

Yet another LPRng client, version 1.2.11

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Contents

1	Overview	3
2	Legal stuff	3
3	Installation	4
3.1	Installation on U*x systems	4
3.2	Installation on W* systems	5
4	Configuration	6
4.1	Configuration files	6
4.1.1	General configuration	6
4.1.2	SNMP device type file	9
4.1.3	Storing the configuration files in different places	10
4.2	Configuration via registry entries	11
4.3	Configuration via preferences	12
5	Usage	13
5.1	Quick start for the impatient	13
5.1.1	Setup	13
5.1.2	Print a file	13
5.1.3	Get queue status	13
5.1.4	View the print queue	13
5.1.5	Remove a print job	14
5.2	klpr - Print a file	15
5.3	klpq - Show print queue contents	19
5.4	klprm - Remove a print job	20
5.5	klpc - Control operations	21
5.6	klpinfo/snmpyalc - Short SNMP status message	22
6	Security and other issues	24
6.1	Privileged ports on U*x	24
6.2	Race conditions, permissions	24
7	A short introduction to SNMP and snmpyalc	25
7.1	A very short and simplified introduction to SNMP	25
7.1.1	What is it?	25
7.1.2	How does it work?	25
7.1.3	How can I use SNMP?	25
7.2	Introduction to snmpyalc	26
7.2.1	Overview	26

7.2.2	Selecting the hostname or IP address	26
7.2.3	Finding the SNMP community	26
7.2.4	Finding the SNMP protocol version	27
7.3	How to configure the SNMP type for your printer	27
7.3.1	Finding OIDs of interest	27
7.3.2	Writing the snmpylc.cfg file	28
8	Appendix	29
8.1	Appendix A: Configuration file search order	29
9	Version history	35

1 Overview

This package contains a set of `lpr/lpq/lprm/lpc`-like commands.

The programs are intended for W* users, on U*x systems you should use the programs shipped with your OS or printing system instead.

The goal of this package was to have a command set of `lpr/lpq/lprm/lpc` clones compatible enough to run `printop` on a Windows PC.

2 Legal stuff

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3 Installation

3.1 Installation on U*x systems

The usual commands

```
1  ./configure
2  make
3  make install
```

should do the installation.

Make sure to install the `dklibs` package¹ before installing this package.

If you want to build the `snmpycalc` and `klpinfo` applications you must have the NetSNMP library² installed.

¹<http://sourceforge.net/projects/dklibs>

²<http://net-snmp.sourceforge.net>

3.2 Installation on W* systems

Make sure you have the `dklibs` package installed. Edit the `nt.mak` file. You may need to apply changes to the configuration section.

In the MS-DOS command box change into your VC's bin directory and run `VCVARS32.BAT`.

If you use another compiler set the environment necessary for this compiler to run.

Run

```
1 nmake -f nt.mak
2 nmake -f nt.mak install
```

and copy the binary files `klpr.exe`, `klpq.exe`, `klprm.exe` and `klpc.exe` into your windows directory.

Create a registry key `HKLM/SOFTWARE/DKrause/Shared/Yanolc` and (on professional OS) grant all users read and write access to the key.

This key is used to store the job number incremented by each `lpr` operation.

4 Configuration

There are several ways to configure the YANOLC package:

- **Configuration files**
The U*x way.
- **dkapp-based preferences**
The portable way.
- **Registry entries**
The W* way.

Different configuration sources may be combined.

4.1 Configuration files

4.1.1 General configuration

This file is typically named `/etc/yanolc/yanolc.cfg` (on Unix systems) or `%WINDIR%\yanolc\yanolc.cfg` (on Windows systems).

The file consists of 3 sections:

- **Aliases.**
This section can be used to assign short alias names for print queues. Each entry consists of the short alias name and the full print queue or printer device name separated by an equal sign (=). Print queues and devices are either specified as `queue@host` for print queues on BSD- or LPRng print servers or `host%port` for raw TCP/IP connections as used by ethernet print servers.
- **Hosts.**
This section contains entries for different hosts running print server software. A line without equal sign (=) introduces a new entry for a host. Lines containing an equal sign are used to specify the hosts properties.
- **Devices.**
This section contains entries for different devices (print queues or network connections). A line without equal sign (=) introduces a new entry. Lines containing an equal sign are used to specify properties.

