Servei SAMBA (II)

Curs 2016-2017

Documentació

LLibre Samba O'Reilly: Using Samba, 2ed, O'Reilly & Associates (Feb. 2003)

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Referències

- Pàgines man
- http://docs.fedoraproject.org/en-US/Fedora/15/html/Deployment_Guide/ch-File_and_Print_Servers.html#s1-Samba
- http://trauko.wordpress.com/2007/09/17/instalando-samba-en-ubuntu-para-compartir-archivos-e-impresoras-en-redes-windows/
- http://samba.org/samba/docs/using_samba/toc.html
- http://samba.org/samba/docs/man/Samba-Guide/
- http://samba.org/samba/docs/man/Samba-HOWTO-Collection/
- http://download.gna.org/smbldap-tools/docs/

Global Configuration

Opcions de configuració:

- **netbios name**: nom del servdior (NO fqdn del DNS o nom arbitrari del server)
- **workgroup**: nom del grup de treball o del domini (segons sigui standalone o PDC). Es en realitat un NetBios group.Els host han de pertànyer al mateix workgrup/domain per compartir recursos samba.
- **server string**: descripció del servidor samba

Tipus de rol:

- **server standalone**: un host 'windows' que pertrany a un grup-de-treball/domain de manera stand-alone. No hi ha cap controlador de domini, són hosts que comparteixen recursos entre ells. Xarxa peer-to-peer.
- **PDC Controlador de domini**: un server que controla un domini/grup-de-treball. És qui autentifica els usuaris i gestiona els recursos del domni. Xarxa client-servidor.
- **master browser**: en un entorn de grup-de-treball un dels servers es pot erigir en master-browser i ser qui gestiona la llista d'integrants del grup-de-treball. En un domini el PDC realitza aquesta funció.
- **BDC**: controlador secundari de domini.

Resolució de noms windows: nmb

- **wins support = yes** el host realitza la resolució de noms windows. És el servidor de noms windows (com un dns per a noms de windows)
- **wins support = no** el host fa de client wins, és a dir, per identificar els noms dels altres hosts ho ha de demanar al servidor de noms wins.

Opcions de un recurs compartit: SHARES

- path /path/to/share
- comment "comment"
- volume "name"
- read only yes/no
- writtable yes/no

Shares: recursos de disc i d'impressió

El model SAMBA Client/Server de Shares

Com es sabut podem generar recursos compartits en una xarxa anomenats *Shares*. Aquests recursos en el nivell bàsic poden ser:

- De **disc**.
- D'**impressió**.

Qui pot generar aquests recursos? De fet qualsevol sistema operatiu Windows pot generar recursos compartits (des de hosts windows fins a servidors Windows) amb la coneguda opció "*compartir com*". però també equips GNU/Linux utilitzant SAMBA poden oferir recursos de disc i d'impressió a altres hosts.

Així doncs, podem tenir:

- Un host **Windows** que ofereix recursos de xarxa o Shares. Els seus clients poden ser altres Windows o GNU/Linux que utilitzen clients de SAMBA.
- Un host **GNU/Linux** que ofereix recursos de xarxa usant el protocol SAMBA. Els seus clients poden ser tant equips Wiondows com altres GNU/Linux que executen el software de SAMBA client.

El software de SAMBA (a nivell bàsic) pot actuar com a:

- **Client** de recursos o *Shares* d'equips que els ofereixen a la xarxa (siguin equips Windows o GNU/Linux). per exemple les ordres smbclient, smbget, mount.cifs, etc.
- **Servidor** de recursos de xarxa, Shares, als que es poden connectar altres equips siguin Windows o GNU/Linux.

SAMBA proporciona més funcionalitats (avançades) per implementar des d'equips GNU/Linux l'administracio de xarxes Windows. permet:

- Actuar com a **browser** de la xarxa.
- Actuar com a servidor **WINS** de la xarxa.
- Actuar com a Server Member d'una xarxa Windows.
- Actuar com a PDC o Controlador principal de Domini d'una xarxa Windows.

El protocol SAMBA/SMB/CIFS

SMB: El protocol Windows per a la gestió de recursos de disc i d'impressores en xarxa, per a fer '*compartir como*' i '*connectar a unidad de red*' és el protocol SMB Server Message Block.

SAMBA: El software *opensource* que permet implementar el protocol SMB en equips GNU/LInux s'anomena SAMBA, fent un joc de paraules amb la pronuncia del protocol de Windows SMB.

CIFS: Windows va evolucionar el seu protocol de compartició de recursos de disc al protocol actualment anomenat CIFS Common internet File System. Des del punt de vista d'aquesta documentació SMB i CIFS realitzen la mateixa funció.

Crear Shares des de hosts windows

Un equip Windows (en totes les seves versions) permet compartir '**carpetes**' i **impressores**. És la opció "*compartir com*". Un cop compartides altres hosts es poden connectar aquests recursos.
Segons la versió de Windows utilitzada o les preferències de l'usuari/administrador els recursos es poden compartir usant dos models de seguretat diferents.

Seguretat d'accés:

- Per **recurs**: (Share Level Access Control) permet compartir un recurs amb seguretat a nivell de recurs que únicament permet:
    - Accés public al recurs sense cap tipus de seguretat.
    - Indicar un *password (generic)* per restringir l'accés al recurs. Els clients que indiquen el password correctament poden accedir al recurs, els altres no.
    - Indicar-se si és *read/write* o només *read only*.
    - A tot recurs se li assigna un nom de recurs, que no té perquè coincidir amb el nom real.
    - També se li pot assignar un comentari descriptiu del recurs.
- Per **usuari**: (User Level Access Control) més avançat i complert. Permet establir una *ACL* o llista de control d'accés indicant quins usuaris/grups poden fer què en el recurs. La granularitat en atorgar permisos és més detallada. Cal indicar:
    - Nom del recurs compartit.
    - Descripció (optativa) del recurs).
    - Llista d'usuaris/grups i permisos assignats en cada cas (una ACL).

- Els recursos es poden fer **publics** (o *browseables*) o poden ser **ocults**. Aquells recursos que comencen amb el *caràcter $* en el seu nom són ocults.
- Segons la versió de Windows també es pot indicar el número màxim de connexions permeses al recurs.
- Les opcions concretes varien en funció de la versió de sistema operatiu Windows utilitzat.

Connectar a shares des de hosts windows

Des dels equips Windows actuar com a client de recursos de xarxa o *Shares* simplement cal seleccionar "**connectar a unitat de xarxa**" i indicar el UNC corresponent.

Usualment els clients Windows proporcionen la facilitat d'assignar un nom de **lletra d'unitat** a un recurs de disc, així per exemple *H:* pot estar assignada a *//server/recurs*.

