SaaS *versus* Private Server, Cloud and On-Premises

What does “cloud” and “On-Premises” mean? Are SaaS (Software as a Service) and VPS (Virtual Private Server) better descriptors?

On-Premises used to mean a physical server down the hall of the company office, or in the data center within the company office building.

Cloud used to mean shared services hosted external to the company.

Technology has advanced to the point that Cloud Technology is deployed universally, both on-premises and off, reducing operational costs significantly. Servers now run as Virtual Machines (VMs). A nearly equivalent term within the industry is a Virtual Private Server (VPS), perhaps originating from the web hosting industry in which hosted services were adopted early. Today that physical server down the hall of the company office is almost certainly running cloud technology and hosting multiple VMs in a private cloud. Those VMs can also be moved to a dedicated rack in a co-location facility (still private cloud), a local (regional) cloud services provider (public cloud), or to one of the major vendors – AWS and Azure are well known.

Meanwhile, Software as a Service (SaaS) has matured – SAP provided ERP and CRM software starting in the 1970s. Today e-mail and Office applications are offered on a SaaS basis by Microsoft (Office 365) and Google (GoogleApps).

Now we focus on a company under 100 employees in size with a decision of whether to embrace cloud technology and move wholly to an Office 365 or GoogleApps platform (SaaS), to cloud hosted VPSs to replace their current in-house servers, or to maintain severs on-premises – typically one or two physical host servers and ten to twenty virtual machines. These three options offer very different benefits:

- Microsoft Office 365, with Azure Active Directory, includes Exchange Online, SharePoint Online, Skype, and supporting services on a SaaS basis. GoogleApps provides equivalent services.
- Hosted VPS maintains the company IT systems on dedicated private servers. The Active Directory domain, file / print services, e-mail, policy based management, security and other network services all remain on machines that are dedicated to the single company, without the up front overhead of purchasing new hardware.
- On-premises servers – typically one or two host servers and ten to twenty virtual machines. As with the hosted VPS, the company has full control of their Active Directory domain, file / print services, email, management policies, and security. In addition, the company has full ownership of underlying hardware, with no dependence on any outside entity.

Microsoft development of the Office 365 and Azure Active Directory systems has been very current and aggressive, working to provide all of the functionality of an on-premises system, including security and policy driven management, reaching a point at which a company can elect to move entirely to the Office 365 platform. Importantly, Azure Active Directory is providing security and management services, referred to as IaaS (Infrastructure as a Service) and PaaS (Platform as a Service).

Not to overlook – company data, in the case of Exchange and SharePoint online, is stored in a common database along with all other companies serviced by the particular server. Security boundaries are

defined in each of the applications such that any company can see and access only their data, user accounts and other attributes, with no visibility of other hosted companies. In the case of the private servers, company data is stored on servers that are exclusively company servers. Databases supporting Exchange and SharePoint contain only company data, and no data of other companies.

CTP is focused on management and security of IT systems, and has found that the same security and management goals can be applied to either the SaaS or VPS model – but the method and technologies are different for the two methods.