

Best Practices for running filePro on a Windows Server

BY EVALUATOR SERVICES AND TECHNOLOGY, INC.

HARDWARE

- ▶ Disk I/O is King
 - ▶ 15K rpm vs 10K vs 7.5K
 - ▶ As many spindles as possible
 - ▶ RAID 6 with battery backed, write-back cache
 - ▶ SAS drives are better than SATA
 - ▶ Solid state drives (all, accelerated, or hybrid)
- ▶ Separate Boot vs Data volume

HARDWARE

- ▶ Virtualization
 - ▶ Microsoft Hyper-V (or VM-Ware)
 - ▶ Two hosts per physical server (or more)
 - ▶ Allocate servers wisely (Domain ctrl, SQL)
- ▶ Processor Speed (Mhz vs cores)
- ▶ RAM (users, RDS)
- ▶ Network speed, nic, and ports

HARDWARE

- ▶ Don't go to sleep
 - ▶ Set server to performance mode
 - ▶ Don't allow PC to hibernate or sleep
- ▶ Network connections
 - ▶ Timeout / Disconnect / Reconnect – not ok
 - ▶ What happens at night
 - ▶ Authentication, Domain control, DHCP

SERVER/FOLDER CONFIG

- ▶ No Antivirus
 - ▶ Server: not on filePro folders
 - ▶ Client: not on mapped drives
 - ▶ Watch out for management system rules
- ▶ Shadow Copies for Backups
 - ▶ Avoid Snapshots/Checkpoints
 - ▶ Be selective with any versioning

SERVER/FOLDER CONFIG

- ▶ Shares
 - ▶ Do not allow caching / local copies
 - ▶ Disable indexing of contents
 - ▶ No compression
 - ▶ No encryption
- ▶ Disable auto-defragmentation
- ▶ Disable any other disk management

BACKUPS

- ▶ You do have backups, right!
 - ▶ Cryptolocker, Phishing
- ▶ Disk to Disk to Offsite
- ▶ Block level (vs file level)
- ▶ Keep a tail (week, month, year)
- ▶ Test it
- ▶ Replication is for failover, not backup

SMB/CIFS

▶ History

- ▶ SMB 1 – WfW / XP / Server 2000 and 2003
- ▶ SMB 2 – Vista (2006) / Server 2008
- ▶ SMB 2.1 – Win 7 / Server 2008 R2 (10/2009)
- ▶ SMB 3.0 – Win 8 / Server 2012
- ▶ SMB 3.1 – Win 10 / Server 2016
- ▶ Originally NetBUIE, later TCP

SMB/CIFS

▶ Problems

- ▶ Chatty
- ▶ Doesn't bundle I/O
- ▶ Poor handling of large file transfers
- ▶ Poor handling of latency
- ▶ Low security
- ▶ OpLocks

SMB/CIFS

▶ Oplocks

- ▶ What is Opportunistic Locking
- ▶ Bad for ISAM databases (Indexed Sequential Access Method) – not just filePro
- ▶ Can be disabled in SMB 1 (registry changes)
 - ▶ Server most important, Client can be done too
- ▶ Can not be disabled in SMB 2 or 3 (revert to 1)

FILEPRO CONFIG

- ▶ Drives: Mapped, Local, SUBST
 - ▶ Avoid the NIC loop if you can
- ▶ Environment Variables
 - ▶ PFDSK=T (List of data drives to scan for segments)
 - ▶ PFPROG=T:\appl (Path for .\fp T:\appl\fp)
 - ▶ PFDATA=T: (Drive for .\filepro folder)
 - ▶ PFDIR=\appl (Path for .\filepro T:\appl\filepro)
 - ▶ Useful for swapping “databases”

FILEPRO CONFIG

▶ Environment Variables

- ▶ PFTMP=T:\appl\tmp
 - ▶ Don't use C drive
 - ▶ Clean regularly (too many files will kill performance)
- ▶ PFFILES=160 (Maximum file handles)
- ▶ PFSYNC=ON (Disk sync after expand or WRITE)
- ▶ PFNODF=ON (Don't test available disk space)
- ▶ PFSHOWWINERROR=ON (more descriptive errors)

FILEPRO CONFIG

▶ Tracking User

- ▶ @ID in *NIX is a number from /etc/passwd
- ▶ @ID in windows may be the domain username
- ▶ What about shared PCs?

