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SAM, NFS und SMB

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SAM-QFS 5.3.2 / 5.3.9

- Unterstützung neuer Geräte
 - LTO-5, LTO-6, T10000-C, SL150, ACSLS 8
- Unterstützung neuer Betriebssystemversionen
 - Solaris 11, Solaris 11.1
- Verbesserung der Datensicherheit
 - T10000C DIV
- Verbesserung der Interoperabilität
 - NFSv4, SMB

Ist doch alles bekannt...

- SAM-Dateisysteme können über NFS exportiert werden
 - NFS ist Teil von Solaris
- SAM-Dateisysteme können über SMB exportiert werden
 - SAMBA unter Solaris 10
 - “Offline” Status über SAMBA SAM VFS Modul

...oder?

- NFSv4 / Windows Access Control Lists?
- DOS Attribute (hidden, system, offline, ...)?
- Groß-/Kleinschreibung?
- UID/GID vs. SID?

Solaris 11 SMB Server

- File Server
 - Workgroup Modus oder Active Directory Domain Modus
- Dateisysteme, die mindestens folgendes unterstützen:
 - NFSv4 ACLs
 - DOS Attribute
 - Groß-/Kleinschreibung

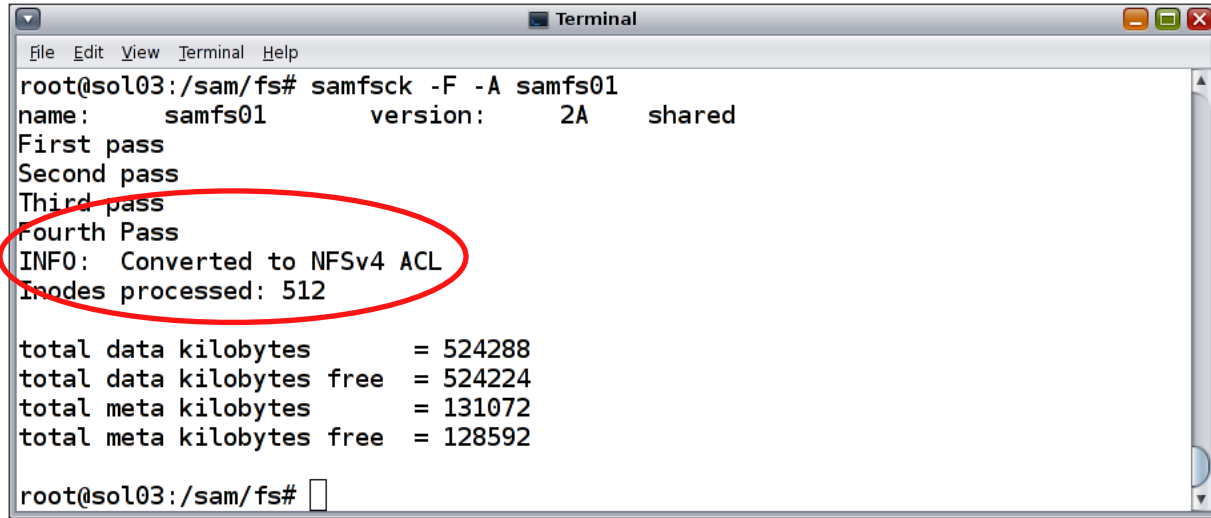
Solaris 11 Identity Mapping

- Erlaubt Zuordnung von UNIX UID/GID zu Windows SID und umgekehrt
- Regelbasiert
- Verzeichnisbasiert
 - LDAP
 - AD
 - Speziell AD IDMU

NFSv4 ACL Unterstützung einschalten

- Erzeuge Dateisystem mit “-A”
 - `sammkfs -A samfs01`
- Konvertiere existierendes Dateisystem (V2 oder V2A)
 - `samfsck -F -A samfs01`
 - Konvertiert vorhandene POSIX ACLs in NFSv4 ACLs
 - Nicht umkehrbar

