HP OpenVMS Common Internet File System based on SAMBA

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What is Common Internet File System?

- Open Source/Free Software suite that provides file and print services to SMB/CIFS clients.
  - SMB/CIFS clients: i.e., Windows clients
  - Commonly known as "*Samba*"
- Freely available under the GNU General Public License.
- Ships with most UNIX and LINUX distributions
  - HP-UX CIFS/9000 server is Samba based
  - Well known, well documented – Books are published on Samba
- Championed by HP
  - HP employees are a key part of Samba development
  - Samba team is excited to add OpenVMS support
- Large community fixing bugs and adding features
  - 30 active participants world wide; 10-12 doing active checkins
  - See http://www.samba.org/samba/team/

Interlude – Terminology
Help Me Understand The Terms!

- These are essentially the same:
  - CIFS
    - Common Internet File System
  - Samba
    - Open Source implementation of CIFS
    - http://www.samba.org

- Samba and CIFS are used interchangeably

Interlude – Terminology
Help Me Understand The Terms!

- These are essentially the same:
  - Advanced Server for OpenVMS (ASV)
  - PATHWORKS for OpenVMS
    - Proprietary implementation of CIFS based on Microsoft Windows-NT 4.0
    - Developed by DIGITAL/Compaq/HP for OpenVMS servers

- PATHWORKS, Advanced Server and ASV are used interchangeably

Why CIFS Based on Samba for OpenVMS?

- Keep pace with new technology - implementing Active Directory, LDAP, new file systems etc.

- Newer releases from Microsoft (might) break Advanced Server (ASV)

- Updates to ASV source code no longer available (MS & AT&T)

- Larger investments required to continue to support ASV and maintain pace with MS deliveries

- Plan is to continue to support ASV on Alpha for the foreseeable future

- Intention is to replace ASV with CIFS

CIFS Strategy

- Product Schedule
  - Evaluation Versions based on Samba V3.0.10
    - Integrity - March CY2006
    - Alpha - May CY2006
    - Basic Samba functionality
  - Production Version based on Samba V3.x
    - External Field Test – Planned for December CY2006
    - Integrity release - March CY2007
    - Alpha release – March CY2007
    - Extended OpenVMS functionality
- Release future production versions based on Samba V4.X
- Migrate ASV base to CIFS on Alpha & I64

OpenVMS Version Support

- Advanced Server for OpenVMS (ASV)
    - V7.3-2 OpenVMS Alpha
    - V8.2   OpenVMS Alpha
    - V8.3   OpenVMS Alpha
    - OpenVMS "next"

- CIFS
    - V8.2 OpenVMS I64
    - V8.2-1 OpenVMS I64
    - V8.3   OpenVMS I64
    - V8.2 OpenVMS Alpha
    - V8.3 OpenVMS Alpha

Software Requirements

- Currently qualified on OpenVMS I64 Version 8.2 and 8.2-1 and OpenVMS Alpha V8.2.

- Qualification on OpenVMS V8.3 I64 & Alpha

- TCP/IP Services - The transport software to support the network protocols used by other servers and by network clients

- Currently working with Process Software in support of TCPware and Multinet.

Key Services/Features

- Support for both Integrity & Alpha Platforms

- Full file & print support

- MS Windows 2000 & later clients

- Authentication and Authorization

- Name Resolution

- Service Announcement (browsing)