Unix Clients amb SAMBA

Documentation: Samba Documentation Chapter 5 Unix Clients

Les principals utilitats GNU/Linux clients de SAMBA son:

- smbtree
- smbclient
- smbget
- mount.cifs

Altres ordres: smbcacls, smbclient4, smbcontrol, smbcquotas, smbget, smbpasswd, smbspool, smbtar i smbta-util.

També podem accedir a recursos SAMBA utilitzant eines de l'entron gràfic com per exemple:

- Un **navegador**, per exemple *firefox*.
- Un browser de fitxers com per exemple **nautilus**.

```
[root@hp01 ~]# docker run ...

[root@hp01 ~]# docker start  -a cont-samba02
[root@2ea1ac403693 ~]# /usr/sbin/smbd
[root@2ea1ac403693 ~]# /usr/sbin/nmbd

[root@2ea1ac403693 ~]# smbtree
Enter GUEST's password:
MYGROUP
    \\2EA1AC403693          Samba Server Version 4.2.3
        \\2EA1AC403693\IPC$             IPC Service (Samba Server Version 4.2.3)
        \\2EA1AC403693\public           Share de contingut public
        \\2EA1AC403693\manpages         Documentacio man del container
        \\2EA1AC403693\documentation    Documentaciódoc del container

[root@2ea1ac403693 ~]# smbclient -L 2EA1AC403693
Enter GUEST's password:
```

```
Anonymous login successful
Domain=[MYGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
   Sharename       Type    Comment
   ---------       ----    -------
   documentation   Disk        Documentaciódoc del container
   manpages        Disk    Documentacio man del container
   public      Disk    Share de contingut public
   IPC$        IPC     IPC Service (Samba Server Version 4.2.3)
Anonymous login successful
Domain=[MYGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
   Server               Comment
   ---------       -------
   2EA1AC403693     Samba Server Version 4.2.3
   Workgroup            Master
   ---------       -------
   MYGROUP          2EA1AC403693
```

```
[root@hp01 ~]# docker inspect cont-samba02 | grep "IPAddress"
        "IPAddress": "172.17.0.3",

[ecanet@hp01 ~]$ smbtree
Enter ecanet's password:
MYGROUP
   \\2EA1AC403693              Samba Server Version 4.2.3
        \\2EA1AC403693\IPC$                 IPC Service (Samba Server Version 4.2.3)
        \\2EA1AC403693\public               Share de contingut public
        \\2EA1AC403693\manpages                 Documentacio man del container
        \\2EA1AC403693\documentation    Documentaciódoc del container

[ecanet@hp01 ~]$ smbclient -L \\172.17.0.3
Enter ecanet's password:
Anonymous login successful
Domain=[MYGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
   Sharename       Type    Comment
   ---------       ----    -------
   documentation   Disk        Documentaciódoc del container
   manpages        Disk    Documentacio man del container
   public      Disk    Share de contingut public
   IPC$        IPC     IPC Service (Samba Server Version 4.2.3)
Anonymous login successful
Domain=[MYGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
   Server               Comment
   ---------       -------
   2EA1AC403693     Samba Server Version 4.2.3
   Workgroup            Master
   ---------       -------
```

```
   MYGROUP          2EA1AC403693
```

smbclient

Estudiar l'ordre *smbclient* analitzant els casos següents:

- Usuari actual de la sessió GNU/Linux.
- Usuari anònim.
- Usuari identificat.
- Sessió interactiva
- Sessió desatesa.
- Realitzar copies de backup.

```
[ecanet@hp01 ~]$ smbclient  //2EA1AC403693/documentation
Enter ecanet's password:
Anonymous login successful
Domain=[MYGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
smb: \> pwd
Current directory is \\2EA1AC403693\documentation\
smb: \> quit

[ecanet@hp01 ~]$ smbclient  //2EA1AC403693/manpages -U guest
Enter guest's password:
Anonymous login successful
Domain=[MYGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
smb: \> pwd
Current directory is \\2EA1AC403693\manpages\
smb: \> quit
```

smbtree

```
[ecanet@hp01 ~]$ smbtree -D
Enter ecanet's password:
MYGROUP

[ecanet@hp01 ~]$ smbtree -S
Enter ecanet's password:
MYGROUP
    \\2EA1AC403693              Samba Server Version 4.2.3

[ecanet@hp01 ~]$ smbtree
```

```
Enter ecanet's password:
MYGROUP
   \\2EA1AC403693            Samba Server Version 4.2.3
         \\2EA1AC403693\IPC$              IPC Service (Samba Server Version 4.2.3)
         \\2EA1AC403693\public            Share de contingut public
         \\2EA1AC403693\manpages                  Documentacio man del container
         \\2EA1AC403693\documentation     Documentaciódoc del container
```

smbget

```
[ecanet@hp01 ~]$ smbget smb://2EA1AC403693/public/README.md
Username for public at 2EA1AC403693 [guest]
Password for public at 2EA1AC403693:
Using workgroup MYGROUP, guest user
smb://2EA1AC403693/public/README.md
Downloaded 141b in 4 seconds

[ecanet@hp01 tmp]$ smbget -R smb://2EA1AC403693/documentation/samba
Username for documentation at 2EA1AC403693 [guest]
Password for documentation at 2EA1AC403693:
Using workgroup MYGROUP, guest user
smb://2EA1AC403693/documentation/samba/WHATSNEW.txt
….
smb://2EA1AC403693/documentation/samba/README
Downloaded 327,78kB in 4 seconds
```

mount.cifs

```
[root@hp01 ~]# mount -t cifs -o guest //172.17.0.3/documentation /mnt

[root@hp01 ~]# mount -t cifs
//172.17.0.3/documentation on /mnt type cifs
(rw,relatime,vers=1.0,cache=strict,domain=2EA1AC403693,uid=0,noforceuid,gid=0,noforcegi
d,addr=172.17.0.3,unix,posixpaths,serverino,mapposix,acl,rsize=1048576,wsize=65536,actim
eo=1)

[root@hp01 ~]# umount /mnt
```

```
[root@hp01 ~]# vim /etc/fstab
//172.17.0.3/manpages   /mnt       cifs       defaults,guest,noauto   0 0

[root@hp01 ~]# mount -a
```

```
[root@hp01 ~]# mount /mnt/
[root@hp01 ~]# mount -t cifs
//172.17.0.3/manpages on /mnt type cifs
(rw,relatime,vers=1.0,cache=strict,domain=2EA1AC403693,uid=0,noforceuid,gid=0,noforcegi
d,addr=172.17.0.3,unix,posixpaths,serverino,mapposix,acl,rsize=1048576,wsize=65536,actim
eo=1)
```

firefox

Provar les següents *locations* en el navegador local, per exemple *firefox*:

```
smb://
smb://mygroup
smb://172.17.0.3
smb://2EA1AC403693
smb://2EA1AC403693/public
smb://2EA1AC403693/manpages
```

nautilus

Provar les següents *locations* en el *file browser*, per exemple *nautilus*:

```
smb://
smb://mygroup
smb://172.17.0.3
smb://2EA1AC403693
smb://2EA1AC403693/public
smb://2EA1AC403693/manpages
```

Atenció a la de recursos que deixa connectats a la barra esquerra de l'arbre de disc. Podeu navegar també via **Navega per la xarxa** i anar seleccionant els elements.

