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Kerberos On The Web

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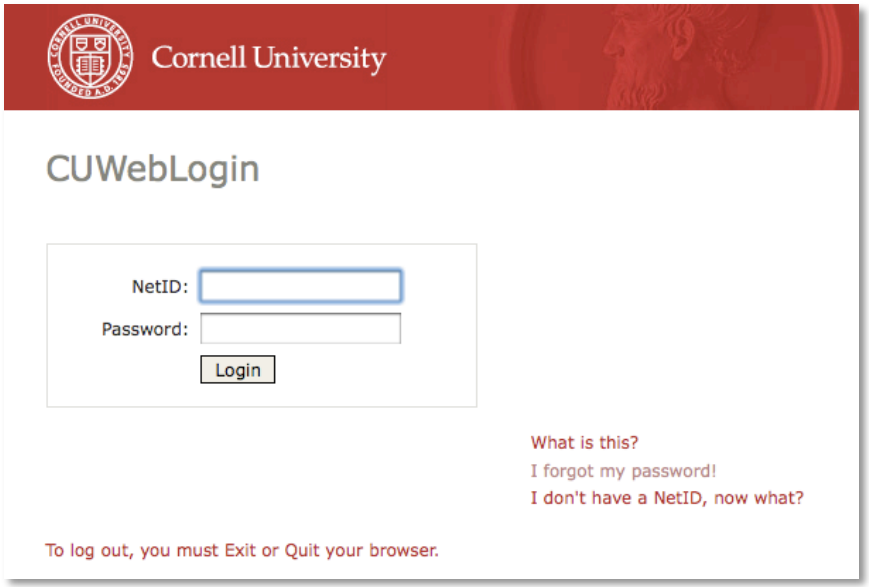
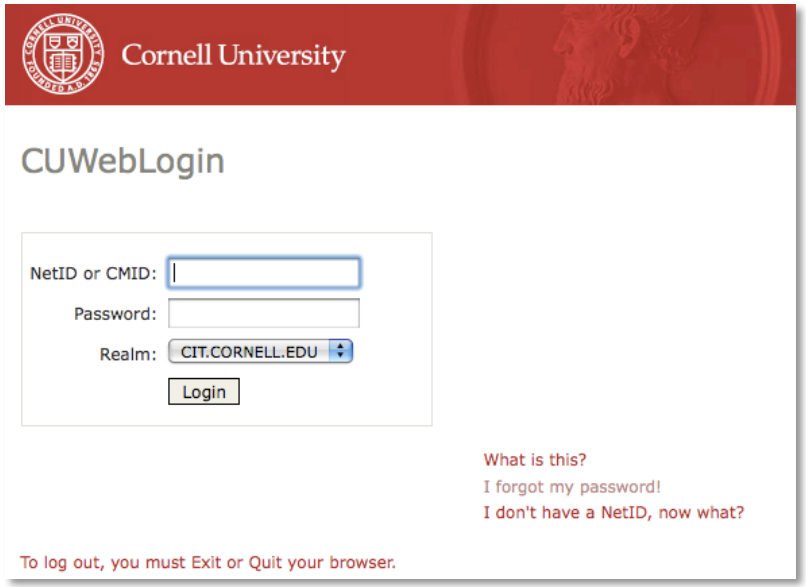
Web Authentication @ CU

- CUWebAuth – Kerberos 5
- 400+ Web Sites Using CUWebAuth
- Heterogeneous – Apache, IIS, Others
- Multiple Kerberos Realms
  - Active Directory
  - MIT KDC
  - Inter-campus Federation
- Shibboleth
- Most Services Use Single-Factor (ID/Password)

CUWebAuth

- Kerberos 5
- N-Tier Delegation
- Fat (Kerberos) Client
- Cross Realm
- Multiple Platforms
- Integrated Authorization





