Host-based intrusion detection with OSSEC

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Agenda

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- Short overview about intrusion detection

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- Introduction to OSSEC

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- Examples

Intrusion Detection Systems (IDS)

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- Hybrid IDS [1]

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- Not being aware of the limitations of an IDS

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- Available for MS Windows (agent only), *nix (full support)
- Can also analyse e.g. Cisco PIX, FWSM logs

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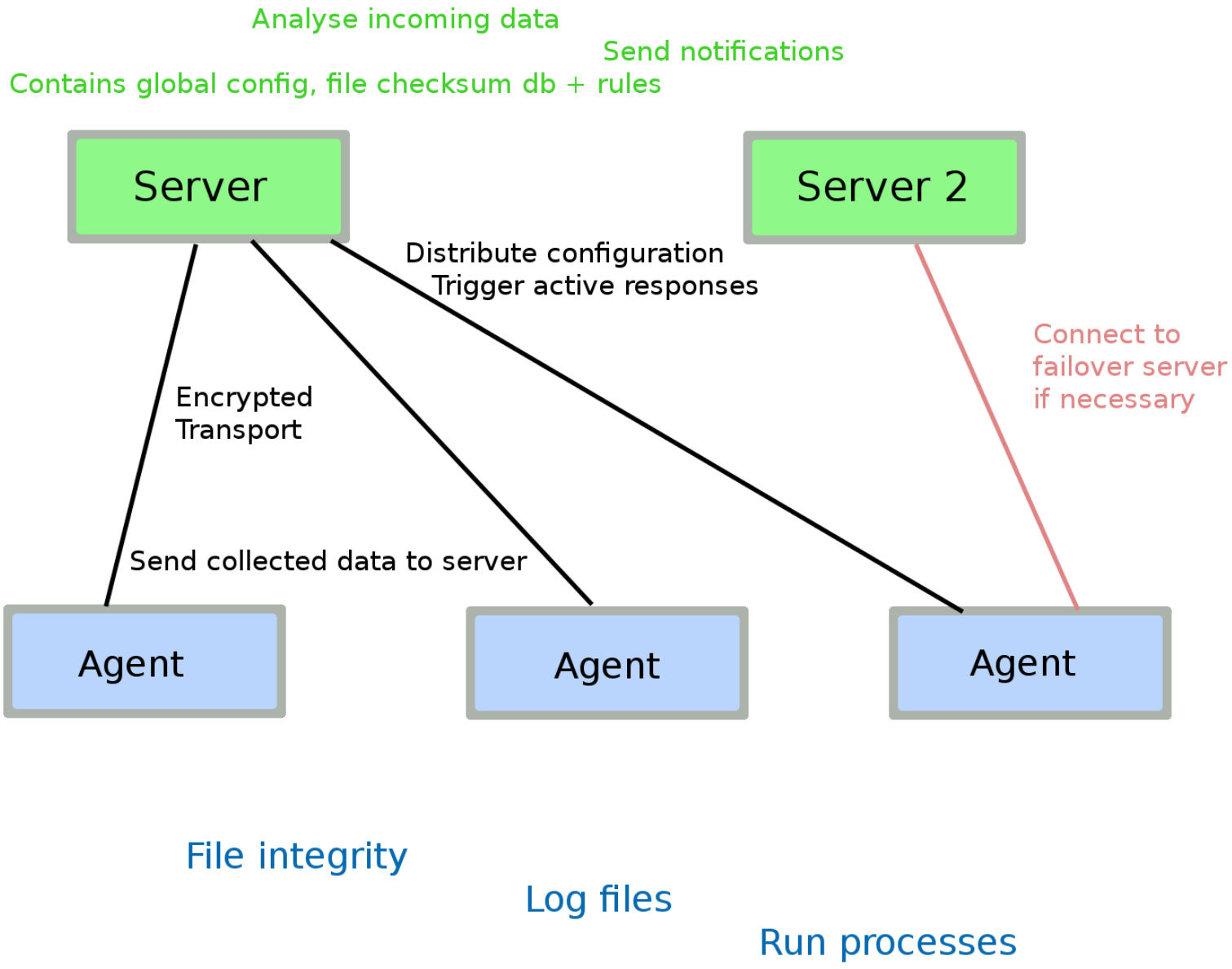
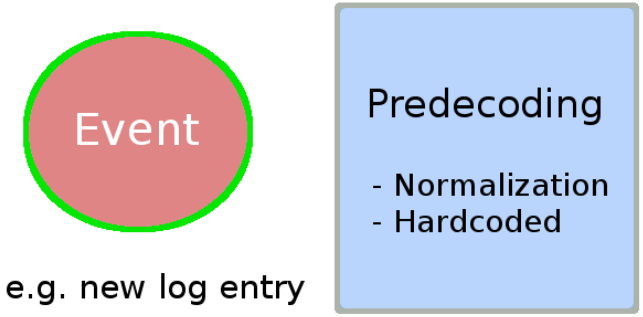
  - triggering **active responses**

