



Intelligent
Systems
Lab

Administration of Operating Systems

Samba
Chapter 23

November 28, 2011

Samba



- Free implementation of SMB/CIFS protocol
 - file and print services
 - authenticated inter-process communication
 - for Microsoft Windows clients
 - work in Windows Server domain
 - as Primary Domain Controller or member
 - can be part of Active Directory domain
- Uses TCP port 445
 - or over NetBIOS API
- Protocol optimised for LAN
- SMB2 introduced in Windows Vista
 - SMB2.1 introduced in Windows 7

Interoperability



- NFS clients for Windows exist
 - can be used to share files
- Microsoft Windows demonstrates a lot more of a “hub of the world” mentality
 - it’s easier for Linux to pretend to be Windows
 - than to get Windows to admit that Linux exists
- Samba allows to share more than files
 - printers
 - serial ports
 - IPC: named pipes, RPC, DCOM, WMI, ...
- For files, NFS is actually a better protocol
 - does not matter in practice most of the time

smb.conf



- Complex file
- Several sections
 - [global]
 - [homes]
 - [ipc\$]
 - [printers]
 - [share name]
- Many parameters within each section
 - name = value
- *A lot* of options
 - with complex dependencies
- testparm utility

Samba Configuration



- Guest account
 - nobody
- IP address security
 - hosts allow & hosts deny
- clear text or encrypted passwords
- user access list
 - invalid users
- security
 - user
 - share
 - server, domain, ads
- Username map

NetBIOS



- Windows Network Neighbourhood
 - My Network Places
- Session layer of the OSI model
- Can run on top of TCP
 - but can also use other protocols
- API
 - not network protocol
- Name service
 - register, delete & find names
- Session service
- Datagram service

Samba Utilities



Intelligent
Systems
Lab

- `nmbd`
- `smbd`
- `net`
- `smbtree`
- `smbclient`
- `smbpasswd`
- `nmblookup`
- `pdbedit`
- `swat`
- `testparm`
- `mount -t cifs`



Security



Intelligent
Systems
Lab

- Uses username & password for authentication
 - can use LDAP / NIS / PAM / etc
- Passwords are usually sent encrypted
 - older Windows version use clear text
- Windows users should *map* to Linux user names
 - can be one-to-one mapping
 - can be many-to-one mapping
 - determines file-level permissions
- `sudo smbpasswd ide`
- `sudo smbpasswd -a slawek`
- Complex system
 - has a history of serious vulnerabilities

Shares-Admin

- Basic configuration utility
 - for Samba and NFS
- Define users
- Path and share name
- Workgroup
- WINS server



