

# Node Administration with opnode\_admin

**NOTE:** This documentation is only relevant to Opmantek Products with NMIS8, when using NMIS9 node\_admin.pl performs all necessary node administration functions for NMIS, opConfig and opEvents.

## For NMIS9 and op Modules

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opConfig and opEvents provide a number of different methods for managing nodes, both GUI-based and commandline-oriented. This document describes the commandline tool opnode\_admin.pl.

## Basic Operation

The opnode\_admin tool is installed by default as /usr/local/omk/bin/opnode\_admin.pl. It is scriptable and pipelineable, and can perform all node-related operations: creation, updating, renaming, exporting and deletion of nodes.

Run the tool with no options or -? or -h and it'll display a simple help page:

```
/usr/local/nmis9/admin/opnode_admin.pl
Usage: opnode_admin.pl act=[action to take] [extras...]
    opnode_admin.pl act=list
    opnode_admin.pl act={create|export|update} node=nodeX
    opnode_admin.pl act=delete node=nodeX [deletedata=0/1]
    opnode_admin.pl act=show node=nodeX
    opnode_admin.pl act=set node=nodeX entry.propname=value...
    opnode_admin.pl act=mktemplate [placeholder=1/0]
    opnode_admin.pl act=rename old=nodeX new=nodeY
mktemplate: prints blank template for node creation,
    optionally with __REPLACE_XX__ placeholder
create: requires file=NewNodeDef.json
export: exports to file=someFile.json (or STDOUT if no file given)
update: updates existing node from file=someFile.json (or STDIN)
delete: only deletes if confirm=yes (in uppercase) is given
node events and config information are deleted only if deletedata
is 1 or true.
show: prints the nodes properties in the same format as set
set: adjust one or more node properties
```

## Node Listing, Viewing and Exporting

Given the argument act=list, opnode\_admin will print a list of all known node names.

Version 2.70.0 onwards prints its two lines of header only when displaying to a terminal; with older versions you'll have to exclude these lines if you want to reuse the data.

To save a node's config information, run admin/opnode\_admin.pl act=export node=somenodename, and it'll print the node's configuration in JSON format to your console. If you want to save that data in a file, either add the argument file=somefilename.json. Here is an example of what to expect:

```
./bin/opnode_admin.pl act=list
Node Names:
=====
bne-server1
bne-switch1
build
char-router1
...
```

To see a node's properties in a relatively human-friendly form you should use `act=show`; it'll present the properties in a 'dotted-path' notation, like this:

```
./bin/opnode_admin.pl act=show node=mel-router1
entry.active=true
entry.activated.opConfig=1
entry.activated.opEvents=1
entry.customer=Sales
entry.group=Melbourne
entry.host=mel-router1
entry.nodeModel=CiscoRouter
entry.nodeType=router
entry.nodeVendor=Cisco Systems
entry.nodedown=false
entry.processorRam=99.61 Mb
entry.softwareImage=C1841-ADVENTERPRISEK9-M
entry.softwareVersion=12.4(25f)
entry.sysContact=default
...
```

Exporting all of a node's configuration (in JSON format) works like this, if you don't specify an output file to save the data in:

```
./bin/opnode_admin.pl act=export node=mel-router1
{
  "InstalledModems" : 0,
  "active" : "true",
  "addresses" : [],
  "customer" : "Sales",
  "depend" : "N/A",
  "group" : "Melbourne",
  "host" : "mel-router1",
  "host_addr" : "",
  ...
}
```

## Node Updating

Naturally `opnode_admin` does not just export node data, but also consumes it for modifying a node in place and for creation of new nodes. There are two modification operations: `act=set` and `act=update`:

- `act=set` works best for adjusting a few individual properties. Its advantage is that doesn't require a full export of the node data.
- `act=update` works best for big modifications, and expects you to supply a complete node config in JSON format.

### Relative updates, changing just a few properties

For example, to change a node's `opConfig` activation field to false (so that `opConfig` does not attempt to communicate with the node) you'd certainly use `act=set`, like this:

```
./bin/opnode_admin.pl act=set node=mel-router1 entry.activated.opConfig=0
Successfully updated node "mel-router1"
```

Any number of arguments of the form `entry.<propertypath>=<somevalue>` can be given, and all identified properties will be updated in one operation.

Please note that you cannot set authentication-related sensitive properties (like the snmp community, for example) using `opnode_admin act=set`; these are ignored and a warning is shown.

## Absolute updates, setting all properties

To change all of a node's configuration (**except** node renaming!), simply dump the node configuration with `act=export`, then edit the exported data suitably and finally perform the change with `act=update` and the exported data as input. Both operation require that you give the node name in question, and both work either from files (with a `file=somefile.json` argument), or via STDOUT/STDIN/pipeline.

For example, this pipelined invocation would change a node's misspelled group property:

```
./bin/opnode_admin.pl act=export node=mel-router1 | sed -e 's/WorngGroup/correctgroupvalue/' | ./bin
/opnode_admin.pl act=update node=mel-router1
```

You can also explicitly pass the argument `file=-` to indicate that STDOUT should be used for export or STDIN be used for update/creation. Please note that the `act=update` operation doesn't create new nodes or rename nodes, and that it **replaces** the whole set of node configuration settings with your new configuration input.

## Creation of Nodes

Node creation is triggered by the argument `act=create`, which behaves mostly like `act=update`, except that it doesn't touch existing nodes. To help you with starting a node configuration document from scratch (or in a scripted fashion), there is another command, `act=mktemplate`, which prints a blank but documented template which you can save and fill in. If you add `placeholder=1` to the command line, then `opnode_admin` fills the template with easily matchable replacement placeholders, like so:

```
./bin/opnode_admin.pl act=mktemplate placeholder=true
// Please see https://community.opmantek.com/display/opCommon/Common+Node+Properties for detailed descriptions
of the properties!
...lots more hopefully helpful comments
{
  "activated" : {
    "opAddress" : "__REPLACE_opAddress_ACTIVATION__",
    ...
  }
}
```

This makes it very easy to fill in the template with a script or some other external tool.

## Node Renaming

To rename nodes you should use `act=rename` which requires both old and new node names with arguments `old` and `new`, respectively. This operation first changes the configured node name, and then adjusts most database entries related to the node in question:

- If `opEvents` is installed and licensed, all existing events for the renamed node will be rewritten to refer to the new node name.
- if `opConfig` is installed and licensed, then all existing command outputs for the renamed node will be updated to refer to the new node name.

## Deleting Nodes

To remove a node (but not its historic data) simply run `opnode_admin` with the argument `act=delete node=ripnode`, plus the option `confirm=YES` (must be uppercase) to make `opnode_admin` actually perform the deletion.

This removes only the node configuration information but not existing `opEvents` or `opConfig` data for the node. To delete these as well, you can add the option `deletedata=1` to the command, and all data related to this node will be removed permanently.