

**FTP Guide - Main Document  
Secure File Transfer Protocol (SFTP)  
Instruction Guide**



**Prepared For:  
Defense Logistics Agency**

**Effective as of version 6.10.0.  
This guide remains valid until modified.**

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## 1 Introduction

This guide is intended to provide the Contractor/Vendor with an overview as well as to introduce the user to information regarding Wide Area Workflow (WAWF), Secure File Transfer Protocol (SFTP) Filing Program. SFTP is one of three methods, including EDI and interactive Web-application, to submit data to WAWF. The WAWF Data File Upload Interface provides both Vendors and government personnel that control government furnished property with the capability to submit Invoices, Receiving Reports and Property Transfer documents.

Authorization to use the SFTP capability requires the WAWF user to have a User ID and password issued by DISA.

PIEE Website:

<https://piee.eb.mil>

Website for detailed UID information:

<http://www.acq.osd.mil/dpap/pdi/uid/index.html>

Website for detailed RFID information:

<http://www.acq.osd.mil/log/rfid/index.htm>

Vendors or government personnel are able to submit Invoices, Receiving Reports or Property Transfer documents using two approaches.

- An accounting or shipping system can provide the necessary data in the required WAWF format.
- The data can be prepared manually using a text editor or utility program.

Data for multiple forms can be entered in one file submission, however duplicate form numbers for a Contract Number and Delivery Order combination are not allowed.

## 2 Document Overview

This document refers to the WAWF SFTP filing process. The forms (User Defined Formats - detailed record layouts) used in WAWF are accessible (as separate documents) via the WAWF Website; Click the Documentation dropdown button and the link named FTP Guides to view the document types.

The FTP Guides consist of a primary Main document and various appendices.

The appendices are:

Appendix	Title
Appendix A	FTP Guide – Appendix A (Invoice_Invoice2n1_EnergyInvoice).doc
Appendix B	FTP Guide – Appendix B (Invoice_MiscPay).doc

Appendix C	FTP Guide – Appendix C (Invoice_NSI).doc
Appendix D	FTP Guide – Appendix D (Invoice_Telecom).doc
Appendix E	FTP Guide – Appendix E (ReceivingReport_EnergyRR).doc
Appendix F	FTP Guide – Appendix F (ReceivingReport_Update).doc
Appendix G	FTP Guide – Appendix G (EnergyRR_Time_Quality_Updates).doc
Appendix H	FTP Guide – Appendix H (RRCombo_EnergyRRCombo).doc
Appendix I	FTP Guide – Appendix I (ReparablesRR).doc
Appendix J	FTP Guide – Appendix J (ReparablesCombo).doc
Appendix K	FTP Guide – Appendix K (ProgressPay).doc
Appendix L	FTP Guide – Appendix L (PBP_CIF).doc
Appendix M	FTP Guide – Appendix M (CostVoucher).doc
Appendix N	FTP Guide – Appendix N (Property).doc
Appendix O	FTP Guide – Appendix O (Workflow_Notification).doc
Appendix P	FTP Guide – Appendix P (Import_Notification).doc

### 3 Program Participation

WAWF data can be sent electronically using SFTP. If a Vendor chooses to participate in the WAWF SFTP filing process, guidelines set forth in this implementation guide must be followed.

Refer to the <https://piee.eb.mil> site to acquire the **Pre-Registration: Vendor Getting Started Help Guide**. This guide will provide WAWF deployment information.

If help is necessary, contact the WAWF Ogden Help Desk (from the WAWF homepage, click on WAWF Customer Support). Please inform the help desk that you need an SFTP filing support ticket.

Help Desk contact information (telephone and e-mail) can be found at the following website:

<https://piee.eb.mil>

Once registered in WAWF, users must complete the following steps before submitting documents to WAWF via SFTP:

**1. The user must first contact Customer Support for testing & assistance**

**NOTE:** Prior to submitting documents in production using SFTP, all users are required to open a trouble ticket and request testing assistance from the Joint Interoperability Test Command (JITC).

