



Osprey

Network Visualization System

Adding Genes

This presentation gives a quick overview on how to add Genes to Osprey.



Adding Genes

There are currently 3 different ways in which you can add genes:

- 1.) Directly inside Osprey
- 2.) Custom Interactions files
- 3.) Gene lists

Note: You must be connected to the right database before adding a Gene to Osprey in order to obtain the correct annotation. Please review the tutorial titled “Changing Databases” for instructions on how this works.

Note: This presentation assumes that you have successfully downloaded Osprey and are able to run it.





Directly in Osprey

Genes can be added directly from within Osprey by using the add “New Node” function that can be accessed in one of two ways:

- 1.) Via the main menu item “New Interaction” located in the Insert option, shown in figure 1.
- 2.) Via the “New Node” icon located on the toolbar, shown in figure 2.

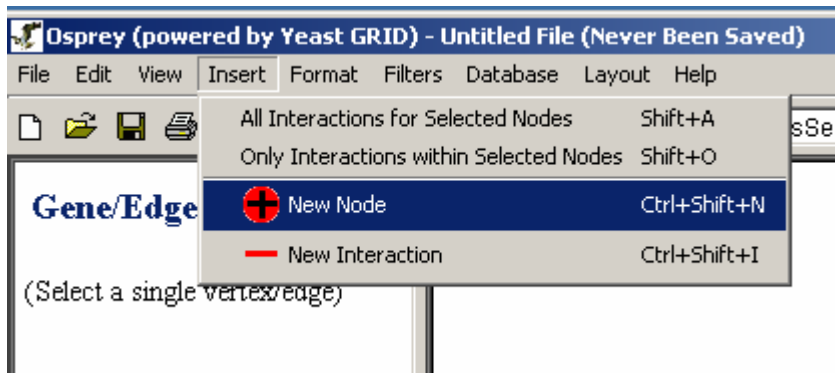


Figure 1: “New Node” option from the “Insert” menu.

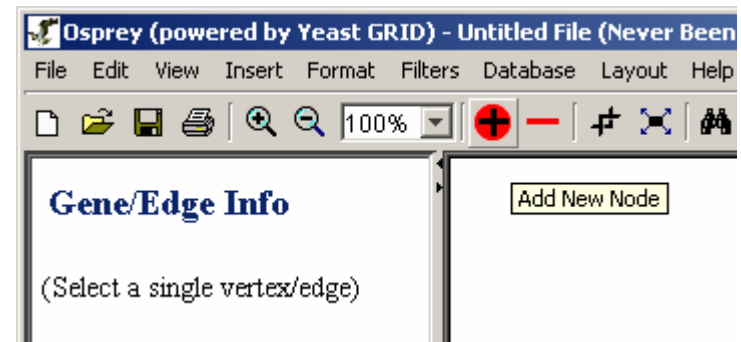


Figure 2: “New Node” option from the tool bar.





Directly in Osprey Cont...

After selecting the “New Node” option you will be presented with the screen shown in figure 3. From this screen you can add genes directly to Osprey that will query the connected database and attach the relevant annotation if there is a match. Note: Ambiguous genes cannot be added to Osprey. Multiple genes can be added and must be separated by semicolons and/or new lines. Figure 4 represents the result of adding the genes in figure 3 while connected to Fly GRID.

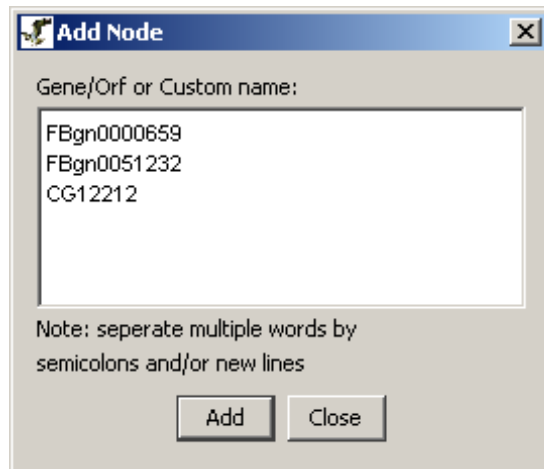


Figure 3: “Add New Node” window.

