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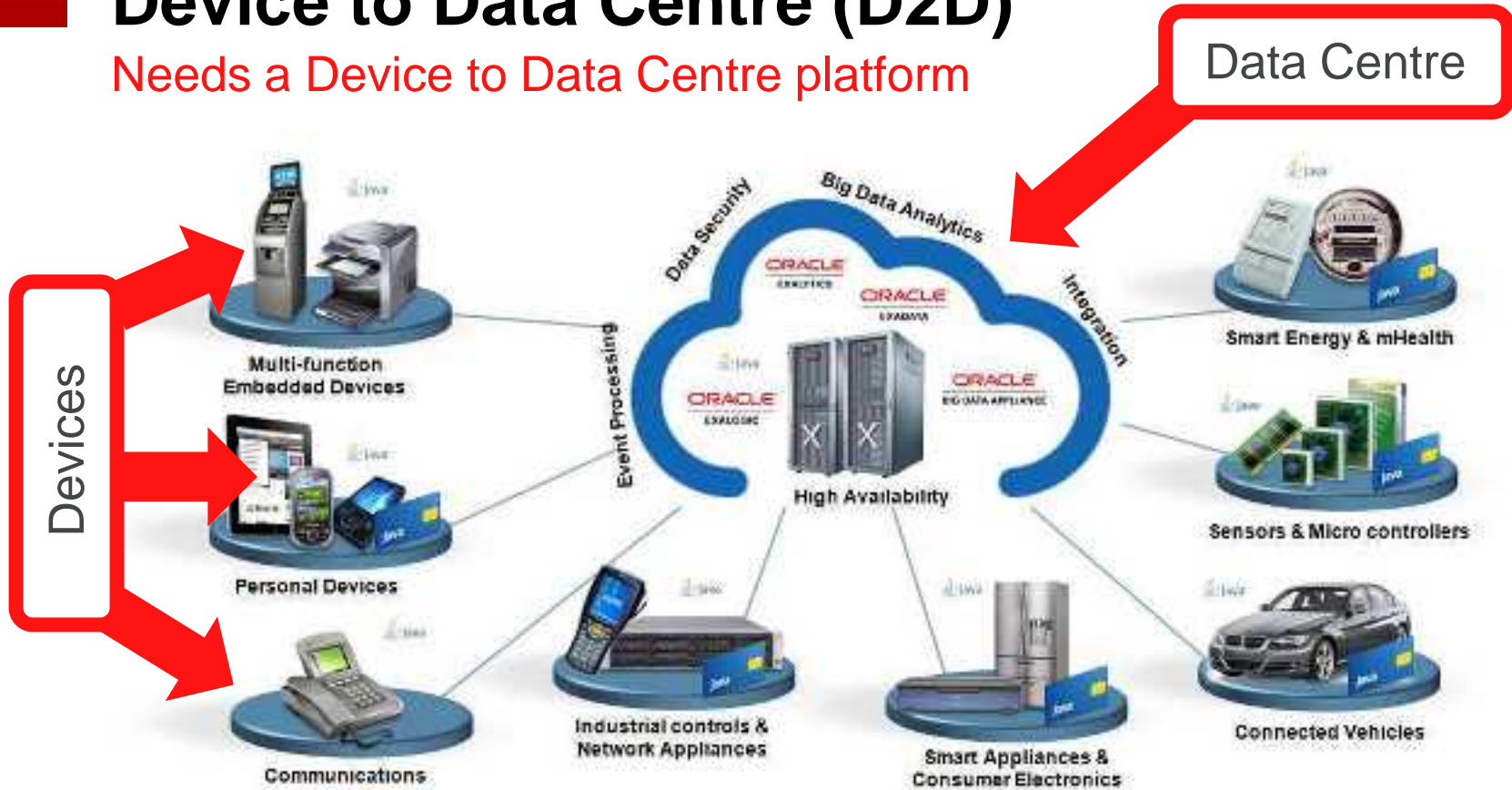
Internet of Things: The Next Horizon

