

## Cloud Printer: A Survey

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### Abstract

Cloud printing services enable any application on any device to print to any cloud connected printer. The File is securely sent to the printer over the web .it does not matter printer is in the same room or on another continent. Today, people shift towards cloud based application of web connected mobile devices .as these web apps and mobile devices have become more capable, users are expecting the same capabilities from them that they have on their PCs and printing is near the top of that list. This is accomplished through use of cloud print service apps no longer rely on local operating system. Application use cloud printer to submit and manage print jobs. Basically, cloud enabled printer has a unique email address assigned to it. Users use that email id to send print jobs from phones, laptops to any cloud enabled printer. After submission, a security code is sent to the user. The Document is only released when the user enters the code on the keypad at the printer. The best example of cloud printer is the Google cloud printer which uses a PC with chrome browser or cloud ready printer to print different jobs. This survey paper gives an overview of the Cloud Printer and tell How Cloud Printer works.

**Keywords:** Cloud Printing; Google cloud printer; cloud ready printer; non cloud printer.

### 1. Introduction

Cloud Printer enables any app (web, mobile, and desktop) on any device to print to any cloud connected printer. Basically Cloud is an on demand shared computing resource available over a network, typically the public Internet or company's private intranet. And Cloud Printing is any solution that connects a client to a printer. Cloud Printer

enables people to print their jobs by sending request to a cloud print provider. Cloud print manager manages the printing process held between client and printer. So we can say cloud print provider and cloud print manager are responsible for cloud printing. There are various sites which provide cloud printing services. Cloud Printer does not depend on location or device. Generally, printers have their own email id attached to them which is used for sending print job request by clients.

## 2. Types of Printers

### 2.1 Cloud Ready Printer

These are the new generation of printers with native support for connecting to cloud Print services. These printers have no need for a PC connection of any kind or for Print drivers. The printer is simply registered with cloud print services and awaits print jobs. There can be multiple cloud printing services and users should have a choice in which services they use and which printers they connected to each.

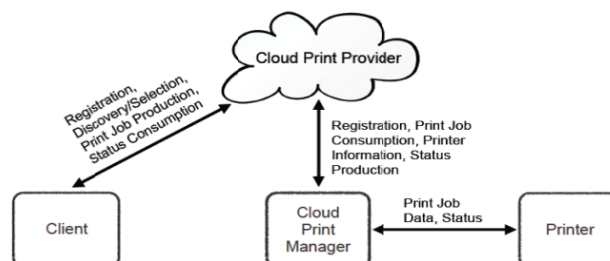
### 2.2 Non Cloud Printer

Most printers in existence today fall into this category. This category includes printers connected directly to PCs as well as networked printers. We want users to be able to print to non-cloud print. This is accomplished through the use of a connector, a small piece of software that runs on a PC where printer is installed. The connector takes care of registered the Printer with cloud print and waits for print jobs from service when job arrives. The connector submits it to printer using PC operating system's native printer software and sends job status back to service.

## 3. Working

Each cloud enabled printer has unique email address assigned to it. Users are able to send print jobs from their smart phones, tablets or laptop. By simply sending an email with attachment to email address of any cloud enabled printer. After submission a secure release code is send to user. Documents are not released until the user enters the released code on keypad at printer which keeps print job private.

## 4. Functional Model of Cloud Printing



**Fig. 1:** This Picture shows working of Cloud Printer.

- *Client*: client is the one who wants print its document via cloud printer.
- *Cloud Print Provider*: the software component that manages printing between clients and cloud printing manager.
- *Cloud Print Manager*: the software component that implements interface between cloud print provider and printer.
- *Registration*: it is the process by which a client or cloud print manager associates itself with the cloud print provider.
- *Discovery*: it is the process by which client finds candidate printers for a subsequent print jobs.

## **5. Solutions Provided by Cloud Printing**

### **5.1 Public Cloud Solutions: Public cloud printing used in following scenarios-**

- A guest at a hotel who needs to print a boarding pass.
- A business provider traveller at an airport who needs to print documents for a meeting at their destination.
- A Patron at a library who needs to print out documents for a research project.

Cloud printing is very useful for business and home by providing various features like ACL which allows businesses to control who has access to printing.

