



INSIDE THE CLOUD WITH HP: THE FUTURE OF IMAGING AND PRINTING TODAY

The Cloud Defined

Cloud computing is a model for enabling or delivering on-demand services over a network on a pay-per-use basis by drawing on scalable and elastic IT capabilities.

The Cloud with HP Imaging and Printing

Cloud computing allows companies to take advantage of scalable and elastic IT capabilities through on-demand digitization of paper-intensive functions, optimized document-centric processes, and improved data and information flow.

Our world is connected. We have constant, instant access to oceans of information available within a digital universe that's always open, always on, and ever-expanding. And not only do we want more—we want it now.

That voracious demand for connectivity has created an increasingly fast-paced, mobile, and global workplace. To respond to the challenges that an omnivorous appetite for technology presents, companies must innovate and advance—or risk being left behind.

In particular, a shift toward consumer-centric products has resulted in the proliferation of smartphones and tablets for simultaneous personal and professional use. This duality creates complications for IT managers who want to ensure that employees and executives can access company resources through a wide variety of devices.

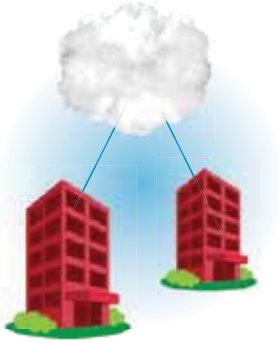
Forward-thinking enterprises are increasingly turning to versatile cloud-based services to optimize infrastructure, improve workflow, and increase productivity. One important force behind that growth is the accessibility and efficiency that cloud printing services offer, which is expected to help “drive rapid acceptance by global 1000 companies.”¹

As technology has grown more comprehensive, mobile, and fluid, HP has applied expertise and resources to lead the way. We're driving innovation in cloud printing and are ideally positioned to help companies make the transition from traditional IT to cloud services by delivering a seamless, integrated experience in the connected world. The cloud is the future. And the future is now.

Read on to learn more about:

- How cloud services, models, and capabilities function
- Why cloud services are an important tool for your business future
- How HP can offer your enterprise comprehensive cloud capabilities

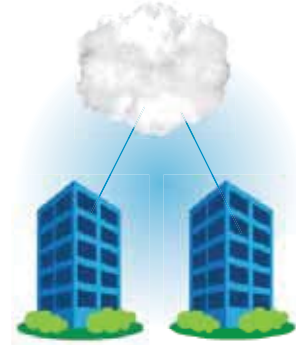
Cloud Deployment Models²



Public The cloud infrastructure is made available to the general public or a large industry group and is owned by a third-party provider selling cloud services.



Private The cloud infrastructure is operated solely for an organization. It may be managed by that organization or a third party and may exist on or off premises.



Community The cloud infrastructure is shared by several organizations and supports a specific community that has shared concerns (e.g., mission, security requirements, policy, and compliance considerations). It may be managed by the organizations or a third party and may exist on or off premises.



Hybrid A composition of two or more clouds (public, private, community) that remain unique entities but are bound together by standardized or proprietary technology that enables data and application portability (e.g., cloud bursting for load balancing between clouds).

Combined, the global public and private cloud market is expected to skyrocket more than **500%**, to more than **\$240 billion** in 2020.³

Transforming challenges into triumphs

The benefits that cloud technology brings to enterprise businesses make the widespread implementation of cloud services inevitable.

Analysts predict that the adoption of cloud services is quickly accelerating from “early adopter status to a core part of the new mainstream,” while public and private cloud services are expected to grow at four to five times the rate of the overall IT market in 2011 alone.³ That trend should continue into the next decade, with the global public and private cloud market forecasted to mushroom from about \$41 billion combined in 2011 to more than \$240 billion in 2020.⁴

The leading organizations of tomorrow must be agile enough to harness advanced technologies today. Many companies, however, have yet to formulate a coherent cloud strategy. In fact, 70% of respondents to a recent IDC survey indicated that their enterprise firms did not have an actionable plan for deploying private cloud services.⁵

Unfamiliarity with leading cloud solutions has made some firms concerned with security, reliability, and return on their investment. At HP, we view today’s accelerated pace of change as a distinct opportunity for companies to set the bar—rather than simply react to each new height—and best position themselves to reap the greatest rewards. With HP by your side, you can do just that.

