

APIC Enterprise Module – High Availability Support

FCS – Release 1.0

The APIC Enterprise Module provides High Availability (HA) support using service redundancy. The APIC-EM cluster consists of multiple root and client virtual machines across multiple hardware resources. The APIC-EM services and database are instantiated across the client virtual machines.

HA support for the various APIC-EM components is described below for the Grapevine Root, APIC-EM services, and APIC-EM database.

Grapevine Root

- Multiple instances of the Grapevine root are deployed across different physical hosts and operate in active-active mode for optimal performance and load sharing.
- If any instance of the root fails, another root instance on a different physical host seamlessly takes over.

APIC EM Services

- For services that support multi-instances, there could be multiple instances of the service running in active-active mode for scale. Any one of these instances can pick up the load for a failed instance. For services that do not support multi-instances at FCS, if the sole instance fails, Grapevine will spin up a new instance to replace it.
- Grapevine spreads the service instance virtual machines across different physical hosts. Note that if VMware DRS is enabled; DRS may rebalance the VMs to balance workload for optimal performance thereby overriding Grapevine's distribution of the services across the physical hosts.

APIC EM Database

- APIC-EM is using the postgres database for the APIC-EM services. Postgres has a built-in master-slave model for synchronizing data across the databases.

- The master and slave postgres instances are spread across different virtual machines and across different physical hosts. The instances are also synchronized.
- If the master database fails, then the slave database seamlessly takes over.

Note: There is no HA support for hardware failure, if the APIC-EM cluster is deployed on a single physical host and there is a failure on that host. APIC-EM still provides HA support in case of any service instance failure.