Needs a Device to Data Centre platform



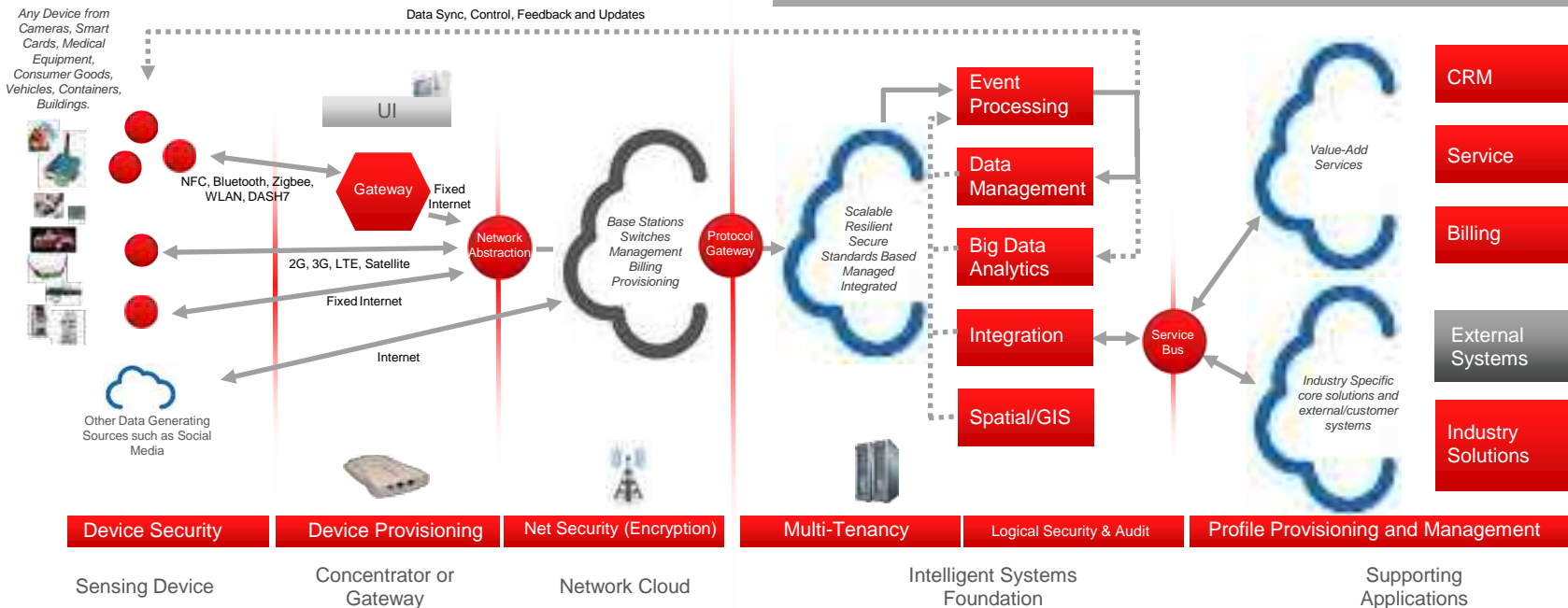
Compressor Pro Device to Data Centre (D2D)

Needs a Device to Data Centre platform



THE INTERNET OF THINGS IN LAYERS

This is what you can enable with Java



What is Java?

It is a Virtualization Platform for Intelligent Devices

- Develop for **ANY** device
- Put Intelligence on the **EDGE**
- FULL?** **Device to Data Center?** DEVELOPMENT and deployment

