Introducing

Cloud Pak for Data System
IBM Performance Server

Hemant R. Suri
Program Director, Offering Management
Data & AI, IBM Analytics
USA

Welcome to Virtual Enzee

Today's Topic:

Introducing
**Cloud Pak for Data System with
IBM (N)etezza Performance Server**

**Virtual Enzee Schedule and
Webcast Replay links are available on:**

PureData-Enzee
Community
IBM.

www.enzeecommunity.com

Call Logistics

Audio is broadcast via your computer speakers (no dial-in)

Q&A

Ask questions via the Q&A button

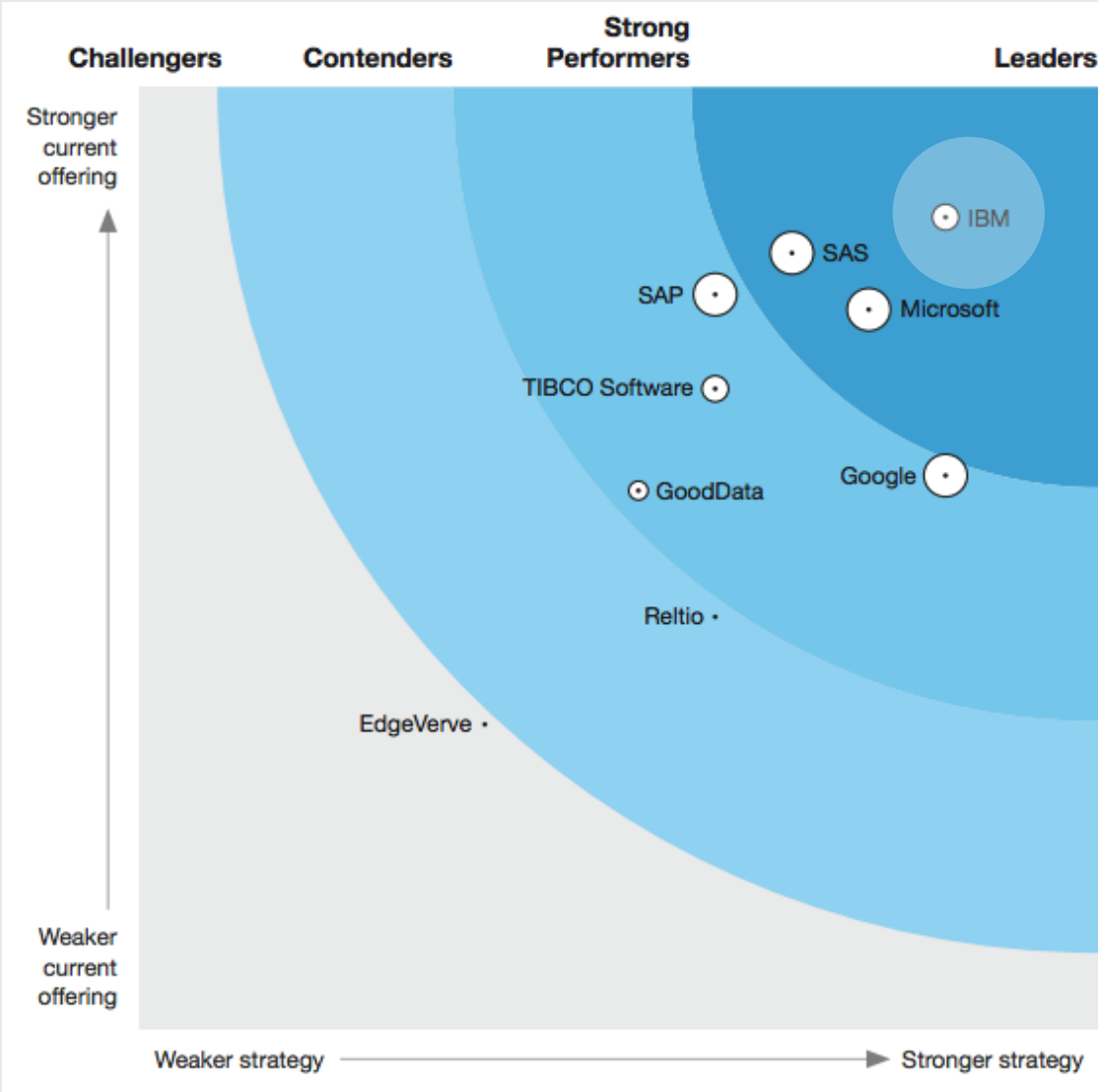Experiencing technical difficulties? Let us know via the Q&A button