Shares-Admin

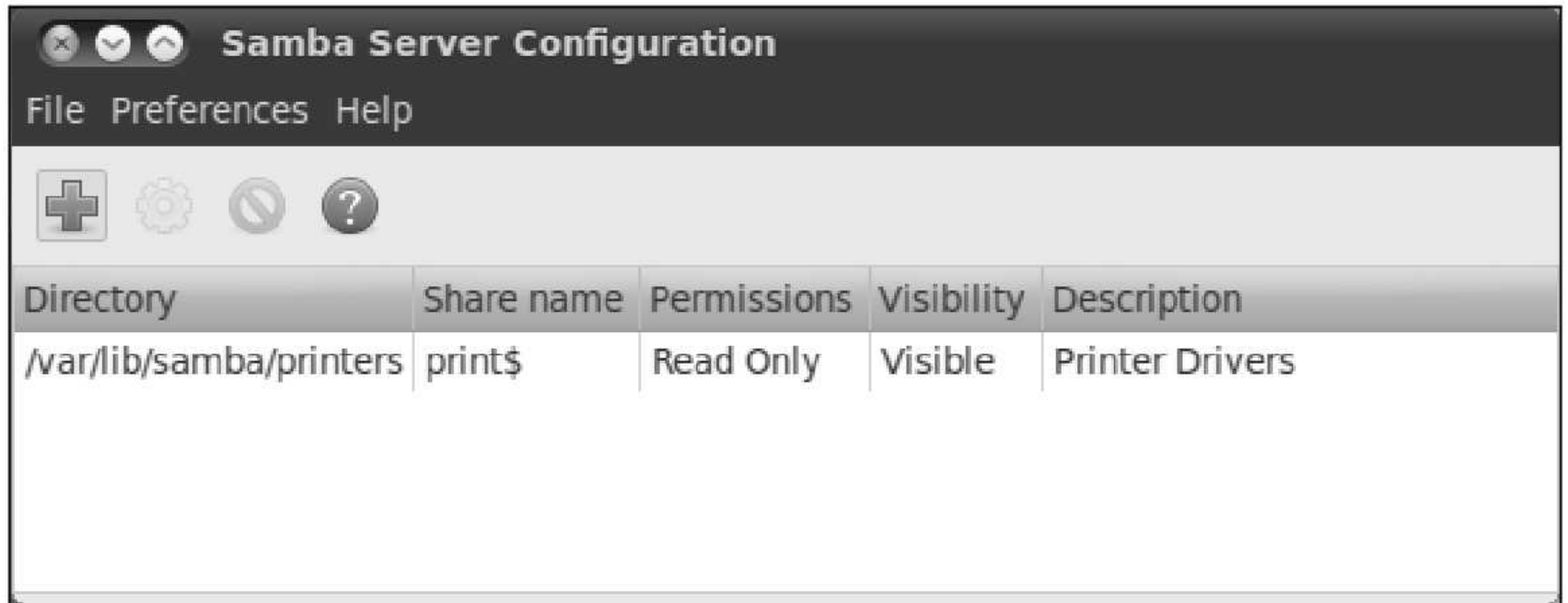


Figure 23-1 Samba Server Configuration window

