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Moving at the Speed of Change

May 2015

Active Directory Implementation

For PowerBuilder, Appeon Web & Appeon Mobile

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An Actual Implementation Case Study!

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- SourceForge: <http://sourceforge.net/projects/stdfndclass>
- TaeKwonDo: <http://www.syeoh.com>

Single Signon and Application Security!

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- User identification and access rights are managed through the **Active Directory** system within the Microsoft Windows operating system. The auditing tools part of the Active Directory and other similar tools are able to track IT activity performed by various network users.

Mandated use by the GOC!



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- **Active Directory:** Microsoft's modern directory service for Windows, originating from the X.500 directory and supports **LDAP**.
- **Apache Directory Server:** Directory service written in Java, supporting **LDAP**, Kerberos 5 and the Change Password Protocol.
- **eDirectory:** This is NetIQ's implementation of directory services. It supports multiple architectures including Windows, NetWare, Linux and several flavours of Unix. Previously known as *Novell Directory Services*.
- **Red Hat Directory Server:** Red Hat released a directory service, that it acquired from AOL's Netscape Security Solutions unit.
- **Oracle Internet Directory:** (OID) is Oracle Corporation's directory service, which is compatible with **LDAP** version 3.
- **Sun Java System Directory Server:** Sun Microsystems' current directory service offering
- **OpenDS:** An open source directory service implementation from scratch in Java, backed by Sun Microsystems
- **IBM Tivoli Directory Server** It is a customized build of an old release of Open**LDAP**.

Major *Active Directory* Vendors



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- Microsoft provides the *Active Directory Service Interfaces* (ADSI) for developing *client*-side directory service applications. \
- ADSI consists of a directory service model and a set of COM interfaces.
- The *Lightweight Directory Access Protocol* (LDAP) API provides a mechanism for *connecting* to, *searching*, and *modifying* Internet directories. LDAP is a directory service protocol that runs directly over the TCP/IP stack.

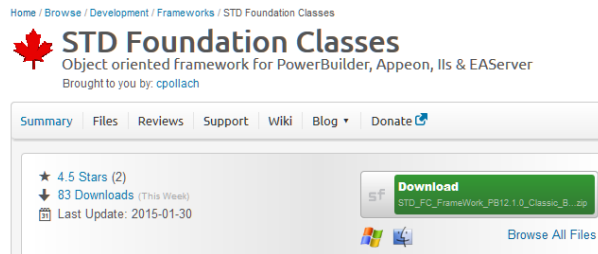
Active Directory API's

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- LDAP/ADSI is **not** supported in PowerBuilder Classic or PB.NET
- LDAP is **partially** supported in Appeon
 - English *only* Appeon interface.
 - Cryptic non-controllable messages.
 - *No* support for *Impersonation*.
 - Can *not* tie a Group/Role to application functionality
 - (ie: menu, button, column, etc ... enable/disable/visible)
- ADSI is **not** supported in Appeon
- LDAP/ADSI **are fully supported** in the Software Tool & Die (STD) Foundation Classes (**free**)!
 - ⇒ <http://sourceforge.net/projects/stdfndclass/>
 - ⇒ Multilingual
 - ⇒ 100% GUI Configurable
 - ⇒ Supports Impersonation
 - ⇒ Fully programmable Group/Role interaction
 - ⇒ Supports PB & Appeon applications
 - ⇒ Etc ...

