# IOT & VERTICAL APPLICATION STORES

## ARDIC IoT Ignite*: diverse vertical market app store and Intel® IoT Gateways

Mobility and user-friendliness are demanding new, innovative, and powerful business models from service providers, business operators, and enterprises. This demand is taking place in every vertical market segment including education, healthcare, retail, government, enterprise, and more. Vertical Application Store* is the keystone for this transformation, shaping the relationship between services and applications provided by the IoT platform and clients.

Intel® IoT Gateways connect edge devices—including mobile devices, sensors, and actuators—to the ARDIC IoT Ignite* platform and extend the entire set of IoT services and applications of the ecosystem to the clients.

## Technology evolution: the service-client model

Users are demanding access to the apps and data from any device and from any location. This demand is creating major management, security, and compliance challenges and concerns for service providers. Service providers need the ability to manage, control, and secure edge devices, applications, and data from a centralized point and assign application and data policies built on the current ownership, status, and location of the device and the user. Benefits can include:

- Improved mobility and flexibility to address business and client needs quickly from any location
- Simple and secure access to the applications and services from any edge device
- Enhanced security, management, and monitoring capabilities

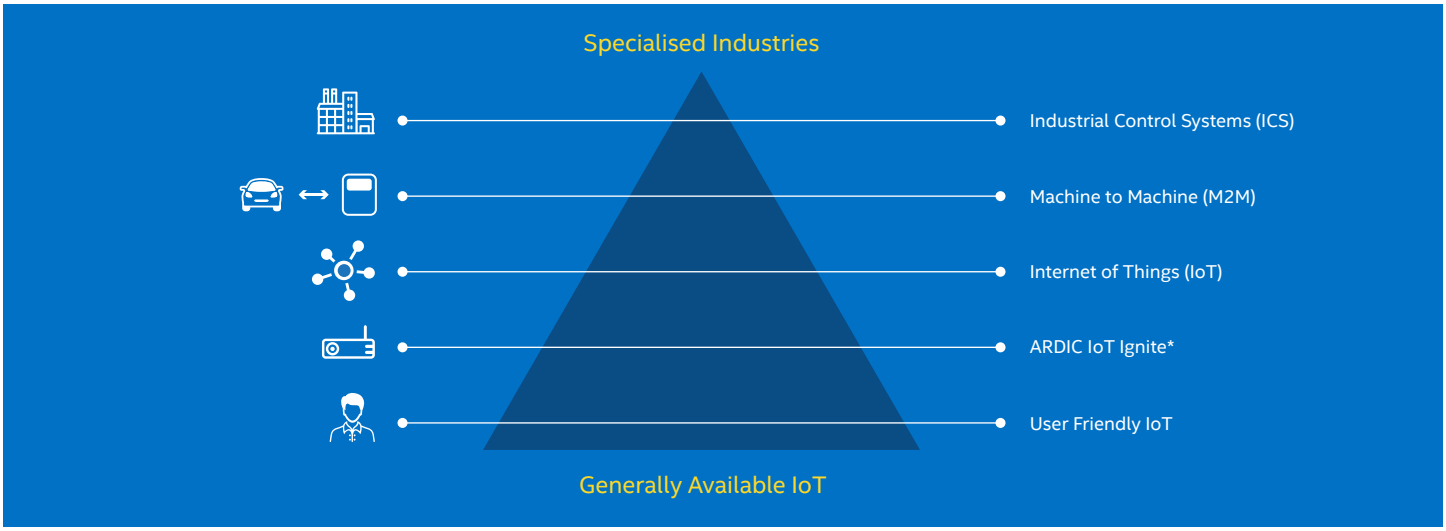


Figure 1: Historical evolution of the networking of machines

The connection of "things" has been around for awhile. Previously, it was not known as a connection of things, but more as machines, and the connections were not Internet based, but were specially built dedicated connections. Figure 1 illustrates the historical evolution of the networking of machines, starting with industrial control systems (ICS) and expanding to encompass many things and become generally available.