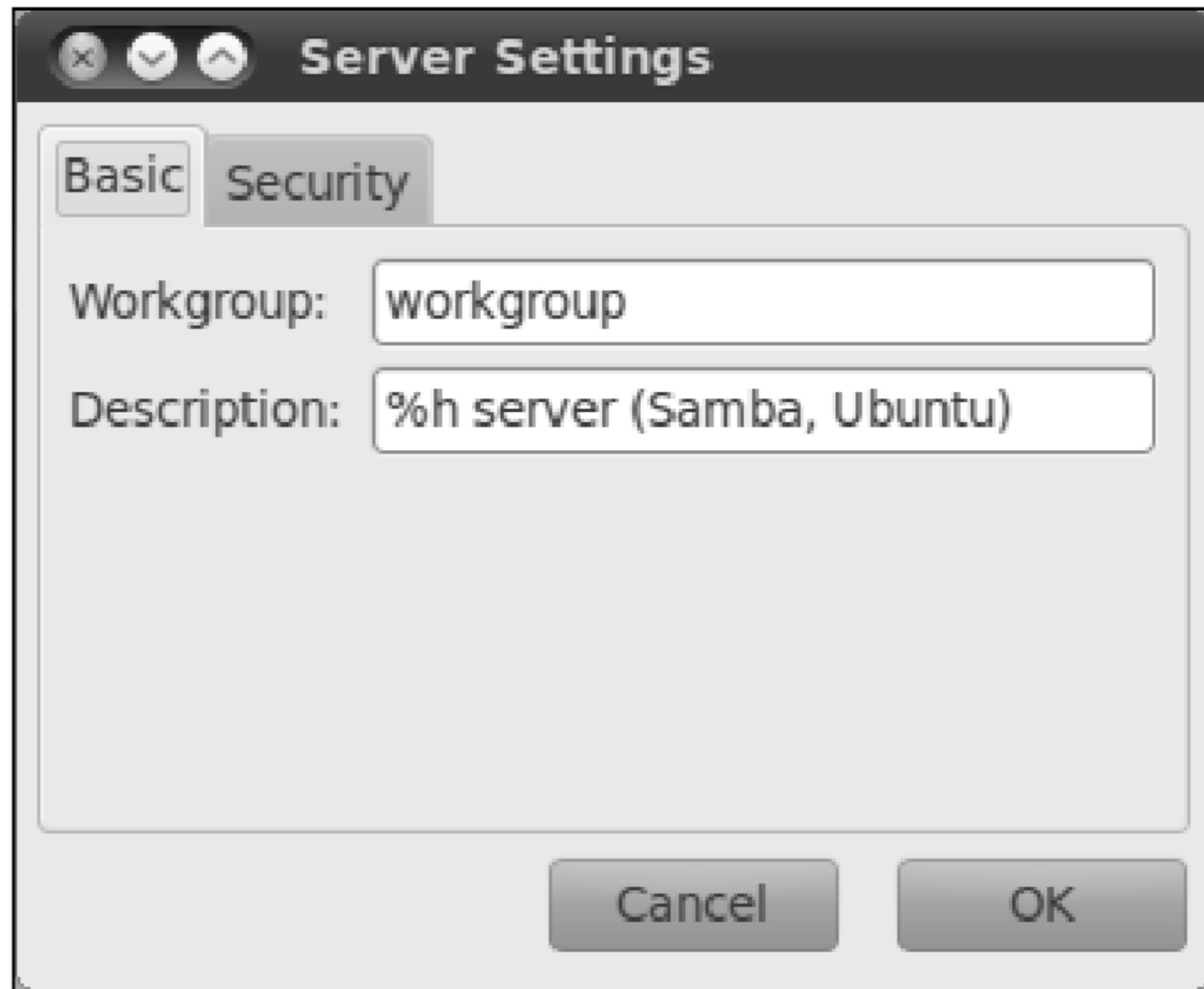


Figure 23-2 Server Settings window, Basic tab

Shares-Admin



Intelligent
Systems
Lab