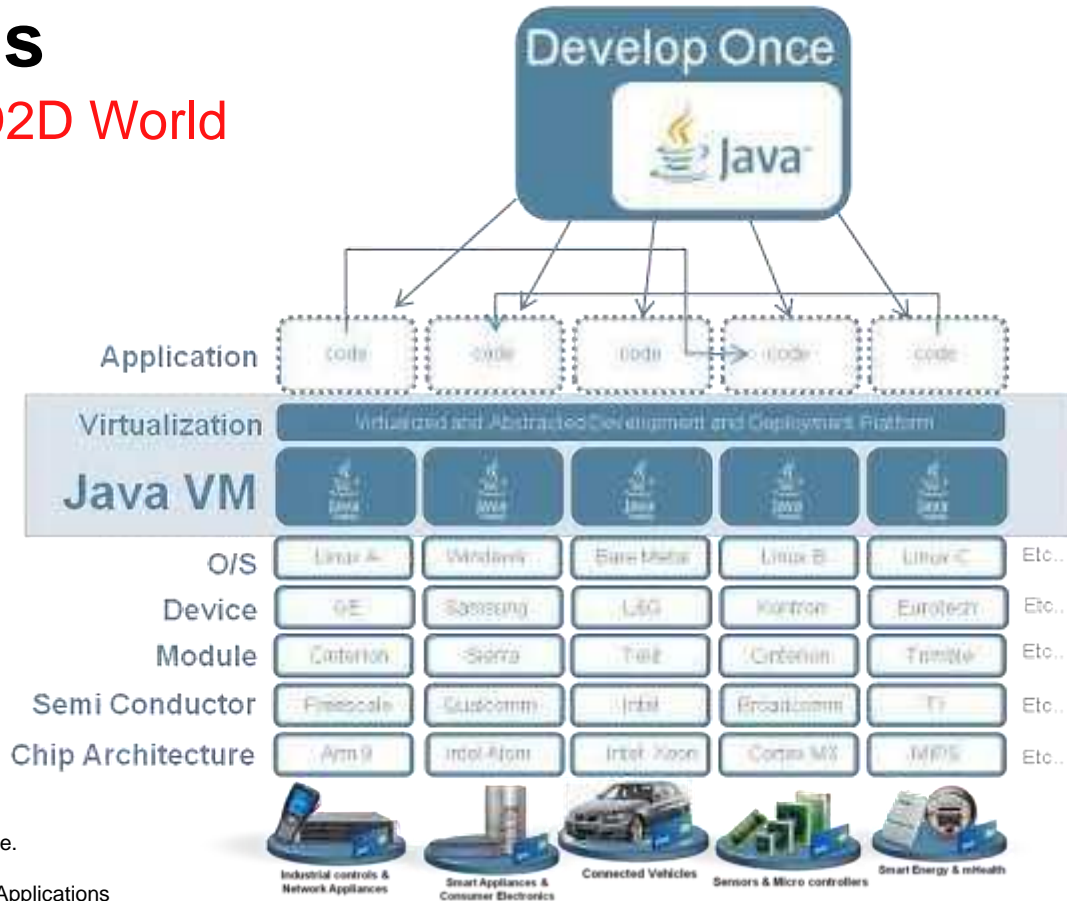


Java VM ? What it is

Virtualizing the Connected D2D World

- Java VM (JVM) runs on all connected devices
- Hides the specifics of the device and the embedded O/S
- Deploy/Move Code to any platform with a JVM implementation

- Applications are compiled in Java Virtual Machine (JVM) bytecode.
- Can be run on any platform with a JVM implementation.
- Portable, Secure, Dynamic, Productive, Robust, Multi-Threaded Applications





Java Embedded Comes in Many Sizes



Small + Secure	Small