Architecture (2)



Analysis



[Time 2010.01.01 10:58:38 UTC] [Facility auth] [Sender sshd] [PID 400] [Message error: PAM: Authentication failure for illegal user root from 192.168.1.6] [Level 3] [UID -2] [GID -2] [Host ossec-agent1]

Jan 01 11:33:22 ossec-agent2 sshd[10718]: Accepted password for root from 192.168.1.6 port 48272 ssh2

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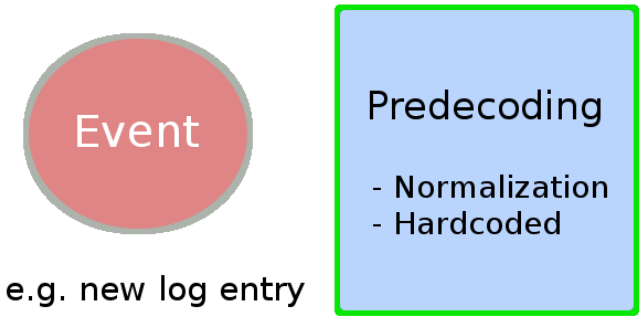

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Time/Date:	2010 Jan 01 10:58:38	2010 Jan 01 11:33:22
Hostname:	ossec-agent1	ossec-agent2
Program name:	sshd	sshd
Log:	error: PAM: Authentication failure for illegal user root from 192.168.1.6	Accepted password for root from 192.168.1.6 port 48272 ssh2

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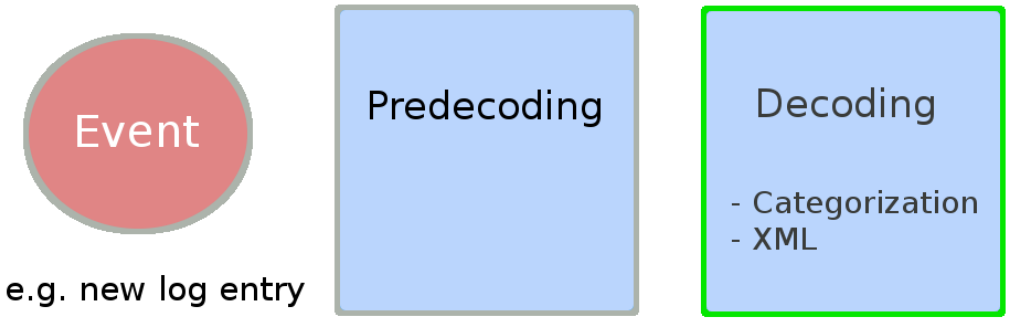


```
<decoder name ="sshd">
  <program_name>^sshd</program_name>
</decoder>

<decoder name="ssh-invfailed">
  <parent>sshd</parent>
  <prematch>^Failed \S+ for invalid user|^Failed \S+ for illegal user</prematch>
  <regex offset="after_prematch">from (\S+) port \d+ \w+$</regex>
  <order>srcip</order>
</decoder>
```

New key value pairs!

