

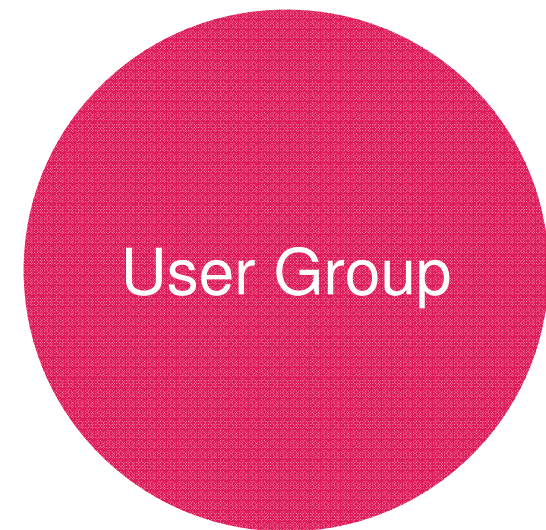


Preparing for Banner Powered by Ellucian XE

Mike Bates

Agenda

- 1** Ellucian XE Strategy and How it Applies to Banner
- 2** Banner 8 and Banner 9.x – Coexistence and Where to Start
- 3** Infrastructure, Tools and Skillsets





Ellucian Extensible Ecosystem (XE) Strategy

And How it Applies to Banner



Ellucian XE Solution Strategy:

Developed hand in hand with clients

- ✓ Focus on **modern technology**
- ✓ Designed specifically for **higher education needs**
- ✓ Provides the tools for **student** and **institutional success**
- ✓ Committed to **choice** and **flexibility**

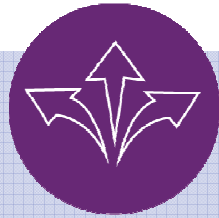


Ellucian XE Strategy

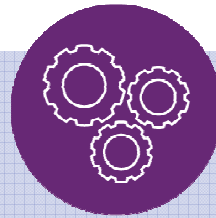
Ellucian XE Design Principles



Usability



**Enhanced
Features and
Functions**



**App
Configuration
over Code
Customization**



Extensibility



**Scalability/
Cloud
Readiness**

Incorporating XE Strategy across the Product



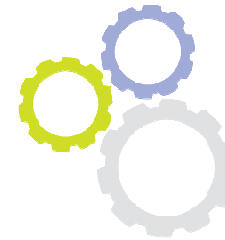
Administrative Banner Imperatives

- Technology—Remove Oracle Forms
- Usability—Improved navigation and functionality
- Configuration and extension versus modification



Self-service Banner Imperatives

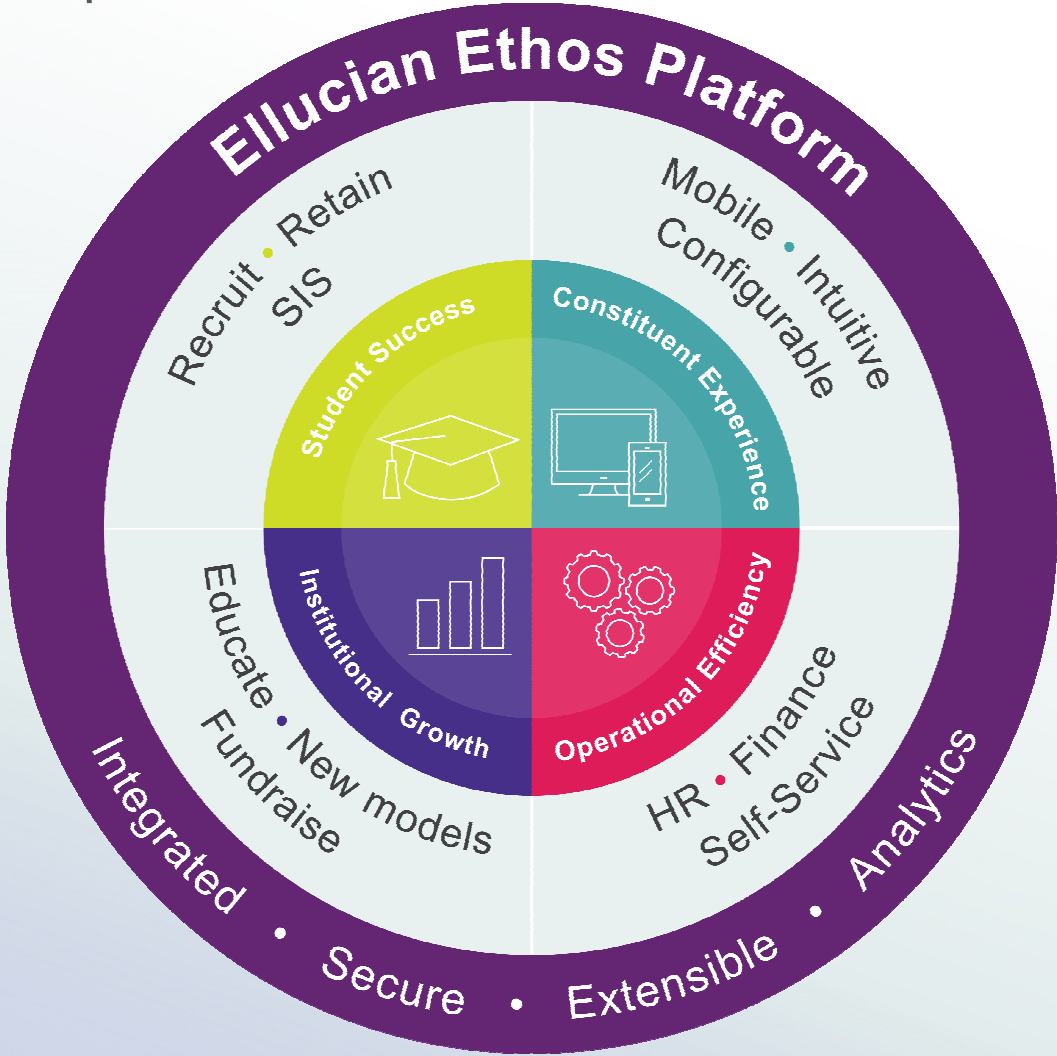
- Usability—Data consolidated and delivered to casual users
- Rich functionality, evolving with Higher Education
- Configuration and Extension versus modification



Banner Integration Imperatives

- Ellucian Ethos Platform
 - API-based integrations
 - Standards-based Single Sign-On
 - Ellucian Solution Manager (ESM)

