

# Power Management at SUSE

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**Novell.**

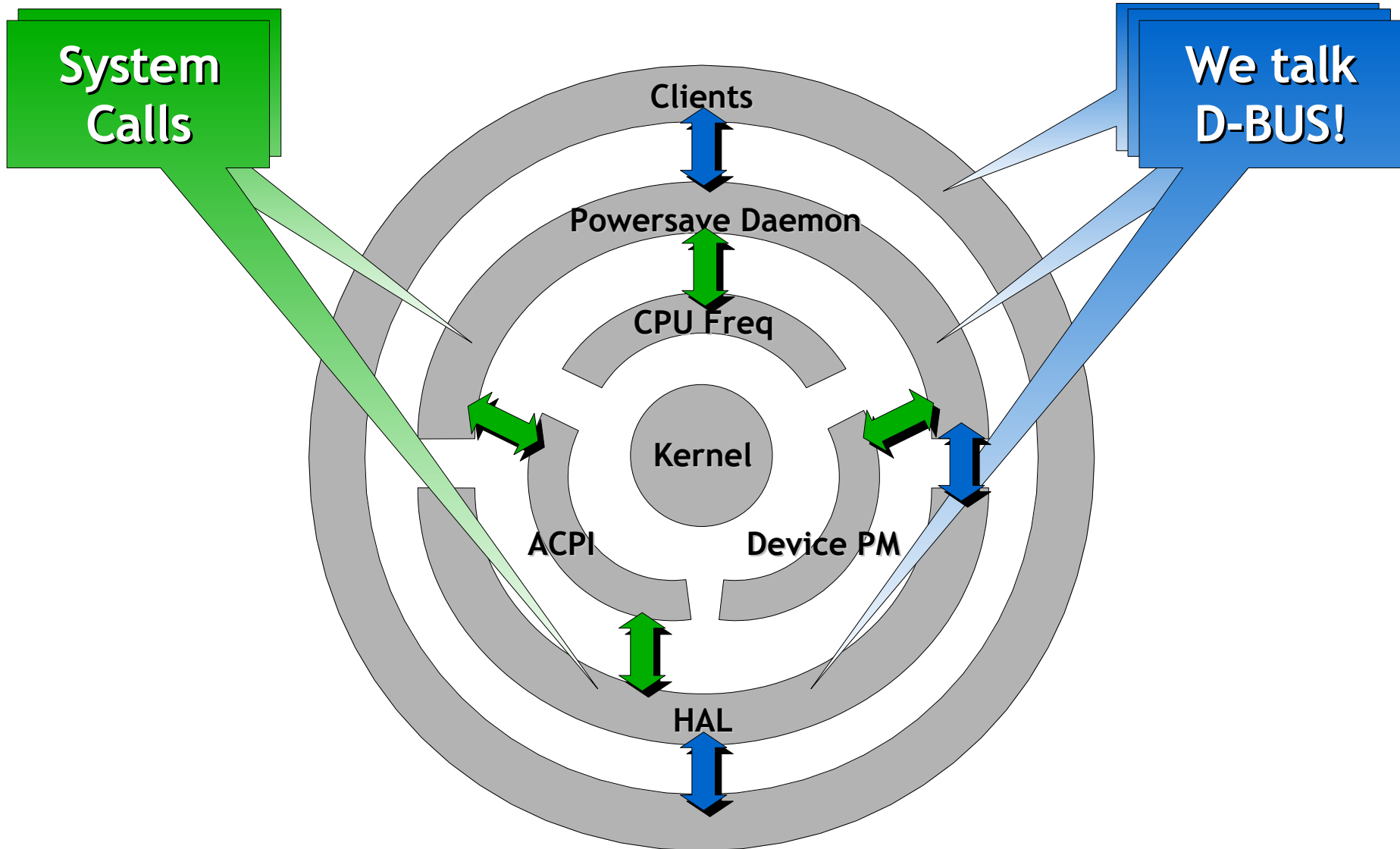


# The Powersave Daemon

- General architecture overview
- The Powersave Daemon
- Schemes
- Suspend to Disk/RAM
- CPU Frequency Scaling



# Architecture and IPC

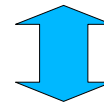
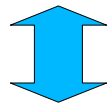


# Powersave Architecture

Clients (KPowerSave, wmpowersave, gkrellm-powersave) 

Client implements: Auto-Suspend, Lock Screen, Event Notifications (...)