Sample configuration file /etc/yanolc.cfg:

```
1  [ hosts ]
2    lprngps .mycomp.com
3      type          = lprng
4      xusers        = jim joe
5      timeout.lpr   = 30
6      timeout.lpq   = 10
7      timeout.lpc   = 10
8      timeout.lprm  = 10
9    bsdps .mycomp.com
10     type          = bsd
11     xusers        = jim joe
12     originate     = 721-731
13   rawps .mycomp.com
14     type          = raw
15     timeout.lpr   = 300
16   lprngps
17     type          = lprng
18     xusers        = jim joe
19     timeout.lpr   = 30
20     timeout.lpq   = 10
21     timeout.lpc   = 10
22     timeout.lprm  = 10
23   bsdps
24     type          = bsd
25     xusers        = jim joe
26     originate     = 721-731
27   rawps
28     type          = raw
29     timeout.lpr   = 300
30  [ devices ]
31    printer@bsdps .mycomp.com
32      timeout.lpr  = 20
33      snmp         = jetdirect:hplj2200tdn:public:2
34    printer@bsdps
35      timeout.lpr  = 20
36      snmp         = jetdirect:hplj2200tdn:public:2
37  [ aliases ]
38    pr1            = pr1@lprngps.mycomp.com
39    pr2            = printer@bsdps.mycomp.com
40    pr3            = rawps.mycomp.com%9100
```

The file configures 3 servers, named `lprngps`, `bsdps` and `rawps`. There are 2 entries for each host, one entry for the short host name, one entry for the full host name.

The `type` line configures the print system type for a print server.

The host `lprngps` runs the `LPRNG` print server software, on `bsdps` we have another RFC1179-compliant software. Host `rawps` is an ethernet print server.

The `xusers` lines specify which users are allowed to use the `-U` option to specify another user name. The users `jim` and `joe` are allowed to do so when using the print servers `lprngps` and `bsdps`.

The `originate` lines configure the applications to use specific local port numbers. This may be necessary when connecting to full RFC1179-compliant print servers. The `LPRNG` server software can be configured to accept connections from other ports too. On `U*x` systems the use of reserved ports requires special privileges.

The `timeout.lpr|lprm|lpq|lpc` lines specify timeout values for the commands in seconds.

The `snmp` lines specify settings for SNMP request. The `printer@bsdps` queue prints to a printer which has an internal JetDirect card. SNMP requests are send directly to this card, the hostname of the JetDirect card is `jetdirect`. The hostname can also be specified as full DNS name or in dotted notation. The SNMP device type (explained below) is `hplj2200tdn`. The SNMP community is `public`, SNMP protocol version 2 is used.

The `aliases` section defines aliases for print queues, i.e. printing to `pr2`, `printer@bsdps` or `printer@bsdps.mycomp.com` goes to the same printer.

4.1.2 SNMP device type file

This file is typically named `/etc/yanolc/snmpyalc.cfg` (on Unix systems) or `%WINDIR%\yanolc\snmpyalc.cfg` (on Windows systems).

It is only needed if the `snmpyalc` application is used.

The file contains information about the known SNMP device types. An SNMP device type specifies which OIDs must be retrieved to get status information to print a short status summary.

Here is an example:

```
1  #
2  # Internal HP JetDirect cards
3  # i.e. HP Laserjet 2200 TDN
4  #
5  [ hp1j2200tdn ]
6  SNMPv2-SMI::mib-2.43.18.1.1.8.1.2
7      type = display
8  1.3.6.1.4.1.11.2.3.9.1.1.3.0
9      type = display
```

Each section describes one SNMP device type. A section is started by the device type name in square brackets. The device type name must not contain colons or square brackets. The rest of the section is a list of OIDs to check. Each list entry starts with the OID *without* leading spaces in the line and a description how to handle the OID *with* leading spaces.

The first OID worth to print is used to print the status message. OID attributes are

- `type`
can be
 - `display`
The OID is worth printing if it is of type `ASN_OCTET_STRING` and the string is set and contains some none-whitespace.
 - `boolean`
The OID is of type `ASN_INTEGER`, `ASN_COUNTER`, `ASN_GAUGE` or `ASN_TIMETICKS` and the value is not 0.
 - `iboollean` (inverted boolean).
- `text`
If the OID is worth printing this attribute specifies the text to issue.

