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Faster

Significant performance improvements for replication workloads and OLTP



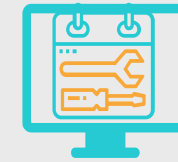
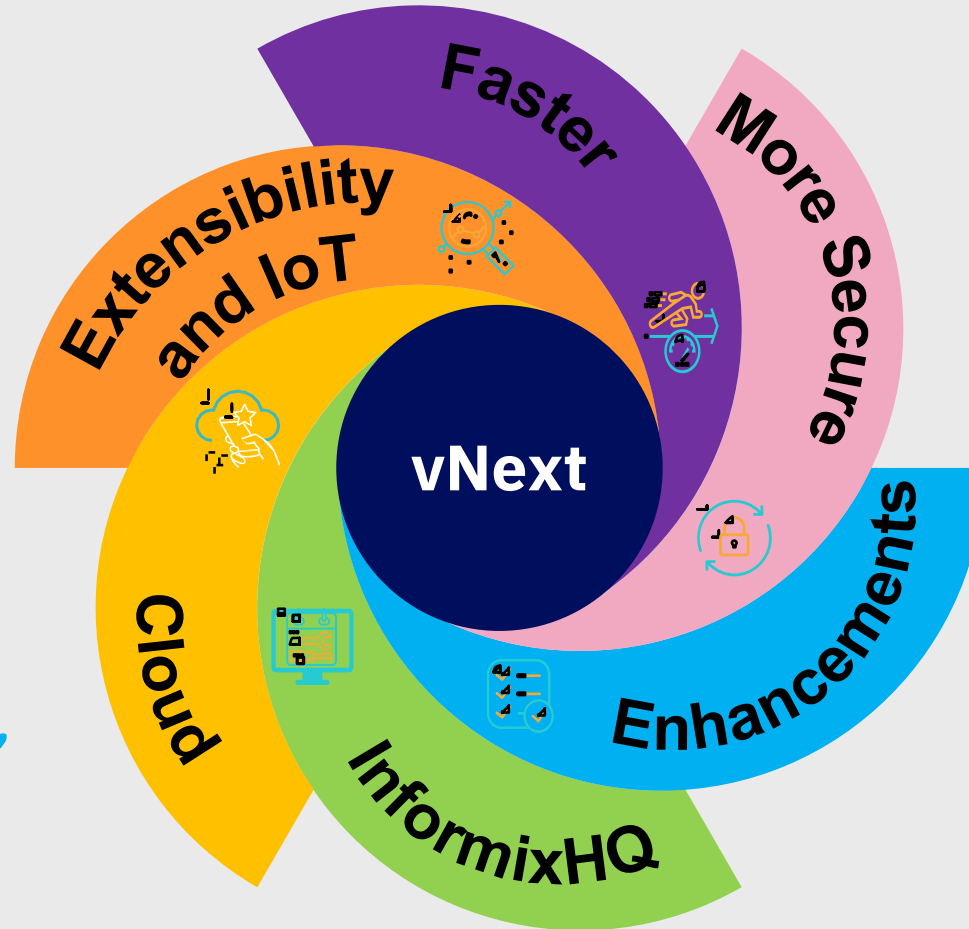
More Secure

Provides higher security for encryption keys and Transport Layer Security (TLS)



Enhancements for Usability, Administration, and Increased Uptime

Customer RFEs implemented to include in-place alter improvements, renaming of indexes and constraints online, and common table expression implementation



InformixHQ

New, fully supported, graphical administration tool



Cloud & Containerization

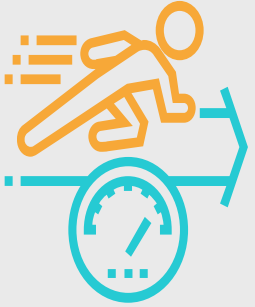
New VPC pricing metric for easier license monitoring



Extensibility and IoT

ARM v8 support
Enhances timeseries granularity and spatial projection systems

Features



v *'s Taste !*

- Up to **5x improvements** in replication log replay enables near zero latency allowing faster recovery time objective in disaster scenario
- Up to **10% faster** than 12.10 for standard OLTP transactions
- Java UDR performance improvements including Smart Blob (up to **40% faster**) and message log (up to **2x faster**) processing.
- Mongo (up to **19% faster**) and REST listener (up to **2x faster**) performance improvements
- Increased the speed of large object access via JDBC by **> 60%**
- Increased the speed of onmode -c block and unblock for external backups
- Workgroup edition has higher limits and storage optimization is now available in Enterprise Edition at no extra charge

