Type = 1' transactions at 'ATM Code = 21' of the last hour. Repeat once every hour (use a tumbling window).

```
SELECT
    SUM(CAST([BDSMastersInput].[Amount] AS BIGINT)) AS TotalAmount,
    System.Timestamp AS Time
INTO
    [BDSMastersOutput]
FROM
    BDSMastersInput
WHERE CAST([BDSMastersInput].[Type] AS BIGINT) = 1 AND
    CAST([BDSMastersInput].[ATMCode] AS BIGINT) = 21
GROUP BY TumblingWindow(hour, 1)
```

```
[
  {
    "totalamount": 128,
    "time": "2017-05-21T12:51:00.0000000Z"
  },
  {
    "totalamount": 132,
    "time": "2017-05-21T12:54:00.0000000Z"
  },
  {
    "totalamount": 110,
    "time": "2017-05-21T12:57:00.0000000Z"
  },
  {
    "totalamount": 139,
    "time": "2017-05-21T1:00:00.0000000Z"
  }
]
```

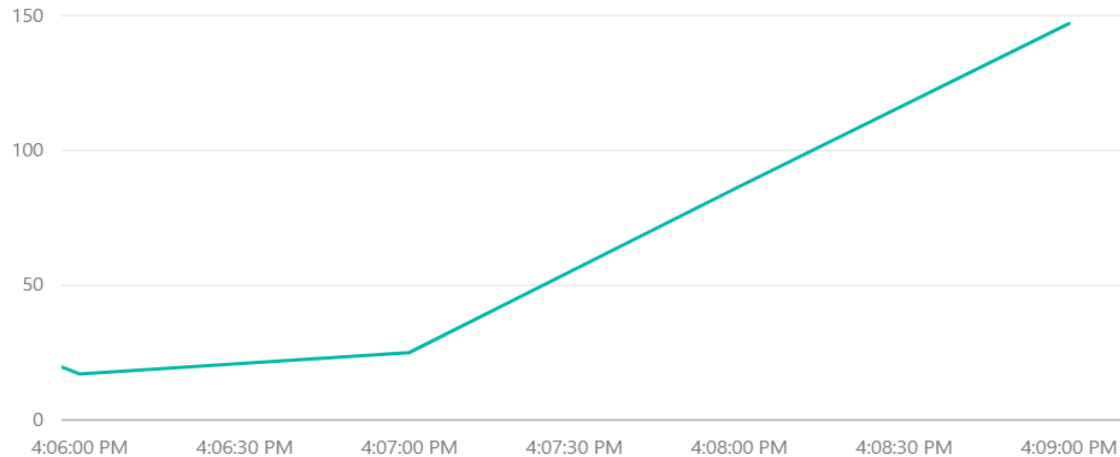


Queries' Execution [4]

Query 3: Show the total 'Amount' of 'Type = 1' transactions at 'ATM Code = 21' of the last hour. Repeat once every 30 minutes (use a hopping window).

```
SELECT
    SUM(CAST([BDSMastersInput].[Amount] AS BIGINT)) AS TotalAmount,
    System.Timestamp AS Time
INTO
    [BDSMastersOutput]
FROM
    BDSMastersInput
WHERE CAST([BDSMastersInput].[Type] AS BIGINT) = 1 AND
    CAST([BDSMastersInput].[ATMCode] AS BIGINT) = 21
GROUP BY HoppingWindow(minute, 60, 30)
```

```
[
  {
    "totalamount": 67,
    "time": "2017-05-21T13:12:00.0000000Z"
  },
  {
    "totalamount": 121,
    "time": "2017-05-21T13:13:00.0000000Z"
  },
  {
    "totalamount": 121,
    "time": "2017-05-21T13:14:00.0000000Z"
  }
]
```



