opCharts 3 Users & Roles (Authentication & Authorization)

Overview

opCharts 3 introduces a new authorization system for MSP's which runs in parallel to the original system, so there are 2 modes running in parallel. Administration of the new "portal" system can only be done by a user with opCharts admin access from the original authorization system.

The new authorization system works by assigning CRUD (create/read/update/delete) privileges for a resource (chart/map/business service) to a role. Users are given a role which allows them to perform the privileges assigned to the role.

The first step in configuring a new user is to create a role, then create a new user who has that role. Last, find a resource and give the role privileges to access it. The examples below use the GUI to perform all operations, the CLI tool section outlines how to perform the same operations from the CLI (which is useful for scripting, exporting and importing).

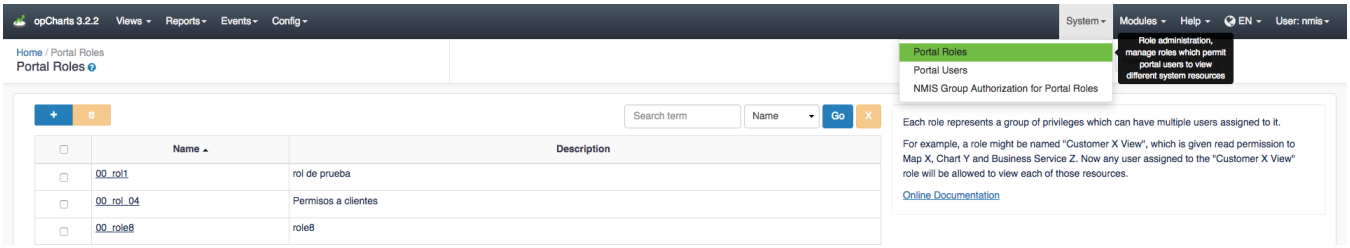
New Portal User/Role mode

Portal Roles

Each role represents a group of privileges which can have multiple users assigned to it. For example, a role might be named "Customer X View", which is given read permission to Map X, Chart Y and Business Service Z. Now any user assigned to the "Customer X View" role will be allowed to view each of those resources.

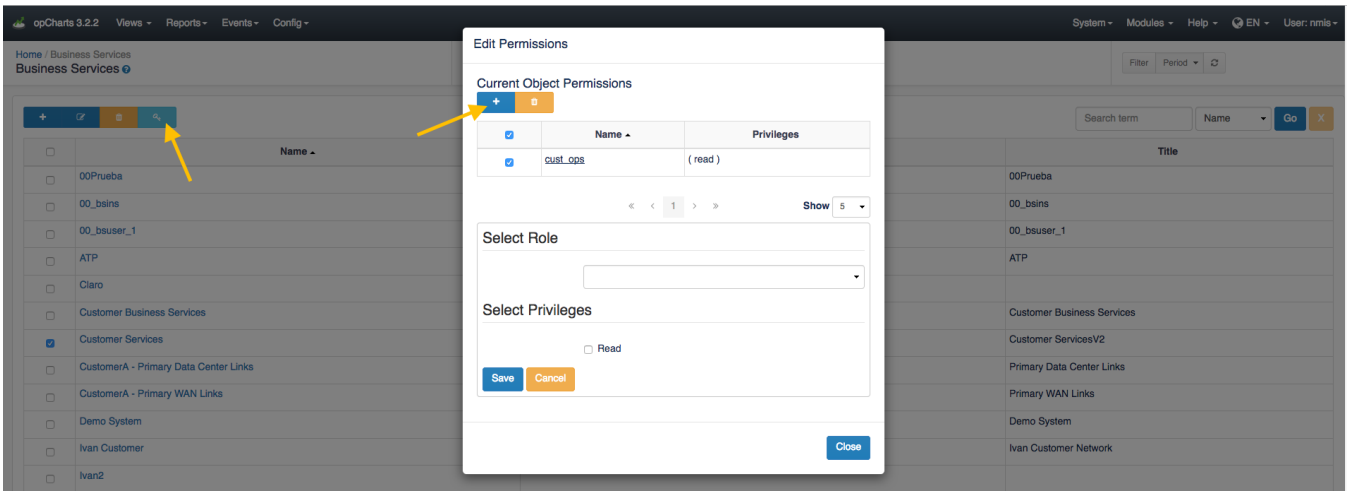
Create/Edit

Roles are created and updated from the GUI by using the "System-> Portal Roles" menu option, only administrators can create/update/delete roles.