Features



is more Secure

- Provides higher security for encryption keys and integrated backup encryption
 - By supporting remote generation and storage of encryption at rest keys in Amazon KMS/SSM, an additional layer of security is applied to Informix server encrypted data. Three ciphers AES128, AES192 and AES256 are supported.
 - By supporting a remote key management server to generate the backup encryption keys and reducing DBA's effort to encrypt Informix backups, data security in backup media is enhanced without the risk of losing the backup encryption keys. The encryption key is itself encrypted and stored together with the data (called Envelop Encryption).
- Transport Layer Security (TLS) to 1.2 for a higher level of network transport security
- Provides a better audit trail, capturing userid and session id to determine who caused an event for smart triggers

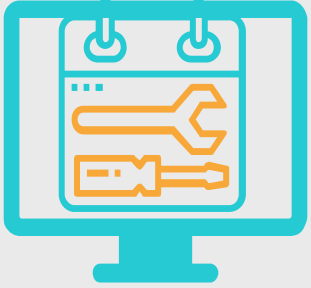
Features



v has customer RF's implemented or Usability, Easier Administration, and Increased Uptime!

- Common Table Expression allows application developers to improve readability and maintenance of complex queries and to write powerful recursive queries
- Support of current Unicode spec v11
- Addition of single 'cdr migrate server' command that automates setting up Enterprise Replication between two servers
- Streaming analytics in a replicated environment with asynchronous post-commit triggers
- Single Product Install - key based licensing to upgrade from edition to edition
- Addition of trim capability to be able to use regular expression on CHAR and NCHAR data
- JDBC 4.1 compliance
- Clients can tag themselves for monitoring purposes with client_label in ODBC and JDBC
- In-place Alter Improvements for tables, additional datatypes, and others
- In-place Alter on varchar to larger varchar, no rebuilding of the indexes
- Renaming indexes and constraints (including system-generated)
- Minimal downtime for table reorgs and codeset conversions utilizing loopback replication
- Table administration – table fragmentation strategies
- Additional enhancements to further avoid the need to perform slow alters
- JDBC now uses feprgram to auto-save the thread information for the session

Features



v has Informix '=Q!

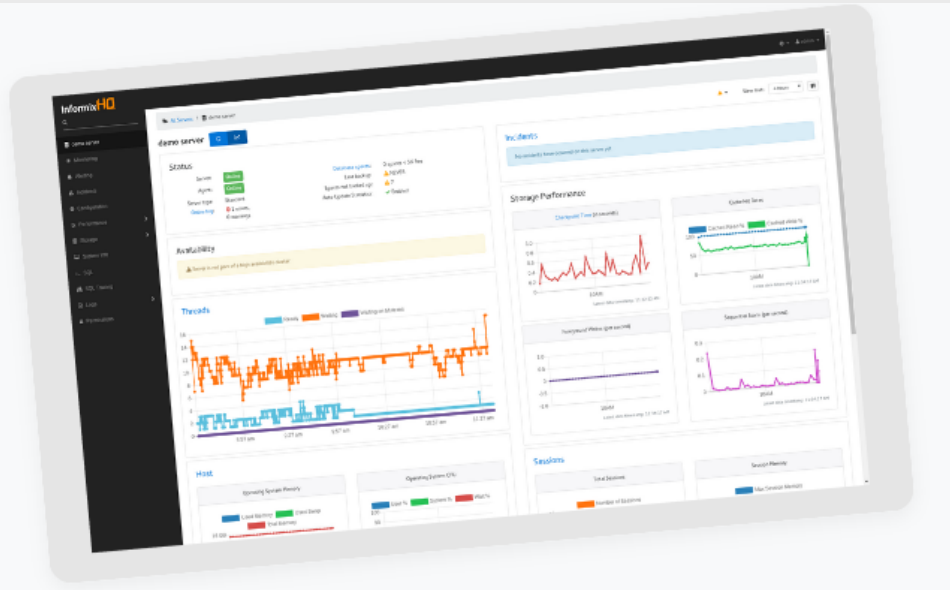
- New graphical tool that elevates administration and monitoring to an integral core part of the Informix server with full support
- Integration with modern IT infrastructures like Pager Duty, Twilio, Email



