

Data running “after” Red Hat OpenShift

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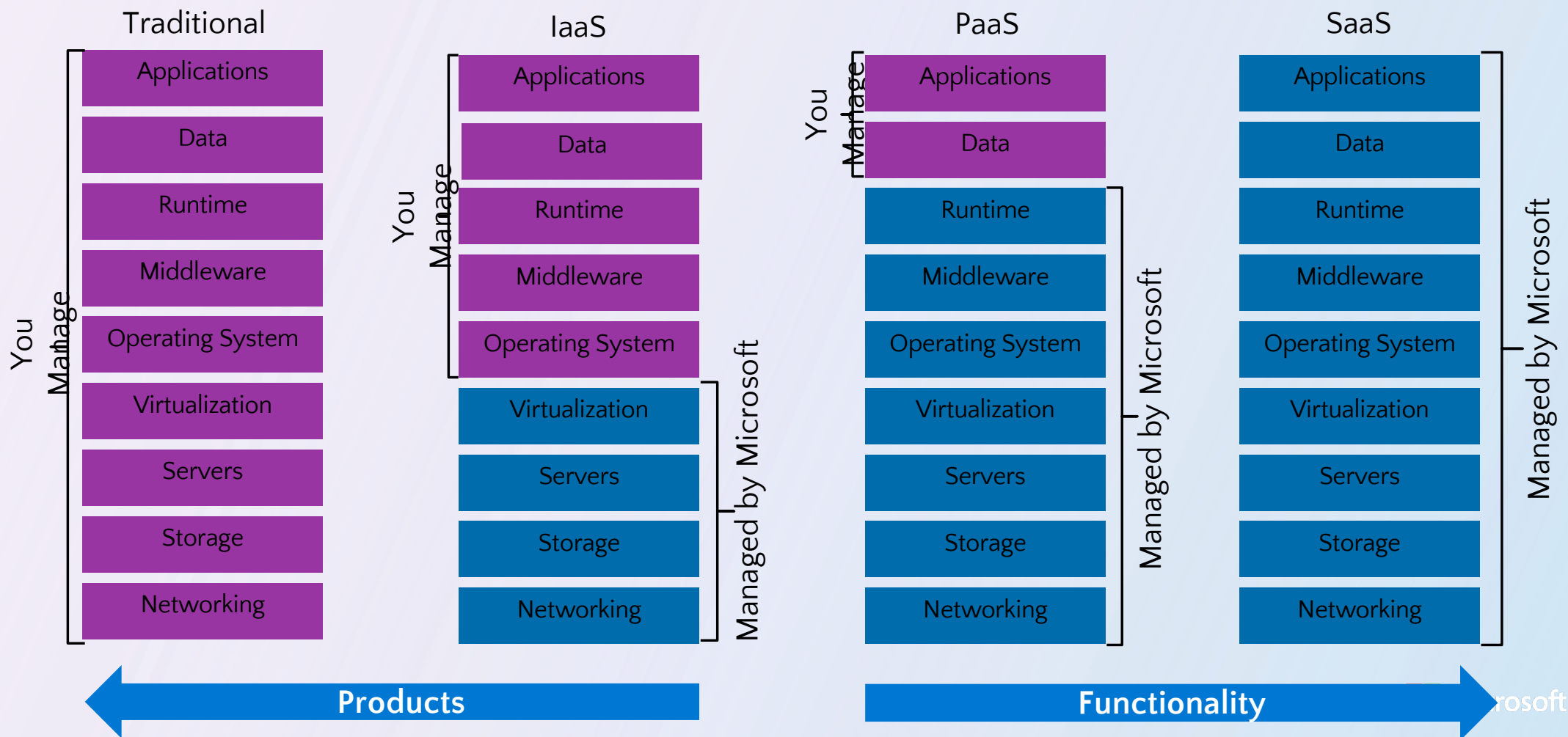


The Cloud





Cloud Models



Denmark East



- One region with three underlying physical locations at Roskilde, Køge and Høje Tåstrup
Three locations ensure Microsoft can deliver high SLA
Under construction and going live in 2025

Why use Danish region?



