

InterWorks  
2001

# Defining and Executing Role-Based ServiceControl Manager Tools

**Donald Suit**  
**Hewlett Packard**  
**3404 Harmony Road, MS 99**  
**Fort Collins, CO 80528-9599**  
**(970) 898-0327**  
**(970) 898-2151 fax**  
**donald\_suit@hp.com**



# Presentation Goals



- Introduce the SCM tool capability
- Explain the purpose of SCM tools
- Describe how to define SCM tools
- Explain how SCM tools execute on managed nodes

# Introduction to SCM Tools



- Tools are the central feature of SCM
- Tools provide the capability to administer distributed systems from a Central Management Server (CMS)
- Tools provide two basic mechanisms
  - Copying files
  - Executing commands
- Tools can be added and customized to meet the unique needs of each installation
- Tools are constrained by the SCM authorization structure

## Purpose of SCM Tools



- Provide a centralized mechanism to administer distributed systems
- Provide a more controlled mechanism than remsh, using role-based authorizations
- Provide a mechanism to build and manage a toolkit of favorite scripts and routine tasks for distributed systems
- Provide a set of convenient HP–provided tools

# Managing SCM Tools



- Define tool contents
- Create a tool
  - Specify general attributes
  - Specify commands & parameters
  - Specify file transfer
  - Specify authorizations
- Run a tool
  - Specify targets
  - Specify parameters
  - Confirm task execution
  - Display task results
- Remove a tool

# Define Tool Contents



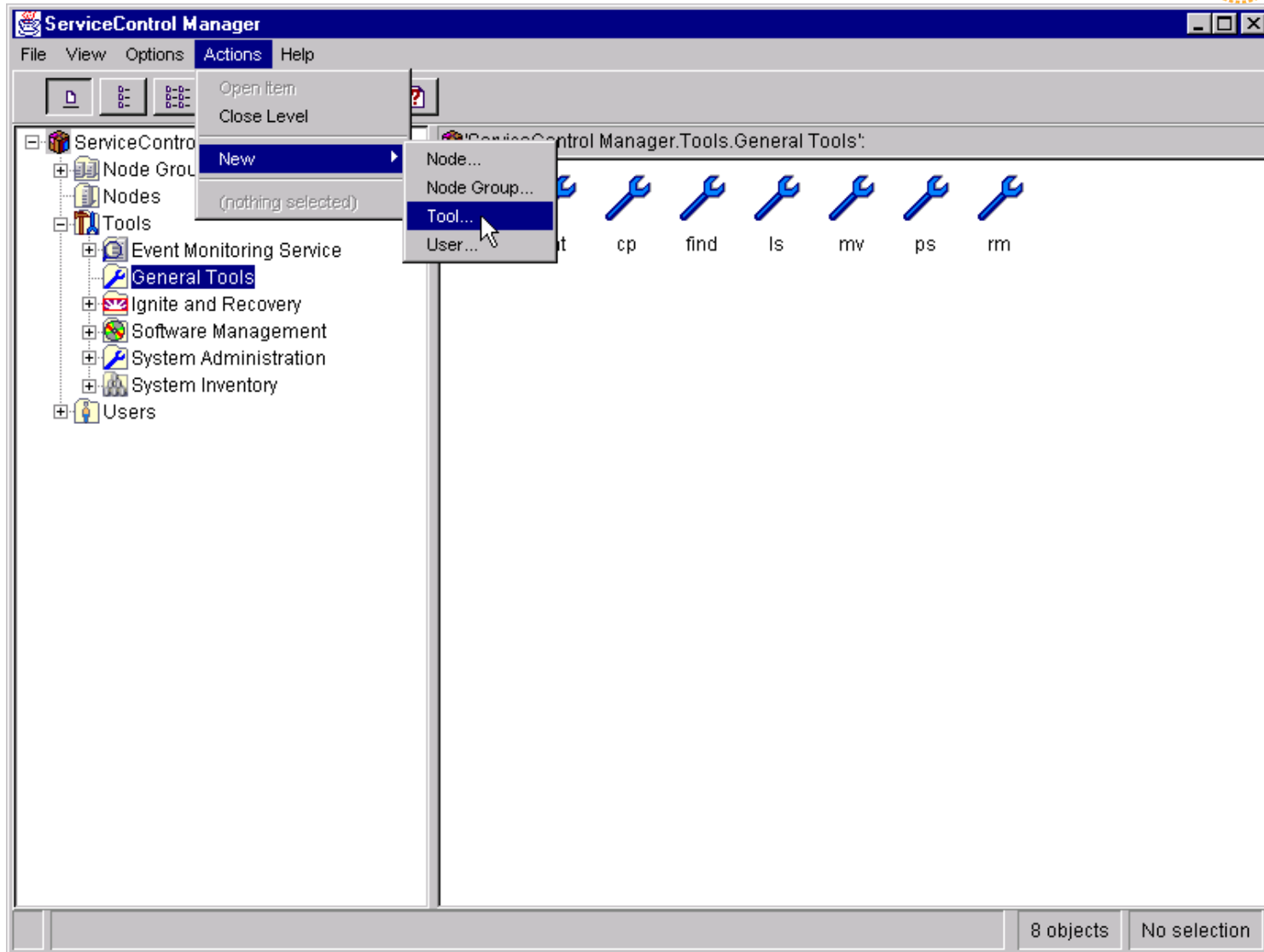
- Define what the tool will do
- Create any scripts or configuration files (if needed)
- Choose the authorizations, i.e. what roles can run this tool
- Choose the login name under which the tool will run on the managed nodes

