AlienVault: End user Devices Integration-Lab Setup (Part 2)

mackingarticles.in/alienvault-end-user-devices-integration-lab-setup-part-2

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As logs never lie, it's very important to aggregate and analyze the internal and external network logs constantly so that you can prevent a breach or perform incident response on time. In the previous article, we looked at the configuration and installation of AlienVault OSSIM.

The operating-system integration for AlienVault is based on window-centric for a Linux platform.

Let's take a look at the involved process for gathering logs from Linux servers using AlienVault.

You can access the previous article from here: – AlienVault Lab setup

in this article, we will discuss how to send Ubuntu RSYS logs to the AlienVault server and the Manual configuration and installation of the SSH plugin.

So, without much theory let's begin the integration process.

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Prerequisites

For the integration of Rsyslog and SSH plugin to AlienVault OSSIM, there are some minimum requirements as listed below.

- Ubuntu 20.04 or later
- Root privileges

Credentials

Ubuntu 20.04 IP: 192.168.1.8

AlienVault OSSIM IP: 192.168.1.70

OSSIM (CLI) user: root

OSSIM password: Designated by you on the time of server setup

Integration of Rsyslog and SSH plugin to AlienVault OSSIM

Ubuntu 20.04

Rsyslog is a software that is used for forwarding log messages in an IP network. It implements basic Syslog protocol and extends it with content-based filtering capabilities. It also supports different module outputs, flexible configuration options and adds features such as TCP for transport.

Make sure the Port 514 (UDP protocol) is both on the ubuntu 20.04 server-side and AlienVault OSSIM server is open so that the logs can be forwarded via UDP on port 514

Open rsyslog.conf file and check whether it is including all configuration file or not

To do this enter the following command

```
cd /etc
nano rsyslog.conf
```

```
root@ignite:~# cd /etc
root@ignite:/etc# nano rsyslog.conf
root@ignite:/etc#
```

Uncomment the following line to include all configuration files.

\$IncludeConfig /etc/rsyslog.d/*.conf

```
# Set the default permissions for all log files.
#
$FileOwner syslog
$FileGroup adm
$FileCreateMode 0640
$DirCreateMode 0755
$Umask 0022
$PrivDropToUser syslog
$PrivDropToGroup syslog

#
# Where to place spool and state files
#
$WorkDirectory /var/spool/rsyslog

#
# Include all config files in /etc/rsyslog.d/
#
$IncludeConfig /etc/rsyslog.d/*.conf
```

If this line by default is uncommented, then save and exit.

Now we forward the rsyslog logs to the AlienVault OSSIM server.

Create a new configuration file named alienvault.conf and add the following line as shown below:

```
nano alienvault.conf
*.* @192.168.1.70
```

Where 192.168.1.70 is OSSIM server IP.

```
root@ignite:/etc/rsyslog.d# nano alienvault.conf
root@ignite:/etc/rsyslog.d# cat alienvault.conf
*.* @191.168.1.70
root@ignite:/etc/rsyslog.d#
```

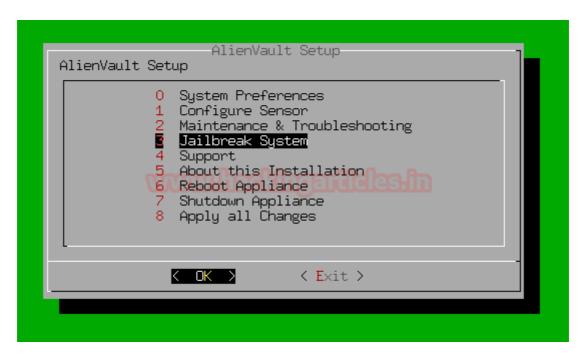
To make the changes effective restart rsyslog service by the following command:

/etc/init.d/rsyslog restart

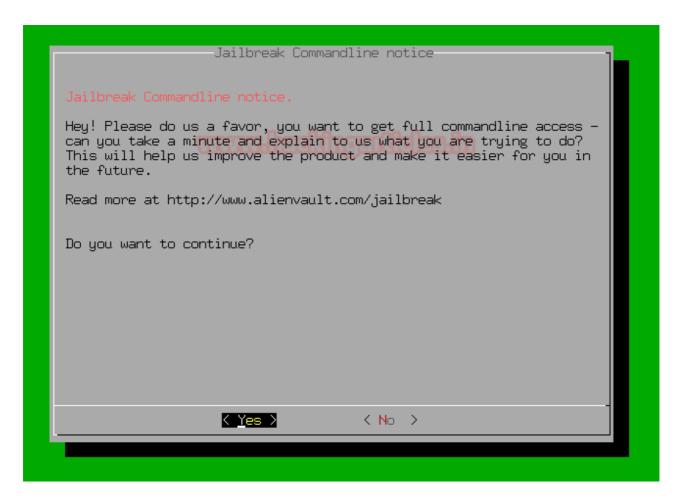
```
root@ignite:/etc/rsyslog.d# /etc/init.d/rsyslog restart
Restarting rsyslog (via systemctl): rsyslog.service.
root@ignite:/etc/rsyslog.d#
```

OSSIM Server

Login to the OSSIM server Jailbreak the server to CLI as shown below



On the next prompt, it will ask you for permission to access the full command line select yes and continue.



Here we're using tcpdump on the OSSIM server to see log communications between Ubuntu 20.04 and OSSIM by running tcpdump to capture the logs with the following command:

tcpdump -i eth0 udp port 514

Let's verify whether it is receiving logs from Ubuntu 20.04 server or not

Ubuntu 20.04

In the ubuntu machine, I m switching users by running the following command, and then after we will see the logs of switching users are reflected on the OSSIM server or not.

sudo su



Come back to the OSSIM server

OSSIM Server

Let's check what happens here ...

Hurrah !!! as we can see the log from the Ubuntu server has entered into the OSSIM server, then now we will redirect the logs sent to OSSIM into a file.

Now we're going to **configure the Filtration in the Rsyslog**.

To do this follow the below steps:

Head towards the rsyslog.conf file in the directory etc.

cd /etc
nano rsyslog.conf

In the section GLOBAL DIRECTIVES, the line "\$IncludeConfig /etc/rsyslog.d/*.conf" by default it includes the whole config file of the system.



```
#### GLOBAL DIRECTIVES ####
********************
# Use traditional timestamp format.
# To enable high precision timestamps, comment out the following line.
Set the default permissions for all log files.
$FileOwner root
$FileGroup adm
$FileCreateMode 0640
$DirCreateMode 0755
$Umask 0022
# Where to place spool and state files
$WorkDirectory /var/spool/rsyslog
# Include all config files in /etc/rsyslog.d/
$IncludeConfig /etc/rsyslog.d/*.conf
```

To filter specific rsyslog configurations and logs put some specific name on the place of * to filter it easily as shown below:

For example:-

\$IncludeConfig /etc/rsyslog.d/debian.conf

Now head towards to directory of rsyslog.d and create a configuration file debian.conf

And enter the following rule into it:

```
If fromhost-ip == '192.168.1.8' then -/var/log/auth.log &~
```

Then save and exit as shown below

```
GNU nano 2.2.6 File: debian.conf

if ($fromhost-ip == '192.168.1.8') then -/var/log/auth.log

& ~
```

Now we check that the logs of the ubuntu server are inserted correctly in auth.log or not.

Before we do rsyslog restart and then follow the below steps:

```
cd /var/log
/etc/init.d/rsyslog restart
tail -f auth.log
```

```
alienvault:/etc# cd /var/log dealienvault:/etc# cd /var/log dealienvault:/var/log# /etc/init.d/rsy
rsync rsyslog
alienvault:/var/log# /etc/init.d/rsyslog restart

[ ok ] Stopping enhanced syslogd: rsyslogd. [ ok ] Stopping enhanced syslogd: rsyslogd.
[ ok ] Starting enhanced syslogd: rsyslogd.
alienvault:/var/log# tail -f auth.log dealienvault:/var/log# tail-envault:/var/log# tail-enva
```

As we can see logs are started coming from the ubuntu server

Now we move on to the AlienVault part

OSSIM needs a plug-in t to connect any data source to the server. Plugins have XML based configuration.

