COMAR: A new approach to System Management

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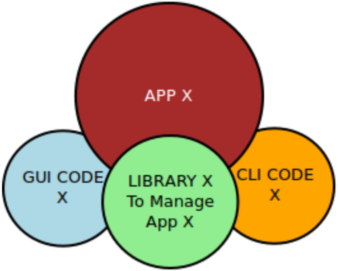
Basics

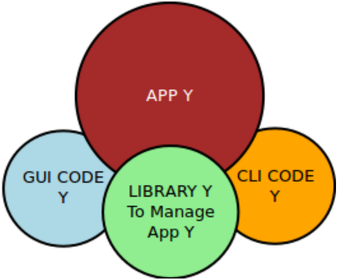
- Package Management
- Service Management
- Network Management
- Boot Management
- Disk Management
- User Management
- Firewall Management
- ...

Current Problems

1. Each library has different API and it is not easy to make universal interfaces for the same purposes
2. GUI or CLI code includes operational code so its hard to use operational code from different apps
3. Application base authentication (GUI or Cli) and it is not possbile to set privileges atomically
4. Different apps can modify same data and syncronization between these apps is not an easy issue to solve

Current Problems





What is COMAR ?

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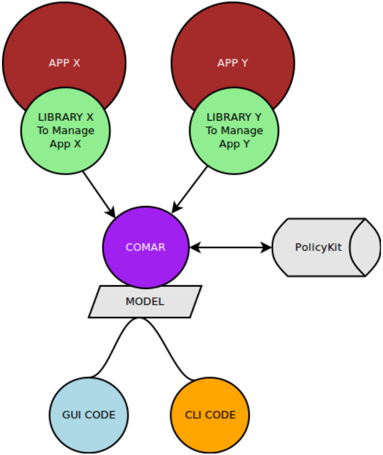
Çomar (pronounced chow-mar), is the COnfiguration MAnageR that helps the installed software operate flawlessly. Çomar knows the tasks that can be provided by each application, together with the functionality they depend on and other information. Different applications may adapt themselves according to the presence and capability of their peers.

What is COMAR ?

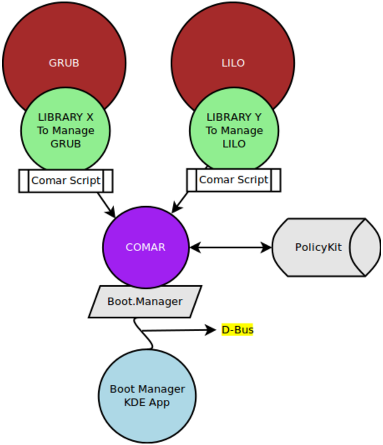


Shared Models

```
<comarModel>
  <interface name="Disk.Manager">
    <method name="getDevices" access_label="get">
      <arg name="devices" type="as" direction="out"/>
    </method>
    <method name="mount" access_label="mount">
      <arg name="device" type="s" direction="in"/>
      <arg name="path" type="s" direction="in"/>
    </method>
    <method name="umount" access_label="mount">
      <arg name="device" type="s" direction="in"/>
    </method>
    ...
  </interface>
</comarModel>
```

Different scripts for same model

Each package can provide different script for the same model



Using D-Bus

```
~ > qdbus --system tr.org.pardus.comar
          /package/mudur
          tr.org.pardus.comar.Disk.Manager.getDevices

/dev/sda
/dev/sdb
/dev/sdc
```

Using Python

```
import comar
link = comar.Link()
link.Disk.Manager["mudur"].getDevices()

dbus.Array([dbus.String(u’/dev/sda’), ..))
```

Using Shell

```
˜ > hav call mudur Disk.Manager getDevices

dbus.Array([dbus.String(u'/dev/sda'), ..))
```

