Master-eligible

- The node may be elected as the cluster's master node
- A master node is responsible for creating and deleting indices, among others
- A node with this role will not automatically become the master node
  - (unless there are no other master-eligible nodes)
- May be used for having dedicated master nodes
  - Useful for large clusters

Configuration: `node.master: true | false`

Data

- Enables a node to store data
- Storing data includes performing queries related to that data, such as search queries
- For relatively small clusters, this role is almost always enabled
- Useful for having dedicated master nodes
- Used as part of configuring a dedicated master node

Configuration: `node.data: true | false`

Ingest

- Enables a node to run ingest pipelines
- Ingest pipelines are a series of steps (processors) that are performed when indexing documents
    - Processors may manipulate documents, e.g. resolving an IP to lat/lon
- Similar to Logstash, but simpler - and directly within Elasticsearch
- This role is mainly useful for having dedicated ingest nodes

Configuration: `node.ingest: true | false`

Machine learning

- `node.ml` identifies a node as a machine learning node
  - This lets the node run machine learning jobs
- `xpack.ml.enabled` enables or disables the machine learning API for the node
- Useful for running ML jobs that don't affect other tasks

Configuration:

```
node.ml: true | false
xpack.ml.enabled: true | false
```

CodingExplained
CODE. SLEEP. REPEAT.

Coordination

- Coordination refers to the distribution of queries and the aggregation of results
- Useful for coordination-only nodes (for large clusters)
- Configured by disabling all other roles

Configuration:

```
node.master: false
node.data: false
node.ingest: false
node.ml: false
xpack.ml.enabled: false
```

CodingExplained
CODE. SLEEP. REPEAT.

Voting-only

- Rarely used, and you almost certainly won't use it either
- A node with this role, will participate in the voting for a new master node
- The node *cannot* be elected as the master node itself, though
- Only used for large clusters

Configuration: `node.voting_only: true | false`

When to change node roles

- “It depends” 😕
- Useful for large clusters
- Typically done when optimizing the cluster to scale the number of requests
- You will often times change other things *first*
    - E.g. the number of nodes, shards, replica shards, etc.
- Better understand what hardware resources are used for
- Only change roles if you know what you are doing 🙂