Designing MC/ServiceGuard Monitor Scripts

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Follow the Process

- ps -f versus ps -e

- ps -eu uname

- ps -p

Following More than One

```
PROCNAME[0]=""
PROCNAME[1]=""
PROCNAME[2]=""
PROCNAME[3]=""


USERNAME="root"


GETPID()
{
ps -eu ${USERNAME} | \
   awk '$NF ~ ^'${1}'$/ {print $1}'
}
```

Following More than One

```
REF=0
while [[ ${REF} < ${#PROC[@]} ]]
do
  PIDS[${REF}]=$(GETPID ${PROC[${REF}]})
  if [[ -z ${PIDS[${REF}]} ]]
      then
      print -n "Unable to determine PID "
      print "for >${PROC[${REF}]}<."
  fi
  (( REF += 1 ))
done
```

Following More than One

```
while true
  for PID in ${PIDS[@]}
  do
      if ps -fp ${PID} > /dev/null 2>&1
      then
            :
      else
            print "PID ${PID} missing!"
            exit 1
      fi
  done
do
```

What if the process can restart?

Check the Database

- A process can be in the process stack, but still…
  - be hung in an endless loop
  - be blocked on a critical resource
  - be unresponsive

There is a Better Way

```
isql  -U ${SYB_USER} \
      -S ${SYB_INST} <<- EOI
          ${SYB_PASS}
          select getdate()
          go
          EOI
```

The Subtleties of SQL

- Selecting an SQL user
  - not a database management id
- Keeping the SQL password
  - You will want to change it occasionally
- SQL code
  - Proof database is up (maybe perf. data?)
- SQL exit status
  - non-zero $? means syntax error

What If SQL Hangs?

```
RC=""
Call_ISQL > ${ES_FILE} &

# Wait up to 15 seconds for isql
# then consider it "hung".
for I in 2 3 5 5
do
   if [[ -s ${ES_FILE} ]]
   then
       RC=$(<$(ES_FILE})
       rm ${ES_FILE}
       break
   fi
   sleep ${I}
done
```

Disable/Enable

- Sooner or later…
  - the database will require maintenance
  - Security will require a password change

Method A

Follow the Process

Check the Database

What If SQL Hangs?

Disable/Enable

Check on Re-enable

WARNING!

Re-configuration

By Signal

```
trap monitor SIGUSR1
trap disabled SIGUSR2


monitor()
{
}


disabled()
{
}


monitor
```

Method B

By File

Follow the Process

Check the Database

What If SQL Hangs?

Disable/Enable

Check on Re-enable

WARNING!

Re-configuration

```
monitor()
{
   if [[ -f ${MONITOR_LOCK} ]]
   then
        print -n "Monitoring disabled at "
        date
        print -n "\tRemove ${MONITOR_LOCK} "
        print "to re-engage."
        disable
   fi
   .
   .
   .
```

Method B

By File

Follow the Process

Check the Database

What If SQL Hangs?

Disable/Enable

Check on Re-enable

WARNING!

Re-configuration

```
disabled()
{
    while [[ -f ${MONITOR_LOCK} ]]
    then
         print -n "Monitoring disabled."
         sleep ${DISABLED_INTERVAL}
    fi
    print -n "Monitoring ENABLED at "
    date
    monitor
}
```

Advantages/Disadvantages

- By Signal
  - only root can signal a process run by root or another user
  - only two user assigned signals available
- By File
  - Whomever controls the file controls the monitor script

Check on Re-enable

- Wouldn't it be nice if you could ask the monitor to check before you enable it?

  – Wrap the checking process into a function.

  – Set a trap to run the function and only report the messages to the log file.

Nice Process

- Disable

- Perform maintenance

- Check

- Enable

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WARNING!

Follow the Process

Check the Database

What If SQL Hangs?

Disable/Enable

Check on Re-enable

WARNING!

Re-configuration

```
MAX_DISABLED=120   # in minutes
DISABLED_SLEEP=5   # in minutes

# Inside of disabled function
DTIMR=0
sleep $(( ${DISABLED_SLEEP} * 60 ))
(( DTIMR += ${DISABLED_SLEEP} ))

if (( ${DTIMR} < ${MAX_DISABLED} ))
then
   print "Monitor disabled too long!"
    # send e-mail to pager, etc.
fi
```

Re-configuration

- Wouldn't it be nice to…
  - change the SQL user and password
  - modify the process list
  - use different SQL code
  - change time intervals

Re-configuration with Autoload Functions

- Autoload functions
  - `FPATH=`
  - `typeset -f FNAME`

  - `unset -f FNAME`

Re-configuration With Autoload Functions

```
LOADFUNCTIONS()

{

unset -f MYFN

typeset -f MYFN

}


trap LOADFUNCTIONS SIGUSR1
```