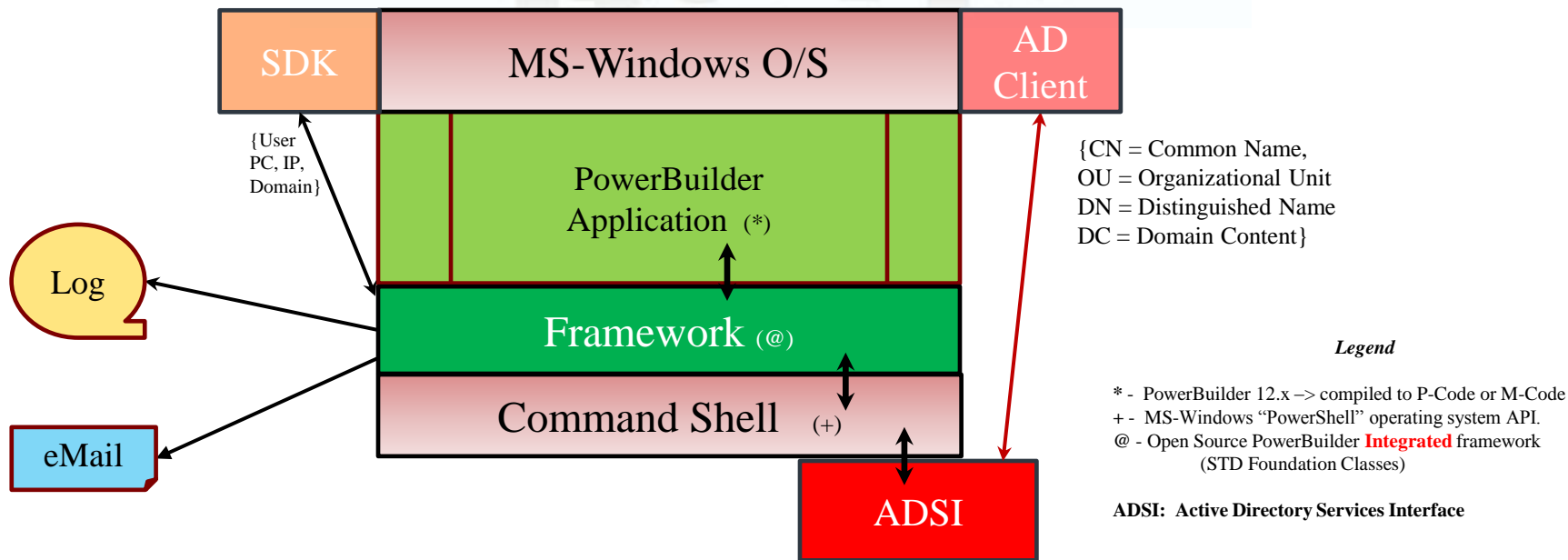


Active Directory Compliance

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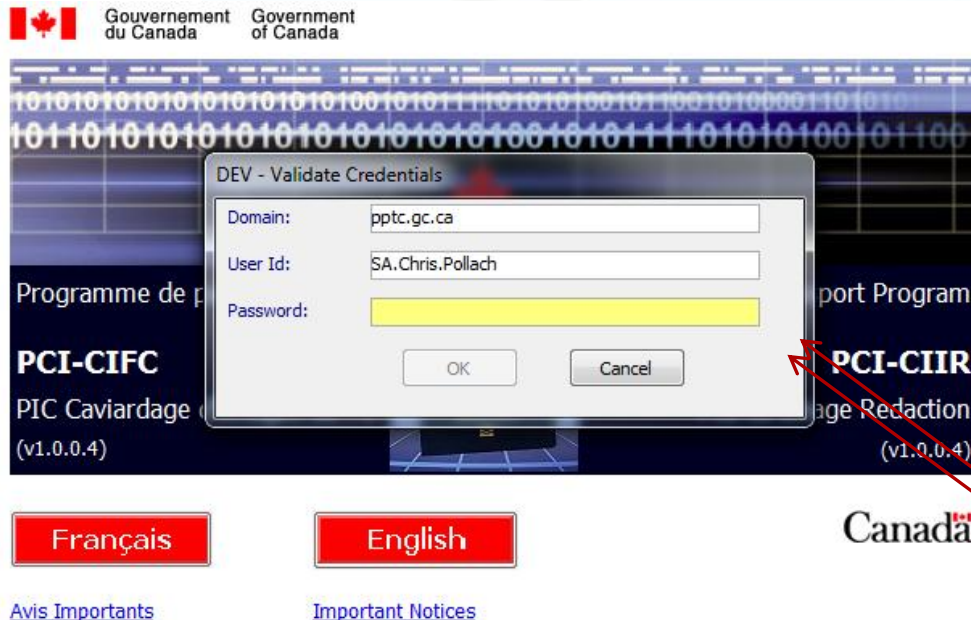


Part A - ADSI Client

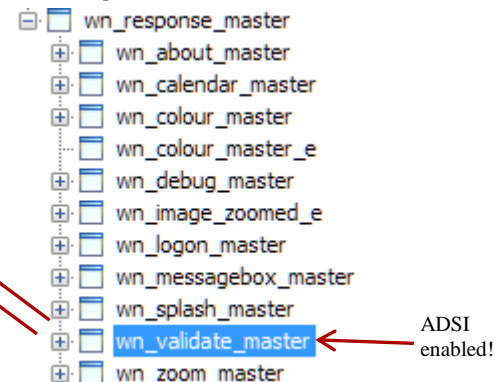
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- Actual Active Directory login web page from the *PCI Human Redaction* web application (built in PowerBuilder 12.5.1 and deployed to Appeon 2013R2)!
- Application was completely built using the *STD Foundation Classes*.