samfsck -F -A

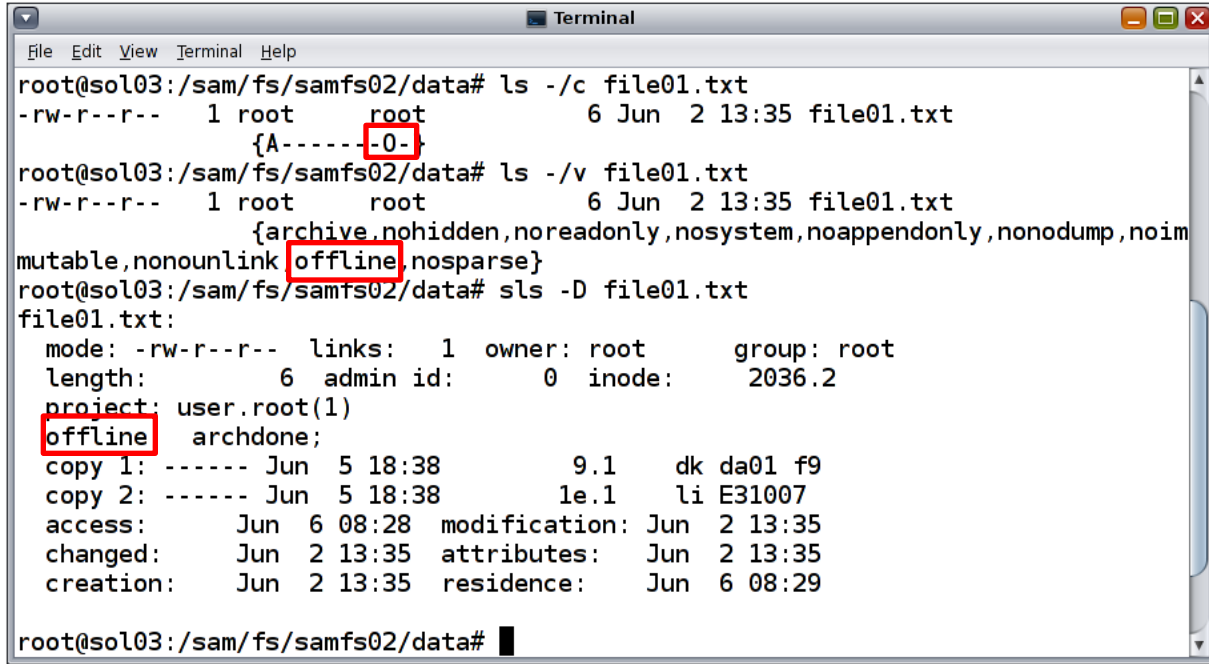


```
root@sol03:/sam/fs# samfsck -F -A samfs01
name:      samfs01      version:    2A      shared
First pass
Second pass
Third pass
Fourth Pass
INFO: Converted to NFSv4 ACL
Nodes processed: 512

total data kilobytes      = 524288
total data kilobytes free = 524224
total meta kilobytes     = 131072
total meta kilobytes free = 128592

root@sol03:/sam/fs#
```

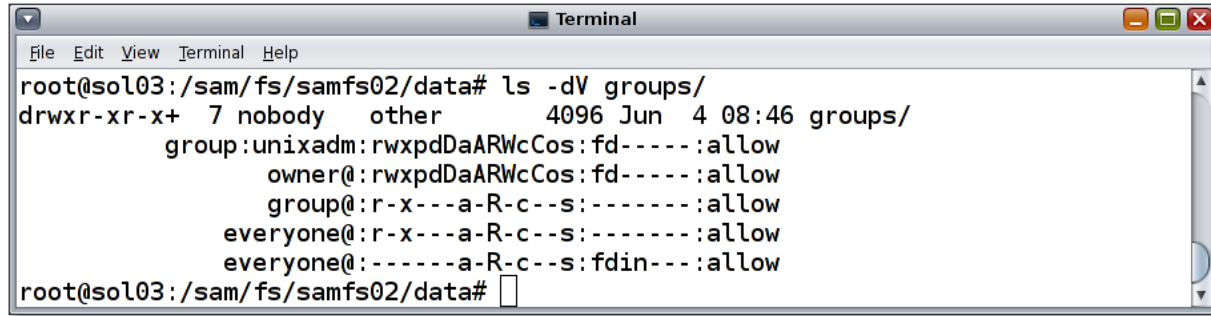
Extended System Attributes – ls -l, ls -lv



```
Terminal
File Edit View Terminal Help
root@sol03:/sam/fs/samfs02/data# ls -l file01.txt
-rw-r--r--  1 root  root          6 Jun  2 13:35 file01.txt
             {A-----0-}
root@sol03:/sam/fs/samfs02/data# ls -lv file01.txt
-rw-r--r--  1 root  root          6 Jun  2 13:35 file01.txt
             {archive,nohidden,noreadonly,nosystem,noappendonly,nonodump,noim
mutable,nonounlink offline,nospase}
root@sol03:/sam/fs/samfs02/data# sls -D file01.txt
file01.txt:
mode: -rw-r--r--  links:  1  owner: root      group: root
length:           6  admin id:  0  inode:   2036.2
project: user.root(1)
offline archdone;
copy 1:  ----- Jun  5 18:38          9.1   dk da01 f9
copy 2:  ----- Jun  5 18:38          1e.1   li E31007
access:           Jun  6 08:28  modification: Jun  2 13:35
changed:          Jun  2 13:35  attributes:   Jun  2 13:35
creation:         Jun  2 13:35  residence:    Jun  6 08:29

root@sol03:/sam/fs/samfs02/data#
```

