

New PASS

The 2008 Technology Update

**Prepare Yourself Before the
July 4th Weekend Migration**

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Overview

- 1) What is PASS?
- 2) The big picture: Penn State Infrastructure
- 3) What is changing? What has changed?
- 4) Impact of changes / take home messages
- 5) References
- 6) Timeline
- 7) Discussion

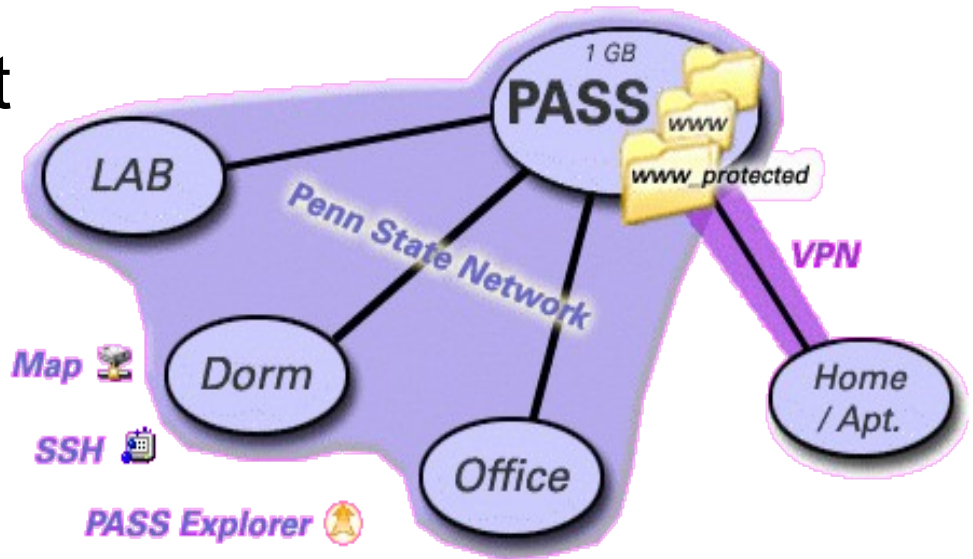
Introduction

We are migrating a key component of our core infrastructure, the Penn State Access Storage Space, aka PASS.

<http://its.psu.edu/news/story-989>

What is PASS?

Upon receipt of a Penn State Access Account all students, faculty and staff are initially* allocated 500 MB of online storage space.



This is also known as your **Penn State Access Account Storage Space (PASS)**.

* Clients can currently increase their storage allocation to 1GB.

How is PASS part of our Core Infrastructure?

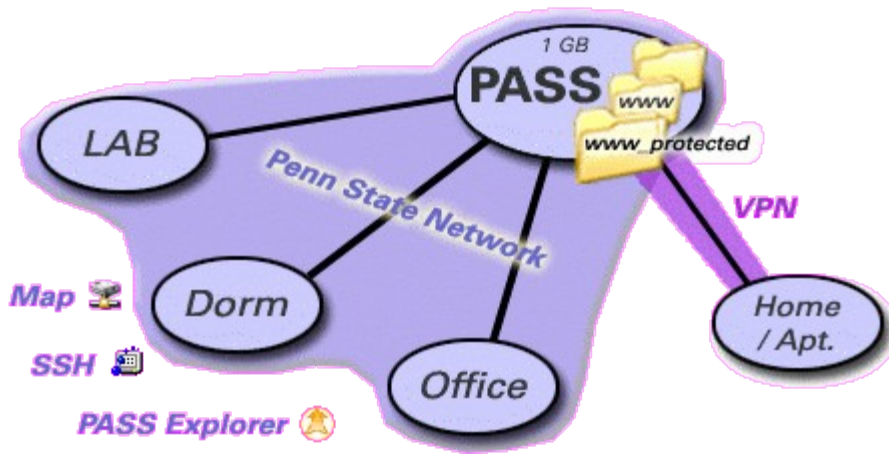
Penn **S**tate **A**ccess **A**ccount **S**torage **S**pace (PASS) serves as 1 of 3 key components of Penn State's IT infrastructure:

- **STORAGE:** PASS provides universally-accessible disk space/file storage for use by anyone in the University community.
- **AUTHENTICATION:** PASS works with Penn State's central authentication system to prove who you are and leverage your digital identity.
- **Enterprise Directory Services:** PASS works with the Enterprise Directory Service for authorization to grant access to files and services once you prove your identity.