Turning advanced technology into practical solutions

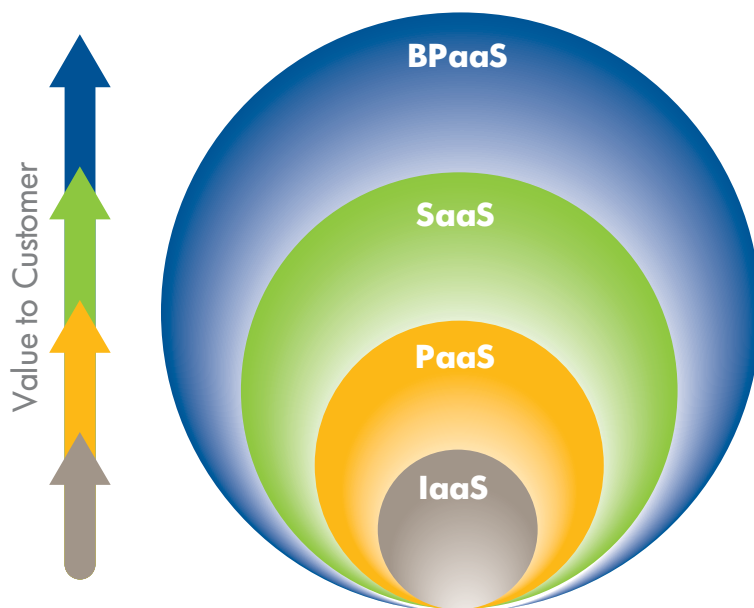
Where, when, and how we work has changed dramatically. Increasingly sophisticated mobile devices that tap into cloud services are driving much of this shift. In 2011, more than 2 billion people will connect regularly to the Internet, with approximately half gaining access through non-PC mobile devices.³

To keep pace with the escalating and widespread adoption of mobile, multi-purpose technologies, HP has constructed a wide-ranging portfolio of solutions that combine current models with next-generation cloud services. We have integrated our hardware, software, and service capabilities into the HP cloud experience to offer our customers leading quality and reliability.

Any imaging and printing cloud service or solution has four key attributes. These characteristics, which HP cloud services can provide, include:

- **Availability.** The cloud services and solutions must be readily accessible to allow enterprise companies to adapt to new opportunities as they arise.
- **Elasticity.** Any cloud-based service or solution must be capable of reliably scaling resources up or down to keep pace with changing business needs and demands.
- **Security.** Assets, resources, and information must be closely guarded to manage risk, maintain data integrity, and safeguard company innovations.
- **Business intelligence.** A truly comprehensive cloud strategy must harness the power of technology and information to drive significant business results while allowing enterprises to make more informed and intuitive decisions.

Cloud Service Models



Forrester Research definitions⁴

Business-Process-as-a-Service (BPaaS): The provisioning of highly standardized end-to-end business processes delivered via dynamic, pay-per-use, and self-service consumption models. Underlying resources used to run the business processes are openly shared among different customers, in most instances driving additional business value.

Software-as-a-Service (SaaS): Standard software application functionality delivered over the public internet and provided through a usage-based pricing model. The underlying application resources are shared among a large number of users.

Platform-as-a-Service (PaaS): A complex, integrated platform offering for the development and operations of general purpose business applications.

Infrastructure-as-a-Service (IaaS): A highly standardized, selective computing functionality—such as computing power, storage, archive, or other basic infrastructure components—provided over the public Internet through a utility pricing and delivery model. The underlying computing resources are shared among a large number of users and hosted by the IaaS provider.

HP's reputation for reliability and innovation gives enterprise customers crucial benefits by reducing costs, offering a managed **mobile environment**, improving **workflow productivity**, enhancing **services**, and optimizing **infrastructure**. Our vision is to provide one-stop, end-to-end solutions that help enterprises seize advantage of everything the cloud has to offer. Here's how:

Cloud-based mobility

HP has been at the forefront of driving innovation in mobile imaging and printing with our groundbreaking, cloud-enabled **HP ePrint Enterprise mobile printing solution** which gives customers the convenience to print where and when business takes place.

Without the right tools, even the most tech-savvy business travelers can find themselves scrambling to locate printing services while on the road or in a branch office. HP developed an easy-to-use cloud-based solution to meet customers' mobile printing needs. HP ePrint Enterprise mobile printing solution lets users easily print documents on the go from their mobile devices.

With HP ePrint Enterprise, you can print presentations, reports, photos, and more from your mobile device to any registered printer on your secure network. This driverless printing solution integrates seamlessly into your IT infrastructure, is easy to manage, and scales to meet the needs of your cloud network.