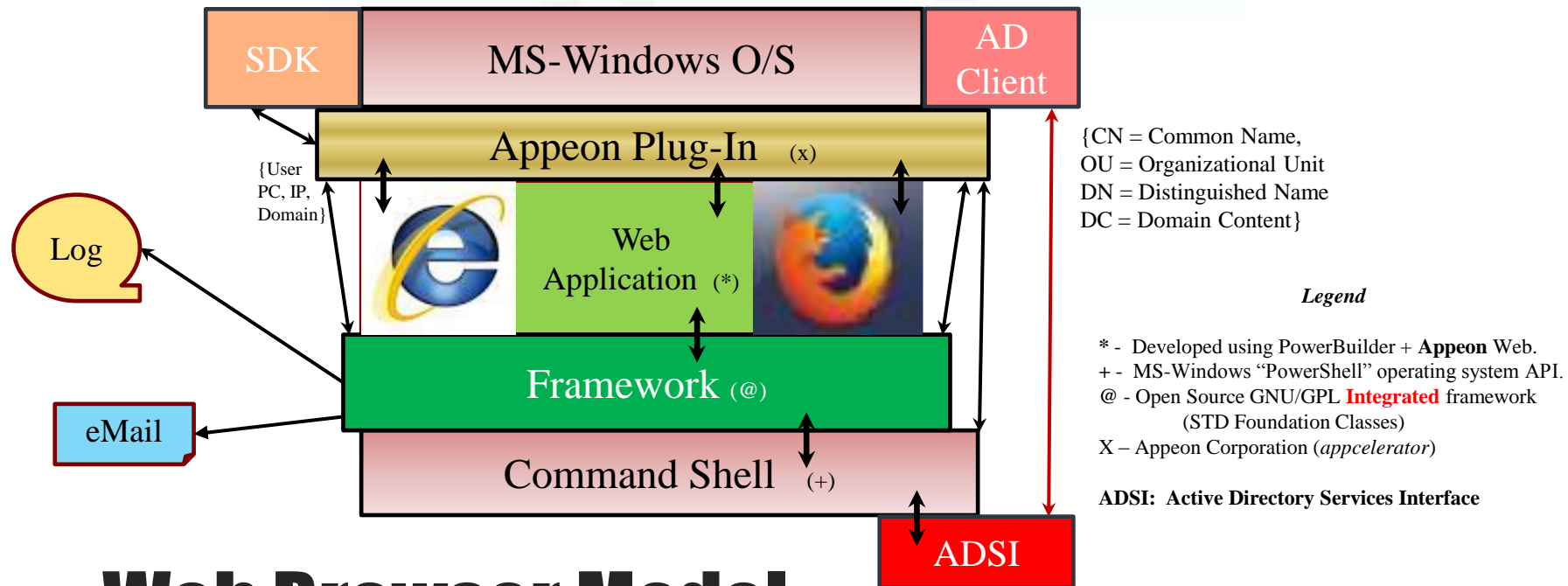


Requirement

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Web Browser Model

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Client: Active Directory information captured by the STD Integrated Framework using ADSI calls.

