Application Note

ALOHA monitoring through SNMP

Document version: v1.0

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Purpose

Current appnote describes how to configure the ALOHA Load-Balancer for SNMP monitoring.

Complexity

Versions concerned

- Aloha 4.2 and above

Synopsis

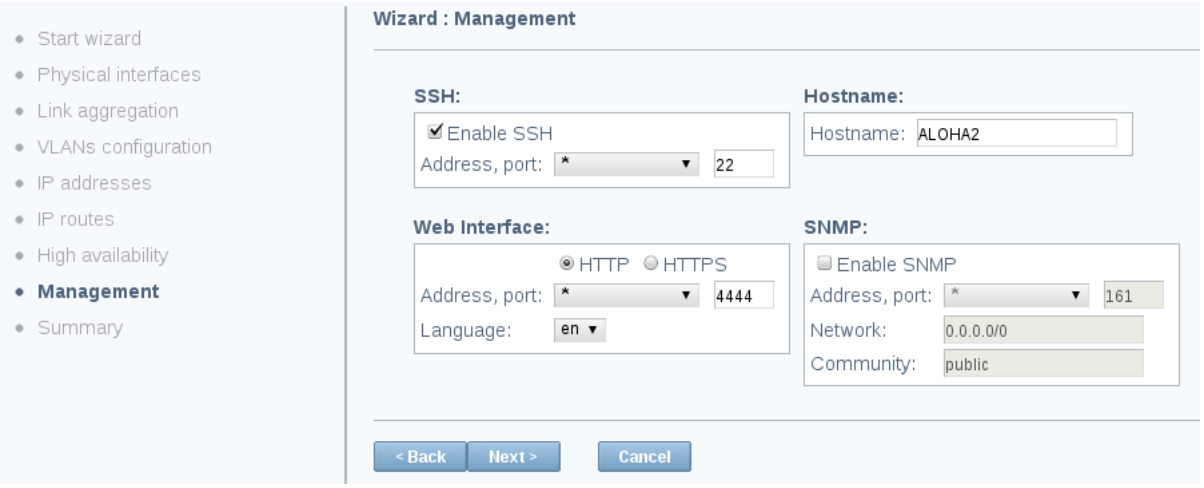
A load-balancer is one of the key point in an architecture. It can be used to gather information about health of the whole platform.
The ALOHA Load-Balancer can provide many information about server health, farm capacity, sessions and errors, etc...

Configuration

Enabling SNMPd in the ALOHA

During the wizard

When running the wizard, you configure the SNMP daemon at the step #7, also called **Management**.



In order to enable the SNMP daemon, just:

- Check the box **Enable SNMP**
- Choose the **Address** and **port** to listen on for SNMP requests
- Specify which **network** is allowed to request ALOHA's SNMP daemon
- Type a **Community**

On a running ALOHA

If your ALOHA Load-Balancer is already setup and running with production traffic, you don't want to run the wizard again. To configure SNMP daemon in that case, follow the instruction below:

- In the ALOHA GUI, go in the **Services** tab
- Click on the Edit icon from the **snmpd** line:
- Comment the line *no autostart* to allow SNMPd to start with
- Configure snmpd as described in the next chapter

Don't forget to start SNMPd by clicking on the start icon

SNMPd customization

You can configure the following parameters:

- network <network> : authorized network (default: 0.0.0.0/0)
- community <text> : used community (default: public)
- listen <ip address> : listening ip address (default: 0.0.0.0)
- port <integer> : listening port (default: 161)

ALOHA MIB

Getting the MIBs

ALOHA's MIB is available on Exceliance website, at the URL:
`http://www.exceliance.fr/download/aloha/mibs/`

Required third party MIBs are a also available from this URL

MIB installation (Linux)

Download all the required MIBs, unzip them and copy them in a directory on your Linux server.
In this example, we use **/usr/src/mibs**.
Edit the file **/etc/snmp/snmp.conf**, and add the path to the **mibdirs** directive:

```
mibdirs /usr/src/mibs:/usr/src/mibs/STD-MIBs
printNumericOids no
mibs ALL
```

MIB browsing

OS information

To get information related to the Operating System, just run **snmpwalk** with the community and the IP address of your ALOHA:

```
$ snmpwalk -v2c -c public 192.168.10.3 [...]
SNMPv2-MIB::sysDescr.0 = STRING: Linux ALOHA2 2.6.27smp-alb50.1-albva #2 SMP Tue Feb 14 11:35:00 CET 2012 x86_64
SNMPv2-MIB::sysObjectID.0 = OID: NET-SNMP-TC::linux
DISMAN-EVENT-MIB::sysUpTimeInstance = Timeticks: (124591) 0:20:45.91
SNMPv2-MIB::sysContact.0 = STRING: emeric@exosec.local
SNMPv2-MIB::sysName.0 = STRING: ALOHA2
SNMPv2-MIB::sysLocation.0 = STRING: Unknown
SNMPv2-MIB::sysORLastChange.0 = Timeticks: (0) 0:00:00.00
SNMPv2-MIB::sysORID.1 = OID: SNMPv2-MIB::snmpMIB
SNMPv2-MIB::sysORID.2 = OID: TCP-MIB::tcpMIB
SNMPv2-MIB::sysORID.3 = OID: IP-MIB::ip
```