The plugins have two elements: cfg and SQL

Let's go to configure cfg

To do this head towards the directory /etc/ossim/agent/plugins

```
cd /etc/ossim
cd agent/
cd plugins/
```

in the directory of plugins, there are lots of plugins available that can be activated in OSSIM

we went on to modify one by hand for example SSH

To do this run the following command:

cp ssh.cfg debianssh.cfg

```
alienvault:/var/log# cd /etc/ossim alienvault:/etc/ossim dagent/ alienvault:/etc/ossim/agent# ls alienvault:/etc/ossim/agent# ls agentuuid.dat aliases.cfg av_pulse.cfg config.cfg config.cfg.orig config.cfg_last ossecagentconfig.cfg alienvault:/etc/ossim/agent# cd plugins alienvault:/etc/ossim/agent/plugins# cp ssh.cfg debianssh.cfg alienvault:/etc/ossim/agent/plugins# _
```

Then after open the debianssh.cfg configuration file.

nano debiannssh.cfg

```
alienvault:/etc/ossim/agent/plugins# nano debianssh.cfg
```

And change the plugin id with your desired no. to make it identifiable for the further process.

Here I'm replacing plugin id 4003 to 9001 as shown below:

Now we can activate the plugin

Come back to AlienVault setup by entering the following command:

alienvault-setup

```
END-HEADER
 Accepted products:
# openbsd - openssh 5.4
# openbsd - openssh 5.5
# openbsd - openssh 5.6
 openbsd - openssh 5.7
 openbsd - openssh 5.8
 openbsd - openssh 5.8p2
 openbsd – openssh 5.9
 Description:
[DFFALI T]
plugin_id=9001
ast_ip=\_tru(piugin-defaults,sensor)
dst_port=22
[config]
type=detector
enable=true
```

alienvault:/etc/ossim/agent/plugins# alie<u>n</u>vault-setup 🛶

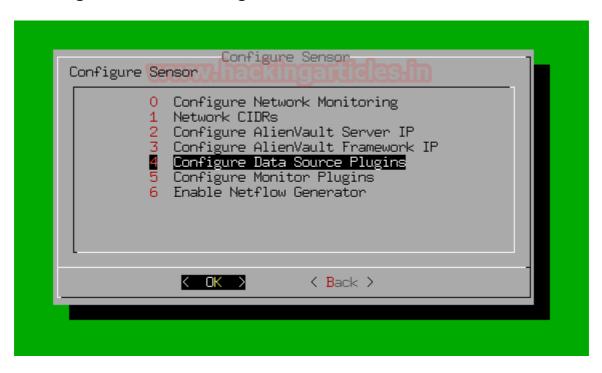
And then configure the sensor by the below steps:

Select Configure Sensor > Configure Data Source Plugins > debianssh

Select Configure sensor



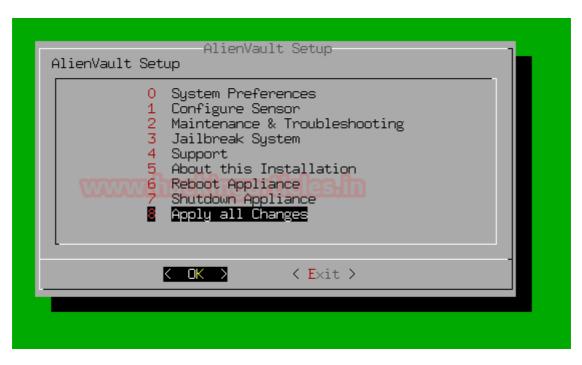
Select Configure Data Source Plugins



In the previous steps, we modified an SSH plugin into **debianssh** plugin. Select it in the list of plugins by pressing spacebar as shown below



And then come back to AlienVault Setup by selecting back option and then **Apply All Changes**



At last, it will ask for your permission to apply all changes

Select yes and then continue

```
Apply all Changes

This will apply the following changes:

[sensor]
detectors

Are you sure?

(Yes)

(No)
```

On the next prompt, it will show you changes applied



Let's go to configure the SQL part of the plugin.

