



HIT PRINT
INTELLIGENTLY

HIT PRINT ACROSS THE ENTERPRISE AND ON THE GO—ALL FROM A BLACKBERRY® SMARTPHONE

Cloud printing in the enterprise: liberating the mobile print experience from cables, operating systems, and physical boundaries

Executive summary

In recent years, mobile technology has proliferated throughout the enterprise. Today, virtually no one in the workforce is bound to a desk to work, check email or communicate with co-workers and customers. Notebooks and personal data assistants (PDAs) have evolved into all-in-one smartphones, and broadband wireless networks make it possible for people to be connected where business takes them. At the same time, we're seeing the rise of cloud technologies to manage data and software that used to run solely on PCs. This merger of mobile and cloud technologies is on its way to becoming one of the most significant enablers of business productivity and innovation in the past decade.

We may hold the power of communicating and computing in the palm of our hands, but one business process has remained elusive: printing. Wireless print technologies have freed the enterprise from cable clutter and offer a bit more mobility. But even the most technically enabled business travelers find themselves hunting down print services while on the road and interrupting IT managers when visiting a branch office simply to print a document.

But the forecast looks good. Technology companies like HP are now turning to the cloud for authentic mobile printing experiences. HP has developed mobile print solutions that are printer-agnostic, driverless and require little more than Internet or intranet access to send a print job to a relevant printer—on the network or on the go. The HP ePrint Enterprise mobile printing solution is one of the first solutions to appear in the enterprise market.

HP ePrint Enterprise is a cloud-based solution that makes it possible for BlackBerry® smartphone users to experience the benefits of true mobile printing. Enterprise users can print documents, presentations, reports, and photos—from their BlackBerry smartphones to registered printers in their enterprises' networks. For even more on-the-go printing options, HP ePrint is available at participating public print locations in hotels, airports, coffee shops, and more.

This leap forward with cloud printing not only allows you to print from any mobile device, but is also an engine of productivity and innovation for forward-thinking enterprises around the globe.

The state of mobile printing today

Network printing

Local area networks (LANs), both wired and wireless (WLAN), are vital components of every enterprise IT infrastructure. WLAN gives employees increased mobility, enabling them to easily access and share printers throughout the office. At the same time, they allow administrators to implement document workflow strategies and IT to better manage how devices are used and supported. HP networked printing solutions have allowed enterprises—including its own—to dramatically reduce annual print costs. But the WLAN ends at the office and is restricted to devices on the network. And while protocols for allowing visitors to access the network are fairly simple to manage, they're a long way from allowing a visiting co-worker to just hit print.

Bluetooth®

Now standard with many mobile devices, Bluetooth offers a reliable mobile printing experience. Many HP printers offer embedded Bluetooth wireless technology that works with handheld devices. And many more HP printers can be upgraded to support Bluetooth with the HP bt500 Bluetooth Adapter. These tools go a long way in freeing users from the wires, but they have their limits: about 30 feet on average. So while they do help clear the cables and clutter, they haven't cut that final, if invisible, cord from the printer.

Portable printers

Mobile printing has made some of its greatest strides in field service, delivery, and other route-support applications, for obvious reasons. Printing receipts and proof-of-delivery documents on-site with the customer saves time, boosts accuracy, and enhances service. But these devices and the apps they run are often field-specific and unsuitable for general business printing. HP offers print-only portables that are powerful, compact, and built to travel. But any mobile worker who balks at traveling with a laptop will certainly resist packing a printer.

What's missing from it all?

So what has been missing from all these solutions? True mobility: Printing from truly mobile devices and with an enterprisewide solution. On the administrative side, enterprises are holding out for a solution that seamlessly integrates into existing infrastructures and further enhances and maximizes document workflows. Mobile warriors are holding out for the experience of a single button that allows them to hit print wherever work takes them.

