

ETHOS Powers the **Ellucian® Connector™** for Lab Computer Access from Anywhere with the VMware® Digital Backpack™

ellucian
LIVE
2019

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Vice President and Chief Information Officer,
Schoolcraft College

SESSION ID: EL252784

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Schoolcraft College

- **Main campus is located in Livonia Michigan**
 - Two satellite sites:
 - Radcliff Center in Garden City
 - Public Safety Training Center in Livonia
- **2 Year College**
- **31,183 Traditional and Non-Traditional Enrollment**
(Source: 2016-2017 Year End Program Enrollment Report and Non-Program Enrollment Report)
- **1 Bachelor Degree Program, 44 Associate Degree Programs and 61 Certificates**
- **Ellucian® Colleague™ customer for over 34years**





We Enable Work!

Strategy:

Position technology as an enabler
and revenue generator, not a barrier

Schoolcraft College Information Technology Strategy

**We do not deploy successful
technology,**

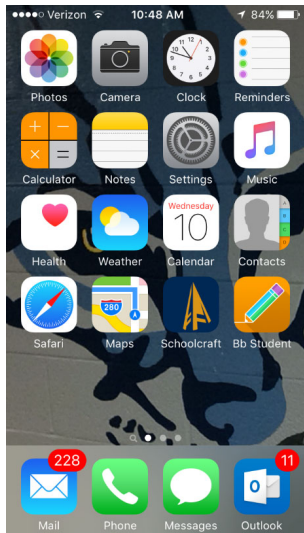
We deploy

Successful Users!

From 9/22/2014 Board Meeting Presentation: *Definition of Primary Client's Expectations – Students*

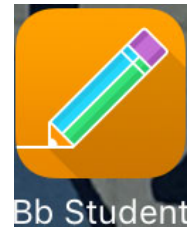


Digital Warrior



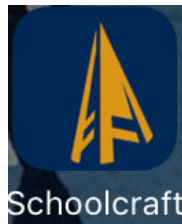
- Immersive Multimedia:

- Smartphones, Tablets, Texting, Facebook, Twitter, Instagram, Reddit, FaceTime, Video, PayPal, Virtual Escort, Campus Maps, Schedules; etc.



- Instant Access from Anywhere:

- Registration from Smartphone, WIFI Blackboard access, Portal with "always relevant content", Class notifications, Grades, Class schedules, Campus Events, Parking Availability, etc.



Where Might You Begin?

Modernize and mobilize learning environments

Improve The Campus Computing Experience

Enhance security and privacy

Improve efficiencies and reduce costs

From 9/22/2014 Board Meeting Presentation: Virtual Desktop – Bad Weather Access to Labs

Any App,
On Any Device,
From
ANYWHERE!!!



**Ethos™ Powered
Digital Backpack™**



LIVE

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Applications Requiring Special / High Performance Computing

The Challenges of Virtual Desktop Computing in Higher Ed



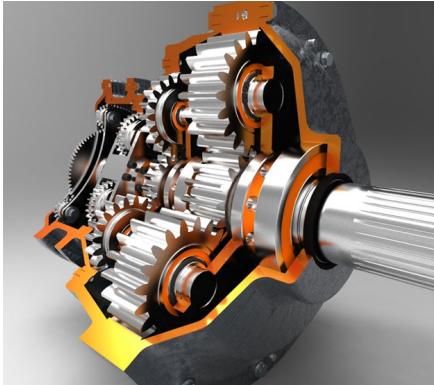
Projector



Document Camera

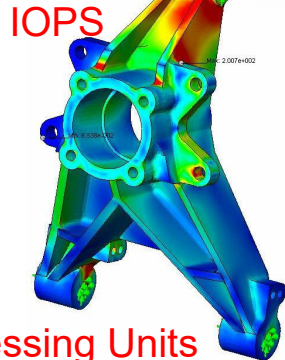


DVD Player

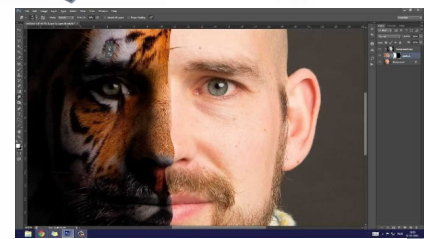


Computer Aided Design

Finite Element Analysis



IOPS



Computer Graphics Technology



Mechatronics



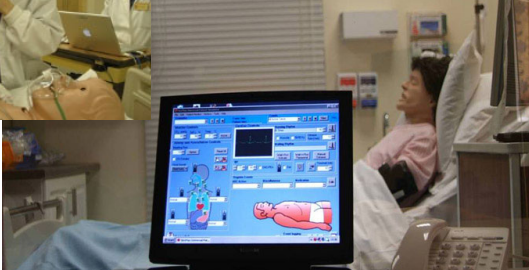
Electron Microscope

GPUs – Graphics Processing Units



Emergency Room Operations

Nursing



Special Interfaces, Drivers, etc.