decoded_as: sshd
srcip: 192.168.1.6

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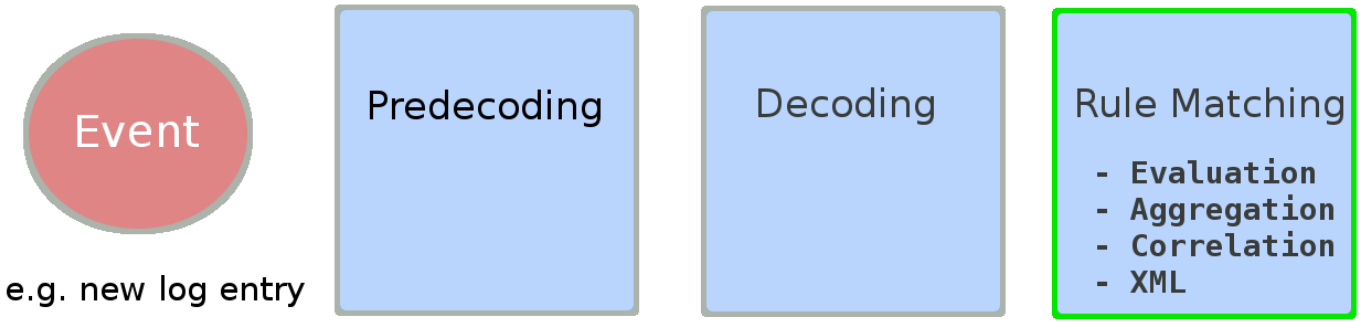


```
<rule_id="123456" level="7">
  <decoded_as>sshd</sshd>
  <srcip>192.168.1.6</srcip>
  <match>root</match>
  <group>localnet,sshd,</group>
  <description>My cat is trying to login as root again!</description>
</rule>

<rule_id="123457" level="10" frequency="5" timeframe="60">
  <if_matched_sid>123456</if_matched_sid>
  <description>5 times within a minute, that's to many </description>
  <group>localnet,repeatedproblems,</group>
</description>
```

Even more key/value pairs:
- rule id,
- group,
- alert level

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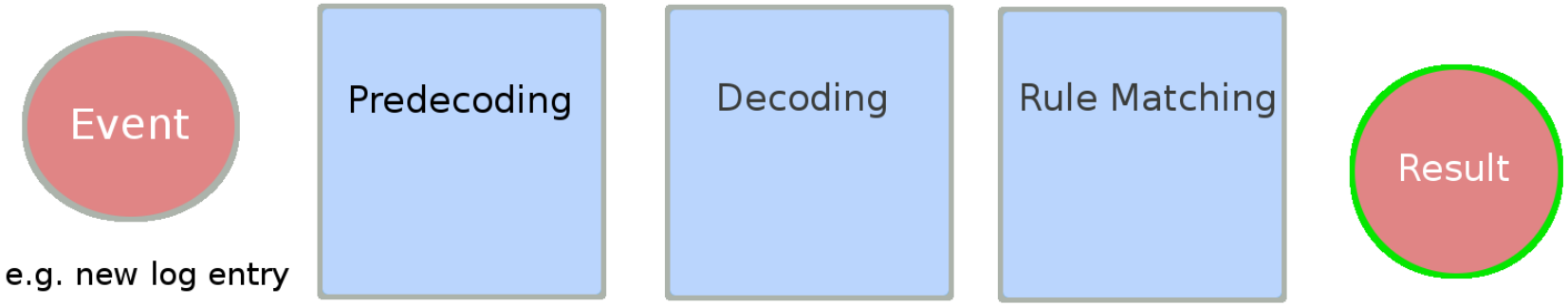

Take action depending on **alert level**, **group**, **rule id**:

- Write event to DB or logfile
- Send me an e-mail
- Send an e-mail to another person
- Ban offenders by autocreating iptables rule

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- Policy enforcement

Community & Questions

- `http://www.ossec.net`
- Mailing list/Google group: `http://groups.google.com/group/ossec-list`
- Active development: `https://bitbucket.org/dcid/ossec-hids`
- IRC channel: `#ossec` at `irc.freenode.org`
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- Are there any questions?