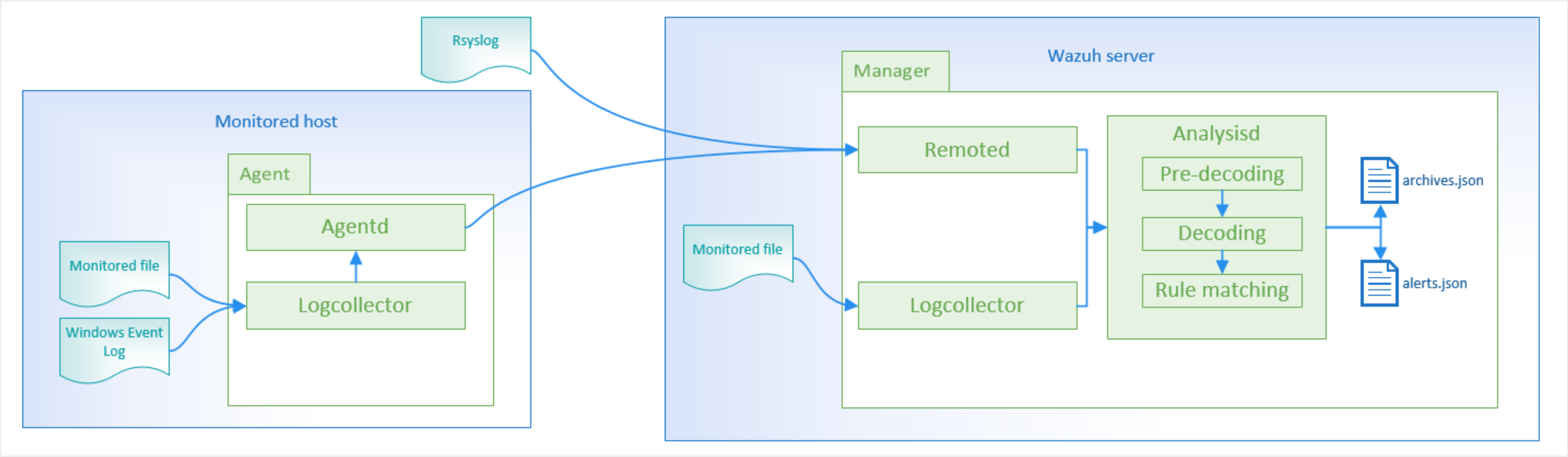
Documentation › User manual › Capabilities › Log data collection › How it works

How it works

The below figure illustrates the event flow:



Log collection

The log source can be:

Log files

The Log analysis engine can be configured to monitor specific files on the servers.

Configuration example:

Linux:

```
<localfile>
    <location>/var/log/example.log</location>
    <log_format>syslog</log_format>
</localfile>
```

Windows:

```
<localfile>
    <location>C:\myapp\example.log</location>
    <log_format>syslog</log_format>
</localfile>
```

Windows event log

Wazuh can monitor classic Windows event logs, as well as the newer Windows event channels:

Configuration example:

Event log:

```
<localfile>
  <location>Security</location>
  <log_format>eventlog</log_format>
</localfile>
```

Event channel:

```
<localfile>
  <location>Microsoft-Windows-PrintService/Operational</location>
  <log_format>eventchannel</log_format>
</localfile>
```

Remote syslog

For other devices like firewalls, you can configure the log analysis component to receive log events through syslog.

Configuration example:

```
<ossec_config>
  <remote>
    <connection>syslog</connection>
    <allowed-ips>192.168.2.0/24</allowed-ips>
  </remote>
<ossec_config>
```

`<connection>syslog</connection>` indicates the manager will accept incoming syslog messages from across the network, and `<allowed-ips>192.168.2.0/24</allowed-ips>` defines the network from which syslog messages will be accepted.

Log Example:

```
2016-03-15T15:22:10.078830+01:00 tron su:pam_unix(su-l:auth):authentication failure;logname=tm uid=500
euid=0 tty=pts/0 ruser=tm rhost= user=root
1265939281.764 1 172.16.167.228 TCP_DENIED /403 734 POST
http://lbcore1.metacafe.com/test/SystemInfoManager.php - NONE/- text/html
[Sun Mar 06 08:52:16 2016] [error] [client 187.172.181.57] Invalid URI in request GET: index.php HTTP/1.0
```

Analysis

Pre-decoding

In this phase, only static information is extracted from well-known fields.

```
Feb 14 12:19:04 localhost sshd[25474]: Accepted password for rromero from 192.168.1.133 port 49765 ssh2
```

Extracted information:

- *hostname*: 'localhost'
- *program_name*: 'sshd'

Decoding

The Decode phase identifies/evaluates the type of a log message and then extracts known fields for that message type. Example of a log and its extracted info:

```
Feb 14 12:19:04 localhost sshd[25474]: Accepted password for rromero from 192.168.1.133 port 49765 ssh2
```

Extracted information:

- *program name*: sshd
- *dstuser*: rromero
- *srcip*: 192.168.1.133

Rule matching

The next step is to check if any of the rules match.

For the previous example, rule 5715 is matched:

```
<rule id="5715" level="3">
  <if_sid>5700</if_sid>
  <match>^Accepted|authenticated.$</match>
  <description>sshd: authentication success.</description>
  <group>authentication_success,pci_dss_10.2.5,</group>
</rule>
```

Note

More information about Wazuh Ruleset

Alert

Once the rule is matched, the manager will create an alert:

```
** Alert 1487103546.21448: - syslog,sshd,authentication_success,pci_dss_10.2.5,
2017 Feb 14 12:19:06 localhost->/var/log/secure
Rule: 5715 (level 3) -> 'sshd: authentication success.'
Src IP: 192.168.1.133
User: rromero
Feb 14 12:19:04 localhost sshd[25474]: Accepted password for rromero from 192.168.1.133 port 49765 ssh2
```

It will be stored in `/var/ossec/logs/alerts/alerts.json` and/or `/var/ossec/logs/alerts/alerts.log`.

By default, it will generate alerts on events that are important or of security relevance. To store all events even if they do not match a rule, you need to enable the `<log_all>` option.

Alerts will be stored at `/var/ossec/logs/alerts/alerts.(json|log)` and events at `/var/ossec/logs/archives/archives.(json|log)`. It uses log rotation and creates an individual directory for each year and month.

Archived logs are not automatically deleted. You choose when to manually or automatically (i.e., cron job) delete logs according to your own legal and regulatory requirements.