Figure 23-3 Samba Users window

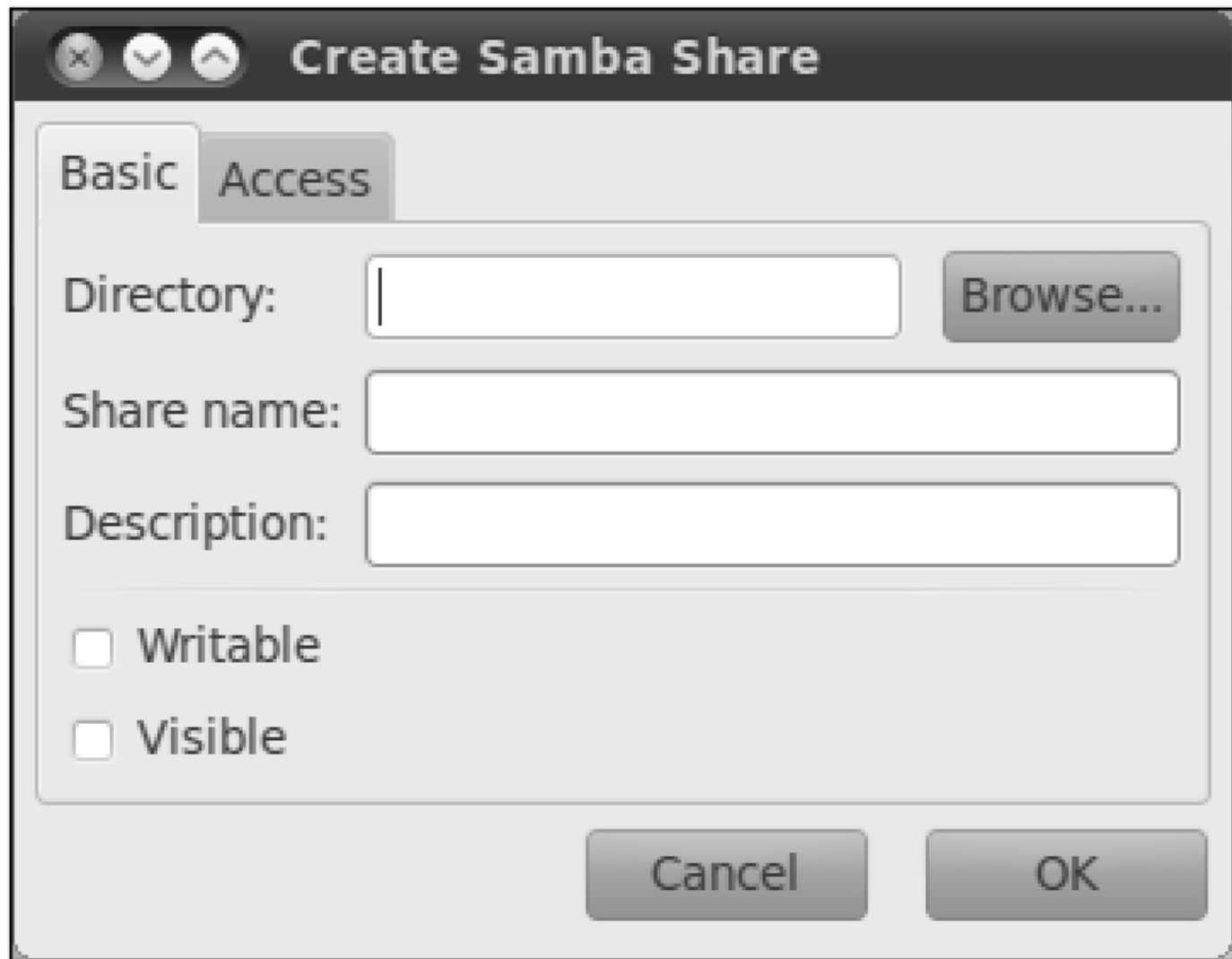
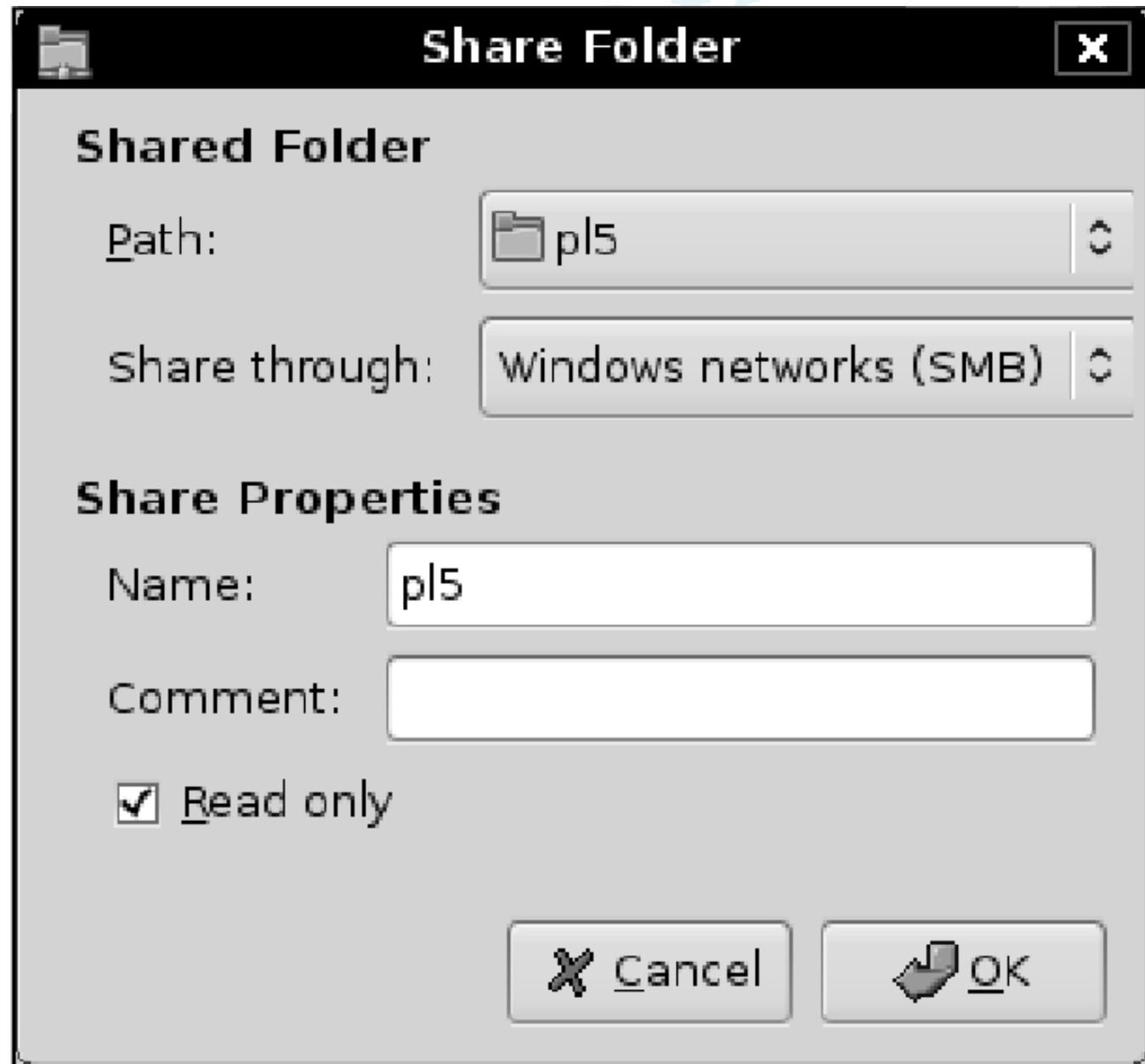