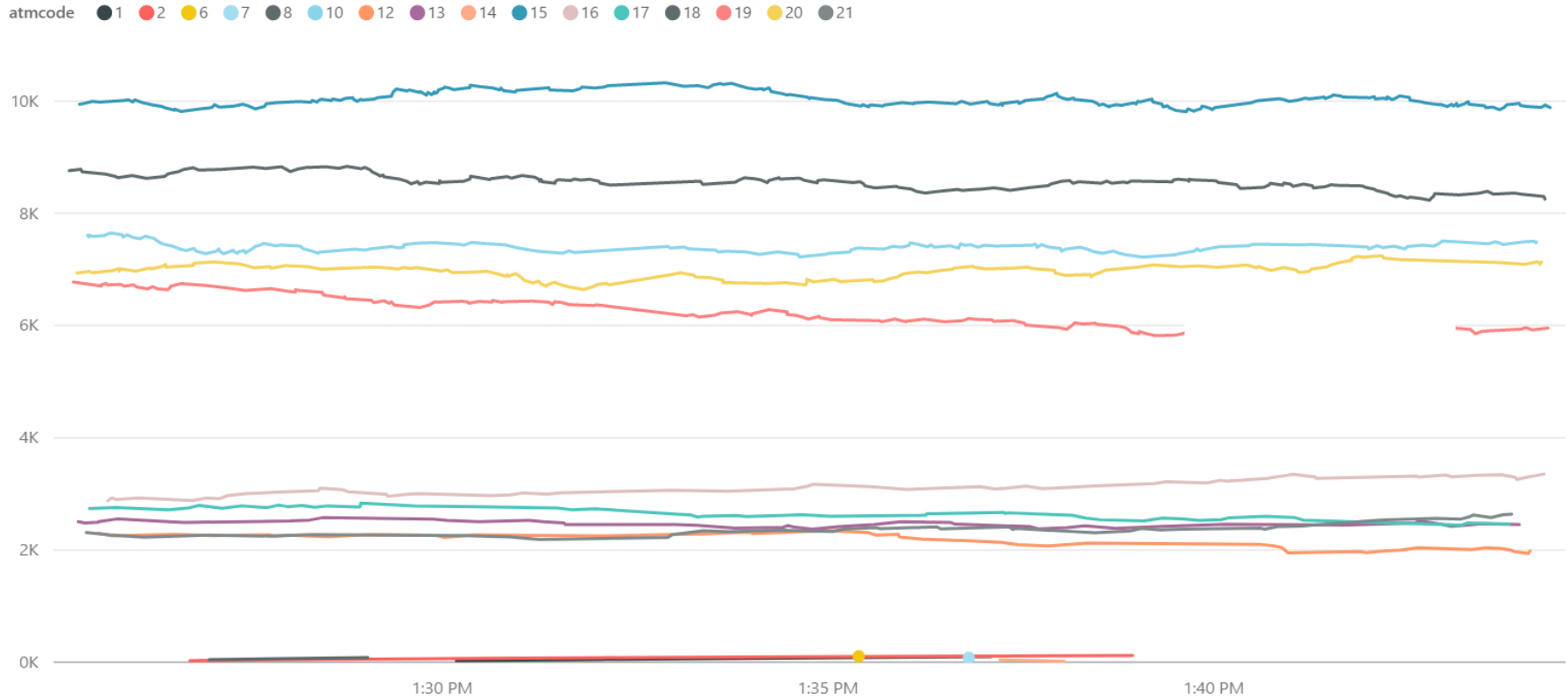
Queries' Execution [5]

Query 4: Show the total 'Amount' of 'Type = 1' transactions per 'ATM Code' of the last one hour (use a sliding window).

```
SELECT
    CAST([BDSMastersInput].[ATMCode] AS BIGINT) AS AtmCode,
    SUM(CAST([BDSMastersInput].[Amount] AS BIGINT)) AS TotalAmount,
    System.Timestamp AS Time
INTO
    [BDSMastersOutput]
FROM
    BDSMastersInput
WHERE CAST([BDSMastersInput].[Type] AS BIGINT) = 1
GROUP BY CAST([BDSMastersInput].[ATMCode] AS BIGINT), SlidingWindow(hour, 1)
```

```
[
  {
    "atmcode": 19,
    "totalamount": 76,
    "time": "2017-05-21T12:01:01.0010000Z"
  },
  {
    "atmcode": 15,
    "totalamount": 143,
    "time": "2017-05-21T12:01:01.0010000Z"
  },
  {
    "atmcode": 12,
    "totalamount": 65,
    "time": "2017-05-21T12:01:01.0010000Z"
  },
  {
    "atmcode": 18,
    "totalamount": 235,
    "time": "2017-05-21T12:01:01.0010000Z"
  },
  {
    "atmcode": 16,
    "totalamount": 21,
    "time": "2017-05-21T12:01:01.0010000Z"
  }
]
```

