

The PC-350 on Linux OS

Instruction manual

1. Preamble

This document is the description of the PC-350 ARC receiver based on Linux OS (the Slackware v.12.1 is recommended for its simplicity). The whole agenda has two parts. First describes the complete installation step by step and the second explains how the system works. Some of parts are extremely detailed for experts, some of them might be found as very simple.

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2. Linux Installation

Optimized for Slackware distribution v. 12.1

2.1. PC BIOS settings

To have the PC boot from the CD, first we have to get in BIOS and have the PC boot up from the CD. To get into the BIOS setting press the *Delete* key after the switch the PC while the PC is checking the HW status.

Set the DVD drive as the highest boot priority.

Insert the DVD media with the Linux distribution

Restart the PC, it will boot from the DVD

When the dialog „Boot:“ appears, just press „Enter“

While the Linux is booting, you are asked for setting the key map. Follow the instruction on the screen and choose the location of your key board (the blue/green screen)

After the keyboard map setting the dialog „slackware login:“ is displayed; login as the user „root“.

Then the ([root@slackware:/#](#)) command line appears on the screen

2.2. Partition settings

Use the **fdisk** utility for partition settings.

Two partitions should be created during this step - one for Linux operating system, and the second is SWAP partition.

1. Enter the command „cfdisk /dev/sda“

The SDA is the type of device, here it is one of hard drive system. In case it might be replaced with sdb, sdc or hda, hdb – it depends on the used PC hardware. The sda is the most common currently.

2. Check whether the list of partitions is empty, then choose the item **NEW** to create new partition.

3. Choose the **Primary** item.

4. Set the size of the partition 2 GB smaller than the maximum size is offered and press enter –the size is set in MB!

5. Choose the position of the partition on the hard drive – the beginning is recommended.

6. Set the created partition as bootable – in the menu displayed on the bottom of the screen.

7. Use the “ ↓ “ key to move the highlighted line to free space on the Partitions list, and choose the **New** item in the menu below the screen.

8. Choose the **Primary** item.

9. Set the size of the partition from 1 to 2 GB and press enter.

10. Choose the **Type** item in the menu below the screen and press enter, then press a key to continue.

11. Set the filesystem type to the value 82,

12. Choose the **Write** item in the menu below the screen, press enter and confirm the writing into the partition table (yes).

13. Remember the name of the Linux partition and Linux swap partition (probably sda1 and sda2).

14. Quit the cfdisk utility.

Now the partitions are ready for Linux installation. Restart the PC by the “reboot” command.

2.3. Linux Installation process

When all the necessary partition on the disk are ready, follow these instruction.

When the dialog „Boot:“ appears, just press „Enter“.

While the Linux is booting, you are asked for setting the key map. Follow the instruction on the screen and choose the location of your key board (the blue/green screen)

After the keyboard map setting the dialog „slackware login:“ is displayed; login as the user „root“.

Then the command line appears on the screen ([root@slackware:/#](#))

- use command “setup”
- choose the **ADDSWAP** item. Check whether the partition name accords to the name created by the cfdisk utility. If yes, continue, otherwise make a correction of the name.
- Let installer system check the partition for the bad blocks, it might takes several minutes and confirm the “SWAP SPACE CONFIGURED” window by the **OK** button pressing.
- Select the partition for Linux – it must accord to the name which has been set by the cfdisk. Press the **SELECT** button.
- Choose the item **Check** and press the **OK** button.
- Confirm the **ext3** filesystem and press the **OK** button, the formatting might take several minutes.
- Confirm the **DONE ADDING LINUX...** window by the **OK** button pressing.
- Choose the item **Install from a Slackware CD or DVD**.
- Choose **auto** mode of the installtion
- Tick the following packages for the installation: A, AP, D, F, K ,L ,N, TCL, X , XAP and press **OK** button,
- Choose the **full** installation mode.
- Skip the making a USB boot stick,
- Choose the **no modem** item in the MODEM CONFIGURATION window.
- Choose the simple LILO installtion.
- Choose the **standard** Linux console.
- just press the **OK** button in the “Optional LILO append” window,
- Choose the **MBR** item in the “SELECT LILO DESTINATION”,
- Choose the mouse type if any and then confirm the gpm configuration by the **Yes** button pressing.
- Next step is the network configuration; if you know the network parameters, continue by **Yes** button clicking. Otherwise press the **No** button; the network might be configured afterwards.
- When the Yes button was pressed, follow the instruction on the screen:
- When the network is configured, the “Confirm startup service to run” window appears.
- Choose the rc.hald item and press **OK** button.
- Skip the custom screen font configuration.
- Set the hardware clock according to your location.
- Select default window manager for X – choose the *xintra.fluxbox* *The fluxbox window manager*.
- Configure the root user password – it is recommended to remember well the inserted password.
- After the password configuration, remove the installation DVD from the DVD drive and reboot the PC.

2.4. Network settings

When the network parameters have not been set while the Linux was installed, use the bellow mentioned instruction.

2.4.1. Network parameters

Firstly the network parameters must be known. If you are not sure about the right parameters, ask your network administrator.

Before parameter setting, ensure that any Ethernet adaptor is ready to use – use the command *ifconfig*.