Welding and Manufacturing

Machine Interfaces



Explosion of Platforms when heavy lifting is in the Data Center



Invitation Only: 15 Higher Ed Schools Only 3 customer presenters

Schoolcraft College VSI & VDI IT Infrastructure Overhaul

2016 VMware® CIO Symposium for Higher Education

- Patrick R. Turner, CIO, Schoolcraft College, Livonia, Michigan
- 3401 Hillview Avenue, Palo Alto
- Building A - Sequoia Room

**Attendees included: Stanford,
Carnegie Mellon, UC Berkley...**



THE TYPICAL OPPORTUNITY

STUDENT
INFORMATION
SYSTEM

Typical Lab login today is User 1 - 24

We now need:

Student IDs – specific credentials

Course IDs – Changes hourly...

The Virtual Desktop must

follow the student to

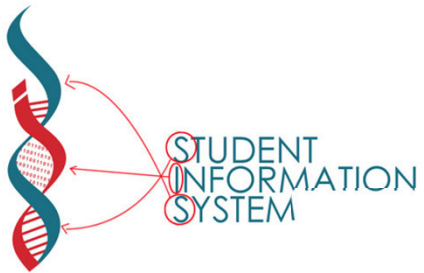
wherever they are working

and be available on their

platform of choice

Digital Backpack™
Delivers!





Student & Course IDs



VMware Ellucian Connector



A Student Digital Backpack
on any device

Digital Backpack Overview

What is it?

- Automation of application entitlement to students based on course enrollment

How'd it start?

- Schoolcraft College developed a solution to map courses to AD groups, but needed help from Ellucian and VMware to enable the API's on each end to automate the data flow and seamlessly translate student course enrollment to application access

What's Needed?

➤ Ellucian

- ❖ Ethos – Ellucian's new unified data platform layer that delivers data in a consistent format for added functionality within Ellucian's products and easier integration with third party solutions

➤ VMware

- ❖ VMware Enterprise System Connector (aka WS1 connector) – Windows server
- ❖ Ellucian Connector – Linux server
- ❖ Optional – Postgres DB, UAG & TrueSSO
- ❖ Horizon – Necessary if they want to publish desktops/legacy apps

The Solution Design

How It Works

Ellucian student ID is synchronized with an AD account (or creates one, if it doesn't exist).



Ellucian course ID is synchronized and creates an AD group



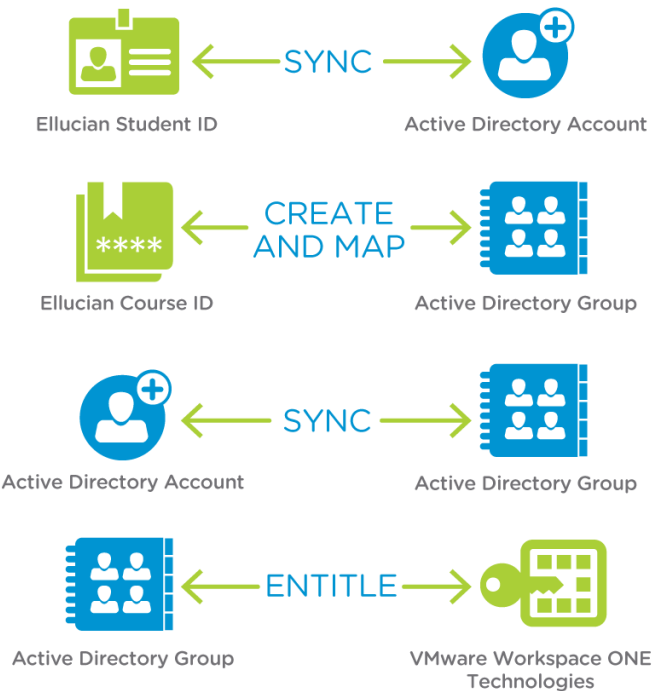
The Connector maps student accounts with class groups in AD



IT administrators entitle resources once based on those AD groups.



HIGH-LEVEL OVERVIEW



Course Connection to AD Group

vmware ellucian

Enter search text...

AD Groups System Events

Active Directory Groups

Create Ad Group

AD Group Distinguished Name:

Please enter Active Directory name...

Name is required!

Group Description:

Please enter Active Directory description...

Move Courses between Left List and Right List.
Left List consists of all available Courses and Right List consists only of the currently assigned ones.

Filter courses...

- German & Swiss Cuisine
- A Mexican Style Breakfast: Hands-or
- Women in Education: Vision, Volition
- SPC User's Workshop
- Mass Media & Popular Culture
- Chemical Investigations II
- "Super" Step Aerobics
- Document Merge Basics
- Gas Metallic Arc Welding (GMAW/MIG)

Add

Remove

Cancel Create

The Ethos Process

Ethos involves data mapping only for what is needed

- **Tell Ethos where data lives and what it means to Schoolcraft**
 - Which Colleague “**fields**” map to which Ethos “**fields**”?
 - Which **screens** are associated with which **data**?
 - Which **emails** are preferred?
 - What is the cellphone type: **c**, **ce**, or **cell**?



What Data Goes Into Ethos?