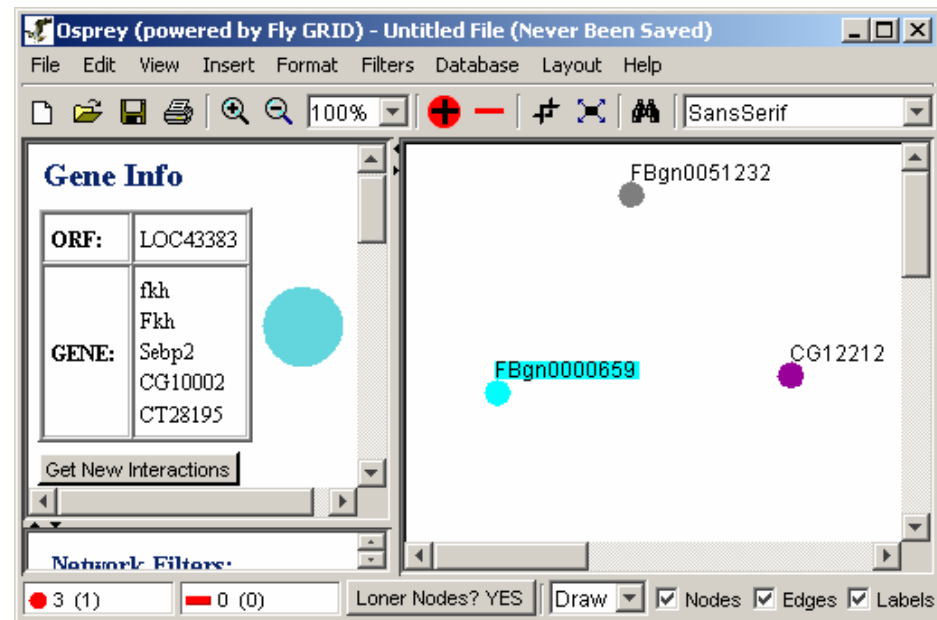


Figure 4: Resulting nodes generated from adding the genes in Figure 3





Custom Interactions files

The Custom file format is a tab delimited text file that allows the user to load personal interaction data into Osprey. There are 4 variations to this file:

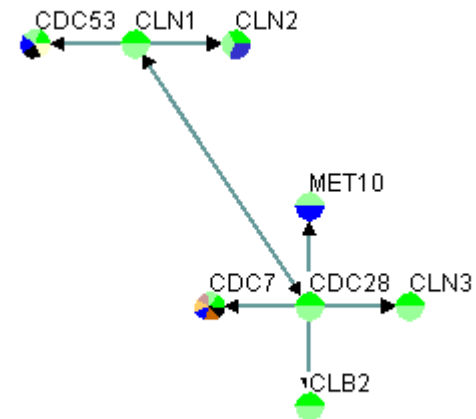
Custom File Variation #1: Simple custom file format designed to allow the user to quickly visualize their data. The two columns represent the different interaction pairs that will be displayed while connected to Yeast GRID.

Custom File Variation #1

| GeneA | GeneB |
|-------|-------|
| CDC28 | CLN1 |
| CDC28 | CLN3 |
| CDC28 | CLB2 |
| CDC28 | CDC7 |
| CDC28 | MET10 |
| CLN1 | CDC28 |
| CLN1 | CLN2 |
| CLN1 | CDC53 |



Resulting Osprey Network



Note: The rows and columns in red are necessary where as the rows and columns in gray are optional.



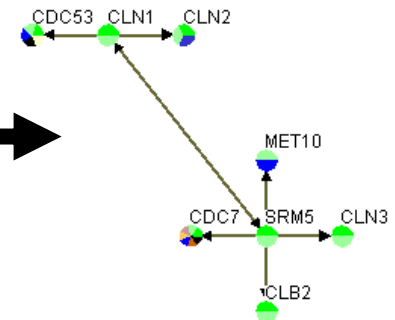
Custom Interactions files Cont...

Custom File Variation #2: This variation of the custom interaction file allows the user to provide a different screen name that will be displayed in the network while still providing Osprey with the correct gene/ORF name so that the proper annotation can be retrieved from The Grid. This is useful for displaying allele information.

Custom File Variation #2

| GeneA | GeneB | GeneA Screen Name | GeneB Screen Name |
|--------|---------|-------------------|-------------------|
| CDC28 | YMR199W | SRM5 | CLN1 |
| CDC28 | CLN3 | SRM5 | CLN3 |
| CDC28 | CLB2 | SRM5 | CLB2 |
| CDC28 | CDC7 | SRM5 | CDC7 |
| CDC28 | MET10 | SRM5 | MET10 |
| YMR199 | CDC28 | CLN1 | SRM5 |
| YMR199 | CLN2 | CLN1 | CLN2 |
| YMR199 | CDC53 | CLN1 | CDC53 |

Resulting Osprey Network



Note: The rows and columns in red are necessary where as the rows and columns in gray are optional.