By typing this command, you would see the status of the network cards.

When any *eth* device is visible, then you can set the network parameters.

- Open the file */etc/rc.d/rc.inet1.conf* for edit:

Config information for eth0:

```
IPADDR[1]=""  
NETMASK[1]=""  
USE_DHCP[1]=""  
DHCP_HOSTNAME[1]=""
```

```
# Default gateway IP address:  
GATEWAY="10.0.0.138"
```

When the PC should obtain the IP address from the DHCP server, then set the parameter "USE DHCP" as "YES". Otherwise set the IPADDR, NETMASK and GATEWAY according to your local network.

- Open the */etc/rc.resolv* file for edit:

```
search domainname.suf  
nameserver 1.2.3.4
```

Set the domain name and name server according to the your local network.

For example

```
search vodafone.cz  
nameserver 192.168.250.1
```

3. ARC PC-350-JAGA

JAGA - Jablotron communication Architecture for GSM Appliances

- The PC-350 provides an interface between Jablotron IP communication ,Jablotron SMS format and picture receiving server for JA 84P to monitoring software on our own or third party ARC softwares
- The PC is based on Linux operating system (Unix family), which is normally used for stable and highly reliable servers supposing no system maintenace.
- The main channel communicates via UDP from all IP/GPRS and LAN dialers.The back up channel is using GSM modem MS 33 to receive SMS formats from GSM dialers. The Internet connection is meant as a main communication channel and the SMS is a back up channel.
- The back up channel might be redirected to the MS-41 card alternatively. The MS-41 is the telephone line receiver which is capable to receive the Ademco Contact ID format (DTMF) but **NO** pulse formats
- The main channel receiving (IP communication) is conditioned with the fix and public IP address where the data should be sent to.
- The standard output is the COM port connection with the Surgard format or the ComGuard driver, which is capable of sending data to SQL database used by ComGuard.
- Upon request, it can be fitted to almost any application.For example sending it via text file to some FTP or network disk

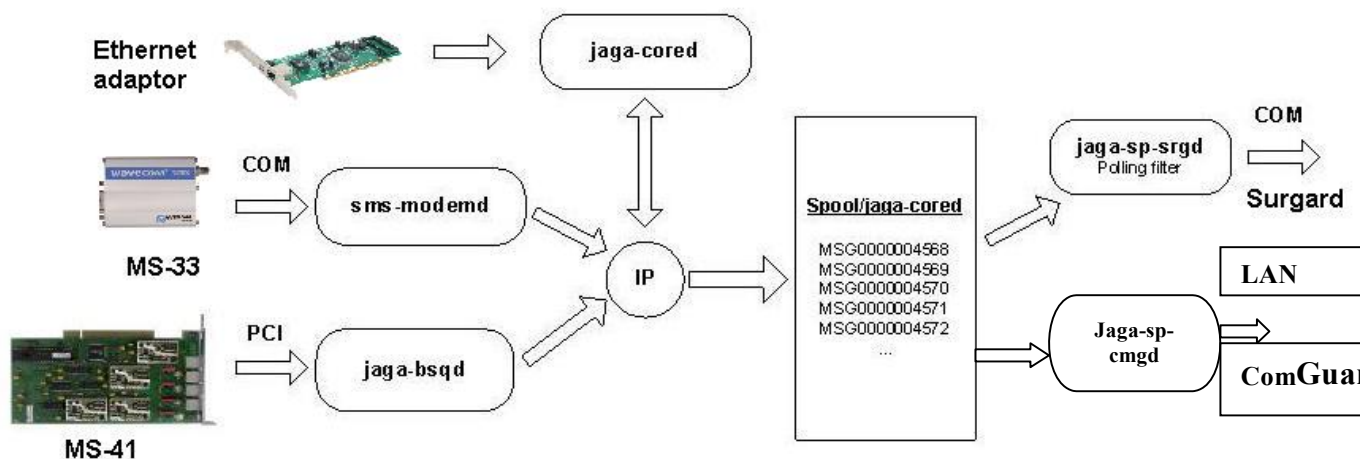
3.1 The PC-350 inputs

The picture below describes possible communication channels. The PC-350 is able to combine various way of ARC communication. The IP and SMS communication is encrypted not to be corrupted or overheard by any not involved subject or by a possible disturber or intruder. The encryption method is the object of the Jablotron Ltd.

company property. The Jablotron Ltd. company provides defined interface between IP (and SMS) communication to 3rd party ARC device based on the PC-350 receiver.

