

DevOps

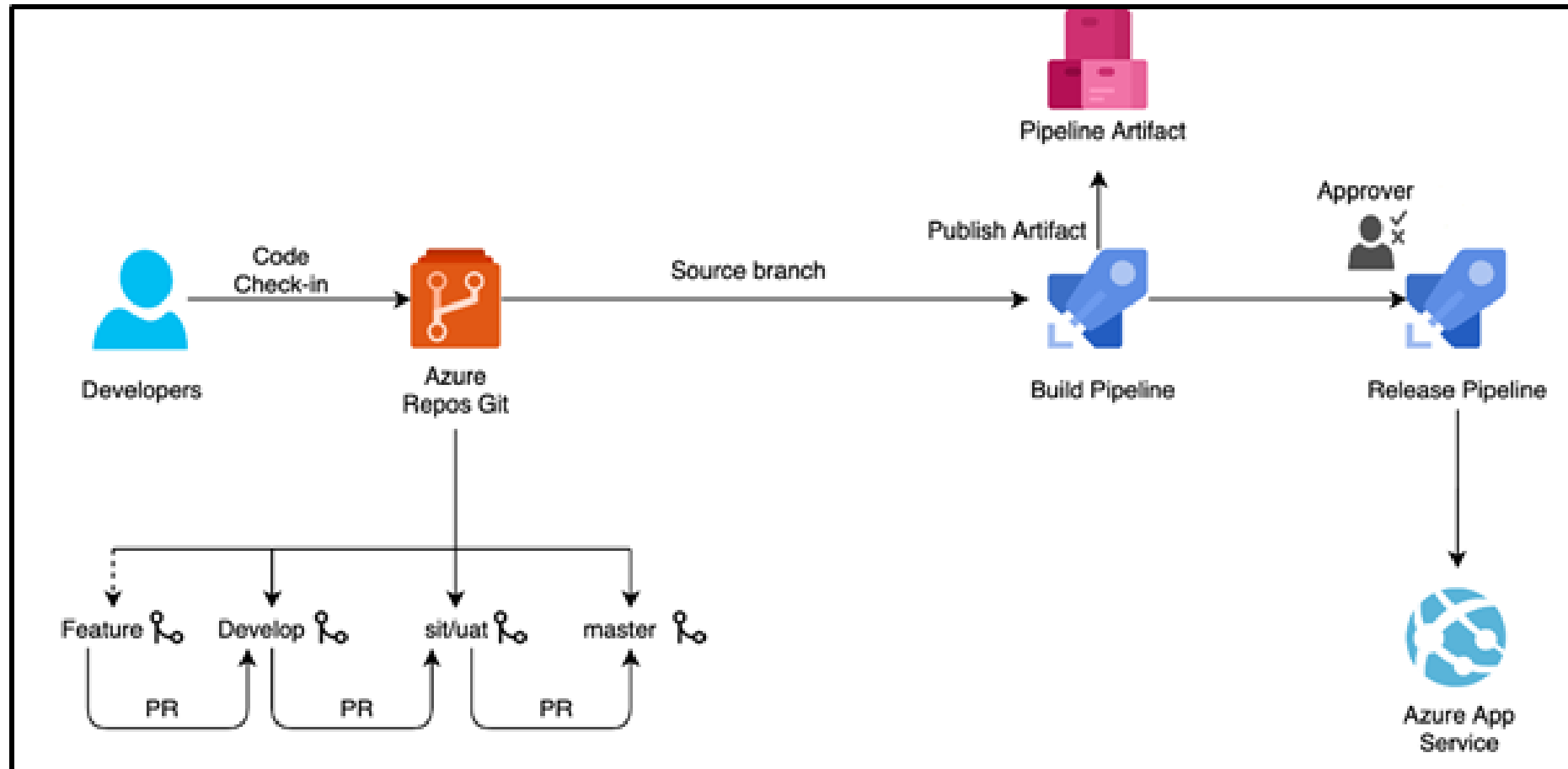
Carlos X. Tacuri

¿Qué es DevOps ?

- Development + Operations, designa la unión de personas, procesos y tecnología para ofrecer valor a los clientes de forma constante.
- Permite que los roles que antes estaban aislados se coordinen y colaboren para producir productos mejores y más confiables.
- Los equipos adquieren la capacidad de responder mejor a las necesidades de los clientes, aumenta la confianza en las aplicaciones que crean y se alcanzan los objetivos empresariales en menos tiempo.