- CIFS will use the TCP/IP protocol installed on the host server

- Extended to include
  - Utilities to ease migration from ASV to CIFS
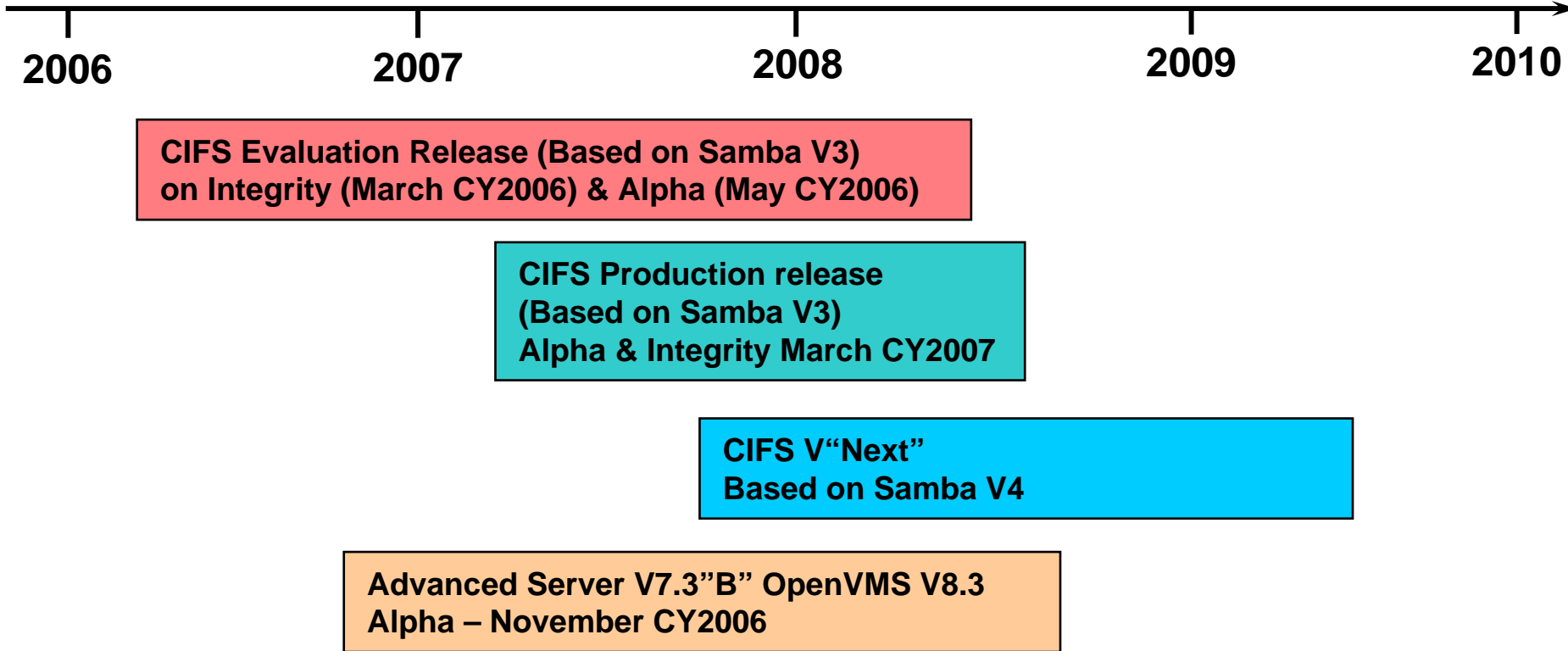 - Tools to aid interoperability with MS

CIFS Services/Features

- Advanced cluster support
- ASV & CIFS in same domain
- International character set support
- Advanced CIFS Management support
- CIFS as a Member Server
  - As well as domain controller
- Fully support OpenVMS ACL's for security
- File locking (Oplocks)

CIFS Services/Features Cont'd

- Support MS file names on ODS-2 and ODS-5 disks

- No required license for CIFS Integrity – part of FOE, EOE and MCOE

- No required license CIFS Alpha

- Multiple TCP/IP stack support

- SWAT utility

- External authentication support

- Trust relationship support

File/Print Servers & Common Internet File System (CIFS) – Road Map

2006   2007   2008   2009   2010

**CIFS Evaluation Release (Based on Samba V3)
on Integrity (March CY2006) & Alpha (May CY2006)**

**CIFS Production release
(Based on Samba V3)
Alpha & Integrity March CY2007**

**CIFS V"Next"
Based on Samba V4**

**Advanced Server V7.3"B" OpenVMS V8.3
Alpha – November CY2006**

hp invent

The CIFS Configuration File

- The SAMBA configuration file, called SMB.CONF by default, uses the same format as Windows *.ini* files.

- SMB.CONF file is a plain-text file and may be edited with your favorite editing tool.

- Each section in the SMB.CONF file represents a share on the SAMBA server except global sections. The section "global" is special, since it contains settings that apply to the whole SAMBA server and not to one share in particular.

- There are three special sections, [global], [homes] and [file/printer share-name], which are described under special sections.

