NMIS Node Status

Introduction

NMIS (Network Management Information System) was developed as an Open Source Network Management System to provide information to IT professionals to support decision making, both operational and longer term. The goal was to provide a dashboard of the all the nodes being managed in a single view so that it is possible to rapidly identify where problems are with "traffic lights". Over the years we have learnt that people see information differently, and while some people see colours and arrows other see data textually, so for some people the details are lost in the colours.

In NMIS 8.5.6G we have returned to this goal and wanted to help people to view the data in different ways. We have done this by providing a new way to see the status of all nodes, this was done by introducing a trinary status, instead of just a node being **UP** or **DOWN**, nodes are now **reachable**, **degraded** or **runreachable**.

This page will describe some details on this new feature as well as the concept of the NMIS modes of classes, coarse and fine-grained for viewing status.

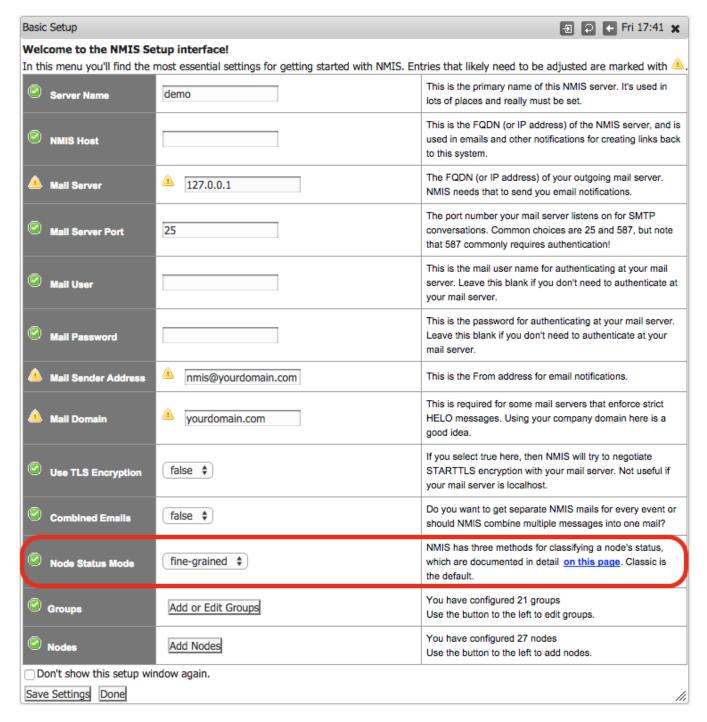
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Classic, Coarse or Fine-Grained

The NMIS dashboard has been working the same way for 15 years, and mostly people like it, that is the "classic" NMIS view, granular colours and information to help see the status of the network. However some people prefer a more coarse view, an Opmantek customer requested less granularity, that is if a node is down any node, don't be granular just make it be red and that way his operators would see it was red and act.

That gives us two dashboard modes, and we have a third optional mode, which is fine-grained. The fine-grained more is about nodes with "Reachable, Degraded and Unreachable" status, so you will see how many nodes are "down" being unreachable and how many nodes are degraded which means they are "up" but have some performance issue.

By default, NMIS8 will be in "classic" mode, you can select which mode you want with the new "Basic Setup" screen, reached from the menu "Setup -> Basic Setup", change the "Node Status Mode". The new Basic Setup screen looks like this:



When you change these settings, it may take one polling cycle (5 mins) for the dashboard to fully reflect the new status.

Manual Configuration of Node Status Mode:

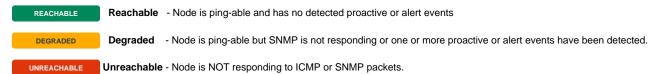
The configuration which relates to these modes are as follows and can be set in Config.nmis or Config.json

	classic mode	coarse mode	fine-grained mode
node_status_uses_status_summary	false	false	true
display_status_summary	false	false	true
overall_node_status_coarse	false	true	false

```
'node_status_uses_status_summary' => 'true', 
'display_status_summary' => 'true', 
'overall_node_status_coarse' => 'false',
```

Reachable, Degraded and Unreachable

The new optional trinary status provides an additional level of detail, this means:



So the new status is Degraded, this is there to reflect the KPI's for a node and show you that the node is up and working, but has some other performance condition active. Please read:

Calculating and affecting Node degraded status

The Gory Details of Classic Mode

Level Status - Normal, Warning, Minor, Major, Critical

The level status is intended to provide some prioritisation to the customer, for example if a Node which has the role Core is down, its status would be Critical, while an access node would be Major. The actual policy is configurable and defined in the NMIS Model file, /usr/local/nmis8/models/Commonevent.nmis and for node down looks like this:

```
'node down' => {
    'core' => {
        'logging' => 'true',
        'level' => 'Critical'
},
    'access' => {
        'logging' => 'true',
        'level' => 'Major'
},
    'distribution' => {
        'logging' => 'true',
        'level' => 'Major'
},
```

How these get calculated? % NodeUp (NodeDn) + role weight (access vs core)?

Overall Node Status for all nodes or for a group is calculated in the subroutine overallNodeStatus in /usr/local/nmis8/lib/NMIS.pm
First the status for each node in the group or in the entire network is calculated and summarised, so we end up with a count of how many nodes are Normal, Minor, Major, Critical, based on the Common-event.nmis policy described above.

Now we add those together weighted as follows:

Then if there is more than one node, we map an overall status to that weighting.

```
if ( $status_number == 100 ) { $overall_status = "Normal"; }
elsif ( $status_number >= 95 ) { $overall_status = "Warning"; }
elsif ( $status_number >= 90 ) { $overall_status = "Minor"; }
elsif ( $status_number >= 70 ) { $overall_status = "Major"; }
elsif ( $status_number >= 50 ) { $overall_status = "Critical"; }
elsif ( $status_number <= 40 ) { $overall_status = "Fatal"; }
elsif ( $status_number >= 30 ) { $overall_status = "Disaster"; }
elsif ( $status_number <= 30 ) { $overall_status = "Catastrophic"; }</pre>
```