¿Qué es Azure DevOps?

Conjunto de herramientas y servicios que nos ayudan en la administración del ciclo de vida de los proyectos de desarrollo de software.



Integración Continua – CI

The screenshot shows the Azure DevOps interface. On the left is a navigation pane with the following items: Boards, Repos, Pipelines (selected), Pipelines, Environments, Releases, Library, Task groups, Deployment groups, Artifacts, and Project settings. The main area displays the details for 'Agent job 1', which is running on an agent. The job steps are listed as follows:

Step Name	Tool/Engine
Restore	.NET Core
Build	.NET Core
Test	.NET Core
Publish	.NET Core
buildAndPush	Docker
Copy Files to: \$(build.artifacts)	Copy files
Publish Artifact	Publish build artifacts

The screenshot shows the 'Jobs in run #2021...' view. The top section shows the run details: DevOpsOctubre-ASP.NET Core-CI (1). Below is a table of jobs:

Job Name	Duration
Agent job 1	1m 58s
Initialize job	5s
Checkout calo...	2s
Restore	13s
Build	6s
Test	13s
Publish	1s
buildAndPush	59s
Copy Files to...	<1s
Publish Artifact	14s

Below the jobs table is a detailed log for 'Agent job 1'. The log shows the following steps:

```
1 Pool: Azure Pipelines
2 Image: ubuntu-18.04
3 Agent: Hosted Agent
4 Started: mié at 21:35
5 Duration: 1m 58s
6
7 Job preparation parameters
8 ContinueOnError: False
9 TimeoutInMinutes: 60
10 CancelTimeoutInMinutes: 5
11 Expand:
12   MaxConcurrency: 0
13   ##### System Pipeline Decorator(s) #####
14
15 Begin evaluating template 'system-pre-steps.y
16 Evaluating: eq('true', variables['system.debugC
17 Expanded: eq('true', Null)
18 Result: False
19 Evaluating: resources['repositories']['self']
20 Expanded: Null
21 Result: False
22 Finished evaluating template 'system-pre-steps.
23 *****
```