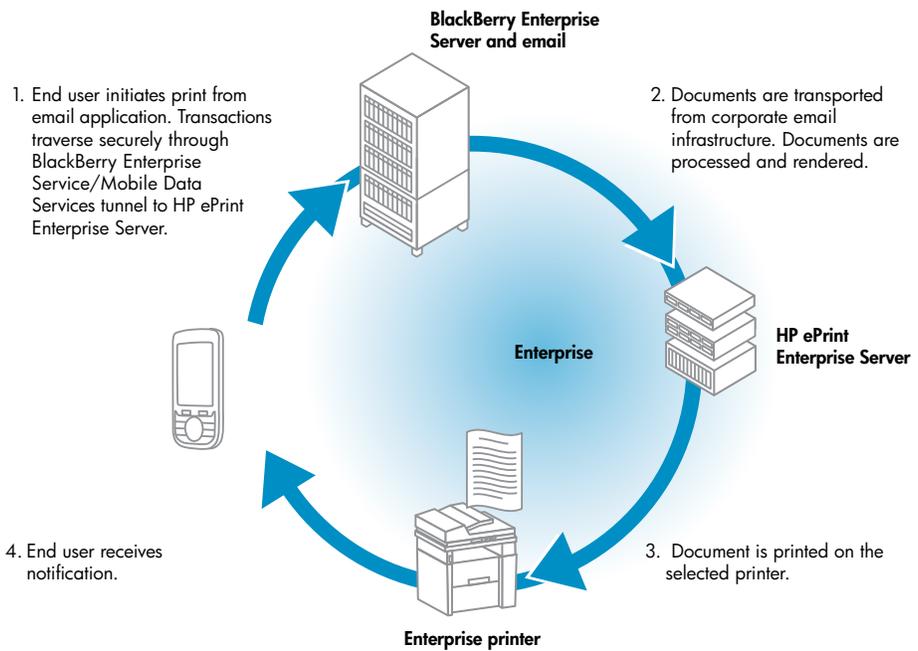


Figure 1. How the HP ePrint Enterprise solution works

The future of mobile printing: the cloud

If we are ever going to meet the growing demand for mobile printing and profit from its potential, it is time to look to the cloud. The future of true mobile applications lies in cloud technologies.

The devices business professionals depend on—desktops, notebooks, handhelds, smartphones—each boast their own applications and content. The Internet, however, has made it possible to provide real-time access to everything from email to word processing to complex customer relationship management (CRM) programs, without requiring that a user personally own the resource.

Users simply access the web- or intranet-based service that does own or host the resource, with the touch of a button from an array of devices. That's cloud computing in sum, and the next big instrument of IT change—and opportunity—in the enterprise.

The cloud in business today

It's very likely that you and your enterprise are already using the cloud. For example, if you access company email from home or have a public email account through Gmail, Hotmail or Yahoo! Mail, then you've participated in the cloud. Rather than running these services as programs on your computer, you simply log in to them from any Internet browser, and all the necessary software resides in the cloud. The benefits enterprises are seeing at the highest level include:

- **Elimination of expensive hardware**—Workers no longer need vast amounts of processing power or memory on their machines. The cloud takes care of your computing and storage needs for you.
- **Enterprisewide access to software applications**—Rather than buying a suite of software and managing licenses for each user, an enterprise simply pays a metered fee to the company offering the cloud service or application.
- **Room to breathe and grow**—Servers and other storage devices take up real estate, and some enterprises go so far as to rent the physical space needed to house their servers and databases. Cloud storage takes no room at all and reduces the risk of stolen or breached physical devices.

HP Labs in the cloud

What is one of the biggest names in technology and printing doing in this space? HP is taking a three-pronged approach to offering cloud technology to its customers: collaborating with cloud providers, collaborating with existing cloud users, and offering its own cloud services and cloud-enabled products. Leading this charge within the company is HP Labs.

The big vision for HP's cloud research is focused on delivering an application and computing end state based on the concept of Everything-as-a-Service: billions of users, accessing millions of services, through thousands of service providers, over millions of servers.