Courses

- Active Courses

Sections

- Start or End is Today

Section Registration

- Section
- Section Registrations

Instructional Events

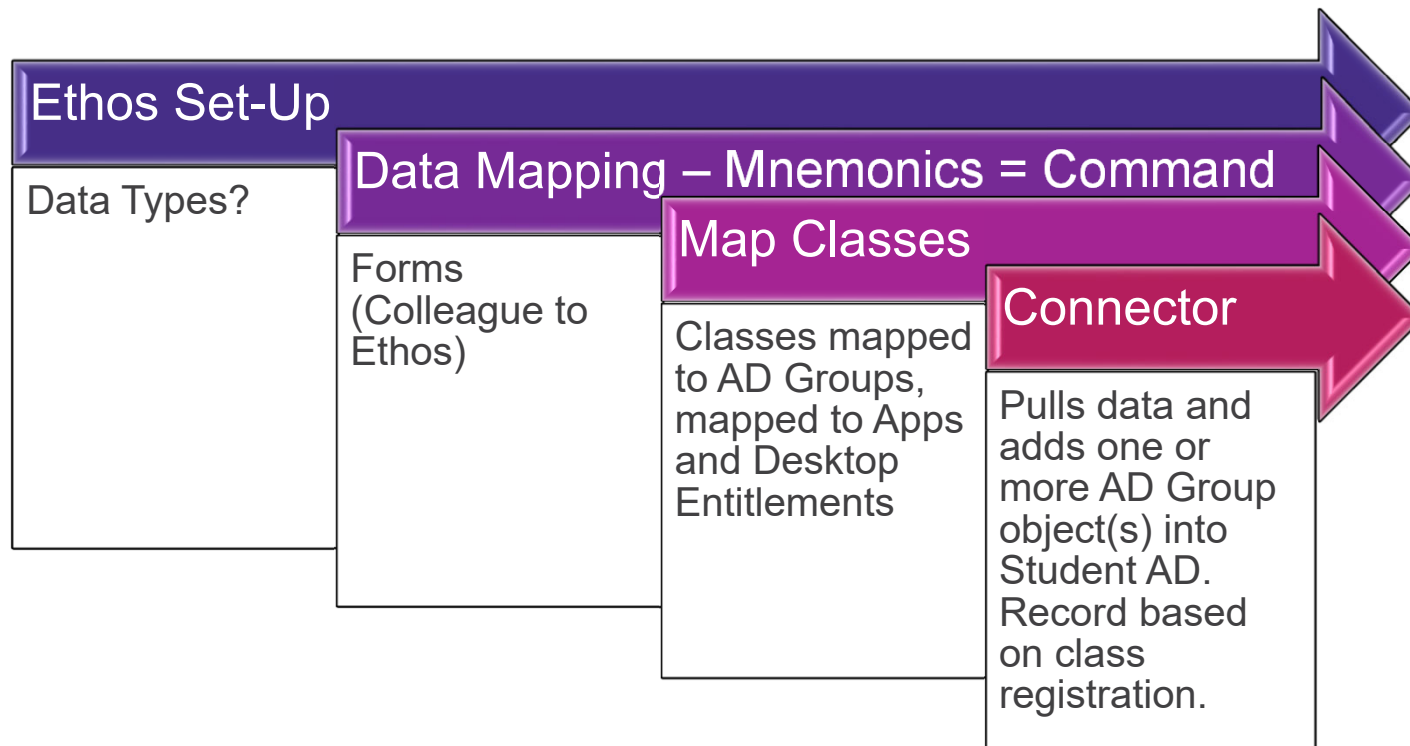
- Instructors

Person Credentials

- Full User Name
- User ID (e.g. "p0770896")

Persons

Process Continued



Schoolcraft Colleague

Mapping is done via CDIP (Colleague Integration Parameters)

Example when detailing down into “Demographic Data”

The screenshot shows the 'CDIP: Colleague Integration Parameters' configuration page in the Schoolcraft Colleague system. The page title is 'CDIP • CDHP - Demographic Data Integration Parameters'. The configuration includes several sections:

- Person Match Criteria:** A text input field containing 'INTG.PERSON'.
- Address Match Criteria:** A text input field containing 'INTG.ADDRESS'.
- Email Types:** A checkbox labeled 'X' with a clipboard icon.
- Address Types:** A checkbox labeled 'X' with a clipboard icon.
- Social Media Types:** A checkbox labeled 'X' with a clipboard icon.
- Phone Types:** A checkbox labeled 'X' with a clipboard icon.
- Relation Types:** An unchecked checkbox with a clipboard icon.
- Visa Types:** A checkbox labeled 'X' with a clipboard icon.
- Restrictions:** A checkbox labeled 'X' with a clipboard icon.
- Veteran Statuses:** A checkbox labeled 'X' with a clipboard icon.
- Guardian Relation Types:** A dropdown menu with '1' selected and 'GU Guardian' displayed.
- Default Privacy Code:** A dropdown menu with 'A Don't release address' selected.

Schoolcraft Colleague

The screenshot shows the Schoolcraft COLLEAGUE web application interface. The top navigation bar is green and contains the text 'SchoolcraftCOLLEAGUE', a user profile icon, a search bar with 'CDIP: Colleague Integration Para' and a search icon, a 'Navigate' button, a 'Log Out' button, and a settings gear icon. Below the navigation bar is a grey header area with a star icon, a question mark icon, and a dropdown arrow. The main content area has a breadcrumb trail: 'CDIP • CDHP • VALI - Validation Table Integration Mapping'. To the right of the breadcrumb are buttons for 'Save', 'Save All', 'Cancel', and 'Cancel All'. Below the breadcrumb is a pagination bar showing '1 of 1' and 'Code to Data Model Value' with 'Value 1/10'. The main table is titled 'Validation Table Nam : PHONE.TYPES' and has two columns: 'Colleague Code' and 'Data Model Value'. The table contains 14 rows, with the first 10 rows having yellow highlighted cells in the 'Colleague Code' column. The first row is selected, showing 'BUS Business' in the 'Colleague Code' column and 'business' in the 'Data Model Value' column.

