Designing MC/ServiceGuard Monitor Scripts

David Totsch

Account Support Engineer Hewlett-Packard Company

Designing MC/ServiceGuard Monitor Scripts	Follow the Process	
Follow the Process Check the Database What If SQL Hangs? Disable/Enable Check on Re-enable WARNING! Re-configuration	 ps -f versus ps -e ps -eu uname ps -p 	
Interworks 2001	David Totsch, Hewlett-Packard Company	Slide 2 of 99

Designing MC/ServiceGuard Monitor Scripts	Following More than C)ne
	PROCNAME[0]=""	
	PROCNAME[1]=""	
Follow the Process	PROCNAME[2]=""	
Check the Database	PROCNAME[3]=""	
What If SQL Hangs?	USERNAME="root"	
Disable/Enable		
Check on Re-enable	GETPID() {	
WARNING!	ps -eu ${USERNAME} \setminus$	
Re-configuration	awk '\$NF ~ ^'\${1}'\$/ {print \$1}' }	
Interworks 2001	David Totsch, Hewlett-Packard Company	Slide 3 of 99

Designing MC/ServiceGuard Monitor Scripts	Following More than One
	REF=0
Follow the Drocoss	while [[$\{REF\} < \{\#PROC[@]\}$]]
Follow the Process	do
Check the Database	PIDS[\${REF}]=\$(GETPID \${PROC[\${REF}]})
What If SQL Hangs?	II [[-Z Ş{PIDS[Ş{REF}]}]]
Dischle/Erschle	then
Disable/Enable	print -n "Unable to determine PID "
Check on Re-enable	print "for $s_{PROC}[s_{REF}]$
WARNING!	II.
	((REF += 1))
Re-configuration	done
Interworks 2001	David Totsch, Hewlett-Packard Company Slide 4 of 99

Designing MC/ServiceGuard Monitor Scripts	Following More than One
	while true
	for PID in \${PIDS[@]}
Follow the Process	do
Check the Database	if ps -fp \${PID} > /dev/null 2>&1 then
What If SOL Hangs?	•
	• alga
Disable/Enable	print "PID \${PID} missing!"
Check or De creble	exit 1
Check on Re-enable	fi
WARNING!	done
	do
Re-configuration	
	What if the process can restart?
Interworks 2001	David Totsch, Hewlett-Packard Company Slide 5 of 99

Designing MC/ServiceGuard Monitor Scripts	Check the Database	,
Follow the Process Check the Database What If SQL Hangs? Disable/Enable Check on Re-enable WARNING! Be-configuration	 A process can be in the process stack, but still be hung in an endless loop be blocked on a critical resource be unresponsive 	5
Interworks 2001	David Totsch, Hewlett-Packard Company	Slide 6 of 99

Designing MC/ServiceGuard Monitor Scripts	There is a Better Way
	ISQI -U Ş{SYB_USER} \
Follow the Process	-S \${SYB_INST} <<- EOI
Check the Database	\${SYB_PASS}
What If SQL Hangs?	<pre>select getdate()</pre>
Disable/Enable	go
Check on Re-enable	EOI
WARNING!	
Re-configuration	
Interworks 2001	David Totsch, Hewlett-Packard Company Slide 7 of 99

Designing MC/ServiceGuard Monitor Scripts	The Subtleties of SQL
	• Selecting an SQL user
Follow the Process	 not a database management id
Check the Database	 Keeping the SQL password
What If SQL Hangs?	– You will want to change it occasionally
Disable/Enable	• SOL code
Check on Re-enable	
WARNING!	– Proof database is up (maybe perf. data?)
Re-configuration	• SQL exit status
	– non-zero \$? means syntax error
Interworks 2001	David Totsch, Hewlett-Packard Company Slide 8 of 99

Designing MC/ServiceGuard Monitor Scripts	What If SQL Hangs?
	RC=""
	Call ISOL > $\${ES FILE} \&$
Follow the Process	
Check the Database	<pre># Wait up to 15 seconds for isql # then consider it "hung".</pre>
What If SQL Hangs?	for I in 2 3 5 5 do
Disable/Enable	if [[-s \${ES_FILE}]]
Check on Re-enable	then RC=\$(<\$(ES_FILE})
WARNING!	break
Re-configuration	fi
	<pre>sleep \${I} done</pre>
Interworks 2001	David Totsch, Hewlett-Packard Company Slide 9 of 99

Designing MC/ServiceGuard Monitor Scripts	Disable/Enable
Follow the Process Check the Database What If SQL Hangs? Disable/Enable Check on Re-enable WARNING! Re-configuration	 Sooner or later – the database will require maintenance – Security will require a password change
Interworks 2001	David Totsch, Hewlett-Packard Company Slide 10 of 99