Enhancing every aspect of the modern connected campus



Applications Leveraging XE Strategy

Available Applications

Banner®

- Grade Entry
- Attendance Tracking
- Event Management
- Advising and Student profile
- Registration
- Employee Profile
- Position Description
- Purchase Requisition
- Academic history, electronic gradebook
- Catalog and Schedule
- Human Resources, Position Control, Admin Transformation
- Finance Admin Transformation
- General Admin Transformation

Ellucian Elevate™

Ellucian eTranscript APIs

Ellucian Mobile

Ellucian Portal

Ellucian Perform™

Ellucian Pilot

Applications in Development

Banner

- Communication Management
- Salary Planner
- Web Time Entry
- Budget Availability

Banner® Student Admin Transformation

- Includes AR
- End of September 2016

Banner® FinAid Admin Transformation

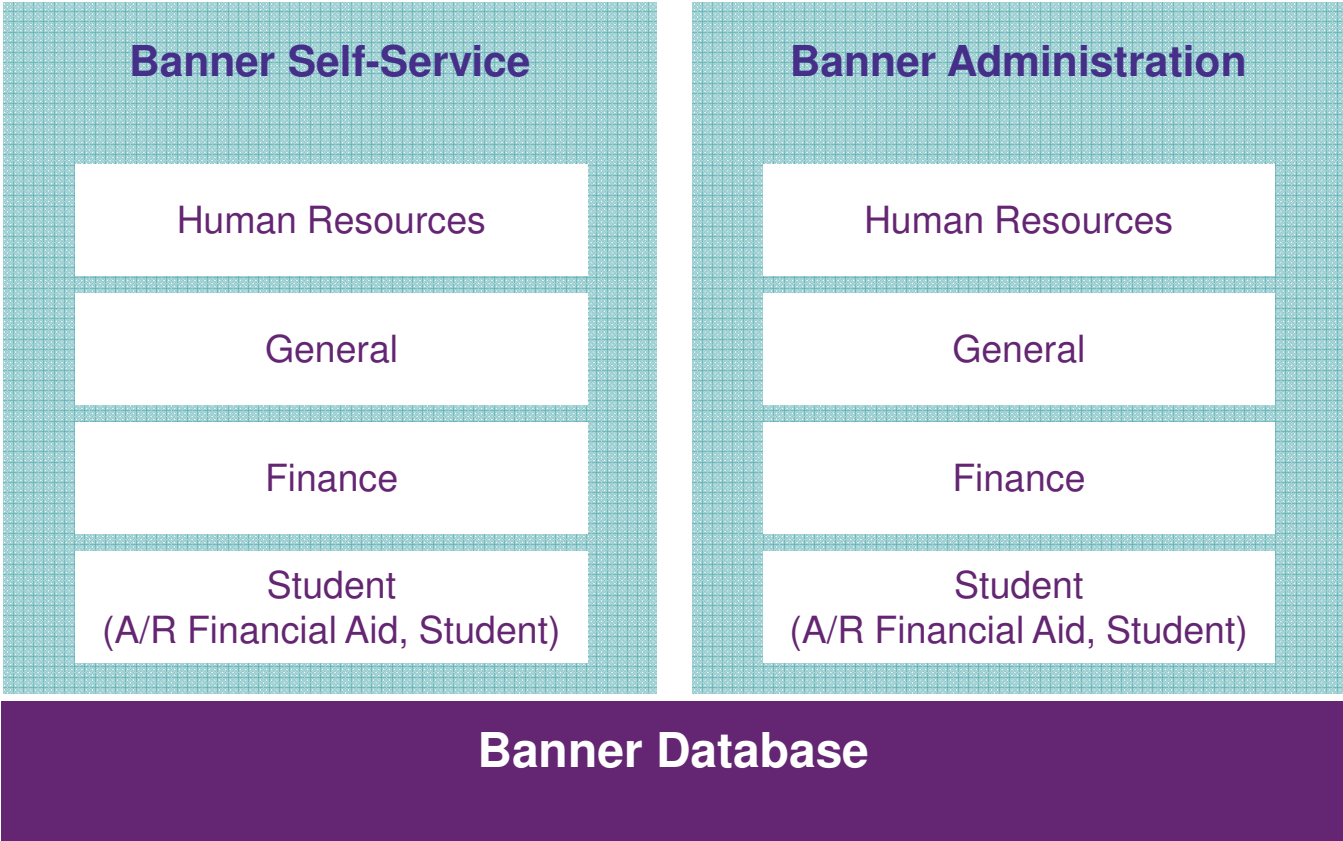
- End of November 2016



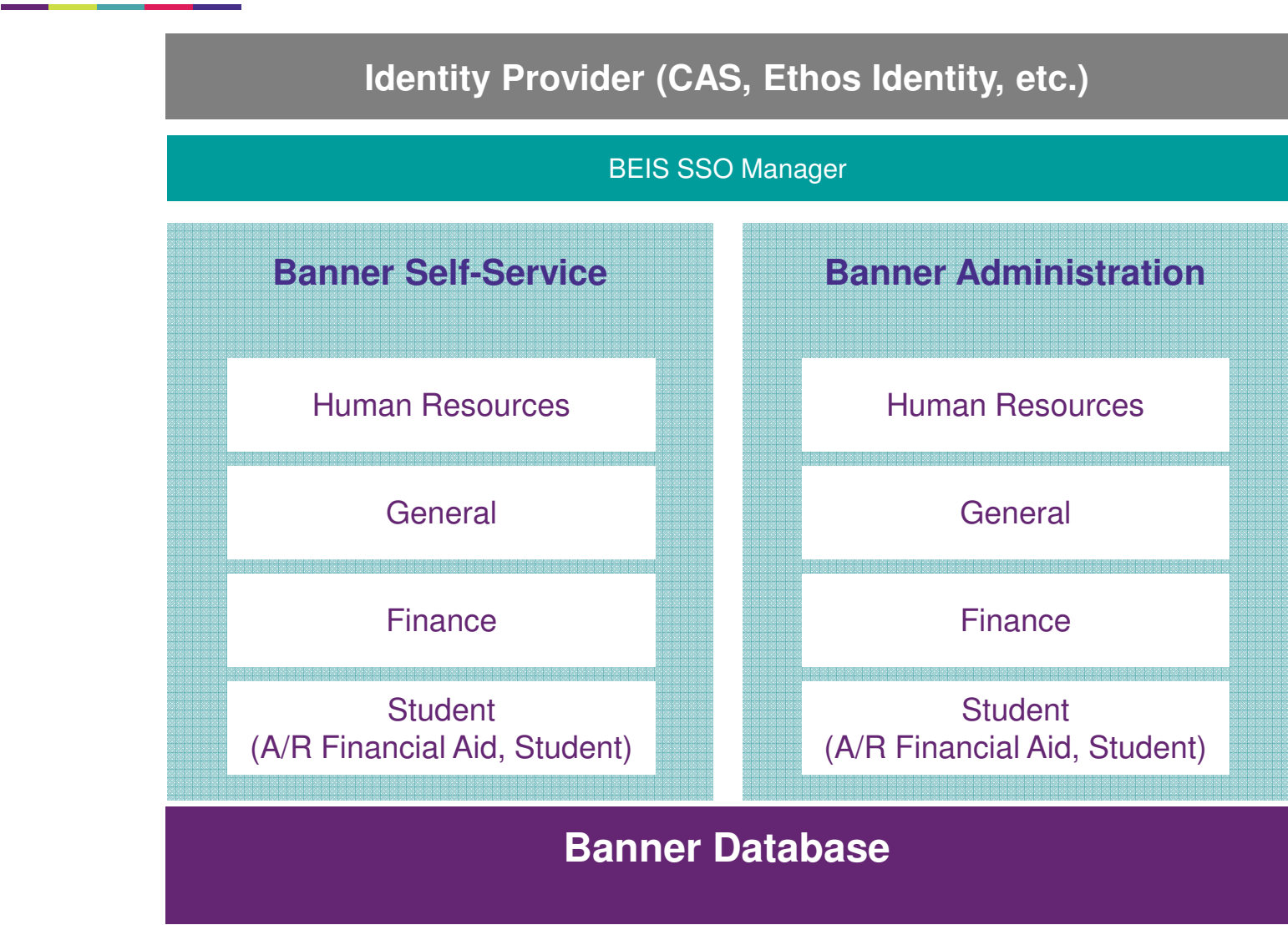
Banner 8 and Banner 9

Coexistence and Where to Start

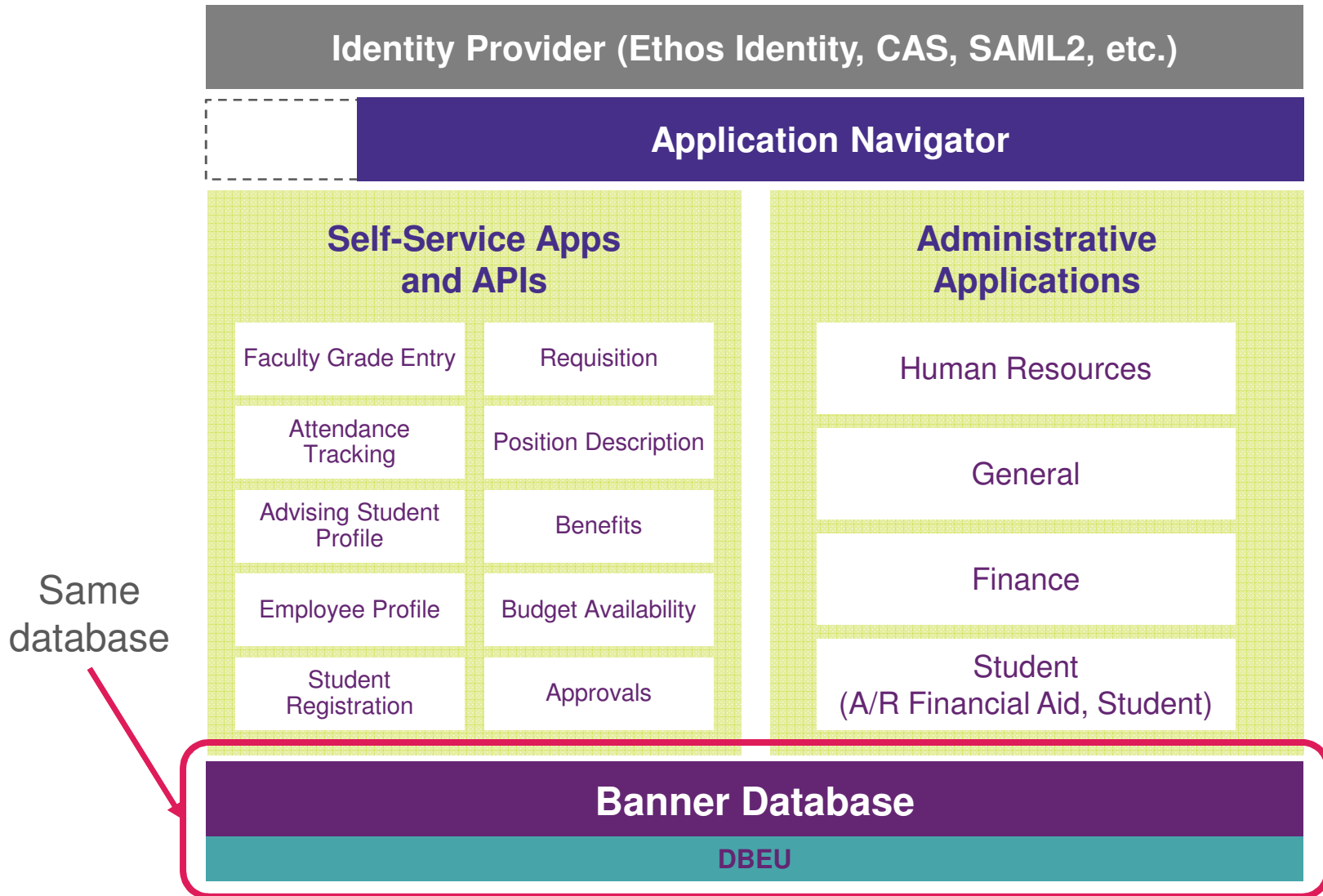
Banner 8 – No SSO



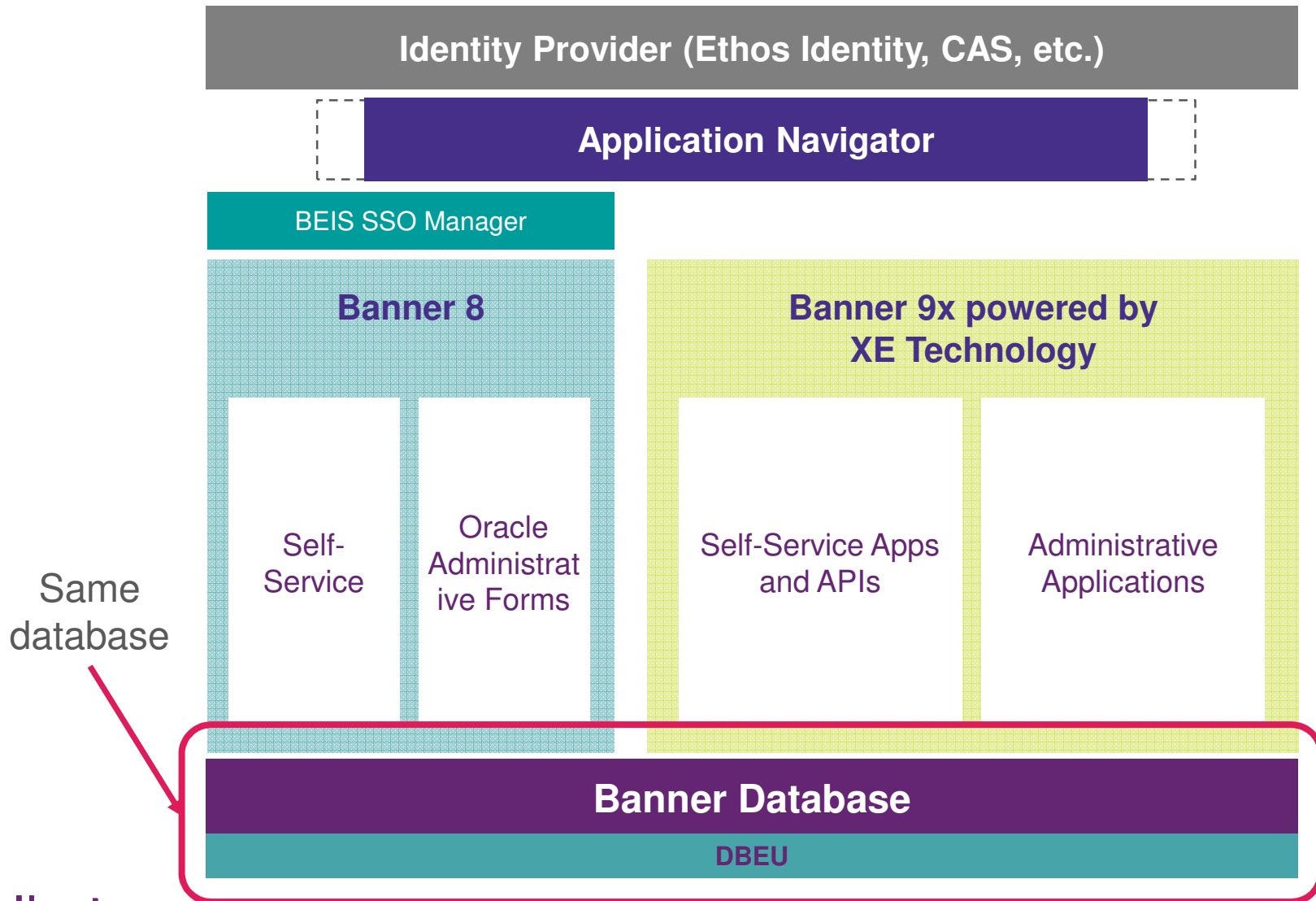
Banner 8 – With SSO



Banner 9.x powered by XE



Banner 8 and Banner 9 Coexisting



Where to Start

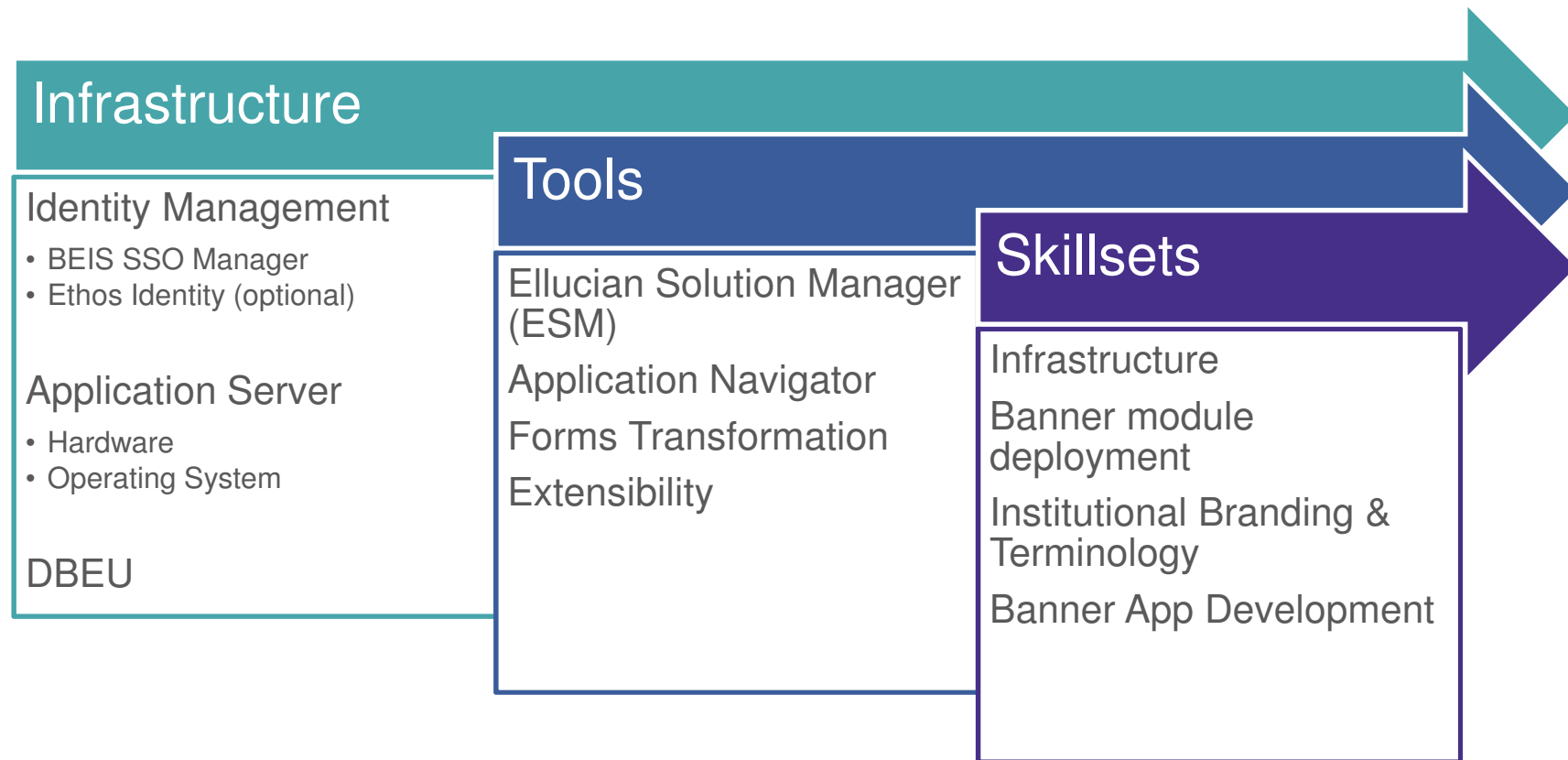
Start in BANNER 8

1. Implement Ellucian Solution Manager (ESM)
2. Implement Identity Management and Single Sign-on into Banner 8.x
3. Catalog and review all Banner customizations – if applicable
 - a. Retire customizations that are no longer required
 - b. Compare with new XE for Banner 9.x out of box functionality
 - c. Ellucian services are available to assist with business process review and comparisons with Banner 9.x out of box functionality
 - d. Upload remaining customizations to the XE Guide website forms analyzer tool for a work assessment
4. Select and install your first 9.x functional application
 - a. Employee Profile or Student Advising Profile are two examples

