autofs, cifs, filesystem, howto, linux, mount, mounting, samba, smb, ubuntu, debian

automount CIFS share with autofs

This HowTo will prepare a Linux client to automatically mount CIFS shares from a remote Samba server on access/demand. Since I am mounting different filesystems, I have structured my mountpoints as follows:

/ ├── home │ ├── USER │ │ ├── mnt │ │ │ ├── cifs │ │ │ │ ├── smb-server-a.fqdn │ │ │ │ │ ├── share-a │ │ │ │ │ ├── share-b │ │ │ │ │ └── share-c │ │ │ │ ├── smb-server-b.fqdn │ │ │ │ │ ├── share-b │ │ │ │ │ ├── share-b │ │ │ │ │ └── share-c │ │ │ ├── sshfs │ │ │ │ ├── ssh-server-a.fqdn From here on, I will use “mysambaserver.local” as the Samba servers FQDN, “mysambaserver” as its hostname, “myusername” as my username, “mygroup” as group and “myPassWord” as the password.

At time of writing, the server is running Ubuntu 18.04.4 LTS and the client is running Ubuntu 20.04.1 LTS.

This HowTo got compiled by trial and error and from these sources:

https://wiki.ubuntuusers.de/Autofs/#Samba-Freigabe https://www.elektronik-kompendium.de/sites/raspberry-pi/2102201.htm https://wiki.ubuntuusers.de/Samba_Client_cifs/ https://wiki.ubuntuusers.de/Gigolo/ https://blog.marvin-menzerath.de/artikel/samba-freigaben-mit-autofs-automatisch-ein-aushaengen/ https://www.howtoforge.com/accessing_windows_or_samba_shares_using_autofs https://wiki.samba.org/index.php/Mounting_samba_shares_from_a_unix_client https://kalitut.com/samba-shares-fstab/ Install Required packages, check supported filesystems Install the required packages on the client (gigolo is just “nice to have”) and check if its kernel supports CIFS.

apt-get install autofs cifs-utils smbclient gigolo gvfs-backends gvfs-fuse fuse ls -1 /lib/modules/$(uname -r)/kernel/fs | grep “cifs” cifs Check remote SAMBA connection Check remote connection to the Samba server:

smbclient -N -L *<mysambaserver.local>/ Sharename Type Comment ——— —- ——- share-a Disk Share A share-b Disk Share B share-c Disk Share C IPC$ IPC IPC Service (mysambaserver server (Samba, Ubuntu)) SMB1 disabled – no workgroup available Check authenticated login Check an authenticated remote login. If the command line asks for a password, enter the SMB password which is configured for the user at the Samba server (via smbpasswd). smbclient -U <myusername> -L* <mysambaserver.local>/ Enter WORKGROUP\myusername's password: [myPassWord] ←– enter the password

```
	Sharename       Type      Comment
	---------       ----      -------
	share-a         Disk      Share A
	share-b         Disk      Share B
	share-c         Disk      Share C
	IPC$            IPC       IPC Service (mysambaserver server (Samba, Ubuntu))
```

SMB1 disabled – no workgroup available Create mount point Create the mount point in the users home directory:

mkdir -pv /home/<myusername>/mnt/cifs chown -R <myusername>:<mygroup> /home/<myusername>/mnt/ autofs configuration The configuration consists of the master map file (/etc/auto.master), the corresponding map file (/etc/auto.mysambaserver-cifs) and the key file which contains the credentials for authentication. In the following we will configure autofs to mount shares to /home/<myusername>/mnt/cifs/<mysambaserver.local>/<share-name>.

Map file Create the mapfile

vim /etc/auto.<mysambaserver>-cifs #!/bin/bash # Id # This file must be executable to work! chmod 755! set -x KEY=“${1}” # Note: create a cred file for each windows/Samba-Server in your network # which requires password authentification. The file should contain # exactly two lines: # username=user # password=* # Please don't use blank spaces to separate the equal sign from the # user account name or password. CREDFILE=“/etc/autofs/keys/${KEY}” # # !!!!!!!!!!!!!!!!! PAY ATTENTION TO the CIFS VERSION in MOUNTOPTS !!!!!!!!!!!!!!!!!!!!!!!!!!!!!! # https://www.raspberrypi.org/forums/viewtopic.php?t=201727 # https://www.raspberrypi.org/forums/viewtopic.php?t=211987 # http://krisko210.blogspot.com/2016/06/autofs-automount-nfs-share.html # Note: Use cifs instead of smbfs: MOUNTOPTS=“-fstype=cifs,file_mode=0644,dir_mode=0755,nounix,uid=1000,gid=1000” SMBCLIENTOPTS=“” for EACH in /bin /sbin /usr/bin /usr/sbin do

```
	if [ -x $EACH/smbclient ]
	then
		SMBCLIENT=$EACH/smbclient
		break
	fi
```

done [-x $SMBCLIENT] || exit 1 if [-e “${CREDFILE}”] then

```
	MOUNTOPTS=$MOUNTOPTS",credentials=${CREDFILE}"
	SMBCLIENTOPTS="-A "$CREDFILE
```

else

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      SMBCLIENTOPTS="-N"
```

fi $SMBCLIENT $SMBCLIENTOPTS -gL “${KEY}” 2>/dev/null \

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| awk -v key="$KEY" -v opts="${MOUNTOPTS}" -F'|' -- '
     BEGIN   { ORS=""; first=1 }
     /Disk/  { if (first) { print opts; first=0 };
               gsub(/ /, "\\ ", $2);
               sub(/\$/, "\\$", $2);
               print " \\\n\t /" $2, "://" key "/" $2 }
     END     { if (!first) print "\n"; else exit 1 }
     '
```

chmod 755 /etc/auto.<mysambaserver>-cifs This file is a slightly modified version of the file auto.smb which usually comes as part of the autofs package. You need to modify the line defining the mountopts above and change userid and groupid to the uid/gid of your personal account.

key file Now you have to give autofs the credentials needed to access shares on your network. To do this create a key file

mkdir -pv /etc/autofs/keys/ vim /etc/autofs/keys/<mysambaserver.local> username=<myusername> password=<myPassWord> chown root:root /etc/autofs/keys/<mysambaserver.local> chmod 600 /etc/autofs/keys/<mysambaserver.local> Master-Map The maps to be monitored are specified in this file. Execute the following command to append the line “/home/myusername/mnt/cifs /etc/auto.mysambaserver-cifs –timeout=60” at the end of the /etc/auto.master file:

echo “/home/<myusername>/mnt/cifs /etc/auto.<mysamabaserver>-cifs –timeout=60 –ghost” »/etc/auto.master The syntax here is: <Directory> <Map-File> [Parameter] The shares should be unmounted after an inactivity of 60 seconds (–timeout=60) and empty directories should be created for the individual shares before mounting (–ghost).

Debugging for debugging output stop the daemon and interactively start autofs with verbose output enabled

service autofs stop automount -f -v You can restart autofs with

service autofs start Test Use the following command to test if your setup is working

ls -als /home/<myusername>/mnt/cifs/<mysambaserver.fqdn>/<share-name>