

Different By Design

InterSystems IRIS Data Platform



**My prompting
skills...**

Please draw a picture of a busy highway full of regular family cars, with a single formula one car in the middle of traffic.



My prompting skills...

Please make sure all the cars, including the formula one car are in a proper lane and honour the driving directions. Also add a barrier in the middle, to separate the incoming and outgoing traffic.



**My prompting
skills...**

Please move the formula one car to a proper lane for incoming traffic. Also, turn the car in the bottom left around as it's facing in the wrong direction.



**My prompting
skills...**

Please move the formula one car to a proper lane for incoming traffic. Also, turn the car in the bottom left around as it's facing in the wrong direction.



**My prompting
skills...**

Only show one half of the highway, for incoming traffic. Make sure all cars are facing in the same direction.



What if... every design was the same?



Session Overview



Real-Time

01

Multi-Model

02

Adaptability

03





Real-Time

Different By Design



"InterSystems excels in real-time analytics, data modeling, and streaming capabilities"

Noel Yuhanna – VP, Principal Analyst

Forrester Wave™ - Translytical Data Platforms, Q4 2024

InterSystems: Leader

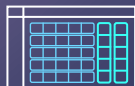


Designed for Performance



SIMD acceleration & parallelism

- **Assembly-level optimization** of key operators
- Adaptive runtime planning and parallelism



Row, columnar & mixed layout

- Mix row and columnar layout for true translytics
- **Single database engine** optimizes across data structures



In-memory B+ trees

- Highly optimized B+ tree enables true real-time
- Disk-backed means **not limited by memory**

Designed for Scale



Enterprise Cache Protocol: Consistent, transparent, hyperscale



Fully Transparent

Keeps data distribution and system topology **invisible** to the application

Application has a consistent logical view of **all the data**

Builds recovery and consistency guarantees **into the fabric**



Fully Elastic

Scales in and out in mere **seconds** via **k8s** operator
Great fit for **multicloud** and **hybrid** scenarios



Easy to Architect

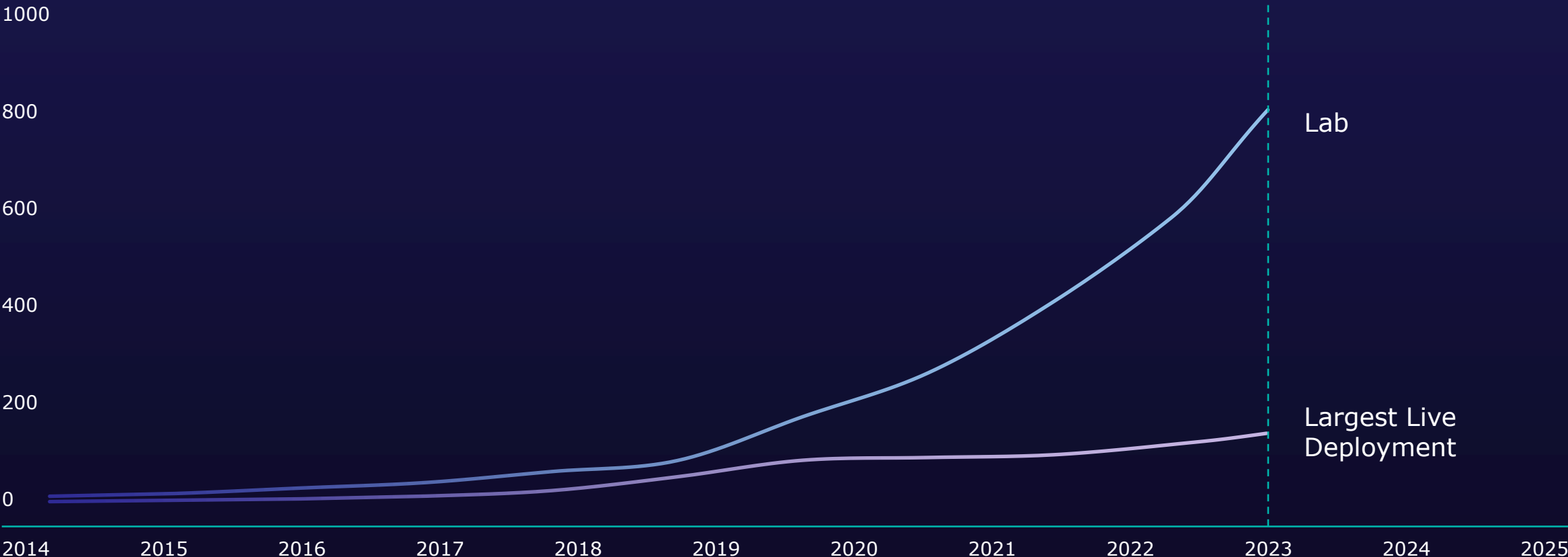
Scale AI & Analytics independently of enterprise operations. Every workload gets the compute it needs...