Server: Web Service brokers validation with actual Active Directory server (STD Web Service Framework using various LDAP calls)

The screenshot displays two windows. The 'Log Viewer' window shows a list of log entries. A red box highlights a section of the log starting with '2015/03/20 07:49:29 - ** START of Active Directory settings **'. Below this, it lists user and computer details for 'CN=SA.Chris.Pollach'. A second red box highlights a later log entry: '2015/03/20 07:49:56 - User pptc.gc.ca/SA.Chris.Pollach was successfully logged into the PCI Human Image Redaction application via Active Directory.' The 'WebService.log - Notepad' window shows the output of a web service call, including 'STD Foundation Classes - web Service Logging started' and a list of validation results for various groups (PCI_ADMIN_GRP, PCI_REPORTS_GRP, PCI_USER_GRP) with 'RC: 1'. A red bracket on the right side of the Notepad window points to the text 'A.D. Privileges'.

```
Log Viewer
File Edit Tools Window Help
Criteria:
Application Log Data
2015/03/20 07:49:29 - => END of User / Machine / Environment settings.
2015/03/20 07:49:29 - ** START of Active Directory settings **
2015/03/20 07:49:29 - User: CN=SA.Chris.Pollach,OU=System Analyst,OU=Software Design and Development,OU=PPBS,OU=Elevated accounts,DC=pptc,DC=gc,DC=ca
2015/03/20 07:49:30 - Computer: CN=DEV678775,OU=Office Automation,OU=Workstations,DC=pptc,DC=gc,DC=ca
2015/03/20 07:49:30 - Domain: pptc.gc.ca
2015/03/20 07:49:30 -
2015/03/20 07:49:30 -
2015/03/20 07:49:30 -
2015/03/20 07:49:30 -
2015/03/20 07:49:30 - Settings,CN=DEVPWDCC
2015/03/20 07:49:30 - Settings,CN=DEVPWDCC
2015/03/20 07:49:30 -
2015/03/20 07:49:31 -
2015/03/20 07:49:31 -
2015/03/20 07:49:31 - D
B.11.31/ase157sp100/3
2015/03/20 07:49:56 - User pptc.gc.ca/SA.Chris.Pollach was successfully logged into the PCI Human Image Redaction application via Active Directory.
2015/03/20 07:49:56 - Window class 'wn_pci_login_validate' opened with Return Code: '1' - by function: 'fn_open_window'.
2015/03/20 07:49:57 - Security set for PCI_ADMIN_GRP - RC: 1
2015/03/20 07:49:57 - Security set for PCI_REPORTS_GRP - RC: 1
2015/03/20 07:49:57 - Security set for PCI_USER_GRP - RC: 1
2015/03/20 07:49:57 - Window class 'wn_images_webpage' opened with Return Code: '1' - by function: 'fn_open_window'.

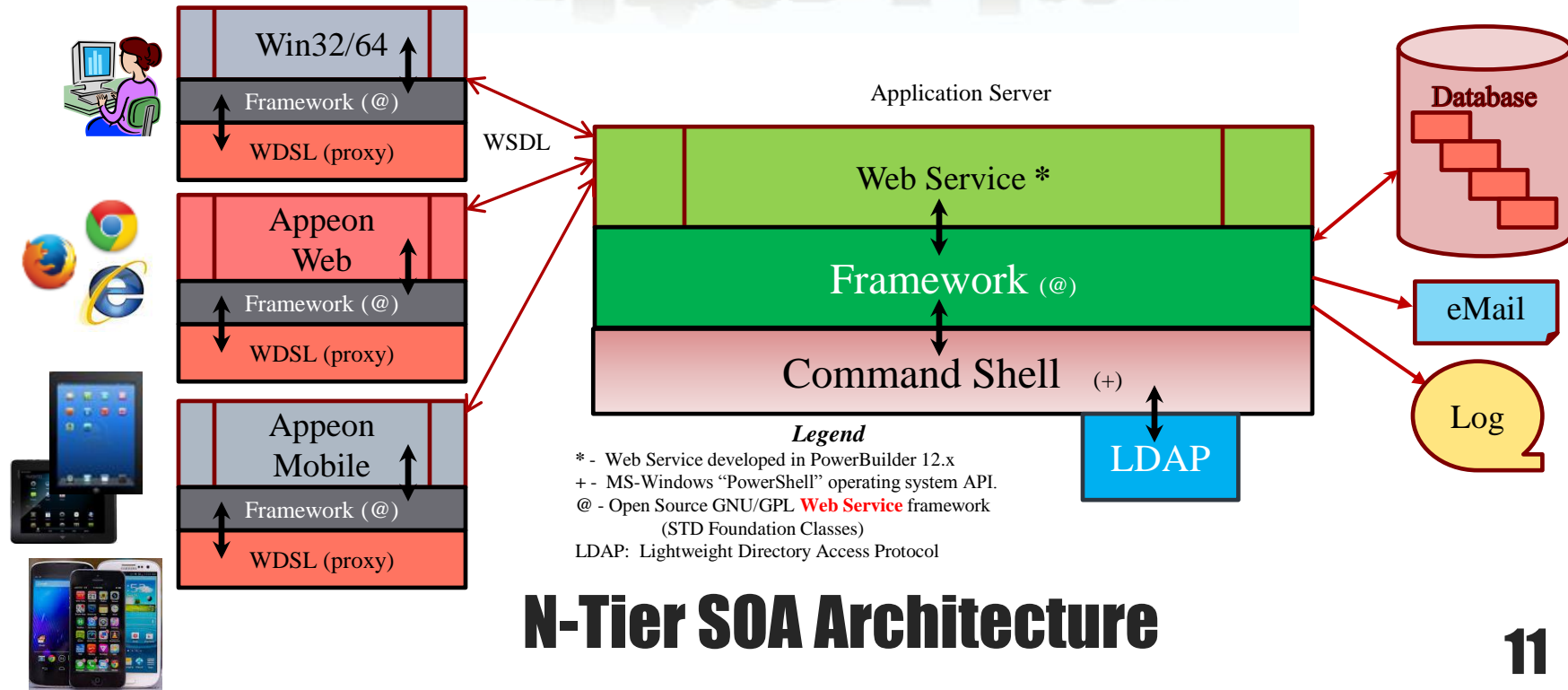
WebService.log - Notepad
File Edit Format View Help
***** STD Foundation Classes - web Service Logging started *****
STD Foundation Classes version 2.3.0.32 was released on 2015-01-29 and
Logging was started based on instantiating interface object class - nar
2015/03/20 08:05:58 - Validation for USER: SA.Chris.Pollach - RC: 1
2015/03/20 08:05:58 - Validation for GROUP: PCI_ADMIN_GRP - RC: 1
2015/03/20 08:05:58 - Validation for GROUP: PCI_REPORTS_GRP - RC: 1
2015/03/20 08:05:58 - Validation for GROUP: PCI_USER_GRP - RC: 1
A.D. Privileges
```