CIFS Configuration File Cont…

Parameters Description:

Parameters define the specific attributes of sections. There are two types of parameters namely,

- Global Parameters
- Service Parameters

Some parameters are specific to the [global] section (e.g., workgroup). Some parameters are usable in all sections (e.g., browsable).

For more details about configuration file (SMB.CONF), refer to the following URL:

http://www.samba.org/samba/docs/man/manpages-3/smb.conf.5.html

CIFS System Impact

CIFS consists of multiple daemons. A daemon is a OpenVMS application that runs in the background and provides services. The CIFS server is made up of the following daemons:

- NMBD
- WINBINDD
- SWAT
- SMBD (1 per connected client)
  - SMB

NMBD – The NMBD handles the naming resolution & network browsing.

WINDBINDD – Handles trust relationship

SWAT – Samba Web Administrative Tool

SMBD - The SMBD is responsible for providing shared file/printer resources.

SMBD Daemons

- ## One per connected client
  - Name includes the BG device client is connected on

```
$ pipe sho sys | search sys$pipe smbd
0000046A SMBD_BG14632    LEF      7    21611   0 00:00:05.01        824    876  N
$ TCPIP SHO DEVICE BG14632


                            Port                        Remote
Device_socket    Type    Local   Remote  Service        Host


  bg14632       STREAM     139    1726   SMBD            16.29.224.104
$
```

pdbedit Tool

pdbedit is a tool that can be used only by system user. It is used to manage the passdb backend. Pdbedit can be used to:

• add, remove or modify user accounts

• list user accounts

The command to add users into pdbedit file is as follows:

$ pdbedit -a <username>

where -a option is used to add a user into the database. When adding a new user, pdbedit will also ask for the password to be used.

Example: $ pdbedit -a test1

new password:

