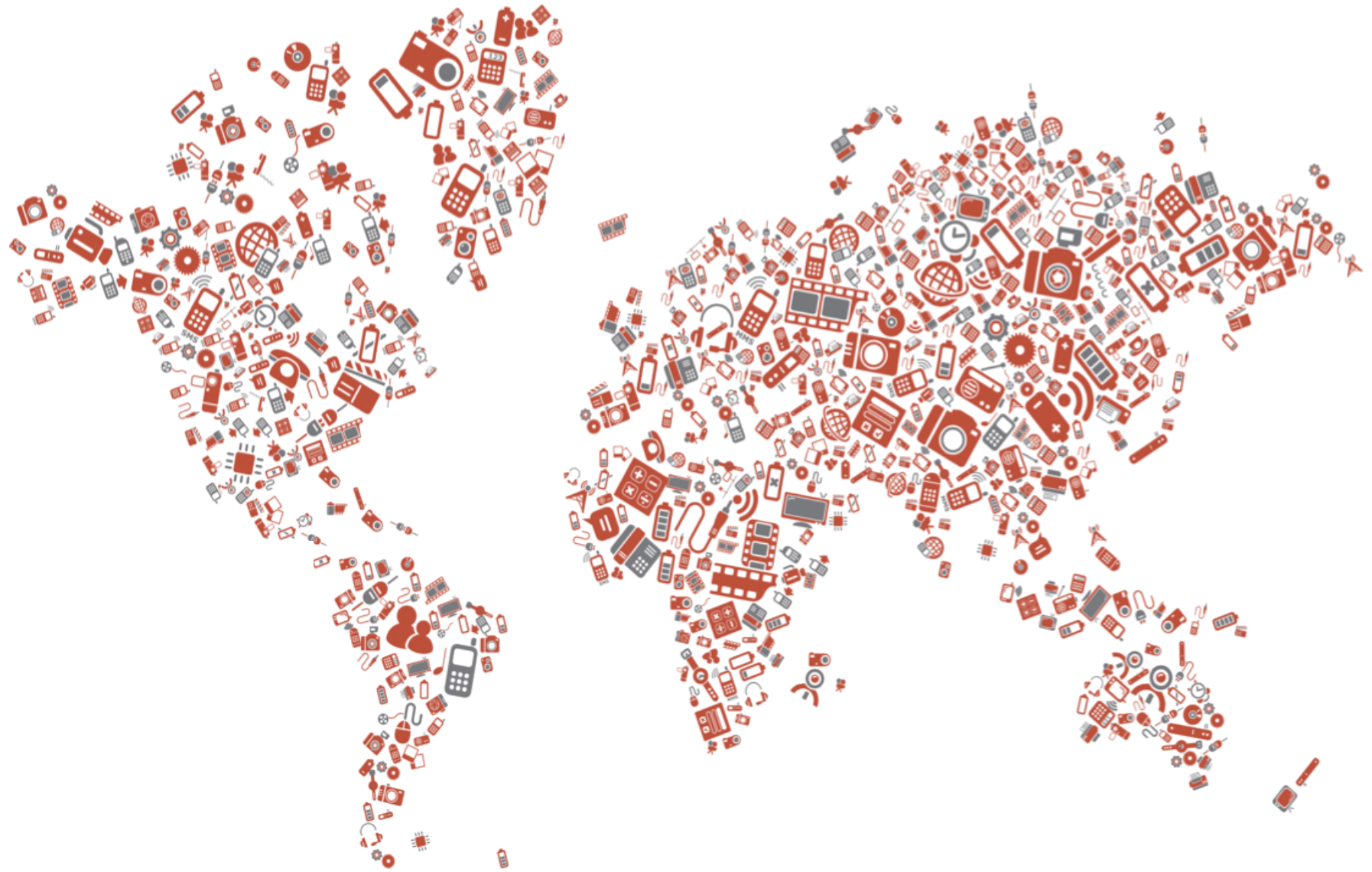


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Safe Harbor Statement

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.