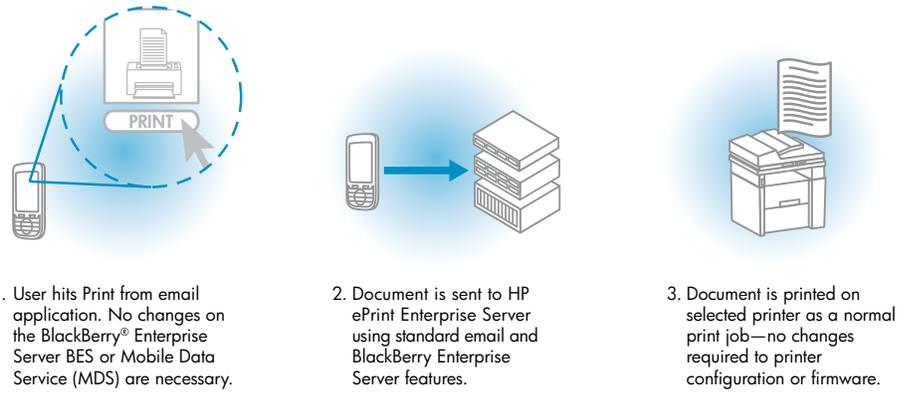


Figure 2: HP ePrint Enterprise solution

On a more tangible level, HP Labs is focusing on developing cloud services with user-friendly web interfaces that are location-agnostic, can be hosted through third-party providers, and are easy to enhance based on customer feedback.

Some current HP cloud offerings reveal HP's consultative side. HP Cloud Assure is designed to help enterprises take advantage of the speed, flexibility, and cost-effectiveness of cloud services. HP Cloud Consulting Services from HP Software Professional Services helps enterprises leverage the cloud as part of a service provider strategy that combines service management expertise, testing services, and automation software.

And now HP has brought cloud-enabled mobile printing to the enterprise.

HP cloud printing

The cloud is all about device and location independence, and for HP that also means liberating the print experience from the tyranny of dedicated operating systems and printers.

HP cloud-printing solutions are aimed at creating a user experience that is printer-agnostic, driverless, and needs only Internet or intranet access to send a print job to a network printer. With just a few clicks of the Print button, HP cloud printing solutions make it possible for smartphone users to print documents, presentations, reports, photos, and more from inside their email to the nearest registered printers in the workplace, commercial hot spot, or home.

This seemingly straightforward concept is a major step forward in real-time mobile printing, as any traveling sales rep or consultant without immediate access to a laptop and print shop can attest.

HP ePrint Enterprise mobile printing solutions

Imagine sending a print job straight from a mobile device to the nearest printer—in or out of the office. The HP ePrint Enterprise mobile printing solution unleashes physical documents from mobile devices, computers, and printers, making it simple for users to access and use their documents while traveling or on the go. It is a cloud-enabled web service that allows mobile users to easily print documents, presentations, reports, and photos from an email application to any registered network printer across the enterprise. For even more printing-on-the-go options, look for the HP ePrint solution at participating public print locations in hotels, airports, coffee shops, and more. The service is printer-agnostic and driverless, requiring little more than Internet access via a BlackBerry smartphone and the HP ePrint application.

The benefits of HP ePrint Enterprise

- Print where and how you choose
- One intuitive Print button; three clicks to print
- Printer-agnostic
- No drivers to manage
- GPS-search locates available printers
- Discover innovative ways to use and profit from cloud printing

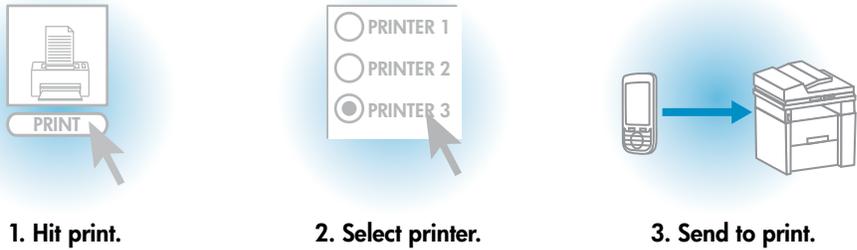


Figure 3. HP ePrint Enterprise mobile printing experience

BlackBerry, RIM and HP Labs: A history of innovation

The BlackBerry, first introduced in 1999, revolutionized communication. In 2001, the introduction of RIM email technology on the BlackBerry platform changed communication forever. For the first time, enterprise users experienced true workplace productivity on a handheld device. Ten years later, the BlackBerry smartphone is empowering nearly 41 million active users. HP is delivering a portfolio of HP ePrint solutions on the BlackBerry platform that frees users to print where business takes them.