ACL – ls -V, ls -v

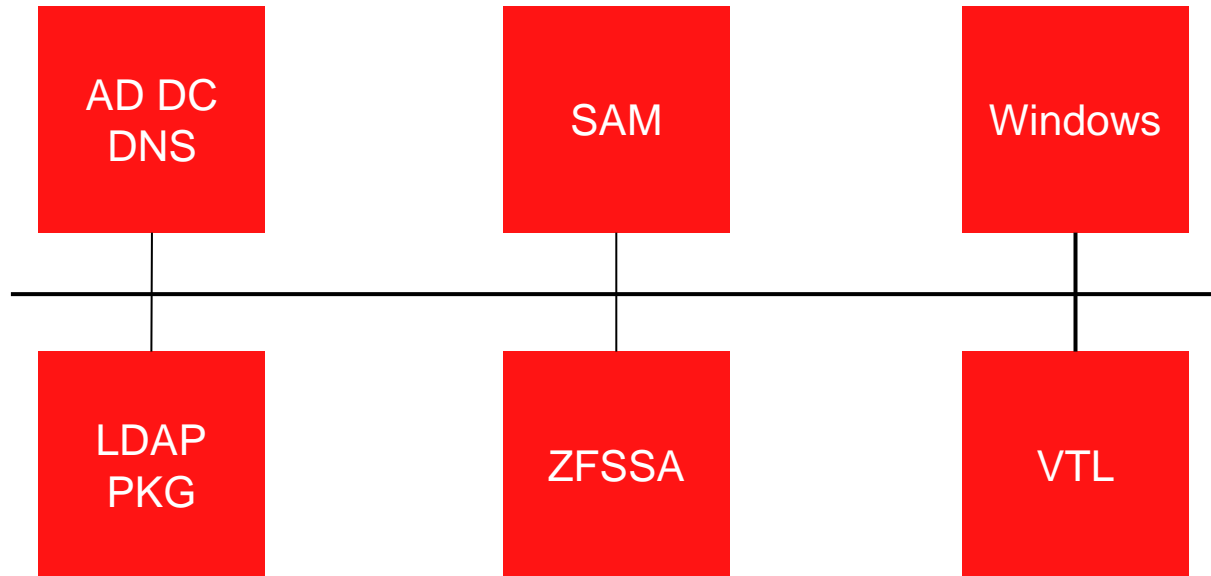


```
Terminal
File Edit View Terminal Help
root@sol03:/sam/fs/samfs02/data# ls -dV groups/
drwxr-xr-x+ 7 nobody  other    4096 Jun  4 08:46 groups/
      group:unixadm:rwxpDaARWcCos:fd-----:allow
      owner@:rwxpDaARWcCos:fd-----:allow
      group@:r-x---a-R-c--s:-----:allow
      everyone@:r-x---a-R-c--s:-----:allow
      everyone@:-----a-R-c--s:fdin---:allow
root@sol03:/sam/fs/samfs02/data#
```

Doch wie geht das jetzt mit SMB?