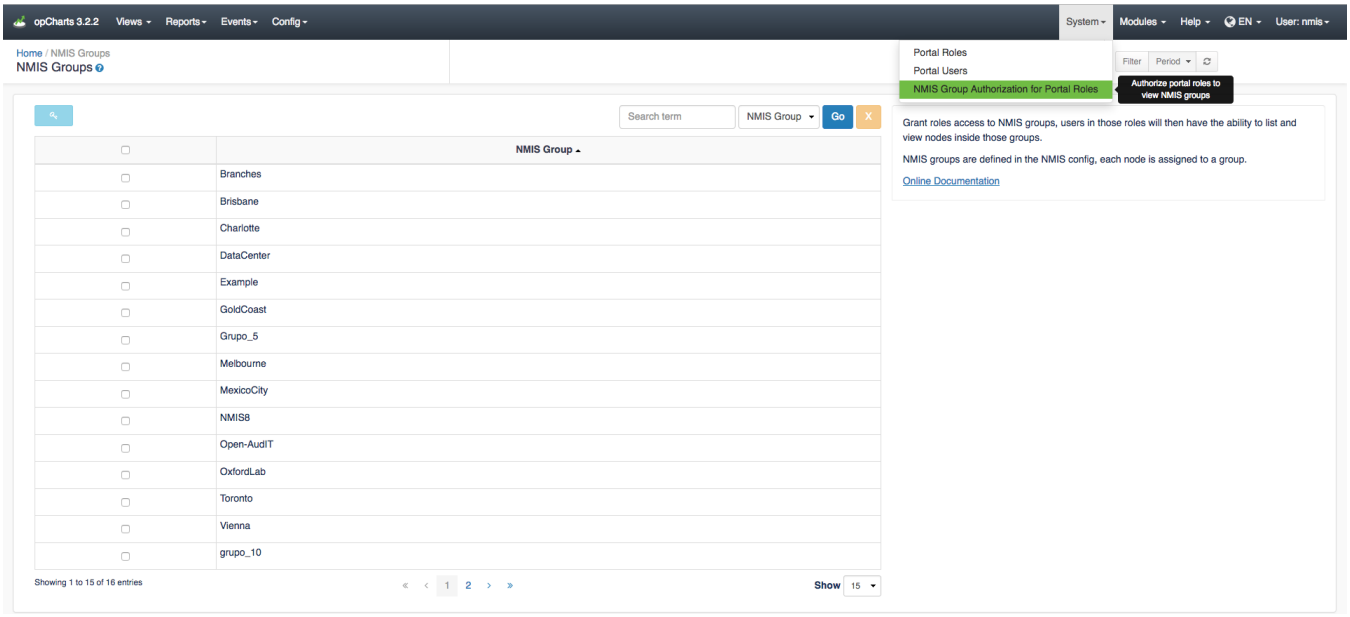
Assign Privileges

To assign privileges to a role, navigate to a resource list, Views-> (charts/maps/business services), select a specific resource checkbox from the grid and click the permissions button located in the light blue box with a key icon on it. A modal will appear listing the current permissions, press "+" in the top left corner, select the desired role and action and save.



NMIS Groups

Once a Role is created you **can** assign NMIS Groups to that role. This enables the Nodes view in opCharts and allows the Role to view devices within that group. Once a Group is assigned to a Role the user will see the Nodes view as the default Dashboard when logging into opCharts.



