

kPooladm



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Installing kPooladm:

The purpose of kPooladm is to manage pooladm using an X11 interface, so to run the program you need a running solaris box with at least solaris 10.

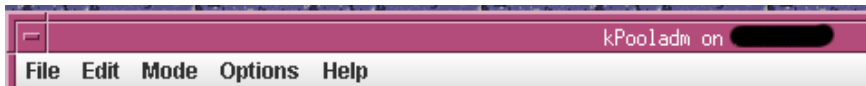
After downloading the kPooladm zipfile on the website (<http://kpooladm.atomique.net/kpooladm.zip>) and unzipping the file you will have a new directory tree named kpooladm. You must do some specific steps to make kpooladm running.

1. copy JPool.jar: the library use to manage the pools is not in the zip file, so you must copy it for your own box, this jar file is /usr/lib/pool/JPool.jar and must be copied in the lib directory under kpooladm. If you don't have this file don't try to get it from another box as it surely tell you than pool can't be run on your box.

Launching kPooladm:

You must launch the run.sh script to run kpooladm. this script may need some enhancement on your box to specify some location (java binary,..). Also the script hasn't the execute bit set on his permission. This script must be run while you are in the directory, if you don't do that kPooladm cannot be launch.

The menus:



- File
- Edit
- Mode
- Options
- Help

The File menu contains only one entry (Quit). which will close the application, saving any modification done.

Edit menu is the menu has two sections, one for the pool where you can add or remove one, the other is for pset with the same functionality than pools.

By default kpooladm only the value from the kernel, if you want to modify some entries you need to switch to write mode using the menu item under Mode menu. Going in write mode, will lock the kernel configuration disabling the ability of other programs to change the configuration (if you are using poold this will freeze any change). To help to remember in which state you are the menu will go red when in write mode. Leaving the write mode will saving the kernel configuration to the file base configuration (/etc/pooladm.conf)

The Options menu has plenty of usage:

The Graph menu will show up a new window with the cpu repartition of each pset, helping you to change the configuration.

The Console Log will bring a new window with the command that you can type to make the same change by the command line.

The Poold Log can be used to see to /var/log/pool/poold file while you are modifying the configuration.

And at least the Check Poold Config will check if the configuration is valid for poold (this will check that poold is running, and that each pset has at least on pinned cpu).

The Help menu will show the window with the kPooladm version and the license, this is by this window that you can check if there is a new release of kpooladm available (this will access to internet and check the kpooladm.atomique.net web site)

Main window:

The screenshot shows the kPooladm main window with the following sections:

System configuration

Name	Version	Bind default	Allocated Method	Comment
default	1	true		

Pool Configuration

pid	Objectives	Log Location	Log Level	History	Monitor interval
4785	wt-load	/var/log/pool	NOTICE	/var/adm/pool	15

Pool(s) configuration(s)

ID	Name	Pset	Scheduler	importance	default	active	Comment
0	pool_default	pset_default		1	true	true	
1	[REDACTED]	[REDACTED]	TS	1	false	true	[REDACTED]
2	[REDACTED]	[REDACTED]	TS	1	false	true	[REDACTED]
3	[REDACTED]	[REDACTED]	TS	1	false	true	[REDACTED]
4	[REDACTED]	[REDACTED]	TS	1	false	true	[REDACTED]
5	[REDACTED]	[REDACTED]	TS	1	false	true	[REDACTED]

Pset(s) configuration(s)

ID	Name	Cpu Binding	Default	min	size	max	load	type	units	Objectives	Comment
-1	pset_default	false	true	1	4	65536	0.356		population		
1	[REDACTED]	false	false	1	3	4	0.167		population		[REDACTED]
2	[REDACTED]	false	false	1	2	4	0.54		population		[REDACTED]
3	[REDACTED]	false	false	1	3	4	0.244		population		[REDACTED]
4	[REDACTED]	false	false	4	4	4	0.076		population		[REDACTED]
5	[REDACTED]	false	false	1	3	4	0.128		population		[REDACTED]

Cpu(s) configuration(s)

ID	Status	Pinned	pset	Comment
0	on-line	false	pset_nr0u0637	
1	on-line	true	pset_nr0u0634	
2	on-line	false	pset_nr0u0631	
3	on-line	false	pset_nr0u0636	
4	on-line	true	pset_nr0u0637	
5	on-line	false	pset_nr0u0632	

The main window is divided into five sections, each section will manage different sort of elements.

