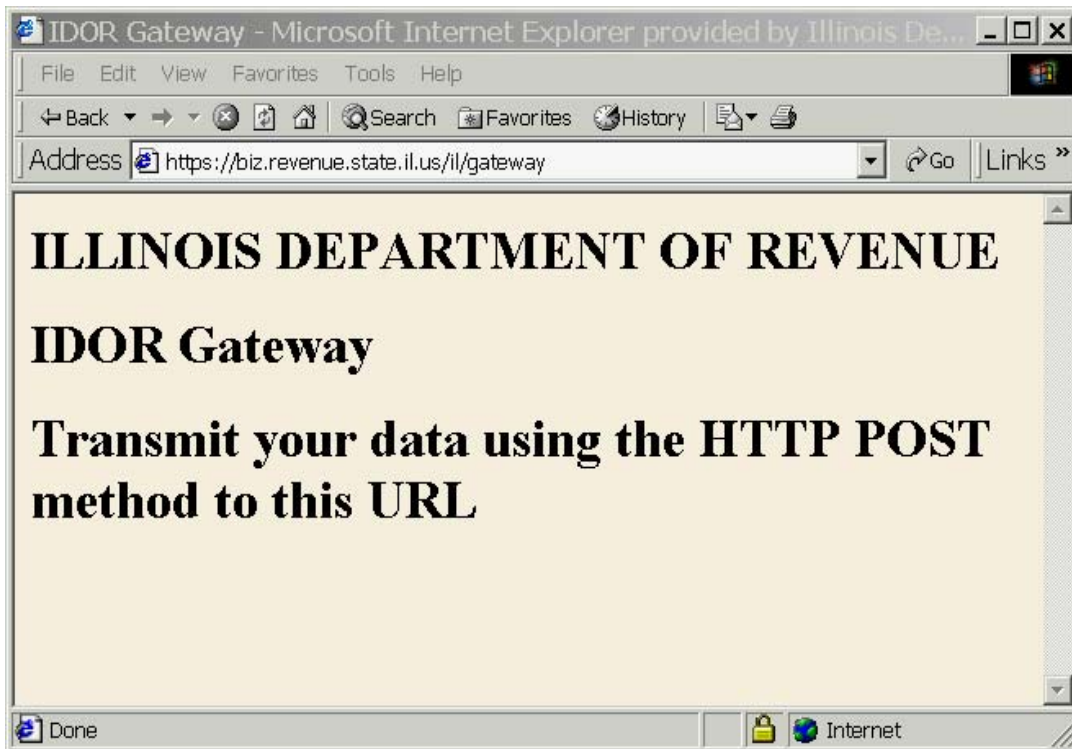# HttpsPost Utility Program

Description

The HttpsPost Utility Program transfers files to and from the Illinois Department of Revenue's (IDOR) Gateway server via the Internet using Secure Socket Layer (SSL) technology. The utility runs as a stand-alone application under Microsoft Windows 95, 98, NT, 2000, and XP. It has not yet been thoroughly tested for use with Windows Vista. Currently, we foresee no problems in using the program with Vista. The utility supports both a graphical user interface (GUI) mode of operation as well as a command line mode suitable for batch processing.

The program requires a connection to the Internet and makes use of Windows' built-in Winsock and certificate management software. These items must have already been installed and set up correctly before attempting to run the program. The best approach is to test the computer setup and Internet connection first by trying to connect to the IDOR Gateway server through a web browser. The web address has the following URL:

https://biz.revenue.state.il.us/il/gateway

Using Internet Explorer, for example, one should retrieve the web page depicted in the illustration below. In addition to testing the computer setup, seeing this page also proves that the SSL certificate exchange has been successful and your computer system recognizes our site as being authentic. Issues involving SSL site certificate exchange must be resolved by calling IDOR support.

Certain problems may be encountered when trying to use the HttpsPost Utility Program with the earlier versions of the Windows operating system. Windows 95 and 98 may require that MS Internet Explorer (I.E.) be installed or upgraded to the latest version. The installation of I.E.

usually automatically installs the required Winsock and SSL functionality. In addition, the utility program may optionally be set to use the API built into Internet Explorer. Choosing this setting can sometimes remedy problems with transmitting from Windows 95 and 98.

Program Use

Installation consists in simply copying the executable file, HttpsPost.exe, to an empty directory or folder. For convenience in launching the application in its GUI mode, place shortcuts to the executable on the desktop or in the START menu. Simply launching the executable without command line arguments starts the application in its GUI mode.

During operation, the program creates two files in the installation directory. One is named "HttpPostLog.txt", which is a text file of logging information showing some messages regarding the http session. This log file provides session record keeping and may be helpful for debugging. The file is overwritten each time a new http connection is made so that it contains only the log of the last full session completed.

The other file, named "Response.ack", contains the body of the http response data returned to the application from the IDOR Gateway Server. This file will contain all acknowledgements sent by the server during the connection. Whenever a new connection or new transmission is made, the content of this file is completely erased and all new response data are recorded here in its place. Therefore, before initiating a new http post session, be sure either to save the results of the last session's "Response.ack" file to some other directory where it will not be lost or else rename it.