ADSI

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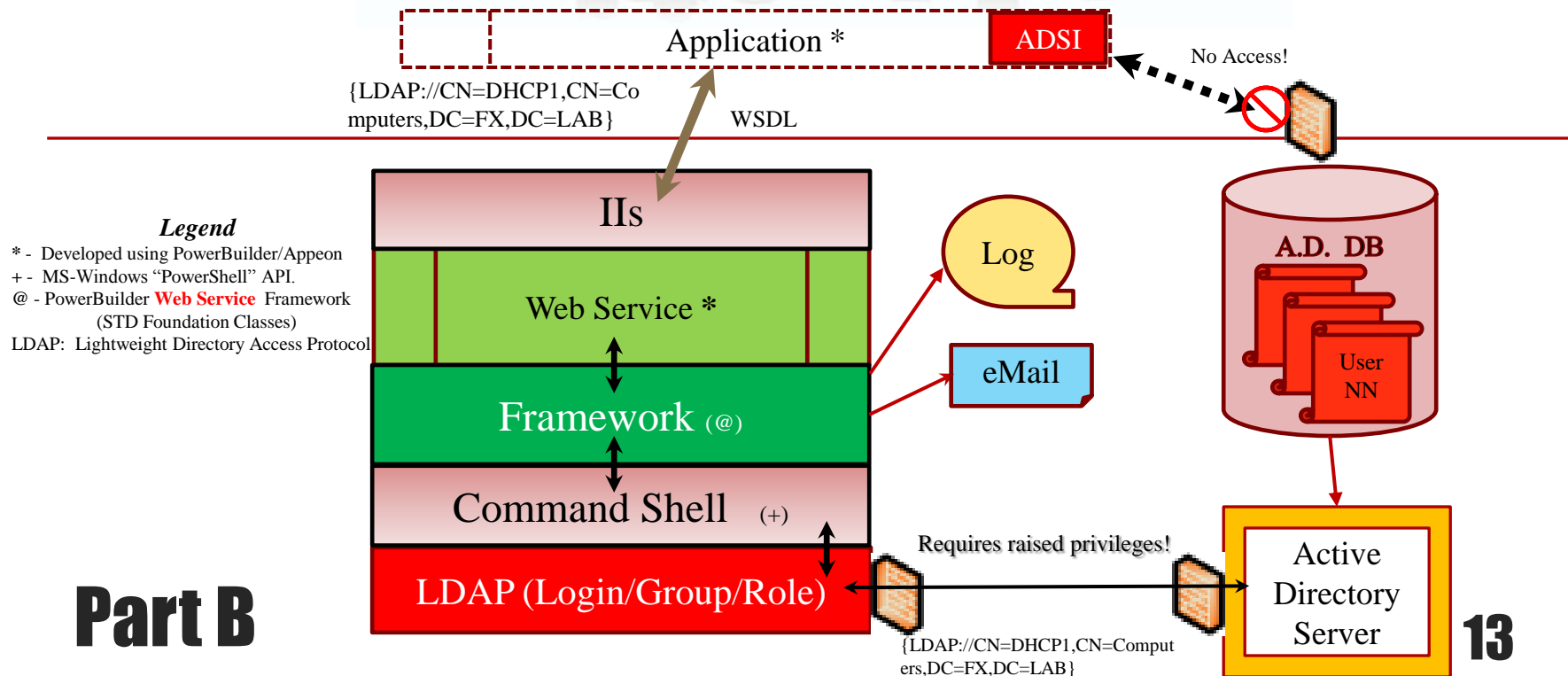
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Part B

