NT and You

Gordon Watts
Remote Installation
April 11, 2000
T-324

Why NT?

- The level 3 trigger will run the NT OS.
  - About 100-150 cvs packages will have to build for the trigger, verification, etc. on NT.
- Other side benefits
  - IDE, tools, etc.

Gordon Watts
gwatts@fnal.gov

University of Washington, Seattle

Philosophy of the NT Releases

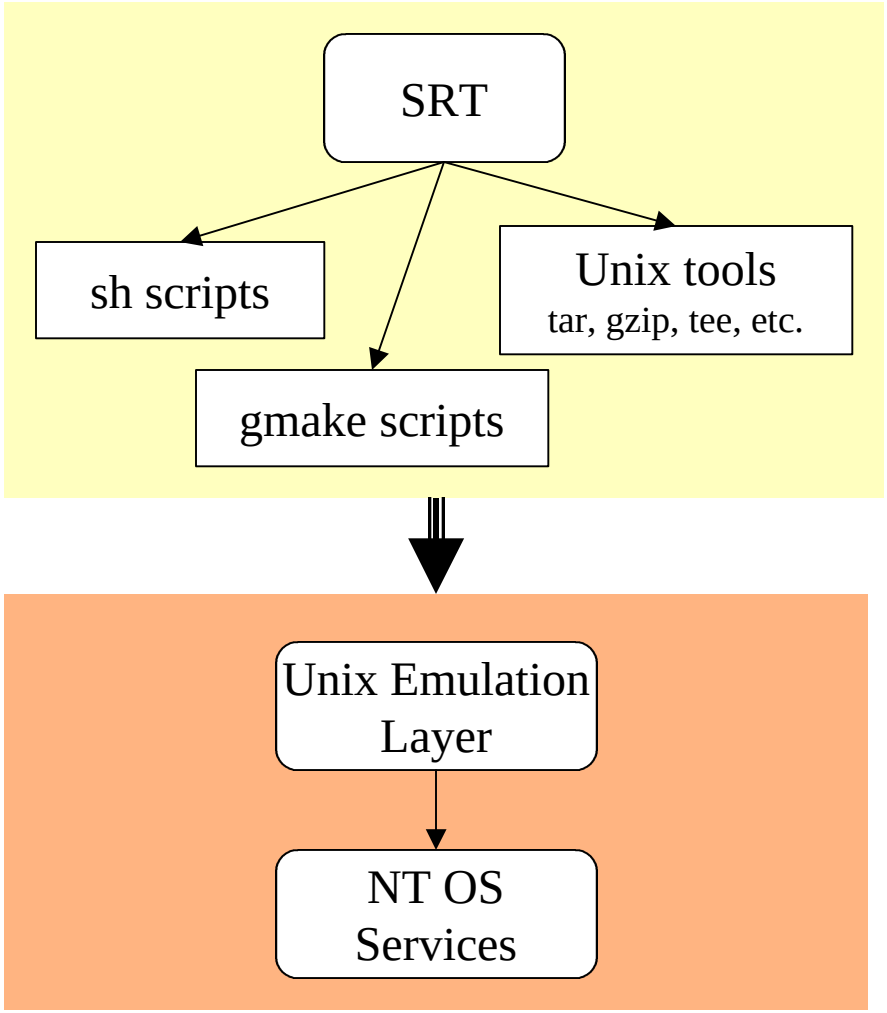
Do not maintain two build systems

- SRT & ctest are ***it*** at DØ.
- gmake is not the natural build system on NT.

Port the Unix environment to NT

- gmake, SRT all run on NT
- Ups/upd are used to maintain releases and products, just as on UNIX system

Limited IDE conversion tool



Gordon Watts
gwatts@fnal.gov
University of Washington, Seattle

Problem Areas

- OS Native Support
  - Symbolic links are not native NT4
    - SRT depends on them.
    - Emulation layer simulates them, but NT OS does not know about them.
    - Windows 2000 does support them.
  - Unix file paths and NT file paths are different.
    - But programs have to move between the two.
    - Ex. Environment variable set under emulation may be /d0dist/dist/releases/nt00.85.00/rcp/stuff.hpp but really d:\d0dist\dist\releases\nt00.85.00\rcp\stuff.hpp.

Gordon Watts
gwatts@fnal.gov

University of Washington, Seattle

Problem Areas

C++

- Compiler is not as up to date as KAI (and has plenty of bugs)
- <iostream> (good) vs <iostream.h> (very bad).
- Inline friend operator<< in class don t work.
- Some namespace issues in presence of template classes
  - In general, template support isn t as good as KAI
- See d0nt mailing list.
- KAI released a beta version of NT compiler, but wasn t very good
- Intel has a more promising version (Marc Paterno has been looking into it).