Colleague Code	Data Model Value
1 BUS Business	business
2 CELL Cell Phone	mobile
3 FAX Fax Number	fax
4 HOME Home Phone	home
5 DAY Day Phone	mobile
6 EVE Evening Phone	home
7 EMER Emergency Phone Contact	parent
8 PAGE Pager Number	other
9 ALT Alternate Phone	other
10 WORK Work	business
11	
12	
13	
14	

You can see things like phone and email address mappings are pretty straightforward.

Schoolcraft Colleague

SchoolcraftCOLLEAGUE

CDIP: Colleague Integration Para

Navigate

Log Out

No Active Context. Search for People or open Favorites to get started

CDIP • CDHP • VALI - Validation Table Integration Mapping

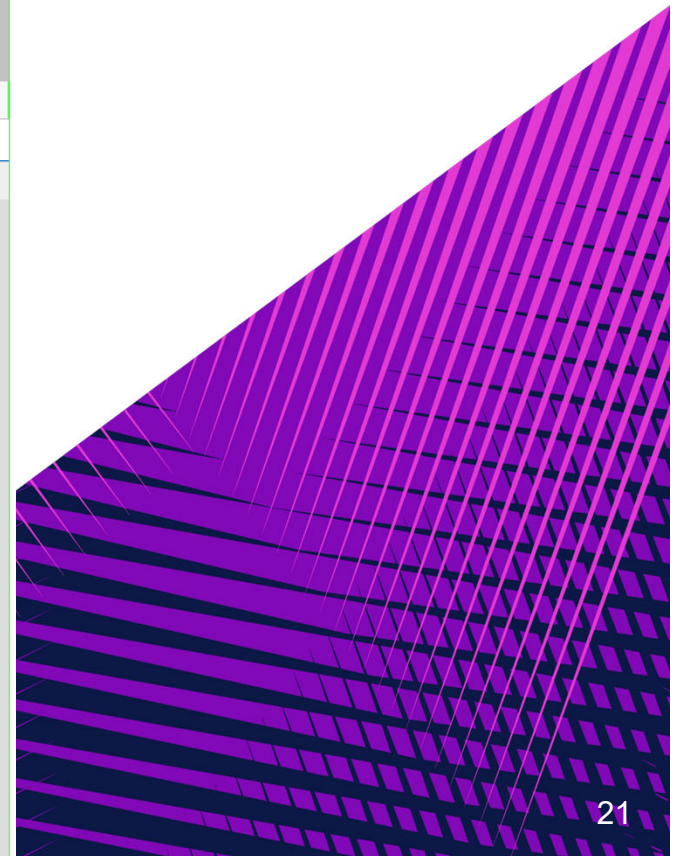
Save Save All Cancel Cancel All

1 of 1 Code to Data Model Value Value 1/8

Validation Table Nam : PERSON.EMAILTYPES

Colleague Code	Data Model Value
1 LO Local	personal
2 INT Internet	personal
3 WWW World Wide Web	personal
4 EDI Elect Data Interchange	personal
5 SCC Schoolcraft Email	school
6 FIN Financial Aid - FAFSA	school
7 DD Direct Deposit	hr
8 GGL Google email	personal
9	
10	
11	
12	
13	
14	

Phone and Email Mappings



Schoolcraft Colleague

Schoolcraft COLLEAGUE

CDIP: Colleague Integration Para

No Active Context. Search for People or open Favorites to get started

CDIP • CDHP • DUPC - Duplicate Match Criteria

Duplicate Criteria Name: INTG.ADDRESS

Description: Integration Address Matching

Intermediate File: INTER.BIODEMO

Colleague File: ADDRESS

Field/Subroutine	Weight	Penalty	Compare to Field
1 IBIO.ADDRESS.LINES	20	20	ADDRESS.LINES
S.COMPARE.ADR.ADR.LINES			
2 IBIO.CITY	10	10	CITY
S.COMPARE.ADR.CITY			
3 IBIO.STATE	15	15	STATE
S.COMPARE.ADR.STATE			

