

Smoothly Start up Geant4

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The 3rd Meeting for New Geant4 Extensions
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Motivation from Background

- As of the admin on Grid computing at KEK
 - Keep many WNs up to date as well as local cluster machines
- As of a lecturer at the tutorial course
 - Always waste time on installation in user's PC
- Packaging in RPM is the best way to save time

YUM repository

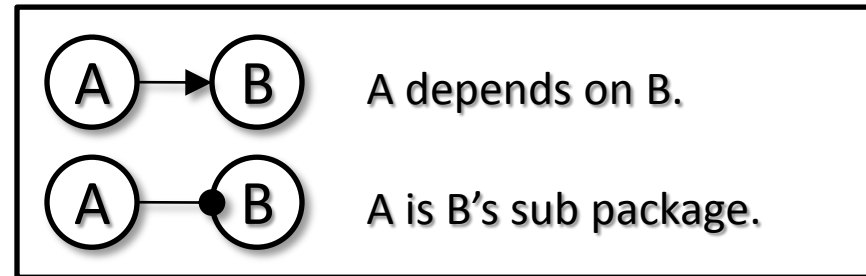
- Why YUM?
 - YUM is update manager used whole in linux-wide
 - Easy to use and manage rather than apt tools
- YUM repository is ready to use since August 31, 2008.
 - <http://repo.cc.kek.jp/>

Today's focuses

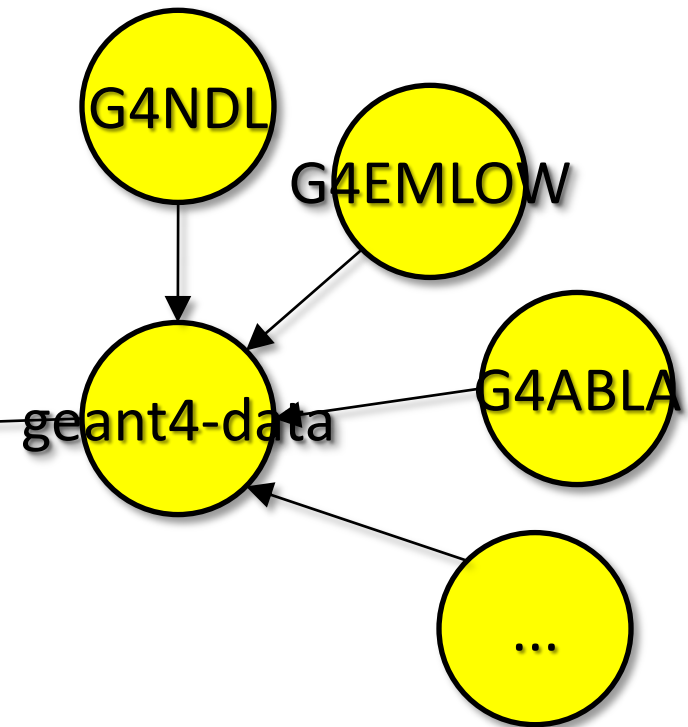
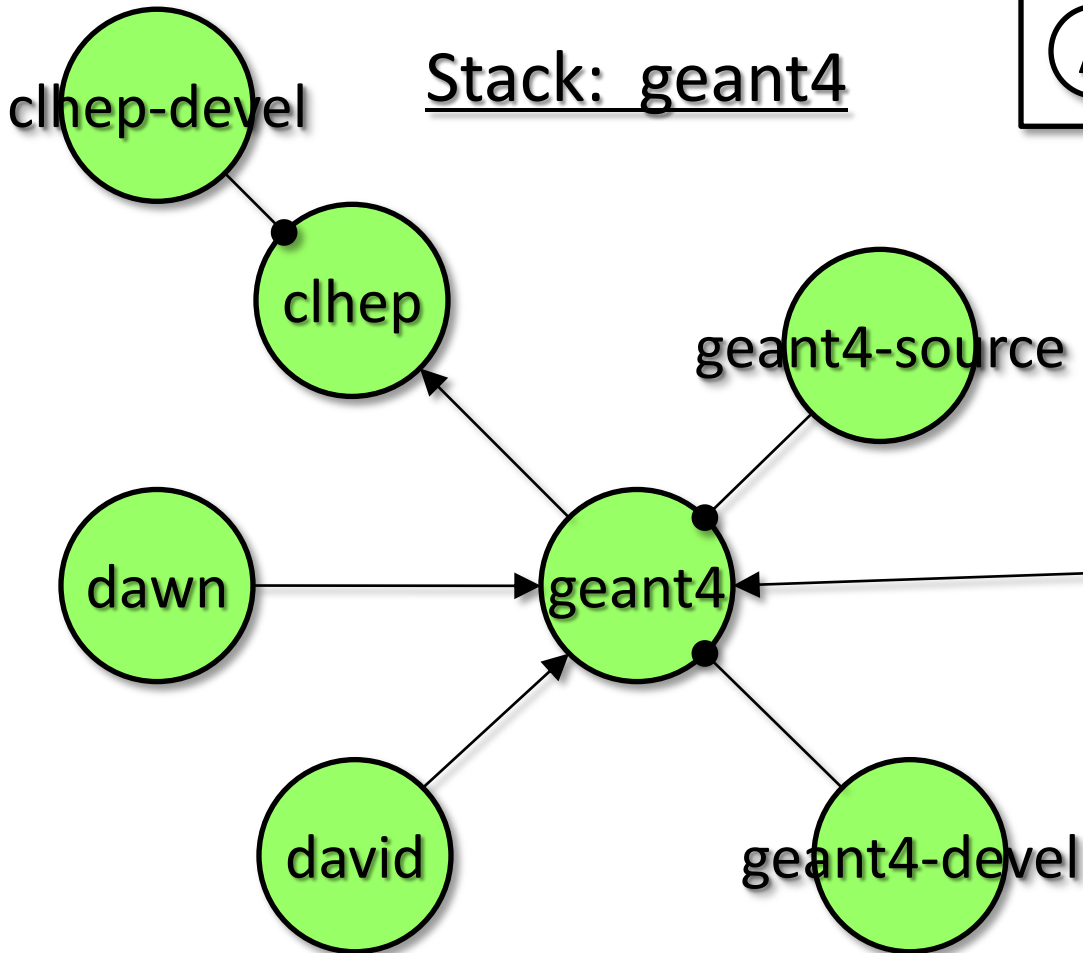
Stacks related Geant4