Users

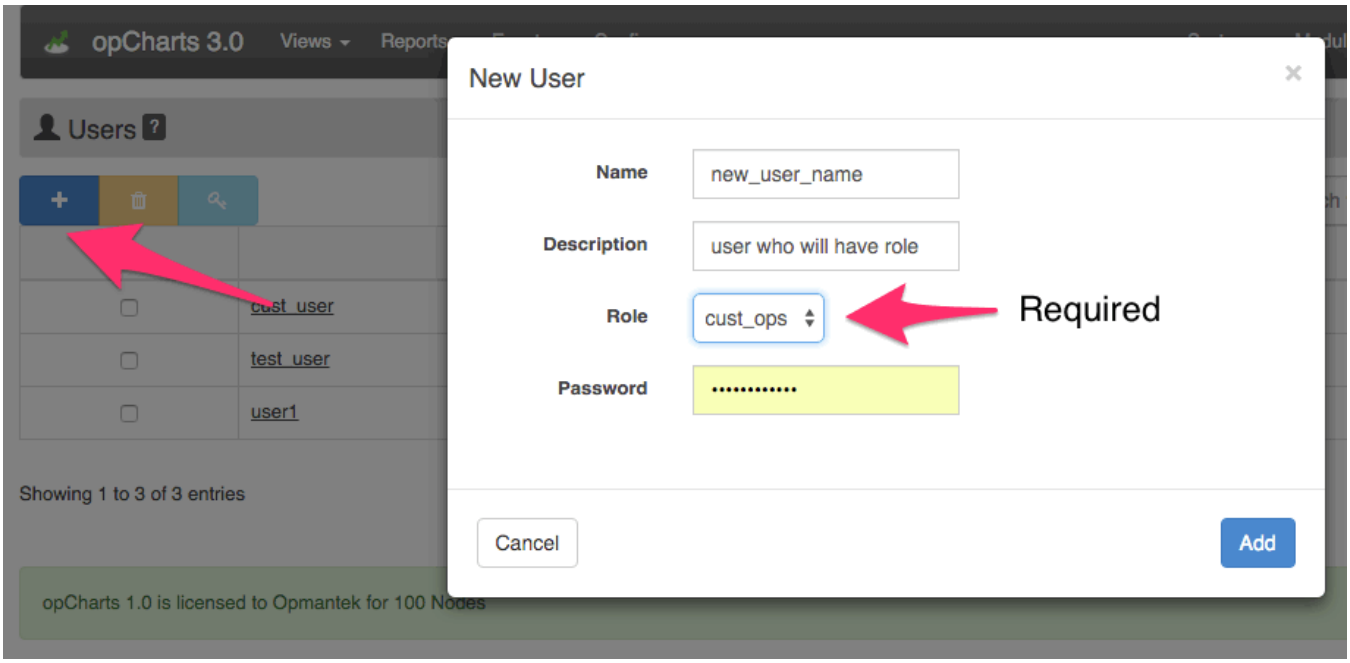
Users are given privileges by being assigned to a role. When the user logs in, they will be directed to a page showing resources they have access to. The Views GUI menu will show links to other resources they also have access to.

Create/Edit

Users are created and updated from the GUI by using the "System-> Portal Users" menu option, only administrators can create/update/delete users. Users must be assigned a role (make sure one exists before adding a new user).

Note: The User Name must be unique and cannot exist in the OMK auth system (i.e. htpasswd, ms-ldap, etc) or a mismatch will occur.

Note: If in opCommon.nmis an external auth_method such as an LDAP server has been provisioned we may not set a user password.



Resources (charts/maps/business services)

Resources are the objects that privileges are granted on, these are the things you want users to see but you only want them to see the ones they have access to see.

Assigning privileges to resources is described in the Roles section.

Resource paths are used when granting users/roles access to resources from the CLI. These paths are:

Resource	Path
Charts	/root/opcharts/chart/<chart_name>
Maps	/root/opcharts/map/<map_name>
Business Services	/root/opcharts/business_service/<business_service_name>
Dashboards	/root/opcharts/dashboard/<dashboard_name>

CLI Interface (oprbac_admin.pl)

The oprbac_admin.pl program gives you access to all functions that the GUI provides but also has more functionality which may not be visible from the GUI. The help text from oprbac_admin.pl describes it's basic usage

```
Usage: oprbac_admin.pl act=[action to take] [extras...]

oprbac_admin.pl act=list-{users|roles|privs|objects} [verbose=0]
verbose: include data beyond name and description

oprbac_admin.pl act=export-{user|role|priv|object} {name=...|path=...} [file=path]
file: save JSON to file, otherwise printed to STDOUT.

oprbac_admin.pl act=delete-{user|role|priv|object} {name=...|path=...}
deletes the indicated record.

oprbac_admin.pl act={create|update}-{user|role|priv|object} [name=...] [description=...] [property.xyz=...]
[file=path]
file: read JSON from file and update record with that data.
property: each property value can be a deeper structure encoded in JSON, set to 'undef' if property no longer
wanted

oprbac_admin.pl act=update-user {name=...} [roles|privileges][=|+=|-=]name[,...]
oprbac_admin.pl act=update-role {name=...} privileges[=|+=|-=]name[,...]
= replaces, += adds and -= removes the named roles or privileges. comma-separated lists of names are supported.

oprbac_admin.pl act=check-access user=userX action=actionY object=pathZ
 [verbose=0]
returns 1 if the user is authorized to perform the given action.

oprbac_admin.pl act=prune-orphans
removes unused orphaned privilege entries.
```