IRIS: Built for Epic Scale



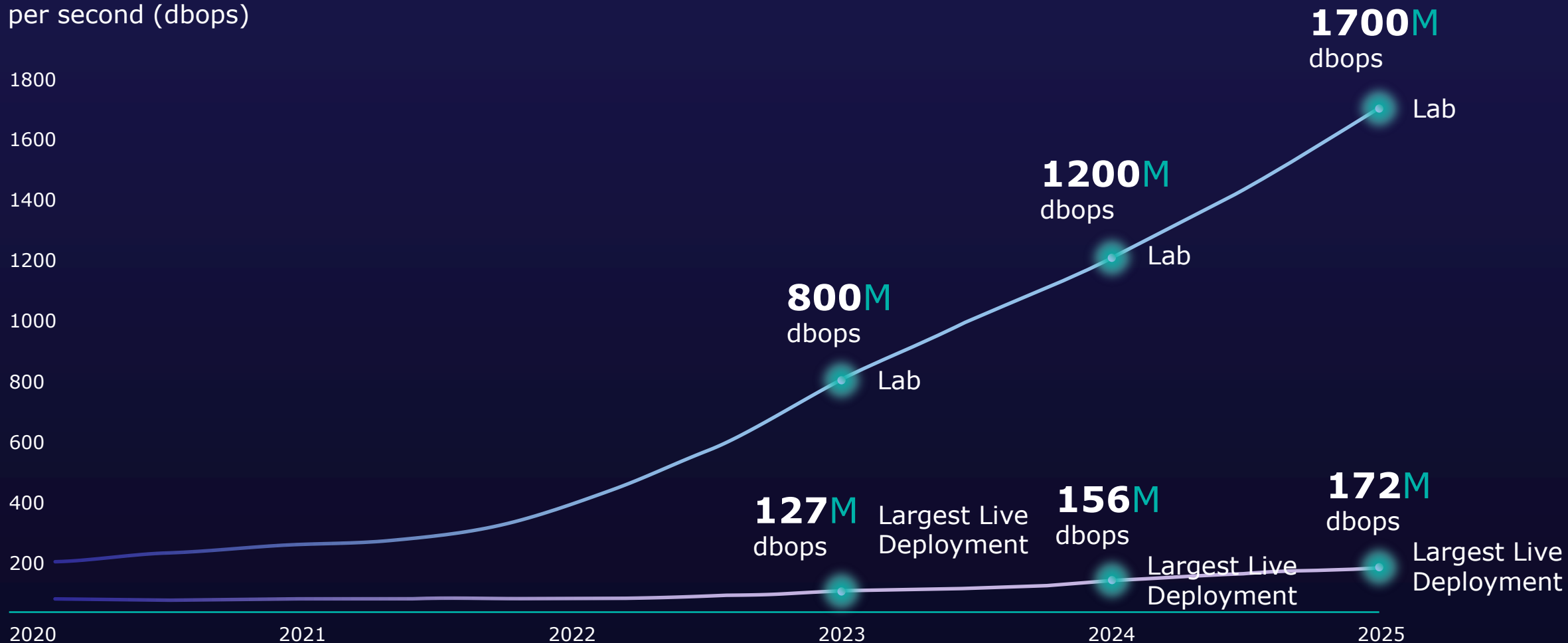
Millions of database operations
per second (dbops)