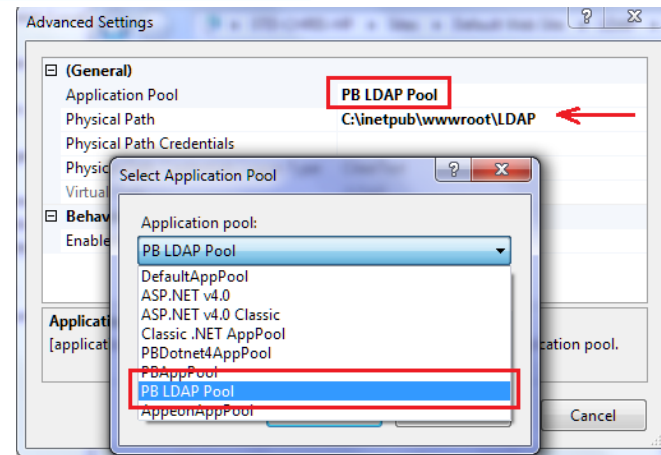
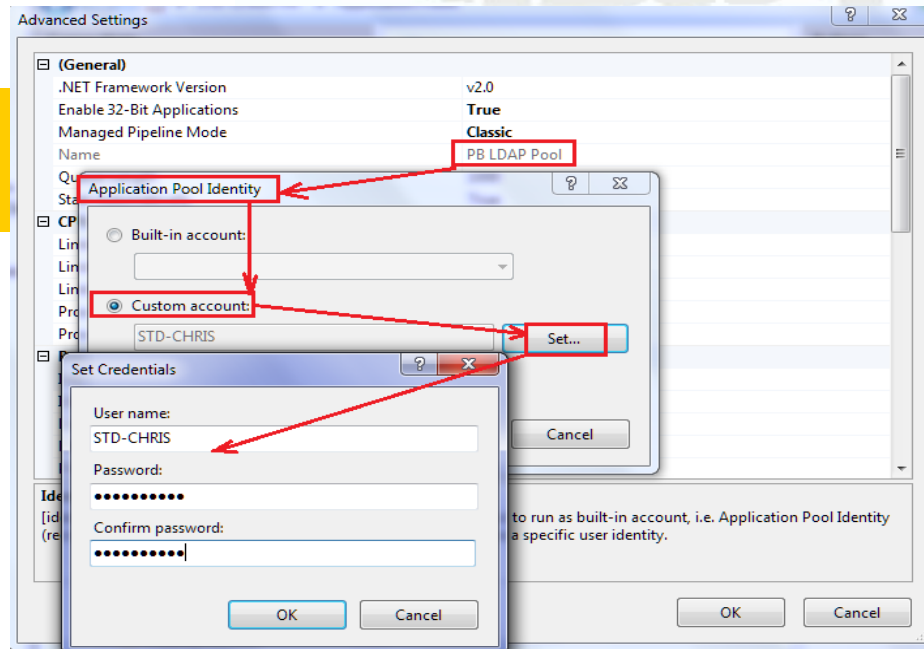
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Step#1 – Create Application Pool & assign Active Directory account



