High availability

Tessera supports deploying more than one instance sharing the same database.

By placing the instances behind a load balancer, downtime can be limited during maintenance operations, achieving high availability (HA).

Servers

Tessera exposes multiple interfaces for connectivity which can be configured in theserverConfigs in theconfiguration file . To enable high availability for the node, set each interface to use the load balancer's address for itsserverAddress , and its own URL or IP for thebindingAddress , as shown in the following example.

Server configuration "serverConfigs":[{ "app": "ENCLAVE", // Defines us using a remote enclave, leave out if using built-in enclave "serverAddress": "http://localhost:9081", "communicationType": "REST" }, { "app": "ThirdParty", "serverAddress": "http://LOAD_BALANCER_URL:9080", // Specify a bind to an internal IP while advertising an external IP using serverAddress. "bindingAddress": "http://OWN_URL:9080", "communicationType": "REST", ... }, { "app": "Q2T", "serverAddress": "http://LOAD_BALANCER_URL:9101", // Specify a bind to an internal IP while advertising an external IP using serverAddress. "bindingAddress": "http://OWN_URL:9101", "communicationType" : "REST", ... }, { "app": "P2P", "serverAddress": "http://LOAD_BALANCER_URL:9000", // Specify a bind to an internal IP while advertising an external IP using serverAddress. "bindingAddress": "http://OWN_URL:9000", "communicationType": "REST", ... }], ...

Load balancer configuration

The load balancer must expose both client and node interfaces.

When configuring for high availability, configure the nodes in the Tessera cluster (Tessera A and Tessera B in the previous diagram) with the same set of keys and advertise the load balancer address.

events { }

http { upstream tessera_tp_9080 { server tessera_1:9080 max_fails=3 fail_timeout=5s; server tessera_2:9080 max_fails=3 fail_timeout=5s; }

upstream tessera_q2t_9101 { server tessera_1:9101 max_fails=3 fail_timeout=5s; server tessera_2:9101 max_fails=3 fail_timeout=5s; }

upstream tessera_p2p_9000 { server tessera_1:9000 max_fails=3 fail_timeout=5s; server tessera_2:9000 max_fails=3 fail_timeout=5s; }

server { listen 9080;

location / { proxy_pass http://tessera_tp_9080; health_check port=9000 uri=/upcheck; } }

server { listen 9101;

location / { proxy_pass http://tessera_q2t_9101; health_check port=9000 uri=/upcheck; } }

server { listen 9000;

location / { proxy_pass http://tessera_p2p_9000; health_check port=9000 uri=/upcheck; } } } The configuration defines two upstreams,tessera_tp_9080 andtessera_q2t_9101 , both of which definehealth checks ,max_fails=3 fail_timeout=5s .

The health checks help Nginx balance traffic among upstream servers.

Database

The last piece to configure in high availability is thedatabase . Set thejdbc endpoint in the same configuration file. We strongly recommend using an SQL database also configured for HA independently. If using a cloud-based database, consider usingAWS RDS ,Azure Postgresql , or equivalent. Edit this page Last updatedonOct 9, 2023 bydependabot[bot] Previous Overriding configuration file Next Use