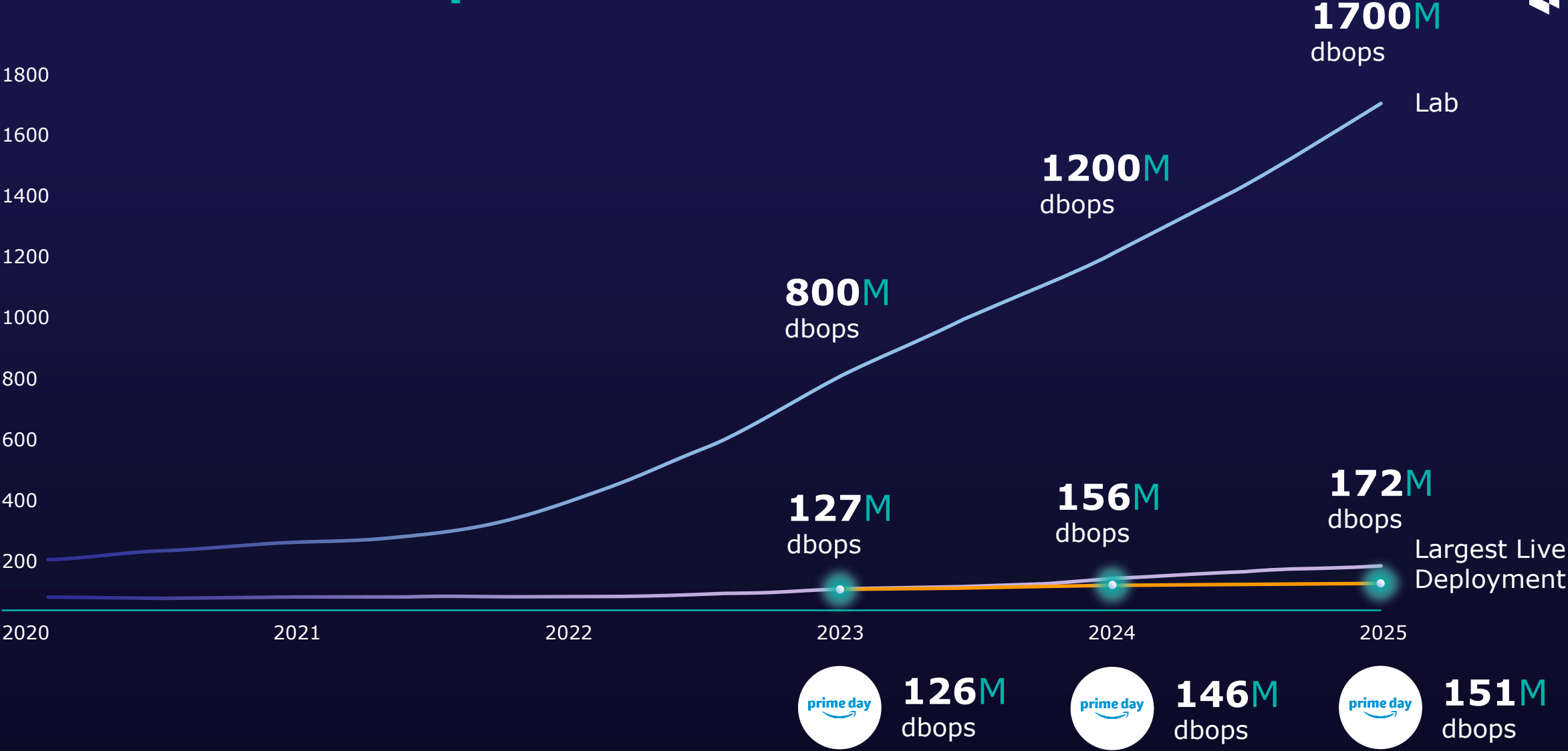
IRIS: Built for Epic Scale



Millions of database operations
per second (dbops)



IRIS: Built for Epic Scale



Murata Systems

Industry: Logistics Automation

Location: Japan



Murata Systems



Leading manufacturer of logistic automation solutions combining automated handling equipment, robotics & IoT

Challenge

- Implement a foundational data platform capable of high-speed transaction processing, data integration, optimization and analysis

Outcomes

- Optimization of shipping operations
- Stable ingestion of ultra-high speed IoT data
- Preventive & predictive maintenance based on real-time analytics





Multi-Model

Different By Design



"This design simplifies architecture, reduces operational complexity, and enables consistent governance and security across all data assets."

