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SAMBA4 ACTIVE DIRECTORY 34

Create an Active Directory Infrastructure with Samba4 on Ubuntu – Part 1

by Matei Cezar | Published: November 21, 2016 | Last Updated: May 10, 2017

Samba is a free Open Source software which provides a standard interoperability between Windows OS and Linux/Unix Operating Systems.

Samba can operate as a standalone file and print server for Windows and Linux clients through the SMB/CIFS protocol suite or can act as an Active Directory Domain Controller or joined into a Realm as a Domain Member. The highest AD DC domain and forest level that currently Samba4 can emulate is Windows 2008 R2.

The series will be titled Setting Up Samba4 Active Directory Domain Controller, which covers following topics for Ubuntu, CentOS, and Windows:

> Part 1: Install Active Directory Infrastructure with SAMBA4 on Ubuntu

> Part 2: Manage Samba4 AD Infrastructure from Linux

Command Line

Part 3: Manage Samba4 Active Directory Infrastructure from Windows10 via RSAT

Part 4: Manage Samba4 AD Domain Controller DNS and Group Policy from Windows

Part 5: Join an Additional Ubuntu DC to Samba4 AD DC

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Part 7: Create a Shared Directory on Samba AD DC and Map to Windows/Linux Clients

Part 8: Integrate Ubuntu 16.04 to AD as a Domain Member with Samba and Winbind

Part 9: Integrate CentOS 7 Desktop to Samba4 AD as a Domain Member

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Part 10: How to Install iRedMail on CentOS 7 for Samba4 AD Integration

Part 11: Integrate iRedMail Services to Samba4 AD DC

Part 12: Configure Roundcube with Samba4 AD DC

Part 13: Configure Thunderbird Client for Samba4 AD DC Mail System with LDAP

Part 14: Integrate Ubuntu 16.04 to Samba4 AD DC with SSSD and Realm

Part 15: Integrate CentOS 7 from Command Line to Samba AD DC as a Domain Member

Part 16: Integrate VMware ESXI Host to Samba4 AD DC Infrastructure

This tutorial will start by explaining all the steps you need to take care off in order to install and configure Samba4 as a

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STEPHEN SAYS:

Thank you VERY much for this free & detailed guide. ...

SANDEEP SAYS:

Hi Ravi, Good article but I have complied apache2.4 and installed...

MIKE WILL SAYS:

I don't agree with using single "=" in string comparison. What...

HENRY SAYS:

I've been using BeyondCompare for years and although it's not free...

KUMAR SAYS:

I followed your steps .. Its working fine .. Thanks.

BEERBARON23 SAYS:

Lightworks on Linux can keep up with FCPX and Premiere, so...

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Domain Controller on Ubuntu 16.04 and Ubuntu 14.04.

This configuration will provide a central management point for users, machines, volume shares, permissions and other resources in a mixed-up Windows – Linux infrastructure.

Requirements:

- Ubuntu 16.04 Server Installation.
- Ubuntu 14.04 Server Installation.
- A static IP Address configured for your AD DC server.

Step 1: Initial Configuration for Samba4

1. Before proceeding your Samba4 AD DC installation first let's run a few pre-

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required steps. First make sure the system is up to date with the last security features, kernels and packages by issuing the below command:

```
$ sudo apt-get update
$ sudo apt-get upgrade
$ sudo apt-get dist-upg
```

2. Next, open machine **/etc/fstab** file and assure that your partitions file system has **ACLs** enabled as illustrated on the below screenshot.

Usually, common modern Linux file systems such as **ext3**, **ext4**, **xfs** or **btrfs** support and have ACLs enabled by default. If that's not the case with your file system just open **/etc/fstab** file for editing and add `acl` string at the end of third column and **reboot** the machine in order to apply changes.

Enable ACL's on Linux Filesystem

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3. Finally setup your machine hostname with a descriptive name, such as `adc1` used in this example, by editing **/etc/hostname** file or by issuing.

```
$ sudo hostnamectl set-
```

A **reboot** is necessary after you've changed your machine name in order to apply changes.