What are our 3 Core Technologies?

- STORAGE: **IBM's General Parallel File System (GPFS)**, the new technology for file storage service, will replace **DCE's Distributed File Service (DFS)**. Provides easy access to and control over different file types between individuals and groups.
- AUTHENTICATION: **MIT Kerberos v5** is a network authentication protocol providing strong authentication using secret-key cryptography, which is replacing **Distributed Computing Environment (DCE)'s Kerberos v5**.
- Enterprise Directory Services : **LDAP** is a client-server protocol for accessing and standardizing directory information (addresses, phone numbers, etc.) across a distributed network. **LDAP** replaces **DCE's** security groups.

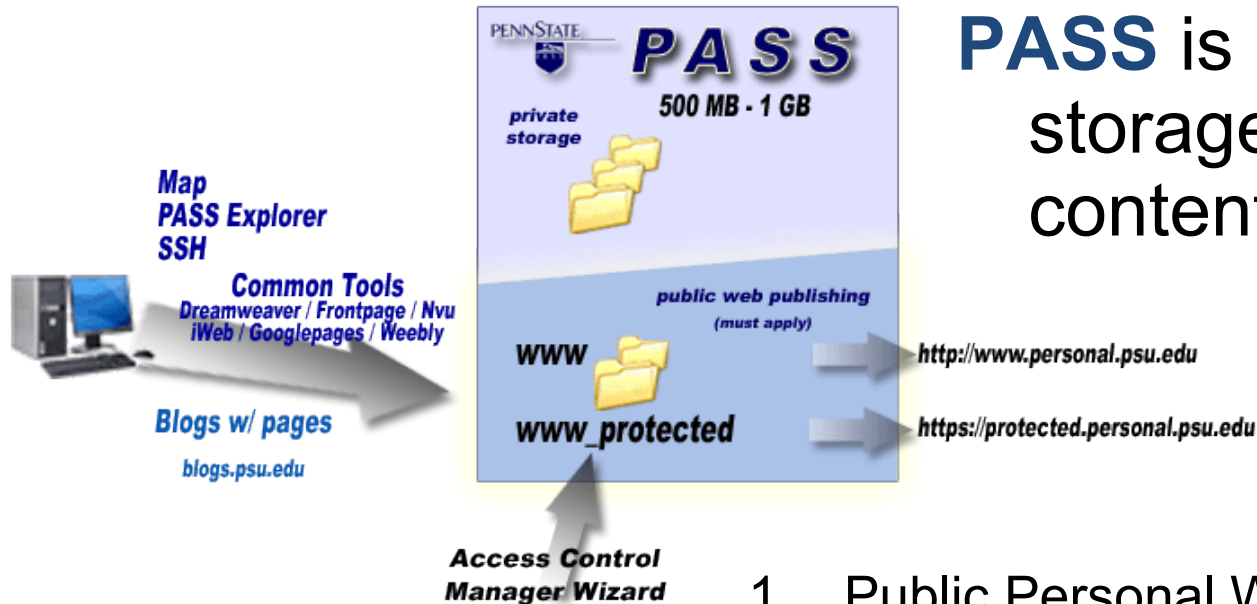
How is PASS accessed?



PASS can be accessed through a variety of methods/tools

1. The PASS Gateway (CIFS and NFS map/mounts)
2. The PASS Explorer – Web Tool
3. Secure File Transfer Protocol : SFTP and SCP
4. UN*X clusters – rs6klab, cbs, armstrong, lxcluster
5. Lab machines – Windows, Mac, Linux
6. Others (indirectly by an application or site)

PASS: Storage for the Web



PASS is also used as storage for Web content

1. Public Personal Web sites
2. Protected Personal Web sites
3. Departmental Web hosting
4. Course Online Accounts (COLA)
5. Student Organizations
6. Various Web-based services use PASS

Do you use PASS?