**2. The user must complete SAAR DD Form 2875 (after Step 1 is completed)**

DISA Form 2875:

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Users must complete this form to request authorization to SFTP from the Defense Enterprise Computing Center (DECC), located in Ogden, Utah. After receiving the request, the DECC personnel will establish a directory for the user. The user will also obtain the User ID and password for the system.

Due to current DISA security requirements, users must use a compatible Secure Shell (SSH2) client-product to communicate with WAWF via SFTP. WAWF does not accept SFTP communications from any client-product using the Secure Shell (SSH1) protocol. Users are not required to have Communications Security's Secure Shell product, but they must use a client-product that meets the following guidelines:

- Interfaces properly with the SSH Secure Shell product on the WAWF server.
- Utilizes the SSH2 protocol to make the connection.

### 3.1.1 Data Preparation

Data can be prepared for file submission using any of the following methods:

Data Preparation Using the Automated Information System (AIS)—Users tailor their AIS to extract data from the forms in the WAWF format.

- Data Preparation Using a Text Editor - Users type a text file with the data from the forms in the WAWF flat file format.
- Data Preparation Using a Utility Program - Users can develop a system utility to present screens for the entry of form data. The utility must generate output files in the WAWF file format.

The data file(s) should be prepared in text format only. Data files created using a word processor (i.e. Microsoft Word, WordPerfect, etc.) must be saved as text-only files.

Each file name should follow this naming convention example: CAGEx\_yyyymmdd .ftp, where CAGE is the Vendor's CAGE Code, x is a unique identifier (1-9 or A-Z) and yyyymmdd is (year) (month) (day). All files must have the .ftp or .ftp2 extension. Also, to ensure proper execution of the file upload process, the name of the file should not include spaces. The file should be transferred to the WAWF system via SFTP in American Standard Code for Information Interchange (ASCII) mode. Data files transferred in binary mode may fail validation. The Vendor is responsible for maintaining a copy of transferred files for correction or resubmission until notification of WAWF acceptance.

If data files include attachments, it is important that the attachment file(s) be transferred in the proper mode. Text files need to be sent in ASCII mode. Microsoft Word document or Excel Worksheet files need to be transferred in binary mode. Also, to ensure proper execution of the file upload process, the name of the attachment file should not include spaces and the extension should be in lowercase letters (i.e. WAWF.doc).

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### 3.1.2 Form Preparation

Line number designators are terminated with an asterisk (\*) and data elements with a caret (^). If a Line Number is included, all data Fields for that Line are mandatory. If a data element is blank or unused, its caret terminator must still be supplied in the file. Optional Lines however, can be totally omitted from the submission.

*For example, Line 4\* with a Bill of Lading (BL) and no Transportation Control Number (TCN) or, First Line Haul Mode would appear 4\*N03587GX3^^*

The price and number Fields may not use dollar signs (\$) or thousands markers (comma).

Certain items within a single-form record may be repeated by duplicating the appropriate data file lines. A record in the data file can accommodate up to 250 CLIN-SLIN (Contract Line Item Number – Sub-Line Item Number) Line Items. In order to add multiple Line Items, repeat the lines 15 through 19 in the following form, (e.g., 15, 16, 17, 18, 19, 15, 16, etc.). Within the Line Item Loop, Line 16A, the Line Item description Field, may be repeated up to 25 times. In those instances when a Receiving Report requires identification of multiple MILSTRIP numbers per Line Item, repeat Line 16C, up to 250 occurrences may be accommodated. Line 23, the document comments, may also be repeated up to 25 times. Lines 16D, 16E, and 16F can be repeated as many times as necessary. Multiple attachments can be added to all forms by repeating Line 26.

### 3.1.3 File Processing

Processing begins after the data is transmitted to the WAWF system. Also, on a periodic basis, the WAWF system retrieves each user's files for processing into the database. To ensure database integrity, the WAWF system validates each form within a file. Processing for a specific form within a file may stop when an error is encountered depending upon the severity of the error. However, processing continues on subsequent forms within the same file.

