

# Querying RRD MAs

## Background

This page shows how to query rrd ma's that exist out there.

An rrd ma is a perfsonar web service that allows us to determine the utilisation and capacity of a network link. Querying such services will enable network users and engineers to determine quickly the state of the network.

## List of RRD MA's

```
GEANT2,http://stats.geant2.net/perfsonar/RRDMA-access/MeasurementArchiveService,NMWG2v2_netutil,"",utilization,utilization
;GEANT2,http://mu.dante.org.uk:8092/perfSONAR-SQL-MA-1.0-RC6/services/MeasurementArchiveService,http://schemas.perfsonar.net/2.0,"",http://ggf.org/ns/nmwg/characteristic/utilization/2.0,http://ggf.org/ns/nmwg/characteristic/utilization/2.0
;GEANT2,http://mu.dante.org.uk:8092/perfSONAR-RRD-MA-2.0-RC8/services/MeasurementArchiveService,http://schemas.perfsonar.net/2.0,"",http://ggf.org/ns/nmwg/characteristic/utilization/2.0,http://ggf.org/ns/nmwg/characteristic/utilization/2.0
;CARNet,http://noc-mon.srce.hr:8090,NMWG2v2_netutil,"",utilization,utilization
;Cesnet,http://perfmonc.cesnet.cz:8080/axis/services/MeasurementArchiveService,NMWG2v2_netutil,"",utilization,utilization
GARR,http://srv4.dir.garr.it:8080/axis/services/MeasurementArchiveService,NMWG2v2_netutil,"",utilization,utilization
GRNET,http://gridmachine.admin.grnet.gr:8080/axis/services/MeasurementArchiveService,NMWG2v2_netutil,"",utilization,utilization
ISTF-J,http://selena.acad.bg:8080/axis/services/MeasurementArchiveService,NMWG2v2_netutil,"",utilization,utilization
;ISTF-P,http://selena.acad.bg:8090,NMWG2v2_netutil,"",utilization,utilization
MREN,http://perfsonar.cg.ac.yu:8080/axis/services/MeasurementArchiveService,NMWG2v2_netutil,"",utilization,utilization
PIONIER-RRD,http://loco4.man.poznan.pl:8080/axis/services/MeasurementArchiveService,NMWG2v2_netutil,PIONIER-Public,utilization,utilization
;PIONIER-SQL,http://loco4.man.poznan.pl:8100/axis/services/MeasurementArchiveService,NMWG2v2_netutil,PIONIER-Public,utilization,utilization
;RENATER,http://supervision-ipv6.renater.fr:8080/axis/services/MeasurementArchiveService,NMWG2v2_netutil,"",utilization,utilization
SEEREN,http://admin.seeren.org:8080/axis/services/MeasurementArchiveService,NMWG2v2_netutil,"",utilization,utilization
SURFnet,http://sonar1.amsterdam.surfnet.nl:8080/axis/services/MeasurementArchiveService,NMWG2v2_netutil,"",utilization,utilization
SWITCH,http://archive.sonar.net.switch.ch:8180/axis/services/MeasurementArchiveService,NMWG2v2_netutil,"",utilization,utilization
;Uninett,http://mi6.uninett.no:8090,NMWG2v2_netutil,UNINETT-uninett,ifInOctets,ifOutOctets
ESnet,http://meal.es.net:8080/axis/services/MeasurementArchiveService,NMWG2v2_netutil,"",utilization,utilization
;Fermilab,http://lhcopnmon1-mgm.fnal.gov:8080/axis/services/MeasurementArchiveService,NMWG2v2_netutil,"",utilization,utilization
RedCLARA,http://server2-saopaulo.lan.redclara.net:8085/perfsonar-RRDMA/services/MeasurementArchiveService,NMWG2v2_netutil,"",utilization,utilization
RNP,http://rnp-rrd-ma.gt-med.ufsc.br:8080/axis/services/MeasurementArchiveService,NMWG2v2_netutil,"",utilization,utilization
GEANT,http://gandalf.rrze.uni-erlangen.de:8090/gandalf/Hades/perfSONAR/MA,ippm,,ippm_aggregated,ippm_aggregated
;RIPE,http://gandalf.rrze.uni-erlangen.de:8090/gandalf/Hades/perfSONAR/MA,ippm,,ripe,ripe
;GEANT-test,http://gandalf.rrze.uni-erlangen.de:6040/services/MA/HADES/GEANT,ippm,,ippm_aggregated,ippm_aggregated
```