4.1.3 Storing the configuration files in different places

On W* systems special registry entries are necessary if the files are not placed in the default locations. The registry key `HKLM/DKrause/Software/Yanolc` must contain a string entry named `"/config-file"` pointing to the configuration file `yanolc.cfg` and an entry named `"/snmpcfg-file"` pointing to the `snmpyalc.cfg` file.

4.2 Configuration via registry entries

There are 2 keys containing configuration information for `yanolc`, `HKLM/Software/DKrause/Yanolc` and `HKCU/Software/DKrause/Yanolc`. The settings in `HKCU` have higher priority than that in `HKLM`.

The `xusers` entries in `HKCU` are ignored.

Alias entries are formed as

```
1  "/ alias / < aliasname > " = "< queue > "
```

i.e. the values

```
1  "/ alias / pr1 " = " pr1 @ lprngps . mycomp . com "
2  "/ alias / pr2 " = " printer @ bsdps . mycomp . com "
3  "/ alias / pr3 " = " rawps . mycomp . com % 9100 "
```

are equivalent to the `aliases` section in the configuration file shown above.

Host entries are formed as

```
1  "/ host / < hostname > / < option > " = "< value > "
```

i.e. values like

```
1  "/ host / lprngps . mycomp . com / type " = " lprng "
2  ...
3  "/ host / rawps / timeout . lpr " = " 300 "
```

would be equivalent to the `hosts` section in the configuration file above.

Print queue / device entries are formed as

```
1  "/ device / < devicename > / < option > " = "< value > "
```

i.e. values like

```
1  "/ device / printer @ bsdps . mycomp . com / timeout . lpr " = " 20 "
2  ...
3  "/ device / printer @ bsdps / snmp " = " jetdirect : hplj2200tdn : public : 2 "
```

would be equivalent to the `devices` section in the configuration file shown above.

4.3 Configuration via preferences

Preferences are stored in the 4 registry keys HKLM/Software/Dkapp, HKLM/Software/Dkapp/<appname>, HKCU/Software/Dkapp and HKCU/Software/Dkapp/<appname>.

See the documentation shipped with the `dklibs` package for detailed information.

The preference names are `/yanolc/alias/...`, `/yanolc/host/...` and `/yanolc/device/...`

5 Usage

5.1 Quick start for the impatient

5.1.1 Setup

Let's assume you want to use the printer `pr` at host `ps` and your DNS domain is `mycomp.com`.

Furthermore let's assume you are on a W*32 system.

Edit your `AUTOEXEC.BAT` file and add the lines

```
1 set NGPRINTER=pr@ps.mycomp.com
2 set PRINTHOST=ps.mycomp.com
```

When using a professional W* system environment variables can be set in your desktop's property dialog box.

5.1.2 Print a file

To print the file `test.ps` simply type

```
1 klpr test.ps
```

in the DOS box.

To print to another print queue, type

```
1 klpr -Pcolor@ps.mycomp.com test.ps
```

5.1.3 Get queue status

Type

```
1 klpq -s
```

for your favorite print queue's status or

```
1 klpq -a -s
```

to get the status of all queues.

5.1.4 View the print queue

Type

```
1 klpq
```

to view your favorite print queue or

```
1 klpq -a
```

to view all print queues.

5.1.5 Remove a print job

Type

```
1  klpnm joe@pc+955
```

to remove a print job.

5.2 `lpr` - Print a file

1 `lpr <options> <files>`

The following options can be used:

- `-P <printer>`

`--p[rinter]=<printer>`

specifies which printer to use. The printer may be specified as short alias (i.e. `pr2`), as queue and host (i.e. `printer@bsdps.mycomp.com`) or as network host and port (i.e. `rawps.mycomp.com%9100`).

