**Non Instrusive Amazon Monitor (NIAM)**

**Introduction**

Monitoring of systems, middleware and applications is an absolute necessity in modern computing. NO longer can administrators log into each system just to see how things ago going! Hence there are many different system monitors which can be utilized. These basically try to contact a remote endpoint or service and receive a suitable response. This can range from a simple ping response to a healthcheck command on a web site.

When setting up a monitoring system we normally have to open up the specific port to which the service should respond. For example for ping requests we must open up for ICMP and for secure shell we must open up for port 22. Each time we want to test an endpoint we have to open up yet another hole from a source IP address which is that of the monitoring system. More than this in the Amazon web services world if the monitor and the target system are in different VPC’s then we must use VPC peering . All of this leads to many more open ports and a weakening of the VPC system. All in all a weakening of the environment security.

Hence we would like to think in terms of a monitoring system which does not reduce security and is in nature “Non Intrusive”. Hence the introduce the concept of a Non Intrusive Amazon Monitor (NIAM).

Consider some use examples:

Example 1: apache server and mongo backend

An apache server wants to ensure that the mongo server configured is available on port 27001. This port is only open the the apache server and no other. Hence it can send ping requests on port 27001 and report back to the NIAM master with a positive or negative result. Hence the apache server running a NIAM slave uses SQS to tell the NIAM master the results.

Example 2: Simple instance ping

A NIAM slave sends a SQS message back to the NIAM master once every time frame. If the master does not receive this message then an alert is raised.

**NIAM**

NIAM is a monitoring product which does not require any new ports to be opened to monitor end points.

A NIAM master system will run an a Ubuntu Linux instance. This will discover the instances running in its own AWS account using the “describe instances” interfaces and will expect to hear from the other instances. It will expect to hear from the other instances via SQS messages and not via ordinary TCP/IP connections.

A NIAM client will regularly send “i am here” message to the master via SQS. Additionally the client can be configured to test is own additional connectivity expectations i.e ping, http or a configured script. The results of these connectivity tests are sent back to the master.

The NIAM master/slave runs as present only on Linux 64 bit systems.

The master accumulates these results and performs simple analysis of the results:

1. The master expects to hear from its known instances at regular intervals via SQS. If this stops then this is considered as an alert
2. If the master has received an additional connectivity test from any slave and then this connectivity stops then the master will consider this as an alert.

When the master generates an alert this will be logged in a standard log file but can also generate a SNS message which can result in an email to a pre-configured email address or in certain regions a SMS test messages.

The master keeps a record of slave connectivity in an SQL database.

At a future phase of the project a web interface to the database results will be added.

Other than this there is no reason why you could not use logstash to send the normal log file to elastic search and make a kibana interface available to view the results.

**Licensing**

The software in its basic binary form is supplied free of charge. By default the master will recognise up to 50 slave systems. If you have more than 50 instances in your environment then the first 50 discovered instances only will be monitored. The remainder will be ignored.

After this a license fee will be required. Costs have yet to be fixed.

**Software download**

<https://github.com/bmmade/niam.git>

These is also configuration documentation provided here.

**Support**

For the free version of NIAM there is no official support but email support will be given as “best effort”.

Contact is established via martin@dew-hattens.com

Once the license fee has been paid then prompt support is offered to help solve problems and provide any application updates.