



Are You FTP'ing Files
to z/OS Securely?
Attend our Demo-
Filled Webinar

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- ▶ Expert development & technical support teams based in MN.
- ▶ 25+ products for mainframe and distributed platforms.
- ▶ Hundreds of organizations worldwide rely on SDS solutions.
- ▶ Focus on mainframe security and compliance.
- ▶ Long-standing global partnerships complement SDS software.
- ▶ Recognized for providing highest quality technical support.

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Are You FTP'ing Files to z/OS Securely? Attend our Demo- Filled Webinar

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Agenda

- ▶ Customer “SFTP Challenges”
- ▶ OpenSSH “limitations” when storing files on z/OS
- ▶ Making SFTP easier to use with the FTADV string and File Transfer Profiles
- ▶ Demo - uploading files to z/OS using FTADV and File Transfer Profiles
- ▶ FTP subcommands vs SFTP commands



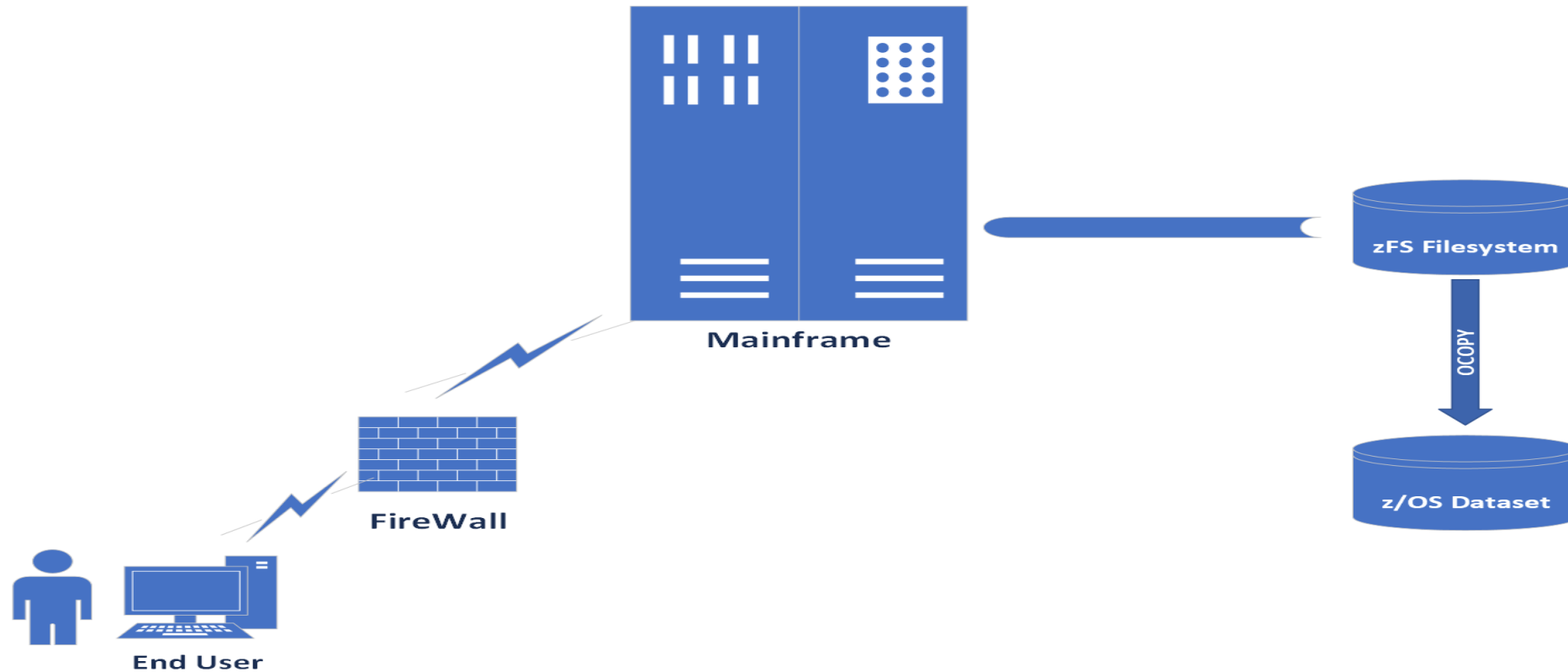


Customer SFTP Challenges

- ▶ Mandate - No more FTP to the mainframe.
 - ▶ All transfers Inbound and Outbound must be secured
- ▶ Migrating to SFTP is not simple.
 - ▶ Command syntax is different. Scripts need to be changed
- ▶ FTP has been around for a long time.
 - ▶ Identifying / changing scripts that have worked using FTP can be a challenge
- ▶ Access to z/OS datasets is a MUST have feature
 - ▶ No staging of data