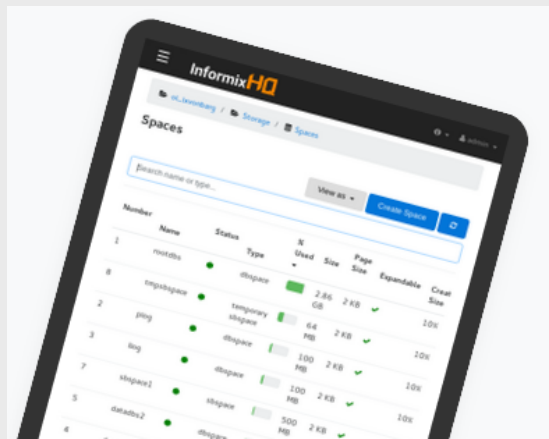
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- IBM Cloud
- New VPC pricing metric for easier license monitoring

New InformixHQ Administration and Monitoring Tool



InformixHQ is the path forward for graphical monitoring, alerting, and administration of your Informix database servers.



- InformixHQ is a modern web console for visualizing, monitoring, and managing your Informix server instances. It is purpose built for ease-of-use, scale-out, and optimizing DevOps needs.

- Provides critical performance management capabilities, monitoring how key performance metrics are changing overtime and tracking how efficiently Informix is running your workload even when you've stepped away from your screen. Its monitoring system feeds directly into a customizable alerting system so you can be immediately alerted via email, Twilio, or PagerDuty whenever an issue occurs on one of your Informix database server instances.

- It is designed to be scalable to efficiently manage and monitor as many Informix database server instances as you run.

- It enables collaboration between the DBAs, the app developers, the ops engineers, and management and accessed from any desktop, laptop, or mobile device.

Features



Features that improve performance in Extensibility and IoT

- Adding ARMv8 64bit support
- Ability to get a count of the number of objects in a given region in a given time range such as “how many times a taxi was at an intersection in a given period of time”
- timestamp distinct type for TimeSeries usability
- Added TimeSeries:Extend CountIF() which enables you to count and find missing readings for a given sensor or meter
- Support for geodetic and projections systems other than WGS 84 – enables you to track packages in a shipping depot using your own coordinate system
- Subsecond GPS readings (1/10 of a second timestamps) – enables you to track airplanes that generate GPS points in sub second intervals
- Additional linear units of measure for Spatio-temporal support

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Platform/Architecture

Workgroup/Enterprise:	32-bit 12.10	64-bit 12.10	64-bit vNext.xC1
AIX	6.1, 7.1	6.1 , 7.1, 7.2	7.2
HP-UX Itanium		11.31	11.31
Linux – Intel	RHEL 5,6 CentOS 6 SuSE SLES 11 Asianux 3.0 Debian 5.0 Ubuntu 8.04 LTS thru 12.04 LTS	RHEL 5 ,6,7 CentOS 6,7 SuSE SLES 11, 12 Asianux 3.0 Debian 5.0 Ubuntu 8.04 LTS thru 17.10	RHEL 7 (min update 4) CentOS 7 (1708) SuSE SLES 12 (SLES 15) Ubuntu 14.04 LTS
Linux – IBM POWER (Big Endian)		RHEL 5 ,6,7 SuSE SLES 11	<i>n/a</i>
Linux – IBM POWER (Little Endian)		RHEL 7.1 SuSE SLES 12 Ubuntu 14.04 LTS	RHEL 7 (min update 4) SuSE SLES 12 (SLES 15) Ubuntu LTS 14.04
Linux – IBM system z		RHEL 5 ,6,7 SuSE SLES 11,12	<i>n/a</i>
Mac OS X		10.9, 10.10	<i>n/a</i>
Solaris SPARC		10 ,11	11.3
Solaris x64		10,11	<i>n/a</i>
Windows	Windows 2008R2 thru 2016 Windows 7,8	Windows 2003R2 thru 2016 Windows 7 thru 10	Windows 2016 Windows 10
ARM	V7 (Debian 7)		V8 (OpenSuSE) Debian V7 (32bit) for Raspberry Pi

Informix into the Future

Energize Modernize Innovate

Delight the Client

- Single install of language drivers
- InformixHQ admin and machine learning options ongoing
- Backup from RSS or HDR Secondaries using ontape, onunload, onbar, dbexport

- Compress Smart Blobs
- KMIP – External encrypted key mechanism
- BI and Data Visualization via 3rd party tools - Grafana
- More autonomies 7*24*365 uptime

- Unicode Phase 2 – expanding limits for wider rows, bigger page sizes, wider indexes...
- Perf improvements for NUMA
- Asynchronous connections
- Go programming language support and others

