News Fact Sheet

Kegs, Wheelchairs and Big Rigs
Welcome to the Internet of Things

SANTA CLARA, Calif., Sept. 9, 2014 – What do kegs, wheelchairs and big rig trucks have in common? They are just a few of the everyday objects that are being transformed into intelligent, data-driven solutions for real-world problems. The Internet of Things (IoT) is enabling this technological revolution. To drive this transformation, there are four key areas that are crucial to the success of the IoT: security, interoperability, industry standards, and scaling with the ecosystem.

IoT Tenets

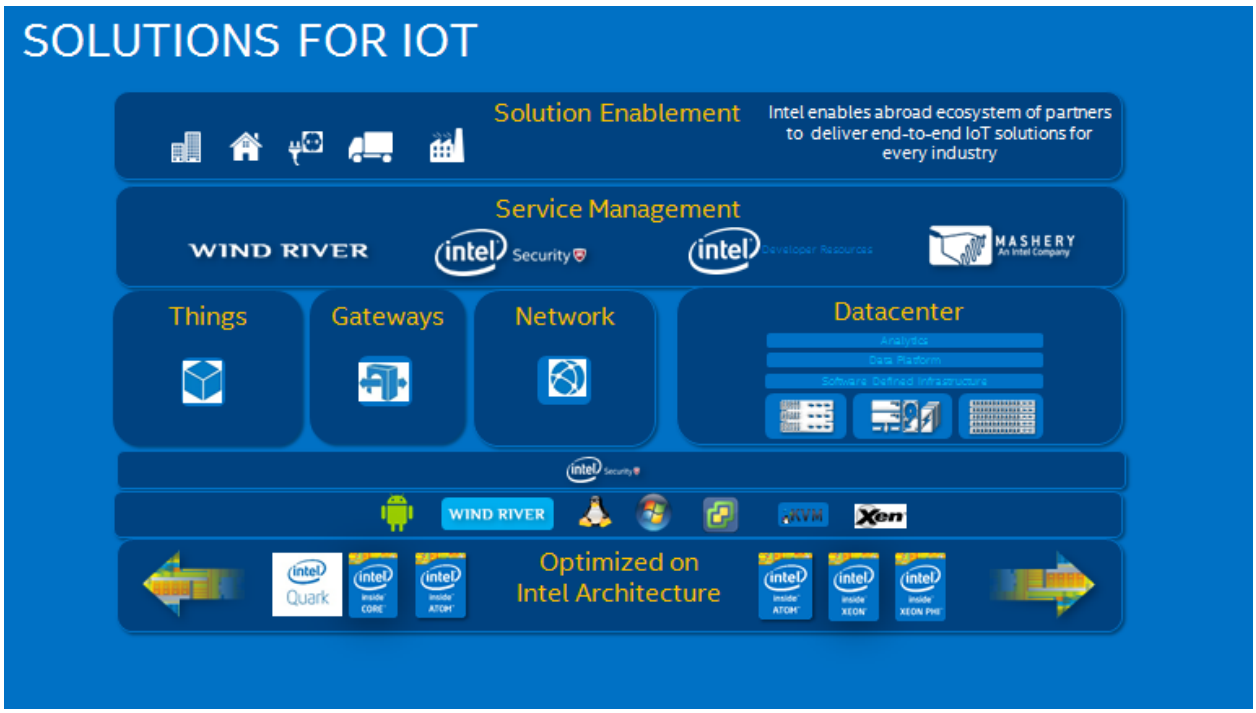
To fully realize the value of the IoT, disparate systems need to securely connect, interoperate and communicate. This can be challenging and time consuming for those deploying IoT systems as well as developers creating IoT applications. To guide the development and ease of deployment of IoT solutions, Intel has identified five key tenets of success for edge-to-cloud solutions, with a focus on security and interoperability.

Intel identified the five tenets of edge-to-cloud solutions.

Industry Leaders Adopting Intel Model for IoT

To enable developers and service providers to create and deliver IoT solutions quickly and securely, Intel is offering a set of foundational building blocks. It starts with security, by integrating hardware and software technologies from Intel, Wind River*,

and Intel security to protect devices and data. Next, providing a framework for managing devices and normalizing data eases deployment and interoperability. Finally, turning data into actionable insight requires a broad analytics infrastructure that spans from the edge to the cloud, as well as the APIs to seamlessly expose, move and monetize data.



Intel offers the foundational building blocks for end-to-end IoT solutions.