Because people and devices are mobile, but printers aren't

With HP ePrint Enterprise mobile printing, it's all about the print experience and empowering enterprises and their workforces to be more productive where business happens.

Experience—When it comes to accessing important business data and applications from a mobile device, there's not much left that can't be accomplished with the push of the button. Printing, however, has remained frustratingly out of the loop. HP ePrint Enterprise mobile printing closes that important gap by unleashing the full potential of BlackBerry smartphones, overcoming VPN hassles (no need to track down security codes and log in) and ultimately freeing the print function from the drivers, cables, and operating systems that held it hostage for so long.

Productivity and innovation—The freedom offered by HP ePrint Enterprise drives productivity by allowing enterprise users to share printers and documents more efficiently, print ahead from remote locations (with documents available on arrival), and convert mobile content into hard copy for easy reading, markup, and sharing. But that's just the beginning. Innovative enterprises and users will find countless ways to push productivity along with the print function.

Three clicks to print

Three clicks to print. It's both the value proposition and the experience with HP ePrint Enterprise.

Click 1: Hit Print.

From a standard BlackBerry smartphone application (in this case, the email application), the user clicks the Print button to begin the HP ePrint Enterprise mobile printing experience.

Click 2: Select a printer.

The user finds and chooses a printer based on descriptive, relevant qualities and clicks to select it. GPS-enabled BlackBerry devices even allow searches by location. The overall experience is similar to a simple web search.

Click 3: Send to print.

The user sees a full description of the printer, reviews the selection of email messages and attachments, and clicks Print to initiate a speedy printout.

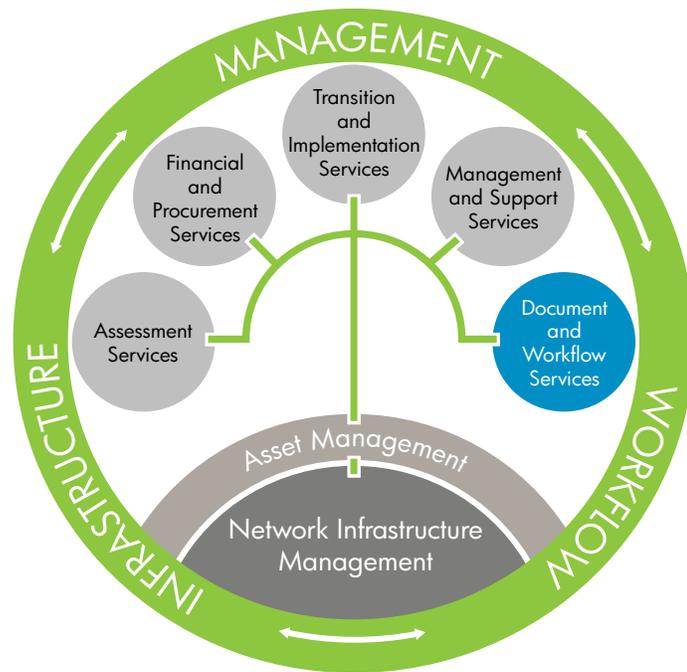
Here's how it works from an administrative perspective:

1. HP and the enterprise's IT resource deploy the HP ePrint Enterprise mobile printing solution within the corporate environment and then map and tag printers to build a rich directory. This customization allows users to easily discover printers on the network based on relevance versus meaningless model names or network addresses.
2. The user downloads the Print button application (or, alternatively, an enterprise's IT pushes the application out through the BlackBerry Enterprise Server). Once installed, the user has access to all registered printers.
3. The three-click print experience is set and ready to go.