Each form that passes the validation process is loaded into the WAWF database. Each form that successfully passes the validation process triggers an e-mail notification to the designated contractor or government official/organization responsible for processing that form.

For each file submitted, there is one (1) e-mail response to the initiator. The e-mail contains information regarding all forms submitted in the file. The message contains: Contract Number, Delivery Order, Contract Effective Date, Invoice Number, Invoice Date, Shipment Number, Shipment Date, and Submitted By (which contains the username and date) for each form in the file. If a form fails validation, there is additional information regarding the type of error encountered during processing. Please reference Appendix CC for more detailed information.

Whenever the WAWF system encounters a statement “=SEPARATOR=”, it finishes processing the form and will continue to the next form in the file. The statement “=END=” signifies that there are no more forms within the file.

Entering a “Y” in Line 25 and a filename in Line 26 designates attachments. Multiple attachments require multiple instances of Line 26, but only the one instance of Line 25 indicating the inclusion of attachments. When the FTP process executes, it updates the database with attachment information such as the attachment flag and the location (directory where attachment

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file was transferred to) of the attachment(s). The attachment files are also stored in a temporary date stamp directory for the process to access.

E-mail is automatically generated and forwarded to the address that corresponds with the submitted Cage / DoDAAC Code. If the code was not supplied or no e-mail address is found for the code provided, then the e-mail would be forwarded to the submitter's User ID e-mail address. If no User ID was supplied or no e-mail address can be associated with the User ID, it is sent to the System Administrator as a default. Once processed, each \*.ftp or \*.ftp2 file is deleted from the system as well as any attachments that may have been submitted. An audit trail is posted for each form submitted via log files. The government workflow folder is also posted for each form successfully processed.

### 3.1.4 Point Of Contact

Please send your questions and comments regarding the submission of these forms to the following e-mail address: [disa.ogden.esd.mbx.cscassig@mail.mil](mailto:disa.ogden.esd.mbx.cscassig@mail.mil)

## 4 Time Stamping

**IMPORTANT NOTICE TO SUBMITTERS OF WAWF INVOICES/RECEIVING REPORTS and other documents types:** All documents processed by the PIEE WAWF servers will be time stamped using the "Coordinated Universal Time" (UTC) standard which means, depending on the "local time" of your submission, your document may be time stamped/dated the next business day. PIEE data and applications have migrated to the Amazon Web Services (AWS) government cloud computing platform. With this migration, our servers are no longer based on the "Mountain Standard Time" (MST) time zone; instead, AWS utilizes a "time measurement" standard (as opposed to specific "time zones") known as "Coordinated Universal Time" (UTC). In computer-based time calculations, "UTC" is the new standard and the successor to Greenwich Mean Time (GMT). The clock time utilized by the UTC standard is the same clock time utilized by GMT, or NATO's "Zulu time." Like GMT, worldwide time zones are expressed using positive (+) or negative (-) offsets from UTC, e.g., "UTC-12" (westernmost time zones) equates to twelve hours behind UTC time, and "UTC+14 (easternmost time zones) is fourteen hours ahead of UTC; therefore, 8:00 a.m. UTC time, equates to 3:00 a.m. Eastern Standard Time (EST), or ("UTC-5"). Likewise, if it's 8:00 a.m. UTC time, it's 9:00 a.m. in Germany, which is 1 hour ahead of UTC (or "UTC+1"). WAWF documents submitted after the times listed below from the following time zones will be time stamped/dated the next calendar day:

7:01 p.m. EASTERN Standard Time  
6:01 p.m. CENTRAL Standard Time  
5:01 p.m. MOUNTAIN Standard Time  
4:01 p.m. PACIFIC Standard Time  
3:01 p.m. ALASKA Standard Time  
2:01 p.m. HAWAII Standard Time

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## 5 Vendor Testing & Assistance

All Contractors/Vendors are required to contact the WAWF Customer Service Center to open a trouble ticket and request testing assistance from the Joint Interoperability Test Command (JITC).

Once a trouble ticket has been established, Contractors/Vendors may work directly with JITC on the SFTP filing process.