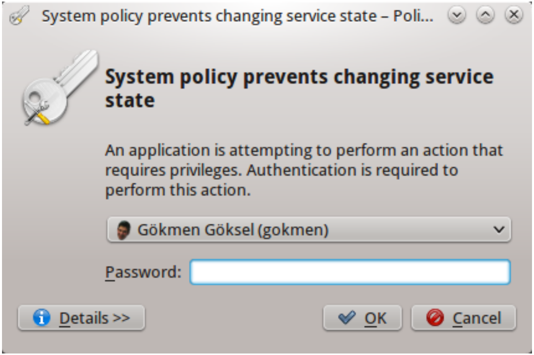
Provides atomic privileges

```
˜ > cat /usr/share/polkit-1/actions/tr.org.pardus.comar.user.manager.policy
...
<policyconfig>
    <vendor>Pardus</vendor>
    <vendor_url>http://www.pardus.org.tr</vendor_url>
    <icon_name>system-users</icon_name>

    <action id="tr.org.pardus.comar.user.manager.adduser">
        <description>Add user</description>
        <message>System policy prevents adding new user</message>
        <defaults>
            <allow_any>auth_admin_keep</allow_any>
            <allow_active>auth_admin_keep</allow_active>
            <allow_inactive>auth_admin_keep</allow_inactive>
        </defaults>
    </action>
    ...
</policyconfig>
```

COMAR call Polkit agent when necessary

```
˜ > hav call openssh System.Service stop
```



System policy prevents changing service state – Poli...

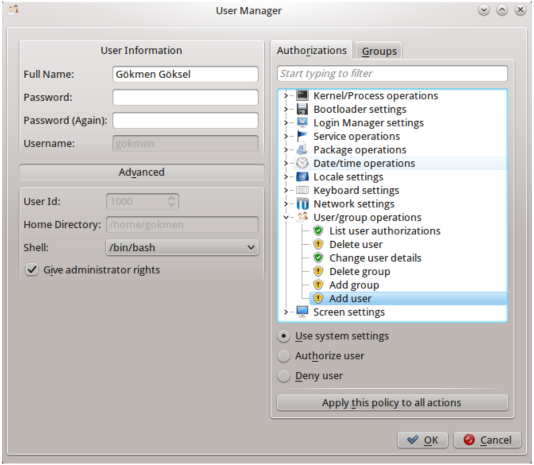
System policy prevents changing service state

An application is attempting to perform an action that requires privileges. Authentication is required to perform this action.

Gökmen Göksel (gokmen)

Password:

Managing privileges over User Manager

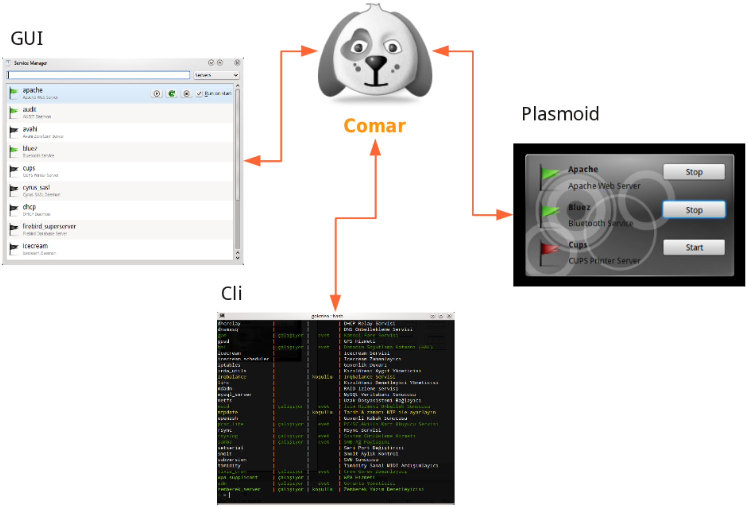


Full Name: Gökmen Göksel
Password:
Password (Again):
Username: gokmen

User Id: 1000
Home Directory: /home/gokmen
Shell: /bin/bash
☑ Give administrator rights