Secure Element	General Embedded
Card based	Low-end processors
Limited resources	Limited memory
Optimized for low power	
Highly cost-sensitive	

Medium
Mid range processors
Low start-up time
Seamless updateability
Somewhat cost-sensitive

Large
High-end processors
Continuous operation
No memory constraints
Less cost-sensitive

Common Attributes Independent of System Size

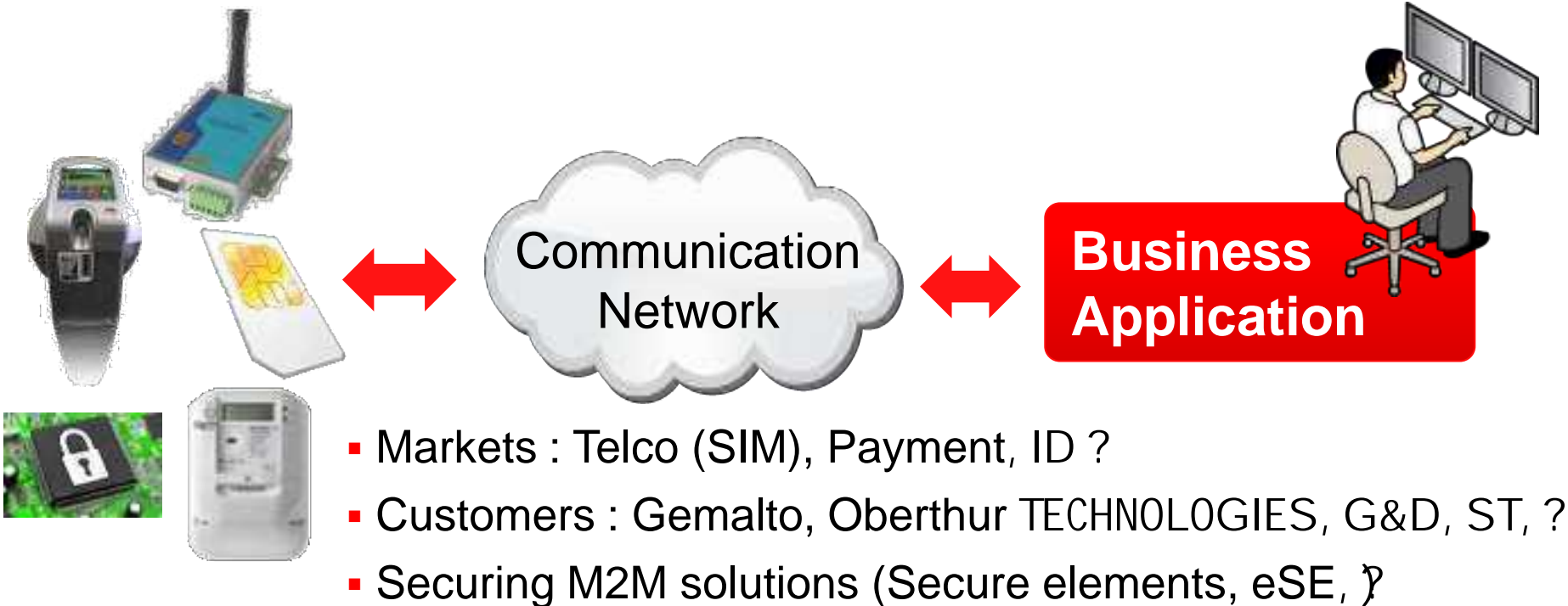
- DIVERSE APIs AND LIBRARIES
- Secure platform and applications
- Portability / Hardware Abstraction

