Snort® Installation, Configuration and Basic Usage

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Overview:

- Planning a deployment
- Preparing the installation platform
- Software requirements
- Performing the installation
- Basic Snort operations
- Tuning strategies
- Q&A

Planning A Deployment

- Inline vs. Passive
  - How will your sensor fit into your existing architecture?
    - Switch span ports
    - Taps
  - Visibility to the assets you wish to protect
- Stand-alone sensors vs. distributed architectures
  - Visibility between the devices you need to communicate with
  - Access controls

Preparing The Installation Platform

- Hardware Considerations
  - Memory vs. CPU
  - Interfaces
    - Inline
    - Passive
  - Other hardware considerations
    - Disks
    - Motherboard bus architecture
- OS choice & preparation
  - Harden the platform

Software Requirements

- Software
  - Install from source or …
  - Install from pre-built binary package (RPM, Debian, etc.)
    - For packages, use a package management tool like Yum or apt-get
- Database, Web Server & PHP
  - The most popular choices are MySQL and Apache
  - Include the mysql, mysql-devel and mysql-server packages for your installation
  - For PHP, also include the php, php-gd, php-mysql, php-devel & php-pear packages

Software Requirements

- Snort requisite software:
  - Snort engine – preferably, the most current release
  - Snort rules – register or subscribe
  - Libpcap
  - PCRE
  - Libnet-1.0.2.a
  - Unified output processing tool (Barnyard)
- Other tools:
  - BASE
  - ADODB

Performing The Installation

Inline or Passive?

- For inline, make sure you choose the `--enable-inline` compile-time flag
- Choose the compile-time flags that enable the features you want in the binary you produce
- Do a `./configure –h` to get a listing of the available options
- Some common options are as follows:

```
--with-mysql
--enable-flexresp
--enable-perfprofiling
```

Performing The Installation

Preliminary Configuration:

- Make directories for the following:
  - For rules and configuration files
    - For example: `/etc/snort` & `/etc/snort/rules`
  - For Snort logging
    - For example: `/var/log/snort`
- Unpack your rules into the rules directory
- Copy configuration files from the location where you unpacked the Snort archive to the directory you created for storing configuration files
- Create a symbolic link of the Snort binary to the `/usr/sbin/snort` directory
- Create a user and group to run Snort and assign ownership of the Snort logging directory to this user and group
- Edit the `snort.conf` file to point to the correct location of your rules and enable database output

Performing The Installation

Preliminary Configuration:

- Setting up the database in the MySQL client
  - Set passwords for the users that will access the database. For example:
    - For the `root` user

```
set password for root@localhost=password(‘password’);
```

    - For the `snort` user

```
set password for snort@localhost=password(‘password’);
```

  - Create the alert database

```
create database snort;
```

  - Grant usage rights to the `snort` user

```
grant create, insert, select, delete, update on snort.*
  to snort@localhost;
```

Performing The Installation

- Preliminary Configuration:
  - Setting up the database schema
    - Check the schemas directory under the location where you unpacked the Snort archive for the schema that corresponds to the database platform you are using
    - For MySQL, you would issue the following command:

```
mysql -p < create_mysql snort
```

(you will be prompted for the password you issued in the previous slide)

Performing The Installation

Preliminary Configuration:

- Start Snort and test

```
snort -c /etc/snort/snort.conf
```

- Set the ownership and permissions for the Snort user in the logging directory

```
chown snort:snort /var/log/snort
chmod 600 /var/log/snort/alert
```

Performing The Installation

- Preliminary Configuration:
  - Setting up the graphical interface
    - Identify the root of your web server's directory structure
    - Unpack the BASE and ADODB packages into that directory
    - Edit the error reporting option in `php.ini` to read as follows:

```
error_reporting = E_ALL & ~E_NOTICE
```

    - Restart the HTTPD service

Performing The Installation

Configure the Snort startup

- The Snort tarball ships with a startup and startup configuration script located in the `rpm` directory
- Copy these files to the appropriate directories as follows:

```
cp /usr/local/snort-2.8.0.1/rpm/snortd /etc/init.d
cp /usr/local/snort-2.8.0.1/rpm/snort.sysconfig
  /etc/sysconfig/snort
```

- Use sym-links to link the `snortd` file to properly named start and kill scripts in the run level directories you intend to use

  Start format – `S##snortd`

  Kill format – `K##snortd`

Performing The Installation

- Tune the Snort startup configuration
  - The startup configuration is controlled via the file you just copied into the `/etc/sysconfig` directory
  - Edit the following areas of this file
    - Interface – set this to the interface you wish to sniff on
    - Alertmode – set to fast by default, you can comment this out
    - Binary_log – turned on by default. Comment this out to control how your logging takes place in the `snort.conf` file

Basic Snort Operations

- Snort can run in either of the following modes:
  - Packet sniffer
  - Packet logger
  - IDS/IPS
- For simple sniffing, do the following:
  - `snort -dev`
- For logging packets, specify an output directory (-l) and, optionally, a file name prefix (-L)

```
snort -dev -l /var/log/snortdump -L snort.output
```

  - Add a BPF for more specific output

Basic Snort Operations

Reading PCAP data with Snort

- Use the –r switch

```
snort -r snort.output.1082135914 -dev
```

- Add a BPF for more specific output

```
snort -r snort.output.1082135914 -dev
  src host 192.168.1.10
```

Basic Snort Operations

- Running Snort as an IDS
  - Start Snort with a configuration file

```
snort -c /etc/snort/snort.conf
```

- Running Snort as an IPS
  - Start Snort with a configuration file and the –Q switch to pick up network traffic from ip_queue and the –i switch to specify the bridged interface set

```
snort -Q -i br0 -c /etc/snort/snort.conf
```

Tuning Strategies

- Only enable rules needed to protect your environment
- Configure preprocessors for your environment; default settings can trigger false alerts
- Tune the variables in `snort.conf`
- Be careful when writing custom rules
  - Poorly crafted rules can have the following implications:
    - Performance impact
    - Prone to false positives
    - Potentially produce false negative situations

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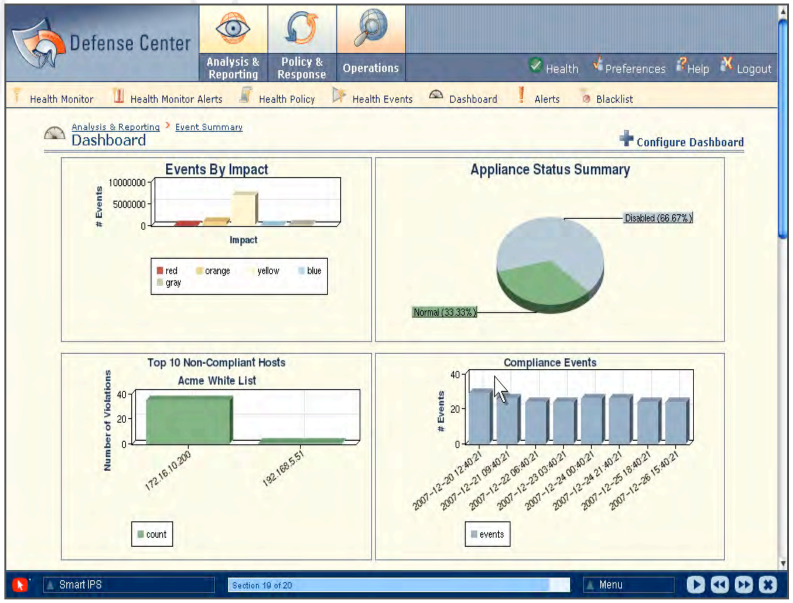

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