3.2 Architecture

3.2.1 The structure of the deamons



- **jaga-cored** – the main module; it receives and decodes the incoming packets to the IP address and after packet decoding stores the events into the *spool* directory . Each event is stored into separate file; MSG[event number]. The module also filters the polling signals (1602 in Contact ID). The polling are not stored as MSG files in the *spool* folder except the first polling signal from each account number after the *jaga-cored* module start.
- **Sms-modemd(1 or 2)** – the module(s) which operates the MS-33 GSM unit, receives the SMS from communicators and send to the IP address as data packet for *jaga-cored* module. It also filters the polling signal; the module does not sent all the polling signal to reduce the data flow on the COM port. The module itself checks the polling signal attendance according to its setting (see the chapter below).
- **Jaga-bsqd(1 or 2)** - the module(s) which operates the MS-41 PSTN receiver. The incoming telephone message is transformed to the data packet send to the IP address as data packet for *jaga-cored* module.
- **SPOOL** – the directory, where the decoded event (MSG files) waits for further processing, See the chapter 3.8.
- **jaga-sp-srgd** – the module, which reads the events from the spool directory, transform them into the Surgard format on the serial port to be received by the 3rd party ARC software. When particular MSG file is read by the *jaga-sp-srgd* module ,the file it is erased not to be read again.”
- **jaga-sp-cmgd** – the module which reads events from the spool directory ,and sends the using LAN connection to an IP address, where is SQL database used by ComGuard. When particular MSG file is read by the *jaga-sp-srgd* module ,the file it is erased not to be read again.”
- **pppd (1 or 2)** - there is also option to use GPRS to be directly received by GSM module. Since the multiplex mode is not stable, for receiving GPRS we need another GSM modem.Static IP of the SIM is also mandatory.WE strongly do not recommend this option,since GPRS network is not very stable

3.2.2 The Jaga pictures flow chart

- **jaga-fd** – the module receives UDP packet with the picture data from a **JA-80 Oasis** control panel equipped by the JA-84P camera PIR detector. When the received data are decoded, the picture is stored into the `/var/spool/jaga-fd` folder for further processing. Every received picture means 2 files in the spool folder - ATT[number] and MSG[number]. The ATT is the picture file, the MSG is the event file with the same structure as the MSG file in the *jaga-cored* spool folder. The [number] indicates which ATT and MSG file pertains to the received event as the [number] is the same for both the ATT and MSG file.

Jaga-fd module can generate the event 6601 (this is optional, not set by default) with the account ID when the image has been received and stored into the `/spool/jaga-cored/` folder to announce operator know about just received image. The image might have a delay after the alarm event from JA-84P about 40 seconds.

- **jaga-fd-filter** – when the module is running, each received picture is stored into the specific folder according to the account ID. It also helps with resolution and it clears out the picture. E.g. every picture from the account 7117 will be stored into the `/var/spool/jaga-fd/storage/7117/..` folder.
- **jaga-fd-www** – the module provides web server for the received picture browsing. See the chapter 4.

3.2.3 The Jaga modules start up

The jaga application are started automatically after the power PC on and Linux OS is booted. Every jaga module has its own start script file in the `/etc/rc.d/` folder – rc file. The rc.jaga file starts the modules which are configured to be start after the OS linux boot. Every start script includes pertinent configuration (e.g. which COM port is used for the Surgard output, etc.). The parameters expected to be configured according to the common usage of the PC-350 are collected into the `/etc/jaga.conf` file (see the chapter 3.3)

It is not necessary to keep all the modules running regardless of the demanded usage of the PC-350 device; e.g. when a user does not demand to use the MS-33 SMS module, the *sms-modemd* module doesn't need run at all. The configuration of the allowed modules is described in the chapter 3.3.

-

3.3 Jaga modules installation

When the Linux OS is installed according to the previous chapter, mount the storage device where the JAGA installation pack is.

Insert the media, where the *jaga* module are stored (CD-ROM or USB flash disk)

Use the command *mount* to connect the media to the system in the following way:

The command's syntax is:

mount [what] [where],

[what] is the device to be mounted, e.g.:

CD-ROM – the name of the device is visible in the `/etc/fstab`

The file probably contain the line like `#/dev/cdrom /mnt/cdrom auto noauto,owner,ro 0 0`

The # should be deleted in the line and then save the change. The name of the device is the "cdrom" here.

USB flash disk – the first step is the searching of the device name. The fact is, that it might be called in various way, according to the hardware controller (e.g. sda, sdb, hda, hdb, etc)

Use the command `dmesg | grep sda` (or `hda`, etc.) and all the device with the searched type will be print out on the screen – the best way, how to recognize the inserted flash disk is the searching of the device with the **SIZE** of the used USB flash.

Search the line similar to the `sda`: `sda1` to learn the pertinent name of the device. Here the name **SDA1** is the real name of the device.

`[where]` is the folder , where the device’s content should be mount to. The Linux contains a recommended folder for the mounted device which is called `/mnt/` .

The complete command for the CD-rom mounting might be: `mount /dev/cdrom /mnt/cdrom`

The complete command for the USB flash mounting might be for example: `mount /dev/sda1 /mnt/usb` – **Note! The `/mnt/usb` folder must already exist before the mounting it.**

When the CD_ROM is mounted on the CD drive is not allowed to open. It is possible to open the CD drive after it is dismounted. Use the command:

`umount [where]` where = folder where is the content of the CD-ROM (or another device) mounted. The Command example: `umount /mnt/cdrom`.

It is necessary to dismount the USB flash disk (or any mounted device) before its disconnecting in similar way.

After the media mounting find the `jaga_arc-1.0-i386-16.tgz` pack and copy it into the `/root/jaga_install` folder. Note: the `/jaga_install` is not created. it is recommended to use the *Midnight commander* for any operation with files administration. The midnight commander is started by the “`mc`” command. To copy the file use the “F5” key.

