



Delivering Cloud-based Services in a Bring-Your-Own Environment

Integrating BYOD efforts with our cloud development:

- Enables secure, flexible delivery of services to a wide variety of devices
- Enhances user experience and productivity
- Supports the best possible performance depending on device capability and cloud availability

As Intel IT builds cloud infrastructure and enables cloud services, one of our goals is to make those services available to as broad a range of devices as possible. Therefore, we are integrating our cloud computing efforts with our bring-your-own device initiatives, enabling Intel to obtain the maximum business value from both.

We have found that the key to delivering cloud-based services to a wide variety of devices, including BYO devices, is to create a two-way awareness between the cloud and the client. Not all client devices have the same capabilities, and the cloud is not always available to a client device. Therefore, a one-size-fits-all service delivery model is not appropriate. A misalignment between the delivery model and the device could negatively affect employee productivity and business functionality, introduce security risk, and invalidate the investment made in developing cloud-based services and applications.

Client-aware Cloud

We are developing an intelligent, client-aware cloud that will be able to determine the following:

- Whether an application provides the best user experience if executed locally or remotely
- Which native features, such as a location-based service provided by the Global Positioning System or accelerometer, are available on a device
- How to use predefined user and device profiles to customize services to user preferences and the device's security access level

Cloud-aware Client

Conversely, we are also establishing foundational capabilities to enable cloud-aware client devices. For example, a client device will be able to determine the following:

- Whether the cloud is available
- What services are available to the client device at the time
- Its security level and available bandwidth

For example, if the cloud is available, the device stores a document in a cloud-based document repository. But, if the cloud isn't available, the device stores the document locally and possibly automatically uploads the document to the cloud when it becomes possible.

Foundational Services

Implementing a client-aware cloud and cloud-aware devices requires changes to several areas of the IT environment:

- **Communications infrastructure.** Providing cloud-based services to multiple devices and OSs requires several modifications to our communications infrastructure, such as additional firewall controls. To manage, protect, and deliver content flexibly, we have made significant enhancements and adjustments to our information security model, mobile device management practices, and personal workspace portability capabilities.
- **Service delivery model.** Because our goal is to enable cloud-based services that take advantage of features on employees' devices, we need to act as a trusted advisor, providing employees information about a device, whether it's a smartphone, tablet, or PC. To educate employees about which devices can access which enterprise services and which devices and OSs are best for certain work scenarios, we have created a web portal that provides a wide variety of information to employees enrolling in our BYOD programs.
- **Application development processes.** We are implementing a data and application virtualization framework that allows us to decouple our enterprise applications that follow more traditional software development methodology from many of our newer capabilities that demand a faster pace. This allows us to create assemble-to-order, cloud-based solutions by combining the capabilities of existing enterprise data and applications and integrating them with new capabilities.

There are parallels and interdependencies between IT consumerization, which provides employees with a wider range of choices for compute capability, and the advent of cloud computing, which offers businesses additional options for IT services. By taking advantage of the unique strengths associated with the device and the cloud, we are systematically building a private enterprise cloud that can determine device attributes and user preferences, and tailor services accordingly.

You can find a full discussion of this topic at "[Delivering Cloud-based Services in a Bring-Your-Own Environment.](#)"

For more information on Intel IT best practices, visit www.intel.com/it.

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