ForCES LFB Subsidiary Management

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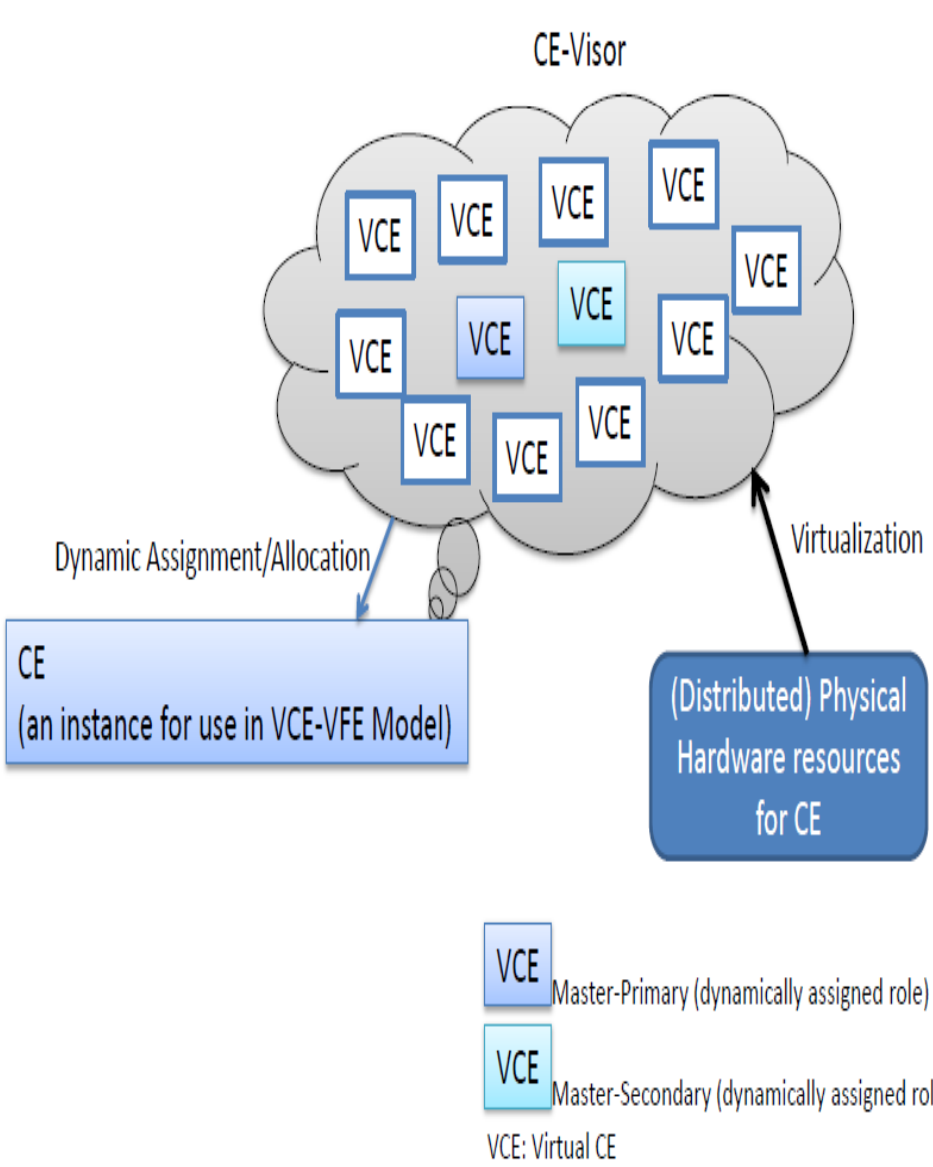
Background

