



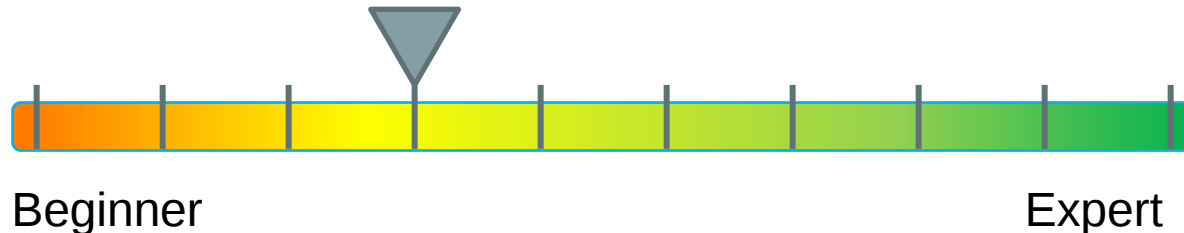
APROL E-Camp workshop

Service



Agenda

Time	Topic
~ 15 min	Brainstorming -> What is service ?
~ 1 h	Overview -> That is service
~ 1.5 h	Practical -> That is service
~ 30 min	Pony for service
	Practice / Go on working





Overview

● Brainstorming

- What is service ?

● Overview of service

- That is service

● Pony for service

- Ground
- Wall
- Roof



Service **Brainstorming**



What is service ?





Service

Overview

That is service



That is service

● General Linux-parts / APROL-parts

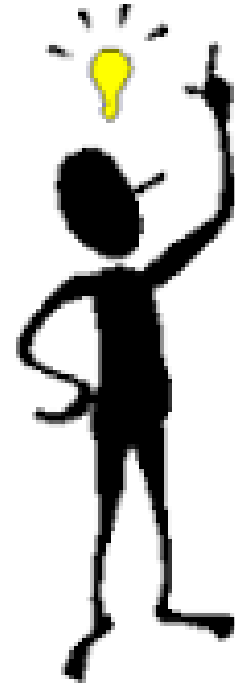
- /var/log, /tmp, /tmp/corefiles, /home/<runtime>/scripts
- top, atop, htop, ftop, iftop, iotop
- Documentation -> Q12

● Different APROL-applications

- CFCViewer, StartManager, Controller Manager
- SysMon, SDM, IOsDiagnostic Manager, exceptionTask

● Support-Tools

- VNC, AprotSupportInfoPacker, AprotChangeHost,
- Data & screenshots, CSP, A&P, Tel, Email,





General Linux-parts / APROL-parts

● /var/log

- You can find the Linux - Errors or -Information in the /var/log – directory, like the “messages”

```
cmengin : vi
File Edit View Scrollback Bookmarks Settings Help
Sep 9 16:00:04 bupa052 syslog-ng[2353]: Configuration reload request received, reloading configuration;
Sep 9 16:00:04 bupa052 syslog-ng[2353]: New configuration initialized;
Sep 9 16:00:05 bupa052 run-crons[9270]: logrotate: OK
Sep 9 16:00:05 bupa052 run-crons[9270]: suse-clean_catman: OK
Sep 9 16:00:05 bupa052 run-crons[9270]: suse-do_mandb: OK
Sep 9 16:00:05 bupa052 run-crons[9270]: suse.cron-sa-update: OK
Sep 9 16:00:05 bupa052 run-crons[9270]: suse.de-backup-rc.config: OK
Sep 9 16:00:06 bupa052 run-crons[9270]: suse.de-backup-rpmdb: OK
Sep 9 16:00:06 bupa052 run-crons[9270]: suse.de-check-battery: OK
Sep 9 16:00:06 bupa052 run-crons[9270]: suse.de-clean_tmp: OK
Sep 9 16:00:06 bupa052 run-crons[9270]: suse.de-cron-local: OK
Sep 9 16:00:06 bupa052 su: (to nobody) root on none
Sep 9 16:00:06 bupa052 su: (to nobody) root on none
Sep 9 16:00:06 bupa052 su: (to nobody) root on none
Sep 9 16:00:10 bupa052 sudo: aprolsys : TTY=unknown ; PwD=/opt/aprol/doc/clt/049/sysconfig ; USER=root ; COMMAND=/usr/sbin/iptables-save
Sep 9 16:00:11 bupa052 run-crons[9270]: suse.de-updatedb: OK
Sep 9 16:00:15 bupa052 in.rshd[9978]: connect from 10.43.235.159 (10.43.235.159)
Sep 9 16:00:15 bupa052 rshd[9978]: pam_rhosts(rsh:auth): allowed access to cmrun2@bupa052.br-automation.co.at as cmrun2
Sep 9 16:00:15 bupa052 rshd[9980]: cmrun2@bupa052.br-automation.co.at as cmrun2: cmd='/sbin/ifplugstatus'
Sep 9 16:00:25 bupa052 in.rshd[10110]: connect from 10.43.235.159 (10.43.235.159)
Sep 9 16:00:25 bupa052 rshd[10110]: pam_rhosts(rsh:auth): allowed access to cmrun@bupa052.br-automation.co.at as cmrun
Sep 9 16:00:25 bupa052 rshd[10113]: cmrun@bupa052.br-automation.co.at as cmrun: cmd='/sbin/ifplugstatus'
Sep 9 16:00:41 bupa052 sudo: aprolsys : TTY=unknown ; PwD=/opt/aprol/doc/clt/049/sysconfig ; USER=root ; COMMAND=/usr/sbin/iptables-save
Sep 9 16:00:45 bupa052 in.rshd[10469]: connect from 10.43.235.159 (10.43.235.159)
Sep 9 16:00:45 bupa052 rshd[10469]: pam_rhosts(rsh:auth): allowed access to cmrun2@bupa052.br-automation.co.at as cmrun2
Sep 9 16:00:45 bupa052 rshd[10471]: cmrun2@bupa052.br-automation.co.at as cmrun2: cmd='/sbin/ifplugstatus'
Sep 9 16:00:55 bupa052 in.rshd[10590]: connect from 10.43.235.159 (10.43.235.159)
Sep 9 16:00:55 bupa052 rshd[10590]: pam_rhosts(rsh:auth): allowed access to cmrun@bupa052.br-automation.co.at as cmrun
Sep 9 16:00:55 bupa052 rshd[10592]: cmrun@bupa052.br-automation.co.at as cmrun: cmd='/sbin/ifplugstatus'
Sep 9 16:01:12 bupa052 sudo: aprolsys : TTY=unknown ; PwD=/opt/aprol/doc/clt/049/sysconfig ; USER=root ; COMMAND=/usr/sbin/iptables-save
Sep 9 16:01:15 bupa052 in.rshd[10938]: connect from 10.43.235.159 (10.43.235.159)
Sep 9 16:01:15 bupa052 rshd[10938]: pam_rhosts(rsh:auth): allowed access to cmrun2@bupa052.br-automation.co.at as cmrun2
Sep 9 16:01:15 bupa052 rshd[10940]: cmrun2@bupa052.br-automation.co.at as cmrun2: cmd='/sbin/ifplugstatus'
Sep 9 16:01:25 bupa052 in.rshd[11059]: connect from 10.43.235.159 (10.43.235.159)
Sep 9 16:01:25 bupa052 rshd[11059]: pam_rhosts(rsh:auth): allowed access to cmrun@bupa052.br-automation.co.at as cmrun
Sep 9 16:01:25 bupa052 rshd[11061]: cmrun@bupa052.br-automation.co.at as cmrun: cmd='/sbin/ifplugstatus'
Sep 9 16:01:43 bupa052 sudo: aprolsys : TTY=unknown ; PwD=/opt/aprol/doc/clt/049/sysconfig ; USER=root ; COMMAND=/usr/sbin/iptables-save
37,1 Anfang
```