Demonstration

Setup



Schritt 0: Vorbereitungen

- Solaris 11, SAM-QFS 5.3
- DNS, LDAP, AD
- NTP
- Identity Mapping
- NFSv4 Identity Mapping Domain
- SAM-QFS Dateisystem mit NFSv4 Unterstützung

Schritt 1: DNS

DNS Client des AD DC



```
root@sol03:~# svccfg -s name-service/switch listprop config/host
config/host astring      "files dns ldap"
root@sol03:~# svcs name-service/switch
STATE          STIME          FMRI
online         6:55:56      svc:/system/name-service/switch:default
root@sol03:~# svccfg -s dns/client listprop config/nameserver
config/nameserver net_address 192.168.192.11
root@sol03:~# svccfg -s dns/client listprop config/domain
config/domain astring      example.com
root@sol03:~# svcs dns/client
STATE          STIME          FMRI
online         6:56:06      svc:/network/dns/client:default
root@sol03:~#
```


Schritt 2: NTP

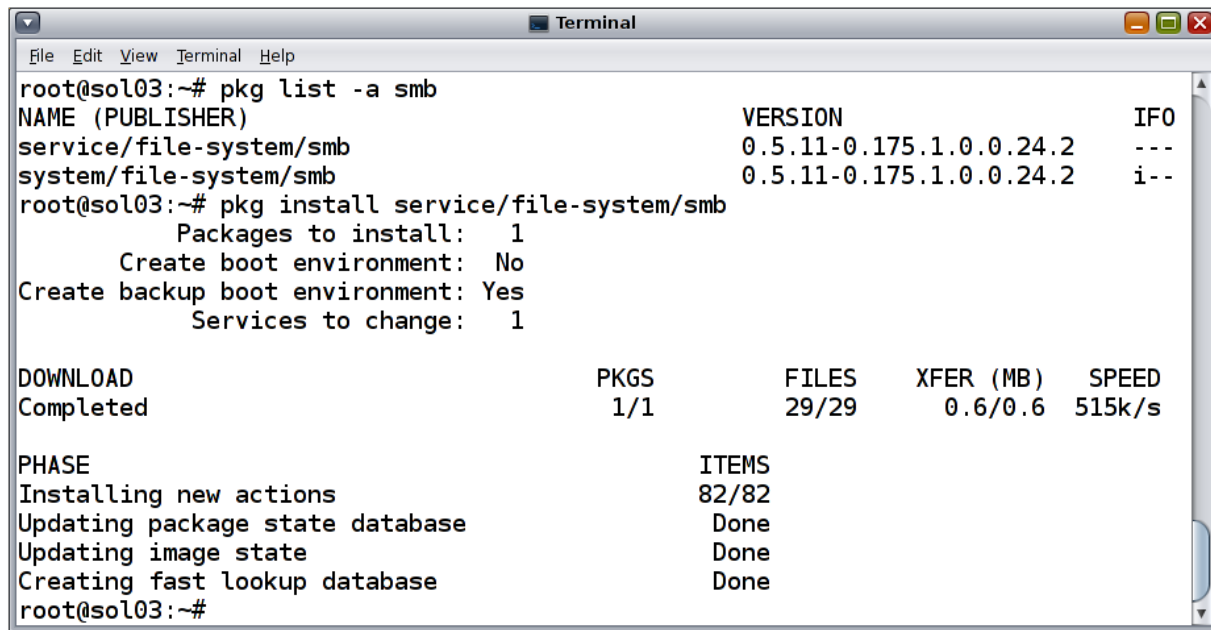
Synchronisation mit AD DC



```
Terminal
File Edit View Terminal Help
root@sol03:~# ntpdate win01.example.com
6 Jun 19:02:17 ntpdate[2424]: step time server 192.168.192.11 offset 1.248417 s
ec
root@sol03:~#
```