HP ePrint Enterprise works within your existing printing environment and supports printers regardless of manufacturer while allowing your entire operation to capitalize on the power of the cloud. And you can further enhance security by integrating pull-printing. Choose multiple ways to enable mobile printing through email or the HP ePrint service app. The app-based approach solves a key problem for today's mobile worker travelling between offices, buildings, and geographies—finding relevant printers. The app is supported for mobile devices, including Android™, iPhone®, iPad® and BlackBerry®.⁶

On-the-go professionals can also use the HP ePrint service app on their mobile devices to print documents at thousands of **HP ePrint Public Printing Locations**.⁷ Your employees can quickly find an available printer while on the road with easy-to-use search functionality—accessibility that few, if any, competing solutions can match.

Taking into consideration that many professionals use a wide variety of mobile devices, HP ePrint Enterprise includes an email-to-print feature allowing employees to send documents from their corporate email account to any networked printer, which makes printing from a mobile device as simple as sending an email.

Cloud-based services

Gartner: By 2014, 90% of global 1000 companies will implement cloud printing services for mobile personnel.¹

Cloud-based mobile printing with the HP ePrint Enterprise solution





HP offers a variety of cloud services and solutions tailored to the needs of enterprise companies, allowing for the seamless integration of management and workflow through [HP Managed Print Services \(MPS\)](#).

HP MPS Smart Decision Suite (SDS) is the cornerstone of the HP MPS cloud-based offerings and is constantly evolving and updated to integrate new devices, solutions, and management tools. This continual refinement allows companies using MPS to analyze, anticipate, and strategize usage throughout their imaging and printing environment while helping to increase productivity and reduce costs.

Using HP SDS tools and technology, HP MPS provides a wide range of services, including remote monitoring and management capabilities—either self-managed or HP-managed—that allow enterprise companies to get the most out of their devices and solutions, from installation to policy management. SDS also offers enterprises access to several powerful Software-as-a-Service (SaaS) solutions through HP and its partners.

The combination of the HP MPS solution and the HP SDS platform is the essence of the Business-Process-as-a-Service (BPaaS) model at its most effective. Management interfaces and cloud-based applications enable customers to get the most out of their devices while effectively managing supply orders and service interventions, as well as ensuring swift and secure delivery—all with minimal staff involvement.

While the opportunity to self-manage these capabilities is readily available, the end-to-end ability and capacity that the HP MPS model offers means less burden on your employees and infrastructure as well as the opportunity to reduce costs, streamline IT processes, and increase productivity.



Cloud-based business process and workflows

HP technology and solutions tap into the full power of cloud services, allowing enterprise companies to optimize their imaging and printing capabilities by enhancing productivity, increasing efficiency, and reducing costs.

With [HP Virtual Print Center](#), customers have access to document production, finishing, and distribution capabilities without the overhead costs of an onsite document center. This suite of browser-based services allows enterprises to produce and send documents from virtually anywhere at any time.

Customers can better manage their print costs while streamlining document workflows by using cloud-enabled ordering, online proofing, and back-end production and distribution. These services improve the security of high-value pages from completion to delivery. Companies also can “right size” in-plant facilities by eliminating under-used assets.

The simple, secure pay-on-demand system requires no start-up or licensing costs and no implementation or infrastructure fees. Customers benefit from the reliable efficiency of fully automated, cloud-based print management that requires minimal IT involvement.

The [HP Exstream](#) solution also allows enterprises to improve workflow by using a single software platform to design and deliver a wide variety of customer communications—including print, web, SMS, and email content—easily and securely. In addition, HP Exstream allows employees highly flexible accessibility to locate documents and files on remote servers.

HP Exstream also enables customers to produce top-quality, high-volume, on-demand projects efficiently and effectively. At the same time, customers can maintain brand consistency, improve quality, and dramatically increase document production and delivery times while reducing costs. The versatility of HP Exstream has enabled far-reaching cloud capabilities for enterprises in all types of industry, ranging from government, health care, and financial services to insurance, utilities, and telecommunications.

[HP Marketing Communications Manager](#) is also a cloud-enabled management solution that can help enterprise companies streamline their marketing operations, reduce costs, and increase customer reach. The solution allows enterprises to view and manage all print orders from one location while automating marketing and printing processes and creating highly targeted customer communications.

Partner solutions drawing on the cloud

HP has deep partnerships with leading business solution providers that draw on cloud technology. Our trusted partners include:

- [HP and Hyland Software Document Capture and Workflow Solutions](#). Streamline and automate paper-intensive workflows while making it easy to electronically capture, manage, and route paper-based information through the cloud.
 - [HP and Kofax Document Capture Solutions](#). Convert a wide variety of data—from paper documents, forms, barcodes, and handwriting—into accurate, retrievable information and delivers it into your business applications and databases using the cloud as a conduit.
 - [ReadSoft](#). Automates the process of inbound invoices. Automated data capture saves time and money while making invoice information readily accessible in digital format via the cloud.
 - [HP and Nuance Document Capture Solutions](#). Put powerful imaging, recognition, and conversion capabilities into the hands of users directly from the LCD touchscreen on HP MFPs, and then deliver that data via the cloud to a variety of business systems.
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Infrastructure connected to the cloud

HP is continually seeking ways to enhance the imaging and printing experiences of its customers and has capitalized on end-to-end capabilities to construct a wide platform of cloud services to meet enterprise needs.