Virtual Enzee: webcast series sharing information to maximize your success

Introducing Cloud Pak for Data

Forrester Wave for "Enterprise Insight Platforms"
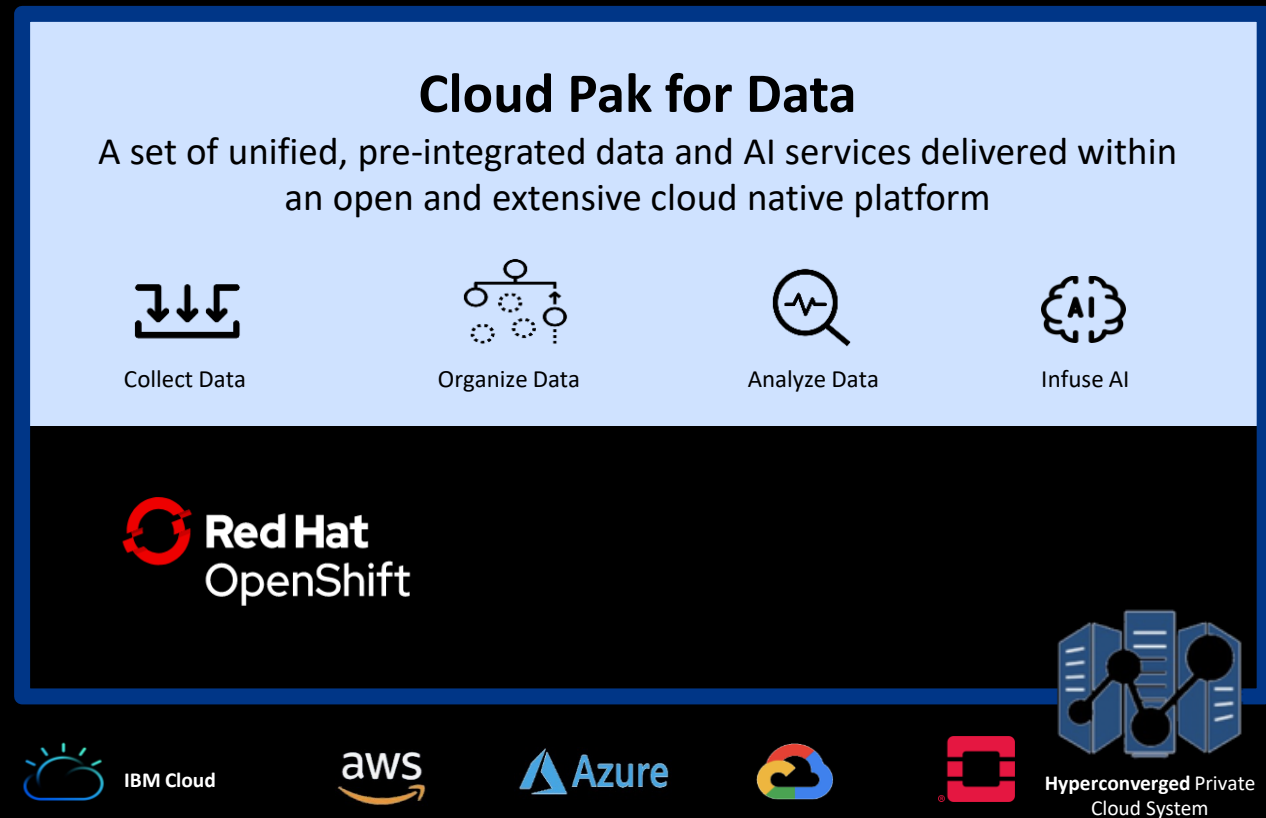# IBM Cloud Pak for Data is #1 (Top Ranked Leader)

	Forrester's weighting	EdgeVerve	GoodData	Google	IBM	Microsoft	Reltio	SAP	SAS	TIBCO Software
Current offering	50%	1.62	2.86	2.94	4.31	3.82	2.19	3.90	4.12	3.40
Data management	25%	0.75	1.80	2.00	5.00	3.50	3.10	4.30	4.30	3.80
Analytics tools	35%	1.80	2.80	2.40	4.40	4.20	0.70	4.80	5.00	4.20
Insight app development tools	15%	2.60	3.40	3.40	4.00	3.70	1.70	2.60	3.60	2.60
Platform	25%	1.66	3.66	4.34	3.66	3.66	3.66	3.00	3.00	2.34
Strategy	50%	1.80	2.60	4.20	4.20	3.80	3.00	3.00	3.40	3.00
Product vision	20%	3.00	5.00	3.00	5.00	5.00	3.00	1.00	3.00	5.00
Past performance	20%	0.00	3.00	5.00	1.00	5.00	3.00	1.00	5.00	3.00
Innovation road map	20%	3.00	1.00	5.00	5.00	1.00	3.00	3.00	3.00	3.00
Delivery model	20%	3.00	3.00	3.00	5.00	3.00	5.00	5.00	3.00	1.00
Partner ecosystem	20%	0.00	1.00	5.00	5.00	5.00	1.00	5.00	3.00	3.00
Market presence	0%	1.00	2.00	5.00	3.00	5.00	1.00	5.00	5.00	3.00
Revenue	50%	1.00	1.00	5.00	5.00	5.00	1.00	5.00	5.00	3.00
Number of customers	50%	1.00	3.00	5.00	1.00	5.00	1.00	5.00	5.00	3.00

All scores are based on a scale of 0 (weak) to 5 (strong).