General Linux-parts / APROL-parts

● /tmp

- Here are logfiles for AprolLoader, AlarmServer, EventDriver, InaDriver, CC-Task, ... All logfiles end with a “.log”

```
cmengin : bash
File Edit View Scrollback Bookmarks Settings Help
-rw-rw-r-- 1 cmengin aprol 0 12. Mai 13:04 cdstmp_960_0
-rwxrwxrwx 1 1002 aprol 0 14. Feb 2013 cdstmp_9604_0*
-rwxrwxrwx 1 cmengin aprol 0 21. Jun 2013 cdstmp_9714_0*
-rw-rw-r-- 1 cmengin aprol 0 18. Jul 10:28 cdstmp_9838_0
-rwxrwxrwx 1 1003 aprol 0 23. Jan 2013 cdstmp_9970_0*
-rw-r--r-- 1 root root 349 1. Sep 07:36 CheckInstallation.err
-rw-r--r-- 1 aprolsys root 5783 10. Sep 08:47 ChronoPlex_status.xml
-rwxrwxrwx 1 1003 aprol 206726 8. Sep 16:01 cmengin_AprolCmd_1.log*
-rwxrwxrwx 1 cmengin aprol 723 8. Sep 14:44 cmengin_ControllerManager_1.log*
-rwxrwxrwx 1 cmengin aprol 400 2. Sep 17:25 cmengin_DisplayCenter_1.log*
-rwxrwxrwx 1 1003 aprol 2559133 10. Sep 08:41 cmengin_DownloadManager_1.log*
-rwxrwxrwx 1 1003 aprol 400 10. Sep 08:37 cmengin_IosDiagnosticManager_1.log*
-rwxrwxrwx 1 1003 aprol 400 2. Sep 17:03 cmengin_OperatorManager_1.log*
-rw-rw-r-- 1 cmengin aprol 400 12. Aug 08:01 cmengin_SFCViewer_1.log
-rwxrwxrwx 1 1003 aprol 177958 10. Sep 08:45 cmengin_StartManager_1.log*
-rwxrwxrwx 1 1003 aprol 72942636 22. Jan 2013 cmengin_StartManager_2.log*
-rwxrwxrwx 1 cmengin aprol 400 23. Mai 11:44 cmengin_TranslationManager_1.log*
-rwxrwxrwx 1 cmengin aprol 723 4. Jul 13:57 cmengin_TrendViewer_1.log*
drwxrwxrwx 3 cmlrun aprol 24 20. Dez 2012 /
-rwxrwxrwx 1 cmlrun2 aprol 1046 4. Sep 09:07 cmlrun2_AlarmServer_02_1.log*
-rwxrwxrwx 1 cmlrun2 aprol 718896 4. Sep 09:07 cmlrun2_AprolCmd_1.log*
-rwxrwxrwx 1 cmlrun2 aprol 792552 9. Sep 08:02 cmlrun2_AprolLoader_cmlrun2_1.log*
-rwxrwxrwx 1 cmlrun2 aprol 1046 10. Apr 14:35 cmlrun2_CCT_CC2100_1.log*
-rwxrwxrwx 1 cmlrun2 aprol 1046 10. Apr 14:35 cmlrun2_CCT_LR02_1.log*
-rwxrwxrwx 1 cmlrun2 aprol 1046 10. Apr 14:35 cmlrun2_CCT_SysMon2_1.log*
-rw-rw-r-- 1 cmlrun2 aprol 1046 11. Apr 08:11 cmlrun2_CCT_Taks02_1.log
-rw-rw-r-- 1 cmlrun2 aprol 1046 11. Apr 08:11 cmlrun2_CCT_Taks03_1.log
-rw-rw-r-- 1 cmlrun2 aprol 1046 4. Sep 09:07 cmlrun2_CCT_Task01_1.log
-rw-rw-r-- 1 cmlrun2 aprol 1046 4. Sep 09:07 cmlrun2_CCT_Task02_1.log
-rw-rw-r-- 1 cmlrun2 aprol 1046 4. Sep 09:07 cmlrun2_CCT_Task03_1.log
-rw-rw-r-- 1 cmlrun2 aprol 1046 4. Sep 09:07 cmlrun2_CCT_Task04_1.log
-rw-rw-r-- 1 cmlrun2 aprol 1046 4. Sep 09:07 cmlrun2_CCT_Task05_1.log
-rw-rw-r-- 1 cmlrun2 aprol 1046 4. Sep 09:07 cmlrun2_CCT_Task06_1.log
-rw-rw-r-- 1 cmlrun2 aprol 1046 4. Sep 09:07 cmlrun2_CCT_Task07_1.log
-rw-rw-r-- 1 cmlrun2 aprol 1046 4. Sep 09:07 cmlrun2_CCT_Task08_1.log
-rw-rw-r-- 1 cmlrun2 aprol 1046 4. Sep 09:07 cmlrun2_CCT_Task09_1.log
-rw-rw-r-- 1 cmlrun2 aprol 1046 4. Sep 09:07 cmlrun2_CCT_Task10_1.log
-rw-rw-r-- 1 cmlrun2 aprol 1046 4. Sep 09:07 cmlrun2_CCT_Task11_1.log
```