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CUWebAuth – Service Model

- Distributed Implementation & Deployment
- Many Campus Units
- ~200 Site Admins

- Open source – BSD License
  - Departmental development

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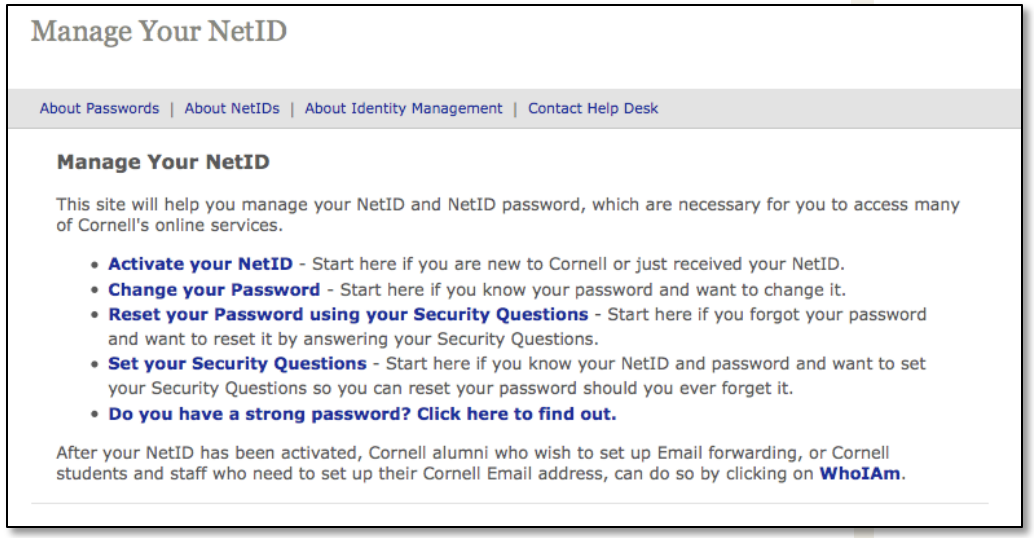
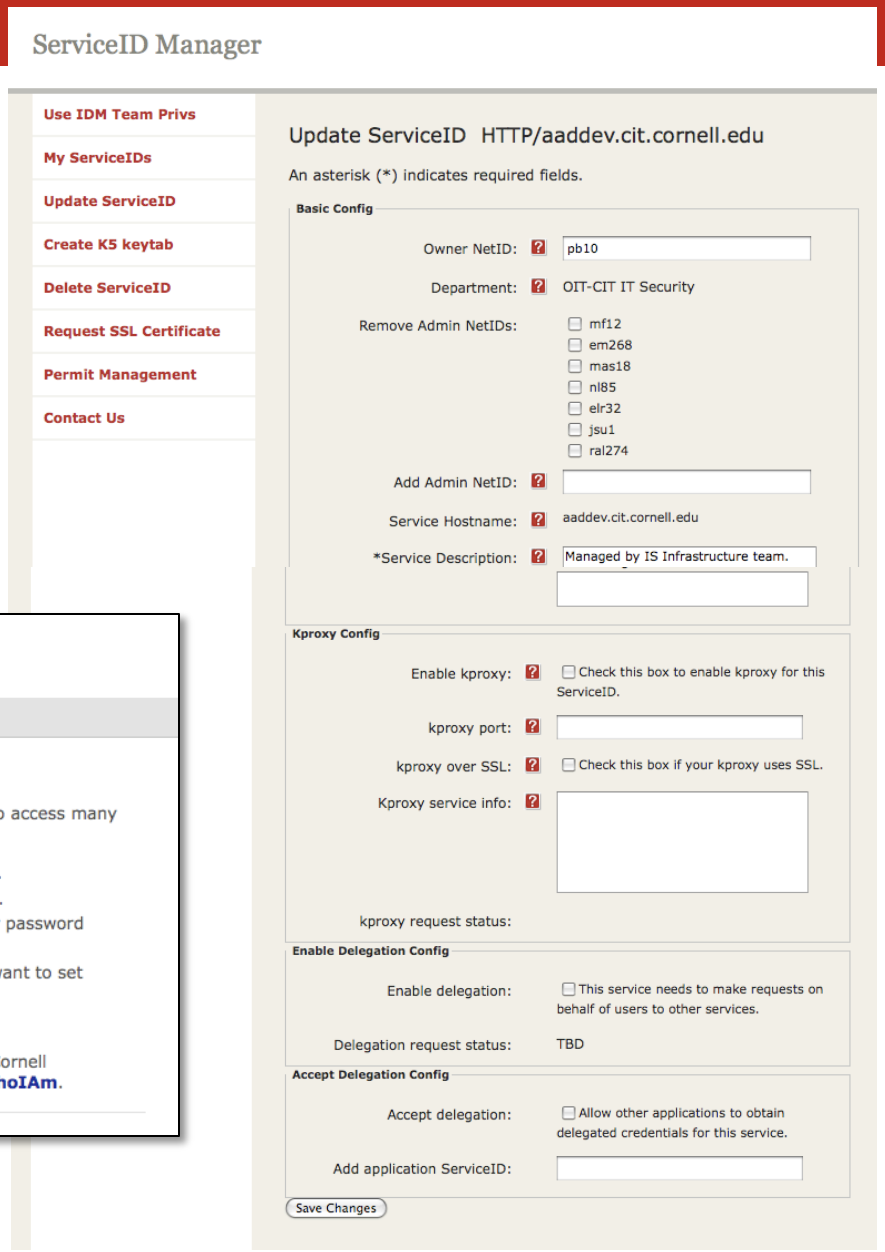
Self-Service