Hyper-scale cloud



Security and compliance



Local innovation and growth



Green IT operations
ESG



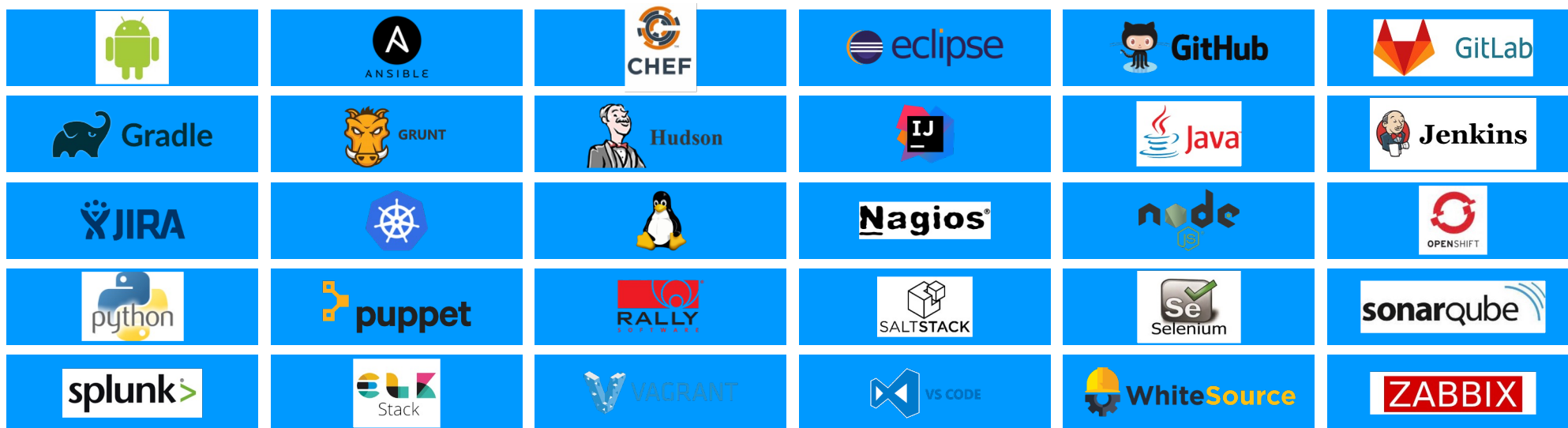
Data at Danish
location



Very low latency



Azure runs what you need



Microsoft is one of the biggest OpenSource contributors

What is going on ?

GenAI is.....

GENERATIVE AI COMPANIES WITH >\$5MM RAISED (AS OF MARCH 2023)

Total Raised (\$MM USD)

Segment / Modality	\$5 - 15MM	\$16 - 40MM	\$41 - 100M	\$100M+ Raised
Speech & Audio	krisp ONE AI loora V+ZY	SecondNature MURF AI astrid. LOVO TENYX POWCASTER REPLICA	skit Corti symbLAI VOICEMOD deepdub.ai supertone	AssemblyAI Speak descript ushur DEEPBRAIN AI Balto Eloq RIVERSIDE PERSADO diaload ASAPP OBSERVE-AI CRESTA replicant PolyAI DESPORAH
Text, Chat, & Translation	nlx LAVENDER personal ai	Landbot copy.ai copySmith Flowrite Tymely	mavens.ai ultimate.ai WRITER regie.ai peppercontent agolo	Deepl Kasisto HISTORIED textlio Jasper ada grammarly Forethought
Image, Visual, & Design	Simplified PRISMA skippr	moddy ZMO.AI Art Blocks reface VIZCOM	Imagen PhotoRoom Facet vizard beautiful.ai	Typeface tome Lightricks
Video	Peech GLOSSAI Waymark REMBRAND Colossyan	Raphrase.ai Reelcat Video REMBRAND detail	VEED.IO invideo Hour One Grain Twelve Labs	synthesia D-ID VIDEOVERSE
3D, Simulation, & XR	Kinetix FABLE METAPHYSIC scenario	LINEAR CSM Marla	rct.ai alethea	inworld LELO INC
General Productivity	Prodigal onloop viable FATHOM	SPRITT ask-ai	xembly mem fireflies.ai	Otter.ai Sana Labs
Search	seek nuclia	Perplexity Metaphor DASHWORKS	Hebbia vectara Weaviate	neeva YOU
Marketing BI & Website Design	madgicx Demandwell Durable MarketMuse	Omneky Outplay Quattr anyword @unbounce	Quattr peppercontent SURFER Creatext testing.ai {lyne}	[PERSADO]
Code	anima bloop.	tabnine Magic	warp	replit
Music	moises	SPLASH	ai	
Health & Drug Discovery	Volence SYNTEGRA Profluent Atomica.ai sorcero Antiverse ATROPOSHEALTH	wysa abridge orda.ai BASECAMP RESEARCH Nabla Pictorlabs JURA BIO retrace ALPHA BIO Redesign Science	Arzeda ATOMIC AI	Generate Biomedics Weebot Health Indica Medicine Enveda MOCLONE Paige BigHot
Other Specialized Verticals	DARWIN AI SWAPP TERM SCOUT ROSS XOKind Harvey zuma	Archistar DATA SKRIVE Casetext REPLICA MAD	Primer	
ML Ops / Dev Tools	LatticeFlow Dhiwise WHYLABS xetdata mystic FIXIE	Pinecone mosaic aporia deepset iterative Outerbounds	comet Lightning ROBUST INTELLIGENCE	anyscale OctoML run:ai Hugging Face Weights & Biases
Data (e.g., Synthetic, Labeling)	MANTIUM Datomize lang.ai SaturnCloud	MOSTLY-AI Synthesis AI zilliz gretel TOMIC scale Snorkel		
Infra / Research / Model Develop.		generally intelligent LLM FOUNDATION chooch Unlikely	AI21labs runway	ANTHROPIC ADEPT OpenAI Inflection cohere Character.AI

