CE CE HA

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Objectives

- Provide more detailed explanation of current HA stand by operations
- Add hot standby to improve failover time
- Define minimalist approach to NE/FE state synchronization to allow faster failover
Current CE HA: Cold Standby

Associate

Successful association

ForCES operational
FE1 Configuration etc

$Dtime_1$: Time to have CE1 operational and Ready to react to Fes associating

$Dtime_A$: Time for CE1 to complete association Phase for FE1
Current CE HA: Cold Standby

ForCES operational
FE1 Configuration etc

CE1 failure detected

CE1 failure

\( Dtime_2 \): time to detect CE1 failure

Associate

\( dtime_1 \)
Current CE HA: Cold Standby

Successful association

ForCES operational in same state as before
And we proceed with FE1 Configuration etc
CE HA: Hot Standby

ForCES operational
FE1 Configuration etc

FE1
Associate
Successful association
Associate

CE1

dtime1

CE2

dtime1

dtimeA
CE HA: Hot Standby

ForCES operational
FE1 Configuration etc

CE1 failure detected

CE1 failure

FE1

CE1

CE2

• dtime1 removed
• dtimeA removed
• dtime3 reduced

dt ime2

ForCES operational
FE1 Configuration etc
Changes Needed

1. FE MUST associate to one or more CEs in FEPO BackUPCEs table
   - New state field to show if CE is associated or not
2. An FE should be able to accept commands from all CEs it has associated with
   - FE should send events only to its master CE
3. At least one or more backup CEs MUST be online
Removing dtime3

- We need to have CE2 to have synchronized information from CE1 on state of FE1
- At failover time CE2 proceeds where CE1 left off
  - No need to discover missing state if transition was planned
  - Need to discover lesser state than hot standby if unplanned failover
Optional CECE synchronization

- We have left this out of the draft for now but we would like to revisit
  - Should be very simple
  - Possibly use ForCES protocol and architecture
  - Goals
    - Zero out dtime3
    - Improve CE failure detection time
- We are soliciting for opinions
WG solicitation

• We would like to make this a WG document