Unix Server amb SAMBA

Documentació: Samba Chapter 6 The Samba Configuration File

Exemple de configuració Server Shares

En aquest exemple el servidor samba es configura per a:

- Actuar com a simple host que ofereix shares a la xarxa.
- Ofereix els recursos de disc de:
    - documentation (/usr/share/doc) només per a lectura

    - manpages (/usr/share/man) només de lectura.
    - public (/var/lib/samba/public) read/write per a tothom.
    - privat (/var/lib/samba/privat) que no es mostra en els llistats.

- Observar del fitxer de configuració els tres blocs:
    - Global: amb la descripció general del servidor SAMBA.
    - *Shares* homes i printer (estàndard).
    - *Shares* definits per l'administrador.

Configuració del fitxer *<u>/etc/samba/smb.conf</u>*:

```
[global]
        workgroup = MYGROUP
        server string = Samba Server Version %v
        log file = /var/log/samba/log.%m
        max log size = 50
        security = user
        passdb backend = tdbsam
        load printers = yes
        cups options = raw
```

```
[homes]
        comment = Home Directories
        browseable = no
        writable = yes
;       valid users = %S
;       valid users = MYDOMAIN\%S
[printers]
        comment = All Printers
        path = /var/spool/samba
        browseable = no
        guest ok = no
        writable = no
        printable = yes
```

```
[documentation]
        comment = Documentació doc del container
        path = /usr/share/doc
        public = yes
        browseable = yes
        writable = no
        printable = no
        guest ok = yes
[manpages]
        comment = Documentacio man  del container
        path = /usr/share/man
```

```
        public = yes
        browseable = yes
        writable = no
        printable = no
        guest ok = yes
[public]
        comment = Share de contingut public
        path = /var/lib/samba/public
        public = yes
        browseable = yes
        writable = yes
        printable = no
        guest ok = yes
[privat]
        comment = Share d'acces privat
        path = /var/lib/samba/privat
        public = no
        browseable = no
        writable = yes
        printable = no
        guest ok = yes
```

Name Resolution & Browsing

Documentation: Samba documentation Chapter 7 Name Resolution and Browsing

Name Resolution

Per ajudar una mica a l'impresentable organització de xarxa via browsing es va desenvolupar WINS, un protocol de noms per a Windows (correcte, encara no s'han enterat del DNS!).

Un server windows pot actuar com a servidor de noms de Netbeui si es configura com a servidor WINS. Els altres hosts li demanen que resolgui els noms Netbeui a adreces IP.

```
name resolve order = ...
wins server = yes/adreçaIP
wins support = yes/no
```

wins server: amb aquests opció a *yes* s'indica que el servidor realitza la funció de servidor de noms WINS. Si ha d'actuar com a client WINS llavors en lloc de yes cal configurar l'*adreça IP* del servidor WINS.

wins support: activada a yes fa que els hosts de la xarxa actuïn com a clients de WINS.

Imitant el funcionament del fitxer /etc/hosts dels sistemes GNU/Linux en entorns Windows s'utilitza per a la resolució local de noms Netbeui el fitxer ***/etc/samba/lmhosts*** (originari de Lan Manager).

Resolució Windows host clients

Utilització de lmhosts

```
[root@hp01 ~]# cat /etc/samba/lmhosts
127.0.0.1 localhost
172.17.0.5 2EA1AC403693
172.17.0.8 3C7C3716C3AB
172.17.0.2 3145DBF85061
172.17.0.4 939C09590BDC

[root@hp01 ~]# nmblookup 939C09590BDC
172.17.0.4 939C09590BDC<00>
```

```
[root@3145dbf85061 /]# nmblookup -S 939C09590BDC
172.17.0.4 939C09590BDC<00>
Looking up status of 172.17.0.4
   939C09590BDC    <00> -          B <ACTIVE>
   939C09590BDC    <03> -          B <ACTIVE>
   939C09590BDC    <20> -          B <ACTIVE>
   MYGROUP         <00> - <GROUP> B <ACTIVE>
   MYGROUP         <1e> - <GROUP> B <ACTIVE>

   MAC Address = 00-00-00-00-00-00
```

[root@939c09590bdc /]# nmblookup -S 3145DBF85061 *(és el Master Browser)*

```
172.17.0.8 3145DBF85061<00>
Looking up status of 172.17.0.8
   3145DBF85061    <00> -          B <ACTIVE>
   3145DBF85061    <03> -          B <ACTIVE>
   3145DBF85061    <20> -          B <ACTIVE>
   ..__MSBROWSE__. <01> - <GROUP> B <ACTIVE>
   MYGROUP         <00> - <GROUP> B <ACTIVE>
   MYGROUP         <1d> -          B <ACTIVE>
   MYGROUP         <1e> - <GROUP> B <ACTIVE>

   MAC Address = 00-00-00-00-00-00
```

Utilització de Wins

```
# This section details the support for the Windows Internet Name Service (WINS).
# Note: Samba can be either a WINS server or a WINS client, but not both.

# wins support = when set to yes, the NMBD component of Samba enables its WINS
# server.
#
# wins server = tells the NMBD component of Samba to be a WINS client.

# wins proxy = when set to yes, Samba answers name resolution queries on behalf
# of a non WINS capable client. For this to work, there must be at least one
# WINS server on the network. The default is no.

# dns proxy = when set to yes, Samba attempts to resolve NetBIOS names via DNS
# nslookups.
```

Resolució GNU/Linux hosts clients

```
[root@hp01 ~]# vim /etc/hosts
127.0.0.1       localhost.localdomain localhost
::1              localhost6.localdomain6 localhost6
172.17.0.3      2EA1AC403693
172.17.0.5      3C7C3716C3AB
```

Master Browser

Una mica d'història: les xarxes windows s'originen sense implementar un servei DNS i els equips s'identifiquen per un nom de 15 caràcters usat pel protocol NETBEUI. Per saber quins equips hi ha a la xarxa local Windows implementa un mètode espectacular, fer crits! via *broadcasts* els equips s'identifiquen els uns amb els altres. Aquesta tecnologia punta evoluciona i apareix la funció d'encarregat principal de la xarxa, que anota els noms de tots els equips que van apareixent a la xarxa i els va difonent a qui els hi demana.

Tot aquest refregit provoca allò tan tradicional en Windows de clicar a la icona de la xarxa i creuar els dits a veure quins equips apareixen i quins no. Evidentment la informació que es mostra no és mai fidedigna, es una foto dels equips que han contestat en algun moment o altre, però en poden faltar i pot ser que d'altres ja no hi siguin.