Driving New IoT Services

- Better Customer Experience
- New Business Models

Grow
Revenue



- Preventative Maintenance
- Remote Diagnostics
- Safety Systems
- V2X and C2X
- Fleet and Use Management

Shareholder
Value

- Operational Improvements
- Increased Efficiency

Reduce
Cost



- HVAC
- Lighting
- Safety and Security
- Resource Utilization
- Maintenance

The Building Blocks for IoT



Devices/Things

IoT Cloud Service

Enterprise Orchestration

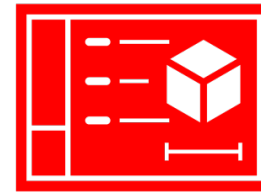
Applications Drive the Enterprise



Customer Experience



Supply Chain Management



Enterprise Resource Planning



Customer Relationship Management



E-Commerce



Finance



Human Capital Management



Billing and Revenue Management

The Device Challenge



Security and identity

Always available, but not always on

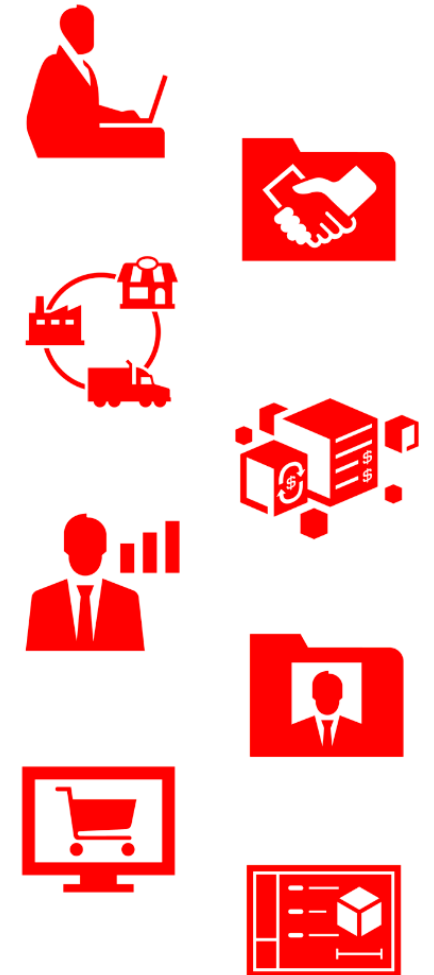
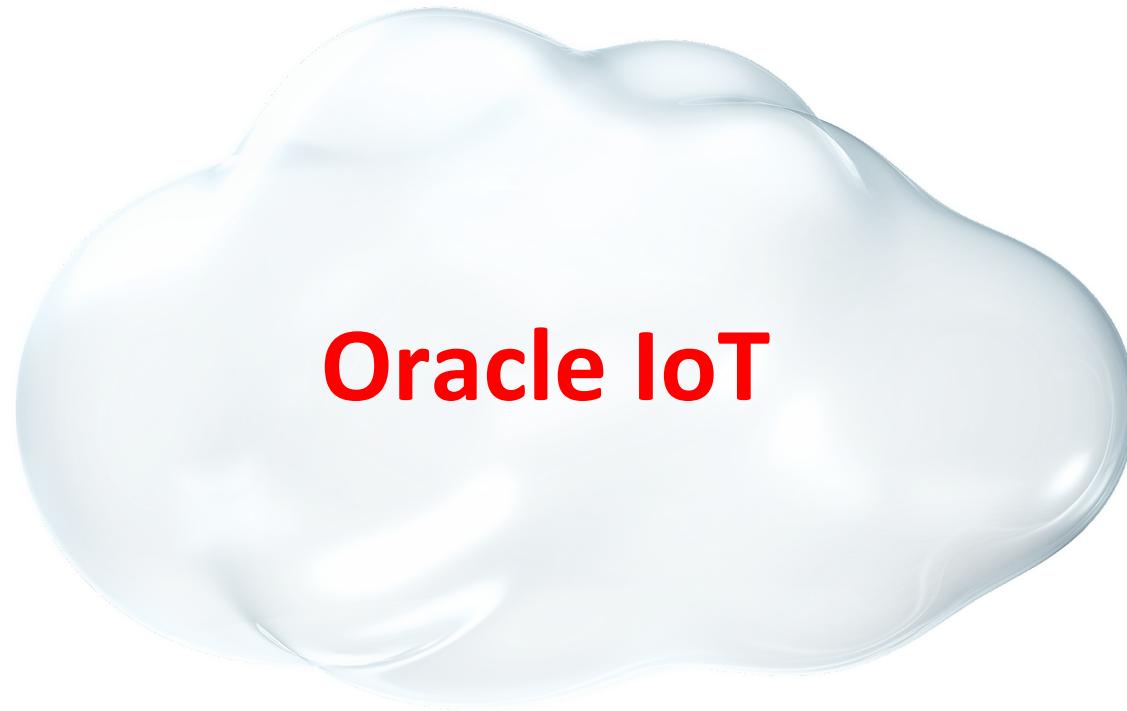
Scale (connection and data)