Limiting Field/Subroutine: IBIO.PERSON.ID

Limiting Compare to Field: RESIDENTS

S.LIMIT.PERSON.ADDR.DUPLICATES

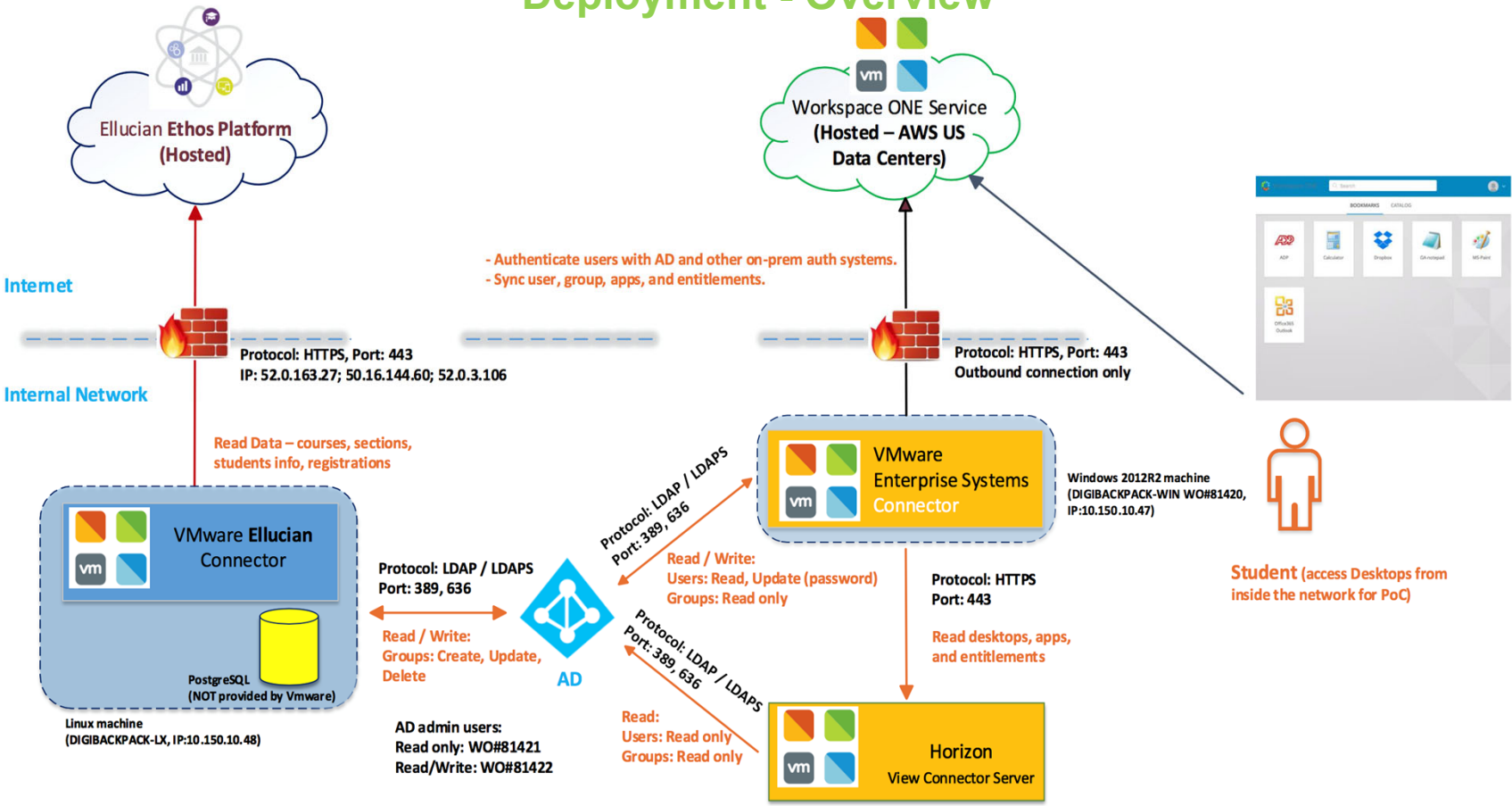
Dupl Rating: 50

Poss Dupl Rating: 36

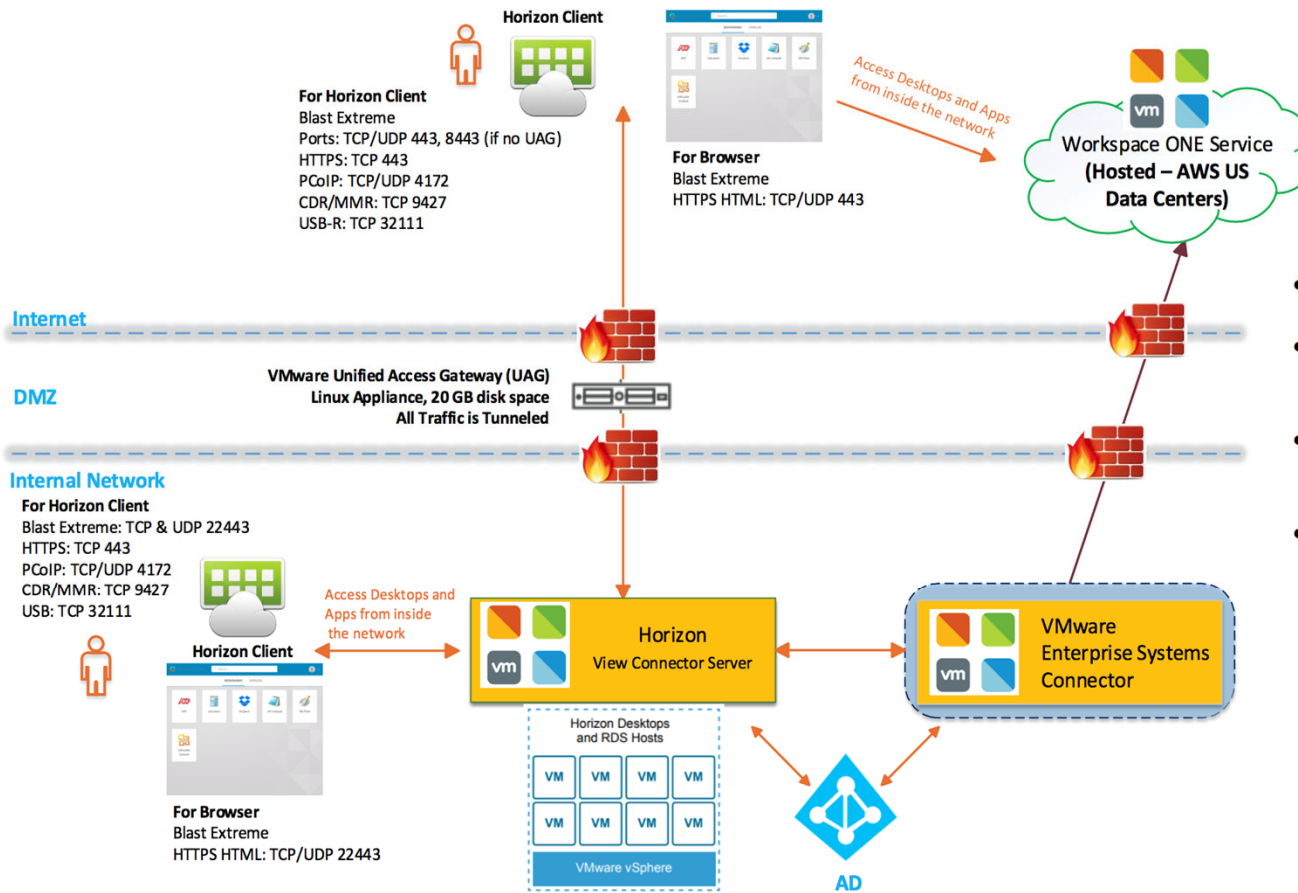
Comments: 1

Some mappings are a little more complex

Deployment - Overview



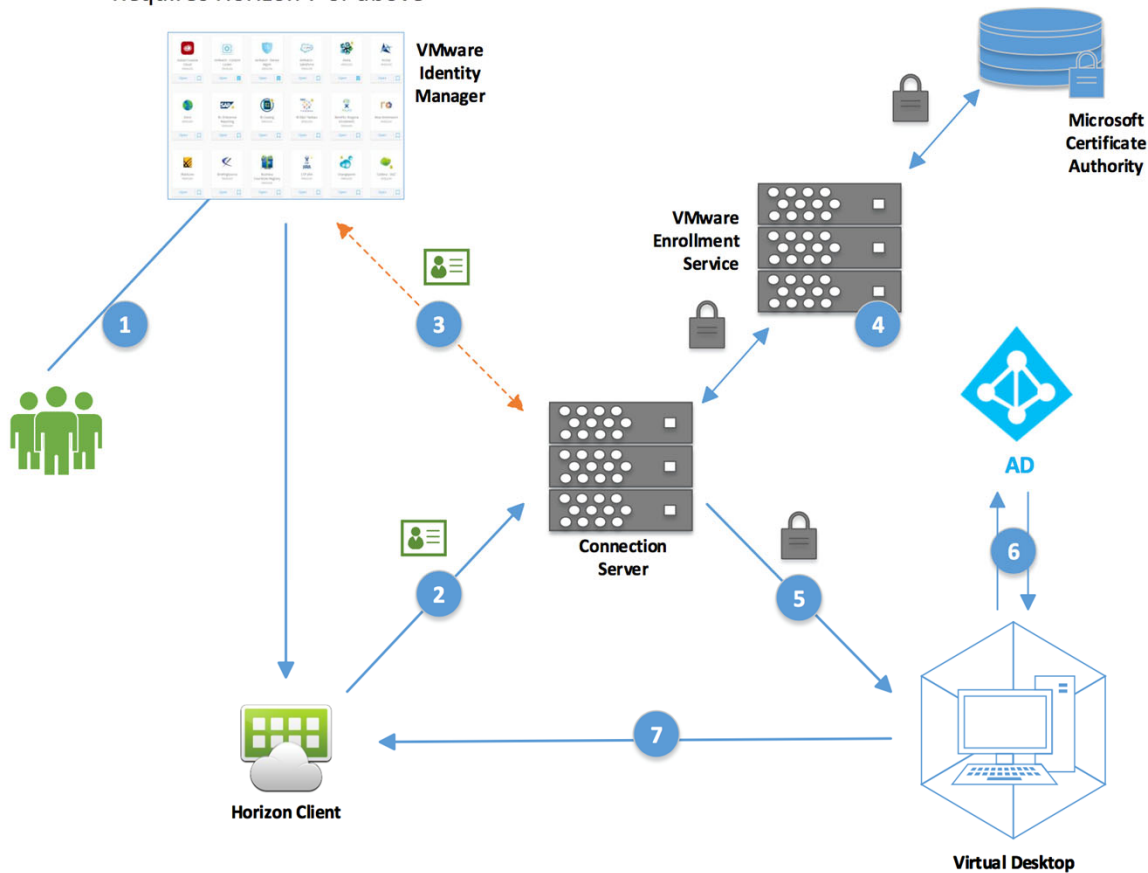
Horizon Apps & Desktop



- User logs in to Workspace portal
- Workspace retrieves Horizon entitlements from on premise Connector
- Workspace Connector syncs entitlements via SAML connection to Horizon Connection Server
- When user launches a Horizon resource via Workspace, the connection request is sent to the Horizon Client or Browser and follows normal Horizon connection sequence