Marlanna Bozicevich – Senior Research Analyst

IDC MarketScape: Data Platform Software, Q3 2025

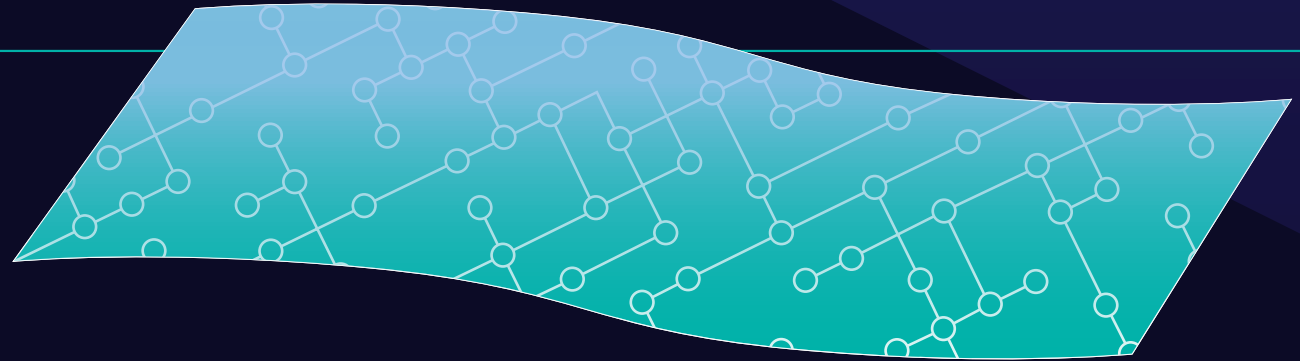
InterSystems: Major Player



Core Abstraction: The Common Data Plane



The Common Data Plane persists values via highly optimized multi-dimensional arrays



Multi-key array subscripts enables advanced index structures with **high-performance lookups & scans**



Flexible, highly optimized core data encodings enable the **multi-model architecture**