After launching the HttpsPost Utility Program in its GUI mode, the user should see a window like the one illustrated in the picture below.
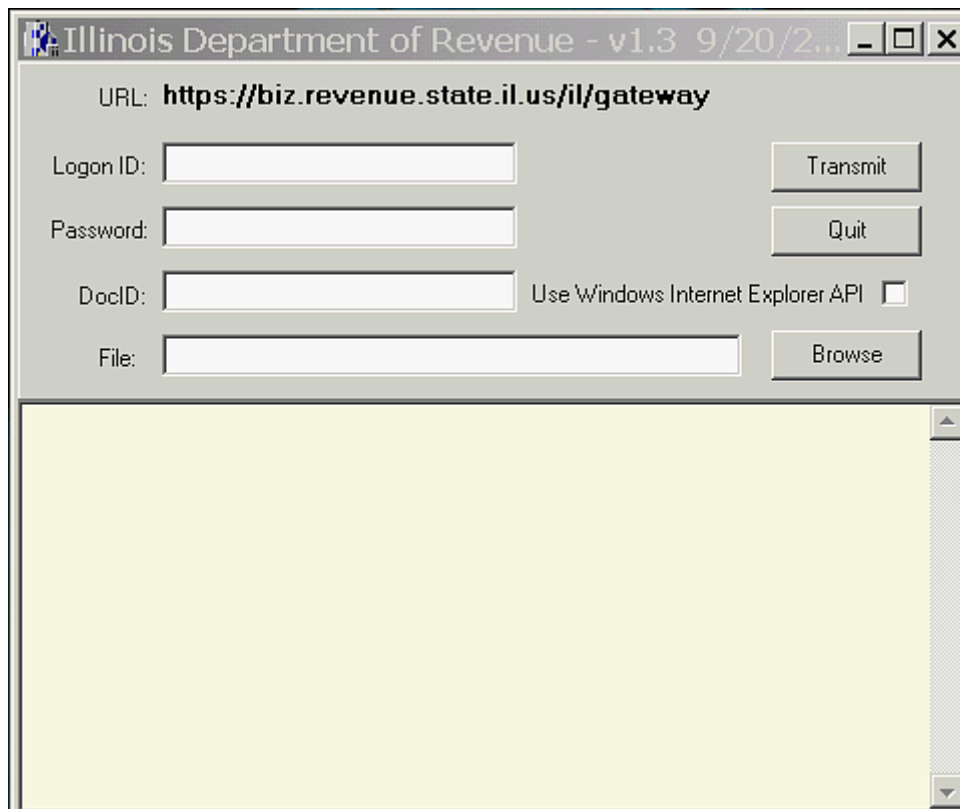
The user needs to type the five-character logon ID (LID) assigned by IDOR into the box labeled "Logon ID". The box labeled "Password" should contain the user's password. The box labeled "DocID" has two purposes depending on whether the user intends to transmit a file during this session or wishes to receive acknowledgements.

If the current session is meant for transmitting a file to the IDOR Gateway, then the "DocID" box may be used at the discretion of the transmitter. It may, for example, contain any character string that conveniently identifies to the transmitter the file he is sending. Any alphanumeric sequence that is meaningful to the transmitter, including the NULL sequence, may be used here with the exception of two reserved values. The reserved values are "NewAck" and "LastAck", neither of which is case sensitive. The "NewAck" and "LastAck" values have special meanings to the IDOR Gateway server for transmitting acknowledgements as will be discussed later.

At the end of a transmission, whatever character string value is placed in the "DocID" box will be echoed back to the transmitter as part of an acknowledgement-one receipt for the transmission. Hence, the "DocID" value may be useful to the transmitter as a way of associating an acknowledgement-one receipt to its transmitted file. At the end of every successful file transmission the server returns this acknowledgement-one as proof of receipt of transmission. The acknowledgement-one receipt will appear in the "Response.ack" file similar to the following text:

```
Illinois Department of Revenue Acknowledgement One
   1. ETIN = 12345
   2. TransmissionIDNumber = doc1
   3. TransmissionTimeStamp = 06/30/2003 08:23:52 am
   4. FileSize = 436352
   5. SysFileName = T1234520030630082352754.181
```

No transmission should ever be considered successful unless an acknowledgement-one receipt is received.

The full path to the file to transmit should be entered into the box labeled "File". Click on the "Browse" button to use a dialog window to navigate interactively to this file. The small check box labeled "Use Windows Internet Explorer API" can be selected if needed to force the application to use the API built into I.E. As mentioned before, this setting may be necessary when transmitting from Windows 95 or 98. Finally, click on the "Transmit" button to send the file.