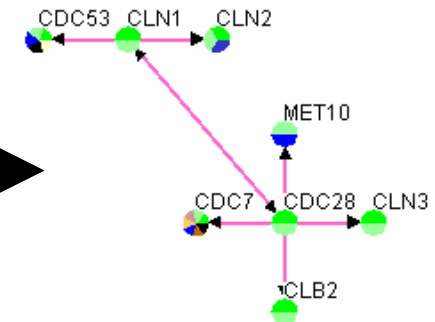
Custom Interactions files Cont...

Custom File Variation #3: Allows the user to provide Osprey with some details about the experimental system, source and any PubMed Ids that may contain information on this interaction. This additional information allows the user to take advantage of the experimental filters provided by Osprey. Multiple PubMed Ids can be added by separating them with semicolons with no blanks, i.e. 11805826:12765409

Custom File Variation #3

| GeneA | GeneB | Experimental System | Source | PubMed ID |
|-------|-------|------------------------|-------------|-----------|
| CDC28 | CLN1 | Affinity Precipitation | Gavin et al | 11805826 |
| CDC28 | CLN3 | Affinity Precipitation | Gavin et al | 11805826 |
| CDC28 | CLB2 | Affinity Precipitation | Gavin et al | 11805826 |
| CDC28 | CDC7 | Affinity Precipitation | Gavin et al | 11805826 |
| CDC28 | MET10 | Affinity Precipitation | Gavin et al | 11805826 |
| CLN1 | CDC28 | Affinity Precipitation | Gavin et al | 11805826 |
| CLN1 | CLN2 | Affinity Precipitation | Gavin et al | 11805826 |
| CLN1 | CDC53 | Affinity Precipitation | Gavin et al | 11805826 |

Resulting Osprey Network



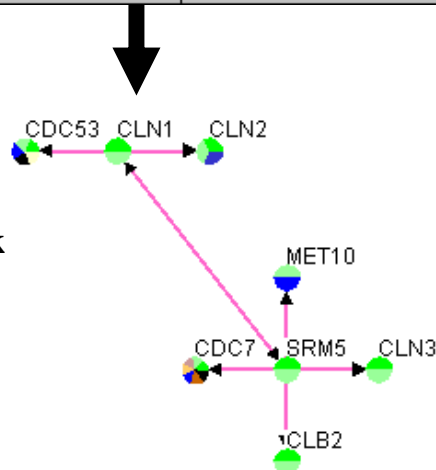
Note: The rows and columns in red are necessary where as the rows and columns in gray are optional.

Custom Interactions files Cont...

Custom File Variation #4: This variation is a combination of the previous three, which allows the user to take full advantage of Osprey.

Custom File Variation #4

| GeneA | GeneB | GeneA Screen Name | GeneB Screen Name | Experimental System | Source | PubMed ID |
|---------|---------|-------------------|-------------------|------------------------|-------------|-----------|
| CDC28 | YMR199W | SRM5 | CLN1 | Affinity Precipitation | Gavin et al | 11805826 |
| CDC28 | CLN3 | SRM5 | CLN3 | Affinity Precipitation | Gavin et al | 11805826 |
| CDC28 | CLB2 | SRM5 | CLB2 | Affinity Precipitation | Gavin et al | 11805826 |
| CDC28 | CDC7 | SRM5 | CDC7 | Affinity Precipitation | Gavin et al | 11805826 |
| CDC28 | MET10 | SRM5 | MET10 | Affinity Precipitation | Gavin et al | 11805826 |
| YMR199W | CDC28 | CLN1 | SRM5 | Affinity Precipitation | Gavin et al | 11805826 |
| YMR199W | CLN2 | CLN1 | CLN2 | Affinity Precipitation | Gavin et al | 11805826 |
| YMR199W | CDC53 | CLN1 | CDC53 | Affinity Precipitation | Gavin et al | 11805826 |



Resulting Osprey Network

Note: The rows and columns in red are necessary whereas the rows and columns in gray are optional.



Gene lists

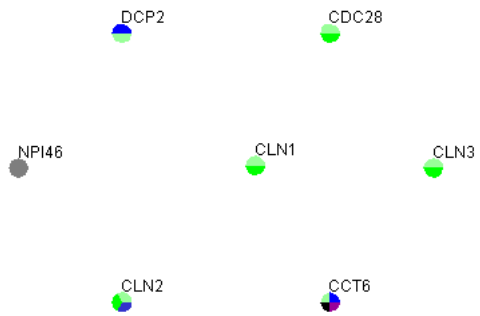
The Gene lists file format is a tab delimited text file that allows the user to load a list of genes into Osprey. There are 2 variations to this file:

Gene list Variation #1:
List of gene/ORF names

Resulting Osprey Network

Gene list Variation #2: Additional column provided for changing the screen name displayed in Osprey while maintaining proper annotation for the given gene (useful for displaying allele information).

| Gene |
|-------|
| CDC28 |
| CLN1 |
| CLN2 |
| CLN3 |
| CCT6 |
| DCP2 |
| NPI46 |



| Gene | Screen Name |
|-------|-------------|
| CDC28 | CDC28 |
| CLN1 | CLN1 |
| CLN2 | CLN2 |
| CLN3 | CLN3 |
| CCT6 | CCT6 |
| DCP2 | DCP2 |
| NPI46 | NPI46 |

Note: The rows and columns in red are necessary where as the rows and columns in gray are optional.





