Enigma NMS – User Visibility Logic

Enigma NMS system design allows different users to have different visibility rights for "**Nodes**" and "**Clients**" objects.

For example you may require following scenario:

1. Users who have visibility of all nodes, regardless of the clients they belong to.
2. Users who have visibility of some but not all nodes, which belong to some but not all clients.
3. Users who have visibility of nodes, which belong to only their own client.

The user visibility rights are controlled by following relationships:

Node --> Client --- One Node can belong to only one client
Client --> Primary Workgroup --- One Client can belong to only one primary workgroup
**Client --> Multiple Secondary Workgroups** --- One Client can also belong to many secondary workgroup, Client --> Secondary Workgroup relationship has special flag "Node Modify Enabled"
Person --> Client --- One person can belong to only one client
Person --> Workgroup --- One person can belong to only one workgroup

Workgroup (a.k.a. User Group, a.k.a. Support group) has special flag "Admin Flag" which if set to "Y" allows all members of this workgroup to see nodes for clients, which are linked to other workgroups.

Please consider following scenario, where the entire Enterprise Network Domain needed to be split into four smaller administrative domains based upon different geographical locations:
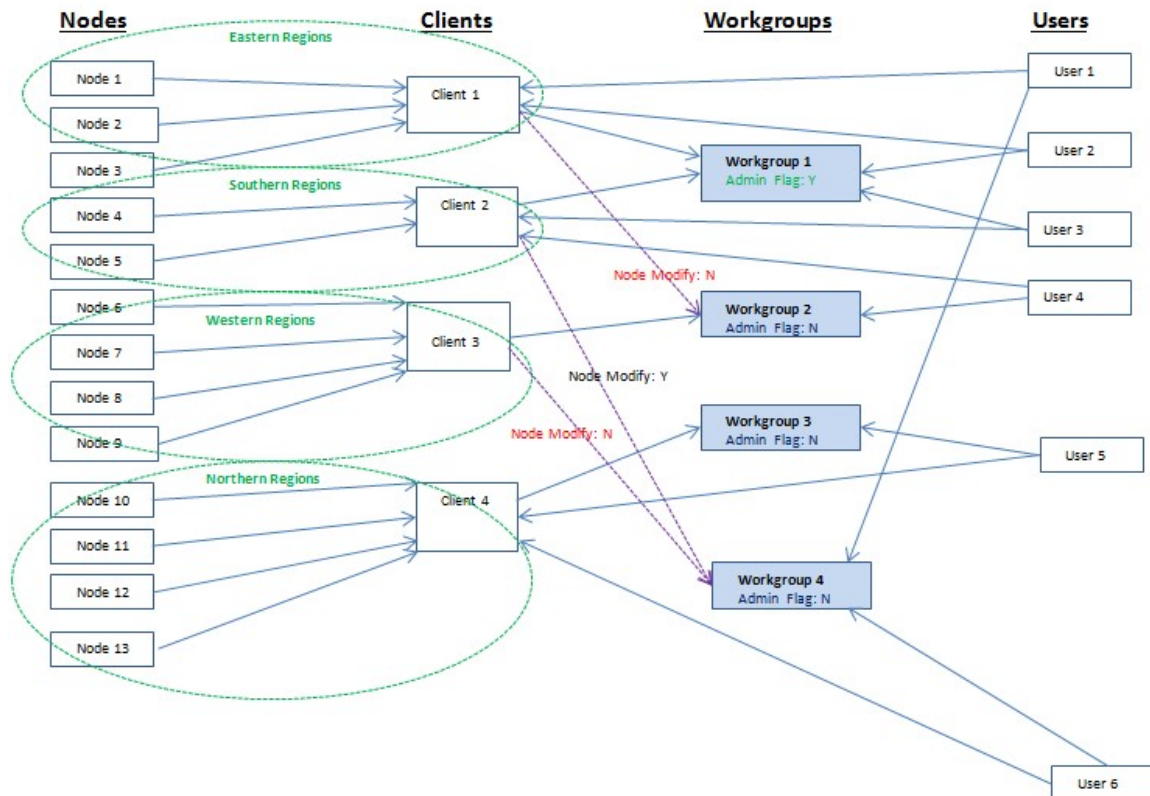
Where Clients in above diagram are

Client 1 – **Eastern Regions**
Client 2 – **Southern Regions**
Client 3 – **Western Regions**
Client 4 – **Northern Regions**

*Note: Object **"Client"** in Enigma NMS can mean different things, depending on the structure of your organization. In some cases like ISP, "**Client**" could be the customer you provide services to, or it could one of your administrative domain if you are a large corporation, or if you are a government entity, "**Client**" could mean one of your internal departments. What criteria you use for "**Client**" definition is totally up to you.