General Linux-parts / APROL-parts

/tmp/corefile

- If an application crashes, it could be that a corefile will be created. With this corefile, the development can debug the application and fix the issue.

```
cmengin: bash
bapa052:/tmp/corefiles #
bapa052:/tmp/corefiles #
bapa052:/tmp/corefiles #
bapa052:/tmp/corefiles #
bapa052:/tmp/corefiles #
bapa052:/tmp/corefiles #
bapa052:/tmp/corefiles #
bapa052:/tmp/corefiles #
bapa052:/tmp/corefiles #
insgesant 7939224
drwxrwxr-x 2 root root 4096 28. Jul 11:51
drwxrwxr-x 705 root root 5240 10. Sep 08:48
-rw-rw-r-- 1 cmengin aprot 506719304 7. Jul 11:18 assert.CaeManager.10600
-rw-rw-r-- 1 cmengin aprot 1770110816 3. Jul 13:07 assert.CaeManager.3842
-rw-rw-r-- 1 cmengin aprot 1181108016 7. Jul 11:16 assert.CaeManager.6074
-rw-rw-r-- 1 root 5763 22. Apr 10:43 Backtrace
-rwxrwxr-x 1 cmengin aprot 1886363648 2. Sep 16:59 core_AnsiDriver*
-rwxrwxr-x 1 root 872672 26. Mar 08:51 core_AprotRightsInfo*
-rw-rw-r-- 1 cmengin aprot 1431160880 3. Jul 13:07 core_AssociatedBag
-rwxrwxr-x 1 cmengin aprot 454168576 2. Sep 10:13 core_CaeManager*
-rw-rw-r-- 1 cmengin aprot 122847232 24. Jul 10:50 core_OFViewer
-rw-rw-r-- 1 root 6296991 23. Jul 14:41 core_OFViewer.tar
-rw-rw-r-- 1 cmengin aprot 64974848 1. Aug 13:38 core_ControllerManag
-rw-rw-r-- 1 cmengin aprot 61120512 28. Jul 11:51 core_devil
-rw-rw-r-- 1 cmengin aprot 11007504 2. Sep 10:18 core_DisplayCenter*
-rwxrwxr-x 1 cmengin aprot 56442880 4. Aug 08:46 core_DownloadManager*
-rw-rw-r-- 1 root 4425968 4. Jun 13:40 core_drkngi
-rw-rw-r-- 1 cmengin aprot 30724096 2. Sep 10:15 core_FlashCardLoader
-rw-rw-r-- 1 root 1965080 7. Mar 2014 core_KeepAlive*
-rwxrwxr-x 1 aprotsys aprot 18169856 17. Apr 07:25 core_Libdc*
-rwxrwxr-x 1 cmengin aprot 53035008 9. Sep 17:04 core_LoginServer*
-rw-rw-r-- 1 root 4184288 13. Mar 09:17 core_MediaLibIdr
-rw-rw-r-- 1 cmengin aprot 155250888 11. Jul 15:19 core_SFViewer
-rw-rw-r-- 1 cmengin aprot 29818880 31. Jul 13:59 core_TBaseExplorer
-rw-rw-r-- 1 cmengin aprot 263917568 3. Sep 07:43 core_Thread (pooled)
bapa052:/tmp/corefiles #
```

- To debug the corefile, use the gdb – command as root:
gdb /opt/aprol/bin/APPLICATION /tmp/corefiles/CORE_FILE
a.e: gdb /opt/aprol/bin/CaeManager /tmp/corefile/core_CaeManager
after that:
“bt” (stands for backtrace, please send always both outputs)

```
cmengin: gdb
File Edit View Scrollback Bookmarks Settings Help
bapa052: # gdb /opt/aprol/bin/CaeManager /tmp/corefiles/core_CaeManager
GNU gdb (GDB) 7.5.1-0.7.2011
Copyright (C) 2012 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
This is free software; you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law. Type 'show copying'
and 'show warranty' for details.
This GDB was configured as 'x86_64-suse-linux'.
For bug reporting instructions, please see
<http://www.gnu.org/software/gdb/bugs/>...
Reading symbols from /opt/aprol/bin/CaeManager...done.
(New LWP 22984)
(New LWP 22984)
(New LWP 22984)
Missing separate debuginfo for /usr/lib64/libboost_thread.so.1.49.0
Try: zypper install -C "debuginfo(builid-id)=ba1c09620a054f1802ee9e78b18e8aa25bba"
Missing separate debuginfo for /usr/lib64/libstdc++.so.6
Try: zypper install -C "debuginfo(builid-id)=f128a26a5a7895e71849d853101031bc92a461"
Missing separate debuginfo for /usr/lib64/libc.so.6
Try: zypper install -C "debuginfo(builid-id)=79613254ab3084a9f7c6732e4d49628a59622"
Missing separate debuginfo for /usr/lib64/libboost_serialization.so.1.49.0
Try: zypper install -C "debuginfo(builid-id)=0dab6c17840a5e2f40592d93bcbcf425afbc613"
Missing separate debuginfo for /usr/lib64/libcrypto.so.0.9.8
Try: zypper install -C "debuginfo(builid-id)=489a44dc9a38c15d4f2a005ab989bdc437d9a"
Missing separate debuginfo for /lib64/libc.so.1
Try: zypper install -C "debuginfo(builid-id)=4b38a4cf428f2107c56c09585aef737a5071348c"
Try: zypper install -C "debuginfo(builid-id)=8ee6418207efac9e7fadc85730c62e0a002d57"
Missing separate debuginfo for /usr/lib64/libstdc++.so.6
Try: zypper install -C "debuginfo(builid-id)=1566d458f-c793cf0a6a7041bd84a36d-402ee"
Missing separate debuginfo for /lib64/libc.so.1
Try: zypper install -C "debuginfo(builid-id)=f3d4e50a422614043e3a75742"
Missing separate debuginfo for /usr/lib64/libc.so.6
Try: zypper install -C "debuginfo(builid-id)=75176b1d5038b4b70e3e4b88a4d56432f5d796"
Missing separate debuginfo for /usr/lib64/libboost_system.so.1.49.0
Try: zypper install -C "debuginfo(builid-id)=b7c3d3f1430ef1ba91f53d6811f4a25c8af2d"
cmengin: gdb
```