Stack	State	Description
geant4	Released	Geant4 , CLHEP and related visualization tools are included. Geant4 divided in geant4, geant4-devel and geant4-source. CLHEP is also divided in clhep and clhep-devel.
geant4-data	Released	A set of ascii data file by using Geant4, therefore independent on architecture, is consists of RadioactiveDecay, PhotonEvaporation, G4NDL, G4EMLOW and G4ABLA. These are associated with single package, which is named geant4-data.
grid	Certification	Grid deployment software but defects inside, is rebuilt and temporarily included until production release by CERN if necessary.
root	Certification	ROOT: An Object-Oriented Data Analysis Framework is included, ROOT is divided in a couple of sub packages, e.g. root-devel, root-gfal, root-g4root and so on.
server	Build	Due to long lifetime cycle of the RHEL4 and its clones, quite a few software is obsoleted, especially in server type software. For example, apache and php should be upgraded by security reason.
utils	Build	Just as server stack above, quite a few software is obsoleted whole over the RHEL4 and clones, and moreover, some useful software is missing even in dag repository. This stack consists of such software.

Dependency Tree of Stack geant4/geant4-data



Stack: geant4



Stack: geant4-data

Supported Distribution and Architecture

- Only on Scientific Linux 4 series so far.
 - Due to limited human resources and lower spec machine.
 - Most of WNs over the LCG are running on SL(C) 4.
 - Both architectures i386 and x86_64 are ready to use on SL4.
- Which distro should be next target?

Setup

- It's really easy, 10 seconds to setup to look up this repository here.

```
# cd /etc/yum.repos.d  
# wget http://repo.cc.kek.jp/SL4/kek.repo
```

Geant4 Installation

End-Level Users

- This “geant4” package provides only shared libraries.
 - **Neither** header files nor static libraries are inclusive.
- Useful for cloning too many nodes.

```
# yum install geant4
```


Geant4 Installation

Application Developers

- If you want header files, static libraries and ascii data set of Geant4
- The “geant4-source” may be useful as references or debugging.