Cloud Pak for Data

Delivers the foundational platform for deploying an information architecture for AI, on any cloud

- Eliminate data silos, connect all data

- Automate and govern the data & AI lifecycle

- Operationalize AI with trust & transparency

- Avoid lock-in, run anywhere with agility

Cloud Pak for Data
A set of unified, pre-integrated data and AI services delivered within an open and extensive cloud native platform

Collect Data   Organize Data   Analyze Data   Infuse AI

Red Hat OpenShift

IBM Cloud   aws   Azure   Hyperconverged Private Cloud System

Cloud Pak for Data
Cloud-Native by Design

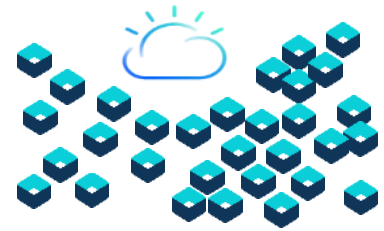**Agility** • **Efficiency** • **Cost Savings**
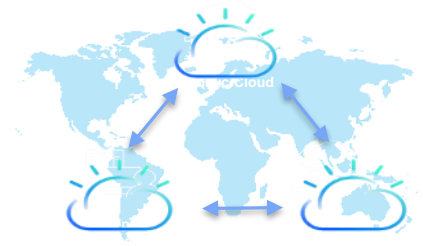
Cloud Pak for Data

Microservices
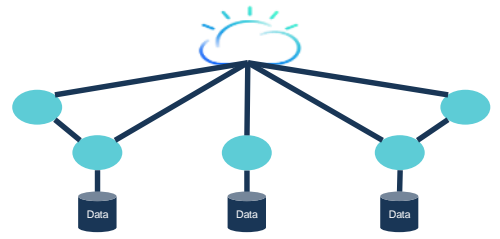
An architecture of loosely coupled data services, easily refactored to create containerized workloads

Containerized Workloads

Stand-alone workloads composed of microservices & data that are flexibly deployed, orchestrated and managed

Multicloud Provisioning

Agile provisioning of containerized workloads in multicloud environments and consumption of cloud services

CLOUD FOUNDRY docker kubernetes HELM Terraform

Power Systems IBM Cloud OPENSHIFT by Red Hat amazon web services Azure openstack Google Cloud

On-Premise

Built for Multi-cloud

Avoid vendor lock-in and get started on your cloud journey today

Customize & Extend with add-on microservices

Pick Your add-on
Containerized Services

Db2 DW	Netezza	Mongo	Cognos	IBM Watson	ISV	OS	Custom

Data Platform
#1 Ranked by Forrester

IBM Cloud Pak for Data

Unified platform of foundational Data & AI cloud services

Collect	Organize	Analyze	Infuse

Kubernetes Based
Containerized, easy to manage

RED HAT OPENSHIFT Container Platform

Pick Your Deployment
Private or Public

On-Premise   IBM Cloud   Azure   aws

Cloud Pak For Data System

Expanding 3rd Party Eco-system

An expanding ecosystem of Partner add-ons

Analogy

Open Source Zeppelin Notebook Server with Anaconda

mongoDB.
Open source NoSQL scalable database

Datameer
Agile Self Service Data Prep & Exploration

NetApp®
Persistent storage for apps deployed using Kubernetes

Open Source RStudio Server
R

portworx
Kubernetes storage & data mgmnt

figure eight
Automates human-like tasks in ML

Cloud Pak for Data

IBM Cloud
RED HAT OPENSHIFT
amazon web services
Azure
openstack
Google Cloud
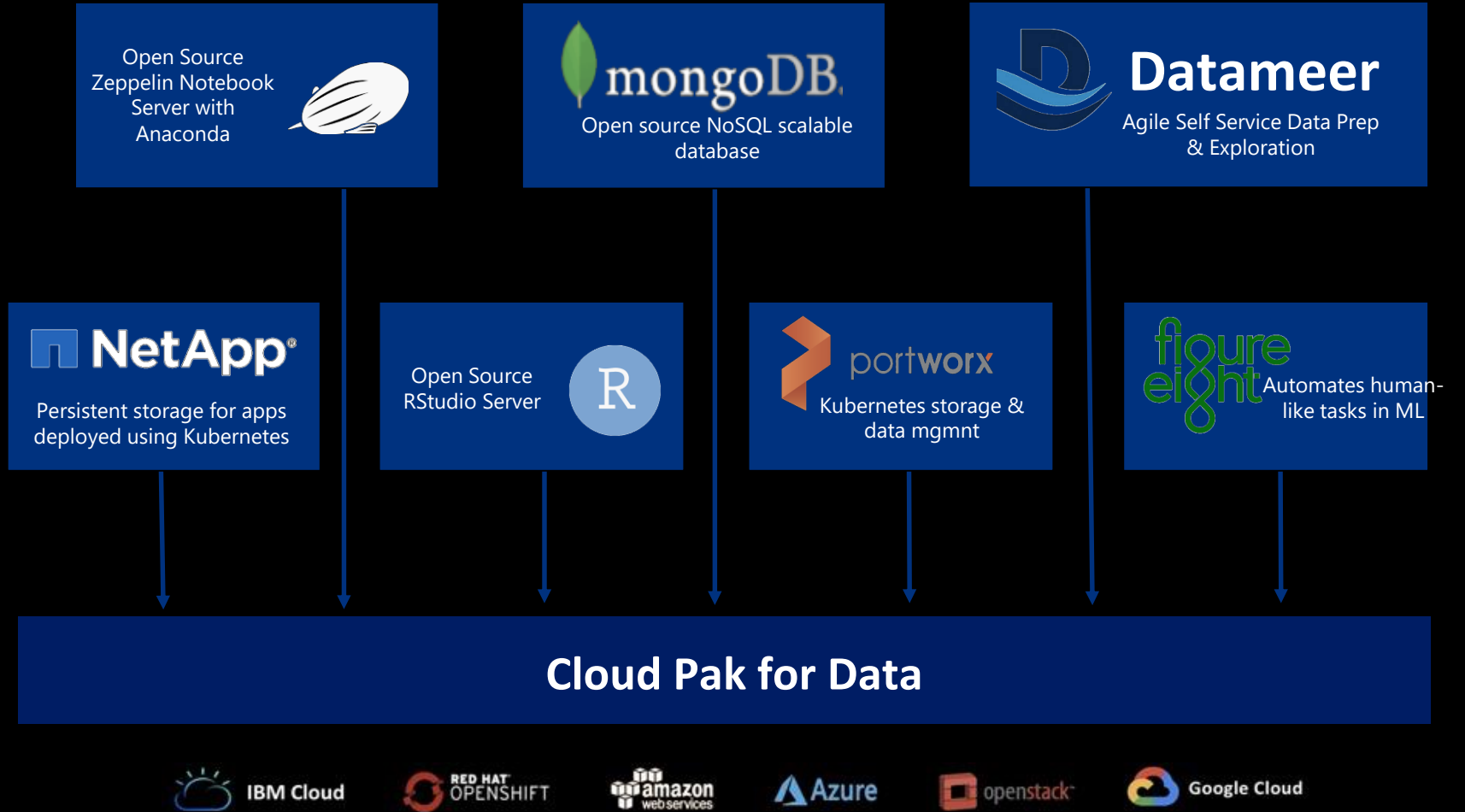
Cloud Pak for Data System
IBM Performance Server

