

# EM-100 Top Shell Scripting

## COURSE DESCRIPTION

The Top Shell Scripting workshop follows-up the course [SA245](#) - Shell Programming for System Administrators and extends its topics. Some of modules in this workshop are deeply concerned with topics of SA-245 course (e.g. filters grep, sed, awk, shell programming). Some modules covers not mentioned useful topics in any other course (e.g. gnuplot, ssh, GNU tools). This workshop consists of several independent modules and can be customized very easily.

## Delivery Method

Instructor-led training (ILT)

## Duration

Five days

## Course outline

- Regular expressions, e/grep and Advanced sed techniques
  - constructing complex RE
  - constructing ERE
  - trickier substitutions using RE
  - sed scripting
  - logs parsing and processing
- Advanced bash constructions
  - command line editing and prompting
  - using and tuning history
  - less-known built-in shell variables
  - less-known shell features
  - brace expansion
  - tilde expansion
  - programmable completion
  - shell options
  - special character handling
  - advanced variables manipulation
  - enhanced 'for' and '[' construction
  - working with patterns
  - built-in enhanced commands
  - read, bind, eval, printf, ulimit
  - recursive functions
  - creating shell function libraries

- parsing script options with 'getopts'
- Advanced nawk programming
  - associative arrays
  - built-in functions
  - user functions
  - system function
  - complex nawk programming
- Writing complex shell scripts
  - real-life examples
  - guided practice
  - cooperative programming
  - functions libraries and sourcing
  - good scripting manners
- Advanced vi/m editor techniques
  - useful non common commands
  - highlighting, auto-indenting
  - auto-completion, folding
  - spell checking, cooperation with make
  - using external tools inside vim
  - automation, key mapping
  - customizing, plugins, templates
  - vim7, vimdiff
- Advanced ssh techniques & PGP
  - using keys (non-interactive login)
  - X11 redirection
  - secure channels
  - creating PGP keys
  - keys management
  - signing files, file verification
- Data visualization using gnuplot
  - data processing using sed/awk
  - plotting graphs

- customizing graphs
- multiple graphs output
- file and terminal output
- programming in gnuplot env
- Using unix tools for administrators
  - screen
  - rdesktop
  - gfind, gtar
  - a2ps