The HP ePrint Enterprise mobile printing solution is deployed to work through the BlackBerry Enterprise Server environment. Users access enterprise data through a secure, encrypted channel via the BlackBerry Mobile Data System (MDS).

Figure 4: HP Managed Print Services

HP Managed Print Services offers flexible imaging and printing services that allow organizations to adapt quickly to ever-evolving business and technology environments.



HP Managed Print Services for HP ePrint Enterprise mobile printing

The HP ePrint Enterprise mobile printing solution is currently available from HP Managed Print Services. HP Managed Print Services (MPS) is a comprehensive, scalable suite of services that include imaging and printing devices, software, supplies, support, professional services, and solutions—with flexible procurement, transition, and management options. MPS covers five categories of services:

- Assessment services
- Financial and procurement services
- Transition and implementation services
- Management and support services
- Document and workflow services

MPS document and workflow solutions help enterprises around the globe automate paper-intensive workflows and continually improve and better manage the underlying print infrastructure. And they are standing by, ready to provide those same services for HP cloud printing solutions, including the HP ePrint Enterprise mobile printing solution. From design, installation, and setup to consulting, training, and ongoing support, MPS has enterprise BlackBerry smartphone deployments covered, enabling greater productivity and efficiencies.

Conclusion

Innovation doesn't just happen. It's happening. And in our increasingly networked world, it's accelerating. To keep pace, enterprises must be open to the possibilities. Consider how technologies that seemed mere novelties a decade ago have changed the very landscape of work and business around the world.

The web browser made the Internet easy to use and paved the way for online commerce. Search engines made it easier to access data and information. Email allowed us to collaborate with others around the globe. Now mobile devices are putting all of those capabilities and more in our hands wherever we go. And then there are all those far-sighted businesses—startups and enterprises alike—that found themselves miles ahead of the competition by adopting early and innovating enthusiastically.

Today, being ready to lead and profit from whatever comes next may be as simple as just hitting Print.

Technical specifications

HP ePrint Enterprise solution¹ components

1. BlackBerry client (HP ePrint works with BlackBerry Device Software V4.5, V4.6, V4.7, and V5.0)
2. HP ePrint Enterprise Server software
3. HP LaserJet or HP inkjet printers or any other PCL5/6, PCL3, or PCL3GUI -compatible printers

HP ePrint Enterprise solution functions

- Rich printer directory with extensible and geo-location-enabled tagging
- Support for driverless printing of Microsoft® Office documents, as well as PDF, XPS, HTML, image, and text files
- Job status notifications

HP ePrint Enterprise mobile printing software requirements

- Windows® Server 2003 or later
- MSMQ 3.0+ (included)
- Microsoft Office Professional 2007
- .NET runtime 3.5
- MSMQ 3.0+ (included in Windows Server)
- SQL Server (2008 SP1 or Express 5.0 edition—the latter is included)
- BlackBerry Enterprise Server (v4.x or 5.0) and corporate email infrastructure (based on Microsoft Exchange/Lotus Notes/Novell GroupWise)

¹ HP ePrint Enterprise solution requires BlackBerry Enterprise Server deployment, Internet- and email-capable BlackBerry smartphone OS 4.5 with separately purchased wireless Internet service, HP ePrint app, and HP ePrint server. Solution works with PCL5/6, PCL3, and PCL3GUI printers (HP and non-HP).

Why HP?

Complete solutions—With end-to-end solutions and services, HP can work with you to identify and address your specific needs today and into the future.

Expertise—HP has more than 10 years of experience with imaging and printing in enterprise environments.

Global reach—With IT professionals in 170 countries, HP has the resources to address your company's needs around the world.

Leadership—HP is recognized as a global leader in imaging and printing, an industry leader in network and infrastructure management, and a company with a strong commitment to environmental sustainability.

To learn more, visit www.hp.com/services/managedprint.

How do you get started?

Contact your local HP representative to:

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

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

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.

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