### **5.2 Private Cloud Solutions**

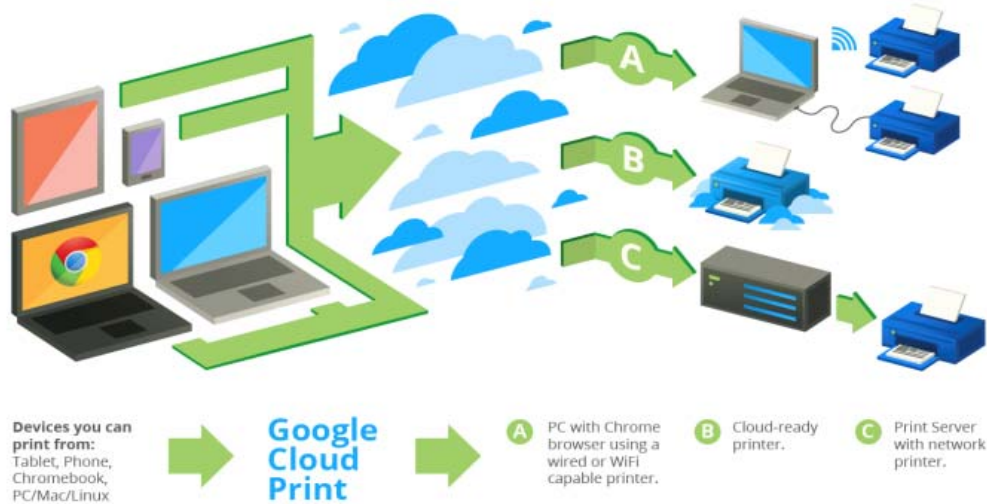
These solutions are deployed directly on site within an organization, typically an enterprise or school. Software components are installed on corporate servers and all processing and encryption of documents is done on site in the private cloud so data stays within the boundaries of secure network. It allows enterprise to offer mobile printing while still having data stay secure on site .it also gives more control over the service and ability to do a tighter integration with existing print management.

### **5.3 Partner Cloud Solutions**

There various companies use cloud printing service by being partners with some cloud printer application. For example- printeron application provide cloud printing services for cisco cius tablet, HP eprint apps.

## **6. Example of Cloud Printing-google Cloud Printer**

To print any document through Google Cloud Printer, we have to sign in by using Gmail ID. Then there are two options: Add classic Printer and Add cloud ready Printer.



**Fig. 2:** This Picture shows processing of Google Cloud Printer.

### 6.1 Add Classic Printer

Classic Printer connects to a laptop, PC and register with Google Cloud Print by using Google Chrome. So for this, Google chrome should be installed on computer. Steps are as follows to print any document by simple printer:

- Log in to your user account on the Windows, Mac, or Linux computer.
- Open Google Chrome.
- Click the Chrome menu on the browser toolbar.
- Select Settings.
- Click the Show advanced settings link.
- Scroll down to the “Google Cloud Print” section. Click Sign in to Google Cloud Print.
- In the window that appears, sign in with your Google Account to enable the Google Cloud Print connector.
- Select the printers you want to connect, and then click Add printer.
- You'll see a confirmation that Google Cloud Print has been enabled. Click Manage your printers to learn more.

The printer is now associated with your Google Account and connected to Google Cloud Print. You can print to this printer using Google Cloud Print whenever you're signed in with the same Google Account.

## 6.2 Add cloud Ready Printer

For best Google cloud printing experience, you should use cloud ready printer. Cloud ready printers connect directly to the web and don't require a PC to setup: you can connect one to your Google cloud print account in seconds, and immediately start printing to it. There are various printer models of dell, canon, Kodak which supports cloud printing.

## 7. Apps That Work with Google Cloud Printer

### 7.1 On all devices:

- *Chrome Browser*: you can print any of the open tabs on chrome to Google cloud print by hitting ctrl+P or print from the wrench menu and selecting "print with Google cloud Print from the destination dropdown.

### 7.2 On Android device

- *Cloud Print Beta*: cloud Print is an android application that allows you to print files off of your android device, including emails and attachments, web pages, documents and more.
- *Cloud Printer*: cloud printer is an add-on to the Mozilla Firefox mobile browser. If you use Firefox on you mobile phone, cloud printer allows you to print web pages as you surf.
- *Easy Print*: it is an android application that allows you to manage you printers and print jobs.

### 7.3 On any mobile device

- *Mobile Google Apps*: if you access Gmail or Google docs through your phone browser, you can print any email, document through Google cloud print. Using the new print2docs feature, you can also print any file you wish to your docs account for safe keeping.

## 8. Advantages of Cloud Printing

### 8.1 Convenient

Cloud ready printers registers themselves directly with cloud print service over your home or office's wireless network, so they are always available and because they're always connected to the web, they can keep drivers up to date without requiring your intervention. Few cloud print also works with conventional non cloud printers. For example- Google cloud print.

### 8.2 Loosing the cables

Just like wireless network, printing without a hardware connection is becoming popular and it is happen only because of cloud printer.

### 9.3 For friends too

It allows you to share printers with friends, family from cloud print management page it takes a single click to share printers that you own with trusted individuals.

## 9. Conclusion

Cloud Printing connects your Smartphone to your printer at home. Basically, cloud printing is a way to connect any web enabled device to any printer, anywhere in the world. Cloud printing affects people in two ways. This technology came on 25<sup>th</sup> of January 2011 officially. but most of the people are unaware to this technology till now.it is very useful to them whose area of work is not limited to any particular location.so they can print any document via web i.e. cloud printer. But sometimes it becomes pointless because this can be done by simply sending a mail with an attachment to someone who can print that document by printer.

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