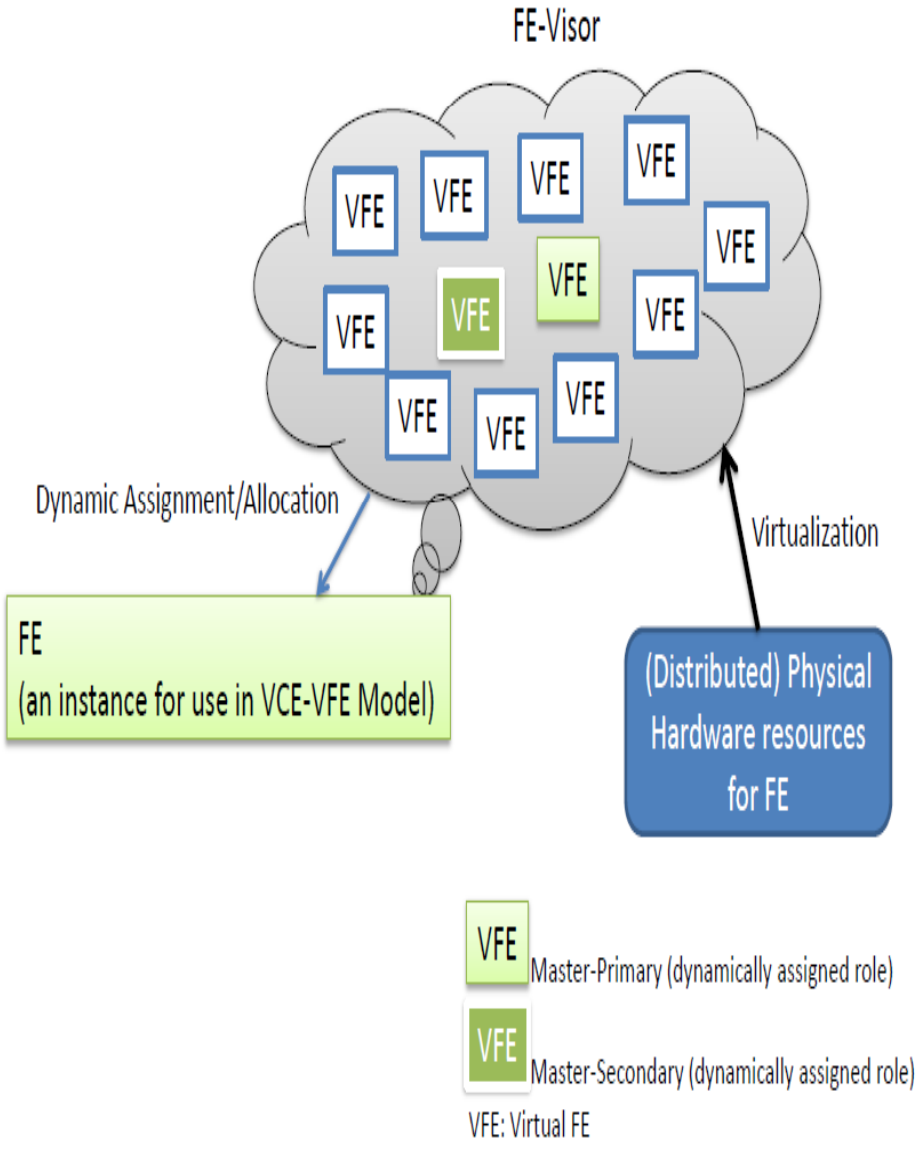
- Per the updated ForCES charter (http://datatracker.ietf.org/wg/forces/charter/), the LFB Subsidiary Management work is within the scope
  - Deployment experience has demonstrated the value of using ForCES to control the **Forwarding Element Manager (FEM)** by creating an LFB to represent its function using the same encoding rules as for any other LFB. This allows it to be controlled by the same **Control Element (CE)**
  - This work item assumes the **presence of an initially booted FE** whose configuration could then be **updated** at runtime via an FEM LFB for runtime config purposes (e.g., by adding a new CE and its associated IP address).
  - This work item can also be useful in addressing **control of virtual FEs** where individual FEM Managers can be addressed to control the creation, configuration, and resource assignment of such virtual FEs within a physical FE
  - This work would result in a standards track LFB FEM library RFC