En una xarxa Windows entre hosts on no hi ha un PDC (Controlador de domini) els equips competeixen entre ells per escollir un *local master browser*. Aquest procés s'anomena **Eleccions**.

El procés d'eleccions es dirimeix en:

- Valor del sistema operatiu: *os-value*.
- Valor del *computer role*.
- Temps que el sistema esta up.
- Menor nom Netbeui del host.
- Si a la CUP no li cau bé no pot ser-ho!

Tota subxarxa local escull el seu local *master browser*. Si aquestes diverses xarxes estan sota un Domini Windows (un PDC) llavors s'escull també un *Domain Master Browser*.

```
local master = no/yes
os level = nº
preferred master = no/yes
```

Directives per a fer de *Local Master Browser*:

- **local master**: el valor *no* indica que l'equip refusa ser mai *local master browser*. El valor *yes* vol dir que es postula per ser-ho, però no que ho sigui, li caldrà guanyar la *election*.
- **os level**: indica un valor que com major és més dret a ser el *master browser* té. Aquest valor depèn de la versió del sistema operatiu però es pot establir arbitràriament.
- **preferred master**: el valor yes indica que l'equip vol ser *master browser* i força (quan s'inicia) que es produeixi una nova *election*. Es a dir, força eleccions.

Primer Cas

Donats dos hosts amb SAMBA server que no jugen cap rol de PDC podem observar que un d'ells realitza la funció de *Local Master Browser*.

```
[root@3c7c3716c3ab /]# smbtree
Enter GUEST's password:
MYGROUP
    \\3C7C3716C3AB              Samba Server Version 4.2.3
        \\3C7C3716C3AB\IPC$             IPC Service (Samba Server Version 4.2.3)
        \\3C7C3716C3AB\public           Share de contingut public
        \\3C7C3716C3AB\manpages             Documentacio man del container
        \\3C7C3716C3AB\documentation    Documentaciódoc del container
    \\2EA1AC403693              Samba Server Version 4.2.3
        \\2EA1AC403693\IPC$             IPC Service (Samba Server Version 4.2.3)
        \\2EA1AC403693\public           Share de contingut public
        \\2EA1AC403693\manpages             Documentacio man del container
        \\2EA1AC403693\documentation    Documentaciódoc del container

[root@3c7c3716c3ab /]# smbtree -D
Enter GUEST's password:
MYGROUP
[root@3c7c3716c3ab /]# smbtree -S
Enter GUEST's password:
MYGROUP
    \\3C7C3716C3AB              Samba Server Version 4.2.3
    \\2EA1AC403693              Samba Server Version 4.2.3
```

```
[root@3c7c3716c3ab /]# smbclient  -L 3C7C3716C3AB
Enter GUEST's password:
Anonymous login successful
Domain=[MYGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
    Sharename       Type    Comment
    ---------       ----    -------
    documentation   Disk        Documentaciódoc del container
    manpages        Disk    Documentacio man del container
    public      Disk    Share de contingut public
```

```
   IPC$          IPC     IPC Service (Samba Server Version 4.2.3)
Anonymous login successful
Domain=[MYGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
   Server               Comment
   ---------      -------
   3C7C3716C3AB            Samba Server Version 4.2.3
   Workgroup            Master
   ---------      -------
   MYGROUP

[root@3c7c3716c3ab /]# smbclient  -L 2EA1AC403693
Enter GUEST's password:
Anonymous login successful
Domain=[MYGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
   Sharename            Type    Comment
   ---------      ----      -------
   documentation   Disk        Documentaciódoc del container
   manpages             Disk    Documentacio man del container
   public          Disk    Share de contingut public
   IPC$          IPC     IPC Service (Samba Server Version 4.2.3)
Anonymous login successful
Domain=[MYGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
   Server               Comment
   ---------      -------
   2EA1AC403693    Samba Server Version 4.2.3
   3C7C3716C3AB    Samba Server Version 4.2.3
   Workgroup            Master
   ---------      -------
   MYGROUP          2EA1AC403693
```

Segon Cas

Generem dos containers Docker més de SAMBA ambdós del WorkGroup NEWGROUP i a un d'ells li modifiquem les opcions per forçar que sigui *master browser*:

```
[global]
        workgroup = NEWGROUP
        server string = Samba Server Version %v 2HISIX
        local master = yes
        os level = 33
        preferred master = yes
```

```
# ----------------------- Browser Control Options ----------------------------
# local master = when set to no, Samba does not become the master browser on
# your network. When set to yes, normal election rules apply.
```

```
# os level = determines the precedence the server has in master browser
# elections. The default value should be reasonable.

# preferred master = when set to yes, Samba forces a local browser election at
# start up (and gives itself a slightly higher chance of winning the election).
```

```
[root@939c09590bdc /]# smbtree -D
Enter GUEST's password:
NEWGROUP
MYGROUP

[root@939c09590bdc /]# smbtree -S
Enter GUEST's password:
NEWGROUP
    \\939C09590BDC              Samba Server Version 4.2.3 2HISIX
    \\3145DBF85061              Samba Server Version 4.2.3 2HISIX
MYGROUP
    \\3C7C3716C3AB              Samba Server Version 4.2.3
    \\2EA1AC403693              Samba Server Version 4.2.3
```

```
root@939c09590bdc /]# smbclient -L 3145DBF85061
Enter GUEST's password:
Anonymous login successful
Domain=[NEWGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
    Sharename       Type      Comment
    ---------       ----      -------
    documentation   Disk      Documentaciódoc del container
    manpages        Disk      Documentacio man del container
    public          Disk      Share de contingut public
    IPC$            IPC       IPC Service (Samba Server Version 4.2.3 2HISIX)
Anonymous login successful
Domain=[NEWGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
    Server               Comment
    ---------            -------
    3145DBF85061         Samba Server Version 4.2.3 2HISIX
    939C09590BDC         Samba Server Version 4.2.3 2HISIX
    Workgroup            Master
    ---------            -------
    MYGROUP              2EA1AC403693
    NEWGROUP             939C09590BDC
```