OpenSSH - "Limitations"





SSH Server for z/OS vs OpenSSH

Tectia Server for z/OS

- ✓ Hardware acceleration of cryptographic operations
- ✓ Transparent tunneling of TN3270 connections with Tectia ConnectSecure
- ✓ Complete and configurable ASCII/EBCDIC and line feed conversions
- ✓ Direct read and write access for MVS file formats
- ✓ Proper file transfer logging using SMF
- ✓ Configurable file transfer profiles for best usability
- ✓ Support for X.509 Certificates and PKI
- ✓ World-class support including 24x7, up-to-date releases and continuous development based on customer needs

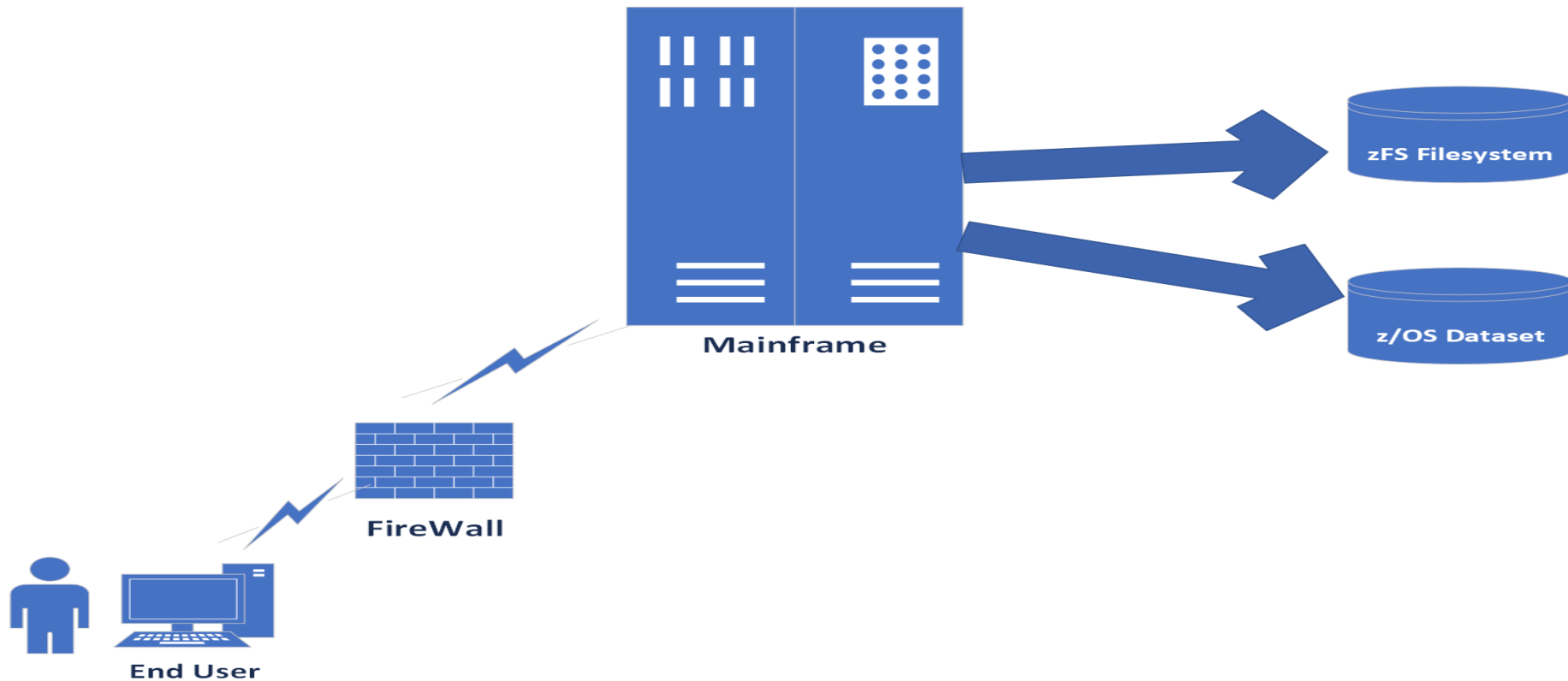
OpenSSH

- ✗ No support for transparent TN3270 tunneling
- ✗ Limited ASCII/EBCDIC and line feed conversion support
- ✗ No direct MVS file format support. Additional HFS file copies are needed (increases CPU usage)
- ✗ Limited transfer logging, limited SMF support
- ✗ No file transfer profiles. All parameters need to be entered manually.
- ✗ No X.509 certificate support
- ✗ Based on OpenSSH 3.8p1 and OpenSSL 0.9.7d. (Released March 2004)

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SSH / Tectia – Direct access to z/OS Datasets or z/FS





What is a File Transfer Advice String (FTADV) ?