▶ Create a Login Screen and User Database

- ▶ Prompt for username
- ▶ Control their menu, printers, etc
- ▶ `PUTENV(), ID(8,*)=GETENV(fpuser)`

DATABASE MAINTENANCE

- ▶ Pre-Expand filePro files
 - ▶ This is the most importance maintenance you can do
 - ▶ Avoid growing one-record-at-a-time
 - ▶ White space vs OS overhead
 - ▶ Create a Management system in filePro
 - ▶ Nightly scan and reporting
 - ▶ Set thresholds for warning or expansion
 - ▶ Automatic or manual

DATABASE MAINTENENCE

- ▶ Run the FRECHAIN program
 - ▶ Updates free record pointers
 - ▶ Not as crucial as it used to be but doesn't hurt
- ▶ Rebuild Automatic indexes
 - ▶ dxmaint file -RA -E (rebuild all, exit)
 - ▶ Improves speed if unbalanced
- ▶ Archive filePro files and/or formats
 - ▶ Too many folders or files makes Microsoft slow

IS THERE A BETTER WAY?

- ▶ How can I avoid SMB?
 - ▶ How can I avoid oplocks?
 - ▶ How can I avoid network traffic?
 - ▶ How can I maximize performance?
-
- ▶ How can I make Windows work more like UNIX/LINUX !!!

IS THERE A BETTER WAY?

- ▶ Tune in tomorrow to
 - ▶ Same bat-time
 - ▶ Same bat-channel.
- ▶ Just kidding...

RUN EVERYTHING ON THE SERVER

- ▶ filePro GServer
- ▶ fileProWEB
- ▶ VDI (Virtual Desktop Initiative)
- ▶ Remote Desktop
- ▶ Published Applications (Remote Apps)
 - ▶ Works with GI and Text (console mode)

PUBLISHED REMOTE APPS

- ▶ Remote Desktop Services
 - ▶ Also known as Terminal Services
 - ▶ Client Access Licenses (CALs)
 - ▶ MSTSC (essentially a terminal emulator)
- ▶ Advantages
 - ▶ Speed
 - ▶ Security
 - ▶ Ease of Deployment and Maintenance
 - ▶ Reconnects on WAN links

PUBLISHED REMOTE APPS

▶ Who Gets What Access

- ▶ Domain control / Group policy
- ▶ Selective Apps per User/Group

▶ How Is It Launched?

- ▶ MSTSC.EXE for remote desktop
- ▶ “Work Resources” (client control panel)
- ▶ IIS Web page link (launches mstsc)
- ▶ Microsoft HTML5 app

PUBLISHED REMOTE APPS

- ▶ Certificates (self-signed vs global)
- ▶ What to Publish?
 - ▶ filePro GI client
 - ▶ Filepro Text (Bat file running in console mode)
 - ▶ Must set Legacy mode
 - ▶ Lucida or Consolas, not Raster font
 - ▶ Set 80x25 (to get rid of scroll bars)
 - ▶ Set font size (per user)

PUBLISHED REMOTE APPS

▶ Printers

- ▶ Install network printers on the server
- ▶ Print to PDF first (filePro, PrintWizard)
- ▶ Preview and allow user to select RDP printer

▶ File Access

- ▶ Server point-of-view
- ▶ Might still need limited SMB (SMB3 ok for this)

PORTABLE DATA

- ▶ Custom Reports with Processing
- ▶ Teach Them filePro Selection Sets
- ▶ Nightly TXT Exports
- ▶ Nightly or RealTime SQL Updates
- ▶ New ODBC Mirror Feature
- ▶ Empower End-Users To Use Their Own Tools

EST EXTENSIONS TO FILEPRO

- ▶ User Database in filePro / Login Screen
- ▶ VB login program to feed Text and GI
- ▶ EST APPS Launcher Bar
 - ▶ Configurable programs, icons, descriptions
 - ▶ Uses filePro encryption w/ VB encryption
 - ▶ Passes username and password to Text and GI
 - ▶ Controls console mode (Text) setting