Queries' Execution [6] – Query 4



Queries' Execution [7]

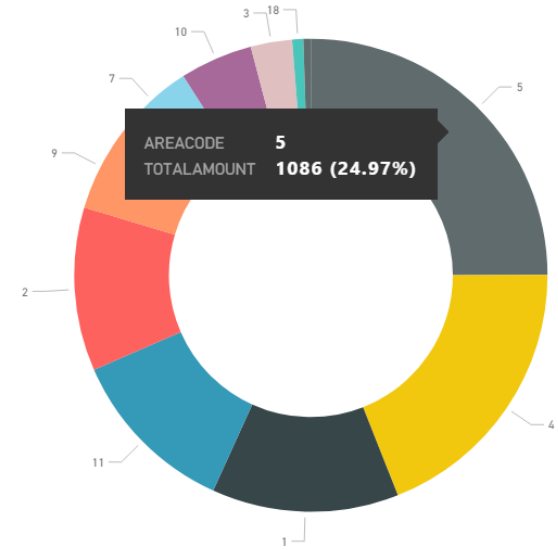
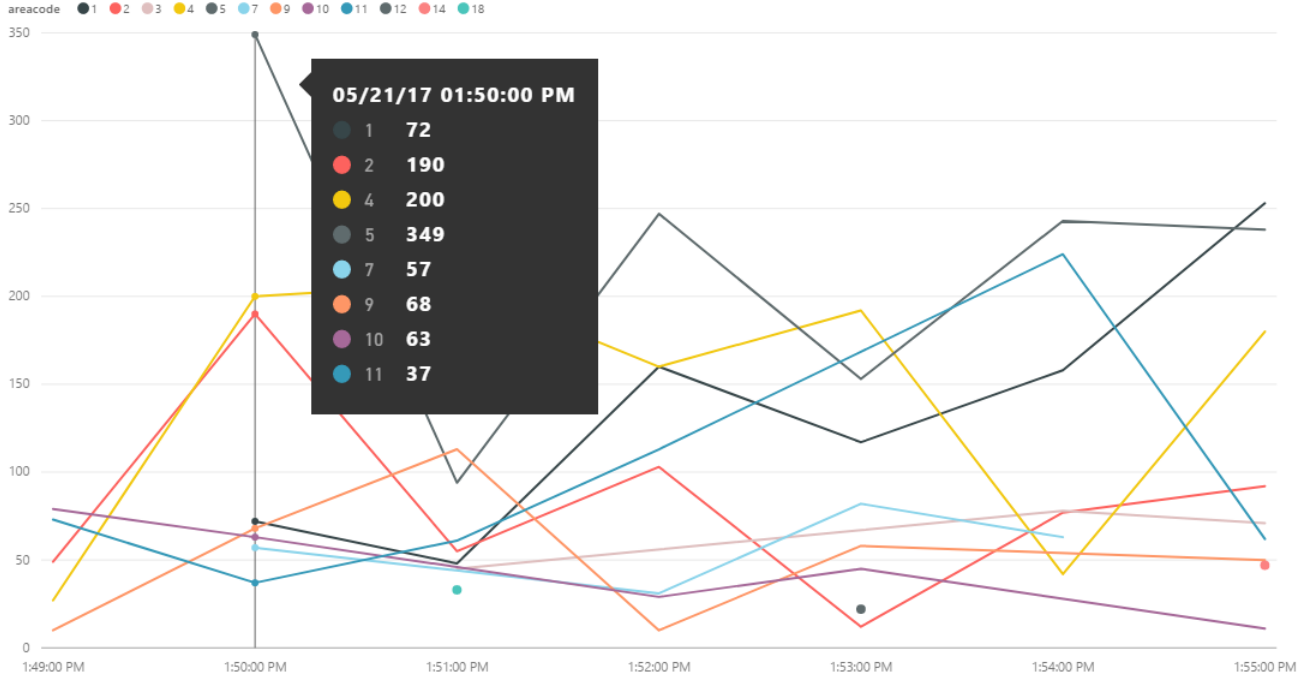
Query 5: Show the total 'Amount' of 'Type = 1' transactions per 'Area Code' of the last hour. Repeat once every hour (use a tumbling window).

```
SELECT
  CAST([atmRef].[area_code] AS BIGINT) AS AreaCode,
  SUM(CAST([BDSMastersInput].[Amount] AS BIGINT)) AS TotalAmount,
  System.Timestamp AS Time
INTO
  [BDSMastersOutput]
FROM
  BDSMastersInput
INNER JOIN [atmRef]
  ON CAST([atmRef].[atm_code] AS BIGINT) = CAST([BDSMastersInput].[atmCode] AS BIGINT)
WHERE CAST([BDSMastersInput].[Type] AS BIGINT) = 1
GROUP BY CAST([atmRef].[area_code] AS BIGINT), TumblingWindow(hour, 1)
```

```
[
  {
    "areacode": 2,
    "totalamount": 76,
    "time": "2017-05-21T13:00:00.0000000Z"
  },
  {
    "areacode": 4,
    "totalamount": 235,
    "time": "2017-05-21T13:00:00.0000000Z"
  },
  {
    "areacode": 9,
    "totalamount": 65,
    "time": "2017-05-21T13:00:00.0000000Z"
  },
  {
    "areacode": 11,
    "totalamount": 112,
    "time": "2017-05-21T13:00:00.0000000Z"
  },
  {
    "areacode": 5,
    "totalamount": 143,
    "time": "2017-05-21T13:00:00.0000000Z"
  }
]
```