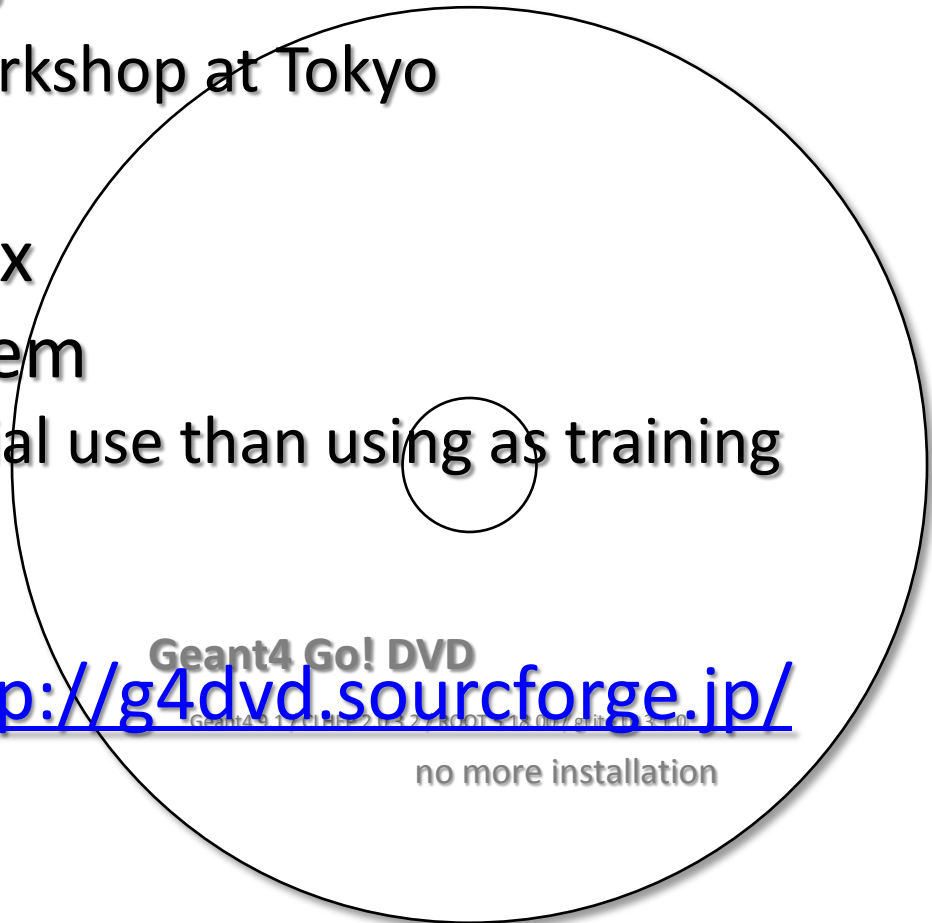
```
# yum install geant4-devel geant4-data
```

Products I: Geant4 Virtual Machine

- Scored a great success at tutorial course 2007
- Uniform environment enables
 - No more waste time on installation
 - benefits for both users and lectures
- Writable system is suitable on training scene
- A bit higher spec is recommended, more than 1GB memory size.
- Download a VM image from <http://g4vm.sourceforge.jp/> and starting with VMware player.

Products II: Geant4 Live DVD

- Novelty for participants
 - @ 5th Geant4 User's Workshop at Tokyo
- Quick trial without Linux
- Basically read-only system
 - It's rather suitable on trial use than using as training material.
- Just download from <http://g4dvd.sourcforge.jp/> and then burn it



Summary: Status and Plan

- Geant4 and related software are packaged in RPM.
- The YUM repository is ready to use.
- It is easier to install and keep up to date with the latest Geant4.
- A couple of products are released based on this activities.
 - Geant4 Virtual Machine released
 - Geant4 Live DVD released
 - Geant4 Live USB not yet
- I'm focusing to build packages only on SL4 and some of packages are still state in checking or building even on SL4.
- Next target distros will be extended on needs basis.
 - I'd make a priority list within FY2008 before starting to build new.

See Also

- YUM repository
 - <http://repo.cc.kek.jp/>
- Geant4 Live DVD
 - <http://g4dvd.sourceforge.jp/>
 - perhaps move to <http://g4dvd.cc.kek.jp/>
- Geant4 Virtual Machine
 - <http://g4vm.sourceforge.jp/>
 - also possibility exists to change to <http://g4dvd.cc.kek.jp/>

Design and Requirements for Packaging Facility

YUM/PHP/Apache

repo.cc.kek.jp -- Scientific Linux 4 (x86_64)

SL4
i386

SL4
x86_64

SL5
i386

SL5
x86_64

suse

fedora

CentOS

OS	Scientific Linux 4 Series
Disk	RAID-1 hopefully for the root partition 50 GB at least should be assigned each guest. Consequently, more than 500 GB is required on host OS
CPU	4 cores X 2 processors at least, 4 cores X 4 processors hopefully
Memory	8 GB at least, 32 GB hopefully
VM	Based on VMware Possibility to run more than 8 guest at the same time Connect over the local LAN, not bridged
Exported Space	Capability: 500GB at least Raid-5 as backend hopefully

Comment and Suggestion

- Hajime & Katsuya: DAWN shouldn't depend on Geant4.
 - Go: Exactly, but it is rather friendly because nobody doesn't use DAWN without Geant4. It should be noted that DAWN driver is included in geant4 package, the package "dawn" provides only application, not libraries.
- Hajime: Analysis packages are also welcome.
 - G: The package "root" in another stack will be released soon, currently state in certification.
- Hajime's suggestion: It's now time to release USB Live.
 - cheaper price, e.g. 20,000JPY/32MB
 - IO speed is improved, ~30MB/sec in read without cache.
 - I need an evidence.
- General subject: Which distribution should be next target as the best.
 - No conclusion.