Cloud Pak for Data System: A Hyper Converged System Architecture

*Requires customer to bring license of "Container Platform"
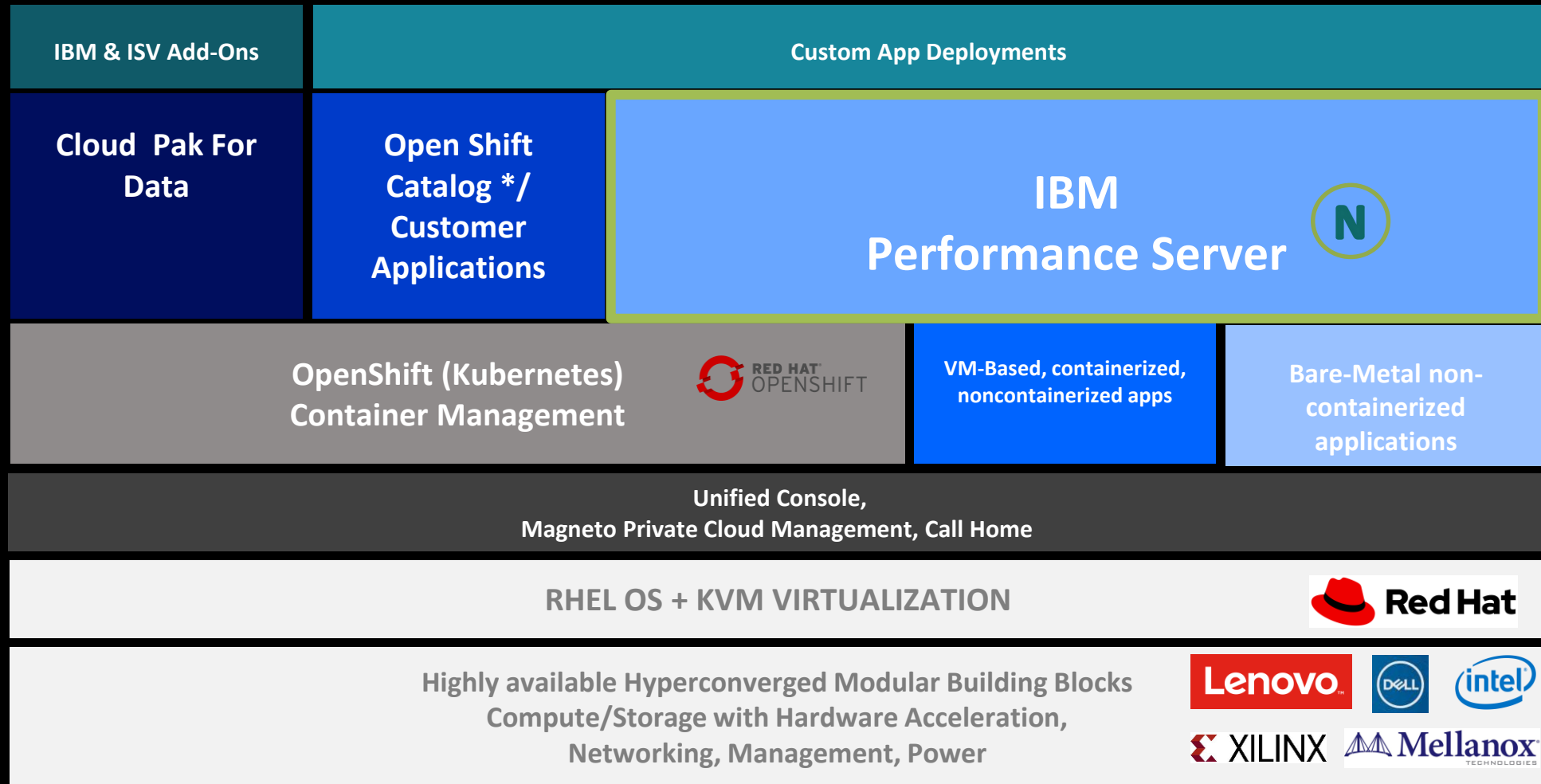
Cloud Pak for Data System
IBM Performance Server