General Linux-parts / APROL-parts

● Debug UCB-block

- If your UCB is not working, take a look into /home/<runtime>/scripts. There are 2 files with the name of your block. If the *.err – file is greater than 0 Byte, you have an error.

```
cmengin : bash
bupa052:/home/cmrun/scripts # l
insgesamt 232
drwxrwxrwx 2 cmrun aprot 4096 23. Jan 2014 ./
drwxr-xr-x 33 cmrun aprot 4096 10. Sep 09:14 ../
-rwxrwxr-x 1 cmrun aprot 4838 7. Feb 2014 Add_HVAC_AdhUcbSuFuIndPersonen*
-rw-rw-r-- 1 cmrun aprot 344 7. Feb 2014 Add_HVAC_AdhUcbSuFuIndPersonen.err
-rwxrwxr-x 1 cmrun aprot 4037 7. Feb 2014 Add_HVAC_AdhUcbSuFuIndRaeume*
-rw-rw-r-- 1 cmrun aprot 342 7. Feb 2014 Add_HVAC_AdhUcbSuFuIndRaeume.err
-rwxrwxr-x 1 cmrun aprot 2778 7. Feb 2014 Add_HVAC_AdhUcbSuFuPersonen*
-rw-rw-r-- 1 cmrun aprot 0 7. Feb 2014 Add_HVAC_AdhUcbSuFuPersonen.err
-rwxrwxr-x 1 cmrun aprot 2513 7. Feb 2014 Add_HVAC_AdhUcbSuFuRaeume*
-rw-rw-r-- 1 cmrun aprot 0 7. Feb 2014 Add_HVAC_AdhUcbSuFuRaeume.err
-rwxrwxr-x 1 cmrun aprot 7678 7. Feb 2014 APROL_AprUcMail02*
-rw-rw-r-- 1 cmrun aprot 0 7. Feb 2014 APROL_AprUcMail02.err
-rwxrwxr-x 1 cmrun aprot 3031 7. Feb 2014 APROL_AprUcParamDown*
-rw-rw-r-- 1 cmrun aprot 0 7. Feb 2014 APROL_AprUcParamDown.err
-rwxrwxr-x 1 cmrun aprot 3213 7. Feb 2014 APROL_AprUcParamUp*
-rw-rw-r-- 1 cmrun aprot 0 7. Feb 2014 APROL_AprUcParamUp.err
-rwxrwxr-x 1 cmrun aprot 684 7. Feb 2014 HVAC_HvacUcLOAD*
-rw-rw-r-- 1 cmrun aprot 0 7. Feb 2014 HVAC_HvacUcLOAD.err
-rwxrwxr-x 1 cmrun aprot 788 7. Feb 2014 HVAC_HvacUcSAVE*
-rw-rw-r-- 1 cmrun aprot 0 7. Feb 2014 HVAC_HvacUcSAVE.err
-rwxrwxr-x 1 cmrun aprot 14507 7. Feb 2014 PDA_MySQLInsert01*
-rw-rw-r-- 1 cmrun aprot 0 7. Feb 2014 PDA_MySQLInsert01.err
-rwxrwxr-x 1 cmrun aprot 11179 7. Feb 2014 PDA_MySQLInsert02*
-rw-rw-r-- 1 cmrun aprot 0 7. Feb 2014 PDA_MySQLInsert02.err
-rwxrwxr-x 1 cmrun aprot 1399 7. Feb 2014 StartupLib_MenuNavIosysPort*
-rw-rw-r-- 1 cmrun aprot 0 7. Feb 2014 StartupLib_MenuNavIosysPort.err
-rwxrwxr-x 1 cmrun aprot 287 7. Feb 2014 StartupLib_SqlRestart*
-rw-rw-r-- 1 cmrun aprot 16 7. Feb 2014 StartupLib_SqlRestart.err
-rwxrwxr-x 1 cmrun aprot 12396 8. Sep 16:01 SysMon_ClCf01*
-rw-rw-r-- 1 cmrun aprot 0 10. Sep 09:10 SysMon_ClCf01.err
-rwxrwxr-x 1 cmrun aprot 11205 8. Sep 16:01 SysMon_EthCf01*
-rw-rw-r-- 1 cmrun aprot 0 10. Sep 08:47 SysMon_EthCf01.err
-rwxrwxr-x 1 cmrun aprot 5825 8. Sep 16:01 SysMon_EthLinkSt01*
-rw-rw-r-- 1 cmrun aprot 0 10. Sep 09:15 SysMon_EthLinkSt01.err
-rwxrwxr-x 1 cmrun aprot 9207 8. Apr 16:08 SysMon_GcCnf01*
-rw-rw-r-- 1 cmrun aprot 0 8. Apr 16:11 SysMon_GcCnf01.err
```

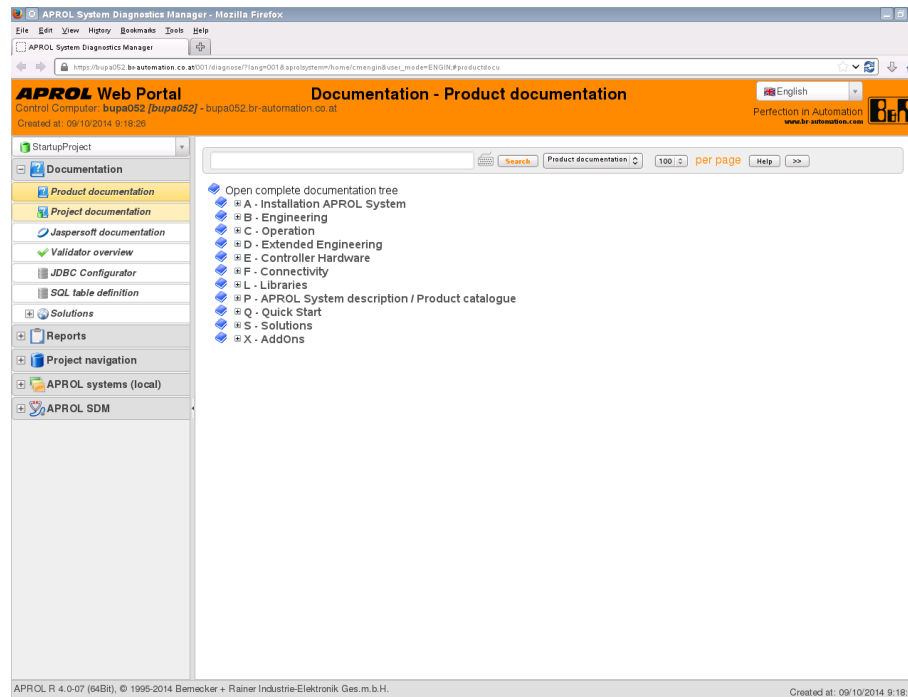
Documentation

- [illegible]



TODO “TOPS”

- Top:
- TODO

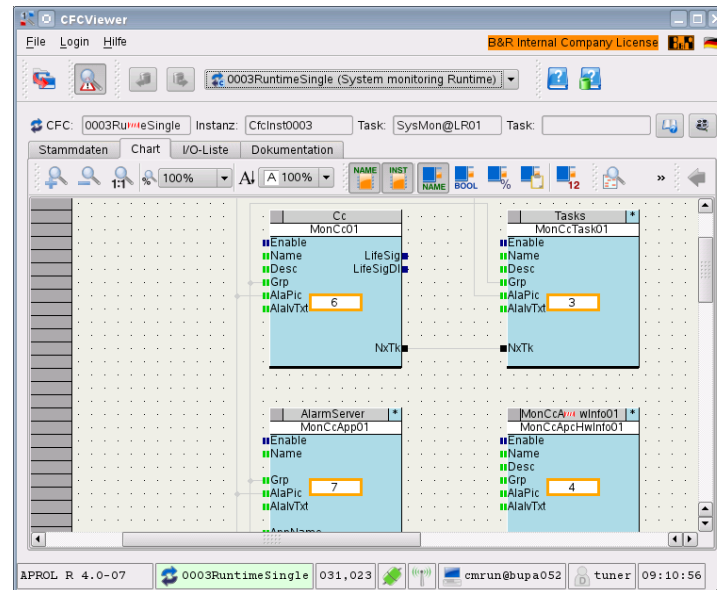




Different APROL-applications

● CFCViewer

- You can start a debugging CFC in your DisplayCenter. Right-mouse-click on your function-block and select CFCViewer. With this tool, you can track your signal.