If this option is not the printer is selected as follows:

- command line preference `/yanolc/default-printer`
- environment variables `NGPRINTER`, `NPRINTER`, `LPDEST` and `PRINTER`,
- user preference `/yanolc/default-printer`,
- registry entry `/default-printer` in `HKCU\Software\DKrause\Yanolc`,
- system preference `/yanolc/default-printer`,
- registry entry `/default-printer` in `HKLM\Software\DKrause\Yanolc`,
- first alias definition in the configuration file (if available) or
- first device definition in the configuration file (if available).

- `-S <server>`

`-H <server>`

`--s[erver]=<server>`

can be used to specify a server.

If the printer name contains `@` or `%` the host name is obtained from the printer name.

Otherwise the program checks whether the `-S` option was used.

If no host name is found the program treats the printer name as alias and tries to resolve it. If the alias value does not contain `@` or `%` the print host name is selected as follows:

- environment variable `PRINTHOST`,
- user preference `/yanolc/print-host`,
- registry entry `/print-host` in `HKCU\Software\DKrause\Yanolc`,

- system preference `/yanolc/print-host`,
 - registry entry `/print-host` in `HKLM\Software\DKrause\Yanolc` or
 - first host configured in the configuration file (if available).
- `-U <username>`
`--u[sername]=<username>`
 specifies a user name (possibly combined with a hostname) for the print job owner. Only users mentioned in the `xusers` configuration entries are allowed to use this option.
 - `-C <class>`
`--cl[ass]=<class>`
 specifies a class for the print job.
 - File type.
 The file type can be specified by
 - `-l`
`--l[iterally]`
 Literal file, print as is.
 - `-c`
`--ci[fplot]`
 Cifplot output file.
 - `-d`
`--d[vi]`
 Dvi file.
 - `-g`
`--pl[ot]`
 Plot file.
 - `-n`
`--dvi-[troff]`
 Device independent troff output file.
 - `-p`
`--pr`
 Use `pr` to format the file.
 - `-t`
`--tr[off]`
 Troff output file.

- -r
--r[aster]
Print raster file.

- -e
--head[er][=<boolean>]
Enable banner page (disabled by default).
- -i <width>
--i[ndent]=<width>
Indent width in columns.
- -J <job_name>
--jobn[ame]=<job_name>
Job name for banner page.
- -K <number>
-# <number>
--c[opies]=<number>
Specify number of copies.
- -m <mailaddress>
--m[ail]=<mailaddress>
Send mail after printing.
- -Q <queuename>
--ori[ginal-queue]=<queuename>
Keep original queue name in control file (not implemented here).
- -R <account>
--b[ill]=<account>
Charge the specified user account (not implemented here).
- -T <job_title>
--jobt[itle]=<job_title>
Job title for banner page.
- -V
--verb[ose][=<boolean>]
Behave verbose (this option is ignored).
- -w <width>
--w[idth]=<width>
Output width.

- -o <option>
--filter-options=<options>
Filter options.

5.3 klpq - Show print queue contents

1 klpq <options> <jobs>

The following options can be used:

- -P <printer>
--p[rinter]=<printer>
Specify a printer.
- -H <server>
-S <server>
--s[erver]=<server>
Specify a server to connect to.
- -a
--a[ll]
Show information about all known printers on the server.
- -s
--st[atus]
Show a short status message only.
- -l
--l[ong-output]
Use long output format.
- -L
--very[-long-output]
Use LPRng's special long output instruction.
- -f
--rem[ove-filter-status]
Remove lines started by 'Filter_status:' and 'Status:'.
- -d
Remove done jobs from list.
- -t <secs>
--rep[eat][=<secs>]
Run periodically after each secs seconds.

5.4 klp_{rm} - Remove a print job

1 klp_{rm} <options> <jobs>

The following options can be used:

- -P <printer>
--p[rinter]=<printer>
Specify a printer.
- -S <server>
--s[erver]=<server>
-H <server>
specify the server to connect to.
- -U <user>
--u[ser]=<user>
Operate as the specified user (this is allowed for users mentioned in `xusers` configuration entries only).
- -a
--a[ll]
remove all jobs accessible.

The jobs can be specified by job-id, username or position in the queue.