Outline

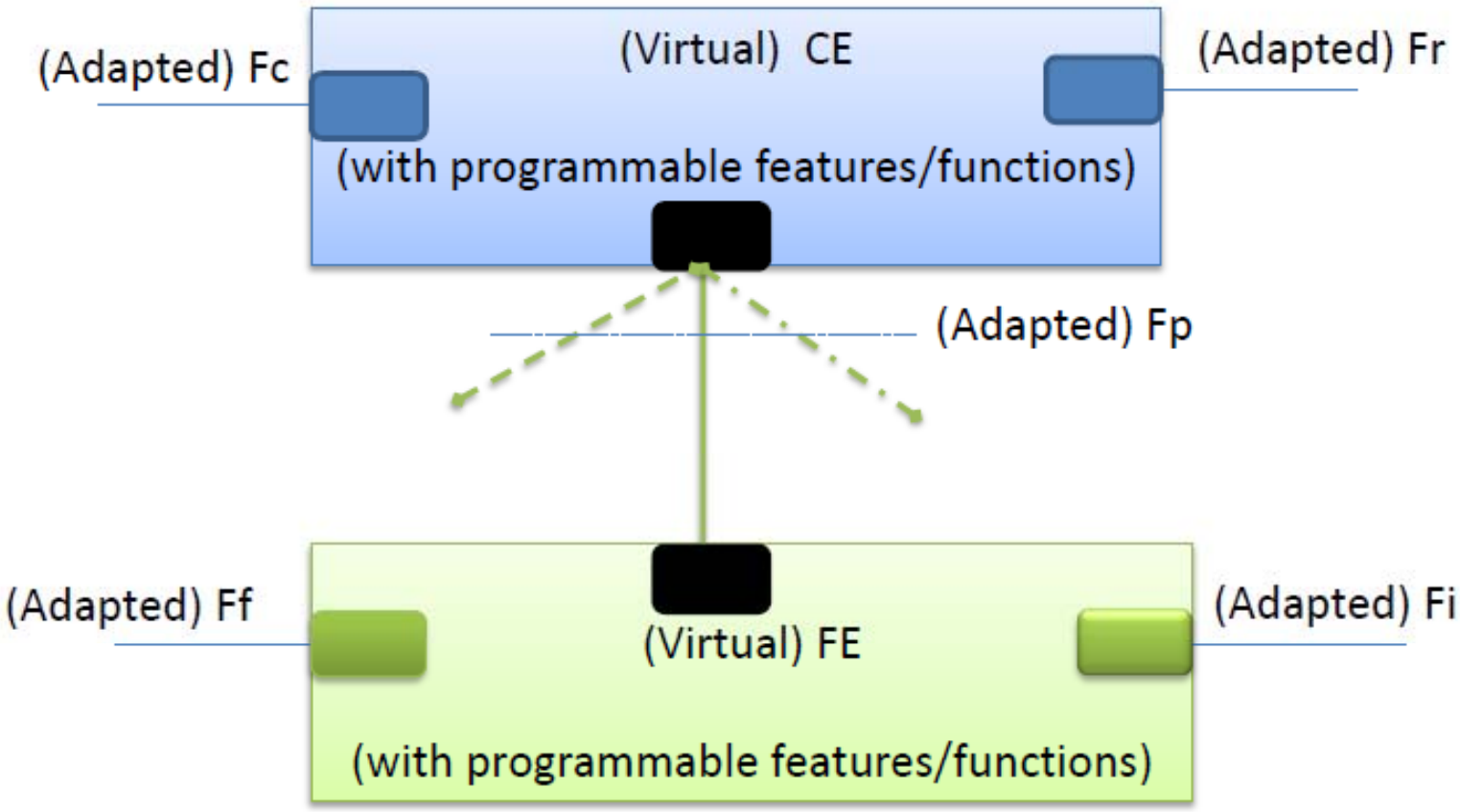
- Virtualization of CE and FE
- Updated ***V***CE-***V***FE Model
- Potential Scenarios
- Sequence of Events in FEM
- Application and Orchestration
- CE/FE/LFB Life Cycle Management
- Comments/Suggestions
- Q&A, and Discussion
- THANKS!