# Define Tool Contents (example)



```
$ cat bdfscript
#
# Run the bdf command with a user-provided option
#
echo Run bdf $1
bdf $1
#
# Remove the script
#
echo Remove $0
rm -f $0
#
# Finish up
#
echo done.
```

# Create a tool





# Specify General Attributes



ServiceControl Manager - New Tool

General | Command & Parameters | File Transfer | Privileges & Authorizations

Name:

Category:

Last modified:

Description:  (optional)

Run as:

Save stdout/stderr to log file

Comments:  (optional)

OK Cancel Help



# Specify Command & Parameters



ServiceControl Manager - Tool Properties

General **Command & Parameters** File Transfer Privileges & Authorizations

Base command:  (optional)

Parameters: (optional)

Prefix	Prompt
optional	Enter a bdf option:

Prefix: (optional) Prompt: (optional)

Comments:  (optional)



# Specify File Transfer



ServiceControl Manager - New Tool

General | Command & Parameters | **File Transfer** | Privileges & Authorizations

Files to copy to target node(s): (optional)

Source Path	Destination Path
/home/dsuit/bdfscript	/tmp/bdfscript

Add  
Modify  
Remove

Source Path: /home/dsuit/bdfscript  
Destination Path: /tmp/bdfscript

Comments: (optional)

OK Cancel Help



# Specify Roles



ServiceControl Manager - New Tool

General | Command & Parameters | File Transfer | **Privileges & Authorizations**

DISABLE roles other than Master Role; Tool Owner or Trusted User may modify tool

ENABLE all assigned roles; ONLY Trusted User may modify tool

Owner:

Role Assignment: all assigned roles are currently enabled

Roles that can Run this Tool

Master Role	<input type="button" value="&lt;--Add--&gt;"/>	Available Roles
operator	<input type="button" value="-Remove-&gt;"/>	dbadmin
		lvadmin
		role10
		role11
		role12
		role13
		role14
		role15
		role16
		role6
		role7

Comments:  (optional)