5.5 klpc - Control operations

This `lpd`-clone has limited functionality, it does not provide a prompt. The following operations are supported:

```
1  klpc start    <printer >
2  klpc stop    <printer >
3  klpc enable  <printer >
4  klpc disable <printer >
5  klpc abort   <printer >
6  klpc kill    <printer >
7  klpc topq    <printer > <job >
8  klpc status  <printer >
9  klpc hold    <printer > <job(s)>
10 klpc holdall <printer >
11 klpc release <printer > <job(s)>
12 klpc move    <job(s)> <printer >
13 klpc active  <printer >
14 klpc lpd     <printer >
```

The `-H <server>` option can be used to specify the host to contact.

5.6 klpinfo/snmpycalc - Short SNMP status message

```
1 klpinfo <options> -P<printqueue>
2 klpinfo <options> -H<host> -V<SNMP-version> -C<SNMP-community>
3 snmpycalc <options> -P<printqueue>
4 snmpycalc <options> -H<host> -V<SNMP-version> -C<SNMP-community>
```

Both programs can be used to query status information using SNMP. The klpinfo program uses the standard OIDs “HOST-RESOURCES-MIB::hrDeviceStatus” and “HOST-RESOURCES-MIB::hrPrinterStatus”, no configuration of OIDs is necessary. The snmpycalc program uses OIDs specified in the “snmpycalc.cfg” file. The programs recognize the following options:

- -P <printqueue>
--p[rinter]=<printqueue>
specifies the name of the printer / printqueue to check.
Information about the host to contact, the SNMP version and community are obtained from the configuration.
- -H <host>
--s[erver]=<host>
specifies the host to contact.
- -V <SNMP-version>
--v[ersion]=<SNMP-version>
sets the SNMP protocol version to use, can be 1, 2, 2c, 2p or 3.
- -C <SNMP-community>
--c[ommunity]=<SNMP-community>
selects the SNMP community name, default is `public`.
- -i
--i[gnore-exit-code]
make the program to return `exit()-code 0` in all cases.
- -s
--s[ilently]
requires silent behaviour. No errors or warnings are written to standard output or standard error output.
- -f
--f[orce]
forces output. If the program fails to obtain a status text, “-” is printed.

- -l
--l[ong-output]
is recognized by klpinfo only. By default the program only prints a short status summary, using this option the program also writes device and printer status as obtained via SNMP.

6 Security and other issues

6.1 Privileged ports on U*x

RFC 1179 specifies a port number range from 721 to 731 for clients. On U*x systems these ports are reserved, access to these ports requires special privileges. Many print programs install themselves SUID/SGID root.

Note: This is not recommended for the programs in the yanolc package.

All guidelines for programming SUID/SGID programs demand to keep programs small and simple. These programs use the `dklibs` library set for preference management, logging, internationalization. . .

This library set is far from being small and simple.

So if you need your client connections to originate from reserved ports I recommend to try to configure the print server to accept connections from any client port or to install other client software.

6.2 Race conditions, permissions

RFC 1179 requires a unique 3-digit job number for each print job as a part of control and data file name.

On U*x systems the yanolc package uses the file `/tmp/lpr-job.id` to store the number of the next print job. No attempts were made yet for locking, so only one `klpr` process should be running at a given time. Once again I recommend to use other printing software on U*x systems.

On W*32 systems the job number is stored in the registry key `HKLM/SOFTWARE/DKrause/Shared/Yanolc`, the entries name is `JobId`. Make sure all users have read and write access to that key and entry.

A user should only run one `klpr` instance at a time.

7 A short introduction to SNMP and snmpyalc

7.1 A very short and simplified introduction to SNMP

Note: This is a very simplified introduction for people that never before dealt with SNMP.

7.1.1 What is it?

SNMP is the Simple Network Management Protocol. As the name implies it can be used to manage networked devices, i.e. servers, printers, UPS and others.

7.1.2 How does it work?

Managing devices includes – among other things – getting information about a device and starting actions changing the devices state.

Getting information is done by retrieving a variable value via some network request.

Changing the device state is done by setting a variable. This is like setting a tied variable in Perl, where setting a tied variable not only makes the program to keep a value in mind but also starts some additional action.

Variables are organized in a tree structure, a numerical scheme is used to identify variables within the tree.

A sequence of numbers – separated by dots – is referred to as an object identifier (OID).

Some parts of the tree follow standards, other parts are vendor-dependant.

