

CMS software installation

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- **Basic strategy**
 - Use RPM (with apt-get) in CMS SW area
- **Bootstrap procedure**
 - Scan installed OS for “basic” things: /bin/bash, GLIBC...
 - Create a system-import dummy RPM out of it
 - Satisfies only dependencies
 - Remains static (changes in installed OS not detected)
 - Ship some basic (CMS) RPMs
 - Compiler
 - Various Tools
 - Only supported on Scientific Linux 4 or RHEL4
 - Some hacks for other OS

- **Install procedure**
 - Send out dedicated Grid jobs with the lcgadmin role
 - Install just CMS RPMs (and dependencies) via apt-get
 - Ship many “external” packages via CMS RPMs
 - e.g. database clients, various libraries, ROOT...
- **Release deprecation**
 - When CMSSW releases are declared obsolete, they are removed from all sites
 - Necessary to avoid hitting some RPM scalability limits (see next slide)

- **RPM/apt-get for single user by design**
 - Problematic with pool accounts for lcgadmin
 - RPM post install scripts assume to own files
 - Many CMSSW RPMs build with this assumption
 - *CMS release never changed later*
 - BTW: Same RPMs must be deployed on OSG (single account)
 - You always can hack around
 - Things can get complicated and need some site support
 - Presently all sites have a single lcgadmin account for CMS

- **Usage of RPM in CMS reaches internal limits**
 - CMSSW releases are huge (50k files now a days)
 - RedHat developer confirmed scalability issues
 - RPM uses 2GB of RAM easily in our case
 - 32bit executable crashes
 - 64bit executable can allocate several GB
 - Limits the number of deployable CMSSW releases