Queries' Execution [8] – Query 5


totalamount by time and areacode



Queries' Execution [9]

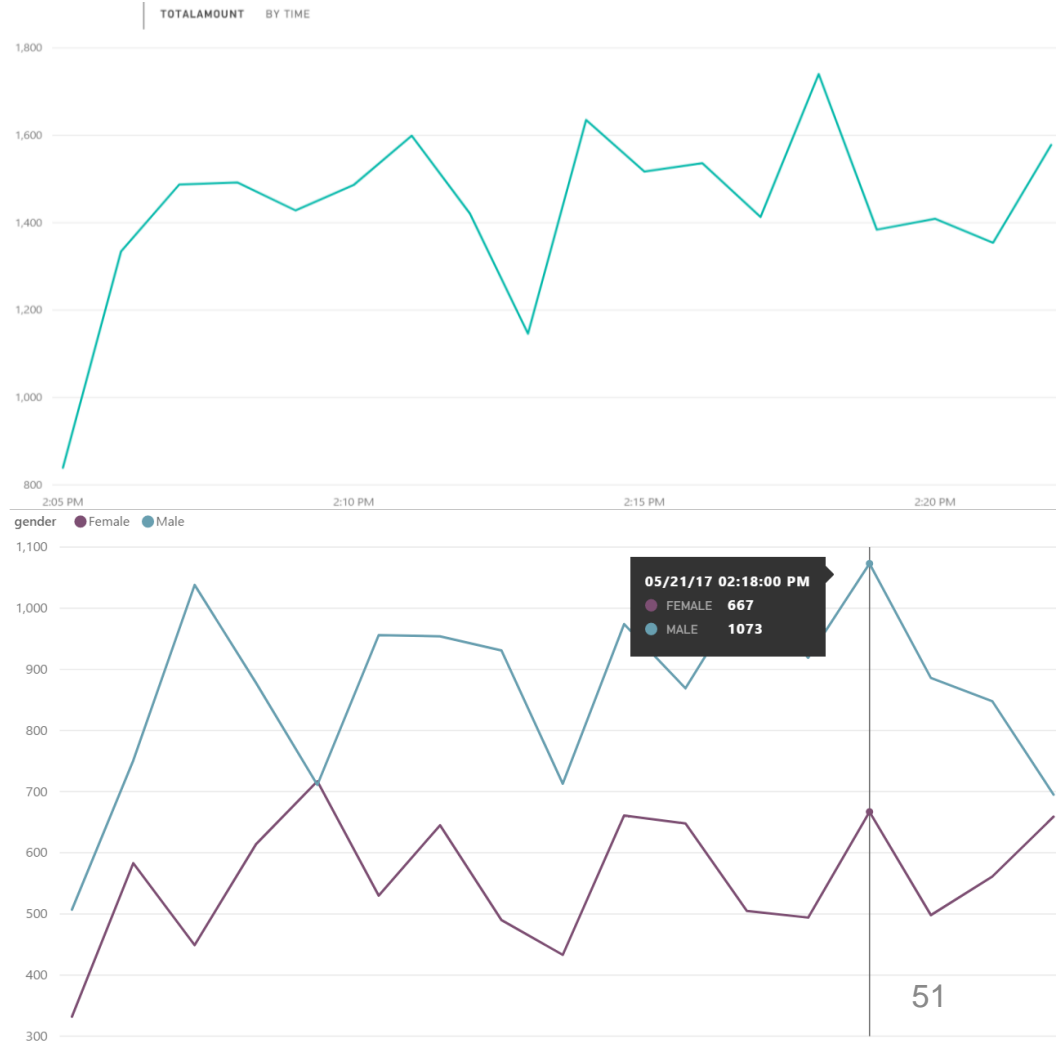
Query 6: Show the total 'Amount' per ATM's 'City' and Customer's 'Gender' of the last hour. Repeat once every hour (use a tumbling window).

```
SELECT
    [areaRef].[area_city] AS City,
    [customerRef].[gender] AS Gender,
    SUM(CAST([BDSMastersInput].[Amount] AS BIGINT)) AS TotalAmount,
    System.Timestamp AS Time
INTO
    [BDSMastersOutput]
FROM
    BDSMastersInput
INNER JOIN [customerRef]
    ON CAST([customerRef].[card_number] AS BIGINT) = CAST([BDSMastersInput].[CardNumber] AS BIGINT)
INNER JOIN [atmRef]
    ON CAST([atmRef].[atm_code] AS BIGINT) = CAST([BDSMastersInput].[ATMCode] AS BIGINT)
INNER JOIN [areaRef]
    ON CAST([areaRef].[area_code] AS BIGINT) = CAST([atmRef].[area_code] AS BIGINT)
GROUP BY [areaRef].[area_city], [customerRef].[gender], TumblingWindow(hour, 1)
```