Schritt 3: Installation Software SMB

SMB Server und Kerberos

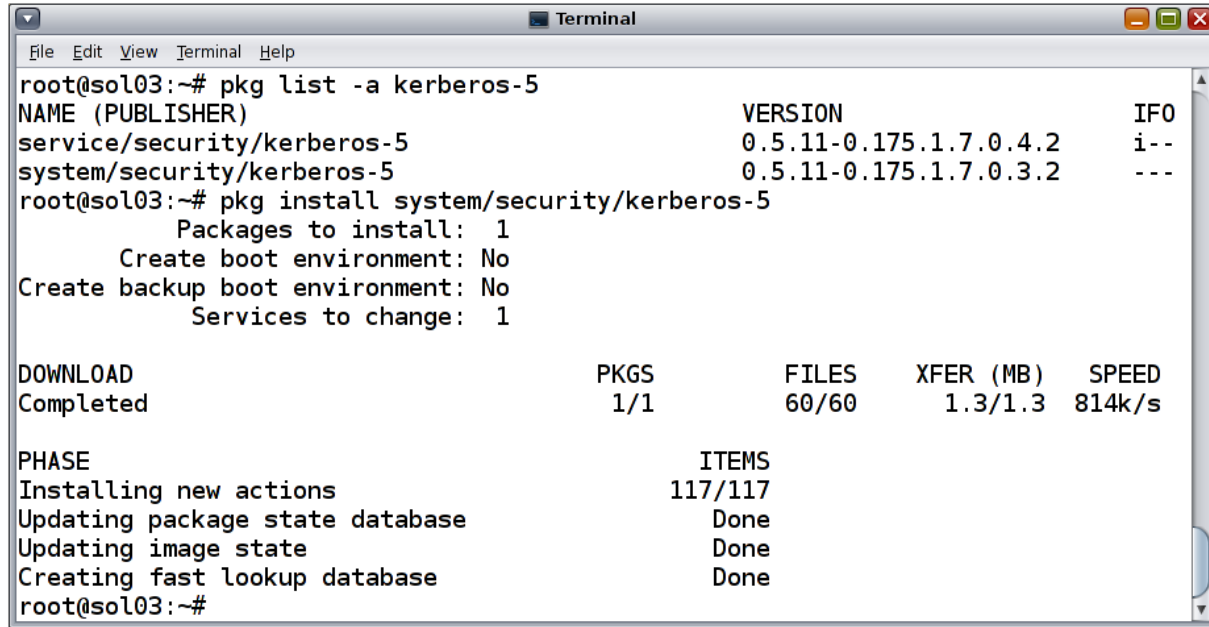


```
root@sol03:~# pkg list -a smb
NAME (PUBLISHER)                VERSION                IFO
service/file-system/smb        0.5.11-0.175.1.0.0.24.2  ---
system/file-system/smb         0.5.11-0.175.1.0.0.24.2  i--
root@sol03:~# pkg install service/file-system/smb
    Packages to install:  1
    Create boot environment:  No
Create backup boot environment:  Yes
    Services to change:  1

DOWNLOAD                PKGS          FILES        XFER (MB)   SPEED
Completed                1/1           29/29         0.6/0.6    515k/s

PHASE                    ITEMS
Installing new actions    82/82
Updating package state database    Done
Updating image state            Done
Creating fast lookup database      Done
root@sol03:~#
```

Schritt 4: Installation Software Kerberos

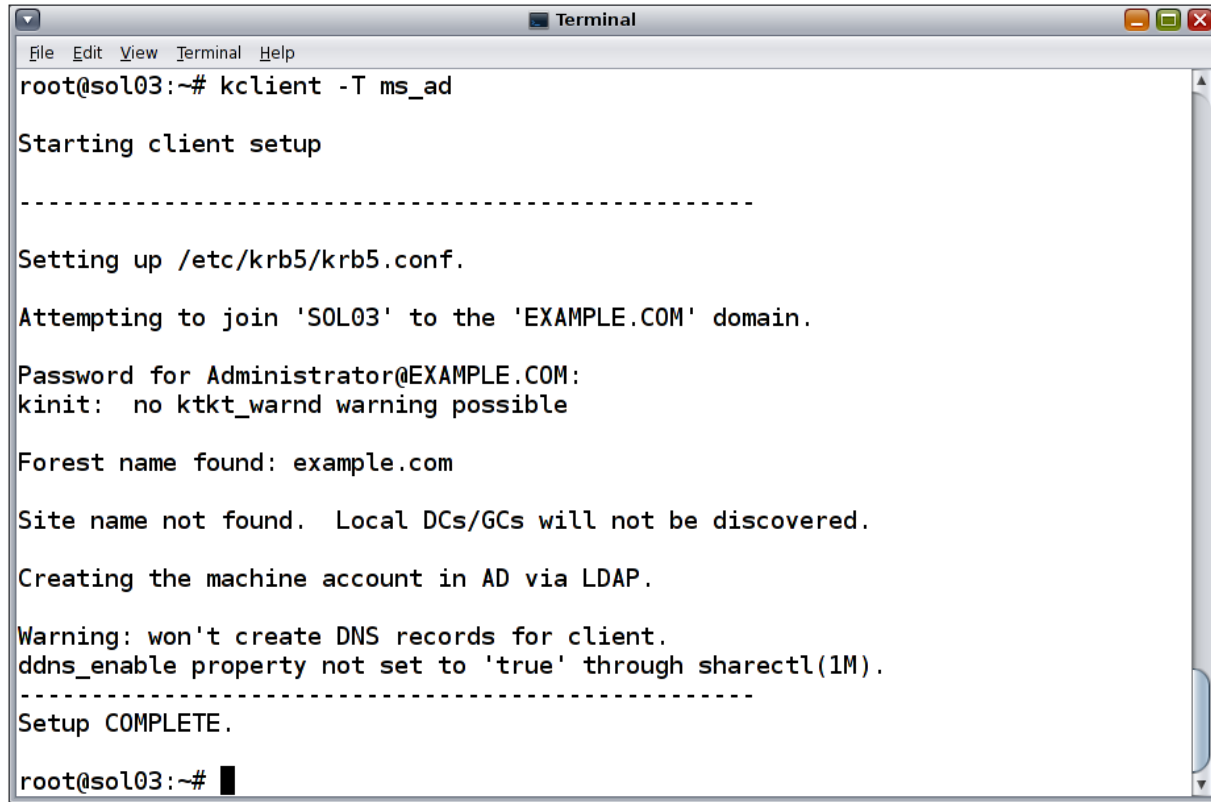


```
root@sol03:~# pkg list -a kerberos-5
NAME (PUBLISHER)                                VERSION                                IFO
service/security/kerberos-5                    0.5.11-0.175.1.7.0.4.2              i--
system/security/kerberos-5                     0.5.11-0.175.1.7.0.3.2              ---
root@sol03:~# pkg install system/security/kerberos-5
    Packages to install: 1
    Create boot environment: No
Create backup boot environment: No
    Services to change: 1

DOWNLOAD                                PKGS      FILES    XFER (MB)   SPEED
Completed                                1/1       60/60     1.3/1.3    814k/s

PHASE                                ITEMS
Installing new actions                 117/117
Updating package state database         Done
Updating image state                   Done
Creating fast lookup database           Done
root@sol03:~#
```