Extreme Multi-Model: **Optimized Data Encodings**



List



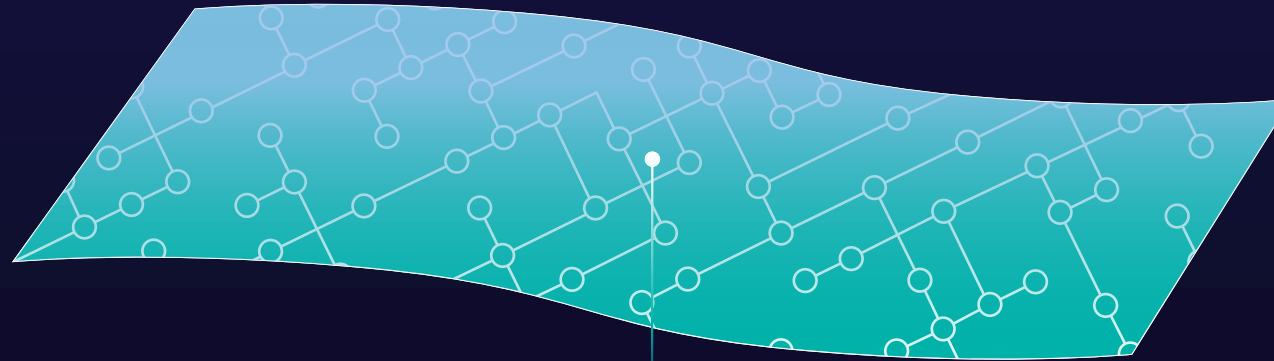
Vector



Bitmap



JSON



`^global(<key1>, <key2>, ...) = $encoding(<val1>, <val2>, ...)`

Extreme Multi-Model: Core Structures



Embedding



Relational



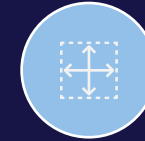
Document



Object



Cube



BLOB



List



Vector



Bitmap



JSON

Secret Sauce: Fast, Flexible Data Encodings



Knowledge
Graph



Time Series



Task Queue



Message



Business
Process



Embedding



Relational



Document



Object



Cube



BLOB



List



Vector

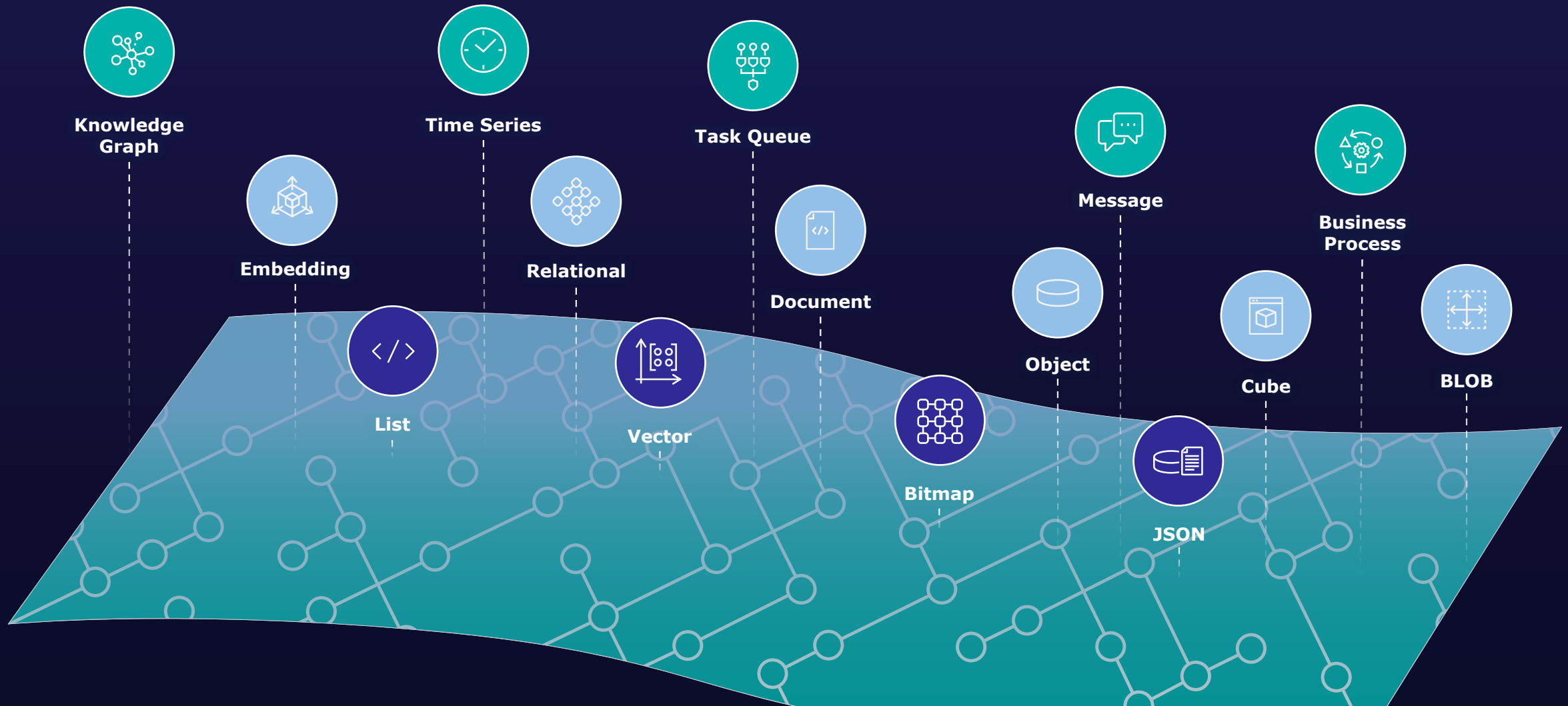


Bitmap



JSON

Secret Sauce: Fast, Flexible Data Encodings



Projections: Shape Data for Any Use Case



Document

```
{
  "location": "ICU5",
  "collector_name": "Smartlinx5",
  "sensor_name": "BP3",
  "bed_id": 8605,
  "readings": [
    { "start_time": "2024-07-04 10:12:03.642",
      "interval": 3.333,
      "values": [7200, 7300, 7700, 8500, 9100, ... ] }
    , ... ]
}
```

PUT

GET



Relational

Location	Sensor	Date	Time	Value
ICU5	BP3	2024-07-04	10:12:03.642	7200
ICU5	BP3	2024-07-04	10:12:06.975	7300
ICU5	BP3	2024-07-04	10:12:10.308	7700