Different APROL-applications

StartManager

- See the runlevel of your RUNTIME/OPERATOR. Change different settings local for testing.

StartManager (cmengin@bupa052)

File View Extras Login Help

B&R Internal Company License

Project / Control computer

RuntimeSystem01 (LR01)

RuntimeSystem01 (LR01) - AnsDriver (001)

Runtime system + Operator system

APROL system name (instance): RuntimeSystem01 (LR01)

Control computer name (instance): bupa052 (PS01)

CC-Account@Hostname: cmrun@bupa052

Runtime system + Operator system

APROL system name (instance): RuntimeSystem01 (LR01)

Control computer name (instance): bupa052 (PS01)

CC-Account@Hostname: cmrun@bupa052

Application name (instance): AnsDriver (001)

Runlevel/Application/Instance	State	R	S	A	E
Runlevel 1					
- losDispatcher	running				
- 001					
- losys	running				
- 01					
Runlevel 2					
- losHtlp	running				
- 001					
- SysInfo	running				
- 01					
Runlevel 3					
- AnsDriver	running				
- 001					
- 002	running				
- 003	running				
- 004	running				
- 005	running				
- 006	running				
- ApChwInfo	running				
- 001					
- EventDriver	running				
- 001					
- LRTASK	running				
- LRTASK	running				
- SysMon	running				
- cAna	running				
- cConMon	running				
- cClick	running				
- cOptCnt	running				
- cPtm	running				
- cPwm	running				
- cPerCalc	running				
- cc_101	running				
- cc_101b	running				
Runlevel 4					
Runlevel 5					
- AlarmServer	running				
- 01					
- ChronoLogServer	running				
- 01					

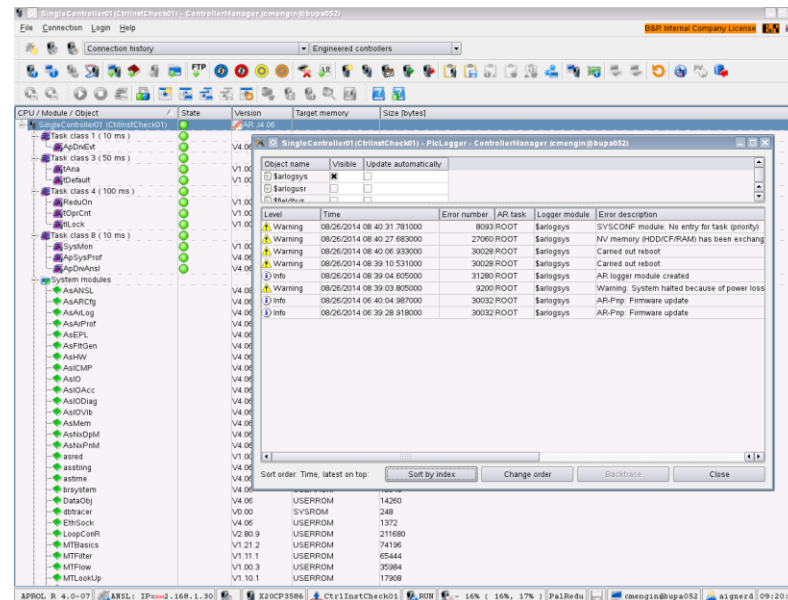
Category / Option	Prio	Engineering	Runtime	Description
CC redundancy				Configurations with control computer
- slaveConnect	2	False (0)	False (0)	When using the control computer
Configuration				Options for apcHwInfo configuration
- ctrlInstance	1	REDCTRL01	REDCTRL01	Instance of the control computer configuration
- driverName	1			Is necessary as must be used
- gw	1			Connection name in this project part
- pda	1			Connection name in this project part
Connectivity				Connectivity options communication data
- ipPrimary	1			IP address of the controller
Controller redundancy				Configurations redundant controller
- ipCluster	1	192.168.1.10	192.168.1.10	Cluster IP address redundant controller
- isRedu	1	True (1)	True (1)	Decision whether configuration options
Mode				Mode options application behaviour
- eventMode	1	True (1)	True (1)	Connect all REA to ANSL-EventMode
Start System				Start options for restart behaviour
- System				System options redundancy i.e. losys



Different APROL-applications

● ControllerManager

- A mighty tool which we used for:
- Logger: It provides you information about your controller
- Backtrace: If you have any error, use the backtrace for debugging
- Watch: Watch your variables, which are running on your controller
- Force: Force your variables or linknodes
- SMTP: MAC
- ...

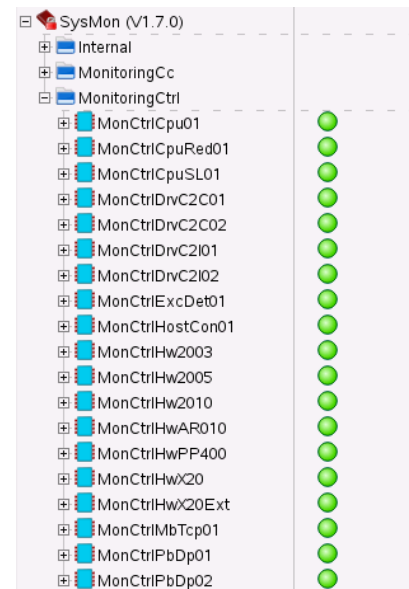
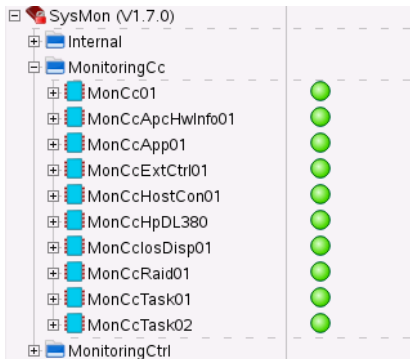




Different APROL-applications

● SysMon

- You should always use the SysMon. There are 2 groups: ControlComputer and Controller
- With these 2 groups you can monitor your ControlComputer (Drivers, Harddisk, etc...) or your Controller (X20CP's, IO-Cards, Timing, etc...)





Different APROL-applications

SDM

- General information about your APROL system and your controller. Here you will find also different reports.