Horizon Apps & Desktop: True SSO

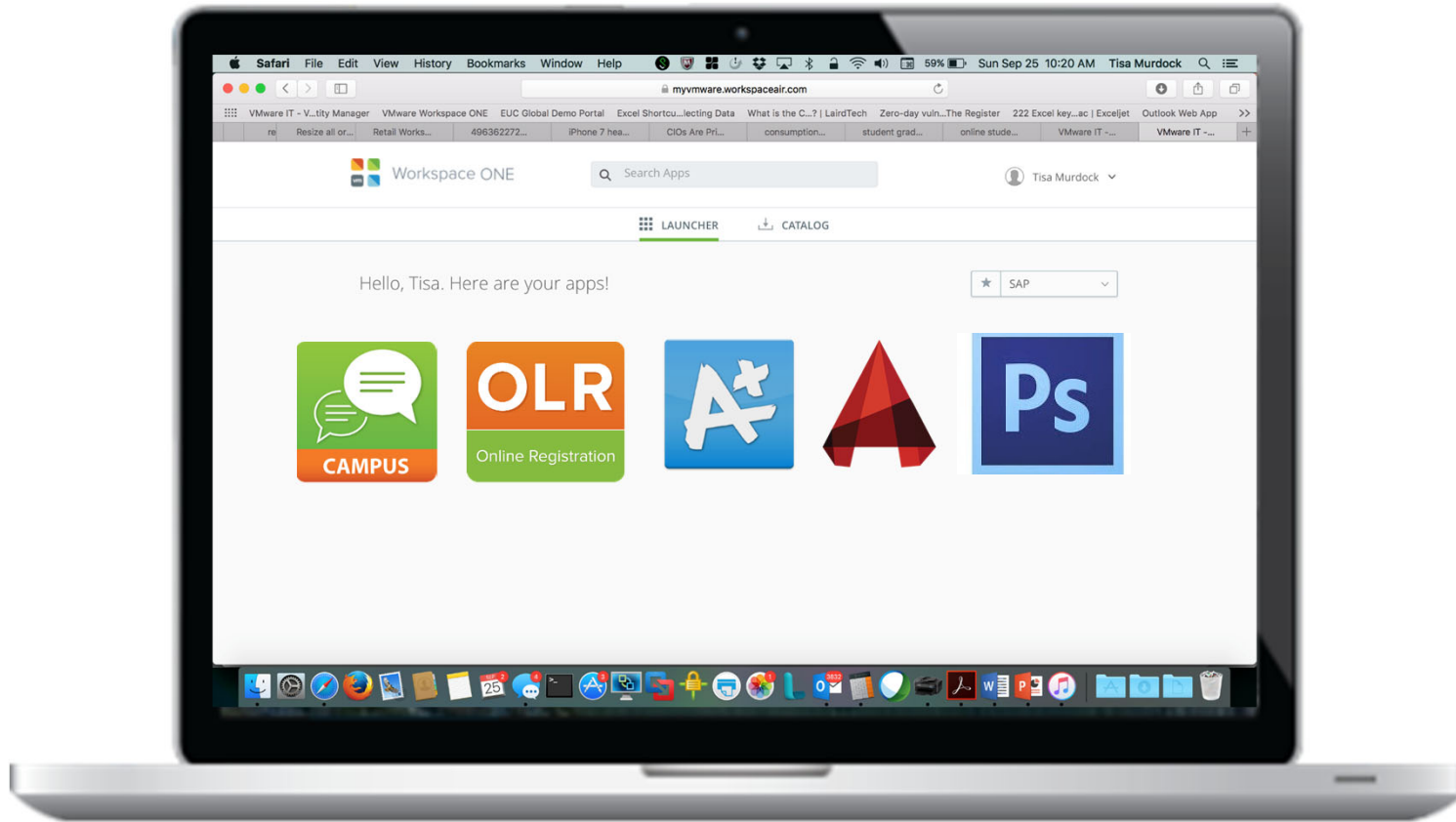
Requires Horizon 7 or above



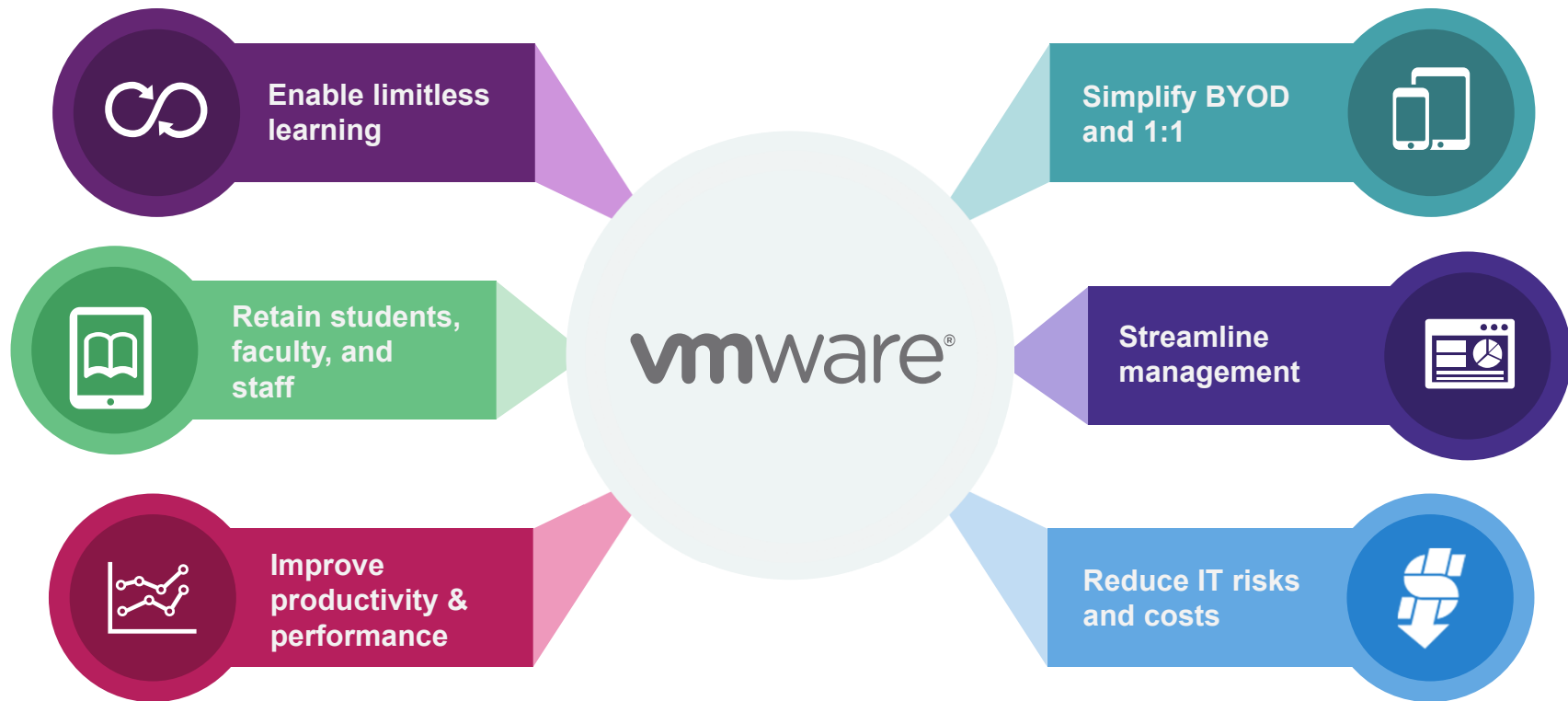
True SSO is required when authenticating to vIDM with UPN (user@domain.edu)

1. User authenticates to vIDM.
2. Horizon Desktop or Application requested.
3. SAML assertion sent to Horizon Connection Server.
4. TrueSSO Enrollment service request SSL Certificate "ticket".
5. SSL "ticket" acts like a SmartCard and passes authentication to the Desktop or RDS Application.
6. SSL "ticket" validated by AD.
7. End user is logged in via Single-Sign-On as "username".

VMware Ellucian Connector Status



Transform Digital Learning And Work Environments in HE



Best Thing About Ethos?

It's Free!

Ethos is quick to get up and running...it's “one and done!”





Ethos Advice to Get Started

Make sure you have:

- **Clean, Clean, Clean Data – Then review it again**
- **Get the Data Mappings Correct**
- **Have a Data Dictionary – Data Definition – Personas – Unified Understanding**
- **Create Detailed Uses Cases – clearly define what object to use and how to map to the Ethos model (start with requirements)**
- **Manage Trigger use to not overwhelm EDX queue – Default set will kill performance.**
- **Well documented code to create maintainability and manage version to version changes. API version upgrades can (a cardinal sin) break your integration.**



Lessons Learned



- GUIDS creation was a problem in the beginning—now auto-generated so an entity has many GUIDS. LDM.GUID is where all GUIDS live
- We have 50 million GUIDS and can create performance issues
- New versions need to generate new GUIDS—there is a lot of work required to match new API changes
