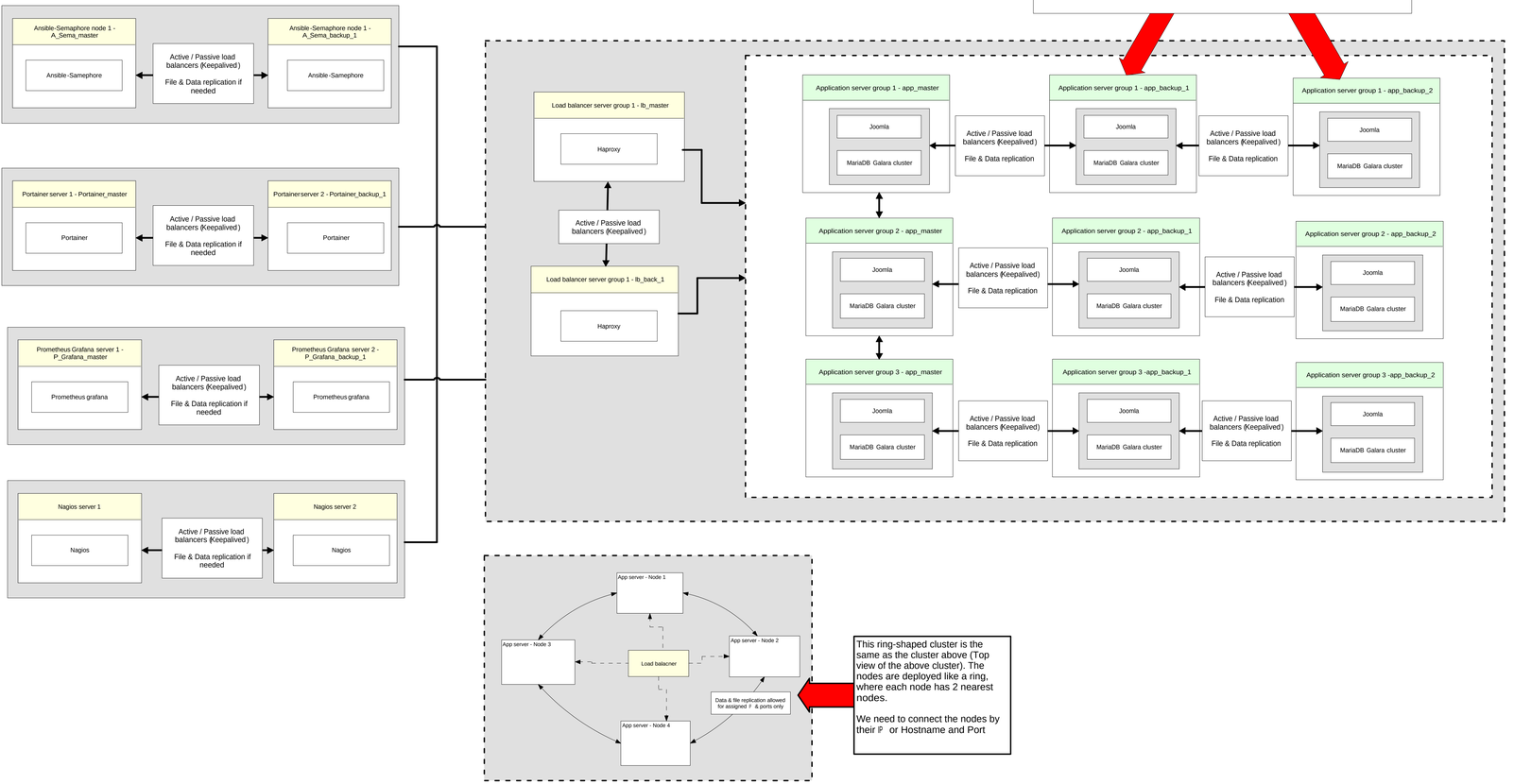
The backup or failover servers are optional. We dont need to have these fail over nodes.

Keepalived with multiple backup servers example --> https://keepalived-devel.narkive.com/R7SMlWgC/multiple-backup-servers

http://woshub.com/keepalived-high-availability-with-ip-failover/

https://tecadmin.net/setup-ip-failover-on-ubuntu-with-keepalived/



This ring-shaped cluster is the same as the cluster above (Top view of the above cluster). The nodes are deployed like a ring, where each node has 2 nearest nodes.

We need to connect the nodes by their IP or Hostname and Port

Workflow for Ansible playbook & roles to setup Docker Joomla cluster	Description
1a CentOS / Ubuntu - SSH limit by IP on all nodes	We need to use ansible to do this --> https://cloudcone.com/docs/article/how-to-restrict-ssh-access-only-to-specific-ips/ By default, the nodes should be as follows: -Ansible Semaphore servers x 2 -Portainer server x 2 -Prometheus grafana servers x 2 -Nagios servers x 2 -Load balancer servers x 2 -Joomla cluster servers x 9
1b. CentOS / Ubuntu - setup dockeron all nodes	We need to setup dockeron all the CentOS or Ubutuntu nodes
1c. CentOS / Ubuntu - Firewalld --> Limit IP and ports to cluster nodes & load balancer only	We need to allow firewall to limit IP and port access. Only IP and ports that belong to the cluster nodes and load balancers are allowed to access each other.
2a Ansible Semaphore server - Setup 2 Ansible Semaphore servers with Keepalived	We should setup Ansible Semaphore servers to manage ourAnsible scripts
3a Portainer server - Setup 2 Portainer server with Keepalived	We need to setup Portainer server to manage and monitor ourdocker containers. Portainer's data and files must be replicated across the nodes. We can use MariaDB galera cluster for database replication, and GlusterFS for file replication
4a Prometheus Grafana server - Setup 2 Prometheus Grafana servers with Keepalived	
5a Nagios servers - Setup 2 Nagios servers with Keepavlied	
6a. Joomla cluster load balancers --> Setup haproxy-Keepalived on the load balancer nodes	
6b. Joomla cluster app servers --> Setup MariaDB galera database on all application nodes	We need to setup Joomla with MariaDB database on all the application servers. The application servers will be put into host groups in Ansible. -Each app server group will need keepalived to provide no single point of failure support. -Database replication will be needed by using MariaDB galera cluster -File replication will be needed by using GlusterFS or other file replication software
6c. Joomla cluster app servers --> Setup GlusterFS on all application nodes	GlusterFS is needed for file replication.

Workflow for system admin tasks - - Server resource usage monitor - For Scale up or down nodes --Server scale up or down - Server & website health monitor - For server or website recovery --Server or app recovery methods	Description
Server resource usage monitor	-Check CPU, RAM and Storage usage We need to check server usage in order to decide whether to add or remove nodes to the cluster
Server & app health monitor	-Check server uptime -Check website uptime We need to check if the server and website is running correctly, if not we need to fix any errors we see.