For the JAGA installation use the command:

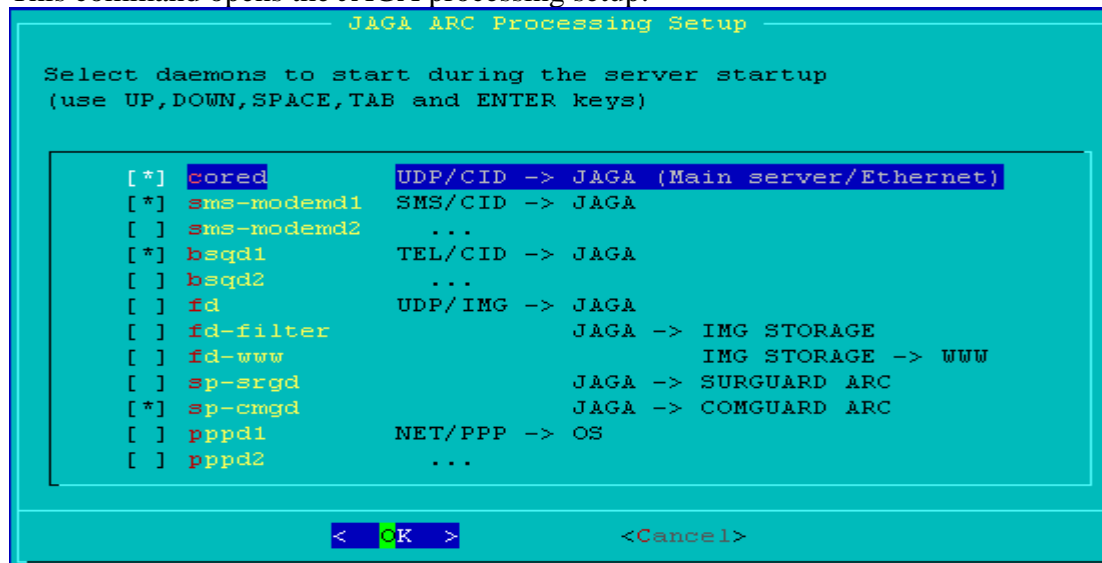
```
installpkg jaga_arc-1.0-i386-15.tgz
```

This command will install all the modules with default configuration.

Non of the module is active after the installation, i.e. non of the module is started automatically after the power on. To activate demanded modules type the command:

jaga-setup

This command opens the JAGA processing setup:



Tick the module you tend to use and press OK. With next PC reboot only the chosen modules will be started.

3.4 Jaga settings

The all user settings of the PC-350 ARC device provides the *jaga.conf* configuration file. Open the */etc/jaga.conf* file for edit. The file offers the following parameters:

BASIC SETUP

- JAGA_CORED_PORT="8080" # UDP input channel
 - the application port , where the incoming UDP packet from communicators are expected.
- JAGA_CORED_PA[1]="0-FFFE:2100:21900:90000:82800" Definitions of polling settings.Please look in section 3.4.1.
- JAGA_CORED_PA[2]=""
- JAGA_CORED_PA[3]=""
- JAGA_CORED_PA[4]=""
- JAGA_CORED_PA[5]=""
- JAGA_CORED_PA[6]=""
- JAGA_CORED_PA[7]=""
- JAGA_CORED_PA[8]=""
- JAGA_SMS_MODEMD1_DEVICE="/dev/ttyS#" # 1st SMS input channel
 - the serial port where the MS-33 GSM unit is connected to the PC-350. To find the port see the chapter 3.4.3
- JAGA_SMS_MODEMD2_DEVICE="/dev/ttyS#" # 2st SMS input channel
 - the serial port where the MS-33 GSM unit is connected to the PC-350. To find the port see the chapter 3.4.3
- JAGA_BSQD1_DEVICE="/dev/ttyS#" # 1st TEL input channel
 - the serial port where the MS-41 PSTN receiver is established. To find the port see the chapter 3.4.2
- JAGA_BSQD1_LINES="1234" # -number of connected lines
- JAGA_BSQD2_DEVICE="/dev/ttyS#" # 2st TEL input channel
 - the serial port where the MS-41 PSTN receiver is established. To find the port see the chapter 3.4.2
- JAGA_BSQD2_LINES="1234" # -number of connected lines
- JAGA_SRGD_DEVICE="/dev/ttyS#" # ARC output channel
 - the serial port where the Surgard output is provided for the 3rd ARC software
- JAGA_SRGD_SPEED="9600" # - N81 required
 - the serial port bit rate parameter for the Surgard output, see also the chapter 3.4.4
- JAGA_SRGD_PERIODIC_TEST="20" # - seconds
 - the period of the heart beat on the Surgard connection to an ARC software, see also the chapter 3.4.4
- JAGA_FD_PORT="7070" # UDP input image channel
 - the application port where the incoming images data from JA-84P camera PIR are expected, see also the chapter 3.4.5
- JAGA_FD_PURGE="30" # - days
 - o the cleaning period for the stored images; the image solder then 30 days are erased.
- JAGA_FD_USER="" # - empty "" to skip login

- the user name demanded to access the inbuilt images web server provided by the jaga-fd-www modul.