Oracle Java Embedded Offering Today



Small + Secure : Java Card 3

Building block for Embedded Security



Small Embedded : Oracle Java ME Embedded

Applicable segments

- Wireless M2M modules
 - ? Smart Meters & Sensors
 - ? Medical monitoring devices
 - ? Industrial comm modules
- References
 - ? Cinterion
 - ? Qualcomm



Medium : Oracle Java Embedded Client

Applicable Segments

- Digital TVs, Set-tops, & Media Players
- Blu-rays Players
- Network Equipment & Storage Devices
- VoIP Telephony
- eBook Readers
- Smart Grid/Concentrators
- Automotive/Telemetric
- Multi-Functional Printers (MFP)
- Handheld Terminals/Kiosk



Large Embedded: Oracle Java SE Embedded



- Routers & Switches
- Storage Appliances
- Network Management Systems
- Medical Imaging Systems
- Radar Systems
- Industrial PCs
- Factory Automation Systems
- Geo-Imaging Devices
- Lottery/Gaming Systems
- Multi Function Printers
- Intelligent Power Module
- Netbooks
- Video Conferencing Systems
- In-Flight Entertainment Systems
- Video Streaming Systems
- Electronic Voting Systems
- Voice Messaging Systems
- Security Systems

Compressor Pro Oracle and Java

Many Examples



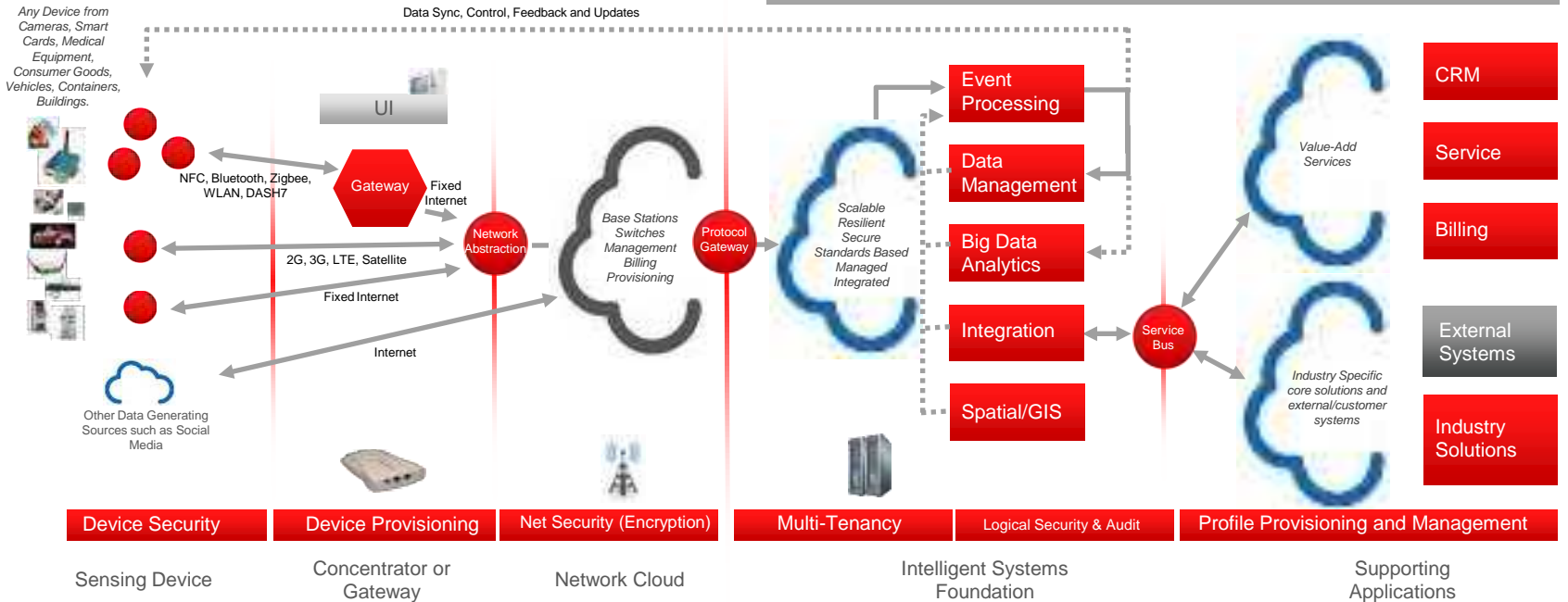
PDF Compressor Pro Solution Areas

http://www.libelium.com/top_50_iiot_sensor_applications_ranking



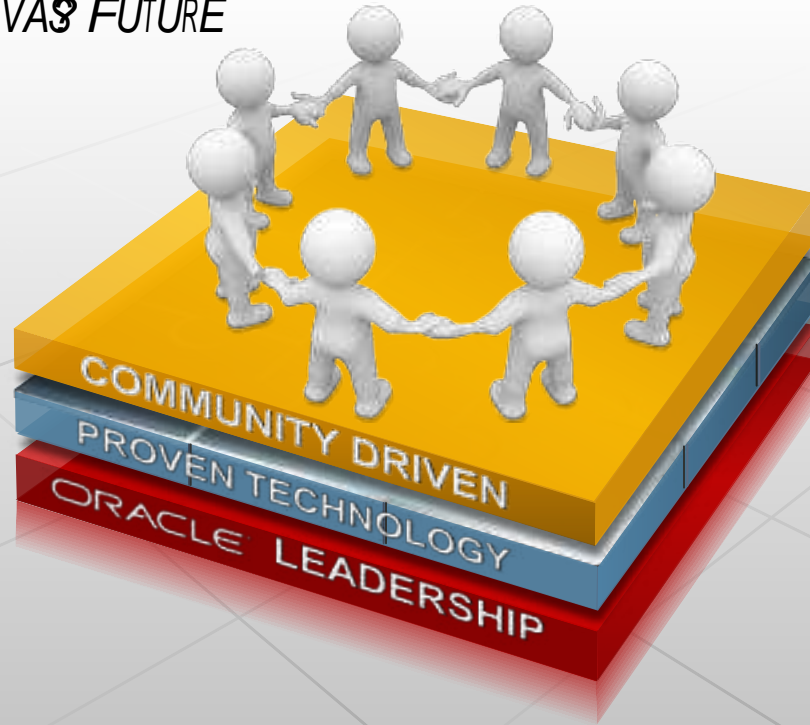
THE INTERNET OF THINGS IN LAYERS

This is what you can enable with Java



Oracle and Java

WHY WE BELIEVE IN JAVA'S FUTURE



Oracle and Java

WHY WE BELIEVE IN JAVA'S FUTURE

- Modularity
- Extensibility
- Flexibility
- Innovation
- Relevance
- Passion
- Fun
- Community!