Tercer Cas

Donats quatre containers Docker configurats com a Samba Server (no PDC) modificar en un d'ells el valor de *os level* i *preferred master* per fer-lo *master browser*.

```
[root@3145dbf85061 /]# smbtree -S
Enter GUEST's password:
MYGROUP
    \\3C7C3716C3AB          Samba Server Version 4.2.3
    \\3145DBF85061          Samba Server Version 4.2.3 2HISIX
    \\2EA1AC403693          Samba Server Version 4.2.3

[root@3145dbf85061 /]# smbclient -L 2EA1AC403693
Enter GUEST's password:
Anonymous login successful
Domain=[MYGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
    Sharename       Type    Comment
    documentation   Disk    Documentaciódoc del container
    manpages        Disk    Documentacio man del container
    public          Disk    Share de contingut public
    IPC$            IPC     IPC Service (Samba Server Version 4.2.3)
Anonymous login successful
Domain=[MYGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
    Server          Comment
    2EA1AC403693    Samba Server Version 4.2.3
    3145DBF85061    Samba Server Version 4.2.3 2HISIX
    3C7C3716C3AB    Samba Server Version 4.2.3
    Workgroup       Master
    MYGROUP         2EA1AC403693
```

```
        local master = yes
        os level = 50
        preferred master = yes
```

```
[root@939c09590bdc /]# smbtree -S
Enter GUEST's password:
MYGROUP
    \\939C09590BDC          Samba Server Version 4.2.3 2HISIX
    \\3C7C3716C3AB          Samba Server Version 4.2.3
    \\3145DBF85061          Samba Server Version 4.2.3 2HISIX
    \\2EA1AC403693          Samba Server Version 4.2.3

[root@939c09590bdc /]# smbclient  -L 939C09590BDC
Enter GUEST's password:
Anonymous login successful
Domain=[MYGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
```

```
    Sharename       Type    Comment
    documentation   Disk    Documentaciódoc del container
    manpages        Disk    Documentacio man del container
    public          Disk    Share de contingut public
    IPC$            IPC     IPC Service (Samba Server Version 4.2.3 2HISIX)
Anonymous login successful
Domain=[MYGROUP] OS=[Windows 6.1] Server=[Samba 4.2.3]
    Server               Comment
    2EA1AC403693         Samba Server Version 4.2.3
    3145DBF85061         Samba Server Version 4.2.3 2HISIX
    3C7C3716C3AB                 Samba Server Version 4.2.3
    939C09590BDC         Samba Server Version 4.2.3 2HISIX
    Workgroup            Master
    MYGROUP              939C09590BDC
```

[root@939c09590bdc /]# nmblookup -S 3145DBF85061 *(és el Master Browser)*

```
172.17.0.8 3145DBF85061<00>
Looking up status of 172.17.0.8
    3145DBF85061    <00> -          B <ACTIVE>
    3145DBF85061    <03> -          B <ACTIVE>
    3145DBF85061    <20> -          B <ACTIVE>
    ..__MSBROWSE__. <01> - <GROUP> B <ACTIVE>
    MYGROUP         <00> - <GROUP> B <ACTIVE>
    MYGROUP         <1d> -          B <ACTIVE>
    MYGROUP         <1e> - <GROUP> B <ACTIVE>

    MAC Address = 00-00-00-00-00-00
```

```
[2015/11/17 22:26:43.291355,  0] ../lib/util/become_daemon.c:124(daemon_ready)
  STATUS=daemon 'nmbd' finished starting up and ready to serve connections
[2015/11/17 22:27:06.070962,  0]
../source3/nmbd/nmbd_become_lmb.c:397(become_local_master_stage2)
  *****
  Samba name server 939C09590BDC is now a local master browser for workgroup
MYGROUP on subnet 172.17.0.10
  *****
```

Domain Master Browser

Existeixen dos tipus de browsing:

- Local Master Browsing.
- Domain Master Browsing.

Local Master Browsing: explicat en l'apartat anterior. Cada subxarxa escull via *election* qui fa aquesta funció.

Domain Master Browsing: donades múltiples subxarxes diferents en un Domini Windows, gestionat per un PDC Controlador Principal de Domini, aquest equip realitza la funció de Domain Master Browsing i Local Master Browsing. les dues funcions.
No s'ecull per elecció sinó que l'administrador ho configura amb les opcions:

```
domain master = yes/no
preferred master = yes/no
local master = yes/no
os level = nº
```

Users / Groups (share options) Security

Users / Groups

Llistat d'opcions de configuració de shares: (taula 9.1 Using Samba)

```
path = /dir1/dir2/share
comment = share description
volume = share name
browseable = yes/no
max connections = #

public = yes/no
guest ok = yes/no
guest account = useraccount
guest only = yes/no

valid users = user1 user2  @group1 @group2 …
invalid users = user1 user2  @group1 @group2 …
auto users = user1 user2  @group1 @group2 …
admin users = user1 user2  @group1 @group2 …

writable = yes/no
read only = yes/no
write list = user1 user2  @group1 @group2 …
read list = user1 user2  @group1 @group2 …

create mode = 0660
directory mode = 0770
```

```
[dave]
        path = /home/dave
        comment = Dave's home directory
        writable = yes
        valid users = dave
```

```
[accounting]
   comment = Accounting Department Directory
   writable = yes
   valid users = @account
   path = /home/samba/accounting
   create mode = 0660
   directory mode = 0770
```

```
# mkdir /home/samba/accounting
# chgrp account /home/samba/accounting
# chmod 770 /home/samba/accounting
```

```
[global]
   invalid users = root bin daemon adm sync shutdown halt mail news uucp operator
   auto services = dave peter bob

[homes]
   browsable = no
   writable = yes

[sales]
       path = /home/sales
       comment = Sedona Real Estate Sales Data
       writable = yes
       valid users = sofie shelby adilia
       admin users = mike

[salesbis]
       path = /home/sales
       comment = Sedona Real Estate Sales Data
       read only = yes
       write list = sofie shelby
```

```
server# smbpasswd -a lila
server# smbpasswd -a patipla

client$ smbclient //host01/documentation
client$ smbclient //host01/documentation -U lila

client$ smbclient //host01/lila -U lila
client$ smbclient //host01/lila -U lila%smblila
```

Security

Nivells de seguretat/autenticació:

- Share-level security.
- User-level security.
- Server-level security.
- Domain-level security.

```
[global]
        security = share
[data]
        username = andy, peter, terry
```

```
[global]
        security = user

[accounting1]
        writable = yes
        valid users = bob, joe, sandy
```

```
[global]
        security = server
        password server = mixtec toltec
```

Global Options

General

```
[global]
        ...
[homes]
        ...
[printers]
        ...
[test]
        ...
```

Es poden definir opcions generals per defecte que poden ser redefinides per share:

```
[global]
        netbios name = toltec
        server string = Samba %v on %L
        workgroup = METRAN
        encrypt passwords = yes
        wins support = yes
        read only = no
```

En la configuració es poden usar variables com les definides en la taula 6-2 using samba:

```
%a    Client's architecture (see Table 6-1)
%I    Client's IP address (e.g., 172.16.1.2)
%m    Client's NetBIOS name
%M    Client's DNS name

%u    Current Unix username
%U    Requested client username (not always used by Samba)
%H    Home directory of %u
%g    Primary group of %u
%G    Primary group of %U

%S    Current share's name
%P    Current share's root directory
%p    Automounter's path to the share's root directory, if different from %P
%d    Current server process ID

%h    Samba server's DNS hostname
%L    Samba server's NetBIOS name
```

%N Home directory server, from the automount map
%v Samba version

%R The SMB protocol level that was negotiated
%T The current date and time
%$var The value of environment variable var