- JAGA_FD_PASSWD="" # -//-
the password demanded to access the inbuilt images web server provided by the jaga-fd-www modul.
- COMGUARD OUTPUT CHANNEL - go in mentioned file /usr/local/etc/freets.conf. In section named [comguard] fill in the IP of theSQL database used by ComGuard
- JAGA_PING_IP[1]=" IP of the any address,which system pings for Ethernet accessibility
- JAGA_PING_IP[2]="
- JAGA_PING_IP[3]="
- JAGA_PING_IP[4]="
- NET/PPP helper- In mentioned files /etc/rc.d/rc.local, /etc/ppp/options{1,2}, /etc/ppp/chat{1,2} ,/etc/ppp/chap-secrets, /etc/ppp/pap-secrets you must edit APN,Pass, Logins .Since this is not standart setup,we reccommend to contact us to help you out with the settings

#ADVANCED SETUP

JAGA_IP[1]="0.0.0.0" # JAGA IP (autodetect)
-the IP address, where the jaga-cored modul receives incoming UDP packet. When the parameter is set to the 0.0.0.0, the jaga-cored uses the current IP address of the connected Ethernet device.

JAGA_IP[2]="0.0.0.0" #it is reserved for another ETH recieveing channel

JAGA_IP[3]="0.0.0.0" #it is reserved for another ETH recieveing channel

JAGA_IP[4]="0.0.0.0" #it is reserved for another ETH recieveing channel

JAGA_FD_IP[4]="0.0.0.0" # JAGA FD (autodetect) Ip of the channel,where JAGA is listening for picture UDP

JAGA_SYS_IP="127.0.0.1" # gate for SMS/TEL
-internal IP address which is used for communication between the jaga-cored module and other modules receiving data from the SMS or PSTN channel (the sms-modemd and jaga-bsqd modules)

JAGA_SYS_PORT="8089" # -//-
- the internal application port for the same purpose as the previous parameter.

JAGA_LOG_LEVEL="2" # 1-5
- jaga application creates a log file with all the action performed by them. The information range of the log file is set by this parameter, the higher value of the parameter the more information in the log file.The parameter is valid for all the modules creating log files.

JAGA_MARK_ALIVE="120" # seconds
-every module refreshes its log every 120 seconds at least(writes the MARK into the log), which allows superior script (rc.jaga) to check the faultless running of the particular module.

JAGA_CHECK_ALIVE="150" # seconds
- the period of the MARKs checking in the log files – must be longer then the JAGA_MARK_ALIVE parameter.

JAGA_CHECK_TIMEOUT ="50" # seconds
- the period of the solid run of the GSM network.Used for checking presence of the GSM module or GSM failures

JAGA_TIME_SERVER="tick.grayware.com" # rdate (empty "" to disable)
- the destination address for the periodic PC time synchronization

JAGA_DAEMONS="cored sms-modemd1 sms-modemd2 bsqd1 bsqd2 pppd1 pppd2 sp-srgd sm-cmgd fd fd-filter fd-www"

- the used modeles by the JAGA system. Iti is not necessary to change the list even if any module is not used. The real usage is set by the Jaga-setup , see the chapter 3.3.

JAGA_RC="/etc/rc.d/rc.jaga"

-the folder where the start scripts are stored

JAGA_BIN_PATH="/usr/local/sbin"

-the folder where the jaga modules are stored

3.4.1 The polling check settings

Please go to main configuration file /etc/jaga.conf to see it again,section #Periodic test adjustmments Generally receiver knows, which Channel was used for delivering the data from the control panel and each channel is using different letter.Based on channel is set switching from main to back up channel and its recoveries.

The letters behind the IP address are allowed communication channels:

U – UDP packets, i.e. Internet communication or GPRS (Ethernet adaptor)

S – SMS communication (the MS-33 modem)

T – PSTN communication (the MS-41 PCI card, Telephone connection, the Contact ID format)

OIDmin-OIDmax:tUDP:tSMS:tTEL:tOUT (OID* in hex 0000-FFFF, t* in secs)

JAGA_CORED_PA[1]="0-FFFE:2100:21900:90000:82800"

JAGA_CORED_PA[2]=""

JAGA_CORED_PA[3]=""

JAGA_CORED_PA[4]=""

JAGA_CORED_PA[5]=""

JAGA_CORED_PA[6]=""

JAGA_CORED_PA[7]=""

JAGA_CORED_PA[8]=""

“0-FFFE” it is group of object ID numbers, that will use filter according following settings

“2100” settings for UDP settings.So every object from this range of ID numbers must send polling test at least every 2100 sec(35 min)

“21900” settings for SMS settings. So every object from this range of ID numbers must send polling test, if communicating via SMS every 21900 sec (6 hours)

“90000” settings for TELEPHONE settings. So every object from this range of ID numbers must send polling signal,if communicating via telephone every 90000 sec (25hours)

“82800” time settings of single polling event being sent to ARC software to monitor receiver in case of failure

The settings of the periods are in seconds. The example on the figure means that every account, which has ever send a message to the ARC, from the range of 0000 to FFFE account ID's , is checked according to the active communication channel: if the last received messages has been sent via internet (UDP packet) next message from the account is expected in 35 minutes (2100 seconds). The time of next expected event is set according to the last received event. When the event is received by the IP channel, the next is expected on IP channel in 2100s. When the new event received by the MS-41 (telephone line) and previous is received by IP channel, the

next is expected via MS-41 (telephone line) in 25 hours and the *Jaga-cored* module generates the information about the channel change (1351, see below text) .