Run Anywhere

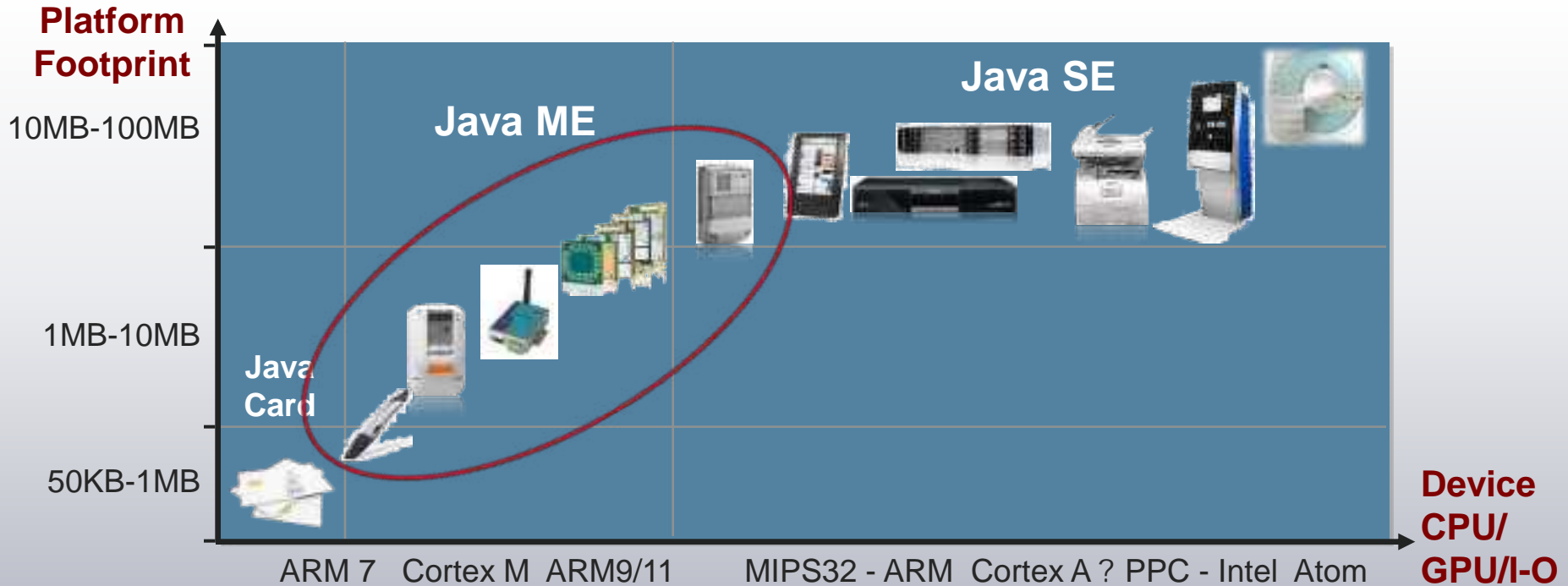
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Java Embedded (ME/SE)

How to start



Java Technology for Embedded Devices

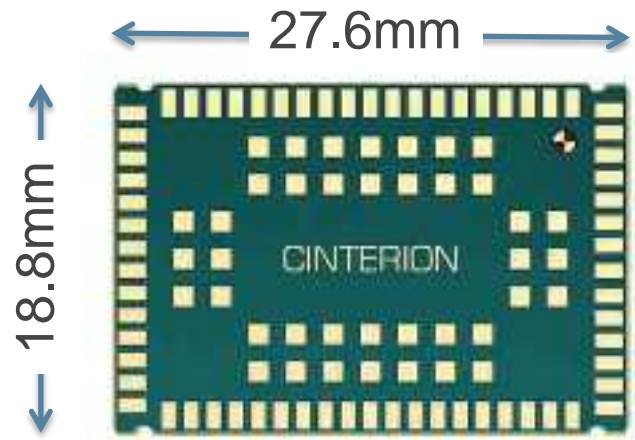


Java and 3G in a Tiny Package

Cinterion EHS5



PDF Compressor Pro
REALLY TINY?