Head towards to the directory of /usr/share/doc/ossim-mysql/contrib/plugins by entering the following command

```
cd /usr/share
cd /doc
cd /ossim-mysql
cd /contrib
cd /plugins
```

by running command Is you can see the examples of sql plugins

we're going to copy the ssh.sql to debianssh.sql by running the following command:

```
cp ssh.sql debianssh.sql
```

```
alienvault:~# cd /usr/share ——
alienvault:/usr/share# cd doc/———
alienvault:/usr/share/doc# cd ossim-mysql
alienvault:/usr/share/doc/ossim-mysql# cd contrib/
alienvault:/usr/share/doc/ossim-mysql/contrib# cd plugins
alienvault:/usr/share/doc/ossim-mysql/contrib/plugins# cp ssh.sql debianssh.sql
alienvault:/usr/share/doc/ossim-mysql/contrib/plugins# _
```

Open the debianssh.sql file

nano debianssh.sql

```
alienvault:/usr/share/doc/ossim-mysql/contrib/plugins# nano debianssh.sql
```

Let's do some modifications in the configuration file so that it can match the plugin.cfg to the SQL database.

The configuration looks like similar as shown below

```
plugin_id: 4003
DELETE FROM plugin WHERE id = "4003";
DELETE FROM plugin_sid where prugin_id
                                                                                                    = "4003";
INSERT IGNORE INTO plugin (id, type, name, description, vendor, product_type) VALUES (4003, 1, 'ssh'
 INSERT IGNORE INTO plugin_sid (plugin_id, sid, category_id, subcategory_id, class_id, name, priority,
(4003, 1, 2, 25, NULL, 'SSHd: Failed password', 3, 2),
(4003, 2, 2, 25, NULL, 'SSHd: Failed publickey', 2, 2),
                                           NULL,
                                                            'SSHd: Invalid user', 3, 2), Hill
'SSHd: Illegal user', 3, 2),
'SSHd: Root login refused', 3, 2),
'SSHd: User not allowed because listed in DenyUsers', 3, 2),
                                                            'SSHd: Login sucessful, Accepted password', 1, 2),
'SSHd: Login sucessful, Accepted publickey', 1, 2)
'SSHd: Bad protocol version identification', 3, 2)
'SSHd: Did not receive identific
                                                            'SSHd: Login sucessful, Accepted password
                                           NULL,
                                                             'SSHd: Bad protocol version identification, 3, 2, 5

'SSHd: Did not receive identification string', 1, 2),

'SSHd: Received disconnect', 1, 2),

'SSHd: Authentication refused: bad ownership or modes', 1

'SSHd: User not allowed becase account is locked', 2, 2),

'SSHd: PAM X more authentication failures', 1, 2),
                                             NULL,
                                              NULL,
                                              NULL,
                                             NULL,
                                                              'SSHd: Reverse mapped failed', 1, 2),
                                             NULL,
                                                              'SSHd: Address not mapped',
                           /, 58, NULL, 'SSHG: Hadress not mapped', 1, 2),
11, 139, NULL, 'SSHG: Server listening', 1, 2),
11, 139, NULL, 'SSHG: Server terminated', 1, 2),
2, 25, NULL, 'SSHG: Refused connection', 1, 2),
2, 25, NULL, 'SSHG: Denied connection', 1, 2),
7, 58, NULL, 'SSHG: Could not get shadow information', 1, 2),
11, 139, NULL, 'SSHG: HPUX Recieved connection - Version', 1, 1),
11, 139, NULL, 'SSHG: HPUX Recieved connection - Throughput', 1,
2, 25, NULL, 'SSHG: POM: Sutherntication failure', 3, 2)
                 22, 11, 139, NOLL, 'SSHd: HPUX Recieved connection 23, 11, 139, NULL, 'SSHd: HPUX Recieved connection 24, 2, 25, NULL, 'SSHd: PAM: authentication failure', 3, 2), 25 2, 24, NULL, 'SSHd: PAM: Session Opened', 1, 2),
```