Queries' Execution [10] – Query 6

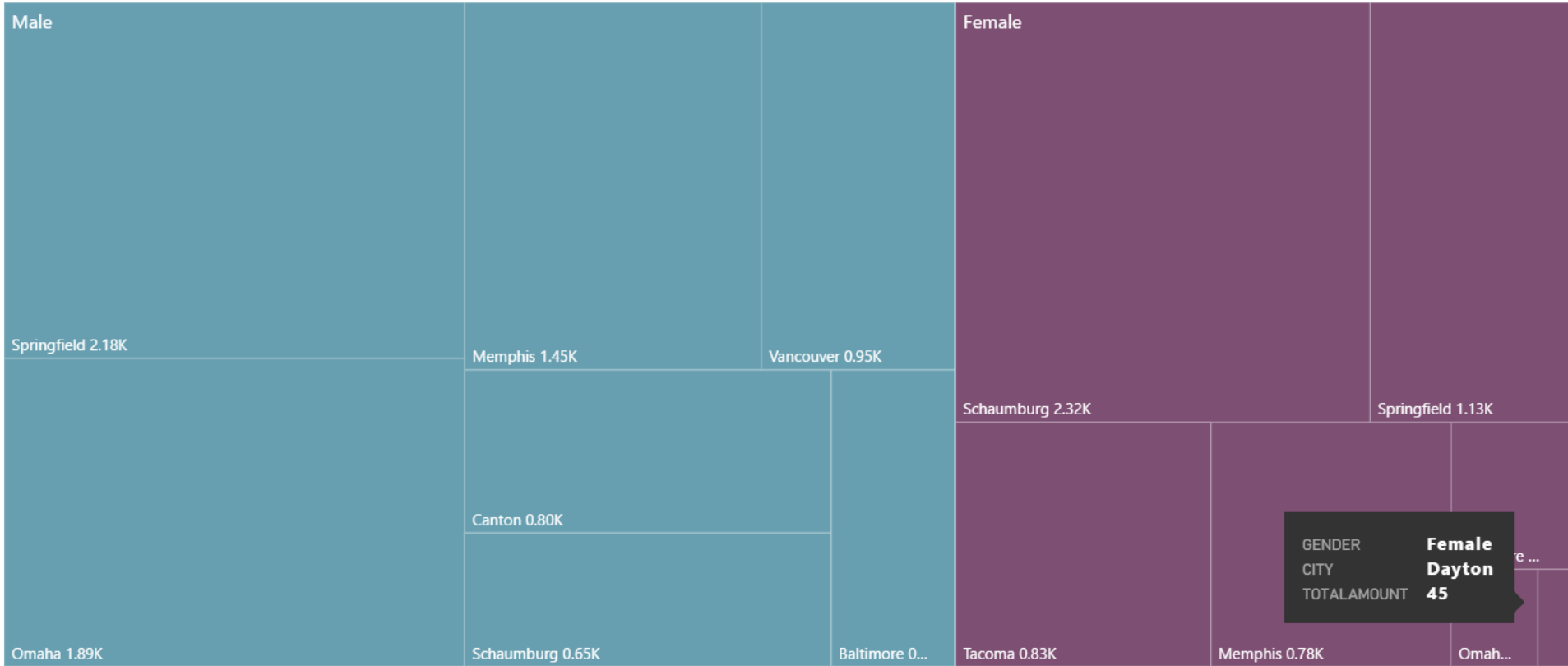
```
[  
  {  
    "city": "Springfield",  
    "gender": "Male",  
    "totalamount": 297,  
    "time": "2017-05-21T13:00:00.0000000Z"  
  },  
  {  
    "city": "Baltimore",  
    "gender": "Male",  
    "totalamount": 19,  
    "time": "2017-05-21T13:00:00.0000000Z"  
  },  
  {  
    "city": "Omaha",  
    "gender": "Male",  
    "totalamount": 245,  
    "time": "2017-05-21T13:00:00.0000000Z"  
  }  
]
```



