

---

# Installation Guide

## Advanced Authentication - Linux PAM Client

Version 5.3

## Legal Notices

For information about legal notices, trademarks, disclaimers, warranties, export and other use restrictions, U.S. Government rights, patent policy, and FIPS compliance, see <https://www.netiq.com/company/legal/>.

**Copyright © 2016 NetIQ Corporation, a Micro Focus company. All Rights Reserved.**

---

# Contents

<b>About NetIQ Corporation</b>	<b>5</b>
<b>About this Book</b>	<b>7</b>
<b>1 System Requirements</b>	<b>9</b>
<b>2 Configuration</b>	<b>11</b>
2.1 Setting a DNS for Server Discovery . . . . .	11
2.2 Preparing Linux for Installing Linux PAM Client . . . . .	14
<b>3 Installing and Uninstalling Linux PAM Client</b>	<b>15</b>
<b>4 Troubleshooting</b>	<b>17</b>



---

# About NetIQ Corporation

We are a global, enterprise software company, with a focus on the three persistent challenges in your environment: Change, complexity and risk—and how we can help you control them.

## Our Viewpoint

### **Adapting to change and managing complexity and risk are nothing new**

In fact, of all the challenges you face, these are perhaps the most prominent variables that deny you the control you need to securely measure, monitor, and manage your physical, virtual, and cloud computing environments.

### **Enabling critical business services, better and faster**

We believe that providing as much control as possible to IT organizations is the only way to enable timelier and cost effective delivery of services. Persistent pressures like change and complexity will only continue to increase as organizations continue to change and the technologies needed to manage them become inherently more complex.

## Our Philosophy

### **Selling intelligent solutions, not just software**

In order to provide reliable control, we first make sure we understand the real-world scenarios in which IT organizations like yours operate—day in and day out. That's the only way we can develop practical, intelligent IT solutions that successfully yield proven, measurable results. And that's so much more rewarding than simply selling software.

### **Driving your success is our passion**

We place your success at the heart of how we do business. From product inception to deployment, we understand that you need IT solutions that work well and integrate seamlessly with your existing investments; you need ongoing support and training post-deployment; and you need someone that is truly easy to work with—for a change. Ultimately, when you succeed, we all succeed.

## Our Solutions

- ◆ Identity & Access Governance
- ◆ Access Management
- ◆ Security Management
- ◆ Systems & Application Management
- ◆ Workload Management
- ◆ Service Management

## Contacting Sales Support

For questions about products, pricing, and capabilities, contact your local partner. If you cannot contact your partner, contact our Sales Support team.

<b>Worldwide:</b>	<a href="http://www.netiq.com/about_netiq/officelocations.asp">www.netiq.com/about_netiq/officelocations.asp</a>
<b>United States and Canada:</b>	1-888-323-6768
<b>Email:</b>	<a href="mailto:info@netiq.com">info@netiq.com</a>
<b>Web Site:</b>	<a href="http://www.netiq.com">www.netiq.com</a>

## Contacting Technical Support

For specific product issues, contact our Technical Support team.

<b>Worldwide:</b>	<a href="http://www.netiq.com/support/contactinfo.asp">www.netiq.com/support/contactinfo.asp</a>
<b>North and South America:</b>	1-713-418-5555
<b>Europe, Middle East, and Africa:</b>	+353 (0) 91-782 677
<b>Email:</b>	<a href="mailto:support@netiq.com">support@netiq.com</a>
<b>Web Site:</b>	<a href="http://www.netiq.com/support">www.netiq.com/support</a>

## Contacting Documentation Support

Our goal is to provide documentation that meets your needs. The documentation for this product is available on the NetIQ Web site in HTML and PDF formats on a page that does not require you to log in. If you have suggestions for documentation improvements, click **Add Comment** at the bottom of any page in the HTML version of the documentation posted at [www.netiq.com/documentation](http://www.netiq.com/documentation). You can also email [Documentation-Feedback@netiq.com](mailto:Documentation-Feedback@netiq.com). We value your input and look forward to hearing from you.

## Contacting the Online User Community

NetIQ Communities, the NetIQ online community, is a collaborative network connecting you to your peers and NetIQ experts. By providing more immediate information, useful links to helpful resources, and access to NetIQ experts, NetIQ Communities helps ensure you are mastering the knowledge you need to realize the full potential of IT investments upon which you rely. For more information, visit [community.netiq.com](http://community.netiq.com).

---

# About this Book

This guide describes the system requirements and installation procedure of Advanced Authentication Linux PAM Client.

## Intended Audience

This book is intended for administrators who implements a secure, distributed administration model.

## About Linux PAM Client

Linux PAM Client enables you to log in to Linux in a more secure way by using the authentication chains configured in Advanced Authentication.



---

# 1 System Requirements

---

**IMPORTANT:** You must have root privileges to install and uninstall the Linux PAM Client.

---

Ensure that the system meets the following requirements:

- ♦ CentOS 7 or openSUSE 42 is installed.
- ♦ The machine must be bound to Active Directory. For more information, see the section “[How To Bind Mac To Active Directory](#)” in the *MacOS Client Installation guide*.
- ♦ DNS is configured for Advanced Authentication Server discovery. For more information, see [Setting a DNS for Server Discovery](#).