fully (100%) compatible with Netezza/Pure Data System for Analytics line of appliance offerings,
all nz* utilities compatible, Synergy with data integration & BI tools, "fork-lift" existing Netezza systems, 'nz_migrate' and go!

Cloud in-a-box

available in Cloud Pak for Data System and 100% compatible with Netezza with deep 3rd party tool integration

Blazing-fast

built over open source and optimized for High Performance Analytics with built-in hardware acceleration and NVMe drives

Simple

load and go, minimal administration and tuning

Scalable & elastic

multi-tenant, start small, grow as you need on storage and compute

Availability

Red Hat Open Shift (Kubernetes)-container managed, highly available

Support & usage

production ready and fully supported by IBM, unlimited use as with Db2 Warehouse

Native Netezza Compatibility

❑ Simple

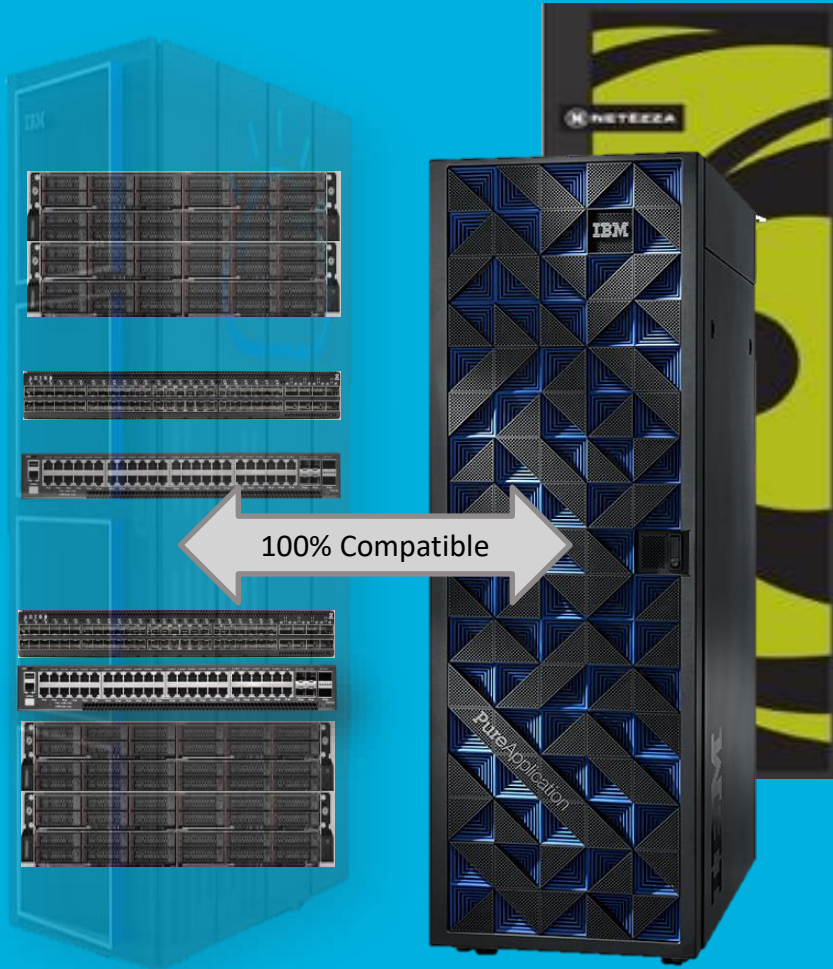- Load and Go, Minimal administration and Tuning

❑ Compatible

- 100% Netezza (Mustang/Skimmer/TwinFin/Striper/Mako) compatibility

- "Fork-lift" existing Netezza/PDA systems

- Simply use familiar 'nz_migrate' and go!

- Existing UDFs / UDXs work (*requires re-compile*)

- Bi-directional D/R Replication, BnR with older Netezza/PDA

❑ Smart with built-in FPGA Performance Accelerator

- Data Stream processing

- Machine Learning

- In-place Advanced Analytics & Geo Spatial

❑ Familiar interface and tools

100% Compatible

IBM Performance Server

❑ Modernization
- Containerized for microservice architecture and deployment in kubernetes
- UI upgraded to REACT based UI with same look and feel as Cloud Pak for Data
- Native Go (Lang) Driver implemented for modern day app connectivity
- PostgreSQL compatible

❑ Serviceability
- Maintenance prediction engine

❑ Hardware
- Upgraded to 64-bit engine to take full advantage of memory
- Upgraded to full NVMe support with NVMEoF implementation for fast performance
- FPGA ready

❑ Differentiation
- In-database Analytics
- Multiple databases with Cross-db writes
- Out-of-box Security
- Near linear performance in scalability
- Ability to take advantage of NVMe Drives
- Hardware acceleration through FPGA