Sources: Pitchbook, Crunchbase, public sources
Note: Includes private, non-exited, companies with over \$5MM of total fundraising raised (as disclosed by Pitchbook)
For companies that are multi-modal or multi-segment, we selected what we believe is the primary modality/segment

What happened ?

ARTIFICIAL INTELLIGENCE STARTUPS

SALES & CUSTOMER SUPPORT

Woebot Health
 PolyAI Ultimate.
 dialpad
 CRESTA
 ASAPP
 haptik
 OBSERVE-AI
 ada
 samespace

MARKETING

Jasper
 anyword
 regie.ai
 madgicx
 Writesonic
 Demandwell
 LAVENDER
 Quattr
 peppercontent
 SURFER
 Creatext
 testing.ai
 {lyne}
 text.cortex
 WriterZen
 GoCharlie

VIDEO MAKER

plask
 rav.ai
 runway
 Peech
 VEED.IO
 unscreen
 lumen5
 kamua
 Supercreator.ai

CODE GENERATION

Codacy
 seek
 Mintlify
 bloop. AI
 2sql*
 Codiga
 mutable.ai
 tabnine
 durable

.ai
 /ING
 ia
 not?
 AI
 IP
 Consumer

Generative AI has been called the “next frontier in machine learning and AI”

- Until recently, machine learning was largely limited to predictive models, used to observe and classify patterns in content. Generative AI changed that.
 - ❓ Rather than simply *perceive* and *classify* a photo of a cat, machine learning is now able to *create* an image or text description of a cat on demand.
- Text applications are most advanced right now, but other modes, like code, speech, and images, are rapidly maturing.
- There’s a lot of tech industry excitement these days about generative tools like DALL-E and ChatGPT.



1. New York Times [access notes](#)

Note: DALL-E [generated this image](#) from a command for “cats playing chess.”

Image source: [New York Times](#)¹

Best Friends



Ensure that artificial
general intelligence (AGI)
benefits humanity



Empower every person and
organization on the planet
to achieve more

Azure OpenAI Service

Language

**GPT-4,
3.5-Turbo**

Multi-Modal

***GPT-4o*
GPT-4-Turbo with
Vision**

Fine Tuning

***GPT-4*
GPT-3.5-Turbo**

Images

DALL·E 3

Transcription & Translation

Whisper

On Your Data GA

Azure AI Studio GA

Assistants API Preview

Provisioned Throughput

Microsoft Copilot

Microsoft Security

Microsoft Windows

GitHub

LinkedIn

Xbox

Azure AI **unlocks intelligence**
across Microsoft products



and empowers every industry
to **build custom** AI apps

Chat with your data

Intelligent call centers

Your own copilots

Information discovery

Hyper-personalization



Is data being left behind ?