Load-Balancing information

To get information related to Load-Balancing in the ALOHA, just run **snmpwalk** with the community and the IP address of your ALOHA, and ask for Exceliance's OID branch: .1.3.6.1.4.1.23263

```
$ snmpwalk -v2c -c public 192.168.10.3 .1.3.6.1.4.1.23263 | head
EXCELIANCE-MIB::alProductName = STRING: "aloha "
EXCELIANCE-MIB::alProductModel = STRING: "albva"
EXCELIANCE-MIB::alProductVersion = STRING: "5.0"
EXCELIANCE-MIB::alProductSubVersion = STRING: "5.0.3"
```

```
EXCELIANCE-MIB::alProductBuildVersion = STRING: "5007"
EXCELIANCE-MIB::alProductBuildDate = STRING: "2012-06-11 18:01:10"
EXCELIANCE-MIB::alProductURL = STRING: "http://www.exceliance.fr/download/aloha/5.0"
EXCELIANCE-MIB::alServiceID.1 = INTEGER: 1
EXCELIANCE-MIB::alServiceID.2 = INTEGER: 2
EXCELIANCE-MIB::alServiceID.3 = INTEGER: 3
```

HAProxy configuration update

In the ALOHA Load-Balancer, each HAProxy's frontend, backend, listen or server is an object. It owns an ID in HAProxy which is use by SNMPd has the OID. By Default, HAProxy affects IDs in the order the each object is read in the configuration, which means the ID, hence the OID, could change at any moment.
Fortunately, the ALOHA allows you to fix the IDs in HAProxy, so the OID in SNMPd will never change, making third party monitoring tools job easier.
To fix an ID in HAProxy, just add the directive **id** to each server, frontend, backend and listen.

this ID must be unique for frontend, backend and listen
Server IDs must be unique in a backend or in a listen

HAProxy Configuration example:

```
frontend ft_redis
  id 1
  bind 192.168.10.2:6379
  mode tcp
  default_backend bk_redis

backend bk_redis
  id 101
  mode tcp
  option tcplog
  server redis1 192.168.10.11:6379 id 1 check maxconn 125
  server redis2 192.168.10.12:6379 id 2 check maxconn 125 backup


frontend ft_web
  id 2
  bind 192.168.10.2:80
  mode http
  default_backend bk_web

backend bk_web
  id 102
  mode http
  server web1 192.168.10.11:80 id 1 check maxconn 125
  server web2 192.168.10.12:80 id 2 check maxconn 125
```

From the example above, the ALOHA will provide the following OIDs:

- redis related OIDs:
  - Frontend name: .1.3.6.1.4.1.23263.4.2.1.3.2.1.3.1.**1**
  - Frontend status: .1.3.6.1.4.1.23263.4.2.1.3.2.1.13.1.**1**
  - Backend name: .1.3.6.1.4.1.23263.4.2.1.3.3.1.3.1.**101**
  - Backend status: .1.3.6.1.4.1.23263.4.2.1.3.3.1.20.1.**101**
  - Server redis1 name: .1.3.6.1.4.1.23263.4.2.1.3.4.1.4.1.**101**.**1**
  - Server redis2 name: .1.3.6.1.4.1.23263.4.2.1.3.4.1.4.1.**101**.**2**
- web related OIDs:
  - Frontend name: .1.3.6.1.4.1.23263.4.2.1.3.2.1.3.1.**2**
  - Frontend status: .1.3.6.1.4.1.23263.4.2.1.3.2.1.13.1.**2**
  - Backend name: .1.3.6.1.4.1.23263.4.2.1.3.3.1.3.1.**102**
  - Backend status: .1.3.6.1.4.1.23263.4.2.1.3.3.1.20.1.**102**
  - Server web1 name: .1.3.6.1.4.1.23263.4.2.1.3.4.1.4.1.**102**.**1**
  - Server web2 name: .1.3.6.1.4.1.23263.4.2.1.3.4.1.4.1.**102**.**2**

Important OIDs to monitor

In the string and numeric OIDs below, replace:

- **F** by the Frontend ID in HAProxy configuration
- **B** by the Backend ID in HAProxy configuration
- **S** by the server ID in HAProxy configuration

These are only a sample of available information.

Statuses

Description	Type	String	Numeric
Frontend status	String	EXCELIANCE-MIB::alFrontendStatus.1.**F**	.1.3.6.1.4.1.23263.4.2.1.3.2.1.13.1.**F**
Backend status	String	EXCELIANCE-MIB::alBackendStatus.1.**B**	.1.3.6.1.4.1.23263.4.2.1.3.3.1.20.1.**B**
Server status	String	EXCELIANCE-MIB::alServerStatus.1.**B**.**S**	.1.3.6.1.4.1.23263.4.2.1.3.4.1.19.1.**B**.**S**

Performance

Description	Type	String	Numeric
Frontend total sessions	Counter	EXCELIANCE-MIB::alFrontendSessionTotal.1.**F**	.1.3.6.1.4.1.23263.4.2.1.3.2.1.7.1.**F**
Backend total sessions	Counter	EXCELIANCE-MIB::alBackendSessionTotal.1.**B**	.1.3.6.1.4.1.23263.4.2.1.3.3.1.10.1.**B**
Backend current queued sessions	Gauge	EXCELIANCE-MIB::alBackendQueueCur.1.**B**	.1.3.6.1.4.1.23263.4.2.1.3.3.1.4.1.**B**
Server total sessions	Counter	EXCELIANCE-MIB::alServerSessionTotal.1.**B**.**S**	.1.3.6.1.4.1.23263.4.2.1.3.4.1.11.1.**B**.**S**
Server current queued sessions	Gauge	EXCELIANCE-MIB::alServerQueueCur.1.**B**.**S**	.1.3.6.1.4.1.23263.4.2.1.3.4.1.5.1.**B**.**S**
Server response errors	Counter	EXCELIANCE-MIB::alServerErrorResponse.1.**B**.**S**	.1.3.6.1.4.1.23263.4.2.1.3.4.1.16.1.**B**.**S**