TES to NVE interaction

Draft-gu-nvo-tes-nve-mechanism

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Overview

- Describe VM lifetime events
  - Creation, (Pre-)Associate, Suspension&Resume, Migration(Emigrating, Immigrating), Termination
  - Not every VM has to pass through all events
  - NVE needn't be aware of all the events

VM Full Lifecycle Sketch

```
/~~~~~~~~~~~~\                    /~~~~~~\
|VM Terminate|--Aged out-->|NULL |
\~~~~~~~~~~~~/                    \~~~~~~/
       ^                             |
VM Terminate                         |
       |                    /~~~~~~~~~~~~\
    +-----------------|VM Creation|<---------.
    |                    \~~~~~~~~~~~~/        |
    |                         |         Fail   |
    |                         v                |
    |                /~~~~~~~~~~~~~~~~~\        |
    +--------------|VM Pre-Associate|--------.
    |              |with NVE        |<-------.
    |              \~~~~~~~~~~~~~~~~~/        |
    |                         |         Fail  |
    |                         v               |
    +---------------/~~~~~~~~~~~~~~\<--------|-----------------.
    |    .---------->|VM Associate |---------.                |
    |    |           |with NVE     |<---------.               |
    |    |           \~~~~~~~~~~~~~~/         |  Successful Immigraiton
    |VM Resume       | or | or |              |     to this server
    |    |           |        .---. .---.     |                |
    |    |           v        |   |   |       |    /~~~~~~~~~~~~~~~\
    +---|-----/~~~~~~~~~~~~~~\ |   .------|----------->|VM Immigrating|
    |   .-----|VM Suspension| |        |           \~~~~~~~~~~~~~~~/
    |         \~~~~~~~~~~~~~~/ |        |                |
    |                         | Failed Immigration      |
    |                         |   to other server       |
    |                         v        |                |
    |              /~~~~~~~~~~~~~~\     |  Failed Immigration
    +--------------------|VM Emigrating|-----.  to this server
    |                    \~~~~~~~~~~~~~~/     |                |
    |                         |              |                |
    |         Successful Immigration to other server         |
    |                         |              |                |
    +-------------------------.              |                |
    |                         |                               |
    +-------------------------------------------------------.
```
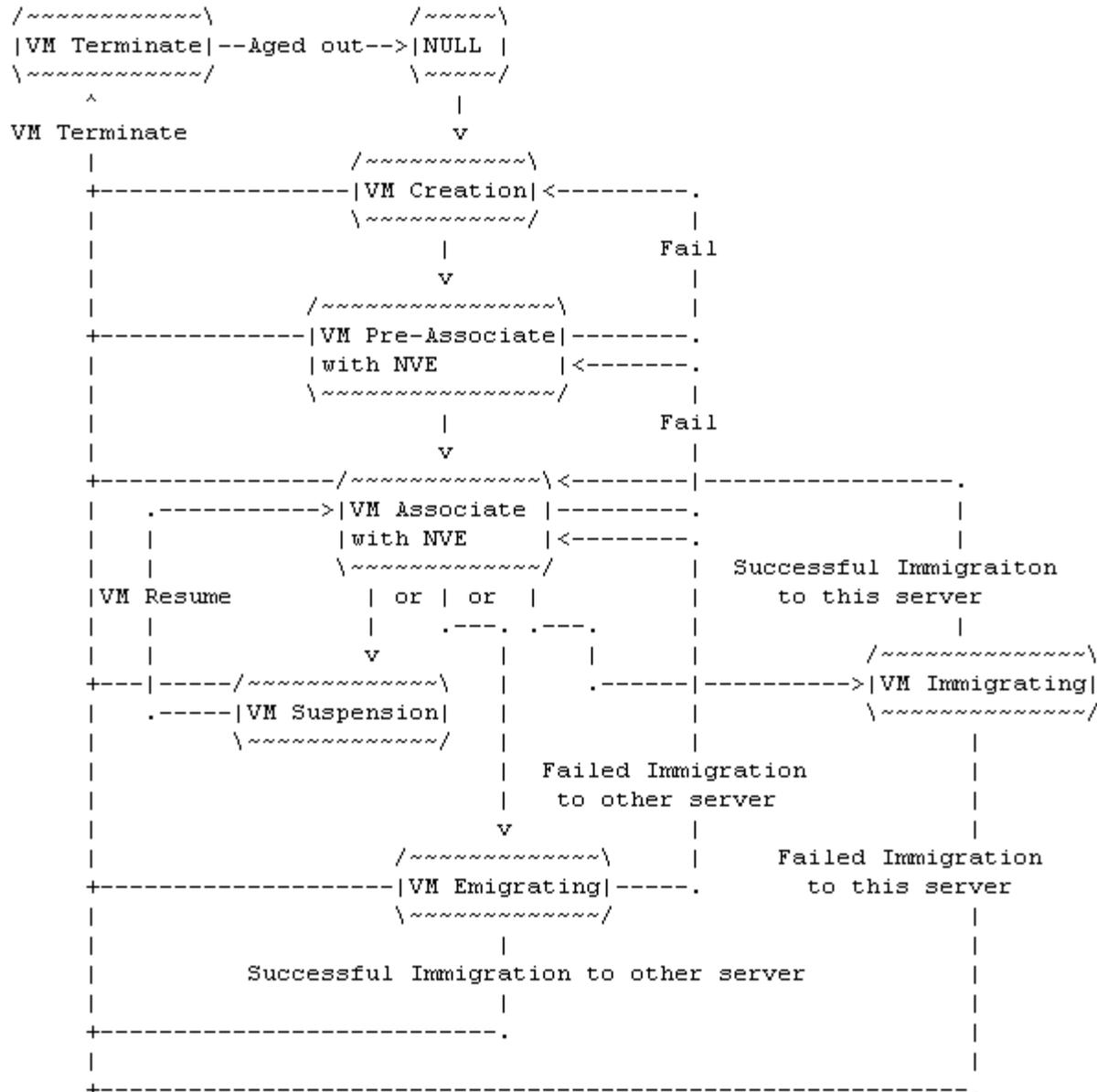
Figure 4: VM Full Lifecycle Sketch