Similar to any technological evolution, the connection of machines and devices has gone through first the diversification and then the unification phase.

- **The diversification** was driven by the fact that each industry or company had to meet its own immediate needs.
- **The unification phase** is motivated by the huge number of devices that have to be connected and the availability of a unifying Internet.

Since these devices vary from wearable devices, to sensors on small micro controller boards, to smart boards in classrooms, to power generators, the unification phase of connecting devices is referred to as the Internet of Things (IoT).

## ARDIC IoT Ignite ecosystem

ARDIC IoT Ignite is a simple and flexible infrastructure for creating an IoT ecosystem for multiple tenants in which the tenants can create or acquire their own applications for their specific and different needs. Tenants could be companies, enterprises, and institutions providing services to their customers (e.g., a power generator service company monitoring customer generators or a healthcare company monitoring vital patient statistics via wearable sensors).

ARDIC'S reliable, scalable, and distributed IoT platform, ARDIC IoT Ignite, comes with a rich feature set, including HTML5 and Javascript* application development support at both gateway level and Ignite API level, including multi-tenancy, secure network connectivity, usage statistics, mediation, and complex event processing.

ARDIC IoT Ignite APIs enable service providers to easily connect, configure, manage, and monitor the edge devices within their networks. Data collection, access, and analysis are provided via a secure and a distributed platform.

On the client side, the edge devices, sensors, and actuators can be connected via either a direct or gateway-based connection. While direct connectivity provides an easy interface to ArCloud's* (the core platform of IGNITE, rich feature set) gateway connectivity provides the same technology and services at the nearest point to a client.

The Vertical Application Store* can accommodate applications for:

- The gateways or the edge devices (phones, tablets, sensors, and actuators)
- The application server for storing, processing, and enabling relevant data

- The service control for IoT network management and monitoring
- Device and user monitoring and management

Figure 2 illustrates the general structure of the ARDIC IoT Ignite ecosystem with multiple tenants. The Vertical Application Store provides applications to the Intel-based gateways compliant to the needs of the tenants.