More advanced functionality and processes are listed below

Grant a Role access to an Object (NMIS Group in this case) (opCharts 3.0.6 and later)

Granting access to different resources in opCharts is done by creating an object in RBAC that represents the resource in opCharts and then granting a role privileges to that object. The object that is created is linked to the opCharts resource through a path, most of these paths can be found in a table in the Resources section. In this instance we will grant access to an NMIS Group, the path for this is /root/opcharts/group/<group_name>.

1. Create a privilege, this could be auto-created for us when doing other actions but then we would have to look up the name or id created by parsing output. I've named it 'group_branches_read' because I intend for it to represent the ability to read the branches group, it can be named whatever you want (as long as it is unique).
2. Create an object that represents the group by giving the correct path (with the group name), and tell that object that read permissions are granted using the privilege name from step #1.
3. Create a new role, and give the role our privilege.

```
nmis64:bin root$ ./oprbac_admin.pl act=create-priv name=group_branches_read
created new privilege (internal id 582ba442a77ea70da3448f11)
nmis64:bin root$ ./oprbac_admin.pl act=create-object path=root,opcharts,group,Branches
read_privileges=group_branches_read
created new object
nmis64:bin root$ ./oprbac_admin.pl act=create-role name=BranchesRole privileges=group_branches_read
created new role (internal id 582ba4c9a77ea70dcf4c2ea1)
```

In the GUI you should now see that group "Branches" has a new role listed with read permissions. The privilege "group_branches_read" could be used to access to other objects as well.

`oprbac_admin.pl` also allows updates so if the role in question already exists and you want to add a new privilege just use `act=update-role` and either set or add the new privilege (with `privileges=<newpriv>` or `privileges+=<newpriv>`, respectively).

Add or edit Role properties (opCharts 3.0.7 and later)

Roles (and Users) can have properties attached to them which can then be used as substitutions in charts using SQL. The property name can be anything and when creating SQL can be accessed via 'user.property_name'.

Properties set on roles eventually trickle down into the user and it is possible to set properties directly on a user. If the same property name is set on a user and a role the value set on the user will win over the value set in the role (as it's the most specific).

The following example uses new users and roles, this also works with existing users/roles.

1. Create a new role (System-> Portal Roles)
2. Create a new user and assign them to the role you have created (System -> Portal Users)
3. In the terminal use the oprbac_admin.pl tool to assign a new property to your role (cannot be done in GUI)

```
# view the roles available on the server
nmis64:bin root$ ./oprbac_admin.pl act=list-roles
Name                Description
role1                role1

# set the property 'customer_id' on the role
nmis64:bin root$ ./oprbac_admin.pl act=update-role name=role1 property.customer_id=abc123xyz
updated role.

# view the roles again, this time using verbose to see the properties
nmis64:bin root$ ./oprbac_admin.pl act=list-roles verbose=1
Name                Description               Properties               Privileges
role1                role1               customer_id=abc123xyz
```

To use the new property:

1. Export your chart defintion using opcharts-cli.pl to a file
2. Edit your chart definition, in the SQL you can use the new property name, eg.user.customer_id (all properties from the user that you have set on the role/user are available using 'user.')
3. Use opcharts-cli.pl to import the altered chart definition (note, import has a force=1 option so you can overwrite existing definitions making it easier to iterate).

```
#export
nmis64:bin root$ perl ./opcharts-cli.pl act=export-charts name="SQL Test With Customer" file=/tmp/chart.
json

# modify the query to use the new property
nmis64:bin root$ vi /tmp/chart.json
      "query" : "select * from test_table WHERE Company = user.customer_id",
# re-import
nmis64:bin root$ ./opcharts-cli.pl act=import-charts name="SQL Test With Customer" file=/tmp/chart.json
force=1
chart SQL Test With Customer deleted

#test chart
```