Overview

- Analysis on necessary TES to NVE interactions
  - (Pre-)Associate, Suspension&Resume, Emigrating, Immigrating, Termination
  - Keep-alive, NVE Local Changes
  - Circumstances and parameters
  - Not every interaction needs a dedicated message
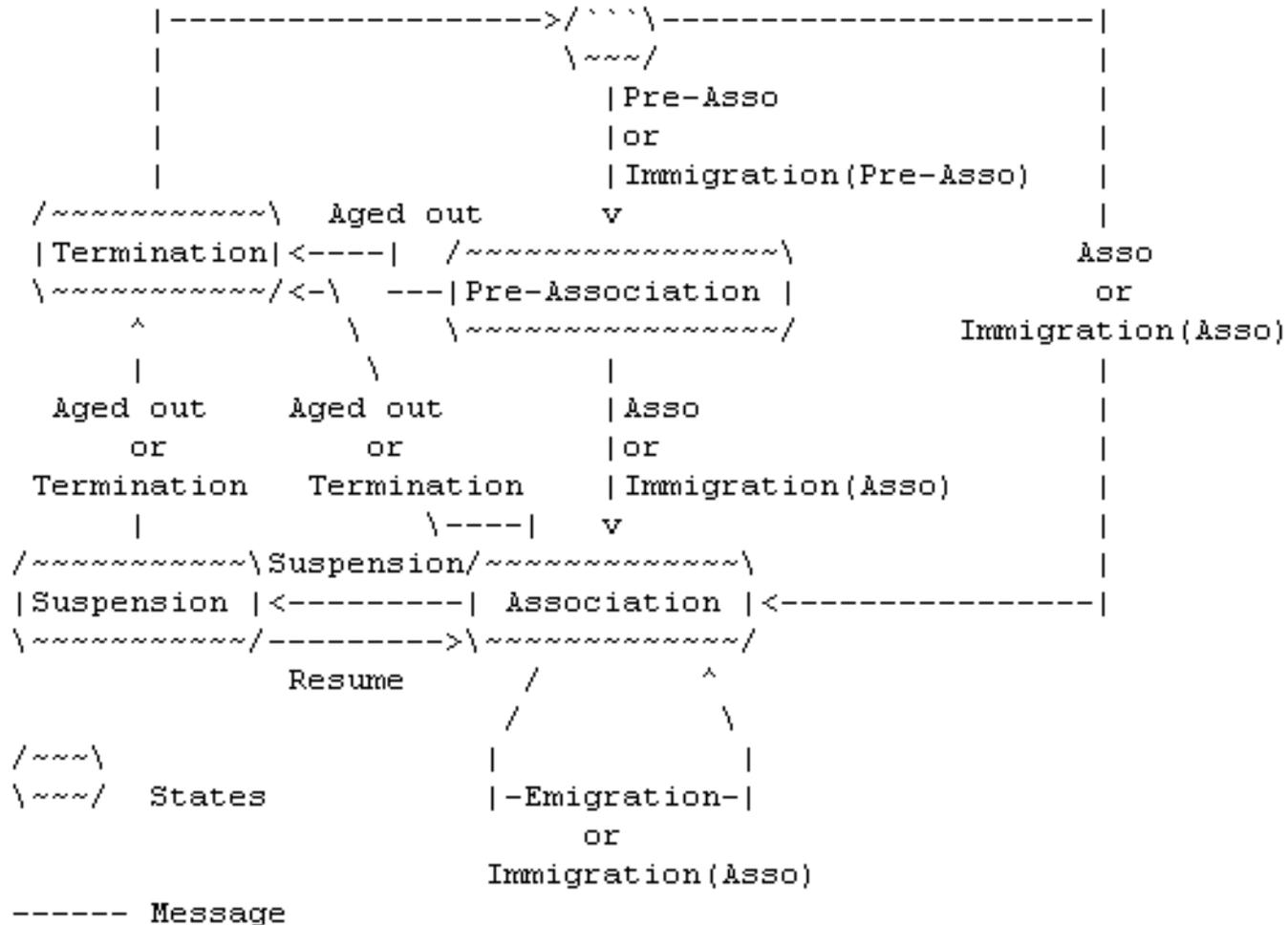
TES to NVE signalling State Machine

```
       |-------------------->/ ` ` `\---------------------|
       |                     \~~~/                        |
       |                      |Pre-Asso                   |
       |                      |or                         |
       |                      |Immigration(Pre-Asso)      |
  /~~~~~~~~~~~\   Aged out         v                       |
  |Termination|<----|   /~~~~~~~~~~~~~~~~\      Asso
  \~~~~~~~~~~~/<-\   ---|Pre-Association |          or
      ^        \    \~~~~~~~~~~~~~~~~/     Immigration(Asso)
      |         \            |                       |
  Aged out    Aged out     |Asso                     |
     or          or        |or                       |
  Termination  Termination  |Immigration(Asso)        |
      |             \----|    v                       |
 /~~~~~~~~~~~\Suspension/~~~~~~~~~~~~~\                |
 |Suspension |<---------| Association |<---------------|
 \~~~~~~~~~~~/--------->\~~~~~~~~~~~~~/
           Resume        /        ^
                        /          \
 /~~~\                 |            |
 \~~~/   States        |-Emigration-|
                            or
                      Immigration(Asso)

------ Message
```

Figure 5: TES to NVE signalling State Machine

Answer to the questions

- Possible material for Problem Statement or Framework document? No.

- Possible material for one of the Requirements drafts? Yes.

- Similar drafts? Yes.

THANKS