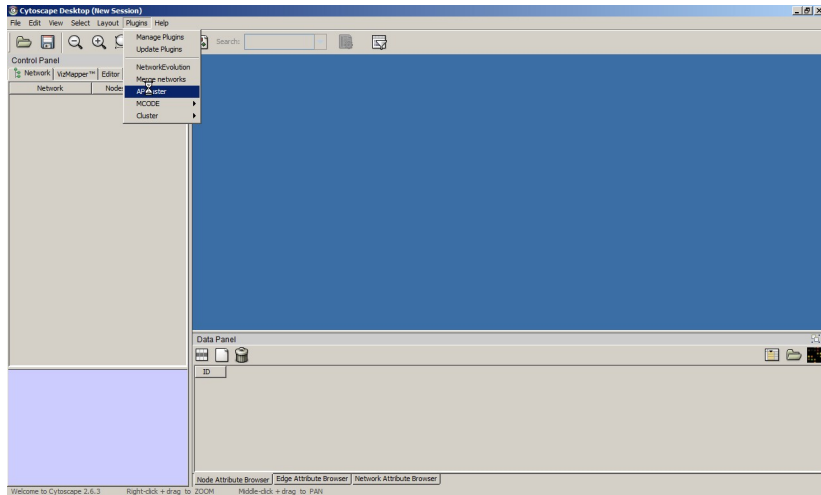


Clustering the network with two cliques: an example demonstrating the importance of adding noise to break symmetries prior to running AP.

Run Cytoscape with "APCluster" loaded in the plugins directory and activate the plugin by selecting it from the plugins menu.



Open the Editor tab and create network with two cliques.

The screenshot displays the Cytoscape Desktop interface for a new session. The main window, titled "Network 0", shows a network graph with eight nodes (node0 through node7) and their connections. The nodes are arranged in two distinct groups, each forming a clique. The left group consists of nodes node0, node1, node2, and node3, which are fully interconnected. The right group consists of nodes node4, node5, node6, and node7, which are also fully interconnected. There are no edges between the two groups. The interface includes a menu bar (File, Edit, View, Select, Layout, Plugins, Help), a toolbar with various icons, and a Control Panel on the left. The Control Panel contains instructions for adding nodes and edges, a "Directed Edge" section with a line icon, and an "Add a Node" section with a red circle icon. At the bottom, there are tabs for "Node Attribute Browser", "Edge Attribute Browser", and "Network Attribute Browser". A status bar at the very bottom provides navigation instructions: "Welcome to Cytoscape 2.6.3 Right-click + drag to ZOOM Middle-click + drag to PAN".

Go to the APCluster plugin tab and run the algorithm with default options.

The screenshot shows the Cytoscape Desktop interface with the APCluster plugin active. The main window displays a network graph with 8 nodes (node0 to node8) and edges. The Control Panel on the left shows parameters for the APCluster algorithm, including Edge weight attribute (DEFAULT), Number of iterations (500), Stop criterion (50), Preference (0.500), and Lambda (0.5). The Start button is highlighted, and a tooltip indicates "Start clustering algorithm." The Data Panel at the bottom shows a table with an ID column.

Control Panel

Network | VizMapper™ | Editor | Filters | APCluster

Parameters

Edge weight attribute: DEFAULT

Number of iterations: 500

Stop criterion: 50

Preference: 0.500

Lambda: 0.5

Add noise:

Log transform edge weights:

Output attributes

Cluster ID: cluster_id

Center ID: center_id

Graph mode

Undirected edges Directed edges

Advanced options **Start**

Highlight centers

Start clustering algorithm.

Data Panel

ID

Node Attribute Browser | Edge Attribute Browser | Network Attribute Browser

Welcome to Cytoscape 2.6.3 Right-click + drag to ZOOM Middle-click + drag to PAN

You will obtain two clusters

The screenshot shows the Cytoscape Desktop interface with a network graph and a dialog box. The network graph, titled "Network 0", contains six nodes: node0, node1, node2, node3, node4, and node5. Node5 is highlighted in yellow. The graph shows connections between nodes, forming two distinct clusters: one with nodes 0, 1, and 2, and another with nodes 3, 4, and 5.

The "Clustering completed" dialog box displays the following information:

- Description: Per
- Status: Cer
- Progress: [Progress bar]
- Algorithm converged after: 51 iterations

The dialog box includes "Close" and "Cancel" buttons, and an "OK" button is being clicked by the mouse.

The "Control Panel" on the left shows the following settings:

- Edge weight attribute: DEFAULT
- Number of iterations: 500
- Stop criterium: 50
- Preference: 0.500
- Lambda: 0.5
- Add noise:
- Log transform edge weights:

The "Output attributes" section shows:

- Cluster ID: cluster_id
- Center ID: center_id

The "Graph mode" section shows:

- Undirected edges:
- Directed edges:

The "Data Panel" at the bottom shows a table with the following data:

Network	Preferences	Lambda	Clusters
Network 0		0,5	0,5

The "Data Panel" also includes a "Delete row" button and a "Details" button.

The status bar at the bottom of the window reads: "Welcome to Cytoscape 2.6.3 Right-click + drag to ZOOM Middle-click + drag to PAN".

Run algorithm again a few times (noise is added randomly), you should obtain two clusters each time, but the exemplars might change.

The screenshot shows the Cytoscape Desktop interface. The main window displays a network graph with six nodes labeled node0 through node5. Nodes node0, node1, node5, and node6 are colored red, while node2 and node4 are colored yellow. A dialog box titled "Clustering completed" is overlaid on the graph, showing the following information:

- Description: Per
- Status: Cer
- Progress: ■■■
- Algorithm converged after: 51 iterations

The dialog box has "OK", "Close", and "Cancel" buttons. The Cytoscape interface includes a Control Panel on the left with various settings for the network and graph mode. The Data Panel at the bottom shows a table of network preferences and clusters.

Network	Preferences	Lambda	Clusters
Network 0	0,5	0,5	2
Network 0	0,5	0,5	2

At the bottom of the window, there are browser tabs for "Node Attribute Browser", "Edge Attribute Browser", and "Network Attribute Browser".

Turn off the "add noise" option and start the clustering again, you will not obtain any clusters (only singletons).

The screenshot shows the Cytoscape Desktop interface with a network graph and a dialog box. The network graph displays six nodes (node0, node1, node2, node4, node5, node8) connected by edges. The dialog box, titled "performing Affinity", contains the following information:

- Description: Algorithm did not converge after 500 iterations
- Status: (Information icon)
- Progress: (Progress bar)

The Control Panel on the left shows the following parameters:

- Edge weight attribute: DEFAULT
- Number of iterations: 500
- Stop criterium: 50
- Preference: 0.500
- Lambda: 0.5
- Add noise:
- Log transform edge weights:

The Output attributes section shows:

- Cluster ID: cluster_id
- Center ID: center_id

The Graph mode section shows:

- Undirected edges:
- Directed edges:

The Data Panel at the bottom shows a table with the following data:

Network	Prefer...	Lambda	Clusters
Network 0	0,5	0,5	0
Network 0	0,5	0,5	2
Network 0	0,5	0,5	2
Network 0	0,5	0,5	2

At the bottom of the window, there are tabs for "Node Attribute Browser", "Edge Attribute Browser", and "Network Attribute Browser".