Gordon Watts
gwatts@fnal.gov

University of Washington, Seattle

Biggest Pluses

Many people do have it on their desktop

Can run most analysis tools on it (root, for example)

The IDE has nothing to compare to in Unix (that I've seen, and especially for the cost).

Debugging is better that most platforms.

Gordon Watts
gwatts@fnal.gov

University of Washington, Seattle

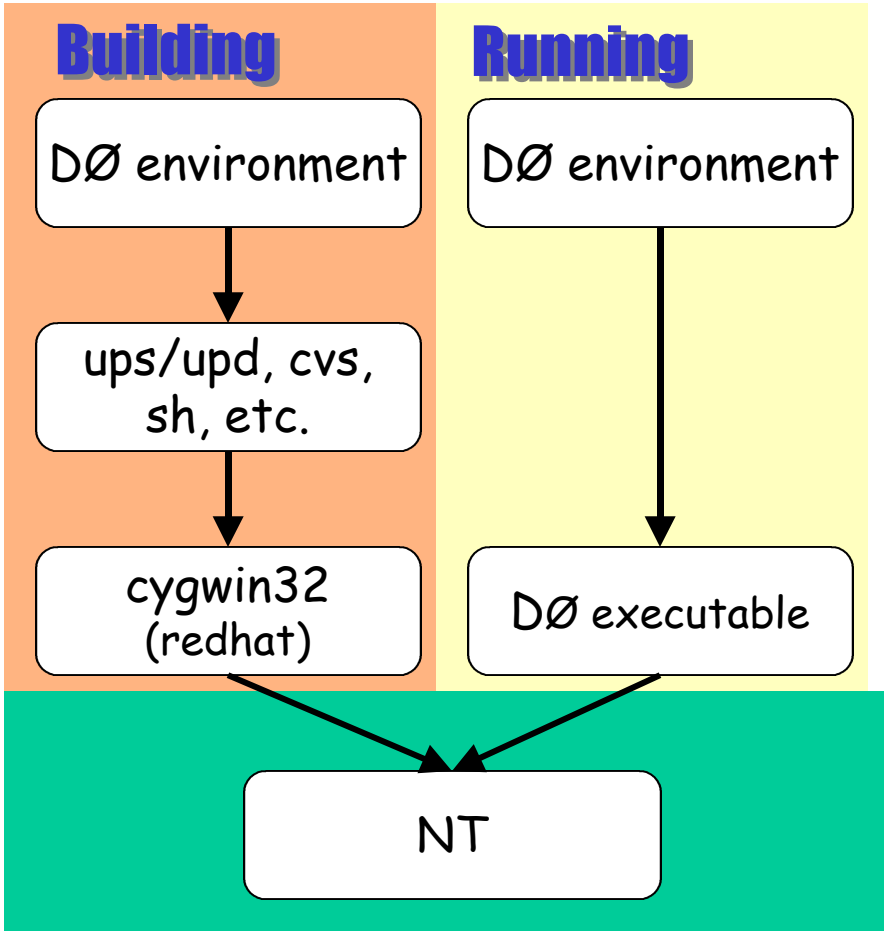
Basic Design

For emulation layer and tools use cygwin32

- Open source by RedHat.
- Distributed by Fermi Computing Division

Add NT support to SRT

- New compiler
- Symbolic link translation utilities and tools.



http://d0ntwg01.fnal.gov
http://d0ntwg01.fnal.gov
http://d0ntwg01.fnal.gov
http://d0ntwg01.fnal.gov
http://d0ntwg01.fnal.gov
http://d0ntwg01.fnal.gov

Mailing lists, archives, tips, installation, releases, etc.

Basic System Requirements

- A good, high end PC
  - 128 Mbytes RAM at least
  - NT4, service pack 4 or higher
    - Windows 2000 works, but need some minor alterations (see later)
  - 2-10 gigs of disk space
    - Depends upon how many releases you wish to keep
- Visual C++ version 6
  - Make sure to install service pack 3 to update library and patch some compiler bugs!!
  - When you install, make sure to check *Register Environment Variables*
    - Can recover, but is a real pain-in-the-butt!!!!!

1 Installing the UNIX environment

Install the UNIX emulation utility and the basic DØ environment

- Databases will be defined
- Perl, python, ups, upd all installed.
- Ready to install release after this.
- Must register with *fnkits* before running (if you are at a remote site).\
- Tested & debugged on W2000.

Gordon Watts
gwatts@fnal.gov

University of Washington, Seattle

1 Installing the UNIX environment

Run one script.

- Go to the install page on d0ntwg01.
- Select the disk you wish to install on (C, D, or E are setup for you)
- Download the driver file (stage1.bat) and the config file (D0cygD.txt) and save them to a temp area
- From a MSDOS shell, run `stage1 D0cygD.txt`

Takes about 10 minutes to complete when run at Fermi, 15 at University of Washington.