Step 2: Install Required Packages for Samba4 AD DC

4. In order to transform your server into an **Active Directory Domain Controller**, install **Samba** and all the required packages on your machine by issuing the below command with **root** privileges in a console.

```
$ sudo apt-get install
```

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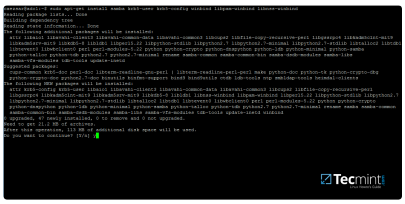
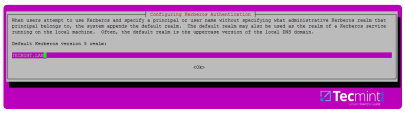


Install Samba on Ubuntu

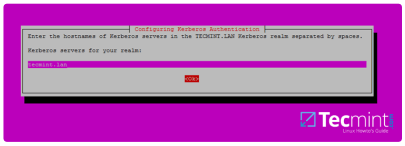
5. While the installation is running a series of questions will be asked by the installer in order to configure the domain controller.

On the first screen you will need to add a name for **Kerberos** default **REALM** in uppercase. Enter the name you will be using for your domain in uppercase and hit **Enter** to continue..



Configuring Kerberos Authentication

6. Next, enter the **hostname** of **Kerberos** server for your domain. Use the same name as for your domain, with lowercases this time and hit **Enter** to continue.



Set Hostname Kerberos Server

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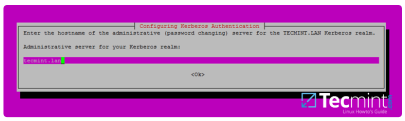
7. Finally, specify the **hostname** for the administrative server of your **Kerberos** realm. Use the same as your domain and hit **Enter** to finish the installation.



Set Hostname Administrative Server

Step 3: Provision Samba AD DC for Your Domain

8. Before starting to configure **Samba** for your domain, first run the below commands in order to stop and disable all samba daemons.

```
$ sudo systemctl stop s
$ sudo systemctl disabl
```

9. Next, rename or remove samba original configuration. This step is absolutely required before provisioning **Samba AD** because at the provision

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time Samba will create a new configuration file from scratch and will throw up some errors in case it finds an old `smb.conf` file.

```
$ sudo mv /etc/samba/sm
```

10. Now, start the domain provisioning interactively by issuing the below command with root privileges and accept the default options that Samba provides you.

Also, make sure you supply the IP address for a DNS forwarder at your premises (or external) and choose a strong password for Administrator account. If you choose a week password for Administrator account the domain provision will fail.

```
$ sudo samba-tool domai
```

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Samba Domain Provisioning

11. Finally, rename or remove Kerberos main configuration file from **/etc** directory and replace it using a symlink with Samba newly generated Kerberos file located in **/var/lib/samba/private** path by issuing the below commands:

```
$ sudo mv /etc/krb6.cor
$ sudo ln -s /var/lib/s
```

Create Kerberos Configuration

12. Start and enable **Samba Active Directory Domain Controller** daemons.

```
$ sudo systemctl start
$ sudo systemctl status
$ sudo systemctl enable
```

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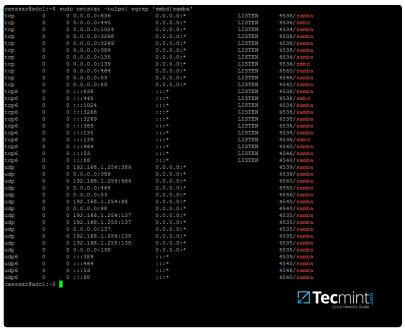
Enable Samba Active Directory Domain Controller

13. Next, use netstat command in order to verify the list of all services required by an **Active Directory** to run properly.

```
$ sudo netstat –tulpn|
```



Verify Samba Active Directory

Step 4: Final Samba Configurations

14. At this moment **Samba** should be fully operational at your premises. The

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highest domain level **Samba** is emulating should be **Windows AD DC 2008 R2**.

It can be verified with the help of **samba-tool** utility.

```
$ sudo samba-tool domai
```

Verify Samba Domain Level

15. In order for **DNS** resolution to work locally, you need to open end edit network interface settings and point the DNS resolution by modifying **dns-nameservers** statement to the IP Address of your **Domain Controller** (use **127.0.0.1** for local DNS resolution) and **dns-search** statement to point to your **realm**.