Designing MC/ServiceGuard Monitor Scripts	Method A
	By Signal
	Dy Signal
Follow the Process	
	trap monitor SIGUSR1
Check the Database	trap disabled SIGUSR2
What If SOL Hangs?	
	monitor()
Disable/Enable	{
	}
Check on Re-enable	
WARNING!	disabled()
	{
Re-configuration	}
	monitor
Interworks 2001	David Totsch, Hewlett-Packard Company Slide 11 of 99

Designing MC/ServiceGuard Monitor Scripts	Method B
	By File
Follow the Process	
Check the Database	monitor() {
What If SQL Hangs?	if [[-f \${MONITOR_LOCK}]] then
Disable/Enable	print -n "Monitoring disabled at "
Check on Re-enable	date print -n "\tRemove \${MONITOR_LOCK} "
WARNING!	print "to re-engage."
Re-configuration	fi
	• • •
Interworks 2001	David Totsch, Hewlett-Packard Company Slide 12 of 99

Designing MC/ServiceGuard Monitor Scripts	Method B
	By File
Follow the Process	disabled()
Check the Database	{
What If SQL Hangs?	<pre>while [[-f \${MONITOR_LOCK}]] then</pre>
Disable/Enable	print -n "Monitoring disabled."
Check on Re-enable	<pre>sleep \${DISABLED_INTERVAL} fi</pre>
WARNING!	print -n "Monitoring ENABLED at " date
Re-configuration	monitor
	}
Interworks 2001	David Totsch, Hewlett-Packard Company Slide 13 of 99

Designing MC/ServiceGuard Monitor Scripts	Advantages/Disadvantages
	• By Signal
Follow the Process	 – only root can signal a process run by
Check the Database	root or another user
What If SQL Hangs?	– only two user assigned signals available
Disable/Enable	• By File
Check on Re-enable	– Whomever controls the file controls the
WARNING!	monitor script
Re-configuration	
Interworks 2001	David Totsch, Hewlett-Packard Company Slide 14 of 99

Designing MC/ServiceGuard Monitor Scripts	Check on Re-enable
Follow the Process Check the Database What If SQL Hangs? Disable/Enable Check on Re-enable WARNING! Re-configuration	 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.
Interworks 2001	David Totsch, Hewlett-Packard Company Slide 15 of 99

Designing MC/ServiceGuard Monitor Scripts	Nice Process
Follow the Process Check the Database What If SQL Hangs? Disable/Enable Check on Re-enable WARNING! Re-configuration	 Disable Perform maintenance Check Enable
Interworks 2001	David Totsch, Hewlett-Packard Company Slide 16 of 99

Designing MC/ServiceGuard Monitor Scripts	WARNING!	
	MAY DIGARIED-120 # in minuted	
	DISABLED SLEEP=5 # in minutes	
Follow the Process		
Check the Database	<pre># Inside of disabled function DTIMR=0</pre>	
What If SQL Hangs?	<pre>sleep \$((\${DISABLED_SLEEP} * 60))</pre>	
Disable/Enable	((DTIMR += \${DISABLED_SLEEP}))	
Check on Re-enable	<pre>if ((\${DTIMR} < \${MAX_DISABLED})) then</pre>	
WARNING!	print "Monitor disabled too long!	ш
Re-configuration	<pre># send e-mail to pager, etc. fi</pre>	
Interworks 2001	David Totsch, Hewlett-Packard Company	Slide 17 of 99

Designing MC/ServiceGuard Monitor Scripts	Re-configuration
Follow the Process Check the Database What If SQL Hangs? Disable/Enable Check on Re-enable WARNING! 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
Interworks 2001	David Totsch, Hewlett-Packard Company Slide 18 of 99

Designing MC/ServiceGuard Monitor Scripts	Re-configuration with Autoload Functions	
	 Autoload functions 	
Follow the Process	- FPATH=	
Check the Database	-typeset -f FNAME	
What If SQL Hangs?		
Disable/Enable	-unset -f FNAME	
Check on Re-enable		
WARNING!		
Re-configuration		
Interworks 2001	David Totsch, Hewlett-Packard Company	Slide 19 of 99

Designing MC/ServiceGuard Monitor Scripts	Re-configuration With Autoload Functions
	LOADFUNCTIONS()
Follow the Process Check the Database What If SQL Hangs? Disable/Enable Check on Re-enable WARNING!	<pre>{ unset -f MYFN typeset -f MYFN } trap LOADFUNCTIONS SIGUSR1</pre>
Re-configuration	
Interworks 2001	David Totsch, Hewlett-Packard Company Slide 20 of 99