

# Using Unique Identifiers (UUID) for NMIS Nodes

UUID's for Nodes in NMIS is now fully integrated and just work, especially when using the GUI or the tools to maintain nodes, you will not need to worry about them.

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## Problems with UUID's

### Error Message: the improbable has happened

You might see an error message like this:

```
ERROR: the improbable has happened, a UUID conflict has been found for 59A2847C-8D41-11E2-A990-F38D7588D2EB,
between YINYANG and FOOBAR
```

The most likely thing to have occurred is that someone cloned/copied the node YINYANG and called it FOOBAR, changed other settings but not the UUID.

To fix this problem, just delete the UUID from the newly added node and NMIS will automatically create a new UUID and update the system automatically.

## Original Documentation

### Prerequisites

NMIS version 8.3.19G or greater.

The perl library Data::UUID to be installed.

Unix Shell access to the NMIS server and suitable Unix privileges to edit the NMIS configuration files, usually a member of the group "nmis" or the root user.

### Summary

Some NMIS users require a Unique Identifier for each node, so Opmantek has added this for those users who require it. To have NMIS add a UUID for each node, you can enable this to be added and exported as required. This capability uses Custom Tables to have NMIS add a UUID when adding a node.

A UUID might be useful or required when integrating NMIS with third party applications like HP Service Manager, or when using NMIS as your source of truth for integration with a CMDB or other database system.

A new module has been added in NMIS 8.3.19G called NMIS::UUID, this is required to support UUID's.

### Adding UUID Support

Modify the file `/usr/local/nmis8/conf/Table-Nodes.nmis` and add the following code.

```

use NMIS::UUID;

--snip--

my $uuid;
if ( $C->{uuid_add_with_node} eq "true" ) {
    $uuid = getUUID();
}

--snip--

{ uuid => { header => 'UUID',display => 'header,readonly',value => ["$uuid"] }},

```

In context these changes look like this:

```

use NMIS;
use Auth;
use NMIS::UUID;
my $C = loadConfTable();
# variables used for the security mods
my $AU = Auth->new(conf => $C); # Auth::new will reap init values from NMIS::config
# Calling program needs to do auth, then set the ENVIRONMENT before this is called.
$AU->SetUser($ENV{'NMIS_USER'});
my @groups = ();
my $GT = loadGroupTable();
foreach (sort split(',',$C->{group_list})) { push @groups, $_ if $AU->InGroup($_); }
my @nodes = ();
my $LNT = loadLocalNodeTable(); # load from file or db
foreach (sort {lc($a) cmp lc($b)} keys %{$LNT}) { push @nodes, $_ if $AU->InGroup($LNT->{$_}{group}); }
my @models = ();
if ( opendir(MDL,$C->{'<nmis_models>'}) ) {
    @models = ('automatic',sort {uc($a) cmp uc($b)} (grep(s/^Model-(.*)\.nmis$/l/,readdir MDL)));
} else {
    print Tr(td({class=>'error'},"Error on loading models names from directory $C->{'<nmis_models>'}"));
}
closedir(MDL);
my $uuid;
if ( $C->{uuid_add_with_node} eq "true" ) {
    $uuid = getUUID();
}
return (
    Nodes => [ # using an array for fixed order of fields
        { name => { header => 'Name',display => 'key,header,text',value => [""] }},
        { uuid => { header => 'UUID',display => 'header,readonly',value => ["$uuid"] }},
        { host => { header => 'Name/IP Address',display => 'header,text',value => [""] }},
    ]
);
--snip--

```

## Not adding UUID when node added

You can use the configuration `uuid_add_with_node` set to true to enable a UUID to be added or disable it with false to allow the other methods to maintain the UUID.

```
'uuid_add_with_node' => 'true',
```

## Including the UUID in the Export

The sample script `/usr/local/nmis8/admin/export_nodes.pl` has been modified to include the UUID in the export. You can review this code to see how it is added. This code also uses the method `createNodeUUID` to create UUID's which might be missing from the nodes file.

## Adding and Auditing UUID for Nodes

A script has been included `/usr/local/nmis8/admin/uuid_update_nodes.pl` which will add any missing UUID's as well as maintain/update the file `/usr/local/nmis8/conf/UUID.nmis` which is a two way index for determining the UUID of devices and visa versa. The error below was introduced intentionally.

```
[keiths@nmisdev64 nmis8]$ admin/uuid_update_nodes.pl
0.00 Begin
ERROR: the improbable has happened, a UUID conflict has been found for 59A2847C-8D41-11E2-A990-F38D7588D2EB,
between YINYANG and FOOBAR
0.02 Begin
```