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```
$ sudo cat /etc/network
$ sudo cat /etc/resolv.
```

Configure DNS for Samba AD

When finished, **reboot** your server and take a look at your resolver file to make sure it points back to the right DNS name servers.

16. Finally, test the DNS resolver by issuing queries and pings against some **AD DC** crucial records, as in the below excerpt. Replace the domain name accordingly.

```
$ ping -c3 tecmint.lan
$ ping -c3 adc1.tecmint
$ ping -c3 adc1
```

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Check Samba AD DNS Records

Run following few queries against Samba Active Directory Domain Controller..

```
$ host -t A tecmint.lan
$ host -t A adc1.tecmin
$ host -t SRV _kerberos
$ host -t SRV _ldap._tc
```

17. Also, verify **Kerberos** authentication by requesting a ticket for the domain administrator account and list the cached ticket. Write the domain name portion with uppercase.

```
$ kinit administrator@T
$ klist
```

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Check Kerberos Authentication on Domain

That's all! Now you have a fully operational **AD Domain Controller** installed in your network and you can start integrate **Windows** or **Linux** machines into **Samba AD**.

On the next series we'll cover other **Samba AD** topics, such as how to manage you're the domain controller from Samba command line, how to integrate Windows 10 into the domain name and manage Samba AD remotely using RSAT and other important topics.

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Matei Cezar **View all Posts**

I'am a computer addicted guy, a fan of open source and linux based system software, have about [illegible]

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experience with Linux distributions desktop, servers and bash scripting.

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Sharif Qaysari May 16, 2017 at 7:30 am

Hello everyone !

I have passed the all the procedure to setup the Samba as ADDC and it was successful. now I am trying to integrate the Samba with OpenLdap, I've searched a lot in google but have found no any guide or documentation about setting up OpenLDAP with Samba backed on Ubuntu 16.04.

could you please help to setup that or reference any resource?

Reply

Matei Cezar

May 16, 2017 at 12:53 pm

That's because Samba4 has LDAP ad schema integrated. If you can't find it in official samba docs, than it's not officially supported.

Reply

jokerZD May 6, 2017 at 2:15 pm

This works super.

Windows server upon Linux stability

what else to say and you #[illegible]

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possibilities here, mdadm, rsync.

Reply

Paulo May 5, 2017 at 1:22 am

Excellent guide!!! Congratulations. I really need part 14. and also 13. When will be your publication? Thank you.

Reply

corpusdilecti April 29, 2017 at 11:30 pm

I'm running to an issue with resolving my domain name. I can ping the FQDN and Host, but not the domain name. Here is my setup:

Hostname:

adc1

Hosts file:

127.0.0.1 localhost
127.0.1.1 adc1.tirnanog.local adc1

The following lines are desirable for IPv6 capable hosts
::1 localhost ip6-localhost ip6-loopback
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters

/etc/network/interfaces

This file describes the network interfaces available on your system
and how to activate them. For more information, see interfaces(5).

source /etc/network/interfaces.d/*

The loopback network interface
auto lo
iface lo inet loopback

Wired network connection
auto eno1
iface eno1 inet static
address 192.168.1.200
netmask 255.255.255.0
broadcast 192.168.1.254
gateway 192.168.1.1
dns-nameservers 127.0.0

192.168.1.200 192.168.1.1
dns-search tirnanog.local

/etc/resolv.conf

Dynamic resolv.conf(5) file for glibc resolver(3) generated by resolvconf(8)
DO NOT EDIT THIS FILE BY HAND — YOUR CHANGES WILL BE OVERWRITTEN
nameserver 127.0.0.1
search tirnanog.local

When I try to ping, these are the results that I get:

root@adc1:/# ping -c3 tirnanog.local
ping: unknown host tirnanog.local

root@adc1:/# ping -c3 adc1.tirnanog.local
PING adc1.tirnanog.local (127.0.1.1) 56(84) bytes of data.