Hosts Allow/Deny

```
[global]
   #  Networking configuration options
   hosts allow = 192.168.220. 134.213.233.
   hosts deny = 192.168.220.102
   interfaces = 192.168.220.100/255.255.255.0 \
                134.213.233.110/255.255.255.0
   bind interfaces only = yes
```

1. If no allow or deny options are defined anywhere in *smb.conf*, Samba will allow connections from any system.
2. If hosts allow or hosts deny options are defined in the [global] section of *smb.conf*, they will apply to all shares, even if either option is defined in one or more of the shares.
3. If only a hosts allow option is defined for a share, only the hosts listed will be allowed to use the share. All others will be denied.
4. If only a hosts deny option is defined for a share, any client which is not on the list will be able to use the share.
5. If both a hosts allow and hosts deny option are defined, a host must appear in the allow list and not appear in the deny list (in any form) to access the share. Otherwise, the host will not be allowed.

hosts allow
You can specify any of the following formats for this option:

- Hostnames, such as ftp.example.com .
- IP addresses, such as 130.63.9.252.
- Domain names, which can be differentiated from individual hostnames because they start with a dot. For example, .ora.com represents all systems within the *ora.com* domain.
- Netgroups, which start with an at sign (@), such as @printerhosts. Netgroups are usually available only on systems running NIS or NIS+. If netgroups are supported on your system, there should be a netgroups manual page that describes them in more detail.
- Subnets, which end with a dot. For example, 130.63.9. means all the systems whose IP addresses begin with 130.63.9.
- The keyword ALL, which allows any client access.
- The keyword EXCEPT followed by one or more names, IP addresses, domain names,

netgroups, or subnets. For example, you could specify that Samba allow all hosts except those on the 192.168.110 subnet with hosts allow = ALL EXCEPT 192.168.110. (remember to include the trailing dot).

TIP

If you specify hosts allow in the [global] section, that definition will override any hosts allow lines in the share definitions. This is the opposite of the usual behavior, which is for parameters set in share definitions to override default values set in the [global] section.

Logging

```
[global]
   log level = 2
   log file = /var/log/samba.log.%m
   max log size = 50
   debug timestamp = yes
```

```
[root@c2ae73d0f616 /]# ll /var/log/samba/
drwx------ 4 root root 4096 Nov 11 21:59 cores
-rw-r--r-- 1 root root  148 Nov 11 22:38 log.
-rw-r--r-- 1 root root 2481 Dec  1 07:24 log.nmbd
-rw-r--r-- 1 root root 8506 Dec  1 07:25 log.smbd
drwx------ 2 root root 4096 Aug 31 16:22 old
```

Rols del servidor SAMBA

Rols

El servidor SAMBA pot realitzar els rols següents:

- Servidor Standalone.
- PDC Controlador Principal de domini.
- Member Server.
- Browser.
- Name resolution.

```
# ----------------------- Standalone Server Options ----------------------
# security = the mode Samba runs in. This can be set to user, share (deprecated), or server
(deprecated).
# passdb backend = the backend used to store user information in. New installations should
use either tdbsam or ldapsam. No additional configuration is required for tdbsam. The
"smbpasswd" utility is available for backwards compatibility.
        security = user
        passdb backend = tdbsam
```

```
# ----------------------- Domain Controller Options ----------------------
# security = must be set to user for domain controllers.
# passdb backend = the backend used to store user information in. New installations should
use either tdbsam or ldapsam. No additional configuration is required for tdbsam. The
"smbpasswd" utility is available for backwards compatibility.
# domain master = specifies Samba to be the Domain Master Browser, allowing Samba to
collate browse lists between subnets. Do not use the "domain master" option if you already
have a Windows NT domain controller performing this task.
# domain logons = allows Samba to provide a network logon service for Windows
workstations.
# logon script = specifies a script to run at login time on the client. These scripts must be
provided in a share named NETLOGON.
# logon path = specifies (with a UNC path) where user profiles are stored.
;       security = user
;       passdb backend = tdbsam
;       domain master = yes
;       domain logons = yes
        # the following login script name is determined by the machine name
        # (%m):
;       logon script = %m.bat
        # the following login script name is determined by the UNIX user used:
;       logon script = %u.bat
```

```
;       logon path = \\%L\Profiles\%u
        # use an empty path to disable profile support:
;       logon path =
        # various scripts can be used on a domain controller or a stand-alone
        # machine to add or delete corresponding UNIX accounts:
;       add user script = /usr/sbin/useradd "%u" -n -g users
;       add group script = /usr/sbin/groupadd "%g"
;       add machine script = /usr/sbin/useradd -n -c "Workstation (%u)" -M -d /nohome -s
/bin/false "%u"
;       delete user script = /usr/sbin/userdel "%u"
;       delete user from group script = /usr/sbin/userdel "%u" "%g"
;       delete group script = /usr/sbin/groupdel "%g"
```

```
# ----------------------- Domain Members Options -----------------------
# security = must be set to domain or ads.
# passdb backend = the backend used to store user information in. New installations should
use either tdbsam or ldapsam. No additional configuration is required for tdbsam. The
"smbpasswd" utility is available for backwards compatibility.
# realm = only use the realm option when the "security = ads" option is set. The realm option
specifies the Active Directory realm the host is a part of.
# password server = only use this option when the "security = server" option is set, or if you
cannot use DNS to locate a Domain Controller. The argument list can include
My_PDC_Name, [My_BDC_Name], and [My_Next_BDC_Name]:
# password server = My_PDC_Name [My_BDC_Name] [My_Next_BDC_Name].
# Use "password server = *" to automatically locate Domain Controllers.
;       security = domain
;       passdb backend = tdbsam
;       realm = MY_REALM
;       password server = <NT-Server-Name>
```

```
# ----------------------- Browser Control Options ----------------------------
# local master = when set to no, Samba does not become the master browser on your
network. When set to yes, normal election rules apply.
# os level = determines the precedence the server has in master browser elections. The
default value should be reasonable.
# preferred master = when set to yes, Samba forces a local browser election at start up (and
gives itself a slightly higher chance of winning the election).
;       local master = no
;       os level = 33
;       preferred master = yes
```

```
#---------------------------- Name Resolution ------------------------------
# This section details the support for the Windows Internet Name Service (WINS).
# Note: Samba can be either a WINS server or a WINS client, but not both.
```

```
# wins support = when set to yes, the NMBD component of Samba enables its WINS
# server.
# wins server = tells the NMBD component of Samba to be a WINS client.
# wins proxy = when set to yes, Samba answers name resolution queries on behalf of a non
WINS capable client. For this to work, there must be at least one  WINS server on the
network. The default is no.
# dns proxy = when set to yes, Samba attempts to resolve NetBIOS names via DNS
# nslookups.
;       wins support = yes
;       wins server = w.x.y.z
;       wins proxy = yes
;       dns proxy = yes
```