- System Configuration
- Pool Configuration
- Pool(s) Configuration
- Pset(s) Configuration
- Cpus(s) Configuration

The System configuration

Name	Version	Bind default	Allocated Method	Comment
default	1	true		

In write mode, you can set :

Comment: you can set comment to any string, this can be used to track a modification date or whatever

Allocated Method : this can be set to “surplus to default” or “importance based”, if not set the default value is “importance based”.

Bind default : this one is a boolean, so it’s either true or false (default to true).

Name: each configuration can have his own name (not sure how it works or what the purpose is).

The ones that can't be set:

The Version is for now always 1, even if there was multiple version of the pool library..

The Pool Configuration:

Pool Configuration						
pid	Objectives	Log Location	Log Level	History	Monitor interval	
4785	wt-load	/var/log/pool	NOTICE	/var/adm/pool	15	

During write mode, the entries can be set:

Log Location: the daemon pool, will write a log file named "pool" under the directory specified here. (default : /var/log/pool)

Log Level: You can see different information of the pool daemon, the Level can be set with the value of (ALERT, CRIT, ERR, WARNING, NOTICE, INFO and DEBUG). The default is NOTICE

History: To make his decision pool keep track of cpu,pset &pool counter in some files in this directory (the default file is /var/adm/pool)

Monitor Interval: This tells pool how often (in second) it must check the counter to see if there any change to make. (default value to 15 seconds)

Those can't be set:

PID: this is the actual pid of pool daemon (if pool isn't running you will see a red -1 (default none).

Objectives: this actually can be set, even if the man pages as some plan with this one. (default to "wt-load" : "weighted-load")

The Pool(s) Configuration:

Pool(s) configuration(s)							
ID	Name	Pset	Scheduler	importance	default	active	Comment
0	pool_default	pset_default		1	true	true	
1	██████████	██████████	TS	1	false	true	██████████
2	██████████	██████████	TS	1	false	true	██████████
3	██████████	██████████	TS	1	false	true	██████████
4	██████████	██████████	TS	1	false	true	██████████
5	██████████	██████████	TS	1	false	true	██████████

As you can see this one is a scrollable table of all the pool that has been configured on the system. All pool are not equals against the system, there is one pool that must be the default one, and further more this one can not have the value active set to false.

Going into write mode, will permit you to change the following:

Name: this is the name of the pool, this is just a string so you can find it, the system use the pool id for his own management.

Pset: this is actually the pset used by the pool, in consequence many pool can share the same pset.

Scheduler: each pool manage its processes, this one can be either unset, set to TS (time sharing) or FSS (fair share scheduler). the default is to use the time share scheduler.

Importance : this is the importance of the pool on all the system, if one decision must be taken and two pool can be chosen, the system will choose the pool with the greatest importance. (default value to 1)

Default: as said before one, and only pool must be the default one,

Active: an pool can be deactivated (still don't known for what purpose), As said before the default pools cannot be deactivated.

Comment: put any string that can help you to manage your pools

The Pset(s) Configuration:

Pset(s) configuration(s)												
ID	Name	Cpu Binding	Default	min	size	max	load	type	units	Objectives	Comment	
-1	pset_default	false	true	1	4	65536	0.356		population			▲
1	██████████	false	false	1	3	4	0.167		population		██████████...	☰
2	██████████	false	false	1	2	4	0.54		population		██████████...	▼
3	██████████	false	false	1	3	4	0.244		population		██████████...	
4	██████████	false	false	4	4	4	0.076		population		██████████...	
5	██████████	false	false	1	3	4	0.128		population		██████████...	

This scrollable table is the configuration of each pset, going in write mode will permit you to change to following entries:

Name: this is the name of the pset

Cpu Binding:

Default: like pool at least and almost one pset must be the default one.

Min: the minimum number of cpus in this pset

Max: the maximum number of cpus in this pset

Objectives: this is the pset objectives, if you click to modify the entry, this window will popup to help you to configure your objectives (see [other windows](#))

Comment: guess what, you can put any comment in this field

Values that cannot be changed (read-only):

Load: the current load-average of the pset

Size: the current number of cpus in the pset

Type:

Units: this field has always the value "population".