You do if you use these services...

RS6kLab UNIX Clubster

blogs.psu.edu

www.clubs.psu.edu

University Learning Centers Website

ITS Linux Labs

Office of Student Aid Website

Palmer Museum of Art site

ITS Windows Lab Computers

WebMail

ITS Macintosh Lab Computers

Help Desk Website

e-Portfolios

ITS Virtual Web Hosting

www.psu.edu

Center for Space Research Programs Website

File sharing

Protected Personal Web space

Course Online Web Accounts

IMAP

World Campus

www.greeks.psu.edu

Linux User's Group Website

ITS Websites

php.scripts.psu.edu

Penn State Harrisburg Website

CBS UNIX cluster

www.personal.psu.edu

Webstandards.psu.edu

Race Relations Project site

Departmental Web Space

Homecoming Website

www.work.psu.edu

CACTUS

Institutional Research Data storage

What's New and Changing with PASS?

- GPFS replaces DFS first weekend in July.
- All data in current PASS file space will be moved in preparation for the fall 2008 semester.
- After all the data is moved, there will no longer be access to the former PASS systems.
- Summer: DCE/DFS will be decommissioned.

Why is the new filesystem necessary?

- The migration is a change to a new technology (GPFS) that promises to give us substantially better performance and overall reliability.
- IBM has dropped normal support for DCE/DFS, Penn State's current authentication, authorization, and distributed file system.

Why was GPFS chosen?

IBM's General Parallel File System (GPFS) was selected to replace DCE/DFS because it provides:

- a file storage management system focused on performance; notable speed increase from DFS
- shared-disk access
- SAN-based disk failover
- inherent balancing and recovery systems offer fault tolerance
- native client access from our server systems

What do IT Staff need to know?

- Gateway technology upgrade
 - Samba upgraded from version 2 to 3
 - NFS upgraded to support version 4
- php.scripts.psu.edu upgrade
 - Solaris to Linux
 - Apache 1.3 to Apache 2.0
 - PHP still 5.1.6 (for now)
 - SQLite extension removed; replaced by PDO

Instructions on using PDO to access SQLite 3.x databases:

<http://php.scripts.psu.edu/jcd/useful/webcon/2005/sqlite.php#pdo-sqlite3>

What do IT Staff need to know? (p.2)

- Gateways Will Require Full Kerberos
 - NT Lan Manager (NTLM) authentication not supported by new SMB/CIFS gateway
 - Kerberos support in SMB/CIFS gateway not available in old gateway
 - Stand alone Windows clients require “userid@dce.psu.edu” or “dce.psu.edu\userid” username notation to obtain Kerberos tickets
 - A MapPASS program may be available to ease usability
 - Windows 95, 98, ME no longer supported

What do IT Staff need to know? (p.3)

- Gateways Will Require Full Kerberos (cont.)
 - Mac OS X – CIFS works with additional steps
 - Samba clients have support (smbclient)
 - UNIX/Linux native CIFS mount support varies

What do IT Staff need to know? (p.4)

- Gateways Will Require Full Kerberos (cont.)
 - NFS versions 3 and 4 available via kerberos
 - Mac OS X kerberos support for NFSv3 in 10.5 Leopard
 - Solaris kerberos support for NFSv3 in version 10
 - AIX NFSv4 support (with kerberos) in 5.2
 - Modern Linux distributions have NFSv4 support
 - Windows has NFS support via 3rd parties
 - <https://nfs.pass.psu.edu/> “Authentication Mapping” to be phased out in July

What do IT Staff need to know? (p.5)

- Client support could be better
 - Linux CIFS support needs further development
 - Linux NFS client requires NFS service principal
 - OSX support inconsistent and the issue is open with Apple Support as an OSX bug.