Role Standalone

```
[root@portatil samba]# testparm
Load smb config files from /etc/samba/smb.conf
rlimit_max: increasing rlimit_max (1024) to minimum Windows limit (16384)
Processing section "[homes]"
Processing section "[printers]"
Processing section "[public]"
Processing section "[documentacio]"
Processing section "[repositori]"
Loaded services file OK.
Server role: ROLE_STANDALONE
Press enter to see a dump of your service definitions
```

```
[global]
    workgroup = GRUPM06
    netbios name = SMBSERVER
    server string = edt - Samba Server Version %v
    log file = /var/log/samba/log.%m
    max log size = 50
    wins support = Yes
    idmap config * : backend = tdb
    cups options = raw

[homes]
    comment = Home Directories
    read only = No
    browseable = No

[printers]
    comment = All Printers
    path = /var/spool/samba
```

```
    printable = Yes
    print ok = Yes
    browseable = No

[public]
    comment = Public Stuff
    path = /var/lib/samba/shares/public
    read only = No
    guest ok = Yes

[documentacio]
    comment = System Documentation
    path = /var/lib/samba/shares/samba-docs
    guest ok = Yes

[repositori]
    comment = Repositori de dades
    path = /var/lib/samba/shares/repositori
    write list = +staff
    read only = No
    guest ok = Yes
```

```
[root@portatil samba]# smbclient -U% -L localhost

Domain=[GRUPM06] OS=[Unix] Server=[Samba 3.6.12-1.fc17]
    Sharename       Type      Comment
    ---------       ----      -------
    IPC$            IPC       IPC Service (edt - Samba Server Version 3.6.12-1.fc17)
    repositori      Disk      Repositori de dades
    documentacio    Disk      System Documentation
    public          Disk      Public Stuff
    Cups-PDF        Printer   Cups-PDF
    ClassPDF        Printer   Classe PF printers

Domain=[GRUPM06] OS=[Unix] Server=[Samba 3.6.12-1.fc17]
    Server               Comment
    ---------            -------
    SMBSERVER            edt - Samba Server Version 3.6.12-1.fc17

    Workgroup            Master
    ---------            -------
    GRUPM06              SMBSERVER
```

```
[pere@portatil ~]$ smbtree
Enter pere's password:
GRUPM06
```

```
\\SMBSERVER                    edt - Samba Server Version 3.6.12-1.fc17
        \\SMBSERVER\ClassPDF           Classe PF printers
        \\SMBSERVER\Cups-PDF           Cups-PDF
        \\SMBSERVER\public             Public Stuff
        \\SMBSERVER\documentacio       System Documentation
        \\SMBSERVER\repositori         Repositori de dades
        \\SMBSERVER\IPC$               IPC Service (edt - Samba Server …..fc17)
```

Rol PDC Domain Server

```
[root@c2ae73d0f616 /]# testparm
Load smb config files from /etc/samba/smb.conf
Processing section "[homes]"
Processing section "[printers]"
Processing section "[documentation]"
Processing section "[manpages]"
Processing section "[public]"
Processing section "[privat]"
Loaded services file OK.
WARNING: You have some share names that are longer than 12 characters.
These may not be accessible to some older clients.
(Eg. Windows9x, WindowsMe, and smbclient prior to Samba 3.0.)
Server role: ROLE_DOMAIN_PDC
```

Repàs ordres client

Smbclient

```
]$ smbclient  -L smbserver
Enter unknowns's password:
Anonymous login successful

Domain=[GRUPM06] OS=[Unix] Server=[Samba 3.6.12-1.fc17]
   Sharename           Type    Comment
   ---------           ----    -------
   public              Disk    Public Stuff
   documentacio        Disk    System Documentation
   repositori          Disk    Repositori de dades
   IPC$                IPC     IPC Service (edt - Samba Server Version 3.6.12-1.fc17)
   Cups-PDF            Printer   Cups-PDF
   ClassPDF            Printer   Classe PF printers
Anonymous login successful

Domain=[GRUPM06] OS=[Unix] Server=[Samba 3.6.12-1.fc17]
   Server               Comment
   SMBSERVER            edt - Samba Server Version 3.6.12-1.fc17

   Workgroup            Master
   GRUPM06              SMBSERVER
```

Usuaris autenticats:

```
[pere@client ~]$ smbclient //smbserver/public
Enter pere's password:
session setup failed: NT_STATUS_LOGON_FAILURE
```

```
[root@smbserver samba]# smbpasswd -a pere
New SMB password:
Retype new SMB password:
Added user pere.
```

```
[pere@clientl ~]$ smbclient //smbserver/public
Enter pere's password:
Domain=[GRUPM06] OS=[Unix] Server=[Samba 3.6.12-1.fc17]
smb: \>
```

```
[pau@client ~]$ smbclient //smbserver/public
Enter pau's password:
session setup failed: NT_STATUS_LOGON_FAILURE
```

```
[pau@client ~]$ smbclient //smbserver/public -U guest
Enter guest's password:
Anonymous login successful
Domain=[GRUPM06] OS=[Unix] Server=[Samba 3.6.12-1.fc17]
smb: \>
```

```
[pere@client ~]$ smbclient //smbserver/documentacio
Enter pere's password:
Domain=[GRUPM06] OS=[Unix] Server=[Samba 3.6.12-1.fc17]
smb: \> quit

[pere@client ~]$ smbclient //smbserver/documentacio pere
Domain=[GRUPM06] OS=[Unix] Server=[Samba 3.6.12-1.fc17]
smb: \> quit

[pere@client ~]$ smbclient //smbserver/documentacio -U pere%pere
Domain=[GRUPM06] OS=[Unix] Server=[Samba 3.6.12-1.fc17]
smb: \> quit
```

```
smb: \> help
ls             dir            du             lcd            cd
pwd            get            mget           put            mput
rename         more           mask           del            open
rm             mkdir          md             rmdir          rd
prompt         recurse        translate      lowercase      print
printmode      queue          cancel         quit           q
exit           newer          archive        tar            blocksize
tarmode        setmode        help           ?              history
!
```

```
unix2dos
dos2unix
```

Ordres desteses:

```
$ smbclient //smbserver/public -c "ls " -U pere%pere |   grep "^  " | cut -d ' ' -f 3 - | sort
```

```
$ alias smbls='smbclient //smbserver/public -c \"ls \" -U pere%pere |   grep "^  " | cut -d\  -f 3 -
```

```
| sort

$ smbls
Domain=[GRUPM06] OS=[Unix] Server=[Samba 3.6.12-1.fc17]
.
..
A05-14-serveisxarxa.pdf
activitats_asix_m06_uf1_nf5_2014-2015.pdf
```

```
smbls(  )
{
        share=`echo $1 | cut -d '/' -f '1-4'`
        dir=`echo $1 | cut -d '/' -f '5-'`
        smbclient $share -c "cd $dir; ls" -A ~/.smbpw | \
                grep "^  " | cut -d ' ' -f 3 - | sort
}
```