The Cpu(s) Configuration:

Cpu(s) configuration(s)				
ID	Status	Pinned	pset	Comment
0	on-line	false	pset_nr0u0637	
1	on-line	true	pset_nr0u0634	
2	on-line	false	pset_nr0u0631	
3	on-line	false	pset_nr0u0636	
4	on-line	true	pset_nr0u0637	
5	on-line	false	pset_nr0u0632	

Each cpu on the box get in this scrollable table, in write mode you can configure each cpu with the following value:

Status: this can be on-line, off-line or no-intr (default is the processor status on the kernel).

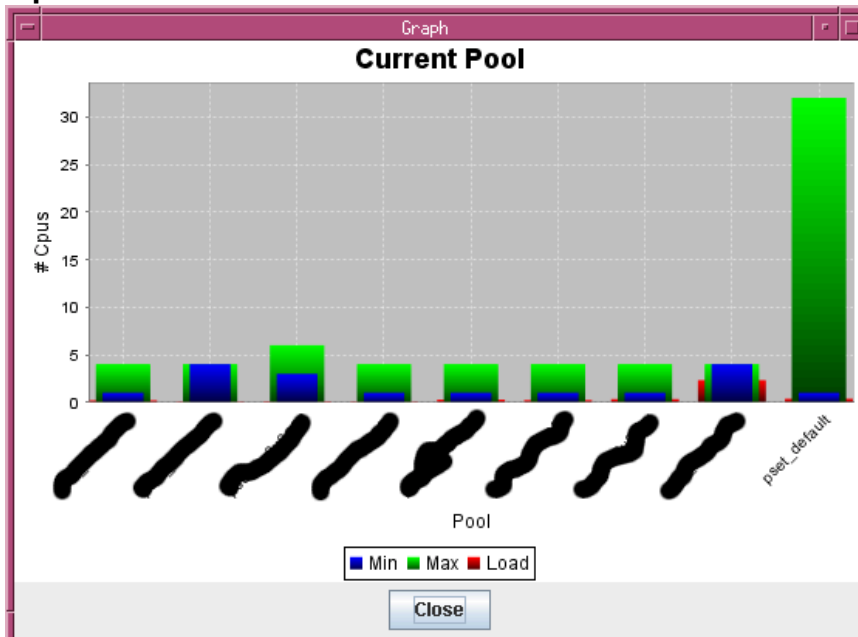
Pinned: this is the most important field if you are using the poold advantage, poold can only move cpu from pset only if each pset got a cpu pinned in it (that is a cpu that will never move out of this pset).

Pset: you can choose which pset will have the cpu, expect pinned cpu that can't be moved

Comment: another fabulous text-field to put something in it

Other windows:

The Graph window:



Graph is available through the options menu, it will graph all the pset with their min/mac cpu and current load. This can help you to visualize the cpu dispatch.

The Objectives window:

processor locality

locality: don't set

processors utilization

utilization	>	-1	%	importance:	1
utilization	<	-1	%	importance:	1

textual

last config:

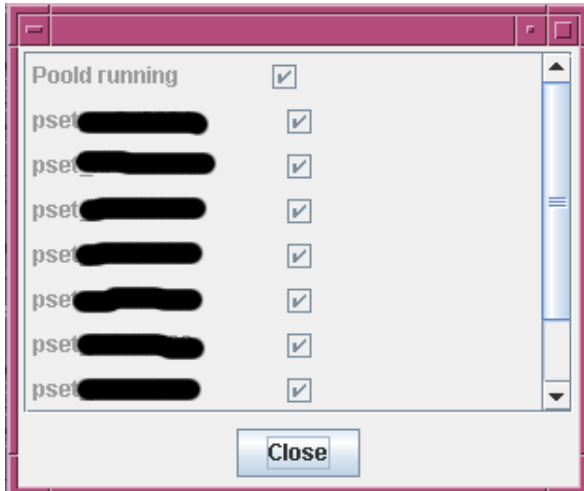
Ok Cancel Reset

This dialog will help you to configure pset objective:

locality is either unset, none, tight or loose this will tell how pool must choose his cpu either on the same board or on another board.

Utilization: you can define how much cpu utilization will affect pool decision, utilization is a percentage this can be greater than (>), lower than (<) or both. Another setting is "about" (~) will tell pool that if the load gets "closed" to this value it must make a decision on it.

The Check Pool window:



Since pools require some mandatory settings you can test and see if your configuration is valid for a pool, as the minimal requirements are:

pool must be running (pool.pid different of -1)

each pset must have at least one pinned cpu.