---

**NOTE:** Only the Active Directory users can log in. Other repositories are not supported.

---



---

# 2 Configuration

## 2.1 Setting a DNS for Server Discovery

- 1 Open a DNS Manager. To open the DNS Manager, click **Start**, point to **Administrative Tools**, and click **DNS**.
- 2 Add Host A or AAAA record and PTR record:
  - 2a In the console tree, right-click the forward lookup zone that includes your domain name and click **New Host (A or AAAA)**.
  - 2b Specify a DNS name for the Advanced Authentication Server in **Name**.
  - 2c Specify the IP address for the Advanced Authentication Server in **IP address**. You can specify the address in IP version 4 (IPv4) format (to add a host (A) resource record) or IP version 6 (IPv6) format (to add a host (AAAA) resource record).
  - 2d Select **Create associated pointer (PTR) record** to create an additional pointer (PTR) resource record in a reverse zone for this host, based on the information that you provided in **Name** and **IP address**.
- 3 Add an SRV record:
  - 3a For the Global servers:
    - 3a1 In the console tree, locate **Forward Lookup Zones** and right-click on a node with domain name and click **Other New Records**.
    - 3a2 In the **Select a resource record type** list, click **Service Location (SRV)** and then click **Create Record**.
    - 3a3 Click **Service** and then specify **\_aaa**.
    - 3a4 Click **Protocol** and then specify **\_tcp**.  
Click **Port Number** and then specify **443**.
    - 3a5 In **Host offering this service**, specify the FQDN of the server that is added. For example, `authsrv.mycompany.com`.
    - 3a6 Click **OK**.
  - 3b For authentication servers in sites:
    - 3b1 In the console tree, locate **Forward Lookup Zones**, switch to a node with domain name then to `_sites` node, right-click on an appropriate site name and click **Other New Records**.
    - 3b2 In the **Select a resource record type** list, click **Service Location (SRV)** and then click **Create Record**.
    - 3b3 Click **Service** and then specify **\_aaa**.
    - 3b4 Click **Protocol** and then specify **\_tcp**.
    - 3b5 Click **Port Number** and then specify **443**.
    - 3b6 In **Host offering this service**, specify the FQDN of the server that is added. For example, `authsrv.mycompany.com`.
    - 3b7 Click **OK**.

Repeat steps 2 to 3 for all the authentication servers. The Priority and Weight values for different servers may vary.

DNS server contains SRV entries `_service._proto.name TTL class SRV priority weight port target`. The following descriptions define the elements available in the DNS server:

- ♦ **Service:** symbolic name of an applicable service.
- ♦ **Proto:** transport protocol of an applicable service. Mostly, TCP or UDP.
- ♦ **Name:** domain name for which this record is valid. It ends with a dot.
- ♦ **TTL:** standard DNS time to live field.
- ♦ **Class:** standard DNS class field (this is always IN).
- ♦ **Priority:** priority of the target host. Lower value indicates that it is more preferable.
- ♦ **Weight:** a relative weight for records with the same priority. Higher value indicates that it is more preferable.
- ♦ **Port:** TCP or UDP port on which the service is located.
- ♦ **Target:** canonical host name of the machine providing the service. It ends with a dot.

### Configuring Authentication Server Discovery on Client

You can use the following options for server discovery on the client side:

- ♦ `discovery.Domain`: DNS name of the domain. For a Windows client, this value is used if workstation is not connected to the domain.
- ♦ `discovery.subDomains`: list of additional sub domains separated by a semicolon. You can use them on a MacOS client or Linux client to list AD sites.
- ♦ `discovery.useOwnSite`: set the value to `True` to use the local site (Windows client only).
- ♦ `discovery.dnsTimeout`: timeout for the DNS queries. The default value is 15 seconds.

### Authentication Server Discovery Flow

Windows Client

The feature is not supported in Windows Client.