HP's [FutureSmart](#) firmware and [Open Extensibility Platform \(OXP\)](#) middleware have revolutionized imaging and printing by allowing companies to accomplish more while spending less. The software management tools that FutureSmart and OXP offer strengthen infrastructure and maximize long-term IT investments by enabling breakthrough workflow solutions connected to the cloud.

The innovative combination of HP's FutureSmart and OXP enables enterprise multifunction products (MFP) to operate with a vast range of applications, solutions, and services. In short, the "brain" of an MFP fleet is moved from the devices to a remote server, allowing for more effective and powerful performance. Enterprises can have on-demand access to an ever-growing number of solutions and applications, most of which are also cloud-based. More than 100 different applications are currently available and can be physically controlled from a central administrative location to maximize workflow and simplify solution management.

The processing power used to run applications available through FutureSmart and OXP can also be offset to a server to maximize the device's performance while opening it up to endless new possibilities.

Why HP?

HP is a global leader in imaging and printing solutions and has been at the forefront of cloud service innovation for enterprise companies. HP offers deep IT expertise and comprehensive cloud solutions that allow customers to benefit from:

- HP's end-to-end cloud capabilities seamlessly integrate with cloud products, services, and solutions.
- HP partners with top technology providers to deliver cost-effective, efficient, secure, and sustainable solutions for our customers.
- HP has the depth of expertise to identify and integrate imaging and printing technology solutions that advance business goals for companies of any size.
- HP is the single point of accountability, offering customers a solid foundation and ongoing support, from consulting services to change management.
- HP has long-term financial stability and financing options that give our customers the confidence, continuity, and resources to maximize the value of their overall IT investments.
- HP is a pioneer and leader in network management, and has deep experience in managing printing and imaging fleets remotely, reliably, and securely.

How to get started

Contact your HP sales representative to:

- Set up a workshop with HP to assess your specific business needs.
- Establish a plan to implement the best solution for today and into the future.
- Identify an environmental approach that can help your company save money.

To learn more, visit www.hp.com/go/ipg.

HP three-part approach

HP works with you to assess, deploy, and manage an imaging and printing environment tailored to meet your business needs, while helping you reduce costs, conserve resources, and simplify document-intensive processes.

Optimize infrastructure

HP can help you achieve a balance between your total cost of printing and your needs for user convenience and productivity.

Manage environment

Working together, HP can help you maintain your optimized infrastructure while improving business efficiency and tightening security.

Improve workflow

By streamlining your document-intensive processes, HP can help you create a more efficient environment for capturing, managing, and sharing information.

1 Gartner Research, "Predicts 2011: Increasing Value of Imaging and Print Services Complements Multimedia Communications," November 17, 2010

2 National Institute of Standards and Technology, "The NIST Definition of Cloud Computing," January 2011.

3 IDC, "IDC Predictions 2011: Welcome to the New Mainstream," Document #225878, December 2010.

4 Forrester Research, Inc., "Sizing The Cloud," April 2011.

5 IDC, "Enterprise Firms Focus on Private Cloud with Preference for Commercial Unified Storage Architectures," Document #228293, May 2011.

6 HP ePrint Enterprise requires Internet- and email-capable BlackBerry® smartphone OS 4.5 or newer, iPhone® 3G or newer, iPad® and iPod Touch® (2nd gen) devices running iOS 4.2 or later, or Android™ devices running version 2.1, 2.2, or 2.3, with separately purchased wireless Internet service, HP ePrint Enterprise server software and HP ePrint service app. Solution works with PCL5/6, PCL3, and PCL3GUI printers (HP and non-HP). BlackBerry requires BlackBerry Enterprise Server (BES) deployment.

7 Usage of HP ePrint service app at public print locations requires Internet- and email-capable smartphone or tablet with separately purchased wireless Internet service, and the HP ePrint service app. Availability and cost of printing vary by mobile print location. Visit www.hp.com/go/eprintmobile to view the list of applicable smartphone and tablet operating systems. Solution works with PCL5/6, PCL3, PCL3GUI printers (HP and non-HP).