Schritt 5: Konfiguration Kerberos



```
Terminal
File Edit View Terminal Help
root@sol03:~# kclient -T ms_ad

Starting client setup

-----

Setting up /etc/krb5/krb5.conf.

Attempting to join 'SOL03' to the 'EXAMPLE.COM' domain.

Password for Administrator@EXAMPLE.COM:
kinit: no ktkc_warnd warning possible

Forest name found: example.com

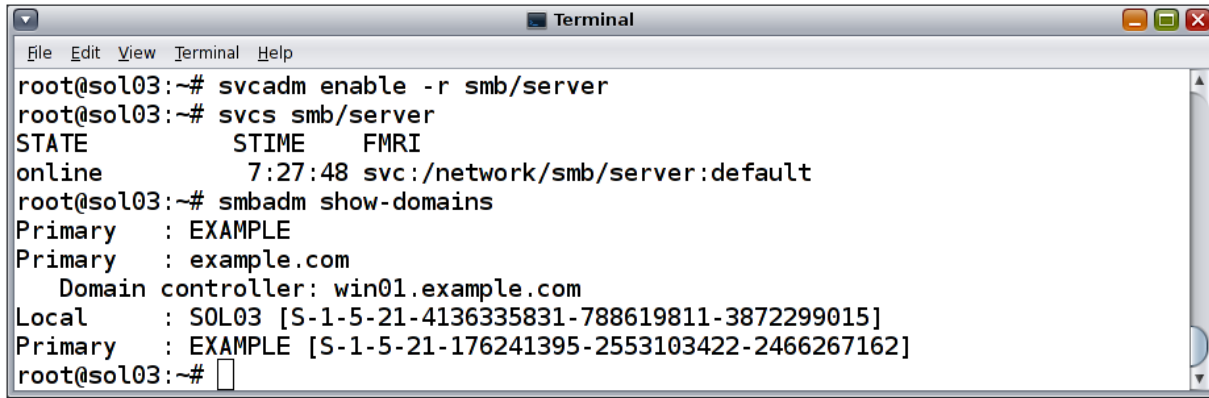
Site name not found. Local DCs/GCs will not be discovered.

Creating the machine account in AD via LDAP.

Warning: won't create DNS records for client.
ddns_enable property not set to 'true' through sharectl(1M).
-----
Setup COMPLETE.

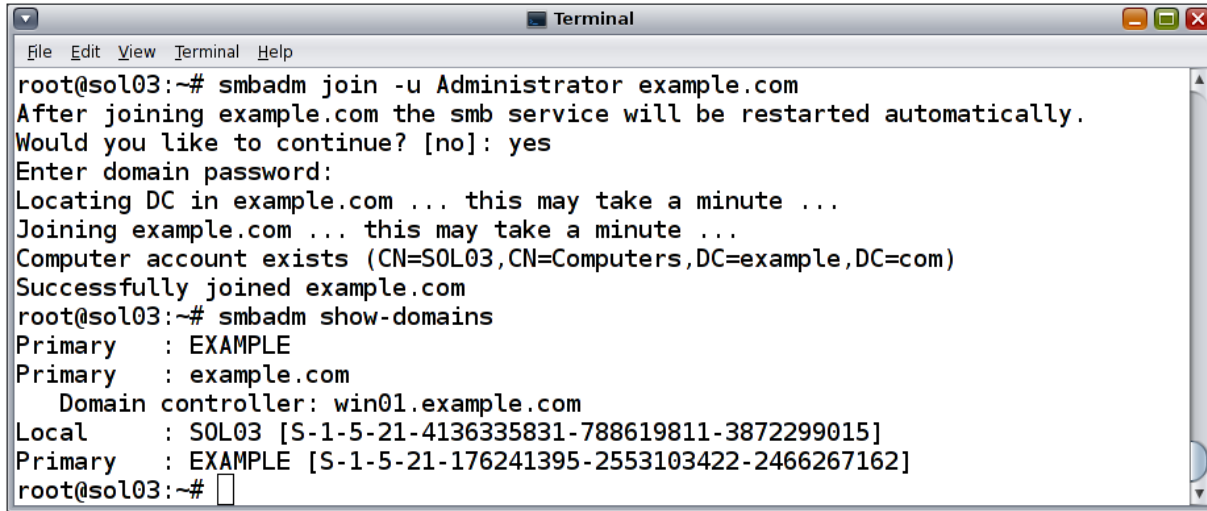
root@sol03:~#
```