EST EXTENSIONS TO FILEPRO

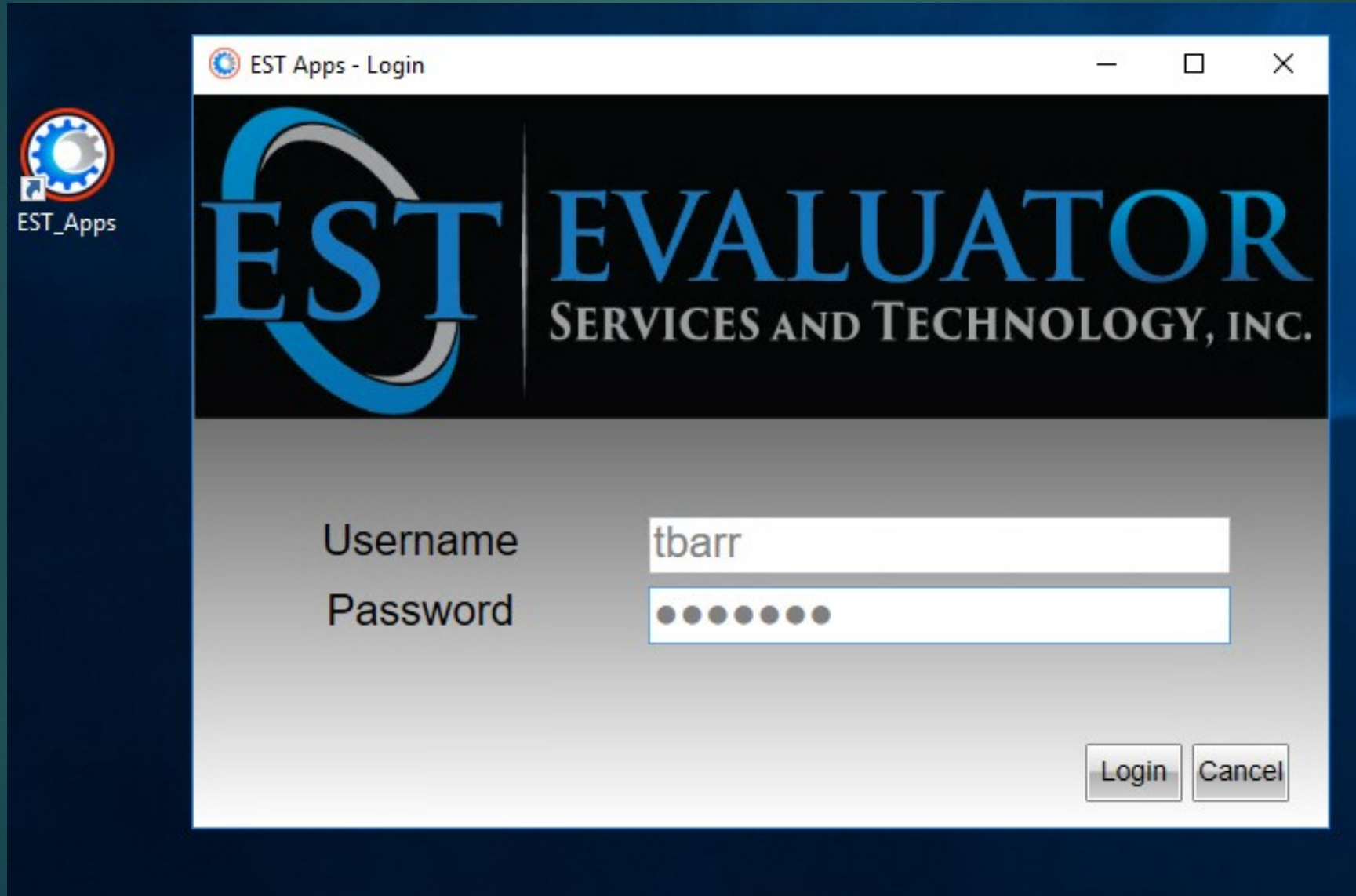
▶ EST Viewer

- ▶ Custom HTML Browser (built on chromium)
- ▶ Display JPG, PDF, TIF, TXT
- ▶ Control Printing, Saving, Copying to Clipboard

▶ EST Explorer

- ▶ Controlled browsing of server folders
- ▶ Control Renaming, Deleting, Downloading, etc
- ▶ Power user and Public user modes

EST APP LOGIN SCREEN



The image shows a screenshot of a Windows-style login window titled "EST Apps - Login". The window has a dark blue header bar with the title and standard window controls (minimize, maximize, close). Below the header, the main area features the EST logo on the left and the text "EVALUATOR SERVICES AND TECHNOLOGY, INC." on the right. The background is a gradient of light gray. Below the header, there are two input fields: "Username" and "Password". The "Username" field contains the text "tbarr". The "Password" field is masked with seven dots. At the bottom right of the window, there are two buttons: "Login" and "Cancel".