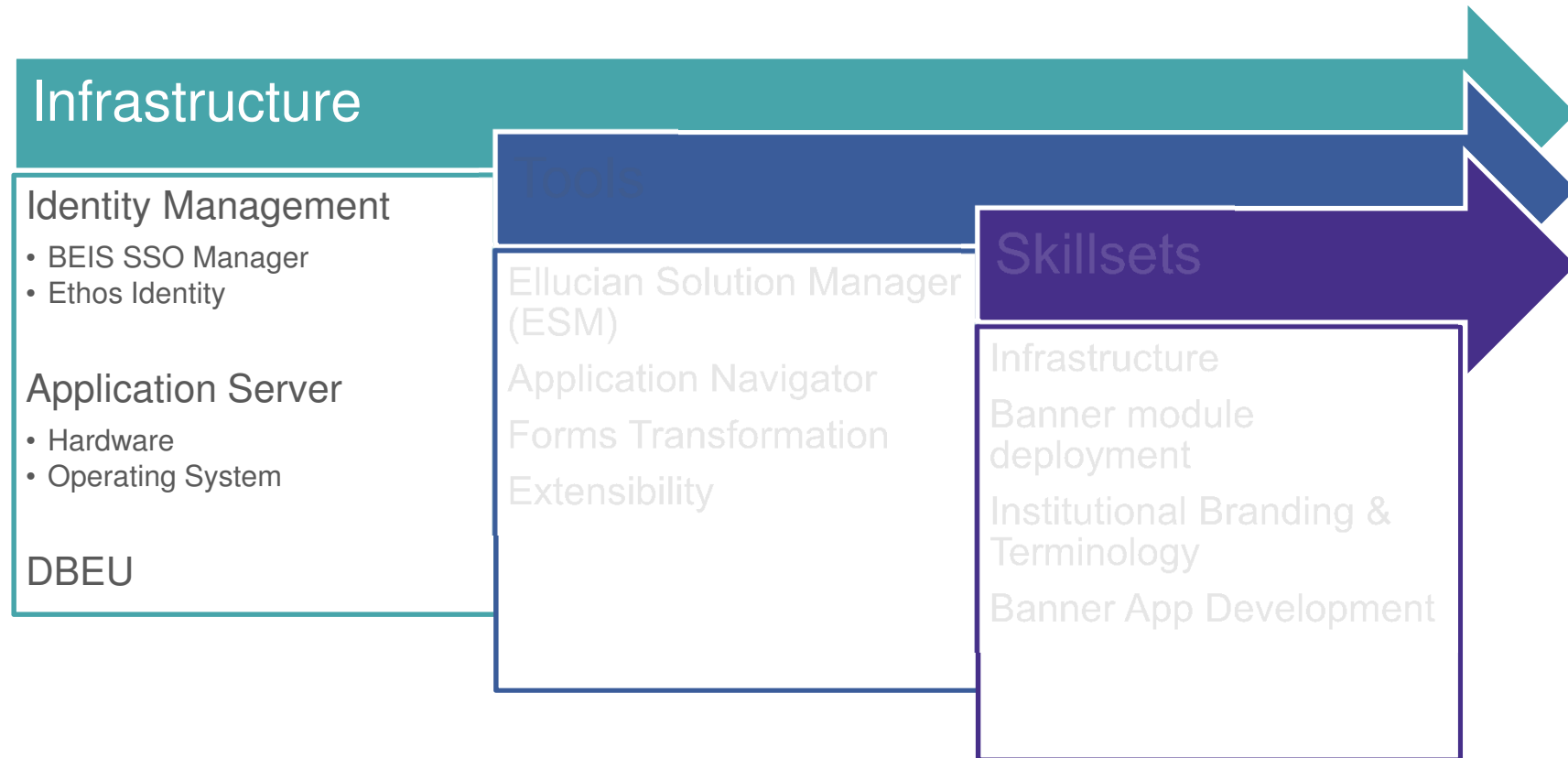


Infrastructure, Tools and Skillsets

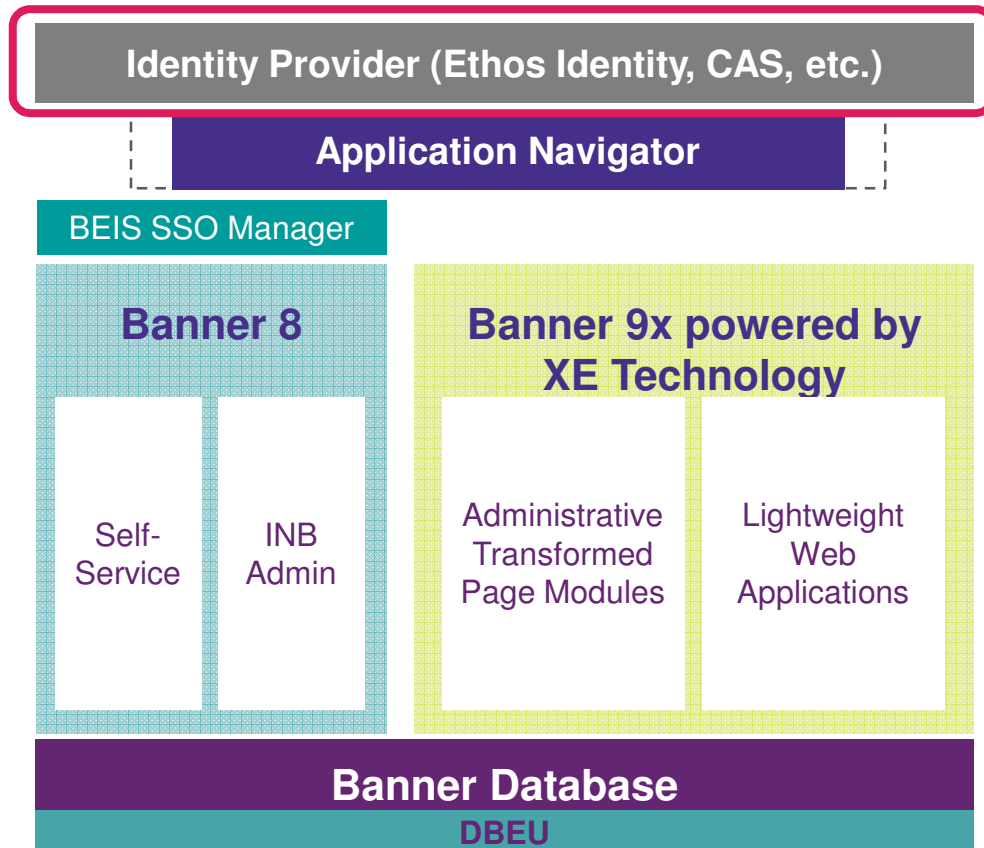
Infrastructure, Tools and Skills



Infrastructure, Tools and Skills



Implement Identity Management and Single Sign-on

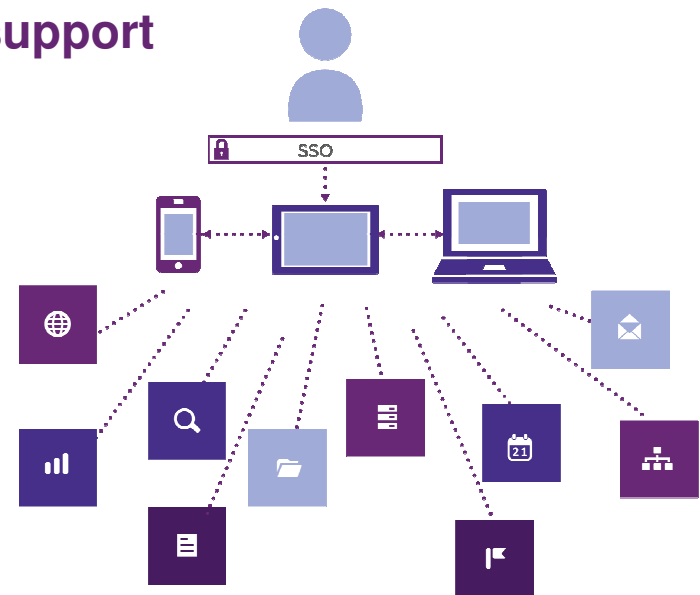


Identity Provider (IdP)

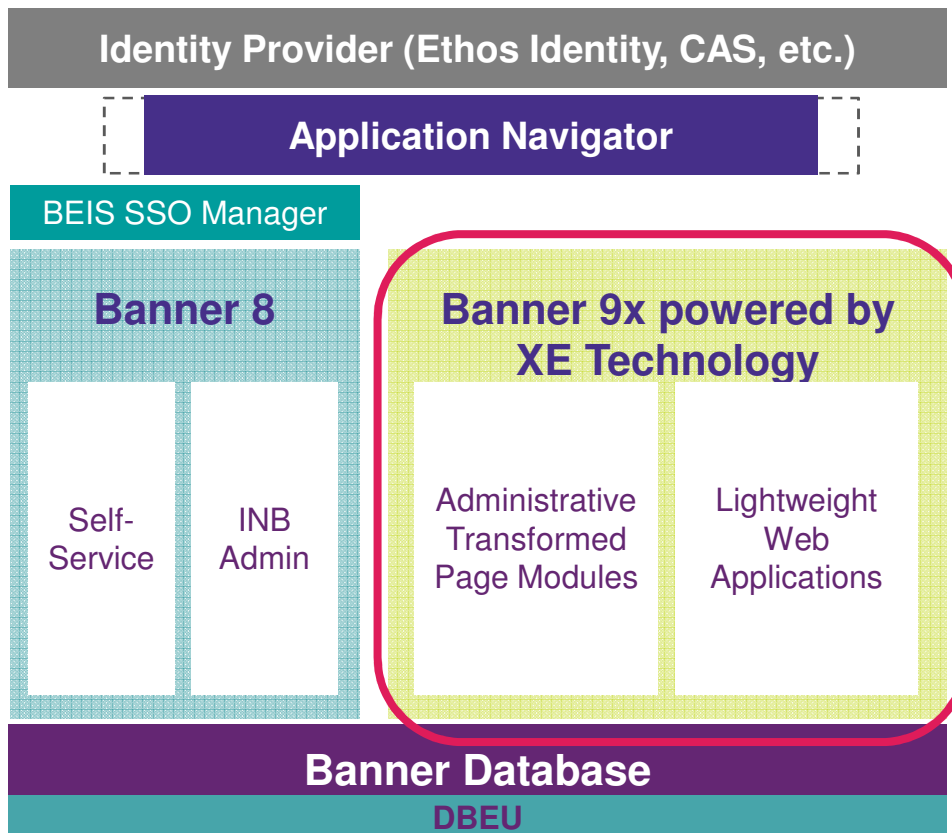
- Modularization requires external authentication / identity provider
- CAS has been the higher education standard, but is limited
- Ethos Identity (EI) is a valuable alternative

Ethos Identity

- **The work Ellucian did to add CAS enables it to be a protocol translator. It can speak ADFS for your Microsoft apps, SAML2, and even CAS.**
- **Secures access to web applications on-premises and in the cloud.**
- **Provides SSO across disparate protocols.**
- **Powered by the WSO2 Identity Server.**
- **Includes enhancements like CAS protocol support and internationalized login screens.**
- **Available to clients under their existing maintenance agreement.**



Application Server Hardware



- **9.x focus shifts to the application server layer**
- **Memory and CPU usage determined for each application**
- **Choose an OS – Tomcat or Weblogic**
- **Performance and load testing is integral**

Application Server Hardware

Where to find resources

www.ellucian.com/xeguide

- Plan your XE Deployment page
 - Hardware Sizing Simplified Recording
 - Hardware Sizing Guide
- eCommunities Technical Group

What is Included

- Memory and CPU sizing info
- Configuration best practices
- Performance test environment information and results

Plan Your XE Deployment

Implementing XE is a simple and straightforward process and there's no prescribed order for implementing the applications. If you are not sure which application(s) to start with, take a look at the **available XE applications**. Before you begin, you should check to make sure that your technological infrastructure is optimized for XE. Because each institution is different, you should always validate your hardware sizing through performance testing using a workload representative of your unique situation. The modular architecture of Banner XE enables institutions to determine which applications will be deployed—and at what time. Institutions can choose to deploy Banner XE applications based on institution-specific service delivery requirements. These applications are ready whether you are on the cloud or have an on-premises deployment, and can scale up or down as your needs change.

