

# Forwarding logs from rsyslog client to a remote rsyslogs server

## Introduction

This guide will walk you through setting up Rsyslog for log forwarding between a client and a remote server using Linux.

## Setup

**Server:** The machine which will send message

**Client:** The machine which will receive the message

## Prerequisites

### Software Requirements

- Linux operating system
- Rsyslog (version 5.0 or higher recommended)
- Root or sudo access

## Network Requirements

- Network connectivity between client and remote server
- Known IP address of the remote Rsyslog server
- Open network ports (typically 514 for UDP or TCP)

## Step-by-Step Configuration Guide

### Preparation

Before beginning, ensure you have:

- Administrative (root) access
- Stable network connection
- IP address of the remote server

### Step 1: Rsyslog Installation

## 1.1 Obtain Root Access

```
sudo -i
```

- Enter your root password when prompted

## 1.2 Update System Packages

If you are using DNF, use the command below:

```
sudo dnf update
```

If you are using YUM, use the command below:

```
sudo yum update
```

## 1.3 Install Rsyslog

If you are using YUM, use the command below:

```
sudo yum install rsyslog
```

If you using DNF, use the command below:

```
sudo dnf install rsyslog
```

*Verification Tip: Confirm Rsyslog is installed successfully*

## 1.4 Start and Enable Rsyslog Service

```
sudo systemctl enable rsyslog  
sudo systemctl start rsyslog
```

## 1.5 Check Rsyslog Status

```
sudo systemctl status rsyslog
```

*Expected Result: Service should be in an active state*

## Step 2: Rsyslog Server and Client Configuration

The following steps outline how to forward system logs to a remote server using either TCP or UDP ports. You can choose to use either TCP or UDP, but if both are enabled, ensure that each protocol

uses a different port.

2.1 Edit Rsyslog Configuration. Open using a text editor such as "vi" or "nano".

```
vi /etc/rsyslog.conf
```

2.2 Enable UDP or TCP Modules. This should be done on the Client machine only.

- For **UDP**, locate and uncomment the following lines by removing the `#` symbol. The default port is 514, but you can change it if necessary.

```
$Modload imudp
$UDPServerRun 514
```

- For **TCP**, locate and uncomment the following lines by removing the `#` symbol. The default port is 10514, but you can change it if necessary.

```
$Modload imtcp
$inputTCPServerRun 10514
```

2.3 Configure Log Template

Add the following line to define log storage:

```
$template RemoteLogs, "/var/log/%HOSTNAME%/%PROGRAMNAME%.log"
*. * ?RemoteLogs
& ~
```

2.4 **On Server**

Add content below at the end of the file `/etc/rsyslog.conf`.

This will configure the log forwarding to the remote host. Please update the "target", "port" and "tcp" appropriately.

```
*.* action(type="omfwd"
queue.type="LinkedList"
action.resumeRetryCount="-1"
queue.size="10000"
queue.saveonshutdown="on"
target="10.43.138.1" Port="10514" Protocol="tcp")
```

**queue.type** enables a LinkedList in-memory queue, `queue_type` can be *direct*, *linkedlist* or *fixedarray* (which are in-memory queues), or disk.

enabled **queue.saveonshutdown** saves in-memory data if rsyslog shuts down,

**action.resumeRetryCount= "-1"** setting prevents rsyslog from dropping messages when retrying

to connect if server is not responding,

**queue.size** where size represents the specified size of disk queue part. The defined size limit is not restrictive, rsyslog always writes one complete queue entry, even if it violates the size limit.

**target** is the IP Address of the remote machine

**Port** is the port of the remote machine

**Protocol** is the protocol to be used. Values can be udp or tcp.

## 2.5 Add port in the firewall rules

### On client side

Add the provided port to the firewall

```
iptables -A INPUT -p tcp --dport 10514 -j ACCEPT
```

Next open the port using nc

```
nc -l -p 10514 -4
```

## 2.6 Apply Server Configuration

```
systemctl restart rsyslog
```

## 2.7 Verify Log Directory

Type : ls -l

Expected Result:

Should see a directory with the client's hostname

Contains files like `rsyslogd.log` and `systemd.log`

### Troubleshooting Tips

Ensure firewall settings allow log forwarding

Verify network connectivity between client and server

Check Rsyslog service status if logs aren't forwarding

### Security Considerations

- Configure firewall rules appropriately
- Use encrypted log transmission when possible
- Regularly review and rotate logs

### Common Issues

1. Port Blocking: Ensure port 514 is open
2. Permission Errors Verify root/sudo access
3. Network Connectivity: Check server IP and network settings

### Conclusion

By following these steps, you should have successfully configured Rsyslog for log forwarding

between a client and a remote server.

**\*\*Note:\*\*** Always test in a controlled environment first and adapt instructions to your specific system configuration.

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Revision #14

Created 17 December 2024 13:40:52

Updated 18 December 2024 08:41:02 by Aldion Pueblos