Queries' Execution [11] – Query 6

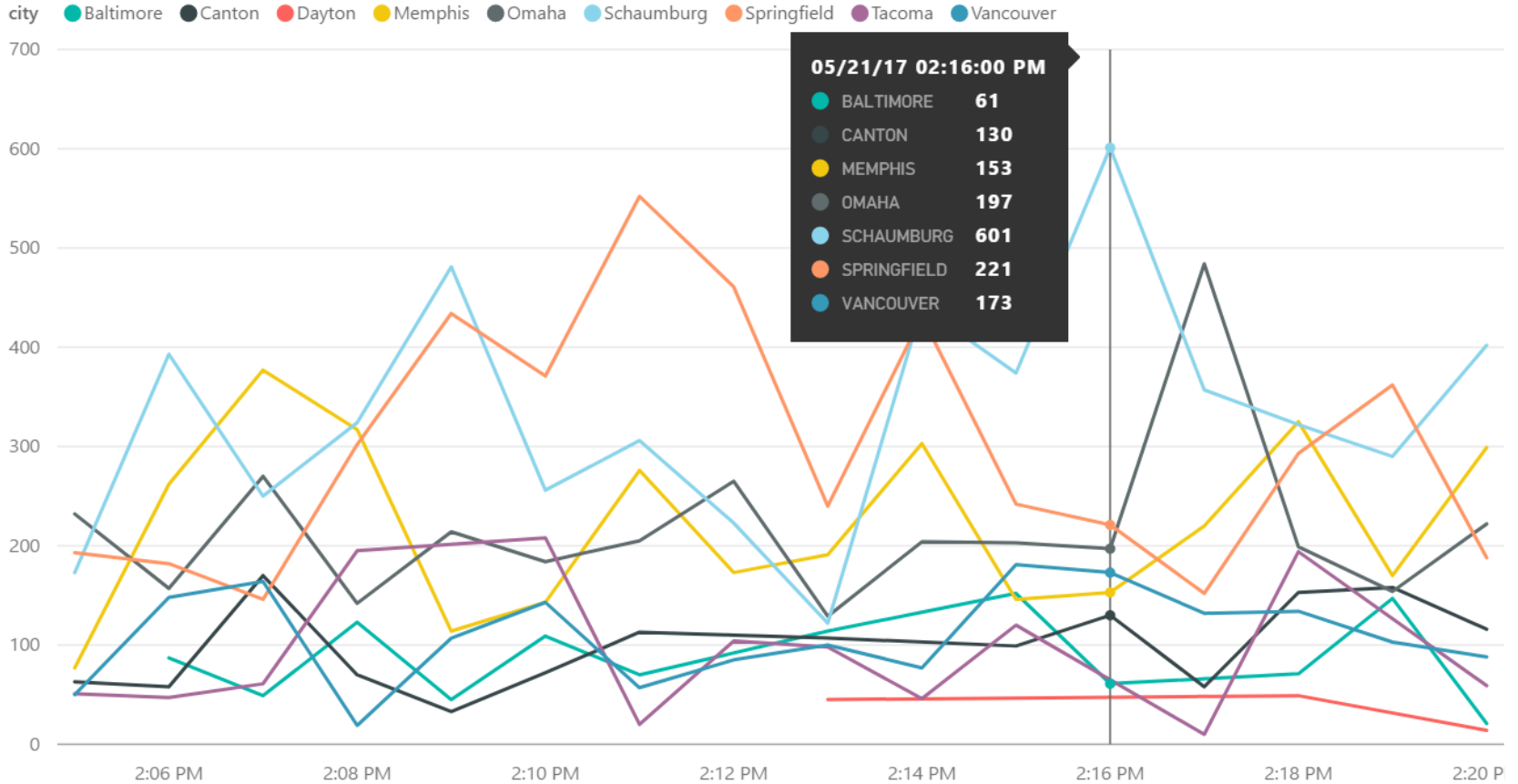
TOTALAMOUNT BY GENDER AND CITY

gender ● Male ● Female



Queries' Execution [12] – Query 6


TOTALAMOUNT BY TIME AND CITY



Queries' Execution [13]

Query 7: Alert (SELECT '1') if a Customer has performed two transactions of 'Type = 1' in a window of an hour (use a sliding window).

```
SELECT
    [customerRef].[first_name] AS Name,
    [customerRef].[last_name] AS Surname,
    CAST([BDSMastersInput].[CardNumber] AS BIGINT) AS CardNo,
    COUNT (*) AS Transactions,
    System.Timestamp AS Time
INTO
    [BDSMastersOutput]
FROM
    BDSMastersInput
INNER JOIN [customerRef]
    ON CAST([customerRef].[card_number] AS BIGINT) = CAST([BDSMastersInput].[CardNumber] AS BIGINT)
WHERE CAST([BDSMastersInput].[Type] AS BIGINT) = 1
GROUP BY [customerRef].[first_name], [customerRef].[last_name], CAST([BDSMastersInput].[CardNumber] AS BI
GINT), SlidingWindow(hour, 1)
HAVING Transactions = 2
```




Queries' Execution [14] – Query 7

```
[
  {
    "name": "Angela",
    "surname": "Moreno",
    "cardno": 3534633361736454,
    "transactions": 2,
    "time": "2017-05-21T12:01:01.0010000Z"
  },
  {
    "name": "Gerald",
    "surname": "Young",
    "cardno": 50384191807294800,
    "transactions": 2,
    "time": "2017-05-21T12:01:01.0010000Z"
  },
  {
    "name": "Richard",
    "surname": "Russell",
    "cardno": 5200253312538103,
    "transactions": 2,
    "time": "2017-05-21T12:01:01.0010000Z"
  },
  {
    "name": "Bruce",
    "surname": "Morrison",
    "cardno": 5602246755688900,
    "transactions": 2,
    "time": "2017-05-21T12:01:01.0010000Z"
  }
]
```

Queries' Execution [15]