Daemon interaction: Trigger Suspend, Set CPU frequency, Set Schemes



## Powersave Daemon

ACPI

APM

RTD-PM

Suspend to Disk  
Suspend to RAM  
Standby

Display  
Brightness

CPU  
Frequency Scaling

Battery  
Management

## Helper Libraries

HAL

DBus

Misc

## Scripts

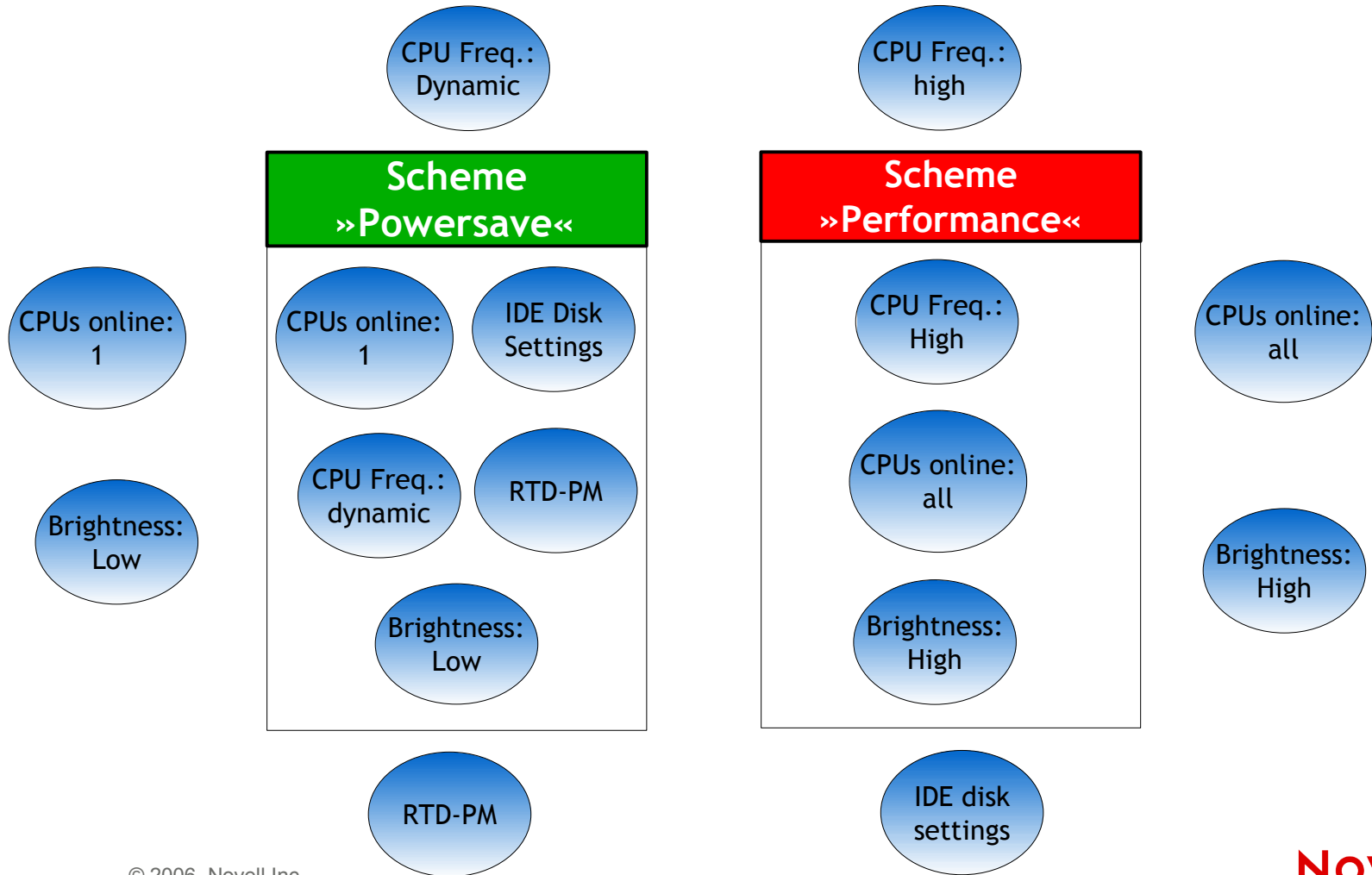
Unload  
Modules

Handle  
Hotkeys

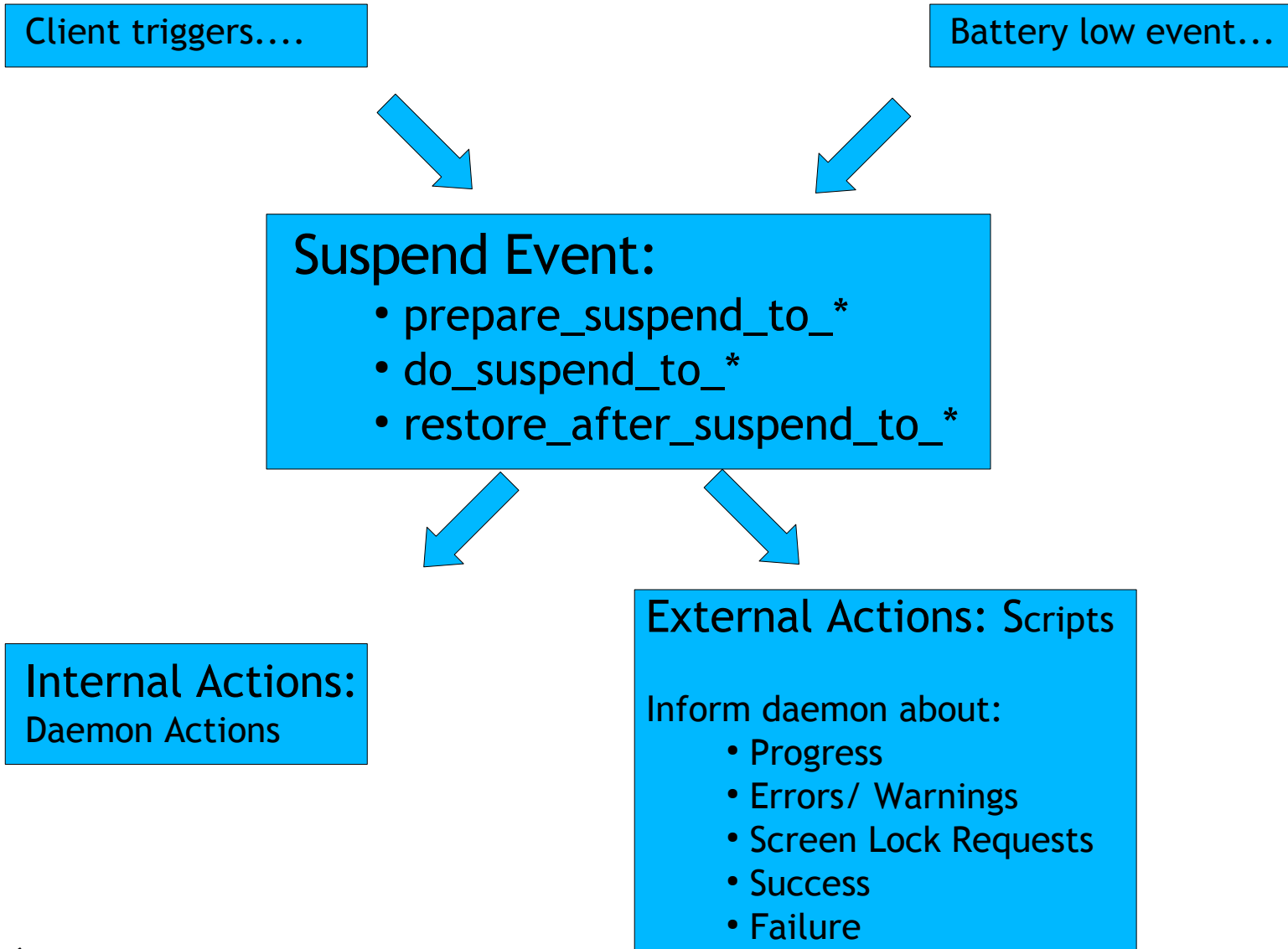
Set Disk  
Settings



# Scheme Architecture



# Powersave and Suspend (1/2)



# Powersave and Suspend (2/2)

- Currently evaluating the so called “hibernate scripts” as successor, for integration/ merge or replacement
- Integration of s2ram tool from the Suspend Project:
  - make suspend to ram “just work”
  - huge whitelist of machines
  - integration of radeontool/vbetool, etc.
- next: Integration of suspend and resume tools

# CPU Frequency Scaling

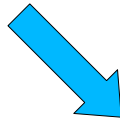
## General policies:

- Powersave
- Performance
- Dynamic



## Kernel Governors:

- powersave
- performance
- ondemand



## Userspace Implementation (userspace governor):

- frequency at min
- frequency at max
- dynamic frequency



# Thank you.

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# Resources of Interest

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- <http://powersave.sourceforge.net/pm-report/>
- [http://www.opensuse.org/Projects\\_Powersave](http://www.opensuse.org/Projects_Powersave)
- <http://powersave.sourceforge.net>
- <http://sourceforge.net/Projects/Powersave>
- Mailing lists:
  - [powersave-users@forge.novell.com](mailto:powersave-users@forge.novell.com)
  - [powersave-devel@forge.novell.com](mailto:powersave-devel@forge.novell.com)