Entrega Continua - CD

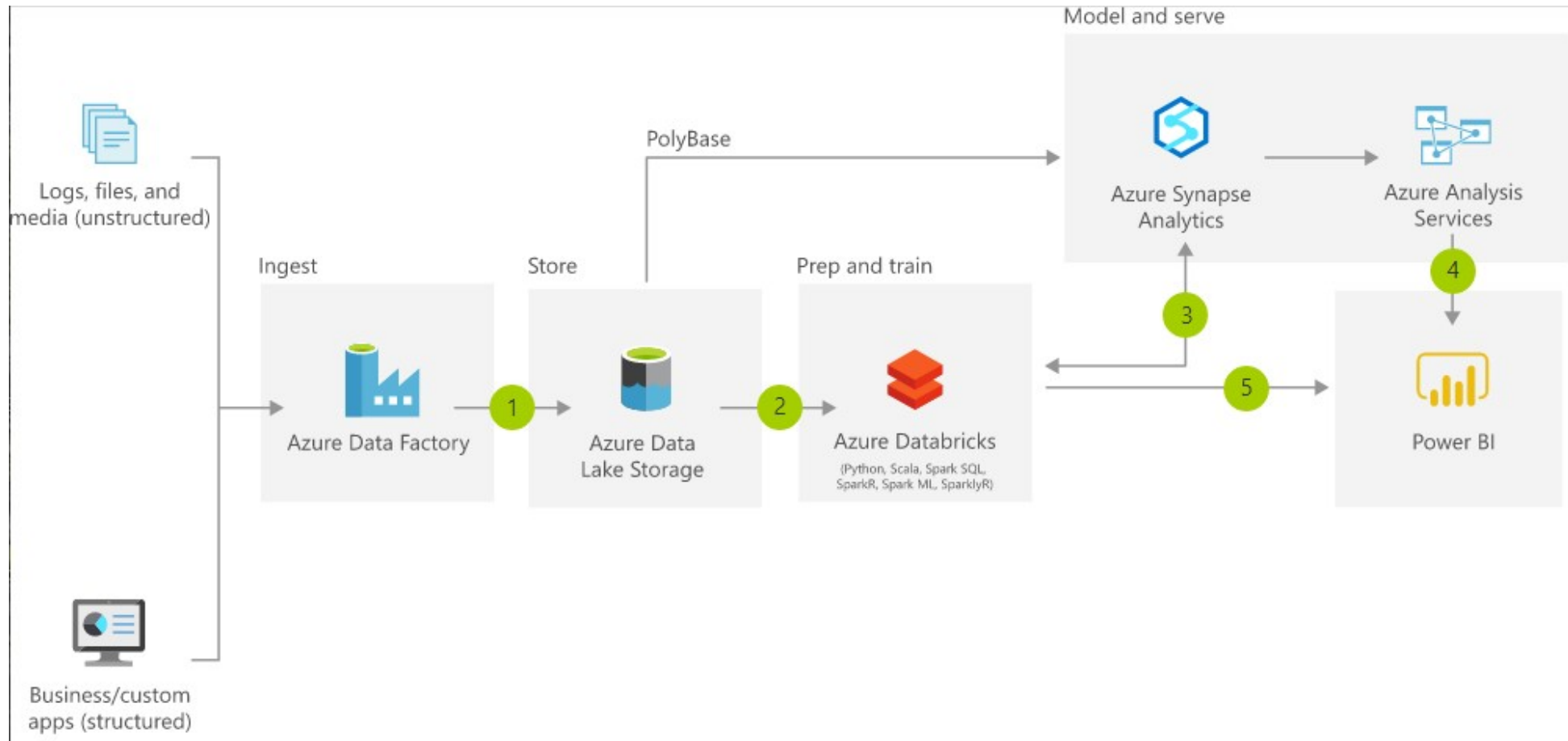
The screenshot displays the Azure DevOps web interface. On the left is a sidebar with navigation links: Overview, Boards, Repos, Pipelines (selected), Pipelines, Environments, Releases, Library, and Task groups. The main area shows the 'ReleasePipeline > Release-1' view. It includes tabs for Pipeline, Variables, and History, along with action buttons: Deploy, Cancel, Refresh, and Edit. The 'Release' section shows a 'Continuous deployment' for 'Carlos X Tacuri' at '7/11/2021 20:30'. Below this, an 'Artifacts' section lists a build artifact: '_DevopsOctubre-...' with version '20211108.2' from the 'master' branch. The 'Stages' section shows a single stage named 'Azure-Container' with a 'Succeeded' status and '1 warning' on '7/11/2021 20:33'. At the bottom, a browser address bar shows the URL 'http://pruebadevopscxt.eastus.azurecontainer.io/'.

Net Core 5.0 Running !!!! -v1 CI/CD CXT 07/11/2021 0836

Azure Databricks

- Es una herramienta de ingeniería de datos basada en la nube que se utiliza para procesar y transformar cantidades masivas de datos y explorar los datos a través de modelos de aprendizaje automático.
- Admite Python, Scala, R, Java y SQL, además de marcos y bibliotecas de ciencia de datos, como TensorFlow, PyTorch y scikit-learn.

Azure Databricks



Azure Databricks - Schema

default.population

Refresh

clusterdemo1

Schema:


	col_name ▲	data_type ▲	comment ▲	
1	Region	string	null	
2	Country	string	null	
3	Population Total	int	null	
4	Rural	int	null	
5	Urban	int	null	
6	Female	double	null	
7	Male	double	null	







Showing all 20 rows.

Sample Data:

	Region ▲	Country ▲	Population Total ▲	Rural ▲
1	Africa	Angola	31825295	10764270
2	Africa	Benin	11801151	6153002
3	Africa	Botswana	2303697	687147
4	Africa	Burkina Faso	20321378	14229029


Azure Databricks - Notebook

 clusterdemo1



Cmd 1

```
1 df = spark.sql('select * from population')
2 df.head(3)
```

▸  df: pyspark.sql.dataframe.DataFrame = [Region: string, Country: string ... 18 more fields]

Command took 0.25 seconds -- by carlosxtacuri@gmail.com at 7/11/2021 16:46:58 on clusterdemo1

Cmd 2

```
1 dfp = df.toPandas()
2 dfp.head(5)
```

▸ (1) Spark Jobs

Out[3]:

	Region	Country	Population Total	Rural	Urban	Female	Male	% Rural	% Urban	% Female	% Male	% Female rural	% Female urban	Female rural	Female urban	% Male rural	% Male urban
0	Africa	Angola	31825295	10764270	21061025	16080518.0	15744777.0	0.3382	0.6618	0.5053	0.4947	0.1709	0.3344	5438914	10641604	0.1673	0.3274
1	Africa	Benin	11801151	6153002	5648149	5909895.0	5891256.0	0.5214	0.4786	0.5008	0.4992	0.2611	0.2397	3081360	2828535	0.2603	0.2389

Power BI

File

Home

Help

Table tools

Column tools

Name

Urban

123

Data type

Whole number

\$%

Format

Whole number

\$

%

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Summarization

Sum

📁

Data category

Uncategorized

Structure

Formatting

Properties

📊

✕

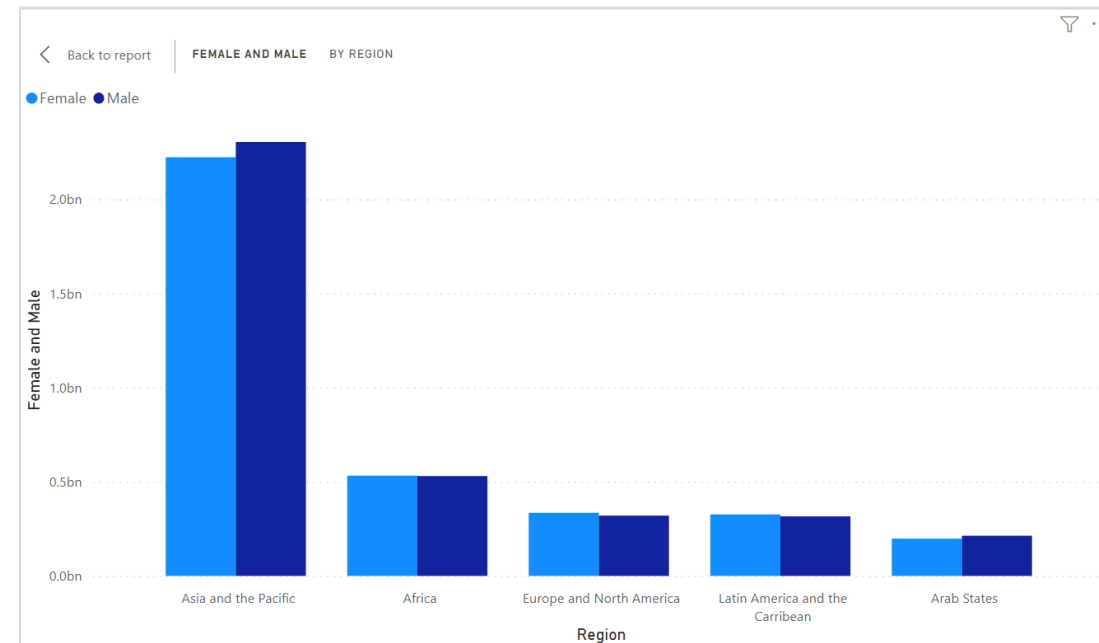
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Region	Country	Population Total	Rural	Urban	Female	Male	% Rural	% Urban
Africa	Angola	31825295	10764270	21061025	16080518	15744777	0.3382	0.6618
Africa	Benin	11801151	6153002	5648149	5909895	5891256	0.5214	0.4786
Africa	Botswana	2303697	687147	1616550	1189584	1114113	0.2983	0.7017
Africa	Burkina Faso	20321378	14229029	6092349	10173606	10147772	0.7002	0.2998
Africa	Burundi	11530580	9989403	1541177	5811591	5718989	0.8663	0.1337
Africa	Cabo Verde	549935	185906	364029	273900	276035	0.3381	0.6619
Africa	Cameroon	25876380	11135124	14741256	12936456	12939924	0.4303	0.5697
Africa	Central African Republic	4745185	2763121	1982064	2393209	2351976	0.5823	0.4177
Africa	Chad	15946876	12234603	3712273	7986357	7960519	0.7672	0.2328
Africa	Comoros	850886	602734	248152	421679	429207	0.7084	0.2916
Africa	Congo, Dem. Rep.	86790567	47694888	39095679	43471464	43319103	0.5495	0.4505



Gracias