Web pages list checks to assure you things installed correctly.

Gordon Watts
gwatts@fnal.gov

University of Washington, Seattle

Installing a Release

- Download a built release
  - nt00.30.00, for example
  - Can build local releases (test releases) and do code development
- Run one script
  - Go to release install web pages
  - Download the nt00.30.00 .bat file
  - Run it from the explorer. 30 minutes or so at Fermi, 40-45 at UW.
  - See changes to get working on W2000 (about 5 minutes of work after downloading).

Check for bugs on web pages!

Final Bits

Install any other packages required

Setup upd

Upd install –h www-d0.fnal.gov d0cvs

Upd install –h www-d0.fnal.gov cern

Upd install –h www-d0.fnal.gov z

Perhaps the same for ace, if you need it.

Gordon Watts
gwatts@fnal.gov

University of Washington, Seattle

Remote Environment Requirements

- Make sure to register with fnkits before starting (1 day turnaround)
  - Need fixed IP
  - Very rare you have to access this db.
- Register with cvs
  - Can t checkout or checking code to DØ repository without this
  - True weather or not you are at Fermi.
  - If you have DHCP this is a real problem
    - Solution with SSH possible, but not really functional at the moment.

Gordon Watts
gwatts@fnal.gov

University of Washington, Seattle

Using the IDE

DORunII release brings down the ctest_nt package.

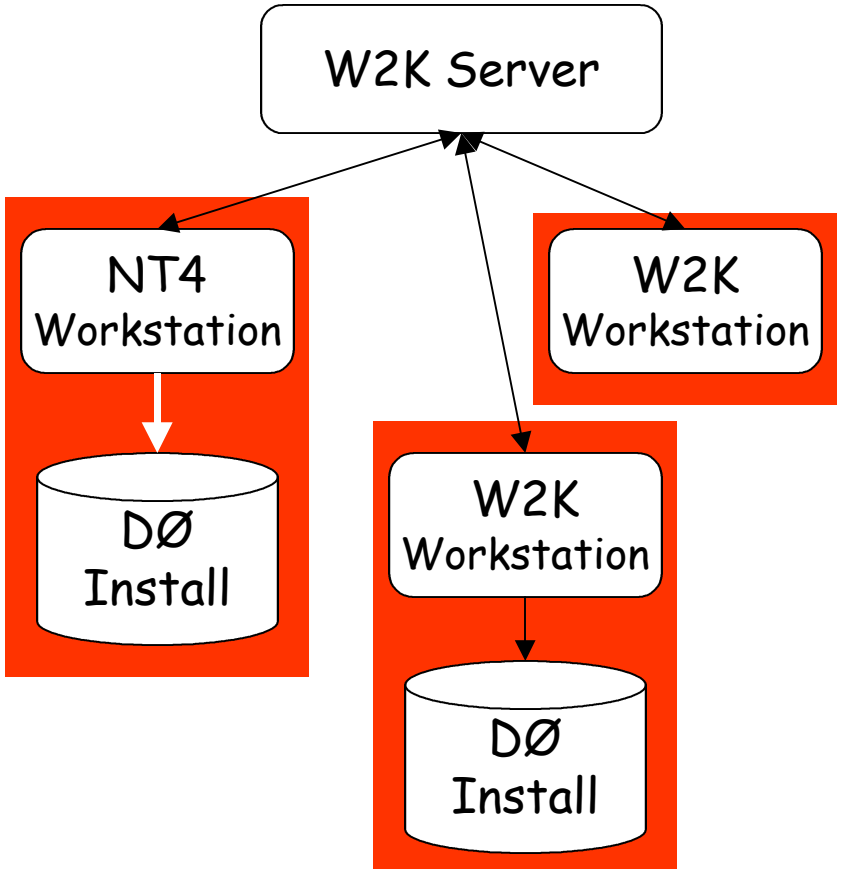
- The command *ctnt_convert_release* will build an IDE in local release
  - For CTEST packages only
- Will build, and link correctly with other packages in local release
- Enables debugging, and the like.
- Supports d0om and d0CINT.

Gordon Watts
gwatts@fnal.gov

University of Washington, Seattle

Setup at UW

- Mix of W2K and NT4
- Server runs W2000
  - Does not have DØ install.
- Each machine that requires DØ software has its own install of the release
  - Disk space is cheap
  - Network performance hit avoided
  - Maintenance hasn t been an issue yet.



Plans

- This is Version 2 of the installer
  - Version 1 was much more difficult (learned a lot).
  - Still looking for problems, etc.
  - Works!
- Near Future??
  - Symbolic links in W2K.
  - A W2K build machine.
- Far Future
  - IDE interface for all of cvs.
  - RPM equivalent for installs and releases??

Gordon Watts
gwatts@fnal.gov

University of Washington, Seattle