Agenda

• Introduction
• Linux-HA
• Pacemaker
• Cluster Developer Summit
  - Prague, 2008-09-30 – 2008-09-02
• Q&A
Linux-HA project

• New governance structure
• The Cluster Resource Manager is now maintained as Pacemaker
• New release 3.0.0:
  - In beta as 2.99.x
  - Removal of lots of unmaintained code
    - 1176 files changed, 5346 insertions(+), 213851 deletions(-)
  - Resource Agent updates
  - Focuses on infrastructure components again
Pacemaker

- Not a fork, but a split from heartbeat
- Next release: 1.0.0
  - Currently in beta as 0.7.x
  - Focus on clean-ups and stability
- Features:
  - Supports both openAIS and heartbeat-2.99.x
  - New CLI
  - Timeout of failures
  - CIB syntax improved
  - Better documentation
Pacemaker CIB changes

- CIB Shadow support
- RelaxNG Schema support
  - Allows better validation (IDREFs etc)
- Element references
  - Rules, instance_attributes, meta_attributes, operations
- M:N constraints
- Failure migration thresholds
- Syntax scaffolding reduced
- Smooth migration supported
- Supports remote connects
Improved GUI for Pacemaker

• Compatible with the new cluster stack including pacemaker-1.0, heartbeat-3.0 and openAIS

• Supports Relax-NG scheme/DTD

• Expert mode for providing full features: adding and modifying kinds of objects (resources, constraints, configurations of resource manager...)

• Support viewing/manually editing/importing/exporting CIB XML

• Management functionalities (Start/Stop/Migrate/Cleanup a resource, Standby a node)

• Generate cluster report
The dropdown box shows all available types of applications we support.

**Required**
- ID: www_ip
- Class: ocf
- Provider: heartbeat
- Type: IPaddr2

**Optional**

**Description**
Manages virtual IPv4 addresses.

This Linux-specific resource manages IP alias IP addresses. It can add an IP alias, or remove one. In addition, it can implement Cluster Alias IP functionality if invoked as a clone resource.
The dropdown box shows all available parameters to this particular RA. The description field describes the parameter.
It's possible to Ref to an existing parameter.
Then we add apache

### Required
- **ID:** www_apache
- **Class:** ocf
- **Provider:** heartbeat
- **Type:** apache

### Optional

**Description**

This is the resource agent for the Apache web server. This resource agent operates both version 1.x and version 2.x Apache servers. See also [http://httpd.apache.org/](http://httpd.apache.org/)
Connected to 127.0.0.1
After adding all resources into the group

<table>
<thead>
<tr>
<th>ID</th>
<th>Class</th>
<th>Provider</th>
<th>Class</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>www_ip</td>
<td>ocf</td>
<td>heartbeat</td>
<td>ocf</td>
<td>IPaddr2</td>
</tr>
<tr>
<td>www_apache</td>
<td>ocf</td>
<td>heartbeat</td>
<td>ocf</td>
<td>apache</td>
</tr>
</tbody>
</table>
The list view of all resources added into the cluster currently. It's an effective way to search for resources.
When in the Tree mode, details of resources will be shown.

ID:        www_apache
Class:     ocf
Provider:  heartbeat
Type:      apache
The normal management view.
Green means the resources are running healthy.
Then group the resource by the node running on. It helps to identify the workload of all nodes.
Click the standby button to put the node into "standby" mode. This will force all resources move away from the node.
The only node is "standby" now. So all resources are stopped because there're no available nodes to run on.
Admin can generate a cluster wide report for heartbeat.
Collecting information.
Please edit this template and describe the issue/problem you encountered. Then, post to
  Linux-HA@lists.linux-ha.org
or file a bug at
  http://developerbugs.linux-foundation.org/


Thank you.

Date: Thu Oct  9 13:30:56 CST 2008
By: hb_report-DC -f2008-10-09 12:59:45 /tmp/clrp.aL5ZwK

Subject: Test
Severity: blocking
Component: CRM

Detailed description:

Good-bye

Common system info found:
Heartbeat version: 2.99.1-18.1
CRM Version: 0.7.3 (node: ec0fb5264e2cb1b9ed05c68bc7a9209574766a3)
Platform: Linux
Kernel release: 2.6.25.16-0.1-pae
Architecture: i686
Distribution: /etc/SuSE-release openSUSE 11.0 (i586)
VERSION = 11.0
Migrate the resource. Duration means the effect time for the resource.
WARNING: Creating rsc_location constraint 'cli-standby-group-www' with a score of -INFINITY for resource group-www on yingying.

This will prevent group-www from running on yingying until the constraint is removed by "Clear Migrate Constraints".

This will be the case even if yingying is the last node in the cluster.

Migration will take effect until: 2008-10-10 05:37:57Z
It's possible to configure advanced parameter for heartbeat itself. The dropdown box will show all parameters available.
<resources>
  <group id="group-www">
    <primitive class="ocf" id="www_ip" provider="heartbeat" type="IPaddr2">
      <instance_attributes id="www_ip-instance_attributes">
        <nvpair id="nvpair-f3eb5383-af03-4be9-921c-4549354642dd" name="ip" value="147.2.207.86"/>
        <nvpair id="nvpair-b3ee503c-3a83-4196-9c78-a9d0392c1dd8" name="nic" value="eth0"/>
        <nvpair id="nvpair-052c40b9-aa0b-4666-8da9-8d84e68c99eb" name="cidr_netmask" value="24"/>
      </instance_attributes>
      <operations id="www_ip-operations">
        <op id="www_ip-monitor" interval="10s" name="monitor" start-delay="5s" timeout="20s"/>
      </operations>
    </primitive>
    <primitive class="ocf" id="www_apache" provider="heartbeat" type="apache">
      <instance_attributes id="www_apache-instance_attributes">
        <nvpair id="nvpair-09475a8-29f5-4b89-9f32-e753a74695cd" name="configfile" value="/etc/apache2/httpd.conf"/>
        <nvpair id="nvpair-d49143d4-3c5d-42e3-8176-e9b40efd8c2b" name="statusurl" value="http://localhost/server-status"/>
      </instance_attributes>
      <operations id="www_apache-operations">
        <op id="www_apache-operations-op" interval="10" name="monitor" start-delay="1m" timeout="20"/>
      </operations>
    </primitive>
  </group>
</resources>

For the resource group, use xml view to see the related configuration. Admin can import existing configuration to overwrite, or export it for backing up.
It's possible to show the part interested to you only.
Here's the configuration for apache only.
Again, you can import/export it.
About to add a colocation constrain. It's not a good example cause group members are automatically collocated. The optional parameters are default to be not visible.
Another example to add orders between 2 resources. Again, it's not needed for group members.
This is the view of what constraints we have already. location/collection/order are in different tabs.
Cluster Developer Summit
Prague, 2008-09-29 – 2008-10-02
Dogs, cats, and mice ...
Topics discussed:

- Merging of stacks
  - Tree splitting
- Community release versus “Enterprise” distributions
- Quorum
- Fencing
- Resource Agents + common library
- Standard logging
- Standard configuration(?)
- Shared root clusters
- Clustered Samba
The future stack:

- **heartbeat** openAIS (corosync)
- Local Resource Manager
- **rgmanager** Pacemaker
- OCF Resource Agents
- Fencing component
- **cEVMS2** cLVM2
- OCFS2
- GFS2
Split-site clusters

- Wide-area:
  - High latency
  - Low bandwidth
  - Redundancy expensive

- Metro-area:
  - Low latency
  - High bandwidth
  - Redundancy expensive

- Quorum?
- Fencing?
- Storage?
Questions? Answers!
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