Netezza Database Engine Enhancements

Built-in Data Science and Machine Learning
Powered by state of the art Data Science Hardware Performance Accelerator

In place Machine Learning
+
High Speed Data Accelerator (FPGA)

Extensible Add-on AI Services

Watson Studio & Machine Learning

SPSS Modeler Data Refinery Model Builder

Data Science Premium
Tools to design, build and deploy AI models

Decision Optimization Watson Explorer Streams Designer

Watson OpenScale ▪ *Operational optimization services*

Watson Assistant ▪ *Conversational AI services*

Watson APIs ▪ *Interactive AI services (e.g., speech)*

Foundational Data & AI Services

*Cloud Pak for Data

Open Source frameworks to build, train and deploy AI models powered by **Watson Studio** and **Machine Learning**

Jupyter
Apache Spark
ML
Caffee
Apache
Zeppelin

TensorFlow
Rstudio
Python
Keras
Torch

XGBoost
Scala

○ **Data visualization**
○ **Machine learning learning**
○ **Model build & deploy**
○ **Model management**
○ **Dashboards & reporting**

*Included with Performance Server for PostgreSQL
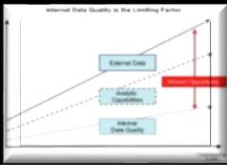
Data Collection Services | Data Organization Services
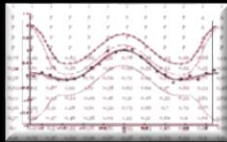
Data Preparation

