ABC

Presenter:杜冠樺 Instructor:江介宏

Outline

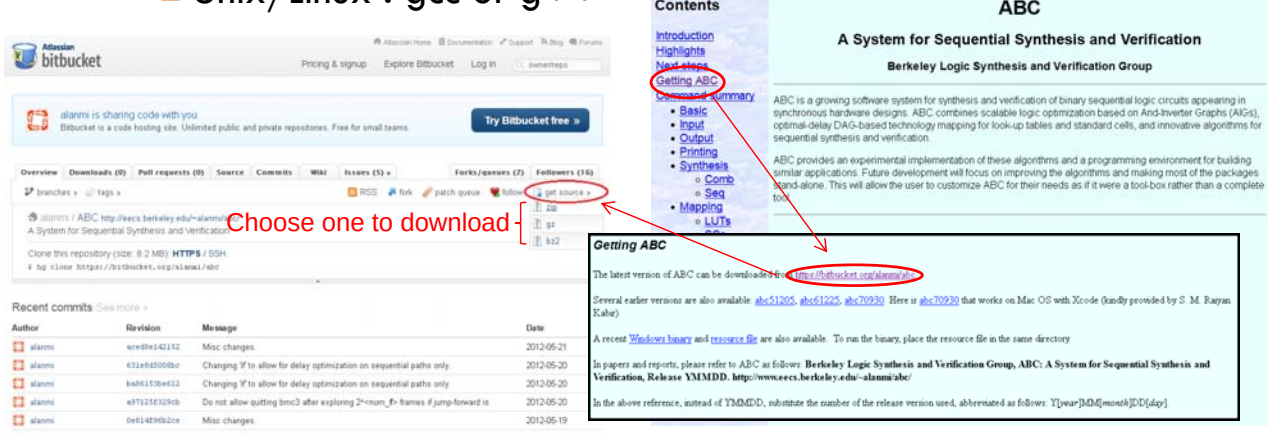
- Introduction
- Installation
  - ABC
  - Additional Tools
- Commands
  - ABC commands
  - User commands

Introduction

- ABC
  - A System for Sequential Synthesis and Verification
  - Support BLIF, PLA, CNF, AIGER, Verilog…etc.
  - What can it do:
    - Logic restructuring (SOP, AIG, BDD…)
    - Technology mapping
    - SAT
    - Model checking
    - …

Installation - ABC

- ABC source code:
  - http://www.eecs.berkeley.edu/~alanmi/abc/
  - Recommended compiler :
    - Windows : Microsoft Visual Studio 6.0
    - Unix/Linux : gcc or g++

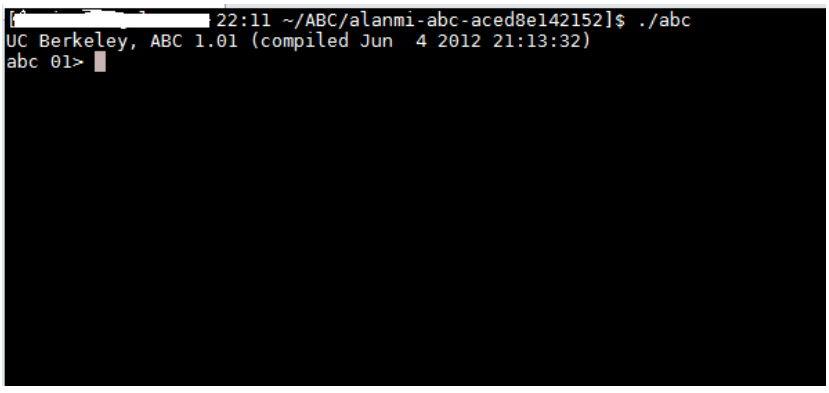


Installation - Additional Tools

- Graphviz:
  - Program for generating PostScript file.
  - Needed by commends “show” and “show_bdd”
  - http://www.graphviz.org/
- GSview:
  - Program for opening PostScript file
  - http://pages.cs.wisc.edu/~ghost/gsview/
- Ghostscript:
  - script needed for GSview
  - http://pages.cs.wisc.edu/~ghost/doc/GPL/index.htm

Commands

- After compiling, you can type “./abc” to run ABC in shell mode.



Commands

- *command* –h : Print help information for "*command*"
- Basic commands:
  - help : Present all commands
  - quit : Exit the ABC
- I/O commands:
  - read_blif *filename* : Read in blif file
  - write_blif *filename* : Write out blif file

Commands

- Printing commands:
  - show : Show the network by PostScript file
  - show_bdd : Show BDD by PostScript file
  - print_stats : Print network information
- Synthesis commands:
  - collapse : Translate network to BDD
  - strash : Translate network to AIG

Commands

- Add new command:
  - src/base/abci/abc.c :
    - Define new function.

```
static int Abc_CommandAbc9Undo          ( Abc_Frame_t * pAbc, int argc, char ** argv );
static int Abc_CommandAbc9Iso           ( Abc_Frame_t * pAbc, int argc, char ** argv );
static int Abc_CommandAbc9Test          ( Abc_Frame_t * pAbc, int argc, char ** argv );

static int Abc_CommandAbcTestNew        ( Abc_Frame_t * pAbc, int argc, char ** argv );
```

    - Add the function into Abc_Init.

```
void Abc_Init( Abc_Frame_t * pAbc )
{
    Cmd_CommandAdd( pAbc, "Printing",     "print_stats",   Abc_CommandPrintStats,       0 );
    Cmd_CommandAdd( pAbc, "Printing",     "print_exdc",    Abc_CommandPrintExdc,        0 );
    Cmd_CommandAdd( pAbc, "Printing",     "print_io",      Abc_CommandPrintIo,          0 );
```

    - Implement

```
int Abc_CommandTest( Abc_Frame_t * pAbc, int argc, char ** argv )
{
...
}
```

Q&A