Schritt 6: SMB Service starten



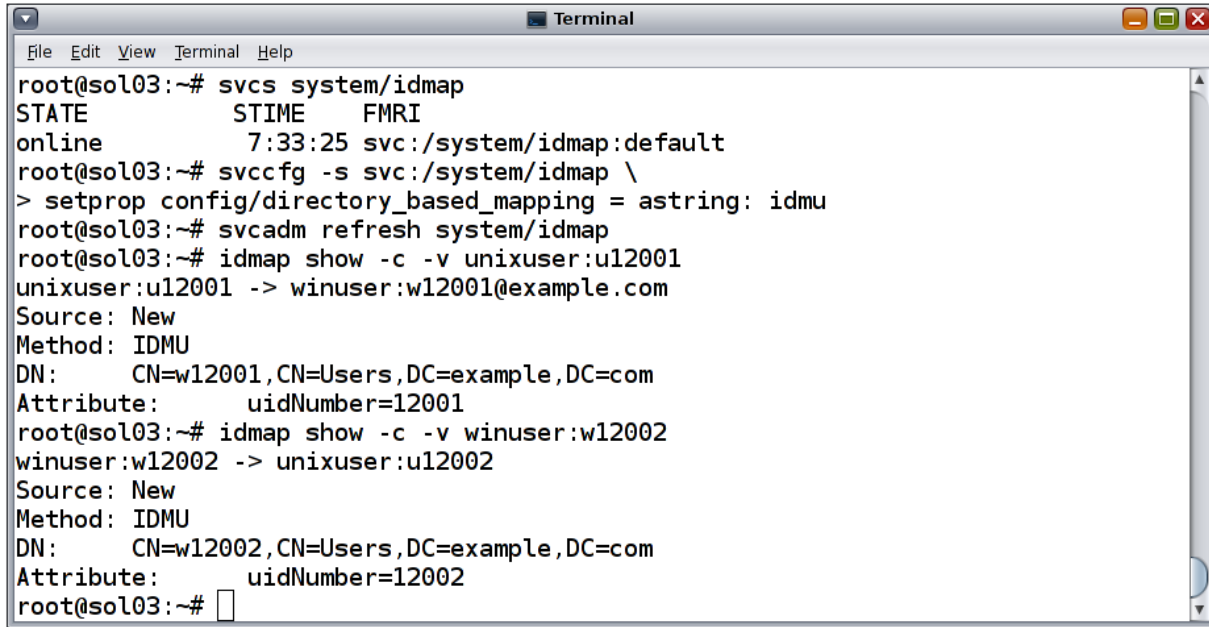
```
root@sol03:~# svcadm enable -r smb/server
root@sol03:~# svcs smb/server
STATE          STIME          FMRI
online         7:27:48       svc:/network/smb/server:default
root@sol03:~# smbadm show-domains
Primary   : EXAMPLE
Primary   : example.com
          Domain controller: win01.example.com
Local     : SOL03 [S-1-5-21-4136335831-788619811-3872299015]
Primary   : EXAMPLE [S-1-5-21-176241395-2553103422-2466267162]
root@sol03:~#
```