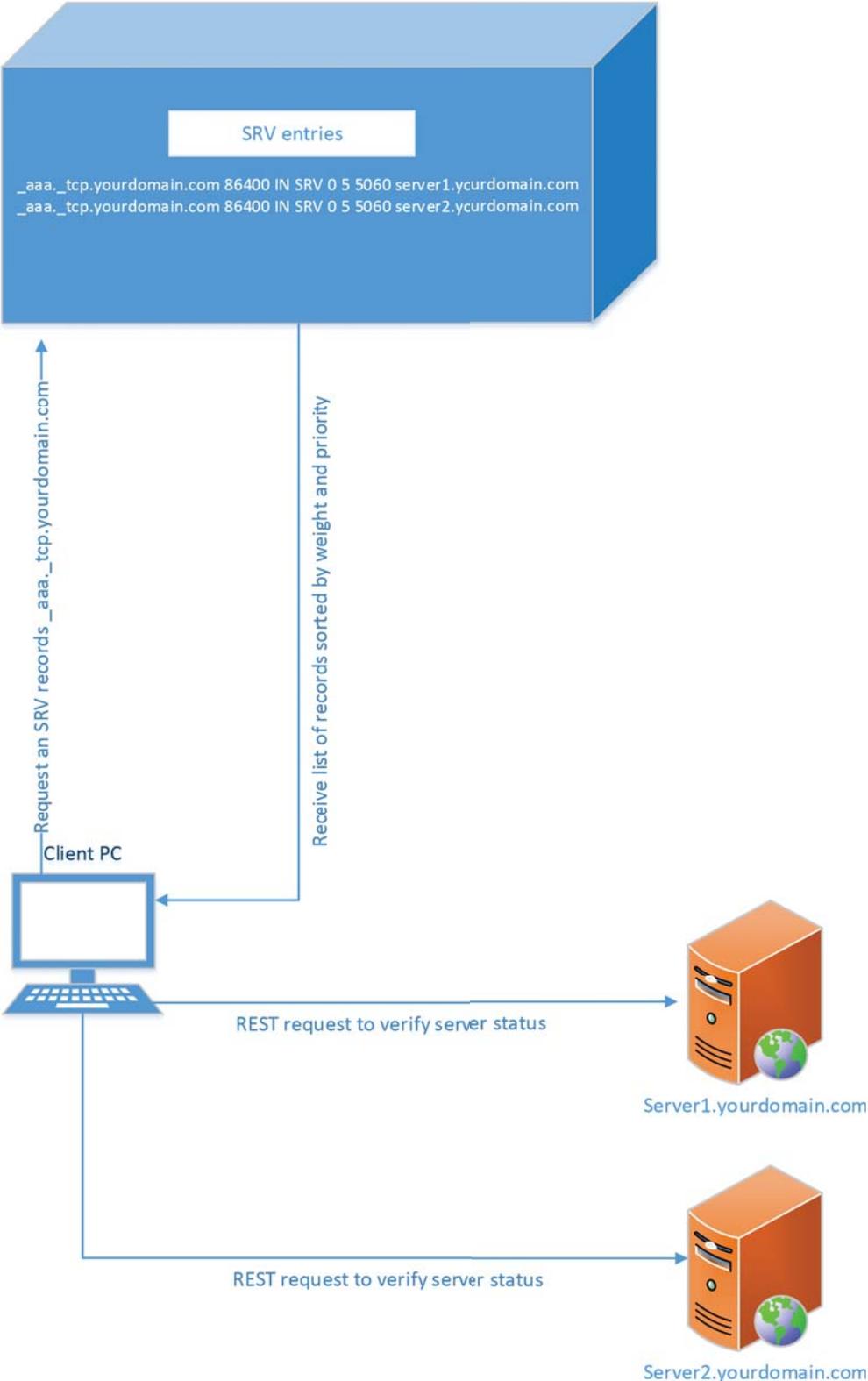
MacOS Client/ Linux PAM Module

1. Get servers from the sub domains listed in `discovery.subDomain`.
2. Get servers from the domain specified in `discovery.Domain` (global list).

Path for the configuration file is as follows:

- ♦ **MacOS Client:** `/Library/Security/SecurityAgentPlugins/aucore_login.bundle/Contents/etc/aucore_login.conf`.
- ♦ **Linux PAM module:** `/opt/pam_aucore/etc/pam_aucore.conf`.

The following diagram illustrates the server discovery workflow graphically.



## 2.2 Preparing Linux for Installing Linux PAM Client

You must disable SELinux and configure networking before installing Linux PAM Client.

To disable SELinux, perform the following steps:

1. Open the configuration file `sudo nano /etc/selinux/config`.
2. Change `SELINUX=enforcing` to `SELINUX=disabled`.
3. Save the changes in the file.
4. Reboot your system.

To configure networking, perform the following steps:

1. ensure that DNS is properly configured for server discovery.
2. Set Search Domains to FQDN.

For example, in CentOS 7, you can set `/etc/sysconfig/network-scripts/ifcfg-eth0` by adding `DOMAIN=mycompany.com`.

---

# 3 Installing and Uninstalling Linux PAM Client

To install Linux PAM Client, perform the following steps:

1. Run the following command:

```
sudo yum install -y ./AAA-LinuxPAMClientInstaller-Release-<version>.rpm.
```

2. Run the following configuration script:

```
sudo chmod +x /opt/pam_aucore/bin/bind-to-ad.sh.
```

```
sudo /opt/pam_aucore/bin/bind-to-ad.sh MYCOMPANY mycompany.com Administrator
```

where MYCOMPANY is your domain name and mycompany.com is your FQDN. Administrator is a domain account that contains permissions to integrate the machines to the domain.

3. Ensure that you complete the configuration:

```
su username
```

where, username is the user name of any user account from a domain.

To uninstall Linux PAM Client, run the following commands:

```
cd /opt/pam_aucore/bin/
```

```
sudo ./uninstall
```



---

# 4 Troubleshooting

To investigate the possible issues, analyze the debug logs.

The logs are placed in the `/opt/pam_aucore/var/log/pam_aucore` folder.