### **Complete DD Form 2875, Standard Mandatory Notice, and Consent Provision For all DoD Information System User Agreements (Standard Agreement Training)**

Department of Defense (DD) Form 2875 and Standard Agreement Training:

A Vendor must complete these forms to request authority to use SFTP to the Ogden Defense Enterprise Computing Center (DECC), located in Ogden Utah. After receiving the request, the Ogden DECC personnel will establish a directory for the Vendor to submit the SFTP files and provide the user with a User ID and Password for the directory as well as other detailed instructions to file via SFTP to Ogden.

Website for DD Form 2875: <https://piee.eb.mil/DD2875.pdf>

Website for Standard Agreement Training:

<https://piee.eb.mil/StandardAgreementTraining.pdf>

## 6 Defense Information Systems Agency (DISA) Security Requirements

Due to current DISA security requirements, Contractors/Vendors must use a compatible Secure Shell (SSH2) client product to communicate with WAWF via SFTP. WAWF will not accept SFTP communications from any client product that tries to make the connection using the Secure Shell (SSH1) protocol. Contractors/Vendors do not have to use SSH Communications Security's SSH Secure Shell product, but they must use a client product that:

1. Can interface properly with the SSH Secure Shell product on the WAWF server.
2. Utilizes the SSH2 protocol to make the connection.

## 7 Withdrawal from WAWF SFTP Filing

Contractors/Vendors who no longer wish to use this process must notify the Customer Service Center Help Desk and send a message via e-mail, by entering WITHDRAWAL FROM WAWF on the subject line.

Help Desk contact information (telephone and e-mail) can be found at the following website:

<https://piee.eb.mil>

## 8 Communication Times

WAWF will process transactions received via SFTP periodically throughout the day. The time may be subject to change. Please contact the Customer Service Center Help Desk with questions if necessary.

Help Desk contact information (telephone and e-mail) can be found at the following website:

<https://piee.eb.mil>

## 9 E-mail Notifications

E-mail notifications are generated after the WAWF upload process. **The subject line of e-mails from WAWF concerning SFTP submissions will have the entry of “WAWF Import: x Successful Import(s), x Failed Imports.** The e-mail message will notify the Vendor of the following:

- Transactions accepted as submitted.
- Transactions accepted with modified data (submitted data did not meet WAWF requirements but did not cause a rejection and/or some information was defaulted or retrieved by WAWF upon import).
- Transactions that did not meet WAWF requirements and were rejected.

WAWF has the capability to receive one or multiple transactions per file.

## 10 Attachments Submitted via SFTP:

**Note:** When attachments are included with documents submitted via SFTP, if document submission fails in WAWF, the attachment must be resubmitted at the same time the document is resubmitted.

When submitting an attachment for a document, you must submit the attachments first, then the document file(s). Each attachment may only be used for a single document. A single attachment may not be used for multiple documents. If this is necessary, then submit the attachment with a unique name for each document.

A single attachment file may not exceed 5 megabytes. Multiple attachment files may be submitted.

## 11 Transferring Files between Computers with FTP

In order for the data file to be uploaded into WAWF, it needs to be transmitted to the WAWF server. A protocol is an agreed upon format for transmitting data between two devices. FTP is the agreed upon format for using the Internet to transmit data between two systems.

The Internet FTP is defined by RFC 959 and was first published in 1985 and updated in 1994 (<http://www.w3.org/Protocols/rfc959/Overview.html>). It provides facilities for transferring to

and from remote computer systems. The user transferring a file needs authority to log on to and access files on the remote system.

## **D.1 What Is Needed To Use FTP**

Files can be transferred between two systems with the FTP command, given that:

The machine you are using, the “local host machine,” has FTP and is somehow attached to the Internet computer network.

The machine you are attaching to, the “remote host machine,” is running FTP and is attached to the Internet computer network.

The user knows the Internet node name, also known as domain name (which generally has the form “system.department.institution.domain”) of the remote host machine. You may also use the remote host machine’s IP address (which has the form “nnn.nnn.nnn.nnn,” where nnn is a number between 0 and 255.) Be aware that this can and does change from time to time.

