

Get IPv6 addresses for perfSONAR

.net/There would be two ways I know of:

- Each host will spit out a JSON record of configuration, e.g.:

http://hcc-ps02.unl.edu/toolkit/services/host.cgi?method=get_summary

In this record you could search for the ipv6 info:

```
{
  "meshes": [
    {
      "toolkit_version": "4.0.2.1-1.el7.centos",
      "administrator": {
        "email": "ps@unl.edu"
      },
      "interfaces": [
        {
          "hostnames": {
            "counters": {
              "speed": 1000000000,
              "ipv4_address": [
                {
                  "iface": "ens1",
                  "ipv6_address": [
                    {
                      "mac": "78:2b:cb:68:a6:8c",
                      "mtu": 1500
                    }
                  ],
                  "external_address": {
                    "cpu_speed": "2926.076",
                    "globally_registered": 1,
                    "ntp": {
                      "location": {
                        "services": [
                          {
                            "sys_vendor": "Dell Inc.",
                            "is_client_uuid": "9B174686-3131-11E7-A152-EF0C47E4",
                            "is_vm": 0,
                            "distribution": "CentOS Linux 7.4.1708 (Core)",
                            "communities": [
                              {
                                "toolkit_rpm_version": "4.0.2.1-1.el7.centos",
                                "toolkit_name": "perfSONAR-Toolkit",
                                "cpu_cores": "8",
                                "cpus": "1",
                                "product_name": "PowerEdge R310",
                                "host_memory": 16
                              }
                            ]
                        }
                      ]
                    }
                  ]
                }
              ]
            }
          ]
        }
      ]
    }
  ]
}
```

Not every host may contain this data, of course.

- Instead of querying each host, you could use the lookup service. For example:

<http://ps-east.es.net:8090/lookup/records?type=host>

This will be another REST/JSON object, and the field in question would be the 'host-net-interfaces', e.g.:

<http://ps-east.es.net:8090/lookup/interface/3fdcf1b0-3cca-4c6f-826b-b4471fcc047a>

Then the value would be stored in 'interface-addresses':

```
{
  "expires": "2018-01-11T21:44:18.815Z",
  "interface-capacity": [
    {
      "interface-name": [
        {
          "ens1"
        }
      ],
      "interface-addresses": [
        {
          "2620:106:c009:41c1:fab:12ff:fe3d:4b38",
          "ps-owamp.colonialone.gwu.edu"
        }
      ],
      "interface-mtu": [
        {
          "9000"
        }
      ],
      "interface-mac": [
        {
          "F8:8C:12:3D:4B:38"
        }
      ],
      "state": "renewed",
      "type": [
        {
          "interface"
        }
      ],
      "uri": "lookup/interface/3fdcf1b0-3cca-4c6f-826b-b4471fcc047a",
      "ttl": []
    }
  ]
}
```

Using the latter we wrote a perl script (json-to-xml.pl) to get the web page <http://ps-east.es.net:8090/lookup/records?type=host> that provides a JSON file, and convert it to an XML file. This file has 328 entries with <host-net-ipv6-enabled>1</host-net-ipv6-enabled>. It also provides the hostname, city, country, lat longs:

<host-name>lpnhe-psb.in2p3.fr</host-name>

<location-city>Paris</location-city>

<location-country>FR</location-country>

<location-latitude>48.8484</location-latitude>

<location-longitude>2.3561</location-longitude>

One can then use entries of the form <host-net-interfaces>lookup/interface/ab1d1899-3a72-4635-abb8-28e981a2bc59</host-net-interfaces> to get the interface to use in a lookup of the form <http://ps-east.es.net:8090/lookup/interface/ab1d1899-3a72-4635-abb8-28e981a2bc59>. This gives output of the form:

```
{ "expires": "2018-01-13T07:35:51.150Z", "interface-capacity": [ "10000000000" ], "interface-name": [ "eth0" ], "interface-addresses": [ "134.158.159.86", "2001:660:3036:197:134:158:159:86" ], "interface-mtu": [ "1500" ], "interface-mac": [ "00:1b:21:81:83:e6" ], "type": [ "interface" ], "uri": "lookup/interface/ab1d1899-3a72-4635-abb8-28e981a2bc59", "group-domains": [ "in2p3.fr" ], "client-uuid": [ "4032B84E-31E9-11E7-9667-B393E181BD16" ], "state": "renewed", "ttl": [ ] }
```