We have following network support arrangements in place:

Client to Primary Workgroup relationships:

- Client 1 is supported by Workgroup 1
- Client 2 is supported by Workgroup 1
- Client 3 is supported by Workgroup 2
- Client 4 is supported by Workgroup 3

Client to Secondary Workgroup relationships:

- Client 1 to Workgroup 2 with "Node Modify" flag: "N"
- Client 2 to Workgroup 4 with "Node Modify" flag: "Y"
- Client 3 to Workgroup 4 with "Node Modify" flag: "N"

*Note: Workgroup 4 does not have any linked clients via **Client to Primary Workgroup relationships**, but has Clients 2 and 3 linked via **Client to Secondary Workgroup relationships**, each with relevant "Node Modify Enabled" flags (Client 2 = "Y", Client 3 = "N"), so the users who belong to this group will be able to see and modify nodes for Client 2 and to see only without being able to modify node records for Client 3:

- User 1 can see Nodes for Client 1, because he belongs to Client 1 and also can see Nodes for Client 2 and 3 but he won't be able to modify node records, which belong to Client 3
- User 6 can see Nodes for Client 4, because he belongs to Client 4 and also can see Nodes for Client 2 and 3 but he won't be able to modify node records, which belong to Client 3

Workgroup 1 is the "**NMT (Network Management Team)**" with Admin Flag set to "**Y**", members of this group need visibility of the entire network domain. But modification rights of members of this workgroup will be affected by the relevant "Node Modify" flag if **secondary relationship** exists between the client and NMT workgroup.

*Regardless which clients members of NMT Workgroup belong to, they will have the same visibility rights:

- User 1 belongs to Client 1
- User 2 belongs to Client 2

You may ask why not all clients are linked to Workgroup 1 (**NMT)**. There could various reasons:

a. Geographical proximity of Workgroup 1 to the Sites of Clients 1 and 2, while Sites for other clients are closer to location of Workgroups 2 and 3

b. Destinations for Email Notifications (Workgroup properties) for Clients 3 and 4 need to be different from Clients 1 and 2.

c. Certain users may need to see the Nodes, which belong to more than one client but not all clients.
Please take a look at User 4, who belongs to Client 2 and Workgroup 2. Note that Workgroup 2, which has "**Admin Flag**" set to "**N**" and has only linked Client 3 via Primary Workgroup and linked to Client 1 via Secondary Workgroup with Node Modify flag set to N. Because of that, User 4 can see Nodes for Client 3 (via Workgroup 2 linkage), for Client 2, which User 4 directly belongs to, but also he can see Nodes, which belong to Client 1, via Secondary Workgroup relationship without being able to modify node records because "Node Modify" flag is set to "N".

d. Organizational separation.

Please Note that "Node Modify" flag, which applied to Client → Secondary Workgroup relationship, will overwrite User's Authorizing Officer Flag even for members of the Workgroup with Admin Flag set to "Y"

Users 2 and 3 belong to different clients but because they both are members of Workgroup 1 (NTM) with "**Admin Flag**" set to "**Y**" they can see everything.

User 5, who is a member of Workgroup 3, can see only Nodes for Client 4, because not only User 5 belongs to Client 4 but also Client 4 belongs to Workgroup 3, and User 5 is a member of this group.

Workgroup 4 does not have any linked clients via primary Workgroup relationships but has Clients 2 and 3 linked via the secondary Workgroup relationship and hence members of this group i.e. Users 1 and 6 can see nodes for their respective clients as well for clients 2 and 3, note that Users 1 and 6 won't be able to modify nodes in Client 3.

The above logic is used as a filter in all views across the system, so by manipulating these relationships to can create custom visibility rights for all your users.

The same relationships are used for creation of flexible notification logic, which will be covered in the next section.

Enigma NMS – Alert Notification Logic

This section will explain how the alert notification logic works.
There are few prerequisites for the email function to work:

1. Properly define DNS Name Servers, which can found under:
   Main Menu → SYSTEM/ADMIN → System Settings → Select DNS Category
   To configure the DNS, please click on "Dns Primary Name Server" and click on Modify Icon (Pencil).
   If you have secondary DNS Name Server to the same for the "Dns Secondary Name Server"

2. Properly defined SMTP Gateway, which can found under:
   Main Menu → SYSTEM/ADMIN → System Settings → Select MAIL Category
   To configure the Mail Exchange Server, please change the "Sendmail Smart Relay". Please note that it has to be fully qualified domain name and your SMTP Gateway should be configured to accept Enigma NMS email.

3. Optionally you may need to configure "Sendmail Masquerade As Domain" and "Source Email Address" system setting, which also can be found in the "MAIL" System Settings Category.

Generally email alerts are sent according to the following object relationships:

- **Interface → Node → Client → Workgroup → On-Call User**

Above logic can be over-written by the following relationship

- **Node → Cluster** and/or
- **Interface → Cluster**

If Enigma cluster, which is Enigma way to group various objects including Clients, Sites, Nodes, Interfaces, Server Processes and Applications has defined "Notification Email Address" field with the Role set to "Explicit".