Change the plugin id 4001 to 9001 or somewhat the value of no. that you designated in the upper section as shown below:

```
plugin_id: 9001
DELETE FROM plugin WHERE id ቱ "9001";
DELETE FROM plugin_sid where plugin_id = "9001";
INSERT IGNORE INTO plugin (id, type, name, description, vendor, product_type) VALUES <mark>(</mark>9001
INSERT IGNORE INTO plugin_sid (plugin_id, sid, category_id, subcategory_id, class_id, name
                                25, NULL,
                                                           SSHd: Failed password', 3, 2),
                               25, NULL,
25, NULL,
25, NULL,
  9001,
                                                         'SSHd: Failed publickey
                                                           'SSHd: Invalid user
 9001, 3,
9001, 4,
                                                        'SSHd: Invalid user', 3, 2),
'SSHd: Illegal user', 3, 2),
'SSHd: Root login refused', 3, 2),
'SSHd: User not allowed because listed in DenyUsers', 3, 2),
'SSHd: Login successful, Accepted password', 1, 2),
'SSHd: Login successful, Accepted publickey', 1, 2),
'SSHd: Dean protection identification', 7, 2)
                                                         'SSHd: Illegal user'
                               25, NULL,
  9001,
                                         NULL,
  9001,
                                                        -33nu: Login Sucessful, Accepted publickey', 1, 2),
'SSHd: Bad protocol version identification', 3, 2),
, 'SSHd: Did not receive identification', 3, 2),
                                         NULL,
  9001,
                               58, NULL,
                        2, 50,
2, 27, Nb.
2, 25, NULL,
2, 25, NULL,
2, 25, NULL,
7, 58, NULL,
58, NULL,
  9001,
                                                            'SSHd: Did not receive identification string', 1, 2),
                                                           'SSHd: Received disconnect', 1, 2),
'SSHd: Received disconnect', 1, 2),
'SSHd: Authentication refused: bad ownership or modes', 1, 2),
'SSHd: User not allowed becase account is locked', 2, 2),
  9001,
  9001,
 9001, 13, 2, 23, NOLL, 'SSHd: PAM X more authentic

9001, 14, 2, 25, NULL, 'SSHd: Reverse mapped faile

9001, 15, 7, 58, NULL, 'SSHd: Address not mapped'

9001, 16, 7, 58, NULL, 'SSHd: Server listening'

9001, 17, 11, 139, NULL, 'SSHd: Server terminated
                                                           'SSHd: PAM X more authentication failures', 1, 2),
                                                            'SSHd: Reverse mapped failed', 1, 2),
'SSHd: Address not mapped', 1, 2),
                                                                оона. server listening′, 1, 2)
'SSHd: Server terminated′, 1, 2
SHd: Refuser
 (9001, 17, 11, 139, NULL, 'SSHd: Server listening', 1, 2),
(9001, 18, 11, 139, NULL, 'SSHd: Server terminated', 1, 2),
(9001, 19, 2, 25, NULL, 'SSHd: Refused connect', 1, 2),
(9001, 20, 2, 25, NULL, 'SSHd: Denied connection', 1, 2),
(9001, 21, 7, 58, NULL, 'SSHd: Could not get shadow information', 1, 2),
(9001, 22, 11, 139, NULL, 'SSHd: HPUX Recieved connection - Version', 1, 1),
(9001, 23, 11, 139, NULL, 'SSHd: HPUX Recieved connection - Throughput', 1, 1),
(9001, 24, 2, 25, NULL, 'SSHd: PAM: authentication failure', 3, 2),
(9001, 25, 2, 24, NULL, 'SSHd: PAM: Session Clased', 1, 2),
                25, 2, 24, NOLL, 'SSHd: PAM: Session Lloseu , 1, 2/,
26, 2, 25, NULL, 'SSHd: Connection closed', 1, 2),
27, 3, 143, NULL, 'SSHd: Connection closed', 1, 2),
96. 2. 25, NULL, 'SSHd: Input userauth request invalid user', 1, 1),
  9001,
  9001,
               96, 2, 25, NULL, 'SSHd: Input userauth request invalid user', 1, 1

97, 2, 25, NULL, 'SSHd: Input userauth request invalid user', 1, 1

98, 11, 139, NULL, 'SSHd: Generic PAM SSH Event', 1, 1),

99, 11, 139, NULL, 'SSHd: Generic SSH Event', 1, 1),

100, 11, 139, NULL, 'SSHd: Protocol major versions differ', 1, 1),

101, 11, 139, NULL, 'SSHd: AIX Could not wait for child', 1, 1),
  9001,
  9001,
  9001,
  9001,
  9001,
                102, 11, 139, NULL, 'SSHd: AIX subsystem request for sftp', 1 , 1),
103, 2, 25, NULL, 'SSHd: PAM authentication error', 1 , 1),
 9001, 102, 11, 155, NULL,
9001, 103, 2, 25, NULL,
9001, 104, 2, 25, NULL,
9001, 105, 2, 25, NULL,
                                                              'SSHd: Maximum authentication attempts exceeded '
                                                              'SSHd: Disconnecting, too many authentication failures
```