Virtualization of CE and FE





Updated *V*CE-*V*FE Model



Potential Scenarios

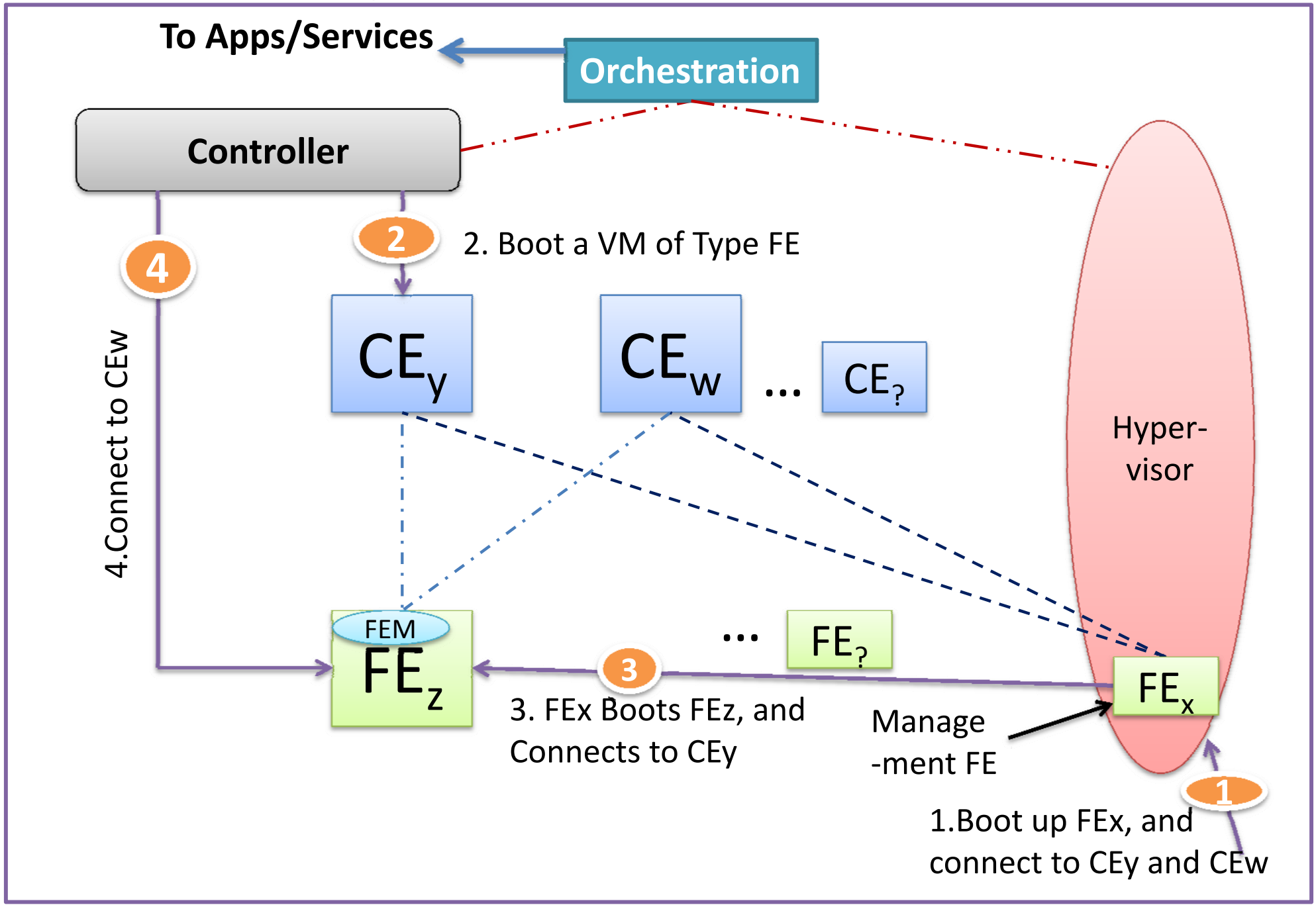
- An **FE** can initially boot using a default **A**ssociation and **C**onfiguration
  - The **A** & **C** can be updated at runtime via an FE-Visor/FEM LFB for runtime configuration purposes
    - For example, by adding a new CE and its associated IP address
- A **CE** can initially boot using a default **C**onfiguration and **S**tate(s)
  - The **C** & **S** can be updated at runtime via a CE-Visor/CEM LFB to satisfy runtime requirements

Sequence of Events in FEM
(an example)

- Step-1: Hypervisor boots up with FEx that connects to a CEy and CEw
- Step-2: Control App (attached to CEy) instructs FEx to boot an FE-type VM
- Step-3: FEx boots FEz and instructs it to connect to CEy
- Step-4: Control application instructs FEz to also connect to CEw
  - this is essentially the "A" part of A&C, as discussed in slide no. 6 (Potential Scenarios)
- Step-5: Control application instructs FEz to increase its syslog debug level
  - essentially this is the "C" part of A&C, as discussed in slide no. 6 (Potential Scenarios)