In addition , the Jaga module generates every 24 hours (86400 seconds) polling signal for a 3rd party ARC software, which is behind the PC-350 receiver.

It is recommended to keep sending polling signal generated by the *Jaga-cored* module for monitoring of the jaga modules run.

The event 1356 is the “Loss of central polling” according to the Ademco Contact ID standard (SIA DC-05-1999.09)

The event 1351 is the “Telco 1 fault” according to the Ademco Contact ID standard (SIA DC-05-1999.09) – it means that the main channel is not available currently, so the dialer has sent the event via back up channel (SMS or phone line)

3.4.2 The MS-41 PSTN receiver settings

All the needed setting is being done in `/etc/jaga.conf`.

```
JAGA_BSQD1_DEVICE="/dev/ttyS#"
```

```
JAGA_BSQD1_LINES="1234"
```

```
JAGA_BSQD2_DEVICE="/dev/ttyS#"
```

```
JAGA_BSQD2_LINES="1234"
```

By using command `dmesg | grep tty` , you will get all COM port assigned in the system.

The lines containing the MMIO identificatin belongs to the MS-41 PSTN card. Use the lower one to set the *serial-device* parametr `JAGA_BSQD1_DEVICE="/dev/ttyS#"`. There is possibility of having two MS 41 cards in the reciever

In line `JAGA_BSQD1_LINES="1234"` set number of used lines to be watched. Each number is representing telephone line input

3.4.3 The MS-33 GSM modul setting

All the needed settings are being made in `/etc/jaga.conf`.

The MS-33 modul settings is very similar to the MS-41 PSTN receiver settings. The point is to define the right COM port device name, where the MS-33 GSM modul is connect.

By using command `dmesg | grep tty` , you will get all COM port assigned in the system. S0 is usually the one on the mother board, then following ones, with higher numbers are added ones

```
JAGA_SMS_MODEMD1_DEVICE="/dev/ttyS#"
```

```
JAGA_SMS_MODEMD2_DEVICE="/dev/ttyS#"
```

3.4.4 The setting of PPP connection(GPRS receivers)

Because PPP daemons are already part of Linux, it would be difficult to implement the setting of the PPP connections in the jaga.conf file.

Therefore there is a few folder that we have to configure. Since this is not a standard option, we recommend consulting this solution and have it set by us.

We strongly do not recommend this solution because of reliability of the GPRS channel. And you would need SIM card with fix IP, which to get is usually problem.

```
Open /etc/rc.d/rc.local
```

```
Echo 1 > /proc/sys/net/ipv4/ ip_nonlocal_bind
```

```
Ip rule add from @PPP1_addr table 121 pref 10001
```

```
Ip rule add from @PPP2_addr table 122 pref 10001
```

where @ppp1_addr is IP of the 1st SIMcard

where @ppp2_addr is IP of the 2nd SIMcard

```
Open /etc/ppp/options{1,2}
```

```
Preset for optimal
```

```
Open
```

```
/etc/ppp/chat{1,2}
```

```
'AT+CGDCONT=1,"IP",@PPPD_APN"' OK
```

```
Same in chat 2 for second modem
```

where @PPPD_APN is the APN of the SIM

```
Open
```

```
/etc/ppp/chap-secrets
```

```
# client      server      secret      IP addresses
```

```
vodafone      internetextra
```

make another line and under client goes Operator and

under secret Log in name

this is just example

```
Open
```

```
etc/ppp/pap-secrets
```

```
# client      server      secret      IP addresses
```

```
the settings are same as in Chap secrets
```

3.4.5 The Surgard output settings

This configuration file affects the Surgard serial port output from the PC-350, i.e. the connection between the PC-350 and 3rd party ARC software.

Everything is being set in /etc/jaga.conf. By using command `dmesg | grep tty` find a COM port to be used for the Surgard output

```
JAGA_SRGD_DEVICE="/dev/ttyS#"
```

Speed is set defaultly to 9600 baud

```
JAGA_SRGD_SPEED="9600"
```

Number represents seconds of its heart beat

```
JAGA_SRGD_PERIODIC_TEST="20"
```

3.4.6 The ComGuard output settings

This is an option, to use receiver for sending data to existing SQL database used by software ComGuard. All, what needs to be set is IP address of the database and it is done in folder `/usr/local/etc/freets.conf` [comguard]

```
host = xxx.xxx.xxx.xxx
port =1433
```

3.4.7 The image receiver setting

The modules `jaga-fd`, `jaga-fd-filter` and `jaga-fd-www` are not recommend to be changed in any way. The communication is based on UDP packets . The default port is 7070 might be changed in the `/etc/jaga.conf` file.