- NEED an API scanning tool to scan data and tell us “integrators” which data is not compliant to what the Ethos model expects.
- New API versions and the new mappings requires a review of all previous API upgrade documentation to make sure things are not missed. Upgrading can break your stuff—A small app that does manual API calls you are using can help to prevent this.





Dr. Timothy Ellis, CIS Professor – A POC Perspective

Courses

- Current: CIS120 – Office Applications
- Future: CIS180, CIS225 (Excel Classes) CIS223, CIS211, CIS221, CIS290, CIS129 (Visual Studio, Java, Python)

Student Experiences

- Student's have reported a positive experience with the product based on ease of use and convenience
- No installations on personal devices required
- Can access from multiple platforms: Chromebook, Mac, etc.
- Not utilized from home yet—culture of Client versus Desktop

Potential

- Possibilities are limitless
- CAD, CAM, CAT—accessible on multiple platforms, anytime, anywhere.
- Images are the same at home as they were on campus



Summary

- The Ellucian Connector (via Ethos) and VMware Digital Backpack Revolutionizes Higher Education Course Delivery.
- Expands the Types of Courses that can be Offered via Distance Learning.
- No Longer Required to go to an On-Campus Computer Lab.
- No Longer Need an Expensive or Powerful PC with a GPU.
- Courses Requiring Special Software/HW can be taken from Anywhere.
- Take Courses Remotely on a Chrome Book, Tablet, even Smart Phone.
- Is a Socioeconomic Equalizer.
- Provides Better Educational Access to Working/Single/Disabled People.

Ethos™ Enables Any App, on Any Device, Any Where!



Thank you.
We want to hear from you.

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