The Challenges

- Application Teams are applying modern DevOps/MLOps principles to deliver business value quicker
- Data teams are being left behind – DATA QUALITY !!!
- The modern data platform is just as sophisticated as the application platform
- They don't need to be different, the same DevOps/MLOps principles we've been using for the application platform must be used for the data platform – called DataOps
- Data teams must, and should, be 1-to-1 working with the application teams



Application TEAMS are MODERNIZING WITH KUBERNETES

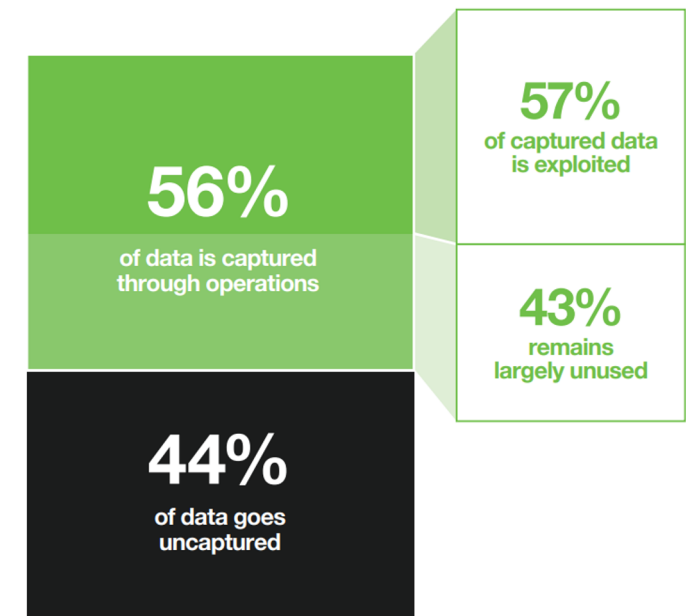


Application Developer



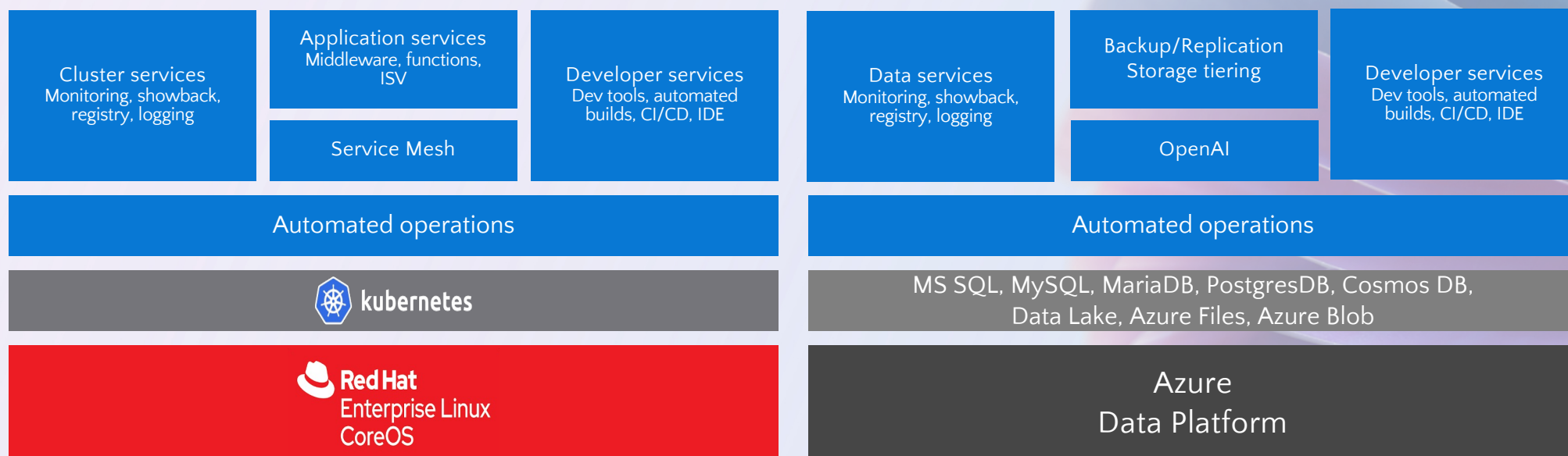
Applications and Data

- Applications are the main driver for capturing data
- Data needs to be used – “to be data driven”
- New disciplines occurs like AI, ML and GenAI
- So, the application landscape will continue to change
- And Data Platforms needs to be modernized too
- Application and data development must go “hand in hand”



Source: The Seagate Rethink Data Survey, IDC, 2020

The ideal solution could be Azure Red Hat Openshift and a Data Platform



Let **Red Hat** and **Microsoft** ...