Shares Backups

```
[pere@client ~]$ smbclient //smbserver/public -U pere%pere -Tc public.tar
Domain=[GRUPM06] OS=[Unix] Server=[Samba 3.6.12-1.fc17]
          159579 ( 3315,7 kb/s) \A05-14-serveisxarxa.pdf
          66227 (64674,8 kb/s) \activitats_asix_m06_uf1_nf5_2014-2015.pdf
tar: dumped 2 files and directories
Total bytes written: 226304

[pere@client ~]$ ll public.tar
-rw-r--r-- 1 pere pere 228352 15 nov 19:11 public.tar

[pere@client ~]$ tar tvf public.tar
-rw-r--r-- 0/0             159579 2014-11-15 17:21 ./A05-14-serveisxarxa.pdf
-rw-r--r-- 0/0             66227 2014-11-15 17:15 ./activitats_asix_m06_uf1_nf5_2014-2015.pdf
```

```
[pere@client ~]$ smbclient //smbserver/public -U pere%pere
Domain=[GRUPM06] OS=[Unix] Server=[Samba 3.6.12-1.fc17]
smb: \> tarmode full hidden system quiet
tarmode is now full, system, hidden, noreset, quiet
smb: \> tar c public2.tar
tar: dumped 2 files and directories
Total bytes written: 226304
smb: \> quit

[pere@client ~]$ ll public2.tar
-rw-r--r-- 1 pere pere 228352 15 nov 19:17 public2.tar
```

cifs - smbfs

```
[root@client ~]# yum install cifs-utils
```

```
[root@client ~]# mount -t cifs //127.0.01/public /mnt -o user=pere,password=pere

[root@client ~]# mount | grep cifs
//127.0.01/public on /mnt type cifs
(rw,nosuid,nodev,noexec,relatime,vers=1.0,sec=ntlmssp,cache=strict,unc=\\127.0.01\public,
username=pere,domain=SMBSERVER,uid=0,noforceuid,gid=0,noforcegid,addr=127.0.0.1,u
nix,posixpaths,serverino,acl,rsize=1048576,wsize=65536,actimeo=1)

[root@client ~]# ls /mnt/
A05-14-serveisxarxa.pdf  activitats_asix_m06_uf1_nf5_2014-2015.pdf

[root@client ~]# umount /mnt
```

```
# mount -t cifs //127.0.01/public /mnt -o guest
# mount -t cifs //127.0.01/public /mnt -o user=pere,password=pere
# mount -t cifs //127.0.01/public /mnt -o credentials=file_passwd.txt
# mount -t cifs //127.0.01/public /mnt -o user=pere,password=pere,\
                                         uid=pere,gid=pere,file_mode=0664,dir_mode=0775
```

```
[root@client ~]# mount -t cifs //127.0.01/public /mnt -o
guest,uid=pere,gid=pere,file_mode=0644,dir_mode=0755

[root@client ~]# uname -a > /mnt/uname.txt
[root@client ~]# ls -la  /mnt/
drwxrwxrwx   2 pere pere      0 15 nov 19:56 .
drwxr-xr-x.  24 root root   4096 15 nov 14:04 ..
-rw-rw-r-- 1 pere pere 159579 15 nov 17:21 A05-14-serveisxarxa.pdf
-rw-rw-r-- 1 pere pere  66227 15 nov 17:15 activitats_asix_m06_uf1_nf5_2014-2015.pdf
-rw-r--r-- 1 pere pere 113 15 nov 19:53 uname.txt

[root@client ~]# mkdir /mnt/noudir
[root@portatil samba]# ls -ld /mnt/noudir/
drwxr-xr-x 2 pere pere 0 15 nov 19:59 /mnt/noudir/
```

Múltiples Samba Servers

```
[pere@client ~]$ smbtree
Enter pere's password:
GRUPM06
    \\SMBSERVER                     edt - Samba Server Version 3.6.12-1.fc17
        \\SMBSERVER\ClassPDF            Classe PF printers
        \\SMBSERVER\NullPrinter-01    Printer /dev/null
        \\SMBSERVER\ClassNulls          Classe de NullPrinters
        \\SMBSERVER\ClassAll            Classe amb totes les impressores
        \\SMBSERVER\NullPrinter-02    Priner /dev/null
        \\SMBSERVER\Virtual_PDF_Printer   Virtual PDF Printer
        \\SMBSERVER\Cups-PDF            Cups-PDF
        \\SMBSERVER\public              Public Stuff
        \\SMBSERVER\documentacio        System Documentation
        \\SMBSERVER\repositori          Repositori de dades
        \\SMBSERVER\IPC$                IPC Service (edt - Samba Version 3.6.12-1.fc17)
    \\SMBHP1                        edt - Samba Server Version 3.4.9-60.fc12
        \\SMBHP1\IPC$               IPC Service (edt - Samba Server Version 3.4.9-60.fc12)
        \\SMBHP1\hprepositori       Repositori de dades
        \\SMBHP1\hpdocumentacio     System Documentation
        \\SMBHP1\hppublic           Public Stuff
```

```
[pere@client ~]$ smbclient -L smbhp1
Enter pere's password:
Anonymous login successful
Domain=[GRUPM06] OS=[Unix] Server=[Samba 3.4.9-60.fc12]
    Sharename       Type    Comment
    hppublic        Disk    Public Stuff
    hpdocumentacio  Disk    System Documentation
    hprepositori    Disk    Repositori de dades
    IPC$            IPC     IPC Service (edt - Samba Server Version 3.4.9-60.fc12)
Anonymous login successful
Domain=[GRUPM06] OS=[Unix] Server=[Samba 3.4.9-60.fc12]
    Server          Comment
    SMBHP1          edt - Samba Server Version 3.4.9-60.fc12
    SMBSERVER       edt - Samba Server Version 3.6.12-1.fc17
    Workgroup       Master
    GRUPM06         SMBSERVER
```

```
# ------------------------------------------------------------------------------------
#  Example M06-ASO configuration: samba workgroup => master browser
# ------------------------------------------------------------------------------------
        workgroup = GRUPM06
        server string = edt - Samba Server Version %v
        netbios name = smbserver
        encrypt passwords = yes
        wins support = yes
```

```
        read only = no
        local master = yes
        os level = 34
        preferred master = yes
```

```
# ------------------------------------------------------------------------------------------------
#  Example M06-ASO configuration: samba workgroup  => member, no master
# ------------------------------------------------------------------------------------------------
        workgroup = GRUPM06
        server string = edt - Samba Server Version %v
        netbios name = smbhp1
        encrypt passwords = yes
        wins support = no
        read only = no
        # local master = no
        # os level = 33
        # preferred master = no
```