What do IT Staff need to know? (p.6)

Permissions revamped – NFSv4 based

- More comprehensive / complicated than DFS
- ACL support over gateways (CIFS, NFS)
- Chmod disabled (for now)

- New Web Tool - Simpler ACL Explorer

[\[https://secureappsbeta.pass.psu.edu/secureapps/explorer/explorer.cgi\]](https://secureappsbeta.pass.psu.edu/secureapps/explorer/explorer.cgi)

- Integrated with PASS Explorer
- Reset at any level
- Wizard based design

What do IT Staff need to know? (p.7)

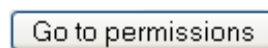
- Improvements in support tools
 - www.work.psu.edu checks PASS permissions
 - Digital Identity Management Center (DIMC) permissions check to be added soon
- “File sharing” feature of PASS Explorer EoL – replaced by Protected Personal ACM



Replaced by:



->



from within `www_protected`

See also: <https://protected.personal.psu.edu/>

Resources: Kerberos

Many of the services we provide will depend upon you already using Kerberos auth to the Penn State Kerberos realm (dce.psu.edu) for either Mac, Windows or Linux clients.

- **Mac OS X:** CLC has documented how to set up Kerberos auth on OSX
<http://clc.its.psu.edu/Labs/Mac/Resources/authdoc/default.aspx>
<http://clc.its.psu.edu/Labs/Mac/help/privatefilespace/macpass.aspx>
- **LINUX:** For discussion of Kerberos auth and SSO see:
<https://wikispaces.psu.edu/display/access/Kerberos>
- **WINDOWS:** For discussion of Kerberos auth and SSO see:
<https://wikispaces.psu.edu/display/access/Kerberos+on+Windows>

Note: The registry key that must be installed on the windows clients is called "psuksetup.reg" and is available here:

http://aset.its.psu.edu/docs/windows/active_directory/kdcrecords.html

Online References and Learning Materials about PASS

- Publishing: The Infrastructure at Penn State
http://portfolio.psu.edu/files/eportfolio/PASS_blogs_viewlet_swf.html
- The Files in Your PASS Space: A Guided Tour
http://portfolio.psu.edu/files/eportfolio/PASS_tour_viewlet_swf.html
- Publishing in your Penn State Web Space
http://portfolio.psu.edu/files/eportfolio/Publishing_in_PASS.pdf

Further Technical Documentation

- The MIT Kerberos tools for various OS
<http://web.mit.edu/Kerberos/dist/index.html>
- Public Online Documentation for PASS Beta Systems – **Please join and test before July!**
<http://css.its.psu.edu/PASSBeta>
- Wikispaces – for Penn State affiliated Faculty and Staff
<http://wikispaces.psu.edu/display/PASS>

See the last two links above for details about our Timeline, the Services we run that depend upon PASS, and details about the testing environment we are currently hosting.

PASS Migration Project – Timeline

Date	Miles tone	How this is defined	Es timated Impact	Completed
March 17, 2008	Open Beta period begins	Enrollment for the testing environment is announced for all of Penn State.	All the current functionality in PASS space is available to the testers.	Yes. Beta testing systems are available until the July 4th cutover
May 30, 2008	Begin Internal ITS Migration	All new production services are operational.	All ITS Units using departmental space	No
May 30-June 30, 2008	Open Penn State Early Migration	We will offer the option to perform a timely migration in advance before the final move on July 4th.	Announcement to ITS staff targeted for mid-May.	No
July 3, 2008, 5 p.m. through July 7, 2008, 7 a.m.	Complete Data Migration, PASS goes read-only for the 3 day weekend	DFS is locked into a read-only state. All systems and data remaining in DFS are moved into GPFS. No turning back.	All our dependent systems	No
July-Aug 2008	Decommission DCE/DFS	Shut off existing systems. Repurpose Hardware. Plan for next hardware/power issues.	Hopefully None	No

Questions?

This presentation is available online at:
<http://www.personal.psu.edu/jcd/useful/>

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