Because each institution is different, you should always validate your hardware sizing through performance testing using a workload representative of your unique situation.

Your IT infrastructure must meet a few basic requirements. Below are the pre-requisites you should have in place before installing XE applications.



Hardware

The Banner XE architecture reduces the resource requirements from the Oracle database tier, which enables additional room for growth and allows Oracle RAC to support higher user loads. This modular deployment allows customers more flexibility when upgrading smaller modules independent of the entire Banner product. This also reduces the dependencies on application upgrades.

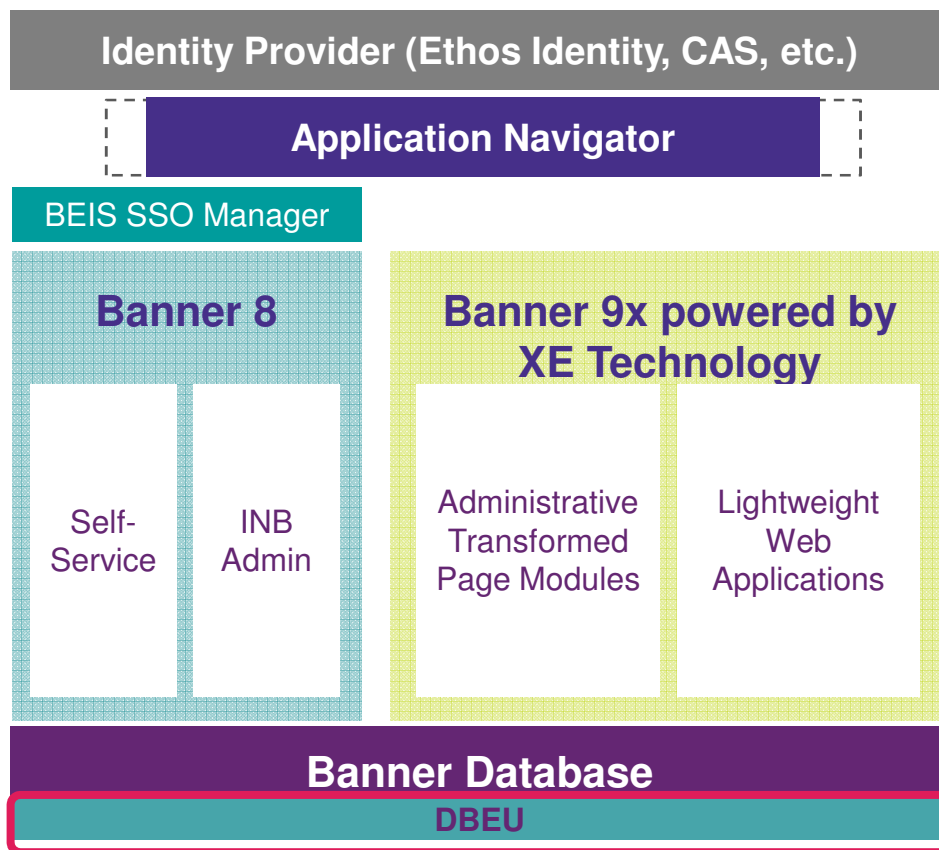
Banner XE technology scales horizontally in the application server tier using lower cost commodity hardware, allowing higher performance for increased user loads. The number of applications per application server will vary depending on the applications' expected concurrent usage, which determines the memory and CPU usage.



Banner XE Sizing and Configuration Guide

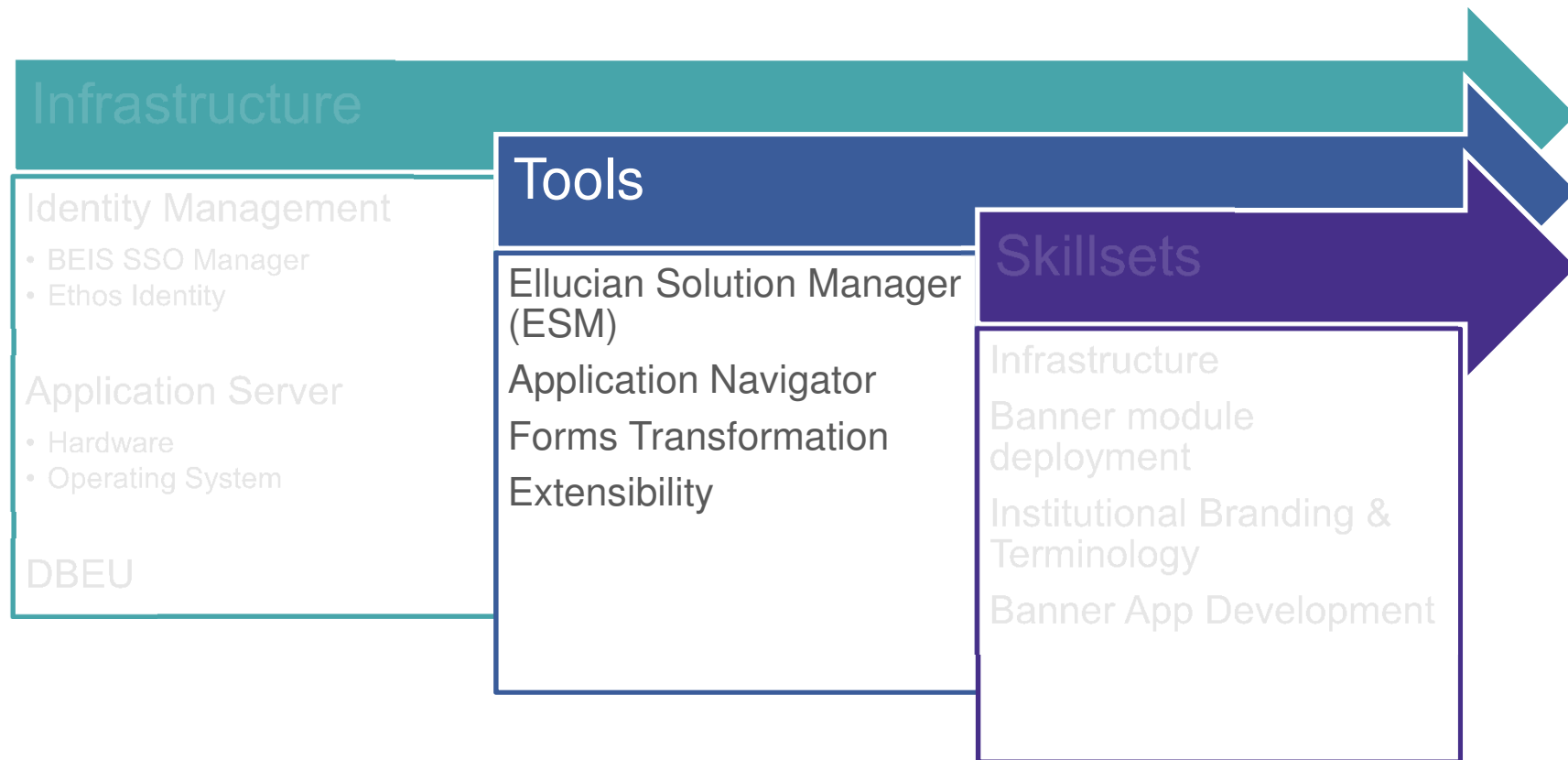
For hardware sizing help, please [contact us](#).