Like DNS assigns a human readable form of a name to an IP address in dotted decimal notation there are names in textual form assigned to certain subtrees.

The relationship between text form and dotted notation is established by textfiles called MIB. These textfiles are also used for documentation purposes.

In addition to getting and setting variables a networked device can be configured to send traps (short messages) on certain events. To recognize traps a specialized software must be running on the receiving host.

Traps are not discussed in detail here, `snmpyalc` does not use them.

7.1.3 How can I use SNMP?

SNMP can be used in different ways:

- Obtain network management software.
This is the most comfortable way. You do not need to deal with OIDs your-

self, the software knows which OIDs to inspect. . .
The price to pay depends on the software you choose.

- Use the programs shipped with the NetSNMP library
The NetSNMP library (formerly known as UCD-SNMP) is a library and toolset for SNMP available at sourceforge.net.
The use of the tools requires you to know which OID to inspect for which purpose.
- Use the NetSNMP library (or another one) to build your own SNMP application.

7.2 Introduction to `snmpyalc`

7.2.1 Overview

The `snmpyalc` program inspects a list of user specified OIDs for a device and prints a short status summary.

In the general configuration file `yanolc.cfg` one can specify SNMP information for a printer including

- hostname or IP address to query via SNMP
- SNMP device type
- SNMP community
- SNMP protocol version

7.2.2 Selecting the hostname or IP address

The hostname or IP address to specify for SNMP is the address of the internal JetDirect card or internal print server.

Do not use the address of the print server running the LPRng software here.

7.2.3 Finding the SNMP community

Most printers use `public` by default. Maybe your site uses another community, ask your local network administrator.

7.2.4 Finding the SNMP protocol version

On a computer with NetSNMP library and tools installed, run the following commands:

```
1 snmpwalk -c public -v 3 192.168.101.100
2 snmpwalk -c public -v 2p 192.168.101.100
3 snmpwalk -c public -v 2c 192.168.101.100
4 snmpwalk -c public -v 2 192.168.101.100
5 snmpwalk -c public -v 1 192.168.101.100
```

Maybe you need to replace `public` by the `Snmp` community used by your site.

Of course you also need to use the correct IP address.

The strings after `-v` are the possible version numbers.

Most devices are capable of one SNMP version only.

If you meet this version number the program prints a lot of output consisting of OIDs and values.

On incorrect version numbers it prints an error message.

7.3 How to configure the SNMP type for your printer

7.3.1 Finding OIDs of interest

RFC 1759

RFC 1759 defines some OIDs for use in printers. These OIDs are below 1.3.6.1.2.1.43.

OIDs for HP JetDirect cards

Table 1: OIDs for HP JetDirect cards

OID	Meaning
1.3.6.1.4.1.11.2.3.9.1.1.3.0	Display status line
1.3.6.1.4.1.11.2.3.9.1.1.2.9.0	Out of paper
1.3.6.1.4.1.11.2.3.9.1.1.2.10.0	Toner low
1.3.6.1.4.1.11.2.3.9.1.1.2.19.0	Paper output tray full
1.3.6.1.4.1.11.2.3.9.1.1.2.17.0	Printer open
1.3.6.1.4.1.11.2.3.9.1.1.2.8.0	Paper jam
1.3.6.1.4.1.11.2.3.9.1.1.2.12.0	Not enough memory
1.3.6.1.4.1.11.2.3.9.1.1.2.11.0	Incoming data too slow
1.3.6.1.4.1.11.2.3.9.1.1.2.3.0	Manual intervention required
<i>... to be continued</i>	

<i>Continuation</i>	
1.3.6.1.4.1.11.2.3.9.1.1.2.6.0	Peripheral error
1.3.6.1.4.1.11.2.3.9.1.1.2.2.0	Paper format error
1.3.6.1.4.1.11.2.3.9.1.1.2.1.0	Line status (online/offline)

Searching for OIDs

You can find out which OIDs to look for by some simple experiments. Turn the printer on, make sure it has paper and is ready to print.

Run

```
1 snmpwalk -v 2c -c public 192.168.101.100 > snmpwalk.1
```

Now remove the paper from the tray and run

```
1 snmpwalk -v 2c -c public 192.168.101.100 > snmpwalk.2
```

Now compare `snmpwalk.1` against `snmpwalk.2`.