OK Cancel Help

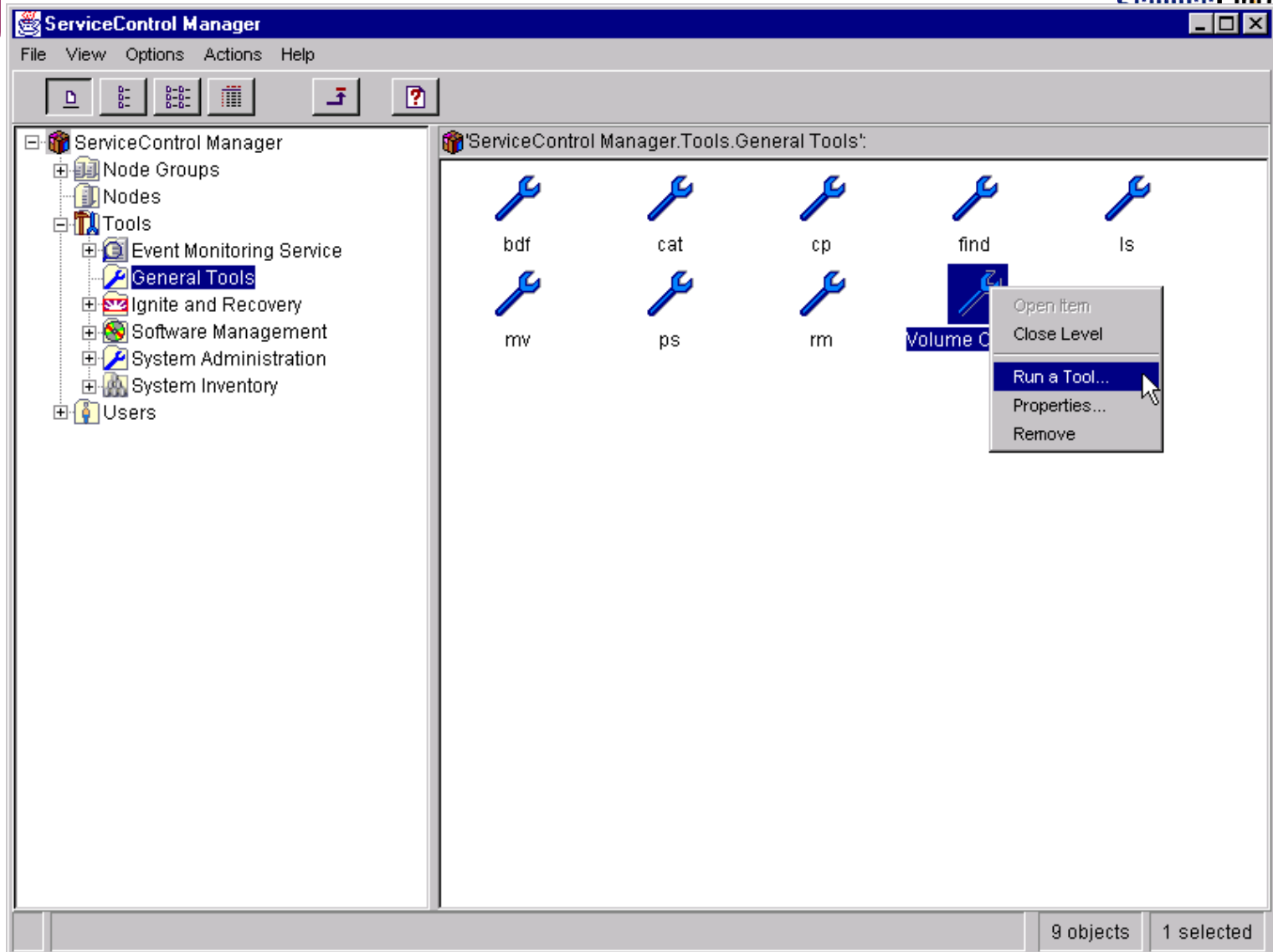


# Tool Definition Format



```
$ mxtool -lf -t "Volume Checker"
//
// This tool definition was automatically
// generated by the ServiceControl Manager
//
// Tool originally created on: Thursday, March 30, 2000 10:17:16 AM MST
// Tool last modified on:      Thursday, March 30, 2000 2:19:19 PM MST
// File Generated:             Thursday, March 30, 2000 2:21:27 PM MST
//
SSA tool "Volume Checker" {
  description "Check the volume usage of nodes"
  category "General Tools"
  copy {
    /home/dsuit/bdfscript : /tmp/bdfscript
  }
  execute {
    command "/tmp/bdfscript"
    arguments {
      " " : "Enter a bdf option:" optional
    }
    nolaunch
    nolog
    user root
  }
  roles {
    "Master Role",
    "operator"
  }
}
```

# Run a Tool



# Specify Targets



ServiceControl Manager - Run a Tool

General | Command Parameters

Select nodes and/or specify node group on which tool will run:

Nodes: (optional)

auxp78.fc.hp.com  
auxp79.fc.hp.com  
auxp80.fc.hp.com  
auxp81.fc.hp.com

Node group: (optional)

Name: Volume Checker

Description: Check the volume usage of nodes

Comments:

Base commands: /tmp/bdfscript

stdout and stderr are not being saved to the log

Save stdout/stderr to a file

OK Cancel Help



# Specify Parameters



ServiceControl Manager - Run a Tool

General Command Parameters

Base command: /tmp/bdfscript

Parameter	Value
optional Enter a bdf option:	-1

Modify

Value:  
-1

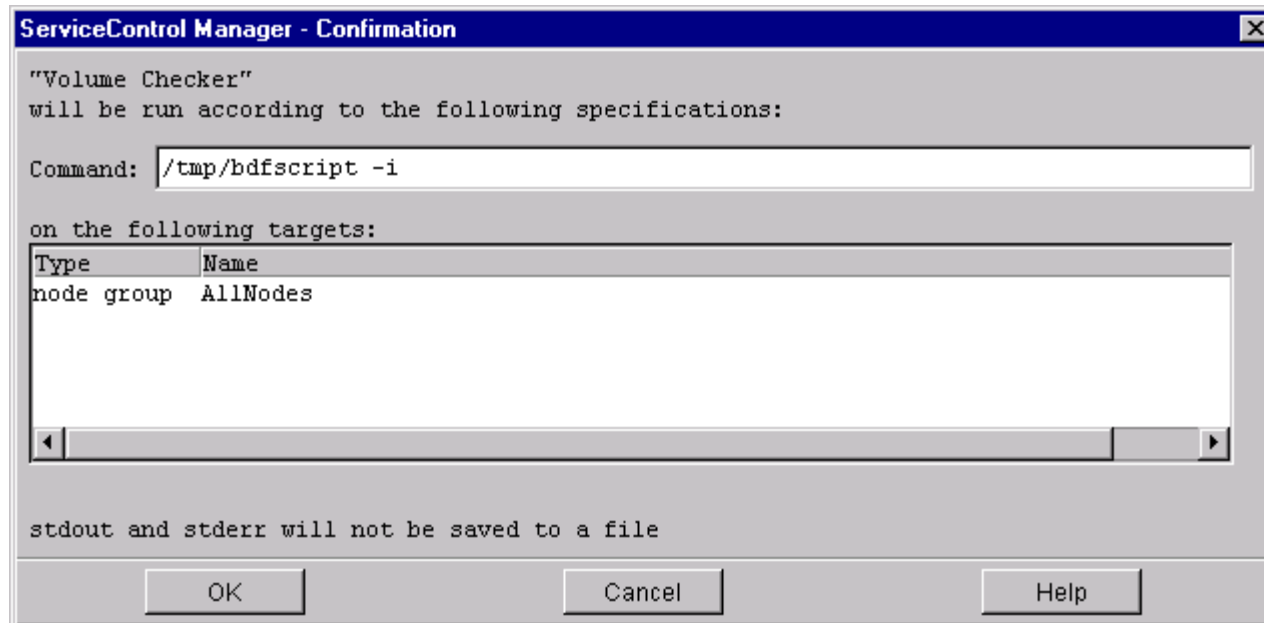
Comments:

OK Cancel Help





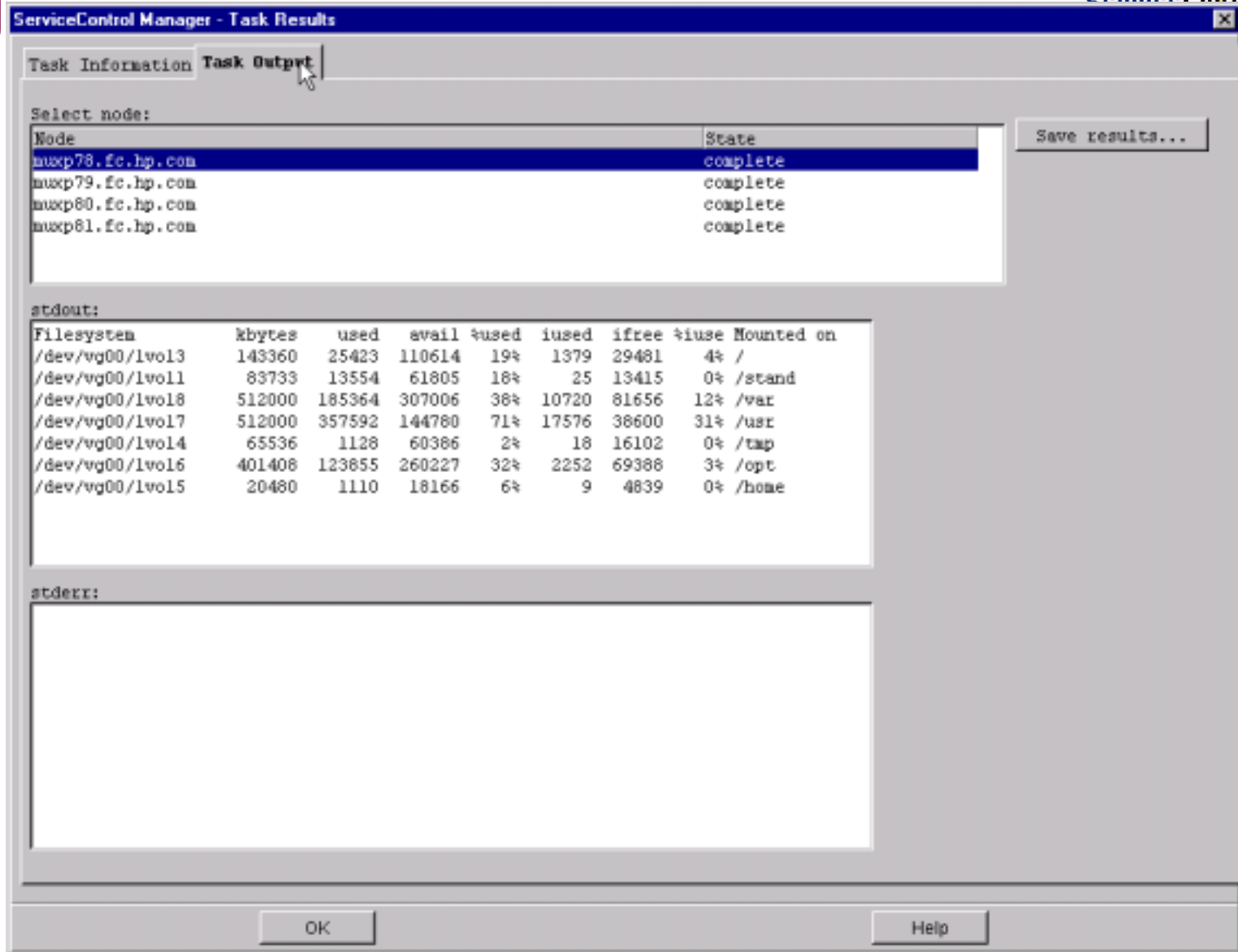
# Confirm Task Execution



# Task Execution Process

- User interface packages tool with user-provided parameters and nodes
- User interface sends this package to the Distributed Task Facility(DTF) daemon on the CMS
- DTF daemon creates task from this information
- DTF daemon copies files, if specified, to each target managed node
- DTF daemon sends command and parameters to a DTF agent on each target
- DTF agent executes the task and sends output and return value to DTF daemon
- DTF daemon reports task completion to user interface

# Display Task Results



The screenshot shows the 'ServiceControl Manager - Task Results' window. It has two tabs: 'Task Information' and 'Task Output', with 'Task Output' selected. The window displays a table of nodes and their states, a 'Save results...' button, and sections for 'stdout' and 'stderr'.

Select node:

Node	State
muxp78.fc.hp.com	complete
muxp79.fc.hp.com	complete
muxp80.fc.hp.com	complete
muxp81.fc.hp.com	complete

Save results...

stdout:

Filesystem	kbytes	used	avail	%used	iused	ifree	%iuse	Mounted on
/dev/vg00/lvol3	143360	25423	110614	19%	1379	29481	4%	/
/dev/vg00/lvol11	83733	13554	61805	16%	25	13415	0%	/stand
/dev/vg00/lvol18	512000	185364	307006	36%	10720	81656	12%	/var
/dev/vg00/lvol17	512000	357592	144780	71%	17576	38600	31%	/usr
/dev/vg00/lvol14	65536	1128	60386	2%	18	16102	0%	/tmp
/dev/vg00/lvol16	401408	123855	260227	32%	2252	69388	3%	/opt
/dev/vg00/lvol15	20480	1110	18166	6%	9	4839	0%	/home

stderr:

OK Help

# Summary



- SCM tools provide mechanism for configuring and managing distributed systems
- SCM provides GUI and CLI access to manage and execute tools
- SCM provides access to and auditing of tool execution results