ICU5	BP3	2024-07-04	10:12:13.641	8500
ICU5	BP3	2024-07-04	10:12:16.974	9100

INSERT

SELECT

```
^wave(202407, "ICU5", 123) = $list("Smartlinx5", "BP3", 8605)
^wave(202407, "ICU5", 123, 1, "ts") = $list("2024-07-04 10:12:03.642", 3.333)
^wave(202407, "ICU5", 123, 1, "v") = $vector(7200, 7300, 7700, 8500, 9100, ...)
```

Schlumberger

Industry: Oilfield Services

Country: United States



Schlumberger



World's largest oilfield services company

Challenge

- Drill rig operations surveillance and instrumentation system to provide continuous decision-ready rig and drilling information

Outcomes

- Collect continuous real time data on rig performance
- Significant reduction of Non-Productive Time
- Eliminated error prone, time-consuming manual collection of sensor data
- Recently expanded to 150 rigs





Adaptability

Different By Design



“InterSystems is notably receiving an A in Adaptability due to the usefulness of preconfigured customization options”

Matt Aslett – Director of Research,
Analysis & Data

ISG Buyers Guide™ Data Platforms – Q3 2025

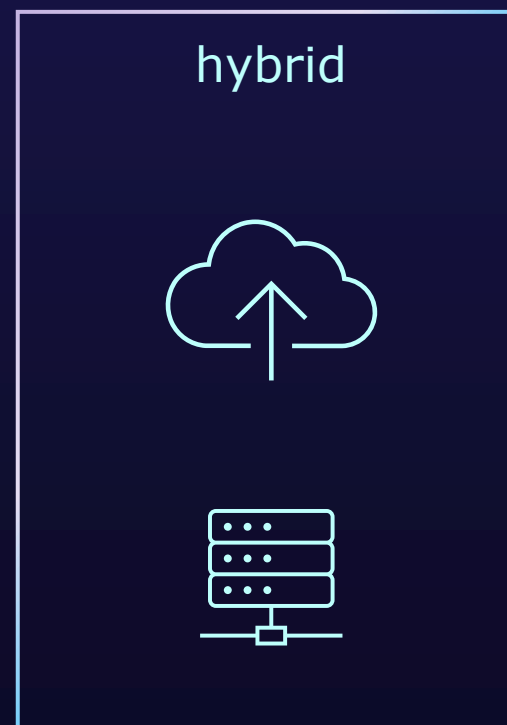
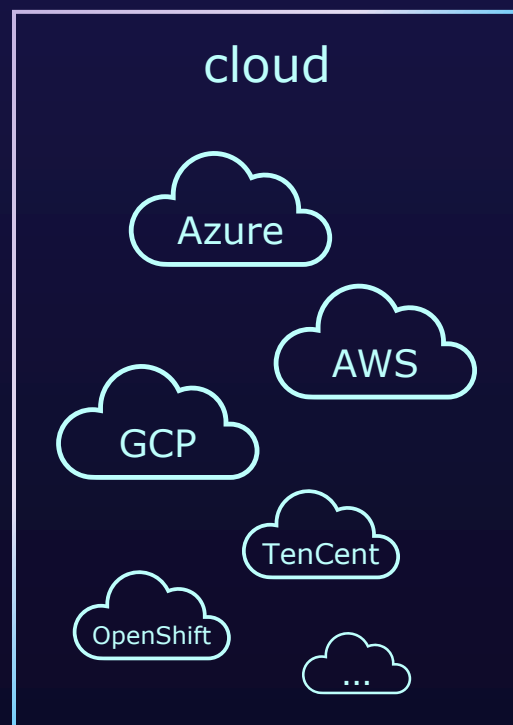
InterSystems: Exemplary