As you can see this configuration file contains a predefined database of SSH logs so that if any suspicious SSH activity or request comes to the Ubuntu server it can match with that request.

And then Save and exit from the file.

Let's put it into the action and activate the database be reconfiguring it.

To do this enter the following command:

```
ossim-db < debianssh.sql
ossim-db
select * from plugin where id = 9001;
quit</pre>
```

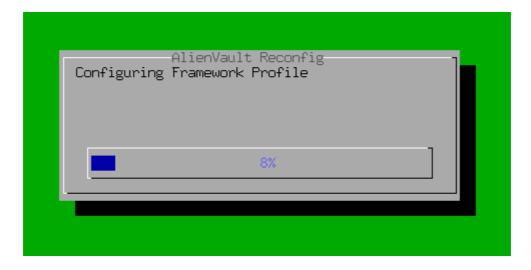
```
alienvault:/usr/share/doc/ossim-mysql/contrib/plugins# ossim-db < debianssh.sql
alienvault:/usr/share/doc/ossim-mysql/contrib/plugins# ossim-db
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 5090
 Server version: 5.6.36-82.1 Percona Server (GPL), Release 82.1, Revision 1a00d79
Copyright (c) 2009–2017 Percona LLC and/or its affiliates
Copyright (c) 2000, 2017, Oracle and/or its affiliates. All rights reserved.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
Type 'help;' or 'acksim' for help. Type 'acksim' to clear the current input statement.
mysql> select * from plugin where id = 9001;
                                type | name | description
                                                                               product_type |
                                                                                                vendor
                                   1 | ssh | SSHd: Secure Shell daemon
                                                                                           23 | OpenBSD
musal> auit
alienvault:/usr/share/doc/ossim-mysql/contrib/plugins#
```

And at last reconfig the AlienVault OSSIM server by entering the following command:

alienvault-reconfig

```
alienvault:/usr/share/doc/ossim-mysql/contrib/plugins# alienvault-reconfig
```

On the next screen, it will start reconfiguring the server



If you are seeing this then congratulations...!!!

You successfully integrated Rsyslog and SSH plugin to the AlienVault OSSIMa server.

Hold tight! this is not enough.....

Have patience

In this article, we explained the integration and configuration process of Rsyslog and SSH plugin to AlienVault OSSIM.

In the next article, our focus will be on the configuration and installation of OSSEc Agents that send logs to **AlienVault Server**.

OSSEC is an open-source Host Intrusion Detection System (HIDS) that runs across multiple OS platforms such as Windows, Linux, Solaris. Mac ...etc.

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