NAME
cluster – find clusters in a graph and augment the graph with this information.

SYNOPSIS
cluster [**–v?**] [**–C***k*] [**–c***k*] [**–o** *outfile*] [*files*]

DESCRIPTION
cluster takes as input a graph in DOT format, finds node clusters and augments the graph with this information. The clusters are specified by the "cluster" attribute attached to nodes; cluster values are non-negative integers. **cluster** attempts to maximize the modularity of the clustering. If the edge attribute "weight" is defined, this will be used in computing the clustering.

OPTIONS
The following options are supported:

–C*k*   specifies a targeted number of clusters that should be generated. The specified number k is only a suggestion and may not be realisable. If $k == 0$, the default, the number of clusters that approximately optimizes the modularity is returned.

–c*k*   specifies clustering method. If $k == 0$, the default, modularity clustering will be used. If $k == 1$ modularity quality will be used.

–o*outfile*
     Specifies that output should go into the file *outfile*. By default, *stdout* is used.

–v   Verbose mode.

–?   Prints the usage and exits.

EXAMPLES
Applying **cluster** to the following graph,

```
graph {
   1--2 [weight=10.]
   2--3 [weight=1]
   3--4 [weight=10.]
   4--5 [weight=10]
   5--6 [weight=10]
   3--6 [weight=0.1]
   4--6 [weight=10.]
   }
```

gives

```
graph {
   node [cluster="-1"];
   1 [cluster=1];
   2 [cluster=1];
   3 [cluster=2];
   4 [cluster=2];
   5 [cluster=2];
   6 [cluster=2];
   1 -- 2 [weight="10."];
   2 -- 3 [weight=1];
   3 -- 4 [weight="10."];
   4 -- 5 [weight=10];
   5 -- 6 [weight=10];
   3 -- 6 [weight="0.1"];
   4 -- 6 [weight="10."];
   }
```

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SEE ALSO

      gvmap(1)

Blondel, V.D., Guillaume, J.L., Lambiotte, R., Lefebvre, E.: Fast unfolding of communities in large networks. Journal of Statistical Mechanics: Theory and Experiment (2008), P10008.