Expand on Cloud

- Elastic Scaling in the cloud
- Helm charts for easier containerization

Optimize for IoT

- Simplify TimeSeries API
- Enhancements for IoT device support
- Sensors in motion

- Edge-2-Cloud Solution Stack
- Finer grain (microsecond) for Timeseries

- Enhanced BlockChain Integration
- TimeSeries compression on other datatypes

Cross Focus Items

- Defect fixing and backlog reduction
- Collateral
- Developer Ecosystem and Community Engagement
- Competitive analysis

- 3rd party integrations
- SQL Compatibility Enhancements

Innovation – Multi-Model

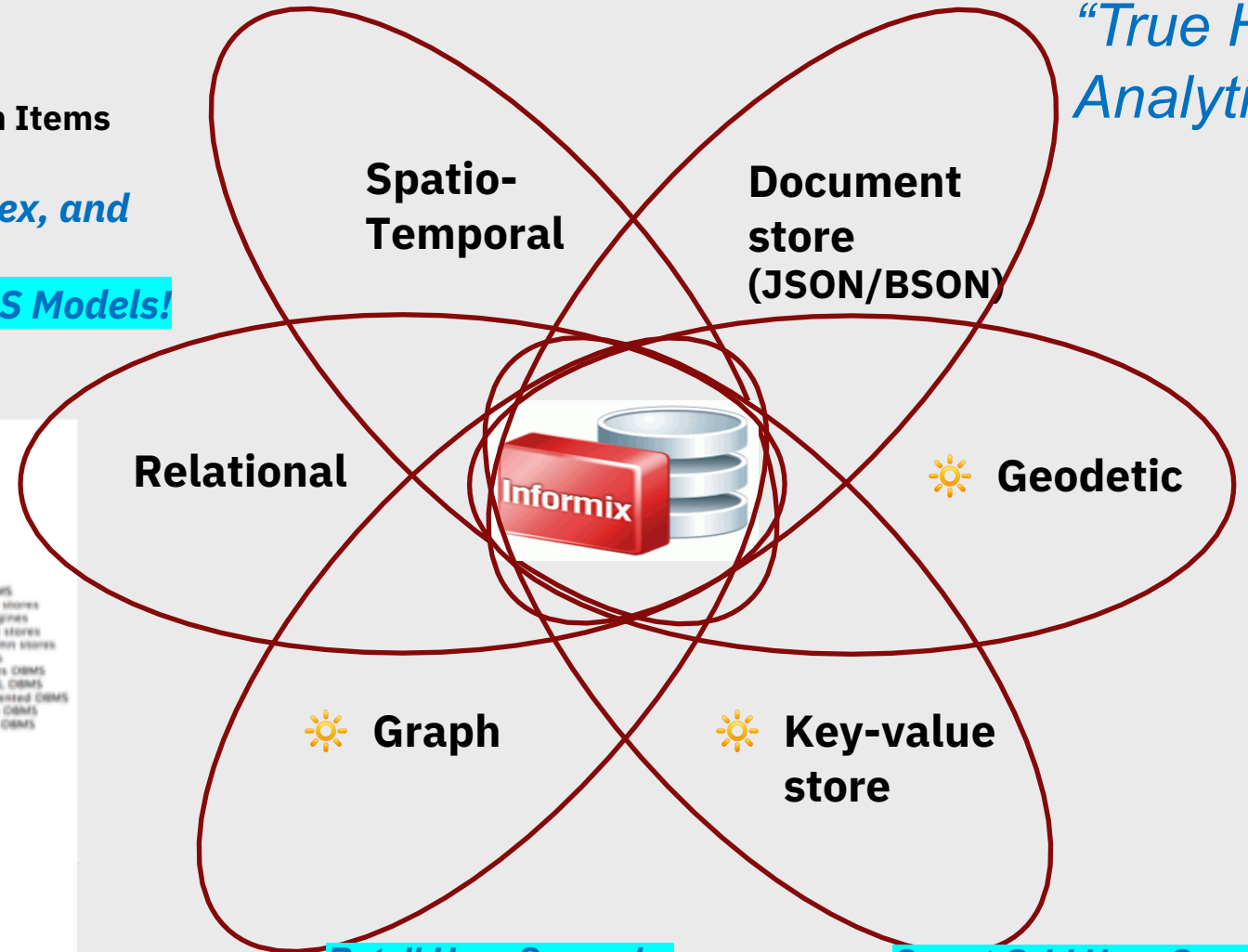
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☀ Innovation Research Items