- ▶ When using a third-party Secure Shell client for transferring files to and from Tectia Server for IBM z/OS it is necessary to relay information about the transfer format, code sets and file characteristics
- ▶ Since the SFTP server decodes the name for the dataset, the file name in the request can be used to convey this information.



Examples of a File Transfer Advice String (FTADV) ?

- ▶ Below is an example of a filename that requests the transfer of a PDS member with the line transfer format and code set conversion from EBCDIC to an ASCII code set.

```
/ftadv:D=IBM-1047,C=ISO8859-1,F=line/___personal.cntl/idlist
```

- ▶ Below is an example that names a zFS file to be transferred without changes. Transfer mode is set to binary (X=bin) to avoid conversion and to override any defaults that may be set in the transfer profile or environment variables.

```
/ftadv:X=bin,T=HFS,F=stream/profcopy
```



What is a File Transfer Profile?

- ▶ A file transfer profile is a mechanism for pre-configuring different types of file transfers
- ▶ There are two types of profiles
 - ▶ Named Profiles
 - ▶ Filename matched profiles
- ▶ Named Profiles – Provides the default values for different advice string parameters
- ▶ Filename matched Profile – used when transferring files whose names match a certain regular expression



Examples of File Transfer Profile

- ▶ The following profile converts text files from Unix to z/OS. ASCII is converted to EBCDIC. This profile is only used when the advice string contains the parameter P=UNIX

```
%UNIX
```

```
  X=text,
```

```
  F=line,
```

```
  C=iso8859-1,
```

```
  D=ibm-1047
```



Examples of File Transfer Profile

- ▶ Below is an example from a recent customer POC using REGEXP.
A99E.TS.AUT.???.FILEIN to be generated as fixed block datasets with LRECL=80

```
//'A99E\TS\AUT\.{3}\FILEIN'
```

```
X=text,
```

```
O=FB,
```

```
B=80,
```

```
F=line,
```

```
C=iso8859-1,
```

```
D=ibm-1047
```

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Demonstration

- ▶ Demo Environment
 - ▶ Unix platform sending to SSH / Tectia on z/OS using PuTTY
- ▶ Examples
 - ▶ Sending a file using the PUT / FTADV command to z/OS
 - ▶ Sending a file using a “Named Profile”
 - ▶ Sending a file specifying the DCB attributes using FTADV
 - ▶ Retrieving a file from z/OS
 - ▶ Retrieving a GDG from z/OS using FTADV
 - ▶ Retrieving a GDG using a “Named Profile”



Comparison - Native z/OS FTP subcommands and SFTP Commands

z/OS FTP Command	Tectia SFTP Command	Description
ascii	ascii	Change the data transfer type to ASCII
cd 'my.dataset.cntl'	cd//my.dataset.cntl'	Define an absolute dataset
delete <i>foreign-file</i>	rm[options...] <i>foreign_file</i>	Delete the foreign file
lcd my.dataset.cntl	cd //my.dataset.cntl	Define a relative dataset
lmkdir <i>directory</i> (LIKE <i>remote_directory</i>)	lmkdir <i>directory</i>	Make a directory on the remote host
locsite <i>parameters</i>	lsite <i>parameters</i>	Define parameters for controlling the file transfer.



Comparison - Native z/OS FTP subcommands and SFTP Commands

z/OS FTP Command	Tectia SFTP Command	Description
get myfile	sget myfile	
mget foreign_file (REPLACE)	mget -overwrite=no foreign_file	Note: the defaults are different
open hostname portnumber	open REMUSER@remhost	Open a connection to a remote host
put srcfile dstfile(REPLACE)	sput [options...] srcfile dstfile	
put 'myfile.cntl' c:\myfile.txt	sput //'myfile.cntl' c:\myfile.txt	The mainframe data set specification syntax can be different depending on the client
	sput /ftadv:P=TEST/___MYFILE.TXT file.txt	When advice string is used, the preferred dataset specification is different.

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Summary

- ▶ Migrating to SFTP can be challenging
- ▶ Different SSH Clients / Server work differently
- ▶ Conversion can be easier using FTADV and File Transfer Profiles
- ▶ Changes will be required in your scripts for sending files to the Mainframe
- ▶ Involve all parties concerned when migrating (Distributed, Mainframe etc)
- ▶ Perform extensive testing on all distributed platforms
- ▶ We are here to help. Contact SDS for additional information on SSH / Tectia and VFTP and how these products can help you with your migration

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Would you like additional information?



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