If you have a `diff` program try

```
1 diff snmpwalk.1 snmpwalk.2
```

and watch out for OIDs having text values changing from `READY` to `TRAY EMPTY` (the exact message text may differ).

Now you have found the OID containing the display status text, this is the OID you need to inspect by `snmpwalk`.

7.3.2 Writing the `snmpwalk.cfg` file

The `snmpwalk` program sends one request PDU and receives one response PDU. So both the size of request and response are limited, only a few OIDs can be retrieved. The suggestion is to choose maximally 3 OIDs.

An error message about a broken response PDU may indicate that your list is too large.

If there is one OID giving a general device status (i.e. 1.3.6.1.4.1.11.2.3.9.1.1.3.0 for HP JetDirect cards) this OID should be in the list. Make it the *last* element in the OID list. If this OID contains a very long description for common errors (i.e. printer out of paper) search for an OID containing a shorter description (i.e. 1.3.6.1.2.1.43.18.1.1.8.1.3) and place this OID in the list *before* the general entry.

8 Appendix

8.1 Appendix A: Configuration file search order

In the following we assume that the `yanolc` package was installed in `/usr/local` on U*x systems and in `C:/Programs/Yanolc` on W* systems.

The file `yanolc.cfg` is searched in the following directories:

- system preference `/yanolc/config-file` (specify full filename)
- registry entry `HKLM/Software/DKrause/Yanolc/config-file` (specify full filename)
- `yanolc.cfg` in the `dkapp_find_cfg()` search order.

The file `snmpyalc.cfg` is searched in the following places:

- command line preference `/yanolc/snmpcfg-file`
- user preference `/yanolc/snmpcfg-file`
- registry entry `HKCU/Software/DKrause/Yanolc/snmpcfg-file` (specify full filename)
- system preference `/yanolc/snmpcfg-file` (specify full filename)
- registry entry `HKLM/Software/DKrause/Yanolc/snmpcfg-file` (specify full filename)
- `snmpyalc.cfg` in the `dkapp_find_file()` directory search order.

The `dkapp_find_cfg()` function searches for

- the file name as specified
- the file name as specified + `.gz` suffix (when compiled with gzip support) and
- the file name as specified + `.bz2` suffix (when compiled with bzip2 support)

in the following directories (on W* systems replace `/usr/local` by `C:/Programs/Yanolc`):

- `%WINDIR%/<app>/<language>/<region>/<encoding>`

- %WINDIR%/<app>/<language>/<region>
- %WINDIR%/<app>/<language>/<encoding>
- %WINDIR%/<app>/<language>
- %WINDIR%/<app>/<region>/<encoding>
- %WINDIR%/<app>/<region>
- %WINDIR%/<app>/<encoding>
- %WINDIR%/<app>
- %WINDIR%/yanolc/<language>/<region>/<encoding>
- %WINDIR%/yanolc/<language>/<region>
- %WINDIR%/yanolc/<language>/<encoding>
- %WINDIR%/yanolc/<language>
- %WINDIR%/yanolc/<region>/<encoding>
- %WINDIR%/yanolc/<region>
- %WINDIR%/yanolc/<encoding>
- %WINDIR%/yanolc
- %WINDIR%/<language>/<region>/<encoding>
- %WINDIR%/<language>/<region>
- %WINDIR%/<language>/<encoding>
- %WINDIR%/<language>
- %WINDIR%/<region>/<encoding>
- %WINDIR%/<region>
- %WINDIR%/<encoding>
- %WINDIR%
- /etc/yanolc/<language>/<region>/<encoding>
- /etc/yanolc/<language>/<region>

- /etc/yanolc/<language>/<encoding>
- /etc/yanolc/<language>
- /etc/yanolc/<region>/<encoding>
- /etc/yanolc/<region>
- /etc/yanolc/<encoding>
- /etc/yanolc
- /etc/<language>/<region>/<encoding>
- /etc/<language>/<region>
- /etc/<language>/<encoding>
- /etc/<language>
- /etc/<region>/<encoding>
- /etc/<region>
- /etc/<encoding>
- /etc