Opening files

To access the open file dialog in Osprey select the file option from the main menu and select the Open -> Standard option, shown in figure 11, or select the file open icon from the toolbar, shown in figure 12. This will then bring up the file dialog box where you can then choose both the location and type of file you are opening, shown in figure 13.

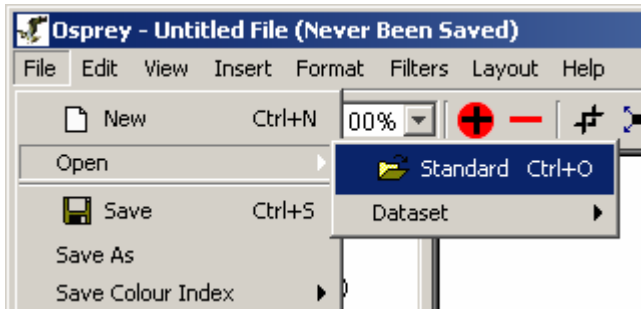


Figure 11: “All Interactions for Selected Nodes” from main menu.

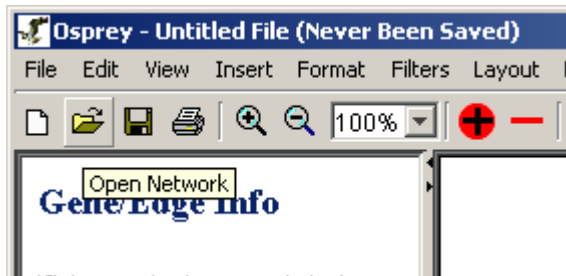


Figure 12: “All Interactions for Selected Nodes” from main menu.

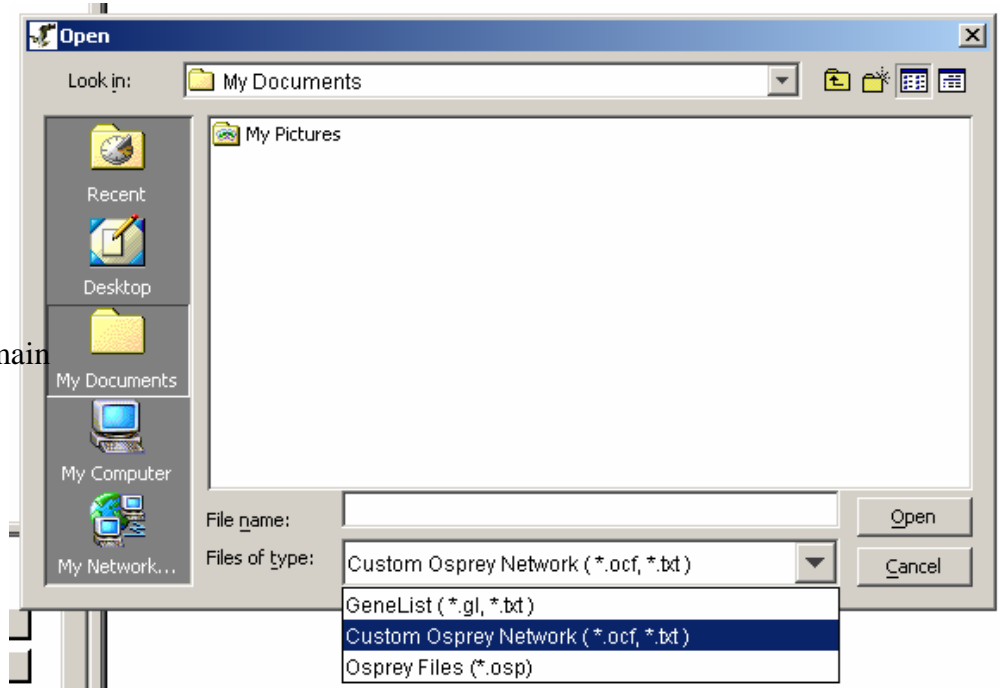


Figure 13: Open file dialog





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