

Advanced Filters



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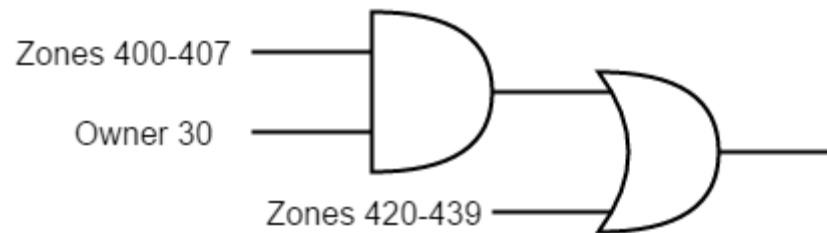
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How Do I Do This?



- Customer request
 - *In short, I am looking for a filter that includes all facilities in Zones 420-439 plus the facilities in Zones 400-407 with an owner number of 30 that I can apply to the Buses, Branches Input, Generators, Loads and Switched Shunts displays in Model Explorer.*



Apply Filter of One Object Type to a Different Object Type



- Zone filter applied to other object types
 - Bus
 - Will meet the filter if the zone of the bus meets the filter
 - Generators, Loads, and Switched Shunts
 - Will meet the filter zone of the terminal bus meets the filter
 - Branches
 - Will meet the filter if the zone of either terminal bus meets the filter
- Owner filter applied to other object types
 - Bus
 - Will meet the filter if the owner of the bus meets the filter
 - Loads
 - Will meet the filter if the owner of the load meets the filter
 - Generators
 - Will meet the filter if any of the 8 owners meet the filter
 - Switched Shunts
 - Will meet the filter if any of the 4 owners meet the filter
 - Branches
 - Will meet the filter if the owner of either terminal bus meet the filter

This is one of the beauties of using a filter of a different object type – tedious stuff is handled for you

Create Common Filters: Zone Filters



Both are created for the Zone object type

Advanced Filters for Zone

Filter By: Advanced | Select Filter Type: Zone

Filter Name: Zone 400-407

Save Filter... | Save | Save As | Rename | Delete | View Filter Logic

Pre-filter using Area/Zone/Owner Filters | Enabled (normally checked)

Logical Comparison: AND | OR | Not AND | Not OR | XOR | One TRUE

Condition 1: Find... Zone Num | within integer range list | 400-407 | ABS

Use Another Filter | Add >> | Delete ...

Enable Field to Field and Meta Comparisons

Filter | Remove | Help | Cancel

Advanced Filters for Zone

Filter By: Advanced | Select Filter Type: Zone

Filter Name: Zone 420-439

Save Filter... | Save | Save As | Rename | Delete | View Filter Logic

Pre-filter using Area/Zone/Owner Filters | Enabled (normally checked)

Logical Comparison: AND | OR | Not AND | Not OR | XOR | One TRUE

Condition 1: Find... Zone Num | within integer range list | 420-439 | ABS

Use Another Filter | Add >> | Delete ...

Enable Field to Field and Meta Comparisons

Filter | Remove | Help | Cancel

Create Common Filters: Owner Filter



Created for the Owner object type

Advanced Filters for Owner

Filter By: Select Filter Type
Advanced | Owner

Filter Name: Owner 30

Save Filter...
Save | Save As | Rename | Delete | View Filter Logic

Pre-filter using Area/Zone/Owner Filters
 Enabled (normally checked)

Logical Comparison: AND OR Not AND Not OR XOR One TRUE

Condition 1
Find... Number within integer range list 30 ABS
 Use Another Filter

Add >> | Delete ...

Enable Field to Field and Meta Comparisons

Filter | Remove | Help | Cancel

Combine Common Filters: *Zone 400-407 AND Owner 30*



Create a different filter for each object type:
Bus, Generator, Load, Switched Shunt, and Branch

Advanced Filters for Gen

Filter By: Select Filter Type
Advanced | Generator

Filter Name: (Owner 30) AND (Zone 400-407)

Save Filter...
Save | Save As | Rename | Delete | View Filter Logic

Pre-filter using Area/Zone/Owner Filters
 Enabled (normally checked)

Logical Comparison: AND | OR | Not AND | Not OR | XOR | One TRUE

Condition 1
Find... _UseAnotherFilter | meets filter | <Owner>Owner 30 | Find

Condition 2
Find... _UseAnotherFilter | meets filter | <Zone>Zone 400-407 | Find

Add >> | Delete ... | Enable Field to Field and Meta Comparisons

Filter | Remove | Help | Cancel

Combine the filters created for the Owner and Zone object types

<Owner> and <Zone> indicate the object type of the filter if it does not match the *Select Filter Type*

Combine Common Filters: Complete Filter



Create a different filter for each object type:
Bus, Generator, Load, Switched Shunt, and Branch

Advanced Filters for Gen

Filter By: Select Filter Type
Advanced | Generator

Filter Name: PSE

Save Filter...
Save | Save As | Rename | Delete | View Filter Logic

Pre-filter using Area/Zone/Owner Filters
 Enabled (normally checked)

Logical Comparison:
 AND OR Not AND Not OR XOR One TRUE

Condition 1
Find... _UseAnotherFilter | meets filter | (Owner 30) AND (Zone 400-407) | Find
 Use Another Filter

Condition 2
Find... _UseAnotherFilter | meets filter | <Zone>Zone 420-439 | Find
 Use Another Filter

Add >> | Delete ...