Figure 23-4 Create Samba Share window, Basic tab

Shares-Admin



Swat

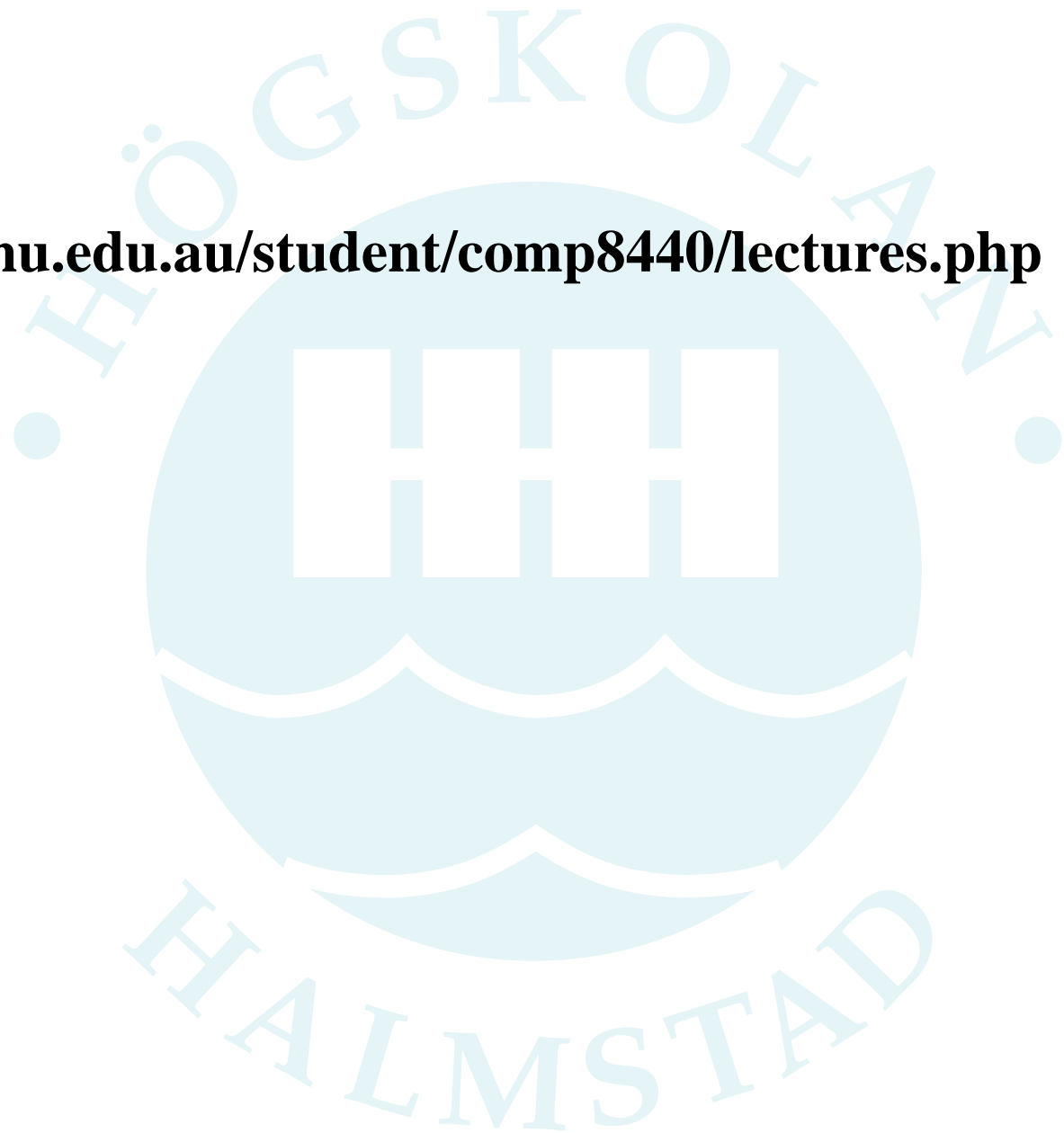


- Easy to use
 - generates good configurations
 - offers basic & advanced view
- Extensive help system
 - description of every available option
- Used to require enabling root password
 - very bad
 - `sudo passwd root`
 - `sudo passwd -dl root`
- Can be done better nowadays
 - `chmod g+w smb.conf`
 - `chgrp adm smb.conf`



Intelligent
Systems
Lab

<http://cs.anu.edu.au/student/comp8440/lectures.php>





Intelligent
Systems
Lab

Questions?