APROL Web Portal
Control Computer: bupa052 [bupa052] - bupa052 br-automation.co.at
Updated at: 09/10/2014 09:22:05

APROL SDM

Global Information

- APROL Release: APROL R 4.0-07 (64Bit)
- APROL delivery date: 04/30/2009
- APROL patch: No patch installed
- Release date: 09/21/2014
- Release limit: No limit
- Redundancy configuration: Single configuration
- AutoYast DVD version: 4.0-070
- APROL DVD 1: 4.0-07
- APROL DVD 2: 4.0-07
- APROL DVD 3: 4.0-07
- APROL DVD 4: 4.0-07
- Documentation: 4.0-07
- Language DVD version: no info
- Required Automation Studio version: 4.1.4.348 (---) (IM_2.0)
- VMware Version: 10.0.0
- SuSE Distribution: SuSE Linux Enterprise Server 11 (x86_64), SP3
- MySQL Version: 5.5.33
- System boot time: 09/04/2014 9:02:41
- Uptime: no value
- Started processes: no value

License Information

- License state: LICENSED
- Licensing date: 01/03/2014
- Licensee: KALKULATIONSMASER BU
- Serial number: B&R Internal Company License
- Actual dongle ID: No dongle found
- Dongle ID at license time: Without dongle

System warnings

- ChronoLog forwarding buffer: 0 MB ✓
- Idle State: no value ⚠
- Free Memory: no value ⚠
- Free Swap Memory: no value ⚠

Free data space on hard disk partitions

- APROL_DATA (no value): no value ⚠
- Root Disk (no value): no value ⚠

VNC configuration for remote access to APROL servers

Viewer	Resolution	Port	Status
VNC viewer	1280 x 1024	5901	✓ Enabled
VNC viewer	1600 x 1200	5902	✓ Enabled
VNC viewer	1920 x 1200	5903	✓ Enabled

APROL services

- TbaseServer: ✓ Running
- APROL logging: ✓ Running
- NTP daemon: ✓ Running
- UPS daemon: ⚠ Stopped

Installable systems

- Engineering system: ✓ Installable
- Runtime system: ✓ Installable
- Operator system: ✓ Installable

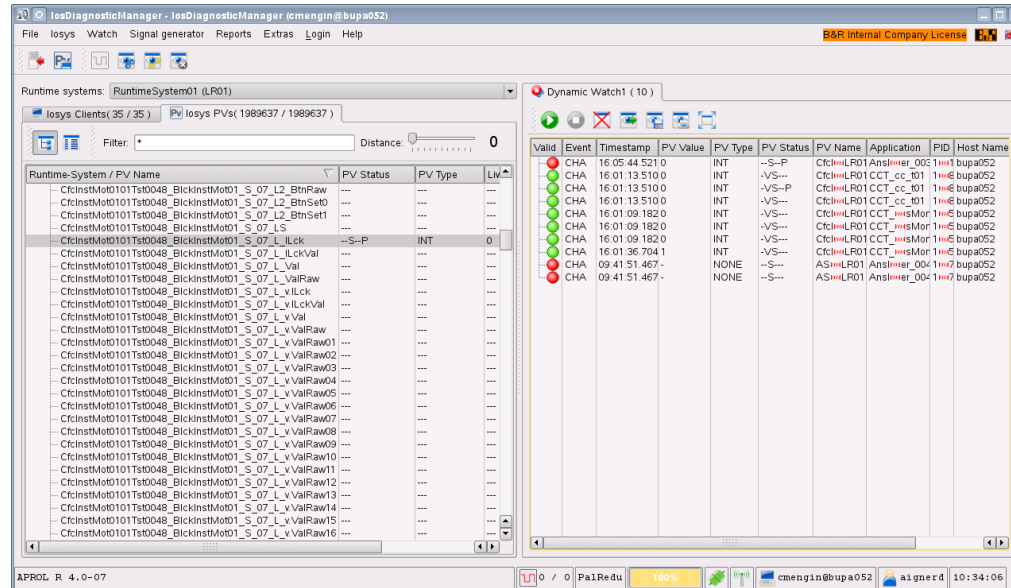
APROL R 4.0-07 (64Bit), © 1995-2014 Bernecker + Rainer Industrie-Elektronik Ges.m.b.H. Updated at: 09/10/2014 09:22:05



Different APROL-applications

● IOsDiagnostic Manager

- Watch your variables, which are running on your runtime-system. See the status of the variable (idle, valid, sourced, source, force, persist). Use the Signal Generator to simulate an Input.

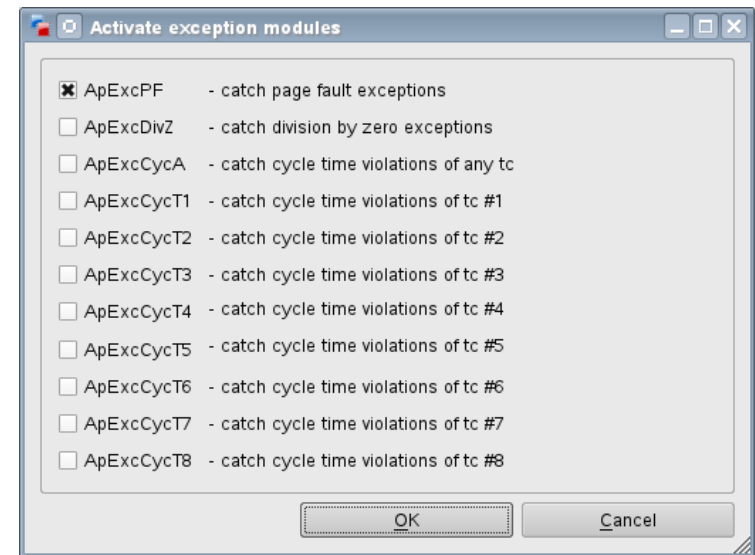
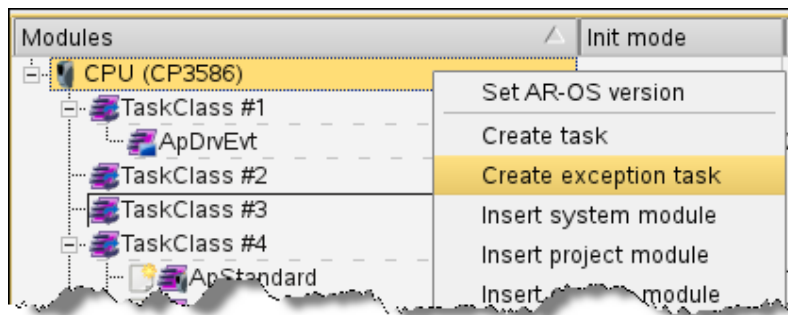




Different APROL-applications

● Exception tasks

- Exceptions are signals which come from the system and indicate certain exception states. Unlike other fatal errors, exceptions allow the user to react to the error, or exception. With this, a booting in service mode can be avoided when something happens:
- Page fault
- Division by zero
- Cycle time violation of any task class
- Cycle time violation separately