Enable Field to Field and Meta Comparisons

Filter | Remove | Help | Cancel

Combine the filters created for the specific object and the *Zone 420-439* condition

<Zone> indicates the object type of the filter if it does not match the *Select Filter Type*

Final Product

AUX File Format



Filter (ObjectType, Name, Logic, FilterPre, Enabled)

```
{
"Zone"      "Zone 400-407"      "AND" "NO" " " "YES"
"Zone"      "Zone 420-439"      "AND" "NO" " " "YES"
"Owner"     "Owner 30"      "AND" "NO" " " "YES"
"Bus"       "(Owner 30) AND (Zone 400-407)" "AND" "NO" " " "YES"
"Gen"       "(Owner 30) AND (Zone 400-407)" "AND" "NO" " " "YES"
"Branch"    "(Owner 30) AND (Zone 400-407)" "AND" "NO" " " "YES"
"Load"      "(Owner 30) AND (Zone 400-407)" "AND" "NO" " " "YES"
"Shunt"     "(Owner 30) AND (Zone 400-407)" "AND" "NO" " " "YES"
"Bus"       "PSE"      "OR"  "NO" " " "YES"
"Gen"       "PSE"      "OR"  "NO" " " "YES"
"Branch"    "PSE"      "OR"  "NO" " " "YES"
"Load"      "PSE"      "OR"  "NO" " " "YES"
"Shunt"     "PSE"      "OR"  "NO" " " "YES"
}
```


Final Product

AUX File Format



Condition (ObjectType, Filter, CondNum, ObjectField, ConditionType, Value, OtherValue, Absolute)

```
{
"Zone"      "Zone 400-407"           1 "Number" "inrange" "400-407" "" "NO "
"Owner"     "Owner 30"              1 "Number" "inrange" "30"      "" "NO "
"Zone"      "Zone 420-439"         1 "Number" "inrange" "420-439" "" "NO "
"Bus"       "(Owner 30) AND (Zone 400-407)" 1 "_UseAnotherFilter" "meets" "<Owner>Owner 30" "" "NO "
"Bus"       "(Owner 30) AND (Zone 400-407)" 2 "_UseAnotherFilter" "meets" "<Zone>Zone 400-407" "" "NO "
"Gen"       "(Owner 30) AND (Zone 400-407)" 1 "_UseAnotherFilter" "meets" "<Owner>Owner 30" "" "NO "
"Gen"       "(Owner 30) AND (Zone 400-407)" 2 "_UseAnotherFilter" "meets" "<Zone>Zone 400-407" "" "NO "
"Branch"    "(Owner 30) AND (Zone 400-407)" 1 "_UseAnotherFilter" "meets" "<Owner>Owner 30" "" "NO "
"Branch"    "(Owner 30) AND (Zone 400-407)" 2 "_UseAnotherFilter" "meets" "<Zone>Zone 400-407" "" "NO "
"Load"      "(Owner 30) AND (Zone 400-407)" 1 "_UseAnotherFilter" "meets" "<Owner>Owner 30" "" "NO "
"Load"      "(Owner 30) AND (Zone 400-407)" 2 "_UseAnotherFilter" "meets" "<Zone>Zone 400-407" "" "NO "
"Shunt"     "(Owner 30) AND (Zone 400-407)" 1 "_UseAnotherFilter" "meets" "<Owner>Owner 30" "" "NO "
"Shunt"     "(Owner 30) AND (Zone 400-407)" 2 "_UseAnotherFilter" "meets" "<Zone>Zone 400-407" "" "NO "
"Bus"       "PSE"                          1 "_UseAnotherFilter" "meets" "(Owner 30) AND (Zone 400-407)" "" "NO "
"Bus"       "PSE"                          2 "_UseAnotherFilter" "meets" "<Zone>Zone 420-439" "" "NO "
"Gen"       "PSE"                          1 "_UseAnotherFilter" "meets" "(Owner 30) AND (Zone 400-407)" "" "NO "
"Gen"       "PSE"                          2 "_UseAnotherFilter" "meets" "<Zone>Zone 420-439" "" "NO "
"Branch"    "PSE"                          1 "_UseAnotherFilter" "meets" "(Owner 30) AND (Zone 400-407)" "" "NO "
"Branch"    "PSE"                          2 "_UseAnotherFilter" "meets" "<Zone>Zone 420-439" "" "NO "
"Load"      "PSE"                          1 "_UseAnotherFilter" "meets" "(Owner 30) AND (Zone 400-407)" "" "NO "
"Load"      "PSE"                          2 "_UseAnotherFilter" "meets" "<Zone>Zone 420-439" "" "NO "
"Shunt"     "PSE"                          1 "_UseAnotherFilter" "meets" "(Owner 30) AND (Zone 400-407)" "" "NO "
"Shunt"     "PSE"                          2 "_UseAnotherFilter" "meets" "<Zone>Zone 420-439" "" "NO "
}

```

Why Didn't I Just Create a Single Bus Filter?



- Bus filter applied to other objects
 - Generators, Loads, and Switched Shunts
 - Will meet the filter if its terminal bus meets the filter
 - Branches
 - Will meet the filter if either of its terminal buses meet the filter
- Zones
 - Generators, loads, and switched shunts can be assigned to different zones than their terminal buses
- Owners
 - Generators, loads, switched shunts, and branches can be assigned to different owners than their terminal buses