Manage all your clusters/databases
Secure your nodes

Monitor and operate your VMs
Manage environment patches

Backup/recovery
Defend your environment

Data : Capabilities



Capability	Description
Consistency	A consistent solution design to ensure simple operation and further development of solutions. Replacing resources must be flexible.
Modulated	Solutions in the data infrastructure are developed modularly with a well-defined interface, so it is easy to replace subcomponents.
Technology independency	The architecture must be independent of the technology being used. This means that no matter what technology is being used, the different processes, functionalities and layers are the same.
Scalability	Scalability (up/down) is part of the solution design from the beginning, so that implementation and operations are not affected by bottlenecks, downtime or a possible mandatory purchase of unforeseen licenses.
Agility	The focus is on MVP (minimum viable product) and ongoing feedback to previous steps in the data flow. It is OK to fail, and solution designs must be tested as soon as possible during the development process.
Security	Security is incorporated into the general architecture as well as in the concrete solution designs, both in terms of information security and privacy.
Data encapsulation	Data in the data infrastructure is accessed through an interface that enables control of who has access to what. The interface allows you to make changes to the data infrastructure without affecting external systems.
Reuse	Solutions are being developed for reuse. The architecture will consist of templates for solution designs that shorten time-to-market and ensure standardization.
Feedback	The architecture is continuously adapted and improved based on feedback from the different users of data.

Data : Layers

New
systems

Legacy
systems

Ingest

Characteristics

- Consume raw data
- High degree of integration points
- Very technical
- No transformation

Transform

Characteristics

- Technical useable data
- Getting data from ingest layer - only
- Very technical
- Place for technical transformations
- Adhere to company chosen standards

Publish

Characteristics

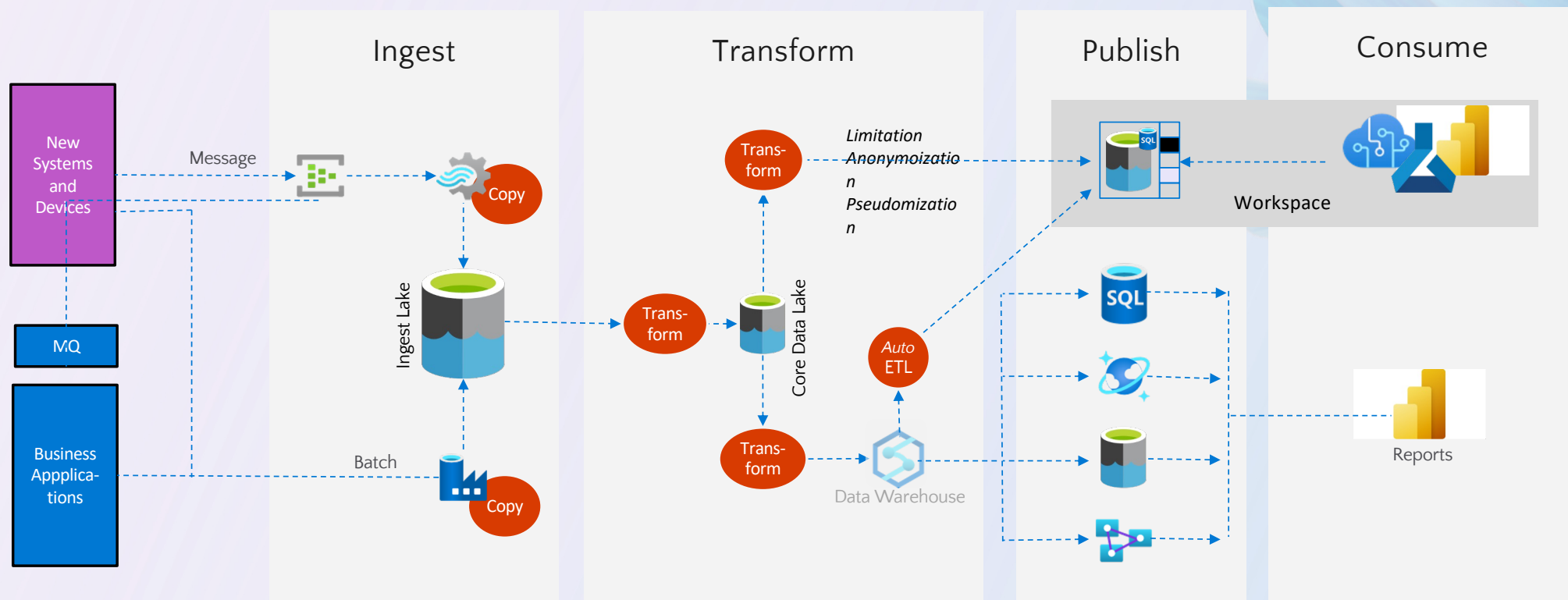
- Business useable data
- Data placed in whatever suitable technology for the end usage
- “Lives” as long as being used
- Can be recreated (by self-service)