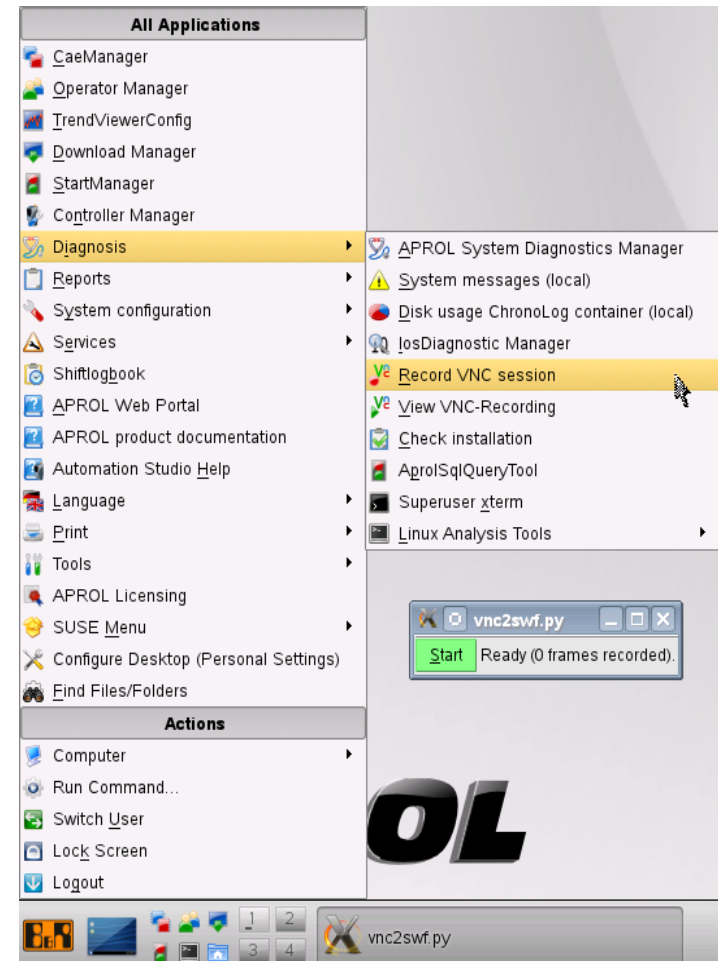




Support-Tools

VNC

- A video says more than 1000 words.

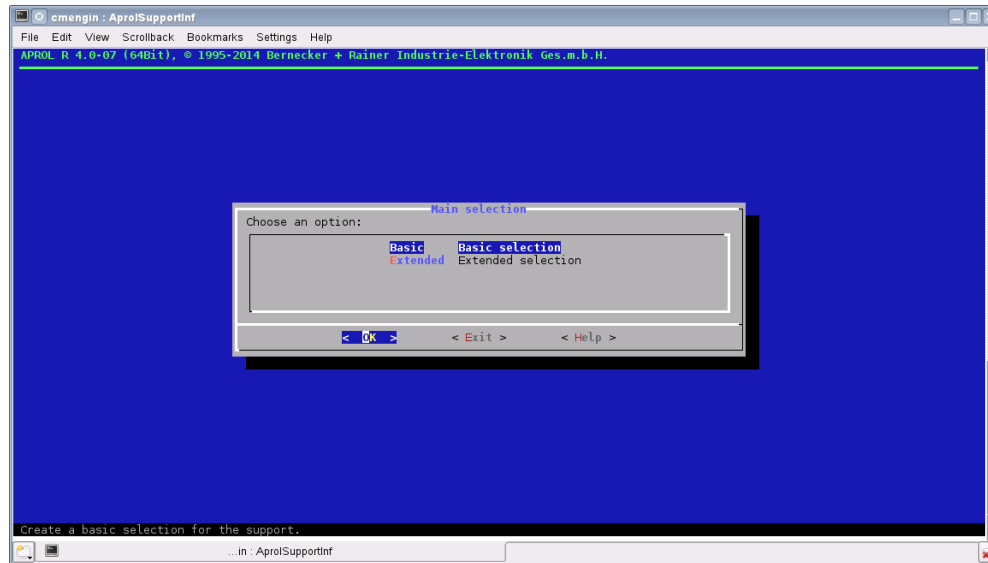




Support-Tools

● AprotSupportInfoPacker

- A tool, which provide you a package, with almost the important information.





Support-Tools

● AprotChangeHost

- A tool that changes your hostname and patch to your database
- Execute as root: AprotChangeHost –help for more information

```
engin : bash
File Edit View Scrollback Bookmarks Settings Help
engin@bupa052:~> su - root
Password:
bupa052:~ # AprotChangeHost -oldhost <OldHostName> -newhost <NewHostName> -user <YourName>
```

```
engin : bash
File Edit View Scrollback Bookmarks Settings Help
bupa052:~ # AprotChangeHost -oldhost bupa052 -newhost bupa053 -user User -test
This APROL test version is best before 12/01/2015 12:00:00 CET !
This host is the primary target for the hostname change.
Changes for AprotConfig
CC-Accounts
runtime / Host name of download server:
:: bupa052.br-automation.co.at
-> bupa053.br-automation.co.at
LDAP
Server hostname:
:: bupa052.br-automation.co.at
-> bupa053.br-automation.co.at
Remote Compiling
Scheduler host:
:: bupa052.br-automation.co.at
-> bupa053.br-automation.co.at
Changes for runtimeb
none
Changes for hosts files
/etc/hosts
:: 10.43.235.159 bupa052.br-automation.co.at bupa052
-> 10.43.235.159 bupa053.br-automation.co.at bupa053
:: 127.0.0.2 bupa052.br-automation.co.at bupa052
-> 127.0.0.2 bupa053.br-automation.co.at bupa053
/home/aprolsys/.rhosts
:: bupa052.br-automation.co.at engin # AprotConfig
-> bupa053.br-automation.co.at engin # AprotConfig
/home/runtime/.rhosts
:: bupa052.br-automation.co.at engin # AprotConfig
-> bupa053.br-automation.co.at engin # AprotConfig
Changes for own hostname
:: bupa052
-> bupa053
bupa052:~ #
```



Support-Tools

- Data, Screenshot, CSP, A&P, Tel, Email,
 - Write as much information as you know in your Email or CSP.
 - Before you explain everything, take a screen-shot or send an export.
 - If you are able to use the CSP-ticket-system. Take care that everything is inside and correct
 - This is the database for the 2nd- and 3rd-Level Support. Here are all the requirements and problems stored.
 - Support-hotline: +43 7748 6586 4040.
 - Support – email-address: support.hq.aprol@br-automation.com