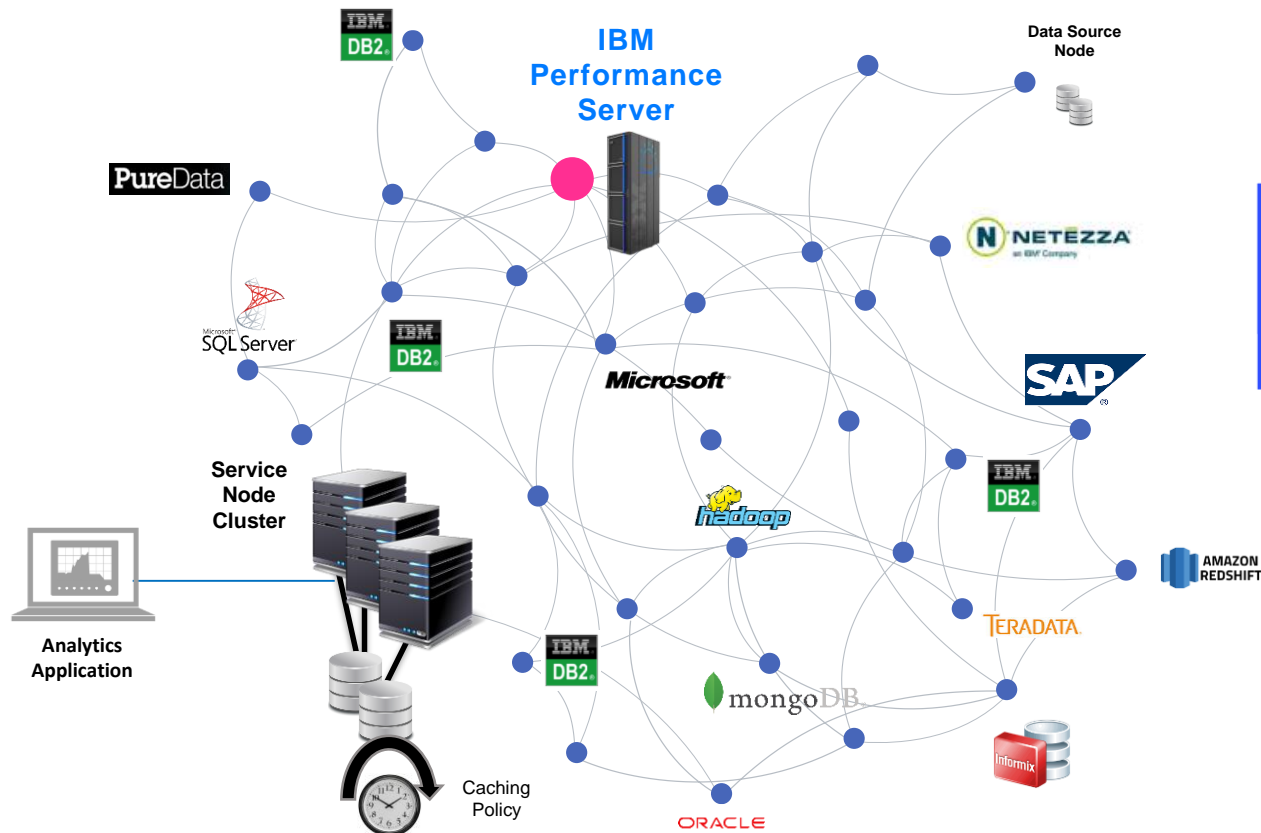*Predictive And Prescriptive Analytics*

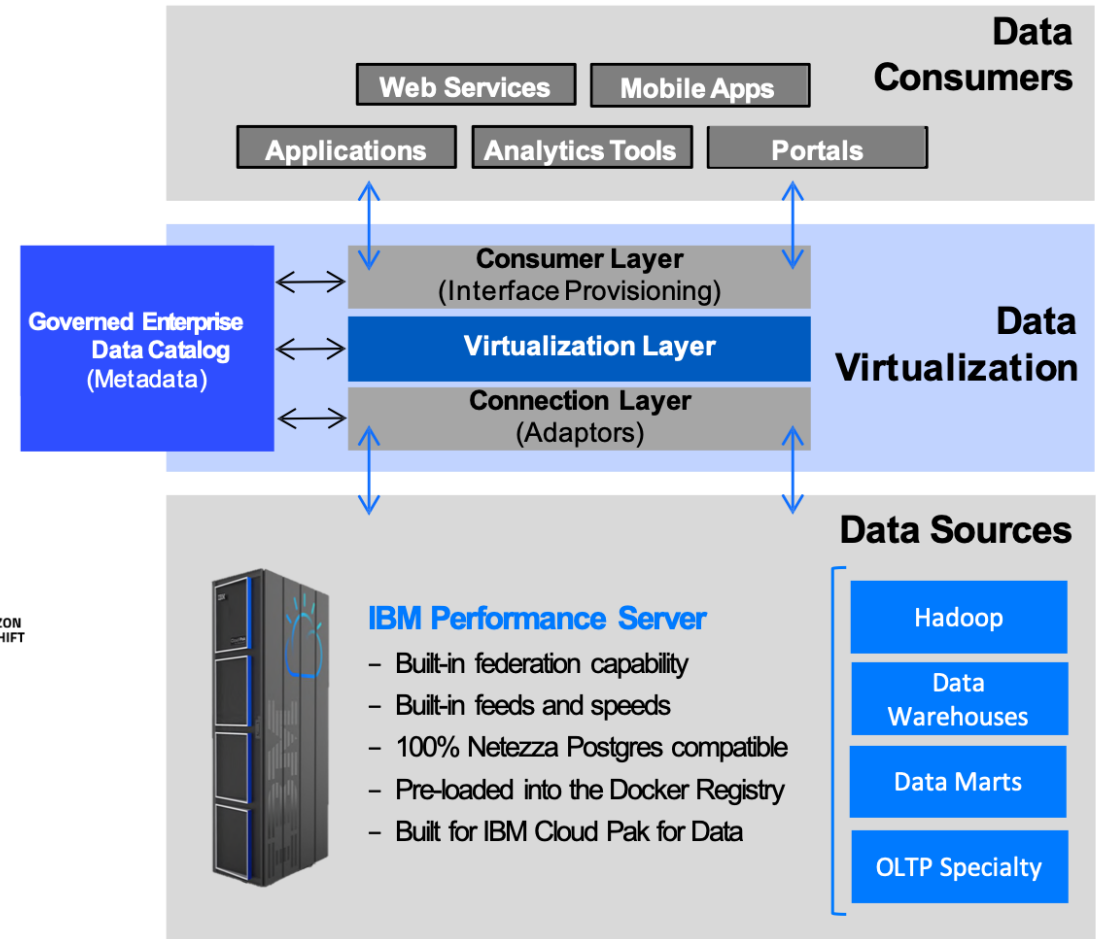*Geospatial Analytics*

Advanced Statistics

Data Virtualization

Key enabler for Hybrid Data Management

- High performance / Enterprise Ready
- Hybrid data store with extreme functionality

- Single data fabric for self-service
- DV gateway through Fluid Query

IBM Performance Server
- Built-in federation capability
- Built-in feeds and speeds
- 100% Netezza Postgres compatible
- Pre-loaded into the Docker Registry
- Built for IBM Cloud Pak for Data

Synergy with Data Integration and Reporting & Analysis Tools

Data Integration[1]

