

# Prodiguer Supervisor Design Notes

## Workflow

### Step 1. Detect @ IPSL

**Responsibility**

Decide whether a simulation's current state requires supervision

**Owner**

MG

**Actions**

1. Loads simulation data from database
2. Decides if simulation state requires supervision
3. If supervision is required:
  - 3.1. writes an entry in db: tbl\_simulation\_supervision
  - 3.2. places a new message on queue: internal-supervisor-format

**Message Queue**

internal-supervisor-detect

**Message Content**

sim-uid, job-uid

**Message Producers**

in\_monitoring\_9999.py  
in\_monitoring\_2900.py  
in\_monitoring\_3900.py  
in\_monitoring\_4900.py  
in\_monitoring\_9000.py  
in\_monitoring\_late\_jobs.py

### Step 2. Format supervision script(s) @ IPSL

**Responsibility**

Format bash script(s) to be dispatched & executed at the HPC

**Owner**

LF

**Actions**

1. Loads required data from database
2. Loads required script template(s) from file system
3. Builds supervision script(s) from template(s)
4. Converts supervision script(s) to base64 encoded text
5. Places message on queue: internal-supervisor-dispatch
6. Updates entry in db: tbl\_simulation\_supervision

**Message Queue**

internal-supervisor-format

**Message Content**

supervision-id

**Message Producers**

internal-supervision-detect.py

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## Step 3. Dispatch supervision script(s) @ IPSL

### Responsibility

Dispatches supervision bash script(s) to HPC for execution

### Owner

LF

### Actions

1. Loads required data from database
2. Loads relevant X509 certs from file system
3. Opens ssh-gsi connection
4. Sends supervision script to executor at HPC over ssh-gsi tunnel

### Message Queue

internal-supervisor-dispatch

### Message Content

supervision-id

### Message Producers

internal\_supervisor\_format.py

## Step 4. Script Execution @ HPC

### Responsibility

Executes supervision bash script(s)

### Owner

LF & SD

### Actions

1. Decodes script(s) from base64
2. Passes script(s) to libIGCM for execution

# Implementation Notes

## New message queues:

- internal-supervision-detect
- internal-supervision-format
- out-supervision-dispatch
- debug-internal-supervision-detect
- debug-internal-supervision-format
- debug-out-supervision-dispatch

## New message consumers:

- prodiguer-server/jobs/mq/internal-monitoring-late-jobs.py
- prodiguer-server/jobs/mq/internal-supervision-detect.py
- prodiguer-server/jobs/mq/internal-supervision-format.py
- prodiguer-server/jobs/mq/out-supervision-dispatch.py

## Modified message consumers:

- prodiguer-server/jobs/mq/in-monitoring-0000.py
- prodiguer-server/jobs/mq/in-monitoring-2900.py
- prodiguer-server/jobs/mq/in-monitoring-3900.py

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- prodiguer-server/jobs/mq/in-monitoring-4900.py
- prodiguer-server/jobs/mq/in-monitoring-9000.py
- prodiguer-server/jobs/mq/in-monitoring-9999.py

## New database objects:

- tbl\_simulation\_supervision
  - id
  - simulation\_uid
  - job\_uid
  - script content
  - script content encoding (default=base64)
  - dispatch\_status
  - execution\_status

## New database python modules:

- prodiguer-server/prodiguer/db/pgres/dao\_supervision.py
- prodiguer-server/prodiguer/db/pgres/validator\_dao\_supervision.py
- prodiguer-server/prodiguer/db/pgres/types\_supervision.py

## New GitHub repo:

- **prodiguer-supervision**
  - detection algorithm
  - script template loader
  - script builder
  - script dispatcher