EST Apps - Login

EST Apps

EST EVALUATOR
SERVICES AND TECHNOLOGY, INC.

Username tbarr

Password ●●●●●●●

Login Cancel

EST APP LAUNCHER BAR



EST APP LAUNCHER BAR



```
*****G=GI, T=Text, $=Tax, C=COL, P=Eiscap, A=ART, V=VRT, F=Filebrowser(EST Client), U=Uploader, H=Help,
EnabledApps=GT$CPAVFUH

*****Logoff=Issues Logoff Command, Close=Close Program, Auto=EST Apps will decide method of exit based on
OnExit=Close

*****App Settings *****
**GI**
GCommand=C:\appl\fp\fileprogi\fileproGI.exe
GMessage=Property (Tax Admin, CAMA, PC/Occ, Claim)
GIcon=N:\jason.garner\Icons\From Sarah\
**Text**
TCommand=t:\appl_mifflin\scripts\EST-Text_Login_MN60new.bat
TMessage=Property-Text Mode (Tax Admin, CAMA, PC/Occ, Claim)
TIcon=N:\jason.garner\Icons\From Sarah\
**Tax**
$Command=T:\appl_ESTTax_UV\bin\ESTTax.exe
$Message=Tax (Billing, Collections)
$Icon=N:\jason.garner\Icons\From Sarah\
**COL**
CCommand=T:\appl\ESTClient\ESTClient.exe
CMessage=Courthouse Online
CIcon=
```


EST APP DEMO



Munic : 01 LEWISTOWN BORO - 1ST

Ctrl: 00000008

School: 1

PIN: 01 ,01-0206 ,000

OWNER INFORMATION

First : DANIEL J & MARIA A
 Last : AMSPACKER
 Ext :
 Own-2 :
 Addr-1 :
 Addr-2 : 1141 WEST FIFTH STREET
 City : LEWISTOWN PA 17044

Route : (SITUS BREAKDOWN)
 House :
 Street :
 City :
 Situs :
 Desc-2 :
 Desc-3 :
 Desc-4 :

Spec :
 Unit :
 Tie :
 Stat: T Type: R R
 Luse: 100
 Nbhd: 100 100

01 01206
 (8)
 03/12/2019 25 1234-01234

Min	:	0	0
CGL	:	0	
Land	:	7800	15600
Impr	:	20300	40600
Total	:	28100	56200

*** HELD PARCEL ***

/CA/1998/MS/1B-NAMES_ADDRS/
 tbarr, viewing Control # 00000008

AMSPACKER, DANIEL J & MARIA A
 01 ,01-0206—,000

[Screens](#)

[Update](#)

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GI
 DATA
 ENTRY



Munic : 01 •LEWISTOWN BORO - 1ST

Ctrl: 00000008•

School: 1• ADD SD?

PIN: 01 ,01-0206-- ,000 •

OWNER INFORMATION

First : DANIEL J & MARIA A •
Last : AMSPACKER •
Ext : •
Own-2 : •
Addr-1 : •
Addr-2 : 1141 WEST FIFTH STREET •
City : LEWISTOWN PA 17044 •

Spec: •
Unit: •
Tie : •
Stat: T• Type: R • R
Luse: 100•
Nbhd: 100• 100

Route : • (SITUS BREAKDOWN)
House : • •
Street : • • •
City : •
Situs : •
Desc-2 : •
Desc-3 : •
Desc-4 : •

01 01206
(8)
03/12/2019 25 1234-01234

LAST-MAILED ASSESSED VALUES

	TAXABLE	APPRAISED
LAND :	7800	7800
IMPR :	20300	20300
TOTAL :	28100	28100

*** HELD PARCEL ***

/CA/1998/MS/1A-NAMES_ADDRS/
tbarr, viewing Control # 00000008

AMSPACKER, DANIEL J & MARIA A
01 ,01-0206-- ,000

Screens Update More

< B X >

TEXT
DATA
ENTRY

Thank you for your attention

TIM.BARR@EVALSVS.COM