Step-4 (FEM part of the charter) and Step-5 are what we would like to achieve

Sequence of Events in FEM

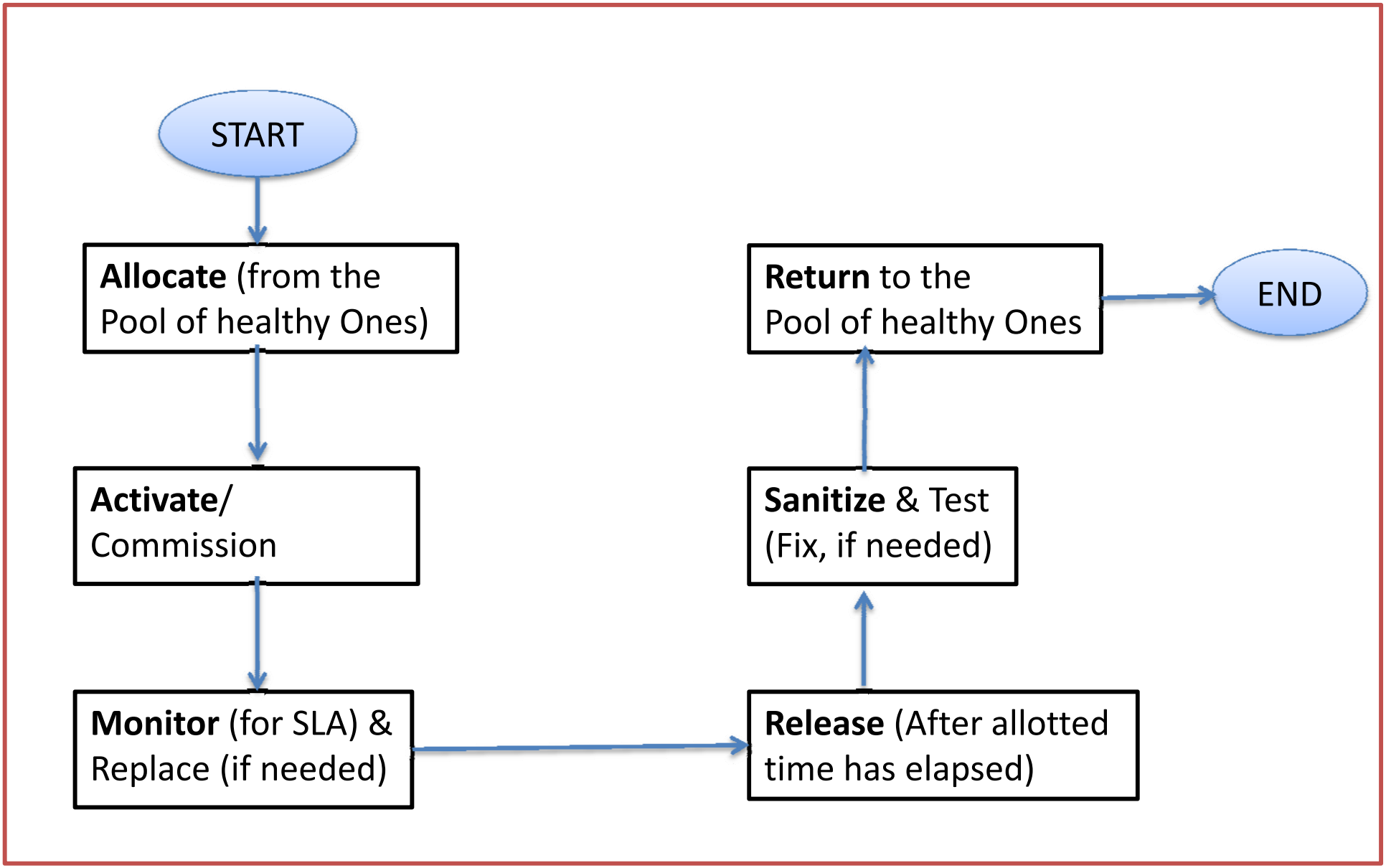


Application and Orchestration

- Applications can adapt based on
  - Loading and Recovery status
  - Pre- and post-condition(s)
  - Other Requirements

- Orchestration
  - Multiple CE/VCE scenarios
  - Handling of Bursts and/or Multiple Conflicting Requests from the Apps/Services

CE/FE/LFB Life Cycle Management



Next Steps

- **Initiate a draft, and Invite others to Contribute/Participate**

- **Comments/Suggestions**

Q&A, and Discussion

THANKS!