3.4.8 Jaga ping

In the folder `/etc/jaga.conf` is setting for device, which is pinging Ip addresses you fill in. The daemon sends 4 pings with 1 sec space between them and they must respond to up to 2 sec. If at least 1 ping gets back, line is considered as OK. It is good to start with your own gateway, then IP of the Iprovider, then very outside.

```
JAGA_PING_IP[1]="xxx.xxx.xxx.xxx"
JAGA_PING_IP[2]=""
JAGA_PING_IP[3]=""
JAGA_PING_IP[4]=""
```

3.4.9 The self running module setting

To keep the PC with no operation, the jaga modules are started automatically after the PC power on.

Open `/etc/rc.d/rc.local` file for edit:

The below mentioned line contains the line with the module which should be run automatically after the PC power on.

```
/etc/rc.d/rc.jaga start
```

The file is run after Linux boot. The `rc.jaga` script starts all the modules according to the `jaga-setup` setting, see the 3.3 chapter.

3.4.10. Internal status events

- Every used module is able to perform a checking of its current featuers. E.g. , when the “`jaga-bsqd`” module notice unplugged telephone line , it generates an event 1307 00 302 from the account FFFF. The 1307 event is the “Self-test failure” according to the Ademco contact ID standard. The account FFFF is the internal account for the unexpected system status warning. The source code 302 means that the telephone card (phone input ~3

The table of events:

Code	description	note
FFFF1813070011(1,2,3,4)	Losing of Ethernet connectivity from IP adr 1-4	Last digit represents Lost connectivity from IP set according jaga.conf
FFFF1833070011(1,2,3,4)	Recovery of Ethernet connectivity from IP adr 1-4	
FFFF1813070012(1-2)	Loosing of GPRS connection or connection to modem problems	Last digit 1 or 2 means connection problems with 1 st or 2 nd modem
FFFF1833070012(1-2)	Recovery of GPRS connection or connection to modem problems	
FFFF1813070020(1-2)	Loosing of the GSM network on the modem MS 33,connection or power problems	Last digit 1 or 2 means problems in general with 1 st or 2 nd modem
FFFF1833070020(1-2)	Recovery of the GSM network on the modem MS 33,connection or power problems	
FFFF181307003(1-2)(1,2,3,4)	Diconnection of telephone line of 1 st or 2 nd MS 41 card and actual line failure	The second number, 1 or 2 means first or second MS 41 PSTN card. And the last number of actual line
FFFF18330700311	Reconnection of telephone line of 1 st or 2 nd MS 41 card and actual line failure	

3.5. The JAGA rotation of the logs settings

The modules *jaga-cored*, *sms-modemd*, *jaga-sp-srgd*, *jaga-bsqd*, *jaga-fd*, *jaga-fd-filter* write all their action into particular log file. To keep the log files in acceptable size is necessary to clear them periodically. The checking of the log for the MARK attendance is based on the OS Linux system control. The automatic maintenance of the system is set in the */var/spool/cron/crontab/root* file. The file sets the time of periodical running of particular tasks.

```
# JAGA
* * * * * /etc/rc.d/rc.jaga check &> /dev/null
0 0 * * 1 /etc/rc.d/rc.jaga log &> /dev/null
0 0 * * * /etc/rc.d/rc.jaga purge &> /dev/null
```

rc.jaga check – the command performs log files checking every single minute to start automatically not running module, e.g. after the 3rd party ARC disconnection.

rc.jaga log – the command puts over active log files generated by particular modules every Monday at 0:00 a.m. into the inactive file (marked by “0” in its name) and erases a previous inactive log file. I.e. it is possible to list 2 weeks history of the log files.

rc.jaga purge – the command erases the image data older then 30 days. The erasing process are run every day at 0:00 a.m.

If you need to set a different time or period open the */var/spool/cron/crontab/root* file for edit and search the line:

```
# JAGA LOG
0 0 * * 1 /etc/rc.d/jaga-log.cron
```

The setting of task triggering accords to the following schema:

Minut Hour Day Month WeekDay Command

The example from the line above means that the task *rc.jaga log* is triggered at 0 hours, 0 minute; independently of a date (the * on the day and month position) every first weekday of every week.

3.6 Module commands for individual operations

Although all the modules are run automatically it is possible to stop or run the chosen module independently on the *rc.jaga* start process.

The module is available to run only if it is ticked by the *jaga-setup*, see the 3.3 chapter.

Starting the module command:

./[module name] start, for example: *./rc.jaga-sp-srgd start*

Stopping the module command:

./[module name] stop, for example: *./rc.jaga-sp-srgd stop*

Restarting the module command (useful after a change of any parameter of the chosen module):

./[module name] restart, for example: *./rc.jaga-sp-srgd restart*

Before using mentioned command, the command line must be active in the folder where the start script are stored (*/etc/rc.d/* folder)

3.7. The configuration back up and recovery

When all the setting of the previously mentioned modules and task is finished the creating of the back up is highly recommended. The back up might be used for PC fast recover of the PC-350 in case of PC failure.

To back up all the JAGA settings use the command :

jaga-backup-conf

Then the settings from the */etc/* will be saved into the */root/jaga-conf.tgz* file.

To recover the PC-350 after a PC accident use the backup file and the original installation pack.