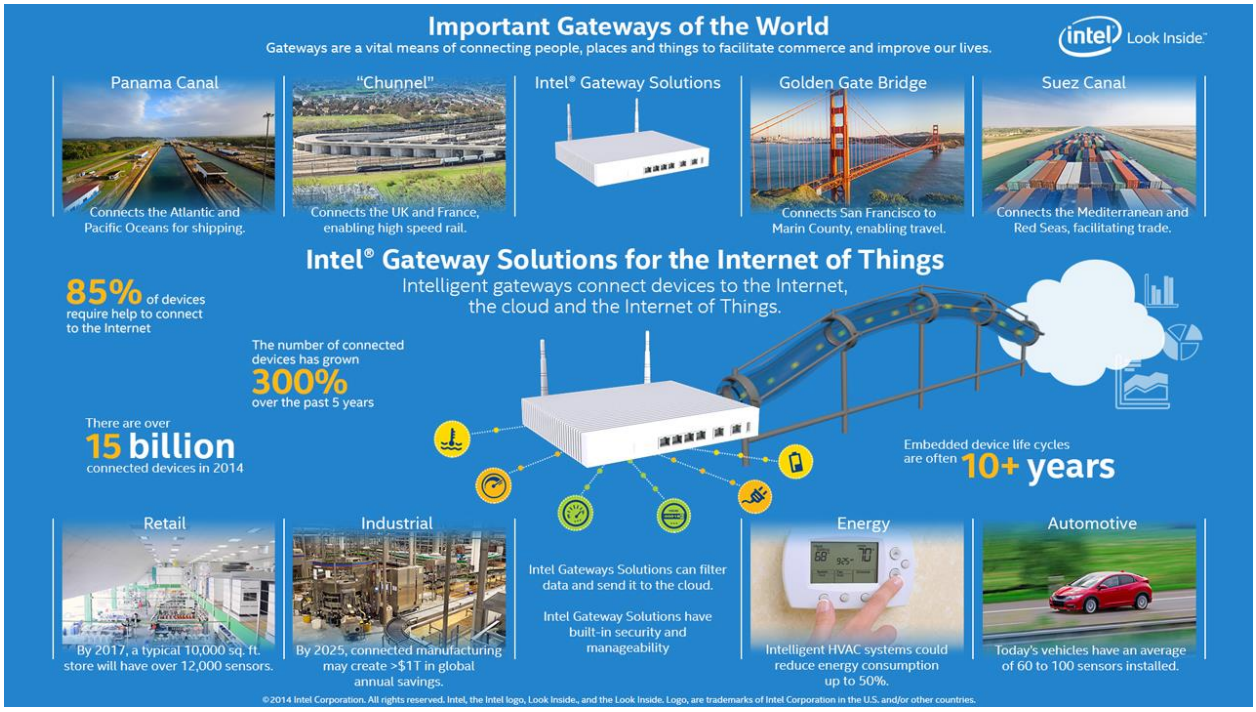
Additionally, industry IoT leaders including AT&T*, Cisco*, GE*, and IBM* are working with Intel to create solutions that give developers and customers the flexibility they need to help drive market adoption.

- **AT&T*** is in discussions with Intel to enable its M2M Cloud Solutions to be preloaded on Intel® Gateway Solutions for IOT. Intel intends to actively promote AT&T's Global SIM and network management offerings to its ODM ecosystem. AT&T and Intel have also discussed streamlining the certification process to enable ODM's to more rapidly and economically bring products to market through Intel and AT&T channels.
- **Cisco*** and Intel are bringing IoT solutions into segments such as smart buildings using Intel® architecture and Cisco's Energywise and IP Network.

- **GE*** is advancing the Industrial Internet by integrating Intel technology such as security, gateway, and embedded system components with GE's Predix platform for industries such as healthcare, energy, transportation and more.
- **IBM*** To enable secure edge to cloud solutions Intel and IBM are collaborating to optimize IBM Bluemix, IBM Internet of Things Foundation and Intel® Galileo and Intel® Gateway Solutions for end-to-end security and rapid time to market. In addition, the IBM Informix database is now available for Intel® Quark™ based edge devices, and included in Intel® Quark™ SDK.

Transforming Everyday Things by Connecting the Unconnected

Intel is transforming everyday objects into connected devices using Intel Gateway Solutions. Today, Intel and its ecosystem have more than 25 different gateway solutions available for the maker, transportation, industrial and retail markets. These products are based on Intel® Galileo development boards as well as Intel® Atom™ and Intel® Quark™ processors and feature integrated software from McAfee* and Wind River*. Eighty-five percent of all devices are unconnected, and gateways will rapidly bring billions of devices into the IoT.



What is a gateway? Intel intelligent gateways connect devices to the Internet of Things.

At the 2014 Intel Developer Conference (IDF) in San Francisco, Intel's Doug Davis is highlighting 10 of the best IoT applications based on Intel architecture – everything from rhino tracking to cupcake ATMs. Three of these Intel-based solutions are being showcased at IDF.

- **Connected Wheelchair** – Through the Intel Collaborators program, a team of Intel engineering interns designed a custom platform that can transform standard wheelchairs into data driven, connected machines. Using the Intel® Galileo Development kit and Intel Gateway Solutions for IoT, the team created a wheelchair proof of concept that enables the collection of biometrical information from the user, as well as mechanical information from the machine, that can then be analyzed. The team also built an application that allows wheelchair users to map and rate the accessibility of locations, further enhancing the user experience.

The Intel-based connected wheelchair was developed using the Intel Galileo Development kit and Intel Gateway Solutions for IoT.

- **SteadyServ* iKeg System** – The Intel-based SteadyServ* iKeg system uses RFID and sensor technology to collect data from beer kegs and provide feedback to bar owners about the state of their inventory, while aggregating market data to help distributors and brewers better serve end-customers by catering to their tastes.

- **Fleet Management Solution** – Intel and Vnomics* are creating custom solutions for the transportation and logistics industry that manage and monitor fleet data. Using integrated technology from Intel, Vnomics brought together sensors, intelligent devices and real-time data analytics to help make freight trucks more efficient. Saia Inc.*, a leading multi-regional less-than-truckload (LTL) carrier, has seen a 6 percent increase in fuel economy resulting in approximately 4 million gallons per year in savings by connecting 100 percent of its fleet with Vnomics gateways.

Using integrated solutions and development kits such as the Intel Gateway Solutions for IoT development kit, Intel Galileo development board and Intel® IoT Developer Kit, developers can create new intelligent devices like these and help build the connected future of the Internet of Things.

Supporting Resources

- IoT Tenets
- Gateway Infographic
- Intel-based SteadyServ* iKeg solution
  - Infographic
- Intel-based connected wheelchair
  - Video
  - Images
- Fleet management solution
  - Video

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