Consume

Characteristics

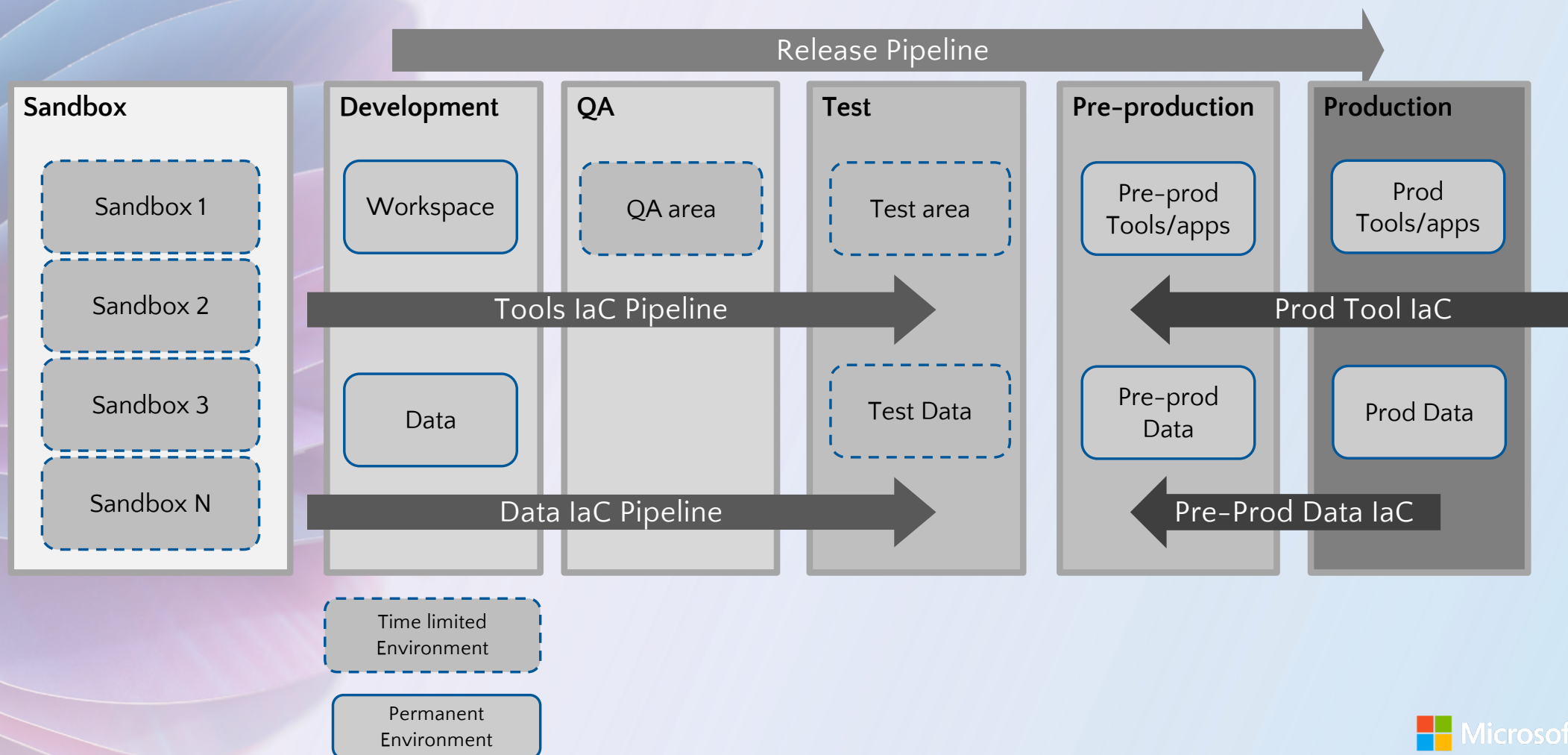
- End user tools
- Business Intelligence
- Reporting
- Machine Learning
- Artificial Intelligence

Data : Process



Important abbreviations: IaC, IaD, Medallion

Data : Environments / Pipelines





Join us for the
Azure Red Hat OpenShift AI Workshop
November 14th at Microsoft in Kgs. Lyngby

red.ht/aro-ai-cph

Thank you

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https://github.com/jcordtz/a_data_platform