Please see the following diagram, which is variation of the above diagram, but this time it shows only following object relationships:
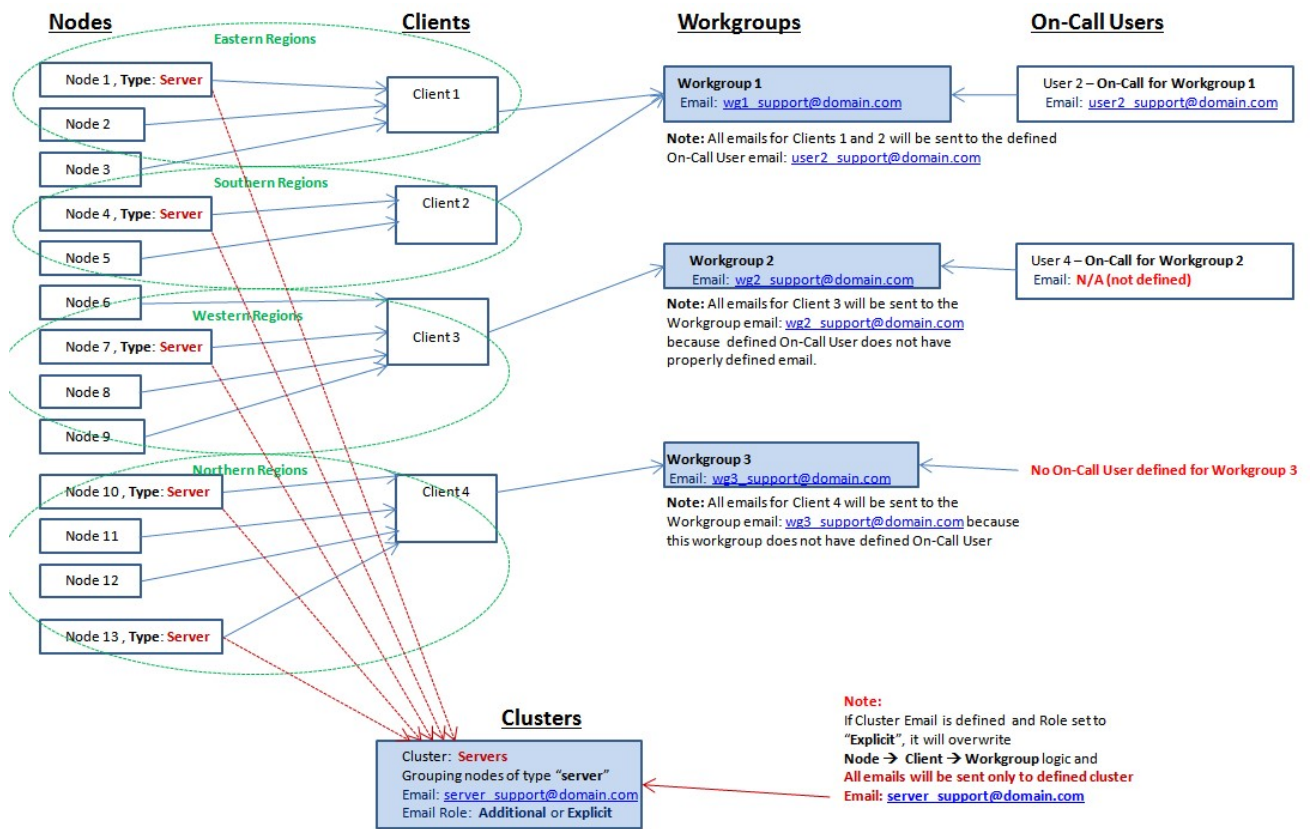
Generally email alerts are sent according to the following object relationships:

- **Interface → Node → Client → Workgroup → On-Call User**

Workgroup: Network Management Team (NMT)

Workgroup Name:	**Network Management Team**
Workgroup Code:	**NMT** All Clients for NMT
Workgroup Manager:	John Smith Email: support@netsas.com.au
Admin Flag:	Y
Workgroup Email Addr:	support@netsas.com.au
Workgroup Email-2-SMS Address:	
Workgroup On-Call:	John Smith Email: support@netsas.com.au
Workgroup On-Call Mobile Number: Please note: Mutiple numbers could be used, need to be separated by ";", ":", "," If configured it **will over-write system-wide setting**	**0412564678**

Note couple of fields underscored by red line.

If the "Workgroup's On-Call" person is defined and he/she has properly defined email, then all emails will be sent to this person.

If the "Workgroup's On-Call" is not defined or does not properly email, then emails will be sent to "Workgroup Email Addr" if it is defined.

Above logic can be over-written by the following relationship

- **Node → Cluster** and/or
- **Interface → Cluster**

For example, you may have some critical trunks in you network infrastructure which needs to be closely monitored and alerts for which should not be missed and your Level 3 support engineers should be alerted in addition to Level 1 NOC support operators. In this case you will need to group these interfaces into the Cluster and define "Level 3 support engineers" group email address as "Notification Email Address" of this cluster.

Please see following screenshot:

The "Role" setting will determine how the Cluster "Notification Email Address" field will function.