If the current session is meant, instead, for picking up acknowledgements, then one of the two, special, reserved values for the "DocID" box need to be used. Enter the string "NewAck", not case sensitive, to pick up all new acknowledgements waiting to be sent. In case some network or transmission error prevents an acknowledgement transmission from completing successfully, then use the string "LastAck", also not case sensitive, to request that the last transmission be resent. The "LastAck" flag may be used repeatedly until the transmission completes successfully. However, once the "NewAck" flag is used again, the previous acknowledgement transmission becomes unavailable for retransmission. The files transmitted during the current "NewAck" session become the files available for retransmission in a follow-up "LastAck" session. The presence of either of the two special values, either "NewAck" or "LastAck", is what tells the IDOR Gateway to send acknowledgements. When one of these are

present, the gateway immediately responds with the acknowledgement transmission and ignores any further attempts by the transmitter to send files to the gateway. Therefore no entry need be made in the "File" box in these cases, and no file will be sent even if the box is filled in. A single http post session cannot both send a file and pick up acknowledgements during the same http post session.

Command Line Operation

Adding command line arguments automatically switches the HttpsPost Utililty Program into its command line mode of operation. In this mode, the program does not display the user interface but rather obtains its transmission settings from the command line parameters.   If command line arguments are used, the application requires exactly five arguments, each separated by one or more spaces. Do not use commas as command line separators. The command line has the following form:

> HttpsPost.exe P1 P2 P3 P4 P5
>
> Where
> - P1 = Logon ID; the user logon id (lid)
> - P2 = Password: the user password
> - P3 = DocID; with the special values "NewAck" and "LastAck" described above
> - P4 = File: full path to the transmitted file
> - P5 = WinInet flag; "0" means do not use WinInet API; "1" means use WinInet API

When the http post session is for picking up acknowledgement files, remember that the file path/name parameter value, P4, cannot be left blank, because five command line parameters are required. A good practice in this case is to use the value "null" as a placeholder for the P4 parameter position when retrieving acknowledgement files.

In command line mode, the utility program returns error level 0 on normal completion. Otherwise, it will return error level 1 if an error occurs while sending data or error level 2 if an error occurs receiving response data.

Technical Information:

The IDOR Gateway is available to use seven days a week except between the times of 11:15 pm to 12:30 am. This system down-time is required to allow for scheduled system maintenance.

The Gateway is designed for use with modern relatively high speed Internet connections. High bandwidth Internet connections are preferred, but slower 56K modem connections can be used provided that the connection to the Internet service provider is high quality and somewhat above the 28.8 K-baud range. We recommend the use of z-modem file transfers for slow modem connections.

Content-Length Headers:

File transfers are verified through the use of the "Content-Length" http header. Every file transmission to the IDOR Gateway server must contain a "Content-Length" header giving the number of bytes in the body of the message that will be transmitted. The server verifies that all

bytes were received by comparing the received file size with this header value. Discrepancies result in the transmission being rejected.

Likewise, a "Content-Length" header precedes all http response data returned by the IDOR Gateway. This header gives the number of bytes that will be transmitted in the body of the response stream. The HttpsPost Utility Program automatically checks this header and compares it to the received file size. If the two values do not match, the utility program will flag the error by popping up a message box with a note of explanation. In case of such a transmission error while receiving acknowledgements, the best error handling practice is to wait a few minutes for the IDOR Gateway server to recover and then try to request the server to retransmit using the "LastAck" flag in the "DocID" field of the HttpsPost Utility Program.

Transmitters who prefer to use their own software to send and receive files to the IDOR Gateway must supply a "Content-Length" header for file uploads and are responsible for verifying file receipt by checking the file size against the value of the received "Content-Length" header.

Extended Header:

The value of the "DocID" field of the HttpsPost Utility Program is used to fill in the value of an extended http header field. The name of the extended header is "X-Transmit-ID". The utility program automatically generates this header. Transmitters who write their own http post software must supply this header and be able to fill in its value appropriately. As described previously, acknowledgements will be returned whenever this header has values of "NewAck" or "LastAck". These two reserved values are not case sensitive. Also, any other value for this header will cause the IDOR Gateway server to expect to receive a file from the transmitter. After the file transfer, the value of the extended header will be returned to the transmitter in the acknowledgement-one http response as a convenient form of document tracking for the transmitter. The use of the extended header for document tracking is optional and remains at the discretion of the user.

The following shows an example of a complete http post transmission including all HTTP MIME headers:

```
POST /il/gateway HTTP/1.0
Host: biz.revenue.state.il.us
Authorization: Basic MQBxWrS7hmQ3V4ly          (Base64 encoded)
Accept: text/plain, text/html, text/xml
User-Agent:                                    (optional header)
X-Transmit-ID: doc1
Content-Type: text/plain
Content-Length: 97

*******************************
The transmitted file goes here.
*******************************
```

Below is the complete HTTP response to the above transmission:

```
HTTP/1.1 200 OK
Content-Type: text/xml
Content-Length: 231
Date: Tue, 09 Dec 2003 21:47:19 GMT
Server: Apache Coyote/1.0
Connection: close

Illinois Department of Revenue Acknowledgement One
    1. ETIN = 99999
```

```
2. TransmissionIDNumber = doc1
3. TransmissionTimeStamp = 12/09/2003 03:47:19 pm
4. FileSize = 97
5. SysFileName = T99999200312091547191 46.343
```