

LiveEPICS® USB Key Bootable with NAL (Nagios Alarm Handler)

Demonstration Session
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INTRODUCTION

LiveEPICS (© copyright under GNU General Public License) [2] is a bootable USB Linux distribution, which contains a pre-configured EPICS development environment. After booting, the user can access all the utilities required to create a simple control application; at the end of the session he can save his application on a USB mass storage device.

The first release was delivered in 2005 and obtained good feedback from the EPICS collaboration. Therefore, we decided to create a second release which was completely rebuilt using a different Linux distribution (Fedora Core 5). Today, this third release is based on Slax 6.0 [7]. The desktop is based on KDE 3.5. The CD contains: EPICS base 3.14.9, base-3.14.10-RC1, StripTool, ALH, NAL, MEDM, Probe, Msi, VDCT, Asyn 4.10 (9 and 8 too) Auto Save ProcServer 2.4

INSTALLATION

LiveEPICS for USB is a Slax customized distribution in TAR format, designed to be unpacked to a writable disk. LiveEPICS for USB is set to save all changes you make to the boot device (disk), so it will behave like a normally installed operating system.

How to make it bootable

When [LiveEPICS_Slax60_w_Nagios.tar](#) is unpacked to your device, it will create /boot/ and /slax/ directories there. Only one more step is needed to make LiveEPICS boot from your USB device or disk: you have to manually navigate to the newly created /boot/ directory and run bootinst.sh script (if you are in Linux) or bootinst.bat script (if you are in Windows).

NAGIOS

Nagios is a configurable service monitor designed to inform you of network problems before your clients, end-users or managers do. It has been designed to run under Linux, but works fine under most *NIX variants as well. The monitoring daemon runs intermittent checks on hosts and services you specify using external "plugins" which return status information to Nagios. When problems are encountered, the daemon can send notifications out to administrative contacts in a variety of different ways (email, instant message, SMS, etc.). Current status information, historical logs, and reports can all be accessed via a web browser. The positive feedback received from the collaboration after the first release has motivated us to prepare a second version. This one is more user-friendly and contains an updated Linux distribution.

LiveEPICS contains a Nagios 3.03 server pre-configured to monitor the standard Epics "example" application. It shows how the check_caget plugin[6] can be used to monitor the process variable and how to set up the necessary service to Nagios. This minimal configuration can be adjusted to suit various needs by modifying the set up files in /usr/local/nagios/etc.



FIG. 1: LiveEPICS with NAGIOS



www.lnl.infn.it/~epics

CONCLUSIONS

The positive feedback received from the EPICS collaboration after the first releases has motivated us to make a third version. This one is more user-friendly and contains an updated Linux distribution. The usage of a USB key maybe interesting to PC104 likes applications.

REFERENCES

- [1] EPICS official web site: <http://www.aps.anl.gov/epics/distributions/index.php>.
- [2] M. Giacchini, PCaPAC Workshop poster, Newport News, VA USA, October 2006. <http://conferences.jlab.org/pcapac/talks/poster/Giacchini.pdf>.
- [3] R.Sabjan et al., "Visual DCT - EPICS Databases can be Fun", PCaPAC 2002, Frascati, Italy, October 2002
- [4] RedHat Fedora Core site:<http://fedora.redhat.com>
- [5] N.Richter et al., ADIOS web site: <http://www.cns.snl.gov/adios>
- [6] M.Giacchini check_caget.sh., Nagios exchange web site: <http://nagiosexchange.org>
- [7] www.slax.org

LiveEPICS

LiveEPICS has the complete functionality to develop a small control system, but it is mainly intended for training classes or to monitor and supervise an EPICS network.

The goal of LiveEPICS is:

- Allows to use EPICS without installation on the hard disk.
- Automatic setup of environment variables to compile and test new applications from scratch.
- Includes the basic tools (MEDM, VDCT, etc.) with the related documentation

The iocBaseApplication (the utility that creates the directory structure necessary to develop an application) can be launched immediately after the boot. The OPI tool included in the USB key is MEDM (Motif Editor and Display Manager), the alarm manager is AH (Alarm Handler) while the IOC database configuration tool is VDCT[3] (provided by Cosylab). The Channel Access Probe is available to test the status of a record on the network. Asyn and MSI packages allow to create device support applications and medium-sized EPICS DataBases.

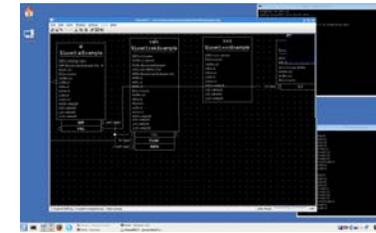


FIG. 2 : This figure gives an idea about LiveEPICS GUI

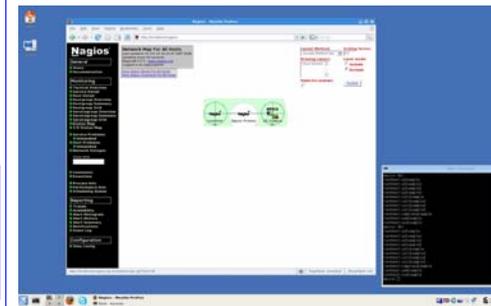


FIG. 3: LiveEPICS with NAGIOS 2D Map

ACKNOWLEDGEMENTS

Acknowledge to Ralph Lange who has encourage and help me to investigate the Nagios usage to monitor the Epics networks.