- IBM
  - Information Server
  - InfoSphere Streams
- Ab Initio
- Hadoop
- Informatica
- Microsoft
- Oracle
- SAP
- SAS
- Others using standard ODBC/JDBC/OLE-DB/SQL
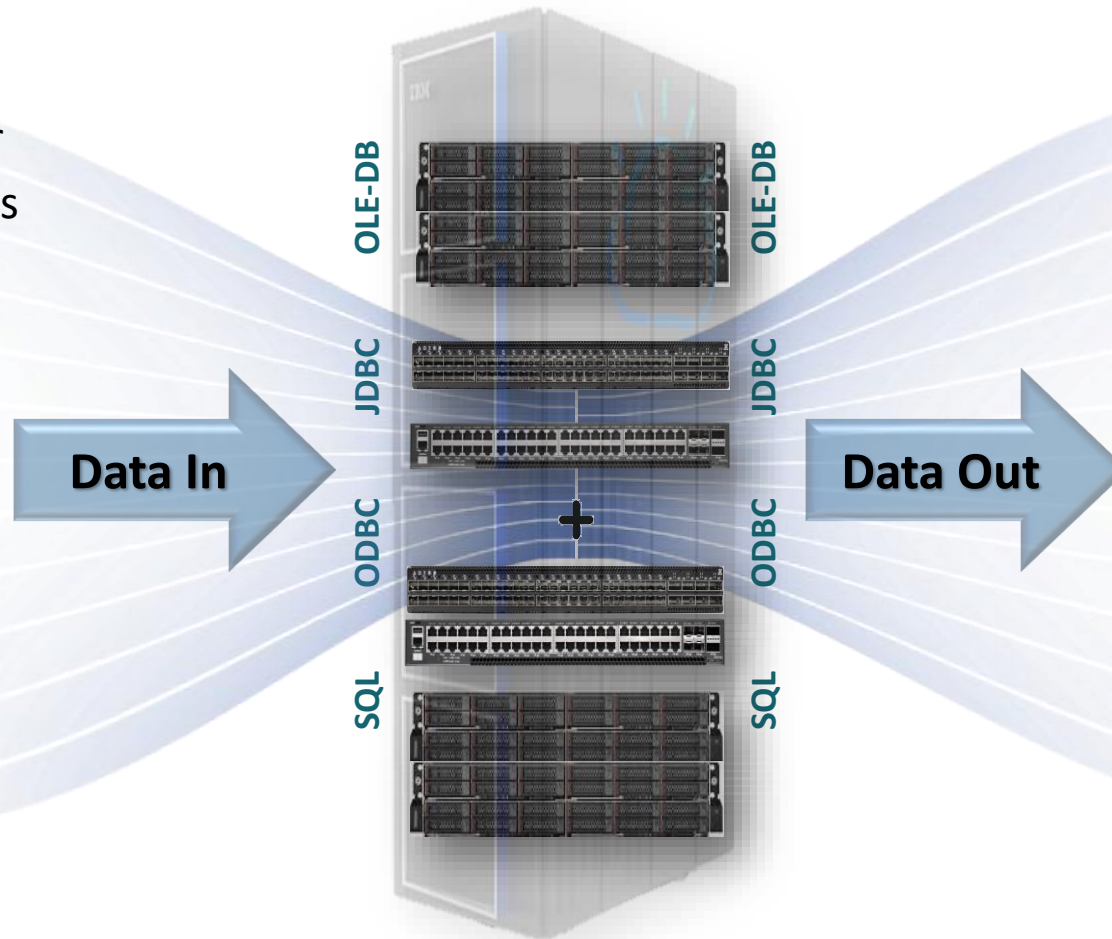
Reporting & Analysis[1]

- IBM
  - Cognos
  - SPSS
  - Campaign
- Hadoop
- Information Builders
- Microsoft
- MicroStrategy
- Oracle
- SAP
- SAS
- Tableau
- Others using standard ODBC/JDBC/OLE-DB/SQL

OLE-DB · JDBC · ODBC · SQL

Data In → **Data Out**

[1]100% native compatibility with Netezza/PDA

Back up
& Restore

100% Compatible
With existing Netezza/Pure Data System for Analytics

Lightning fast restore from backup *if you should need it*

- Build on External Table framework

- Backup and restore user data using nzbackup and nzrestore

- Supported backup types
  - Full
  - Differential
  - Cumulative

- Connectors Supported
  - File System Connector
  - Veritas NetBackup Connector
  - IBM Tivoli Storage Manager Connector
 - EMC NetWorker

Back up & Restore

Backup Method contd.,

User data backup method

Option	Description	Command
Full	Full database backup	`default`
Schema Only	Only saves database objects (tables, views, stored procedures, privileges …) but no user data.	`-schema-only`
Differential	Saves only the data, that has changes since the last backup (full, differential or cumulative)	`-differential`
Cumulative	Back-ups everything that has changed since the last full backup	`-cumulative`

database backup with table-level restore possibility

Less Admin, More Analytics
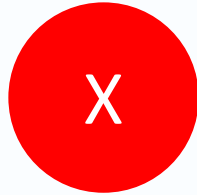
|	
X	**✓**
NO requirements for armies of administrators	Load data, **start querying within hours**, not days
NO "trapping" your data on the platform	**Built-in data** migration tools
NO proprietary-only integration	**Single management** console
NO storage administration	System is **performance optimized** for analytics
NO physical data modeling needed	**Hyper converged** scale out system
NO indexes and tuning necessary	**Single support** number

Cloud Pak for Data System - Performance Server *vs everyone else*

Benefits of upgrading

100%

Netezza cross-generational compatibility
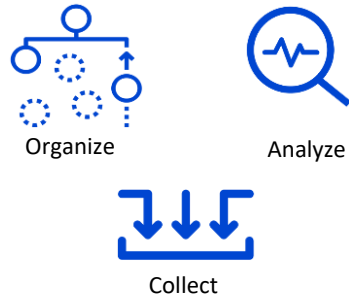
IA for AI
(Information Architecture for AI)

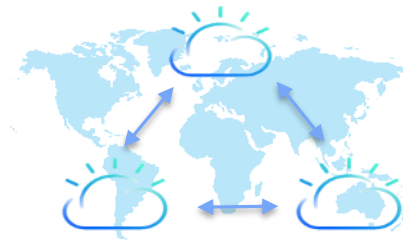Organize

Analyze

Collect

Migration effort
(frictionless upgrade)

Blazing fast
(up to 3X faster)

In-place expansion and hardware based multi-tenancy

Seamless on-ramp to Managed Cloud (1H 2020)

0%

0% risk

Built-in Security

Questions?

**Type your question in the
Q&A panel on your screen.**