● Use system settings
○ Authorize user
○ Deny user

When you change a service state everybody knows it



Service Manager

Servers

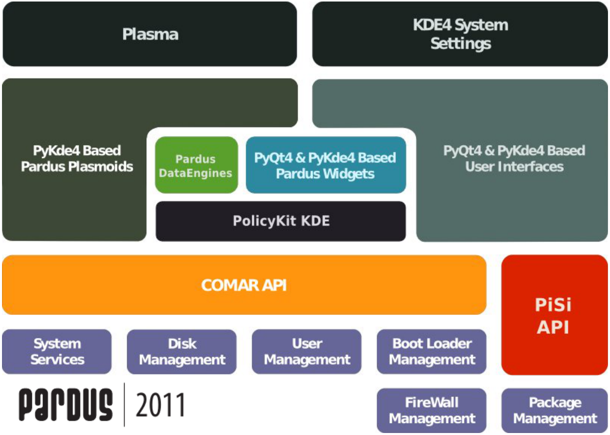
- apache — Apache Web Server — Run on start
- audit — AUDIT Daemon
- avahi — Avahi ZeroConf Server
- bluez — Bluetooth Service
- cups — CUPS Printer Server
- cyrus_sasl — Cyrus-SASL Daemon
- dhcp — DHCP Daemon
- firebird_superserver — Firebird Database Server
- Icecream — Icecream Daemon

Apache — Apache Web Server — Stop
Bluez — Bluetooth Service — Stop
Cups — CUPS Printer Server — Start

gokmen : bash

```
dhcrelay              |           |          | DHCP Relay Servisi
dnsmasq               |           |          | DNS Önbellekleme Servisi
gpm                   | çalışıyor |   evet   | Konsol Fare Servisi
gpsd                  |           |          | GPS Hizmeti
hal                   | çalışıyor |   evet   | Donanım Soyutlama Katmanı (HAL)
icecream              |           |          | Icecream Servisi
icecream_scheduler    |           |          | Icecream Zamanlayıcı
iptables              |           |          | Güvenlik Duvarı
irda_utils            |           |          | Kızılötesi Aygıt Yöneticisi
irqbalance            |           | koşullu  | Irqbalance Servisi
lirc                  |           |          | Kızılötesi Denetleyici Yöneticisi
mdadm                 |           |          | RAID izleme servisi
mysql_server          |           |          | MySQL Veritabanı Sunucusu
netfs                 |           |          | Uzak Dosyasistemi Bağlayıcı
nscd                  | çalışıyor |   evet   | İsim Hizmeti Önbellek Sunucusu
ntpdate               |           | koşullu  | Tarih & zamanı NTP ile ayarlayın
openssh               |           |          | Güvenli Kabuk Sunucusu
pcsc_lite             | çalışıyor |   evet   | PC/SC Akıllı Kart Okuyucu Servisi
rsync                 |           |          | RSync Servisi
rsyslog               | çalışıyor |   evet   | Sistem Günlükleme Hizmeti
samba                 | çalışıyor |   evet   | SMB Ağ Paylaşımı
setserial             |           |          | Seri Port Değiştirici
smolt                 |           |          | Smolt Aylık Kontrol
subversion            |           |          | SVN Sunucusu
timidity              |           |          | Timidity Sanal MIDI Ardışımlayıcı
vixie_cron            | çalışıyor |   evet   | Cron Görev Zamanlayıcı
wpa_supplicant        | çalışıyor |          | WPA Hizmeti
xdm                   | çalışıyor |   evet   | Görüntü Yöneticisi
zemberek_server       | çalışıyor | koşullu  | Zemberek Yazım Denetleyicisi
~ > |
```

System Management in Pardus 2011



Thanks

- Questions ?
- Demo ?

- Home Page : http://www.pardus.org.tr
- Developer Page : http://developer.pardus.org.tr
- E-Mail Lists : http://lists.pardus.org.tr
- Bugzilla : http://bugs.pardus.org.tr
- Wiki : http://en.pardus-wiki.org