The `dkapp_find_file()` searches for

- the file name as specified
- the file name as specified + `.gz` suffix (when compiled with gzip support) and
- the file name as specified + `.bz2` suffix (when compiled with bzip2 support)

in the following directories (on `W*` systems replace `/usr/local` by `C:/Programs/Yanolc`):

- current directory
- /usr/local/lib/<app>/<language>/<region>/<encoding>
- /usr/local/lib/<app>/<language>/<region>
- /usr/local/lib/<app>/<language>/<encoding>

- /usr/local/lib/<app>/<language>
- /usr/local/lib/<app>/<region>/<encoding>
- /usr/local/lib/<app>/<region>
- /usr/local/lib/<app>/<encoding>
- /usr/local/lib/<app>
- /usr/local/lib/yanolc/<language>/<region>/<encoding>
- /usr/local/lib/yanolc/<language>/<region>
- /usr/local/lib/yanolc/<language>/<encoding>
- /usr/local/lib/yanolc/<language>
- /usr/local/lib/yanolc/<region>/<encoding>
- /usr/local/lib/yanolc/<region>
- /usr/local/lib/yanolc/<encoding>
- /usr/local/lib/yanolc
- /usr/local/lib/<language>/<region>/<encoding>
- /usr/local/lib/<language>/<region>
- /usr/local/lib/<language>/<encoding>
- /usr/local/lib/<language>
- /usr/local/lib/<region>/<encoding>
- /usr/local/lib/<region>
- /usr/local/lib/<encoding>
- /usr/local/lib
- %WINDIR%/<app>/<language>/<region>/<encoding>
- %WINDIR%/<app>/<language>/<region>
- %WINDIR%/<app>/<language>/<encoding>
- %WINDIR%/<app>/<language>

- %WINDIR%/<app>/<region>/<encoding>
- %WINDIR%/<app>/<region>
- %WINDIR%/<app>/<encoding>
- %WINDIR%/<app>
- %WINDIR%/yanolc/<language>/<region>/<encoding>
- %WINDIR%/yanolc/<language>/<region>
- %WINDIR%/yanolc/<language>/<encoding>
- %WINDIR%/yanolc/<language>
- %WINDIR%/yanolc/<region>/<encoding>
- %WINDIR%/yanolc/<region>
- %WINDIR%/yanolc/<encoding>
- %WINDIR%/yanolc
- %WINDIR%/<language>/<region>/<encoding>
- %WINDIR%/<language>/<region>
- %WINDIR%/<language>/<encoding>
- %WINDIR%/<language>
- %WINDIR%/<region>/<encoding>
- %WINDIR%/<region>
- %WINDIR%/<encoding>
- %WINDIR%
- /etc/yanolc/<language>/<region>/<encoding>
- /etc/yanolc/<language>/<region>
- /etc/yanolc/<language>/<encoding>
- /etc/yanolc/<language>
- /etc/yanolc/<region>/<encoding>

- /etc/yanolc/<region>
- /etc/yanolc/<encoding>
- /etc/yanolc
- /etc/<language>/<region>/<encoding>
- /etc/<language>/<region>
- /etc/<language>/<encoding>
- /etc/<language>
- /etc/<region>/<encoding>
- /etc/<region>
- /etc/<encoding>
- /etc

Here <app> ist the application name (klpr, klpq, klprm, klpc or snmpyalc).

<language> is the language you use (i.e. en or de).

<region> is the region you use (i.e. us, uk or de).

<encoding> is the encoding you use (might be utf-8 or empty).

%WINDIR% is the windows directory on your system (only on W* systems of course).

Because the printer configuratin does not depend on language, region or encoding the suggested places for the configuration files are the directories:

- /etc/yanolc
- %WINDIR%/yanolc
- /usr/local/lib/yanolc

9 Version history

- 1.2.0
2002/08/02
Option -d added to klpq to hide printjobs which are done.
- 1.1.1
2002/06/17
String-to-boolean and value-to-string conversions added.
- 1.1.0
2002/06/13
snmpyalc added, worked.
- 1.0.1
Version numbering changed to major-minor-micro scheme.
- Former version
used the SCCS version numbers of yalc.c for versioning the package.