The user has an active account on both the local and remote host machines, and you know the accounts password (where relevant.)

## **D.2 Some Things to Keep In Mind When Using FTP**

### **D.2.1 Warning On the Case of FTP Commands**

All the commands in the examples in this document are given in lowercase. Many computer systems, including all UNIX machines, are case sensitive. These case-sensitive machines expect the commands in lowercase. Thus, it is recommended to enter all FTP commands in lowercase.

Warning on the case of file names:

The only exceptions to the advice to always use lowercase for FTP commands are for the names used to identify the files you are transferring. To be safe, always enter the file names exactly as they are shown in the FTP “`dir`” command, i.e. if they are shown as lower, upper, or mixed case, type them exactly as they are listed.

### **D.2.2 Binary versus ASCII Files**

There are two general types of files, text and binary. A text file is a straightforward file. If you look at the contents of a text file, you are able to distinguish the characters and/or read it. Text files are also called ASCII files. A binary file does not make any sense if you try to read it. It consists mostly of unprintable characters. Different applications call for different formats. Be sure you know which type of file is most appropriate for your needs before making the transfer. Archived or compressed files and all executable files require binary transfer while PostScript output files generally do not. The data files being transferred are ASCII files, and ASCII mode must be selected when transferring these files. In ASCII

mode, the file is converted from a local text file to Network Virtual Terminal (NVT) ASCII with end of lines indicated by a CR/LF pair. At the receiving end, this is converted into local text file form. This explains why text file transfers between UNIX hosts, always indicate more bytes transferred than the actual file size.

**NOTE:** If one or both systems do not use ASCII text encoding it is the responsibility of the data transfer processes to convert between NVT ASCII and the local encoding. When transferring attachments that have either the “.doc” or “.xls” extension, the binary transfer mode needs to be selected. In addition, when entering the name of the attachment in the data file, the extension must be in lowercase letters (i.e. WAWF.doc.)

### D.2.3 Duplicate File Names

Most versions of SFTP replace an existing copy of the file you are transferring if one exists without warning or asking if it is OK to do so - copy files carefully. Or, enter the FTP command: “`sunique`,” which instructs SFTP to generate a unique file identifier for any file being transferred whose name duplicates an existing file. When such a name conflict exists, you are notified of the name actually used for the transferred copy. The command “`sunique`” is a toggle command; enter it again to turn the “store unique” feature off.

When a transfer is being set up the client always initiates it. However, either the client or the server may be the sender of data. As well as transferring user requested files, the data transfer mechanism is also used for transferring directory listings from server to client.

**NOTE:** The exact messages you receive depend on what version of SFTP you are using.

## D.3 Step By Step Transfer Instructions

There are many different SFTP utility programs and SFTP is often incorporated within utilities such as Web browsers. On Disk Operating System (DOS) and UNIX systems the basic utility is called SFTP and it includes facilities to allow users to see the various commands.

### D.3.1 Connecting To Host Machine Using Proxy Server

Open a DOS prompt. Enter **ftp**

At the ftp> prompt enter **open *firewall.co.com*** where *firewall.co.com* is the firewall proxy server.

At the user prompt, enter your external connection ID.

At the password prompt, enter your external connection password.

At the ftp> prompt, enter **user *ftp\_id@host.machine.disa.mil*** where *ftp\_id* is the ID assigned for use with the host machine and *host.machine.disa.mil* is the address of the machine being accessed.

At the password prompt, enter your host machine password. You are now logged into your Home directory.

### D.3.2 Connecting to Host Machine from Site with Direct External Connection

Open a DOS prompt. Enter **ftp**

At the ftp> prompt, enter **open *host.machine.disa.mil*** where *host.machine.disa.mil* is the address of the machine being accessed.

At the user prompt, enter your host machine ID.

At the password prompt, enter your host machine password. You are now logged into your Home directory.