Step#2 – Assign Application Pool to Web Service (appears as an IIS Application)

Raised Privileges – IIS Manager

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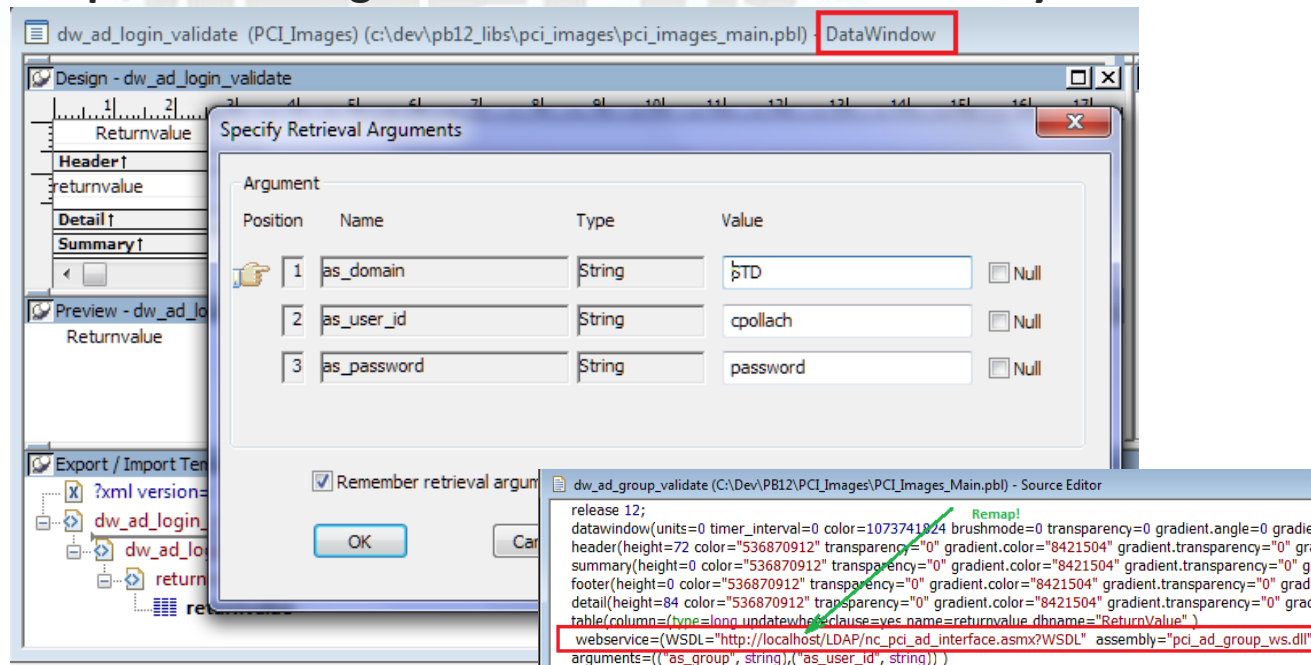
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Use PB Script to code
Web Service
interaction

- Or -

Use a *Web Service*
DataWindow!



Making it work

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Use Appeon's *Application Enterprise Manager* to remap the DW's WSDL URL for the various environments (Dev, QA, SI, Prod)!

The screenshot shows the Appeon Enterprise Manager console with the following configuration:

- Navigation:** Welcome > Application > PB Features > Web Service DataWindow > [dw_ad_group_validate]
- Left Panel (AEM Console):**
 - Local Database
 - PB Features
 - Registry Mode
 - INI Files
 - DLL/OCX Files
 - Decimal Precision
 - Web Service DataWindow
 - Web Browser
 - Client Features
 - Data Transfer
 - Performance
 - Client Security
 - Mobile UI Resizing
- Main Panel:**
 - Web Service URL:** You are allowed to specify the web service URL of each method in dataobject.
 - Actions:** Update
 - Method Name:** of_validate_group
 - Web Service URL:** http://dewwir01_LDAP/nc_pci_ad_interface.asmx?WSI
 - Replace LOCALHOST:** (Green text)

Diagram on the right:

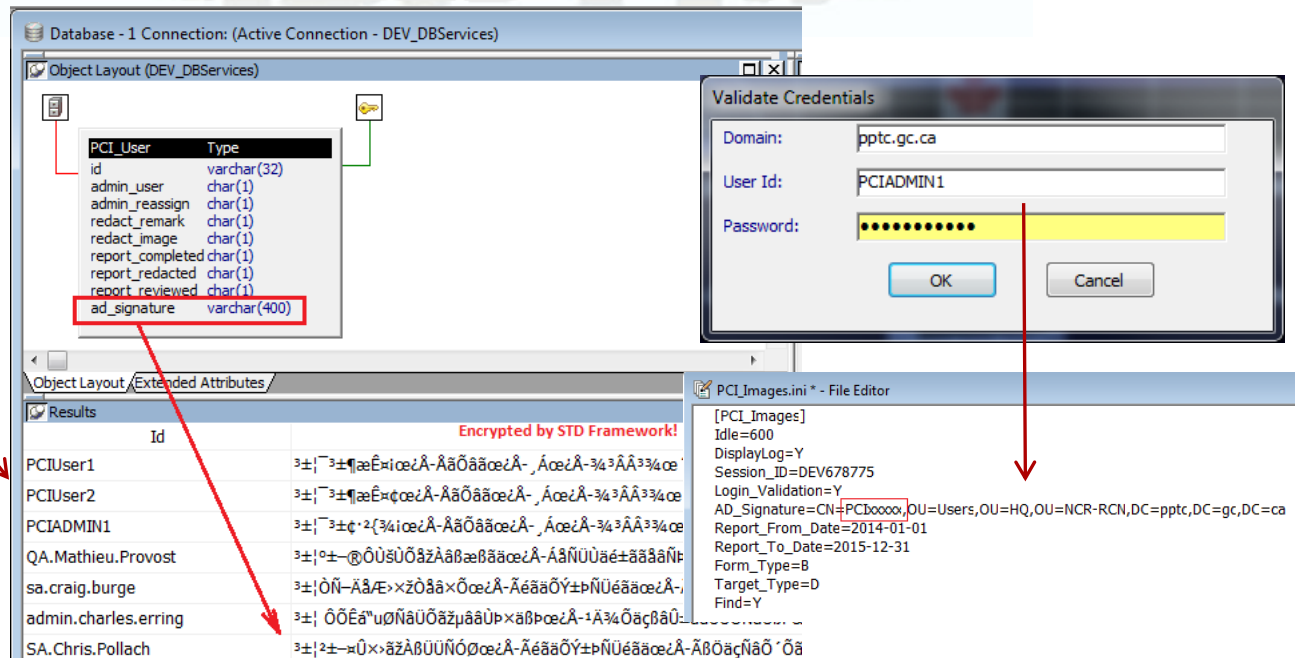
- Application Server:** DataWindows, Embedded SQL, PB WVO, Other Web Services, Data Access, Transaction Management, Session Management, Security.
- Appeon Server Framework:** Application Server (INET/IS, EAServer, WebLogic, WebSphere, JBoss).
- IIS Application Server:** C# .Net Web Service, LDAP (Login & Group), PBVM Required!

Appeon Web & Mobile

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- Q.A. Testing
- Support Personnel
- Employee Vacation
- Manager Over-Ride



Impersonation

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AD Tool Kit => (Integrated Framework) + (Web Service Framework) + LDAP

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STD Foundation Classes

Object oriented framework for PowerBuilder, Appoon, IIS & EAServer

Brought to you by: cpollach

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★ 4.5 Stars (2)

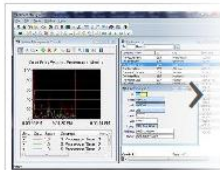
↓ 23 Downloads (This Week)

📅 Last Update: 2015-01-30

Download
STD_FC_FrameWork_PB12.1.0_Classic_B...zip



[Browse All Files](#)



STD Foundation Classes

New 2015 ... LDAP =>

A **Plug & Play** Active Directory PowerBuilder Web Service. Just Deploy it – its ready to go!

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Questions?



Q&A Session

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Obrigado!

Gracias

Grazie

THANK YOU

Merci

Vielen Dank

Köszönettel

Have you hugged your DataWindow today?