Different formats,
architectures, languages

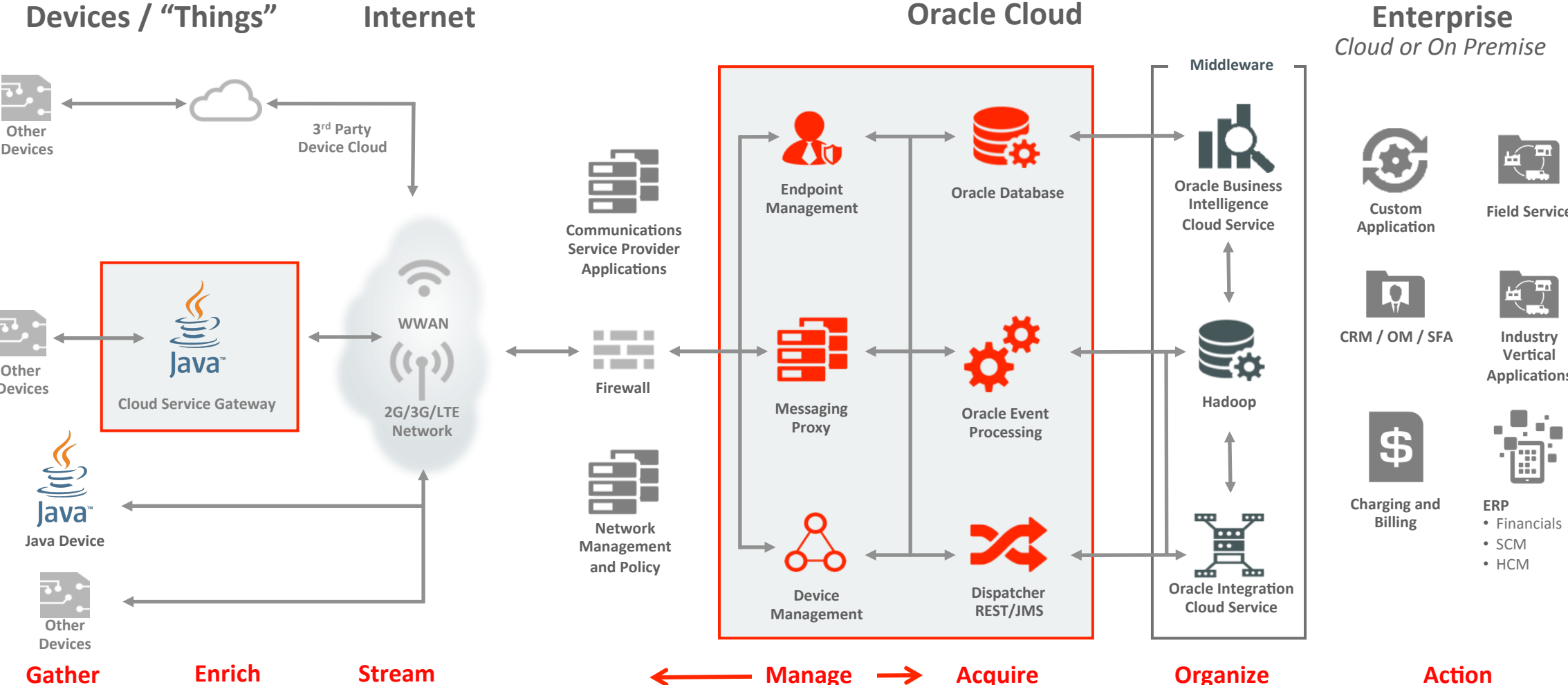
Life-cycle management

IoT Device Management

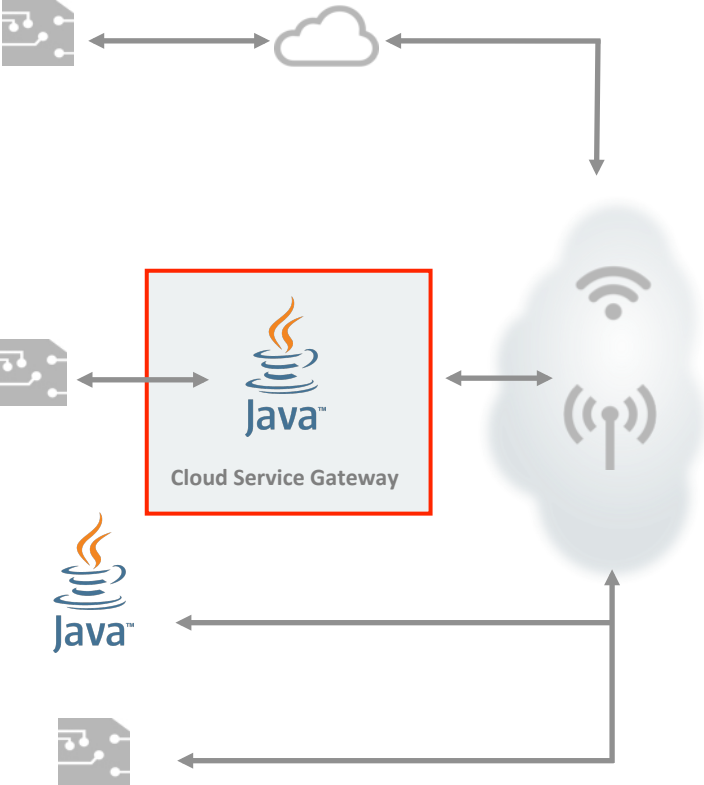
The “link” Challenge



Oracle Internet of Things Cloud Service



Devices/Things



Support for heterogeneous Things:

- Device adapter framework
- Standards driven integration
- Proprietary protocols
- Managed endpoints



Oracle IoT Cloud Service device-side strategy

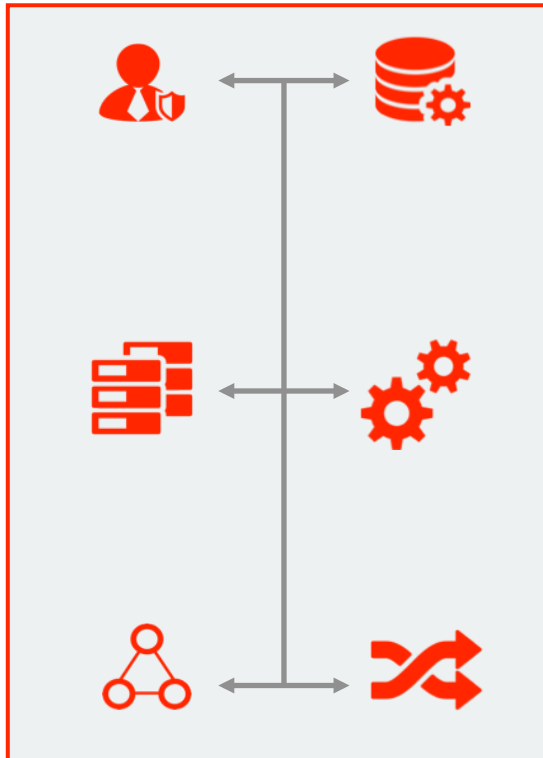
- Java preferred, but support “everything”
- Enable any device to integrate with the Oracle IoT Cloud Service
 - Java, C , Javascript, standard protocols, HW, etc.
- Out of the box libraries for Java ME/SE to make integration of Java-enabled devices very easy
 - Enables communications, device management, security, etc
 - Reduces cost & effort for Oracle’s customers & partners
- Leverage open ecosystem to enable scale
 - Collaborate with customers/partners/competitors based on OSS for device-side enablement

Java Benefits for IoT Devices

- Familiar, (relatively) platform independent, strong tooling/ecosystem
- IoT enabling functionality readily available from commercial vendors and FOSS community
 - Hardware/network support
 - Application containers, remote management etc
 - OpenJDK, Eclipse, Apache to name a few
- Mature set of security features & APIs – easily extended to support different levels based on industry/regulatory needs
- “Distributed intelligence” straightforward