Adaptable Deployment



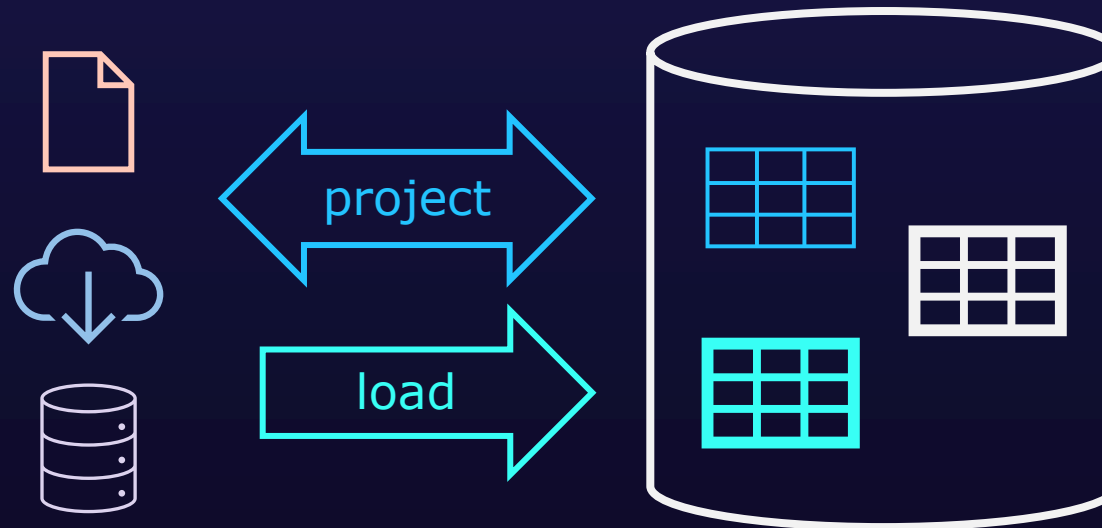
No other vendor supports such a broad set of operating systems, cloud platforms, and deployment models.



Adaptable External Data Access



InterSystems supports both **Connect & Collect** paradigms in a single platform



Adaptable Analytics & AI



Embedded & Open options for all major Analytics & AI use cases



Semantic Layer



Pipelining



Reporting



Catalog



Search



Bi/Analytics



AutoML



Large Language Models



Agents & MCP



Vector Search



Conversational Interfaces

Shift

Industry: Clinical Lab Systems

Country: Brazil



Shift



LATAM's leading provider of Lab Information Systems and long-time InterSystems partner

Challenge

- Offer a business benchmark for customers based on regulatory & quality metrics

Outcomes

- Scalable & highly automated cloud-based service that blends in with on-prem customer deployment
- Complemented IRIS with fit-for-purpose data pipelining & end-user data viz tools on top of common semantic layer.



Real-Time



Multi-Model



Adaptability





“InterSystems stands out as one of only a few data platform providers that can address the full spectrum of analytic and operational use cases with a single product.”

Matt Aslett

Director of Research, Analysis & Data, ISG





"... InterSystems IRIS is also one of the few products that appears in both the Operational and Analytics Critical Capabilities reports."

Henry Cook

Senior Director Analyst, Gartner





Unified Data Platform

Different By Design



My prompting skills...

Please create an image of a formula 1 car that is driving alone on the highway, with a traffic jam of boring family cars a few hundred meters behind it.

You only get one shot.





Thank You