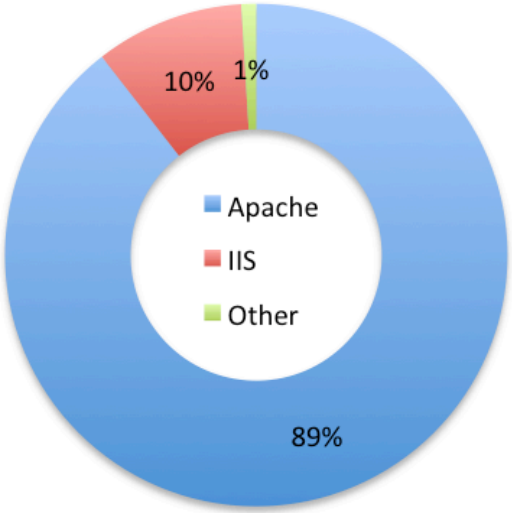
- Users
- Website Administrators

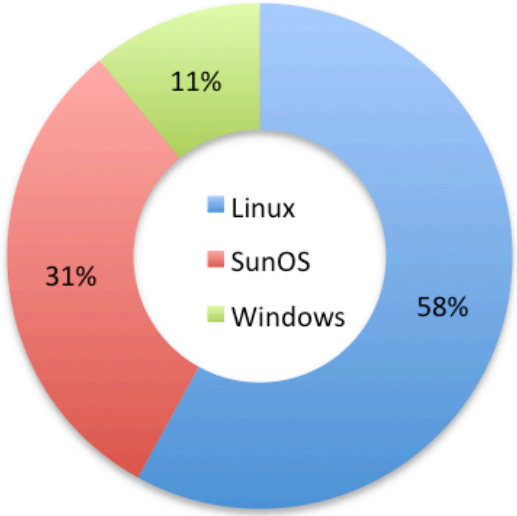




Protected Web Applications

- 400+ Virtual Hosts
- Roughly Half in Shared Hosting
- >1M Logins / Month



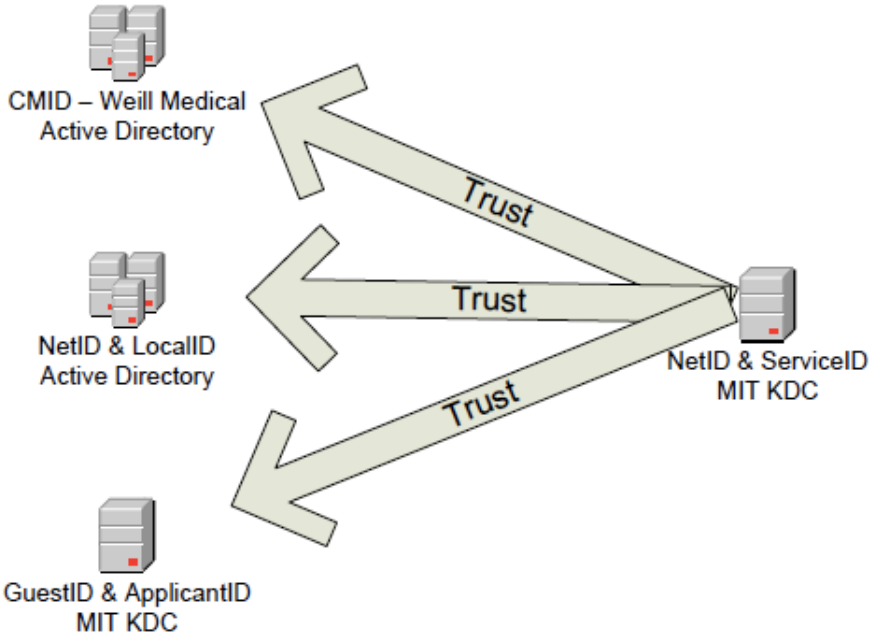


Cross Realm Applications

- Primary Student/Staff/Faculty Accounts
- Exchange
- Distance Learning (Blackboard)
- Applicants
- Medical College

Realms / Domains

- NetID & ServiceID
  - MIT KDC
- NetID & LocalID
  - Active Directory
- GuestID & ApplicantID
  - MIT KDC
- CMID – Weill Medical
  - Active Directory
  - NYC – Qatar



Access Control

```
<Directory c:/Inetpub/wwwroot/Services/Projects>
  AuthName CORNELL
  AuthType all
  require permit cu.employee cu.medical cu.affiliate.cumc
  require netid ar74
  require valid-user@A.WCMC-AD.NET
  CUWAwaK0Realms "CIT.CORNELL.EDU,A.WCMC-AD.NET"
  CUWAwak2Name "NetID or CMID"
</Directory>
```

Federation

- Shibboleth (Single CUWebAuth IdP)
  - InCommon
- Harris Connect (Cornell connect)
- SciQuest (Purchasing)
  - under development
- Videonote.com (online course lectures)
- Library research sites
  - JSTOR & Sciencedirect.com & others
- Illiad (Inter library loan)

Kerberos with WebDAV

- Kproxy
  - Kerberos Proxy Service
  - SSL + Basic Auth
  - Integrated with CUWebAuth
- DAV Portal
  - Integrated with CUWebAuth
  - Establishing a Session is Less User Friendly
- SPNEGO
  - Under development
  - Some DAV client issues

N-Tier Web Applications

- CUWebAuth
  - Kerberos Credentials
- Delegation Constraints
  - Applications must be Authorized
  - WebLogin is Gatekeeper
- Target System Authenticates…
  - User
  - Mid-Tier

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Future

- Improve AD Integration – IIS Impersonation
  - Under development
- Token – Multi-factor
  - Early Planning Stage
- Realms / Domain Consolidation
- Client Certificates
- Simplify our Federation

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More Information

CUWebAuth https://confluence.cornell.edu/display/CUWAL

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