
Remote Access and Printing with Citrix and DataFax

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Overview

- Rationale
- Objectives
- A little history
- What is Citrix?
- Current solution



Why provide remote access?

- Clients want it
- It is relatively easy and inexpensive
- Remote office
- Telecommuters



Objectives

- Provide clients with access to data
- Maintain security of production systems
- Exclusive access
- Ability to print
- Easy to use and configure



A little history

- Microsoft's PPTP
- Windows NT Terminal Server
- Reflection X



On the client side

- Windows 95, 98, or NT
- Dial-up Networking installed
- Software updates to add encryption
- Microsoft Terminal Server Client



The Result

- It worked, but...
- Microsoft clients only
- Different configuration for each OS
- Multiple logon prompts
- No local printing



New plan

- Eliminate most logon prompts
- Easy web interface
- Lightweight client
- Multiple platform support



The Answer

- Citrix MetaFrame
- Windows and UNIX servers
- Web Interface available
- Citrix client for almost every platform



What is Citrix?

- A Terminal Server
- Publish applications
- Centralized application management
- Applications execute on server, screen updates, keyboard, and mouse clicks pass between client and server



Current Solution

- Web site with SSL encryption
- Nfuse
- Citrix for UNIX
- Sun Fire V100
- Rsync



Current Solution

- Modified DFprint_filter
- Created Ip script
- PostScript printer



Remote Printing

- Citrix print command: ctxlpr
- DataFax tools use DFprint_filter
- DF lite on Solaris uses lp



ctxlpr

- ctxlpr [-P printerName] [-b] fileName
- Use -P option for other printer
- Use -b for background printing
- Use ctxprinters to list client printers
- Will print to default printer on client



DFlite and lp

- DFlite sends print jobs to lp
- Replace default lp with script
- Call cctlpr to print



lp script

- ```

• #! /bin/sh
• files=""
• while [$# -gt 0]
• do
• case $1 in
• -c) # this option is always true for lpr
• ;;
• -d*) # equivalent option is -P but ignore
• # dest="-P`echo $1 |cut -c3-`"
• ;;
• -m) # no equivalent option
• ;;
• -n[0-9]*) # no equivalent option
• ;;
• -o*) # no equivalent option for lpr

```



## lp script

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```

• ;;
• -s) # no equivalent option for lpr
• ;;
• -t*) # no equivalent option
• ;;
• -w) # no equivalent option
• ;;
• -*)
• echo "Illegal flag argument '$1'"
• echo "Usage: lp <files>"
• exit 1
• ;;
• *) files="$files $1"
• ;;
• esac
• shift
• done
• /opt/CTXSmf/bin/ctxlpr $files

```



## DFprint\_filter

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- # Choose the appropriate system print command
- LPCMD="/opt/CTXSmf/bin/ctxlpr"
- PRINTCMD="{LPCMD}"
- Edit script as necessary



## End Result

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- Single sign-on
- Offline from production system
- Quick data synchronization
- Remote printing



## Information

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- [www.citrix.com](http://www.citrix.com)
- [www.sun.com](http://www.sun.com)
- [www.sunfreeware.com](http://www.sunfreeware.com)
- [www.samba.org/rsync](http://www.samba.org/rsync)



## Synteract Services

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- Customized validation documents
- Experience importing legacy data from other clinical systems to DataFax
- Experienced I.T. staff and Applications group can assist in any portion of installation, validation, CRF design, study design, and DataFax training
- [www.synteract.com](http://www.synteract.com)