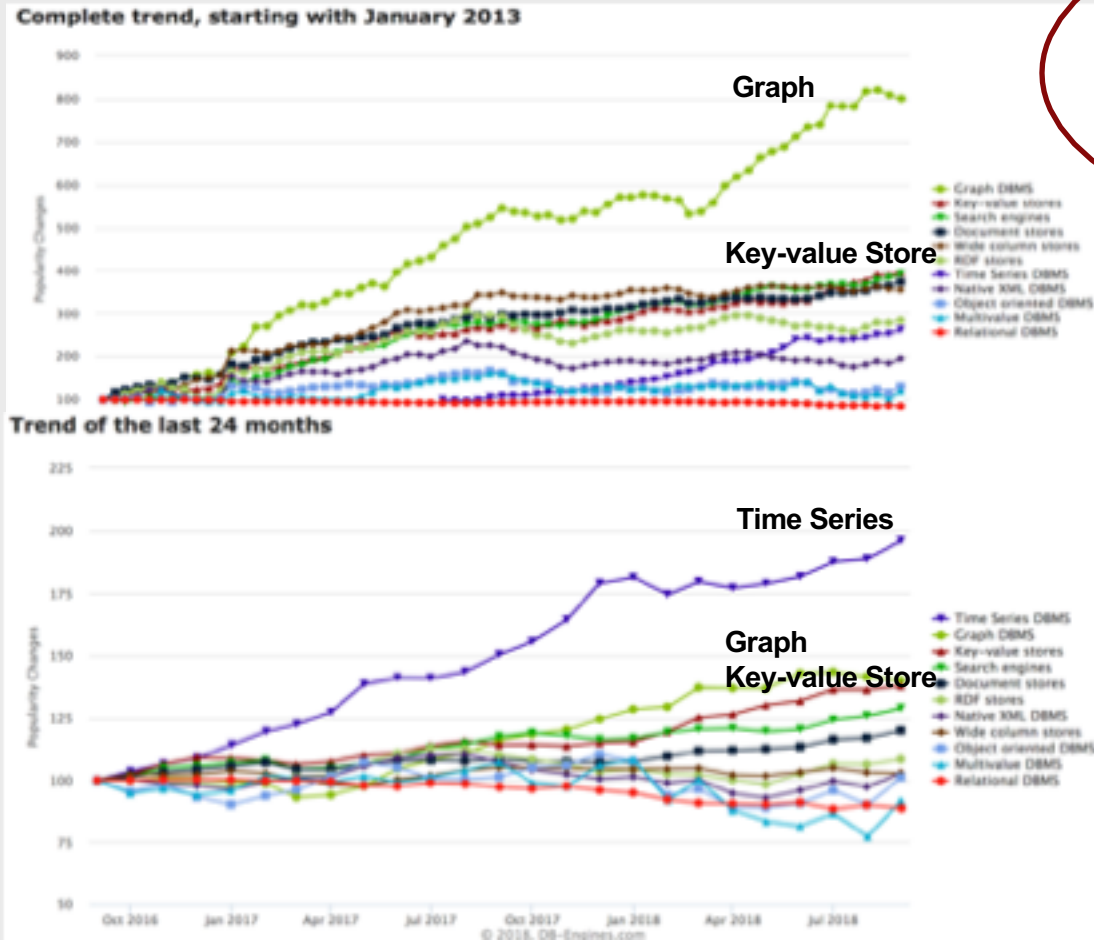
A Multi-Model database is one that can store, index, and query data in more than one model.

Informix can store, index, and query data ACROSS Models!

“True Hybrid Analytics”



Model Popularity Trends



Retail User Scenario:

Data Stored in:

- JSON - Metadata on products
- Key Value Data Store - Pricing/SKU
- Graph - Reliability of the supplier

You are able to find the description on a specific product, its price, and vendor information all in one query

Smart Grid User Scenario:

Data Stored in:

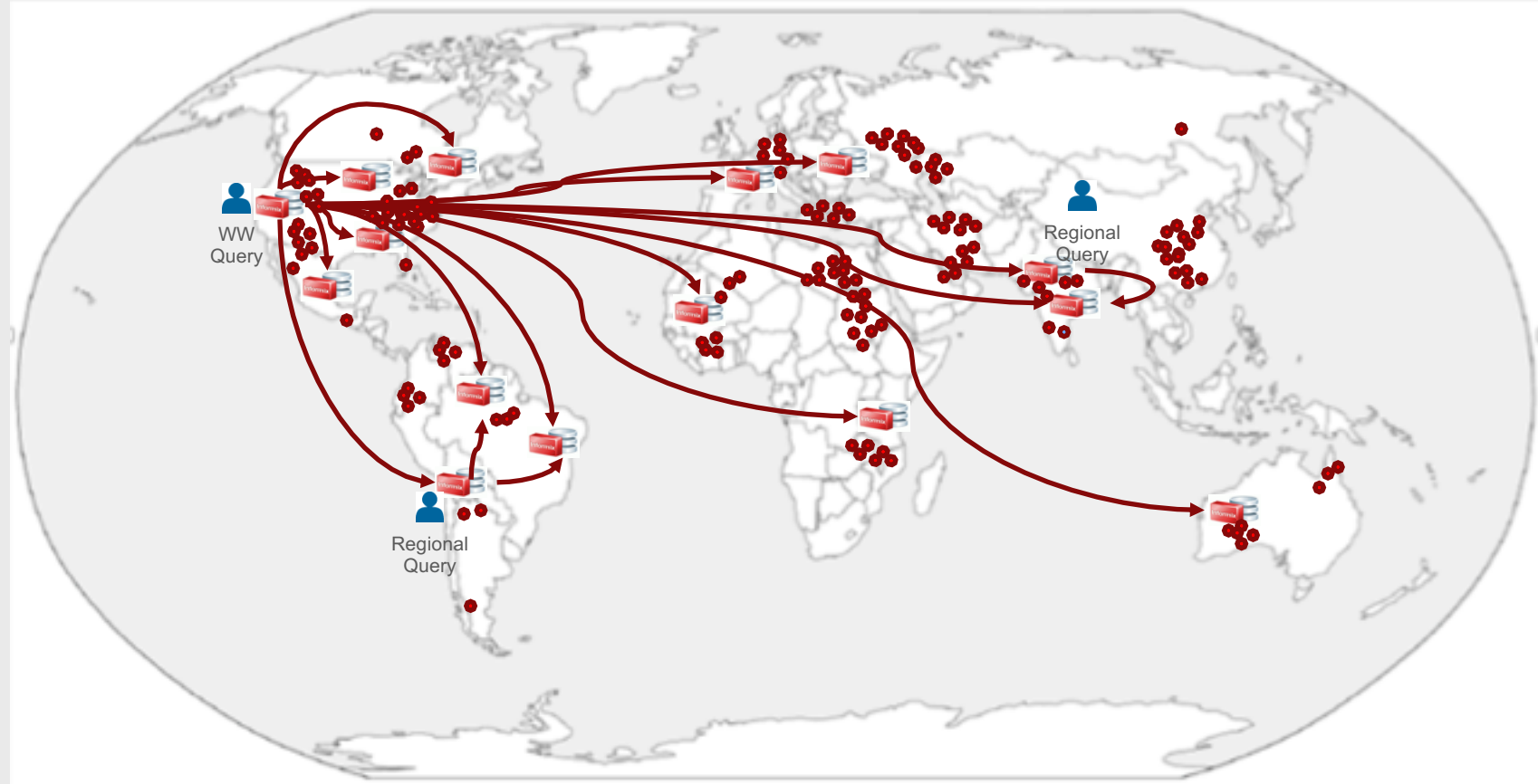
- Graph – Electricity Grid
- Relational - Revenue by Customer

Find how many customers are affected by an outage and the revenue they bring in all in one query

Innovation – Super Scaleout

“Keep data where it originates; access it from anywhere”

- **Ability to Scale out to 1000's of nodes**
 - Nodes can be anything from stores to sensors
 - Commodity hardware
- **Keep the data local**
 - GDPR
 - Faster regional access
- **Queries survive inaccessible nodes**



Phase 2

- Fog Computing – scaling to 100's of 1000's of nodes
- No Downtime for Schema updates and Upgrades with no downtime

Innovation – Machine Learning/Self-Healing

This is the database equivalent of a “driverless car”.



Every Informix customer expects 100% uptime, stability, and peak performance.

1. Gather statistics on vital engine stats and actions
2. Review statistics for trends
3. Anticipate thresholds and take corrective action
 - Runbooks built into the admin tool
 - Alert
 - Health-check

Trend Use Cases:

- Storage
- CPU/mem usage
- Indexing/update statistics
- User