Subject: Resource Management development plans
Posted by Srivatsa Vaddagiri on Fri, 20 Jul 2007 16:19:39 GMT
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Here's a tentative development plan on resource management from our side.
Would request others to comment/add their plans as part of this discussion.

This plan, alongwith appropriate usage scenarios, is being requested for
kernel-summit discussion. Most likely, the resource management plans
will be presented as part of container discussion.

1. Infrastructure
 Userland interface for task-grouping, specifying group usage limits etc

 Paul Menage's container patches will be the basis for this
 infrastructure.

2. cpu controller

- Atleast 1-level deep hierarchical proportional fair-share scheduling
- Soft and Hard limit cpu usage of group
- Fine grained cpu control (ex: parts per 1000?)
- SCHED_FIFO policy for groups
    Groups having this policy will recv all cpu cycles as long
    as they have any task runnable. This is at the cost of
 starving other non-SCHED_FIFO groups.
- Sleeper fairness - Will help bursty workloads
- Accounting - group cpu usage

3. memory controller

- Basic rss controller
- user space oom handler
- Improve shared page accounting
- Handling of soft limits
- Provide support for accounting kernel/user memory, slabs, page tables,
  dcache entries, vma's, etc
- Improved statistics (folding)
- Add support for better tuning of containers
    i. Low and high water marks per container
    ii. Per container swappiness support
- Per container swap file(s)

4. Disk io controller

[I don't have sufficient details at the moment on disk io controller
requirements. Will add after I talk to relevant groups here]

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Regards,
vatsa

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Containers mailing list
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