Roger,

Daniel and I started discussing a little about how you can invoke the security services that you may want to use in combination with IPP.

This is not yet mature enough to send out to the full IPP list, but I suggest that we spend some more time on this in tomorrow's phone conference.

We started looking at in which order the different protocols are invoked etc. and came up with a number of possible cases:

- The IPP server enforces security on all IPP clients that wants to talk to it, by switching from IPP to e.g. SSL if an IPP client tries to invoke any operation over IPP. If the client cannot respond, that is the end of the story.

- The IPP client wants to enforce security and starts off by invoking SSL before trying to invoke any IPP operations. If the server cannot respond, that is the end of the story.

- The IPP client may want to first find out if the IPP server supports a particular security protocol, such as SSL version 3. It then first invokes a Get Printer Attributes operation to get the information, or might get it over Directory, if the IPP server would refuse to answer. The IPP client should get the information back that the server supports security protocols A,B and C. The IPP client then chooses one, provided it has capability to use at least one of them and the communication goes along.

- The IPP server may want to enforce security, but rather then just refusing the connection it returns an error in which information about available security protocols are given as error reasons.

- A server or client may support both secure and non-secure printing. In this case it should be possible to inform each other about the possible options and allow each end to select what they want to do.

Taking these different possible scenarios together, it starts looking like we might need either some kind of negotiation feature at the beginning of an IPP session in cases where either the IPP client or the IPP server end wants to use any of the security features, or we well need to define a fixed behavior pattern and possible restrictions for how server and clients should behave to invoke the security services.

In either case, it looks like at a minimum, we will need to define a Printer attribute (multi-valued) that can give information about security protocols supported by the IPP server, and which can be found both as directory and as Printer attributes.

Comments?

Carl-Uno & Daniel