Schritt 6: Beitritt zur Domäne

A terminal window titled "Terminal" with a menu bar (File, Edit, View, Terminal, Help) and standard window controls. The terminal shows the execution of the 'smbadm join' command to join a server to a domain. The output includes confirmation messages, password prompts, and the successful completion of the join process. A subsequent 'smbadm show-domains' command is also executed, displaying the current domain configuration.

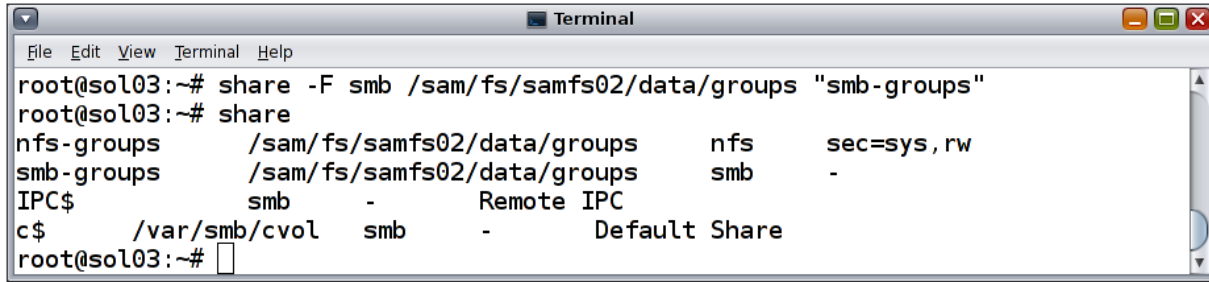
```
root@sol03:~# smbadm join -u Administrator example.com
After joining example.com the smb service will be restarted automatically.
Would you like to continue? [no]: yes
Enter domain password:
Locating DC in example.com ... this may take a minute ...
Joining example.com ... this may take a minute ...
Computer account exists (CN=SOL03,CN=Computers,DC=example,DC=com)
Successfully joined example.com
root@sol03:~# smbadm show-domains
Primary   : EXAMPLE
Primary   : example.com
          Domain controller: win01.example.com
Local     : SOL03 [S-1-5-21-4136335831-788619811-3872299015]
Primary   : EXAMPLE [S-1-5-21-176241395-2553103422-2466267162]
root@sol03:~#
```

Schritt 7: Identity Mapping



```
root@sol03:~# svcs system/idmap
STATE          STIME      FMRI
online         7:33:25   svc:/system/idmap:default
root@sol03:~# svccfg -s svc:/system/idmap \
> setprop config/directory_based_mapping = astring: idmu
root@sol03:~# svcadm refresh system/idmap
root@sol03:~# idmap show -c -v unixuser:u12001
unixuser:u12001 -> winuser:w12001@example.com
Source: New
Method: IDMU
DN:      CN=w12001,CN=Users,DC=example,DC=com
Attribute:      uidNumber=12001
root@sol03:~# idmap show -c -v winuser:w12002
winuser:w12002 -> unixuser:u12002
Source: New
Method: IDMU
DN:      CN=w12002,CN=Users,DC=example,DC=com
Attribute:      uidNumber=12002
root@sol03:~#
```

Schritt 8: Dateisystem exportieren



```
root@sol03:~# share -F smb /sam/fs/samfs02/data/groups "smb-groups"
root@sol03:~# share
nfs-groups      /sam/fs/samfs02/data/groups  nfs      sec=sys,rw
smb-groups      /sam/fs/samfs02/data/groups  smb      -
IPC$            smb      -      Remote IPC
c$              /var/smb/cvol  smb      -      Default Share
root@sol03:~#
```


Schritt 9: Freuen!

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