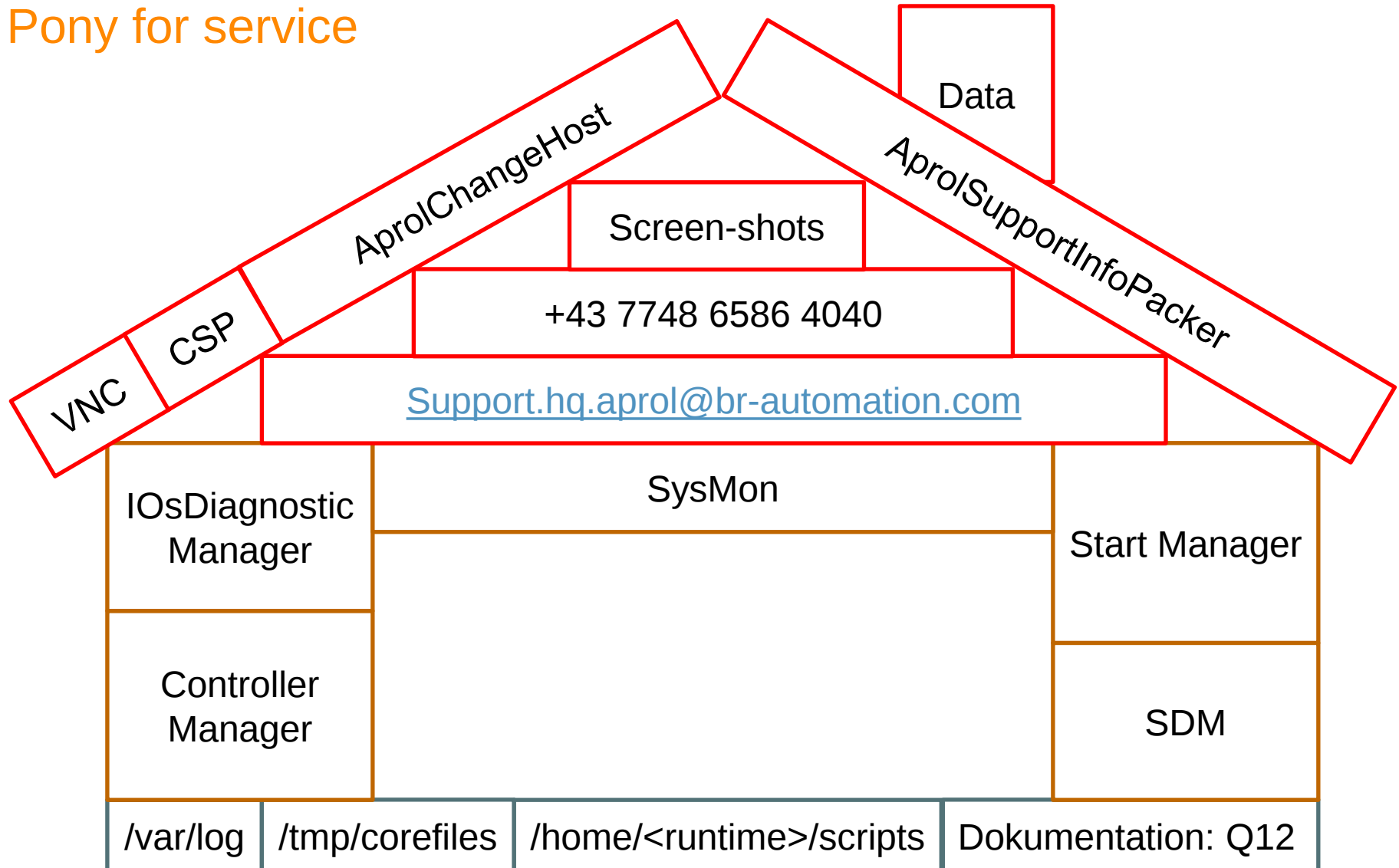
Service **Practical** **That is service**



Service **Pony for service**

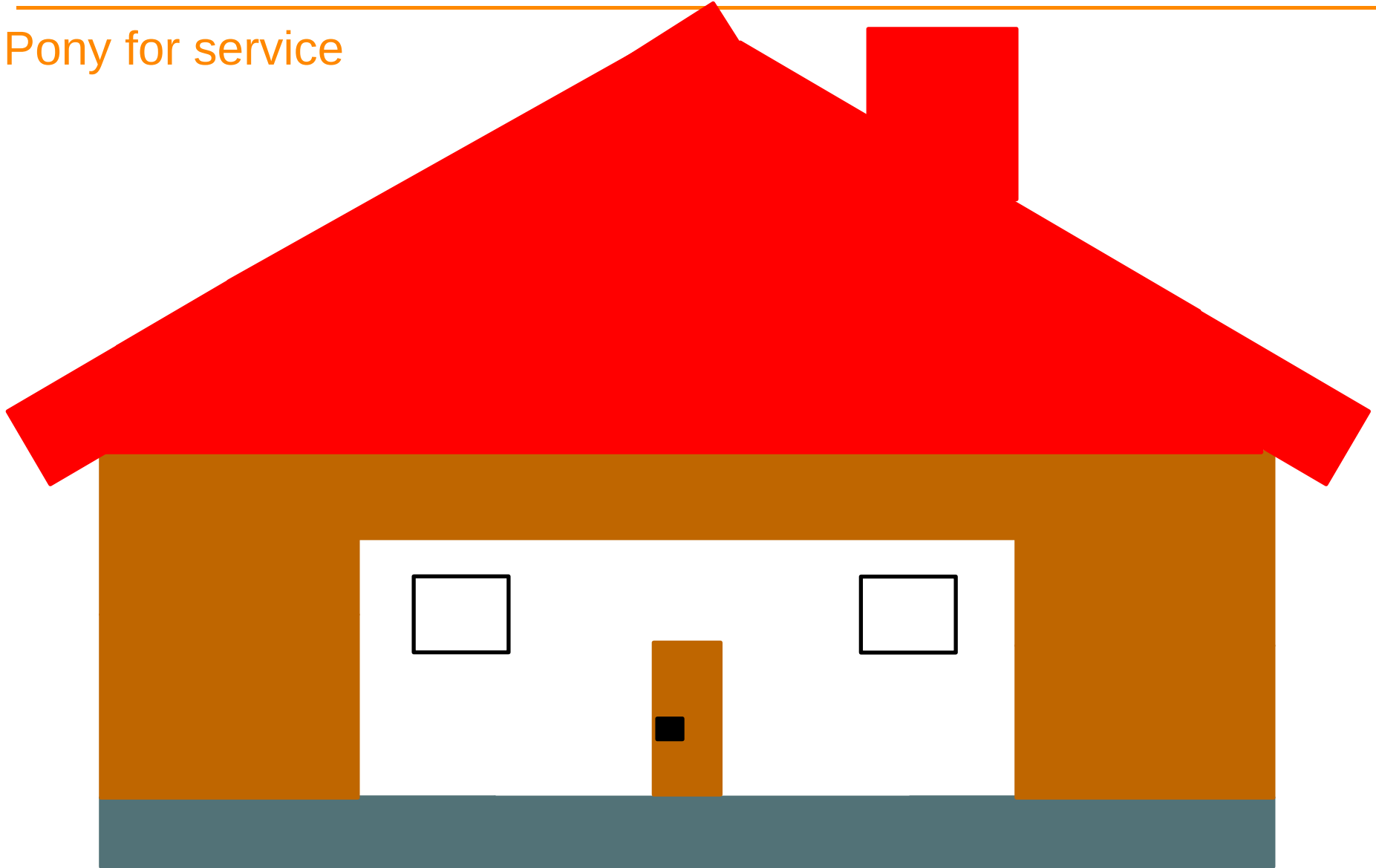


Pony for service





Pony for service





Have fun

**YOUR GLOBAL PARTNER FOR
AUTOMATION EXCELLENCE**