Daemon Process Manager – Architecture and Design doc.

1. What is a Daemon Process Manager?

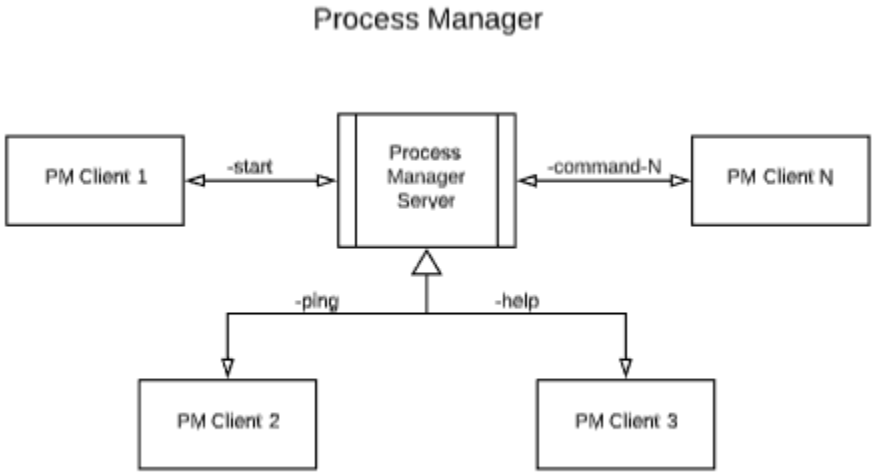
- **Daemon Process Manager** is a daemon/background process to manage other processes.

2. Features,

- **Configuration driven:** All the information are read from a configuration file, mostly XML file.
- **CLI architecture:** Command line interface architecture.
    - E.g - where **pm** is the process name,
        - **pm start –id0** : start process with the id "id0" in the configuration file.
        - **pm ping** : check the status of all the processes defined in the configuration file.
- **Process Monitoring and Action Handlers**: Enabled with process monitoring and action handler capabilities.

3. Architecture,

- Client-server architecture via TCP/IP.



- This architecture allows to manage the Process Manager from remote system and also possibly even through cross platform systems.
    - Manage local system processes (linux-linux).
    - Manage remote system processes (linux-linux , windows-linux).
- Since client and server communicate with the common interface, they are decoupled and could be interconnected as N-Client – N-Server.

4. Design,

- Process Manager requires the following different components to function as desired,
    - **CommandManager** : Where all the commands are defined and the CLI parsing is done.
    - **PDU**: Common low-level cross-platform compatible **Predefined Data Unit** package which carries the request/response data between the client and servers.
    - **SocketManager**: Common interface responsible for sending and receiving the requests.
    - **RequestsHandler:** Common interface responsible to handle command request and response.
    - **ConfigurationManager:** Server side configuration manager which handles the configuration file read/write operations.
    - **ProcessManager:** Process data manager and responsible to primary operations like process start, stop ,restart, etc.
    - **Logger:** Log manager.
    - **HelpManager:** Client side self-explanative CLI helper.

5. Typical request lifecycle,

Prerequisites:

- Server is running configured.
- Clients and Servers reachable to each other.
- Are running the same binary versions (Common Interface)

Prerequisites:

- User runs the client with the respected command line arguments.
- Client CLI validates the request command, if failed to parse the command displays the proper error messages.
- Upon successful command validation it checks for the server connectivity and interface version running, either in case server unreachable/version mismatch it displays the proper error message and exit.
- Upon successful command request to the server, Server executes the command routine defined and returns the result to the client.
- Client display the response and exit.

Supported commands,

In the following example **pmc** is the **Process Manager Client** executable name.

Sl.No	Command	Variants	Usage
1	**Start**: Start the process or set of processes.	1. **ALL**: Start all the processes listed in configuration. 2. **BY_ID:** Start a specific process listed in configuration by ID.	1. **./pmc start** 2. **./pmc start id-0**
2	**Stop**: Restart the process or set of processes.	1. **ALL**: Stop all the processes listed in configuration. 2. **BY_ID:** Stop a specific process listed in configuration by ID.	1. **./pmc stop** 2. **./pmc stop id-0**
3	**Restart**: Restart the process or set of processes.	1. **ALL**: Restart all the processes listed in configuration. 2. **BY_ID:** Restart a specific process listed in configuration by ID.	1. **./pmc restart** 2. **./pmc restart id-0**
4	**Ping**: Ping the process or set of processes.	1. **ALL**: Ping all the processes listed in configuration. 2. **BY_ID:** Ping a specific process listed in configuration by ID.	1. **./pmc ping** 2. **./pmc ping id-0**

5	**Config**: Display or perform an operation on the configuration data.	1. **DISPLAY ALL**: Display all the processes listed in configuration. 2. **DISPLAY BY_ID:** Display a specific process listed in configuration by ID. 3. **RELOAD:** Reload data from the configuration file.	1. **./pmc config -display** 2. **./pmc config -display -id0** 3. **./pmc config -reload**
6	**Setting**: Display or perform an operation on the server setting data.	1. **DISPLAY ALL**: Display all the server settings. 2. **DISPLAY BY_ID:** Display a specific server setting by ID. 3. **RELOAD:** Reload server setting from the fi.	1. **./pmc setting -display** 2. **./pmc setting display -id0** 3. **./pmc setting -reload**
7	**Help**: Help guide on the available commands.	Variants available for each of the supported commands. When used without command, displays help for all commands.	**1. ./pmc help** **2. ./pmc help -start** **3. ./pmc help -stop** **4. ./pmc help -ping** **5. ./pmc help -help**