64 bytes from adc1.tirnanog.local (127.0.1.1): icmp_seq=1 ttl=64 time=0.049 ms
64 bytes from adc1.tirnanog.local (127.0.1.1): icmp_seq=2 ttl=64 time=0.060 ms
64 bytes from adc1.tirnanog.local (127.0.1.1): icmp_seq=3 ttl=64 time=0.061 ms

— adc1.tirnanog.local ping statistics —
3 packets transmitted, 3 received, 0% packet loss, time 1998ms
rtt min/avg/max/mdev = 0.049/0.056/0.061/0.010 ms

root@adc1:/# ping -c3 adc1.tirnanog.local
PING adc1.tirnanog.local (127.0.1.1) 56(84) bytes of data.
64 bytes from adc1.tirnanog.local (127.0.1.1): icmp_seq=1 ttl=64 time=0.052 ms
64 bytes from adc1.tirnanog.local (127.0.1.1): icmp_seq=2 ttl=64

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time=0.061 ms
64 bytes from adc1.tirnanog.local (127.0.1.1): icmp_seq=3 ttl=64 time=0.062 ms

— adc1.tirnanog.local ping statistics —
3 packets transmitted, 3 received, 0% packet loss, time 1998ms
rtt min/avg/max/mdev = 0.052/0.058/0.062/0.007 ms

Can anyone give me a hand and let me know what I'm doing wrong? I have a good feeling it is something to do with the dns-nameservers, but I've tried changing them a few time in /etc/network/interfaces and I can't seem to get anything to work.

By the way, this is what I'm running:

Distributor ID: Ubuntu
Description: Ubuntu 16.04.2 LTS
Release: 16.04
Codename: xenial

Please, let me know if there is any other info needed. Thanks!

Reply

corpusdilecti

April 30, 2017 at 11:12 pm

Well! It seems I didn't install/configure DNS before starting this tutorial.. that would have helped :)

Reply

Matei Cezar

May 2, 2017 at 11:50 am

If your machine is a Samba4 DC then remove **127.0.1.1 adc1.tirnanog.local** from hosts file and point to **adc1** only before provisioning the domain.

I see you have three DNS entries on interfaces file, use only dns-

nameservers 127.0.0.1 and other DNS server provisioned on your domain if that's the case after you've provisioned the samba domain.

Reply

Hannes van Vuuren

April 6, 2017 at 3:44 pm

Thanks a lot for this article! After going through the domain provision process a few times this seems to me the most solid article about the process. There is plenty of outdated information around the net, and Samba wiki is often confusing (if not outright down on a given day).

Reply

unknowen March 31, 2017 at 1:34 pm

Hello,

I have reached to the step below and I have encountered one failure! any idea, please?

$ sudo samba-tool domain provision --use-rfc2307 -interactive

Usage: samba-tool domain provision [options]

samba-tool domain provision: error: no such option: -i

Reply

Matei Cezar

March 31, 2017 at 4:53 pm

Use **–interactive**. While editing with microsoft word a ' – ' has been suppressed.

Reply

Matei Cezar

March 31, 2017 at 4:57 pm

Double hyphen.

Reply

Matei Cezar

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April 15, 2017 at 10:56 pm

–interactive

Reply

Dave March 24, 2017 at 11:16 am

Hi guys.

After running through the guide in the office, I took the server on site to a client with a different network.

When changing the IP address and DNS entries the lookup of domain.local returns the IP address the box had in our office.
Tried flushing the DNS and a bunch of things and nothing has worked so far.

How would I get around this?

Reply

Matei Cezar

March 24, 2017 at 12:22 pm

You must manually update all IP's addresses on your machine (hosts, network interfaces, samba IP forwarders, resolvers) and samba DNS records to fit new IP range.

Reply

Dave

March 28, 2017 at 6:08 pm

Where do I edit the samba dns records and IP forwarders? In the smb.conf file?

Where do i edit the resolvers as well. I have set the rest, I have also set the IP's in the smb.conf file.

Reply

Dave March 13, 2017 at 12:24 pm

Hi there,

I have set up an active directory domain controller according to your guide in a test environment in our office.

When I took it on site to a different IP range, I changed the IP address. Changed the DNS according to the site. When i ping the domain name it returns the old IP address. When I do an NSlookup it also returns the IP address I had set up the machine on in the office.

I have set it up on Ubuntu 16.10

Reply

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