- 1) Install the Linux OS to a PC,
- 2) Install the JAGA system by the *installpkg jaga_arc-1.0-i386-2.tgz* command , see the 3.3 chapter,
- 3) copy the content of the *jaga-conf.tgz* backup file to the */etc/* folder,
- 4) reboot the PC.

3.8 The modules logs

The run of the *JAGA* module is possible to check by the content of the log files besides the tools included in the Linux OS.

Log files for particular module are created in the */var/log/* folder:

jaga-cored.log

jaga-sp-srgd.log
jaga-bsqd.log
sms-modemd.log
jaga-fd.log
jaga-fd-filter.log

The messages received by the *jaga-cored* module are stored into the */var/spool/jaga-cored/* folder – every message is in separate file called *MSG[order number]*.

Example of the MSG0000000236 content:

```
1 1 1 1 2008-01-18 13:21:00      2008-01-18 14:23:27      192.168.33.230      919118330601741
```

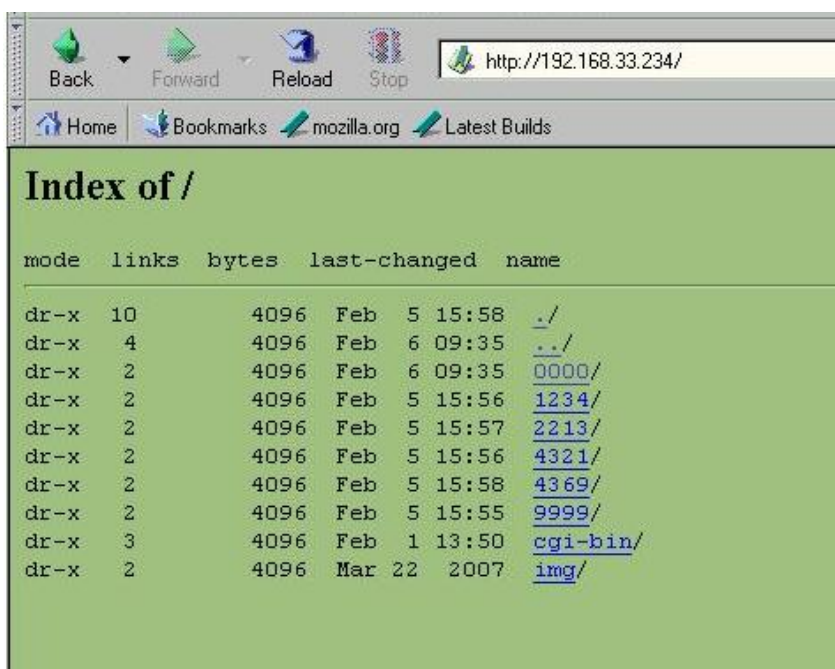
The most important item of the file is the “919118340101503” string – the code of the Ademco Contact ID. The received code came from the account No. 9191 and the event is arming (3401) buy the user code No.3 (503).

The image data from the JA-84P camera PIR are stored into the the */var/spool/jaga-fd/* folder. When the only *jaga-fd* module is running the ATT and MSG files are stored in this folder directly.

When the *jaga-fd-filter* is running as well, then all the images are stored into the extra folder according to the account ID. E.g. the images from the account 4569 will be stored into the */var/spool/jaga-fd/storage/4569/..* folder.

4. The image server

The JAGA system provides the web server for the user purposes. When the *jaga-fd-www* module is running, received images might be browsed by whatever PC connected to the network, where the PC-350 is accessible. Open your Internet browser and insert the IP address of the PC-350 into the location bar:



The visible subfolders contain the received images according to the Account ID.

If you need direct access to received images from particular Account use the address in the following format:

http://192.168.33.234/cgi-bin/ja-84p-arc?object_id=9999&pictures=3

where the part id=9999 is the Account ID of the demanded folder

5.Using of utility JAGA-OBJ,JAGA-LOG

Usage of JAGA-OBJ

Jaga-obj can be well used in searching of all or just some events from particular object.The number of the vents is not limited.Example below

```
jaga-obj <object id> <number of last messages> [old]
- 'old' option considers the archived log as well
```

e.g.: jaga-obj 5132 10
jaga-obj 2456 100 old

Usage of JAGA-LOG

By typing command JAGA-LOG you will have real time look to the log of main daemon JAGA CORED

6.The Linux help

JAGA

To open the help for the jaga modules use the command “*jaga-cored - -help* “. The command might be used on whatever active folder of the command line.

All the Jaga modules are stored in the */usr/local/sbin/* folder.

Another command

Use the syntax “*man [command]*“ – it displays the *command* usage description.

5. Useful commands

- *mc* – opens the Midnight commander (MC here and after))
- pressing the CTRL+O when the MC is running – “minimizes” the MC screen, so the command line can be used as though the MC doesn’t run. Next press CTRL+O will “maximize” the MC.
- ALT+Fn pressing – opens another console.
- *ps x* – shows the running tasks and module,
- *poweroff* – switches the PC off,
- *reboot* – reboots the PC,
- *logout* – logouts the current user,
- *date* – sets the PC date and time
- *./jaga.log* – opens the online dump of the jaga processes on the active console. The dump is stopped by the *Alt+c* key press.

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