Query 8: Alert (SELECT '1') if the 'Area Code' of the ATM of the transaction is not the same as the 'Area Code' of the 'Card Number' (Customer's Area Code) - (use a sliding window).

```
SELECT
    CAST([atmRef].[area_code] AS BIGINT) AS AtmAreaCode,
    CAST([customerRef].[area_code] AS BIGINT) AS CustomerAreaCode,
    COUNT (*),
    System.Timestamp AS Time
INTO
    [BDSMastersOutput]
FROM
    BDSMastersInput
INNER JOIN [customerRef]
    ON CAST([customerRef].[card_number] AS BIGINT) = CAST([BDSMastersInput].[CardNumber] AS BIGINT)
INNER JOIN [atmRef]
    ON CAST([atmRef].[atm_code] AS BIGINT) = CAST([BDSMastersInput].[ATMCode] AS BIGINT)
WHERE CAST([atmRef].[area_code] AS BIGINT) != CAST([customerRef].[area_code] AS BIGINT)
GROUP BY CAST([atmRef].[area_code] AS BIGINT), CAST([customerRef].[area_code] AS BIGINT), SlidingWindow(h
our, 1)
```



Queries' Execution [16] – Query 8

```
[
  {
    "atmareacode": 10,
    "customerareacode": 1,
    "count": 1,
    "time": "1970-01-01T12:01:01.0010000Z"
  },
  {
    "atmareacode": 4,
    "customerareacode": 2,
    "count": 11,
    "time": "1970-01-01T12:01:01.0010000Z"
  },
  {
    "atmareacode": 3,
    "customerareacode": 4,
    "count": 1,
    "time": "1970-01-01T12:01:01.0010000Z"
  },
  {
    "atmareacode": 9,
    "customerareacode": 10,
    "count": 3,
    "time": "1970-01-01T12:01:01.0010000Z"
  },
  {
    "atmareacode": 10,
    "customerareacode": 6,
    "count": 1,
    "time": "1970-01-01T12:01:01.0010000Z"
  }
]
```

Queries' Execution [17] – Alert: Queries 7 + 8

Microsoft Azure bdsmastersStream - Alert rules > Edit Alert

Edit Alert

Save Discard Disable Delete

Name
Alert Two Transactions

Description
Alert

Source
Alert on
Metrics

Criteria
Subscription
Free Trial
Resource group
BDSMasters
Resource
bdsmastersStream
Metric
Output Events
6,000

Microsoft Azure bdsmastersStream - Alert rules > Edit Alert

Edit Alert

Save Discard Disable Delete

Condition

Greater than or equal to

* Threshold

1

count

Period

Over the last 5 minutes

Microsoft Azure bdsmastersStream - Alert rules

bdsmastersStream - Alert rules
Stream Analytics job

- Search (Ctrl+F)
- Locate
- Event ordering
- Error policy
- GENERAL
- Tools
- Properties
- MONITORING
- Metrics
- Alert rules
- Diagnostics logs
- SUPPORT + TROUBLESHOOTING
- Resource health

Columns + Add metric alert + Add activity log alert

* Subscription Free Trial Source All sources Resource group BDSMasters Resource type Stream Analytics jobs Resource bdsmastersStream

Free Trial > BDSMasters > bdsmastersStream

Diagnostics settings

Filter alerts...

NAME	STATUS	CONDITION	RESOURCE GROUP	RESOURCE	LAST FIRED
Alert Two Transactions	Warning	Output Events >= 1 ...	BDSMasters	bdsmastersStream	16 min ago

Queries' Execution [18] – Alert: Queries 7 + 8


Microsoft Azure Alerts <alerts-noreply@mail.windowsazure.com>

to me ▾

 Microsoft

Azure

Dear Customer,

 'OutputEvents GreaterThanOrEqual 1 (Count) in the last 5 minutes' was activated for bdsmastersstream

You can view more details for this alert in the [Microsoft Azure Management Portal](#).

RULE NAME: Alert Two Transactions

RULE DESCRIPTION: Alert Two Transactions

SERVICE: streamingjobs: bdsmastersStream (BDSMasters)

METRIC: Total OutputEvents

ALERT ACTIVATED TIME (UTC): 5/21/2017 2:50:49 PM

References

[1] *En.wikipedia.org. (n.d.). Microsoft Azure. [online] Available at: https://en.wikipedia.org/wiki/Microsoft_Azure [Accessed 21 May 2017].*

[2] *Docs.microsoft.com. (n.d.). Introduction to Stream Analytics. [online] Available at: <https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-introduction> [Accessed 21 May 2017].*