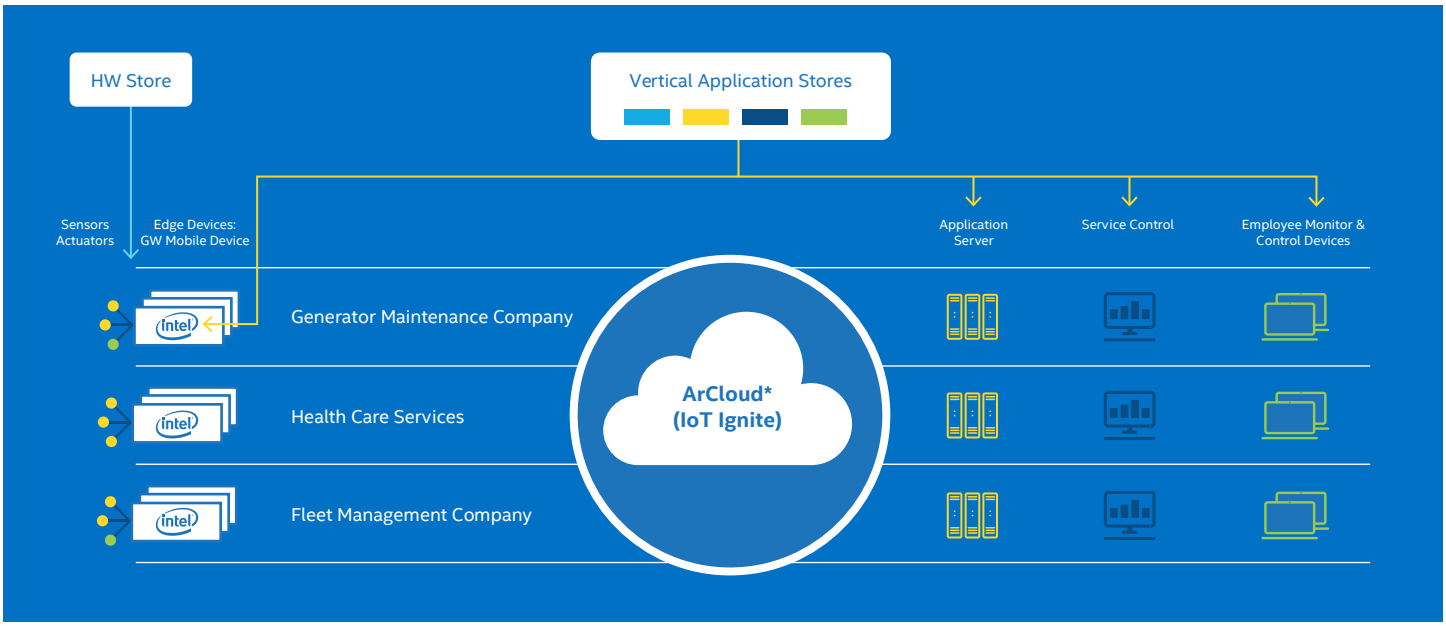


Figure 2: General structure of the ARDIC IoT Ignite ecosystem with multiple tenants

## Diverse vertical market segments: Vertical Application Store

Vertical Application Store enables flexible, user-friendly and, most importantly, rapidly deployable services for any market segment. The service provider doesn't have to worry about network and backbone infrastructure, since the necessary applications are readily available in the Application Store. In addition, applications developed by a third-party Independent Software Vendor (ISV) could easily be integrated into the secure ecosystem.

Service providers can benefit from the ARDIC IoT Ignite ecosystem and the flexible Application Store for deployment within diverse vertical market segments. Some examples of different scenarios include:

- In agriculture, monitoring and management of soil conditions for efficient farming
- In enterprise and government, monitoring and management of field employees' secure connectivity to the main office
- In education, monitoring and management of smart and connected classroom environments including student and teacher tablets and smart boards

- In services, monitoring and maintenance of edge devices to minimize field trips (e.g., a power generator maintenance company may want to optimize its maintenance schedule with remote monitoring of different makes and models of power generators)
- In healthcare, monitoring and management of sensors deployed to track patients' vital signs

These cases demonstrate the power of the Vertical Application Store in implementing flexible and customized IoT networks.

Figure 3 shows the relationship among the players in the IoT market space. The ARDIC IoT Ignite ecosystem is an enabler, bringing together IoT platform owners, service providers, Intel IoT Gateways manufacturers, and ISVs. The glue in this ecosystem is the availability of the diverse applications from a Vertical Application Store for specific services and needs. In conclusion, the ARDIC IoT Ignite ecosystem—with its flexibility, open APIs, ease of use and Vertical Application Store—enables service providers to rapidly implement IoT services in an unlimited range of fields.

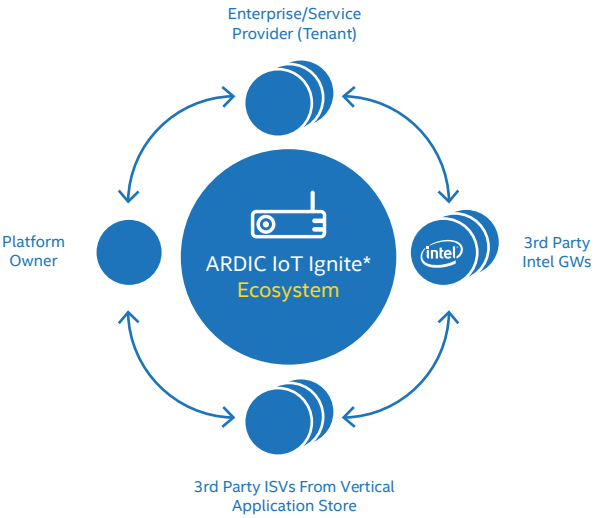


Figure 3: Relationship among the players in the IoT market segment

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Learn more about Intel and the Internet of Things here.
Learn more about ARDIC IoT Ignite Services here.