LET'S START SMALL

Raspberry Pi

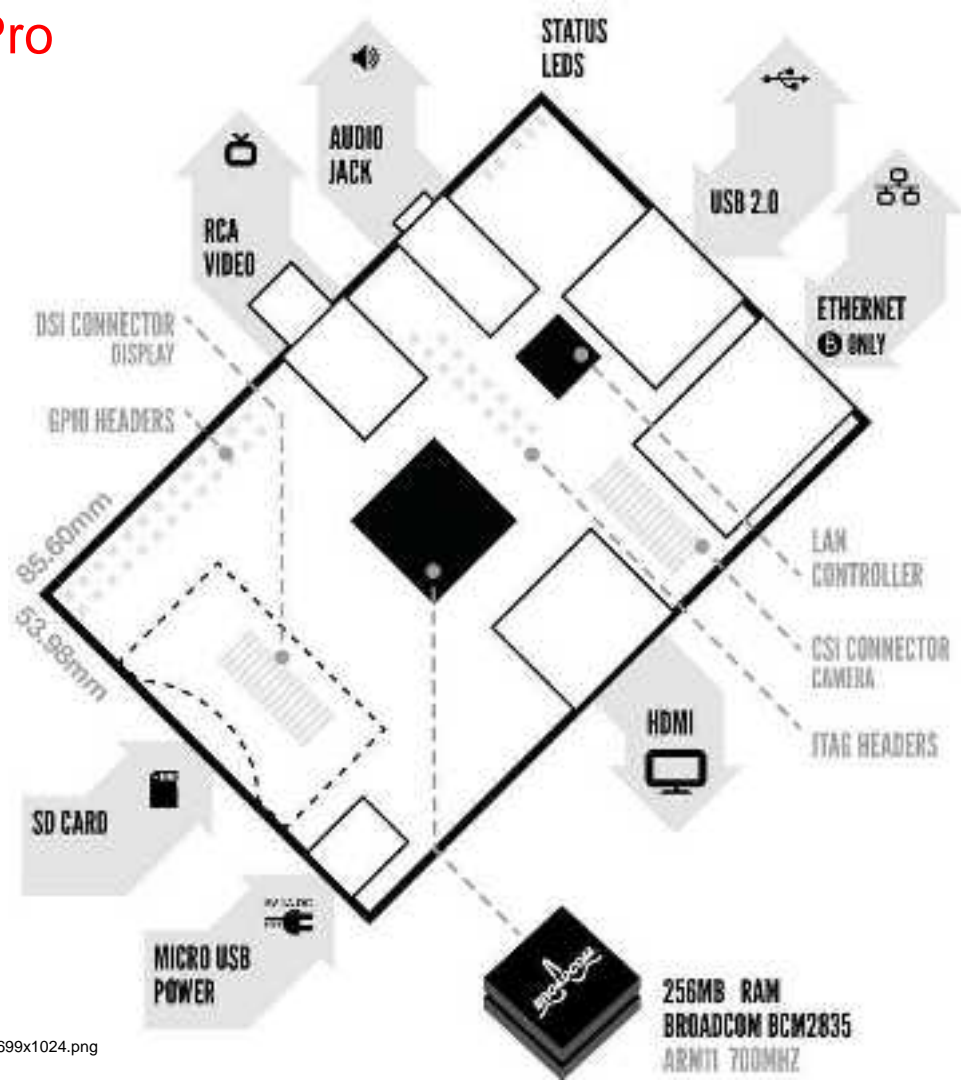


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JavaOne

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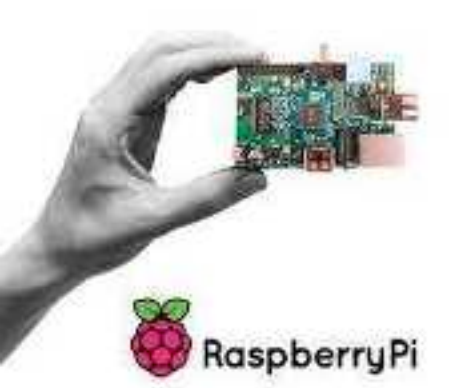
Raspberry Pi

Small and cheap, but powerful

- CPU: ARM 11 core running at 700MHz
 - ? Broadcom SoC package
 - ? Can now be overclocked to 1GHz (without breaking the warranty!)
- Memory: ~~256Mb~~ 512Mb
- I/O:
 - ? HDMI and composite video
 - ? 2 x USB ports (Model B only)
 - ? Ethernet (Model B only)
 - ? Header pins for GPIO, UART, SPI and I2C