## Request

The request is a simple xml file which should be sent to the MA endpoint:

```
<?xml version='1.0' encoding='UTF-8'?>
<nmwg:message id="#message1"
  type="SetupDataRequest"
  xmlns:netutil="http://ggf.org/ns/nmwg/characteristic/utilization/2.0/"
  xmlns:topo="http://ggf.org/ns/nmwg/topology/2.0/"
  xmlns:nmwg="http://ggf.org/ns/nmwg/base/2.0/">

  <nmwg:metadata id="#metal">

    <netutil:subject id="#netutil1">
      <topo:interface>
        <topo:ifAddress type="ipv4">134.55.209.93</topo:ifAddress>
      </topo:interface>
    </netutil:subject>

    <nmwg:eventType>utilization</nmwg:eventType>

  </nmwg:metadata>

  <nmwg:data id="data1" metadataIdRef="#metal1"/>

</nmwg:message>
```

```
[~/Work/perfSONAR/perfSONAR-PS/trunk/perfSONAR-PS/client]$ ./client.pl \
  http://meal.es.net:8080/axis/services/MeasurementArchiveService \
  ~/Work/perfSONAR/rrdma/request.xml | tidy -xml -i -w 134 2>/dev/null
```

client.pl is a simple perl client that send/receives xml soap messages.

This results in the following output (note two <data> elements, one for in and one for out).

```
<nmwg:message xmlns:nmwg="http://ggf.org/ns/nmwg/base/2.0/" id="localhost.-9157eb7:111905a8f49:-25c3">
  <nmwg:metadata id="metal71">
    <netutil:subject xmlns:netutil="http://ggf.org/ns/nmwg/characteristic/utilization/2.0/" id="subj171">
      <nmwgt:interface xmlns:nmwgt="http://ggf.org/ns/nmwg/topology/2.0/">
        <nmwgt:hostName>slac-mr1.es.net</nmwgt:hostName>
        <nmwgt:ifName>GigabitEthernet4/4</nmwgt:ifName>
        <nmwgt:ifDescription>slac-rt4:ge::show:na</nmwgt:ifDescription>
        <nmwgt:ifAddress type="ipv4">134.55.209.93</nmwgt:ifAddress>
        <nmwgt:direction>in</nmwgt:direction>
        <nmwgt:authRealm>ESnet-Public</nmwgt:authRealm>
        <nmwgt:capacity>1000000000</nmwgt:capacity>
      </nmwgt:interface>
    </netutil:subject>
    <nmwg:eventType>utilization</nmwg:eventType>
  </nmwg:metadata>
  <nmwg:metadata id="metal72">
    <netutil:subject xmlns:netutil="http://ggf.org/ns/nmwg/characteristic/utilization/2.0/" id="subj172">
      <nmwgt:interface xmlns:nmwgt="http://ggf.org/ns/nmwg/topology/2.0/">
        <nmwgt:hostName>slac-mr1.es.net</nmwgt:hostName>
        <nmwgt:ifName>GigabitEthernet4/4</nmwgt:ifName>
        <nmwgt:ifDescription>slac-rt4:ge::show:na</nmwgt:ifDescription>
        <nmwgt:ifAddress type="ipv4">134.55.209.93</nmwgt:ifAddress>
        <nmwgt:direction>out</nmwgt:direction>
        <nmwgt:authRealm>ESnet-Public</nmwgt:authRealm>
        <nmwgt:capacity>1000000000</nmwgt:capacity>
      </nmwgt:interface>
    </netutil:subject>
    <nmwg:eventType>utilization</nmwg:eventType>
  </nmwg:metadata>
  <nmwg:data id="localhost.-9157eb7:111905a8f49:-25c4" metadataIdRef="metal71">
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</nmwg:data>
</nmwg:message>
```

Should the MA not support the `ifAddress` of the device provided, it will return an empty element:

```
<nmwg:message xmlns:nmwg="http://ggf.org/ns/nmwg/base/2.0/" id="localhost.-9157eb7:111905a8f49:66ea" />
```

## Advanced usage

The RRD MA's are supposed to support the `select` statements through metadata chaining; however, in tests, even with simple `startTime`, `endTime` parameters, the output seems unaffected.