Type of Device	Positioning	Software
Gateway	<p>Proxy/bridge between Internet and existing devices and peripherals using non-IP protocols (mesh networks, field buses, etc)</p> <p>Can also double as high-end endpoint</p>	Java SE + adapter framework + managed application container (for example OSGi)
High-end endpoint (CPU, 10+ MB RAM, 100+ MB disk/flash)	Data collection and advanced device-side logic/processing. Can be quite powerful: good when sensor data is combined with media (audio, video) or interactive UI. Wired power available.	Java SE + IoT endpoint application or managed application container (eg, OSGi)
Low/medium-end endpoint (wireless module or MCU, 128+ kB RAM, 1 MB + disk/flash)	For remote and low-power data collection + some device-side logic/processing. Lower cost, economically feasible to deploy in very large numbers.	<p>Java ME + agent for management</p> <p>ME 8 application container + management functionality sufficient, no additional “infrastructure SW” needed</p>

IoT Cloud Service



- IoT-scale messaging
- Event processing
- Data driven real-time dispatch
- Managed identity, security, lifecycle
- Flexible and scalable business model

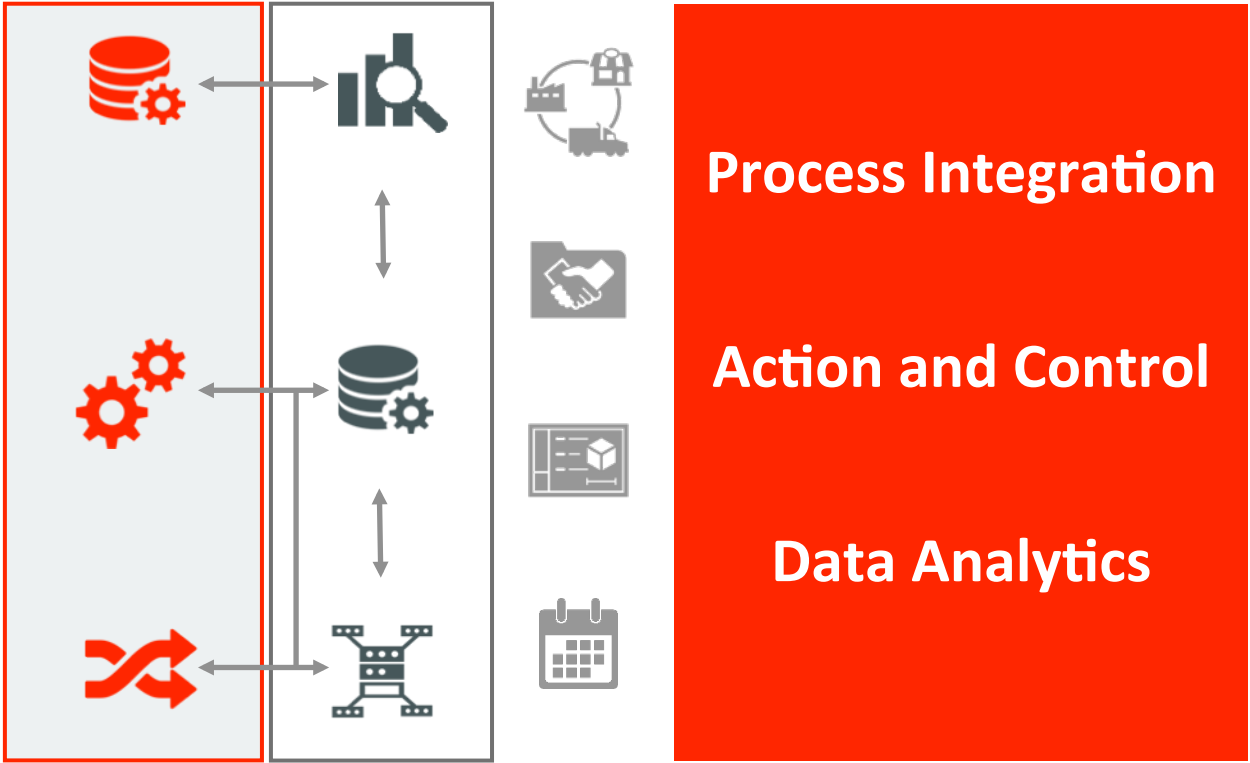
Device

IoT

Middleware

Enterprise

Enterprise Orchestration



- Standards based integration
- Event processing
- Oracle BI and Data Analytics support

Device

IoT

Middleware

Enterprise



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