Java on Raspberry Pi



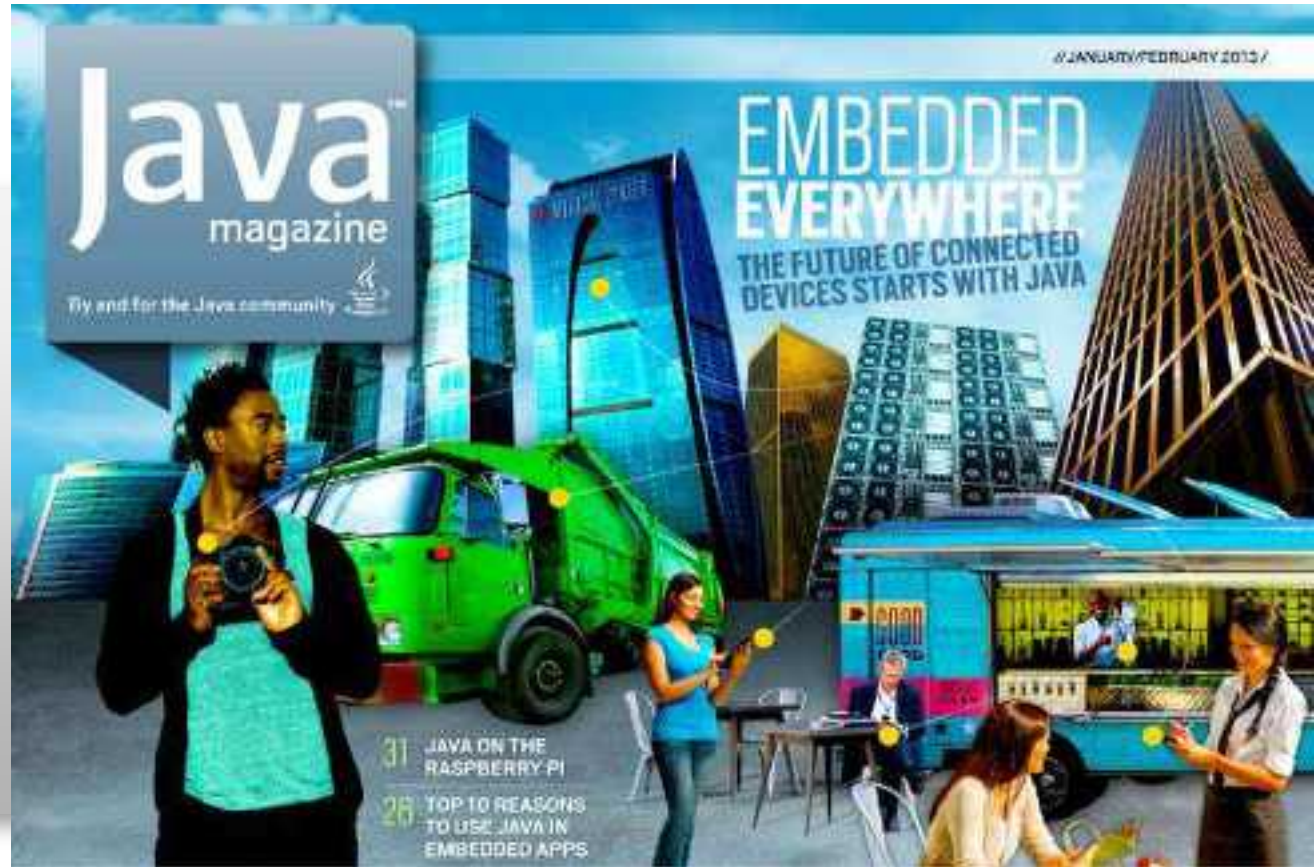
- Java SE & ME (emb) EA x ARM
- Hard Float Support
- Java SE & Java FX
- Excellent Performances



JAVA MAGAZINE 2013

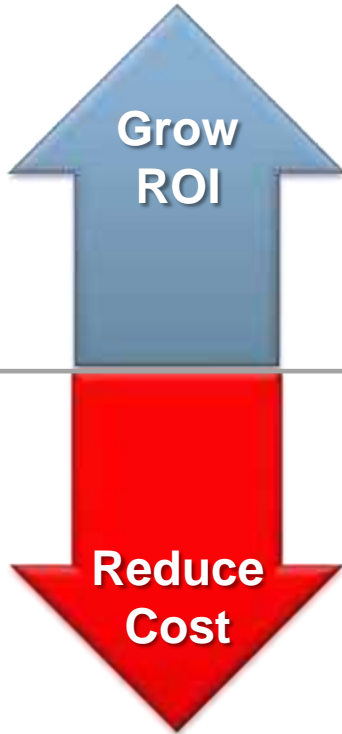
FOCUS ON
EMBEDDED JAVA

WWW.ORACLE.COM/JAVAMAGAZINE



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Java Delivers Business Value



- **Extend Product Lifecycle**
- **Competitive Advantage**
- **Innovation**
- **Increase Market Reach**

- **Portability**
- **Shorter Time-to-Market**
- **Reduce Risk and Support Cost**
- **Standards-based**

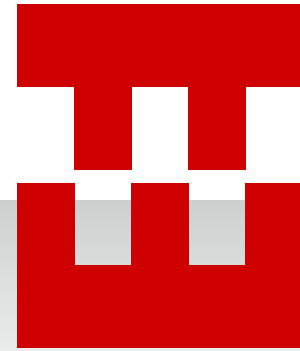
ORACLE HAS A
COMPLETE
PORTFOLIO



OF
BEST IN CLASS
TECHNOLOGIES



THAT ARE
ENGINEERED TO
WORK TOGETHER



FROM DEVICE TO DATA CENTER

Where are we

Where to download, where to follow

- <http://www.oracle.com/technetwork/java/embedded/downloads/>
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Hardware and Software

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Engineered to Work Together

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