

## Telework and remote printing



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JetCAPS – Extended Opportunities for Printing



In our time, when the use of Internet technologies allows not only to exchange the information, but to work on remote computers, the issue of possibilities to print on the remote printers becomes rather actual.

On one hand, this task does not seem difficult. Especially if to take into account that printing using TCP/IP protocol is well known; besides, there exist special protocols for printing using the Internet, such as IPP (Internet Printing Protocol).

On the other hand, everything is not so simple if we are talking not about a simple text printing, but about the printing of professional graphical documents. We also have to remember that Internet is, generally speaking, the open network. It does not take much trouble to intercept information there, and this raises an issue of security and confidentiality of the remote printing.

From the moment of appearance of first series of laser printers in mid-eighties, they underwent the drastic changes both in technology and in their functions. The modern printers are the intellectual devices, which can be switched to global networks and which are able not only to print, but to make after-printing actions (sorting, stapling, *etc.*), and many models are also able to scan, copy, fax and to make other actions. Besides, the architecture of the modern printer allows to create different additional products and solutions for optimization of the printing and for the extension of opportunities of these devices.

These and many other solutions are the core business of association JETCAPS (Corporate Account Printing Solutions), which unites about 30 companies all over the world. JETCAPS is making developments and implementations of the printing solutions for HP LaserJet printers.

Now let us look in more details, how the remote printing is made. Solutions for remote printing are based on application software HP ChaiServer. This software is executed in the printer; it deals with arriving information or even is finding the necessary data in Internet or intranet for the subsequent automatical printing. Software HP ChaiServer – this is simple, but powerful operating system, which has a built-in virtual machine for execution of applications directly in the printer HP LaserJet. Such applications called ChaiJet, can process the information, sent to the printer as e-mail or attached files, or even can actively collect the information in different networks. Web-server, built-in into the printer, allows to tune these ChaiJet applications by usual web browser. In other words, it is possible to manage the printer from the distance of many thousands kilometers.

For example, J@Mail is a small Chai-application, which is loaded directly into the printer and is executed really inside the printer. (It works with the printers, which support HP Chai technology). Then, the printer is assigned its own e-mail address and it can receive and send e-mails. Now, if you know the address of this printer, you can send it e-mail from any place on the globe; all what you need, is an Internet connection. No drivers, no IP addresses, *etc.* Printer is receiving your mail and directly prints it. Moreover, you can attach the file to e-mail (picture or PDF document), and printer will print such files as well.

Suppose that you need to print a confidential document for employee in remote office of the company (which can be in other town or even on another continent). Thanks to the service J@mail, which allows sending the jobs to the printer by e-mail, you easily can send a task to remote printer. But how to secure the information and to guarantee, that it will come only to the person, whom it was addressed?

In such situations you can use the solution Secure Document Express (SD Express), developed by the company Capella Technologies (USA). It allows the coding of transmitted information and authorization of users for the access to the office printers, equipped by the system of remote printing *via* Internet.

Module SD Express is installed into DIMM-slot of any printer HP LaserJet, which has a built-in virtual machine (Embedded Virtual Machine, EVM). Client application software, which codes the information, is installed directly on the computers of the authorized users, switched into Internet (it does not matter, where exactly are situated these users).

The sender of the document prints it in a usual way (from the point of view of the user, this does not differ from the printing to the local printer). Then the system SD Express codes the information and sends the document by e-mail to the printer of recipient. This information is stored on the hard disk of the remote printer. Logical module of the system SD Express allows to notify the sender and the recipient about the document delivery. After the receiving of notification, the recipient can come to the printer, make identification procedure and print the document. It is necessary to mention, that document on the hard disk is stored in a coded form, and its decoding is made only after the identification of the user with the right to access to it. Of course, the printer equipped with the system SD Express can be used also for printing of the normal, not coded documents.

There also exist a lot of other solutions, which allow, for example, to monitor the state of the remote printer or even to change its settings. Or solutions, which can unite several printers, including remote, into powerful clusters. All these products and solutions are installed and successfully working in many companies and organizations all over the world (including Russian Federation and CIS).