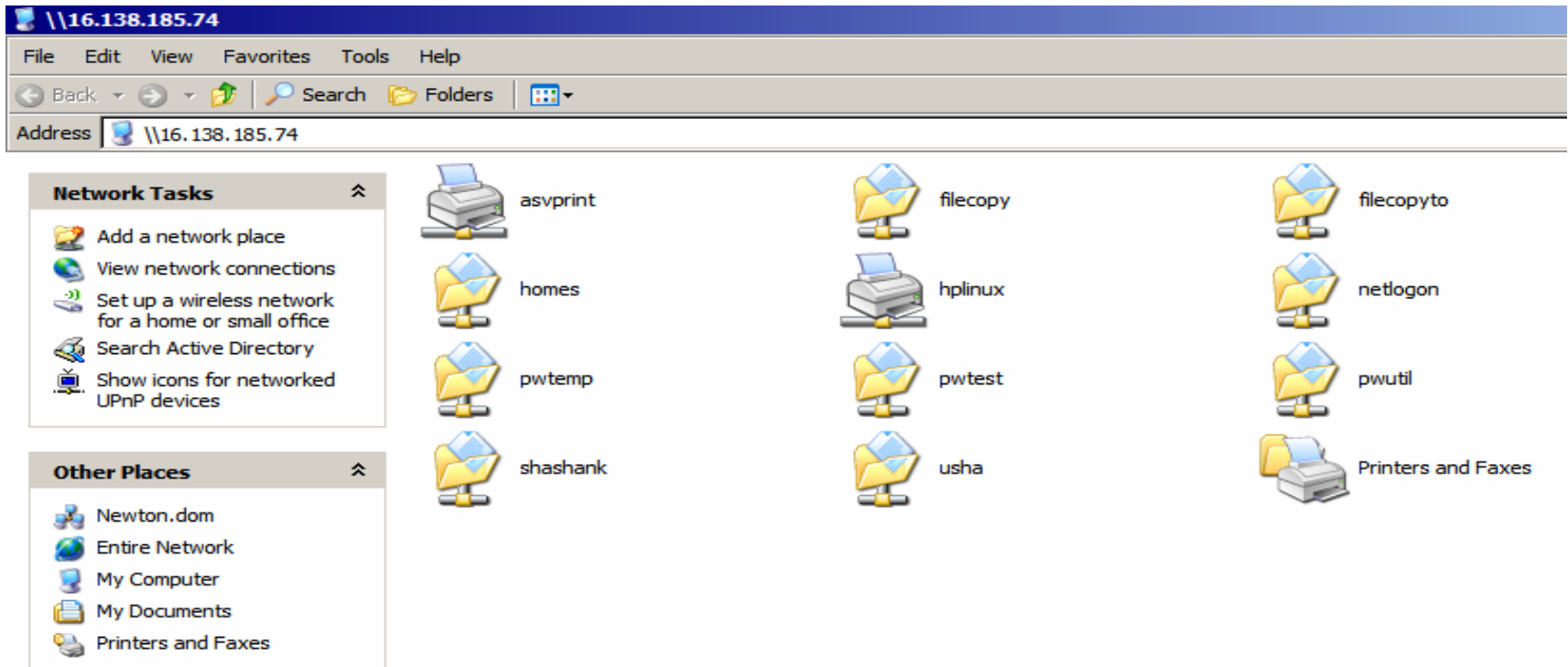retype new password

For more information about how to use pdbedit, see the help of pdbedit by entering the following command:

$ pdbedit --help

Connection from a Client

- CIFS users can connect from a client to the server like any other process
- A list of shared folders and files are displayed

Tools to Monitor CIFS

Types of Tools to monitor CIFS:

- SMBSTATUS – This tool reports on current CIFS connections

- TDBDUMP – Tool for printing the contents of a TDB file

- TDBTOOL – Tool for manipulating the contents of a TDB file

- SMBCONTROL – This utility sends messages to NMBD,SMBD and Winbindd processes

- PDBEDIT – This tools is used to manage the SAM database (Database of SAMBA users)

- NET – Tool for administration of CIFS and remote CIFS servers

Migration Utility

A migration procedure will be provided to help in graceful migration of user and share information from ASV to CIFS. There are two stages of migration:

- Share migration

- SAM database migration

MS Active Directory

- Production version based on Samba V3.X will support Active Directory MS Windows 2000 and later.

- It is currently supported in NT compatible mode based on WIN NT V4.0 Server.

- Full Active Directory will follow based on updates of LDAP and Kerberos on OpenVMS

- Plans are for full Active Directory support on future CIFS releases based on Samba V3.X and later

Command Line "Unix" Flavor

- CIFS (Samba) was originally developed in support of the Unix operating system.

- We have endeavored to provide specific text in support of OpenVMS user.

- Please provide feed back to email account - "OpenVMSCIFS@HP.COM" when (*%$#@)!

- Example:
    - **$ pdbedit -a test1** (single letter/single dash = letter command)
    - **$ pdbedit - -help** (mult letter/dble dash = word command)
    - OpenVMS = **$ pdbedit/help**

Cluster Compatibility/Support

- CIFS internal and configuration data bases must be common to all members of the cluster

- Will support cluster alias and failover to the extent that it is supported under TCP/IP Services

- Will support load balancing to the extent that it is supported under TCP/IP Services

Delivery & Support

- Integrity
  - CIFS will be part of the FOE, EOE & MCOE's
  - Supported as part of the operating system
  - Requires a valid license to operate OpenVMS
  - Included on the OE Update Media (DVD)
  - Part of Q2 CY07 Layered Products Distribution

- Alpha
  - Will require a valid license to operate OpenVMS
  - "QM" 2-5-2 part number but @ no cost ($0) for services
  - Service pricing as yet not established, similar to ASV
  - Part of CY07 Software Products Library

- http://h71000.www7.hp.com/network/CIFS_for_Samba.html for downloads of CIFS

Reference Materials

- For more details on SAMBA, refer to the following URL:

  http://www.samba.org

- For more information about configuration file (SMB.CONF), refer to the following URL:

  http://www.samba.org/samba/docs/man/manpages-3/smb.conf.5.html

- For more details about Migration, refer to the following URL:

  http://www.samba.org/samba/docs/man/Samba-Guide/ntmigration.html

- For Troubleshooting Techniques, refer to the following URL:

  http://www.samba.org/samba/docs/using_samba/ch12.html

  http://samba.org/samba/docs/man/Samba-HOWTO-Collection/troubleshooting.html

CIFS Information and Feed Back

- CIFS home page located at
  http://h71000.www7.hp.com/network/CIFS_for_Samba.html

- Feedback hot link button located at bottom of page

- E-mail address openvms@hp.com

- E-mail address OpenVMSCIFS@HP.COM

CIFS Program Team

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Questions?

Thank you!