### D.3.3 Transferring Files

If transferring an ASCII file: At the ftp> prompt enter **ascii** to switch the transfer type to ASCII mode. By default, FTP assumes the file being transferred is an ASCII file.

If transferring attachments with either the “.doc” or “.xls” extension: At the ftp> prompt, enter **bin** to switch the transfer type to **binary** mode.

At the ftp> prompt, enter **lcd <dir>** where <dir> is the directory path of the file you wish to send. If the directory name includes a space, then it is necessary to use \* as a wildcard in order to change the directory. As an example, if the directory name is “my directory” then the command entered at the ftp> prompt would be **lcd my\***.

At the ftp> prompt, enter **put *filename*** where *filename* is the name of the file to be sent.

At the ftp> prompt, enter **dir** to list the content of the remote directory to make sure the file was transferred successfully. If the file(s) are transferred in ASCII mode, the file sizes may differ between a local Windows machine and the remote UNIX machine.

**Table D-1: Frequently used command line ftp commands and results**

<i>UNIX</i>	<i>DOS</i>	<i>Result</i>
!ls	!dir	list of files on local host in current directory
!pwd	!cd	display local host current directory
lcd <dir>	lcd <dir>	change local host directory to <dir>
ls	ls	list of files on remote host in current directory
pwd	pwd	display remote host current directory
bin	bin	select binary transfer mode
ascii	ascii	select ASCII transfer mode
dir	dir	list contents of remote host directory
status	status	show current ftp settings
help	help	list all available commands
help <command>	help <command>	describe a commands function

put < <i>file</i> >	put < <i>file</i> >	copy file from local host to remote host
bye	bye	exit ftp and return to DOS or prompt

## 12 WAWF SFTP Capability of the Vendor Data File Upload Block Diagram

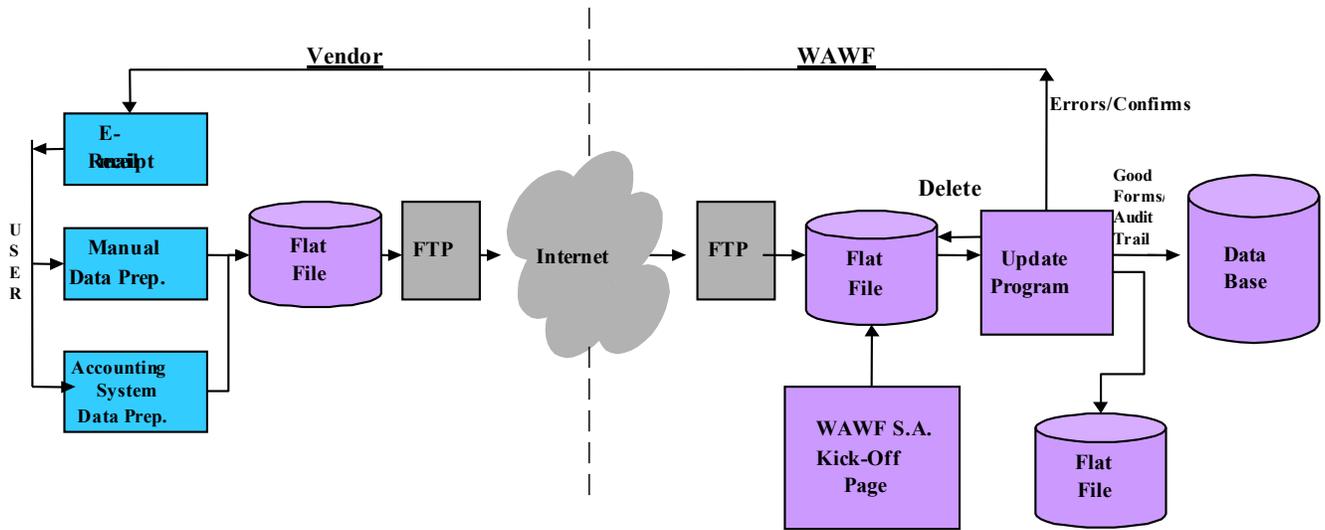


Figure 11-1: The WAWF SFTP Vendor Interface