Database Extension Utility (DBEU)



- Tool for applying large scale database changes to Banner
- First Use: Apply and enable new columns needed for Banner XE and Multi-Entity Processing Support
- Functionality will be expanded as new changes are required

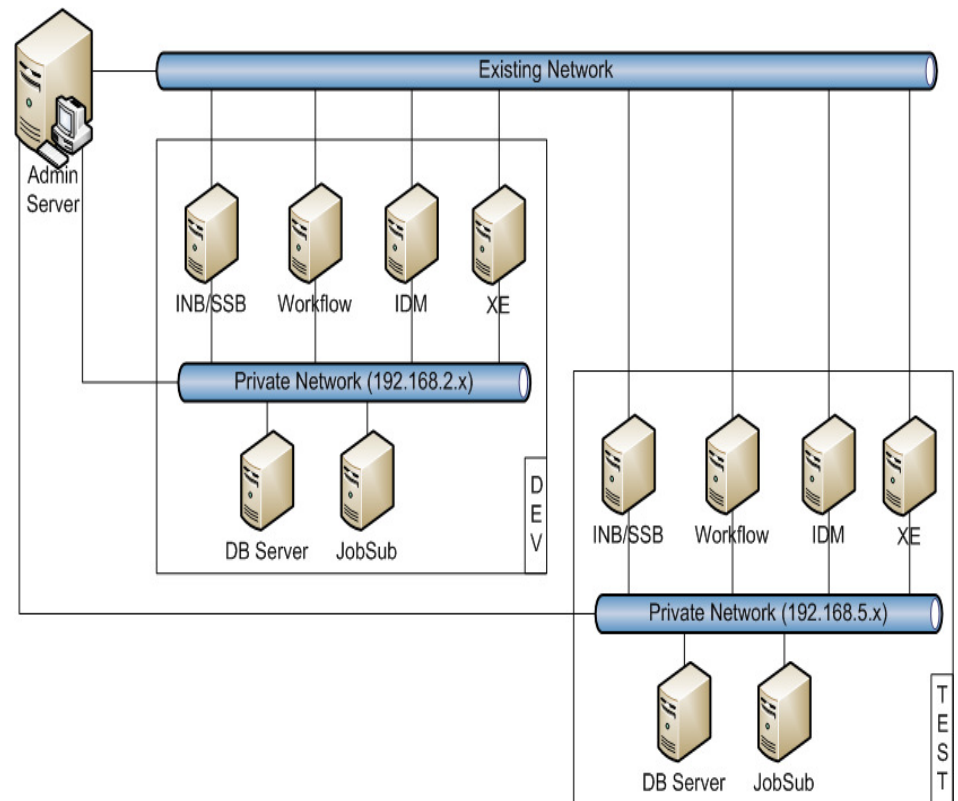
Infrastructure, Tools and Skillsets



Ellucian Solution Manager (ESM)

Capabilities

- **View installed product versions and available upgrade releases in Banner environments**
- **View documentation**
- **Download Banner upgrades**
- Install available Banner upgrade releases on both provisioned (OEL5) and existing Banner (Linux/Unix/Windows) environments
- Provision Banner environments



ESM - View Installed and Available Releases



ellucian. ELLUCIAN SOLUTION MANAGER 1.6 (BUILD MAIN_ADMIN_20160316.1) Help

ELLUCIAN UNIVERSITY - Environment: TEST TEST DCM3

Products

- Upgrades
- Deployments
- Links
- Env Settings
- Applications
- App Servers
- Machines
- Credentials

Name	Type	Application	Current Installed Release	Latest Available Release	Selected Target Release
Banner 9 Online Help	BannerERP	Database			
Banner 9x Database Upgrade	BannerERP	Database	9.3	9.4	
Banner Accounts Receivable	BannerERP	Database	8.5		
Banner Advancement	BannerERP	Database	8.7.1	8.8.0.1	
Banner Advancement Self-Service	BannerERP	Database	8.8.1	8.9	
Banner Application Navigator	BannerERP	Database	1.3.1	1.4	
Banner Document Management System	BannerERP	Database	8.3.0		
Banner Document Retention	BannerERP	Database			
Banner Employee Profile App	BannerERP	Database		9.0.4	
Banner Employee Self-Service	BannerERP	Database	8.11.2	8.12.1.4	
Banner Faculty Attendance Tracking Self Service	BannerERP	Database	9.1		
Banner Faculty Grade Entry	BannerERP	Database	9.3	9.4.0.2	
Banner Faculty and Advisor Self-Service	BannerERP	Database	8.7.1	8.7.1.2	

ESM - Manage Environment Upgrades

ellucian. ELLUCIAN SOLUTION MANAGER 1.6 (BUILD MAIN_ADMIN_20160316.1) Help About Sign

ELLUCIAN UNIVERSITY - Environment: TEST TEST DCM3

Kick-off Environment Upgrade

Description
Banner General 8.8.4.1 - Upgrade

Auto-Start Jobs

Selected Releases

Product	Release Version	Application	Release Date	Upgrade Properties
Banner General	8.8.4.1	Database		

Cancel

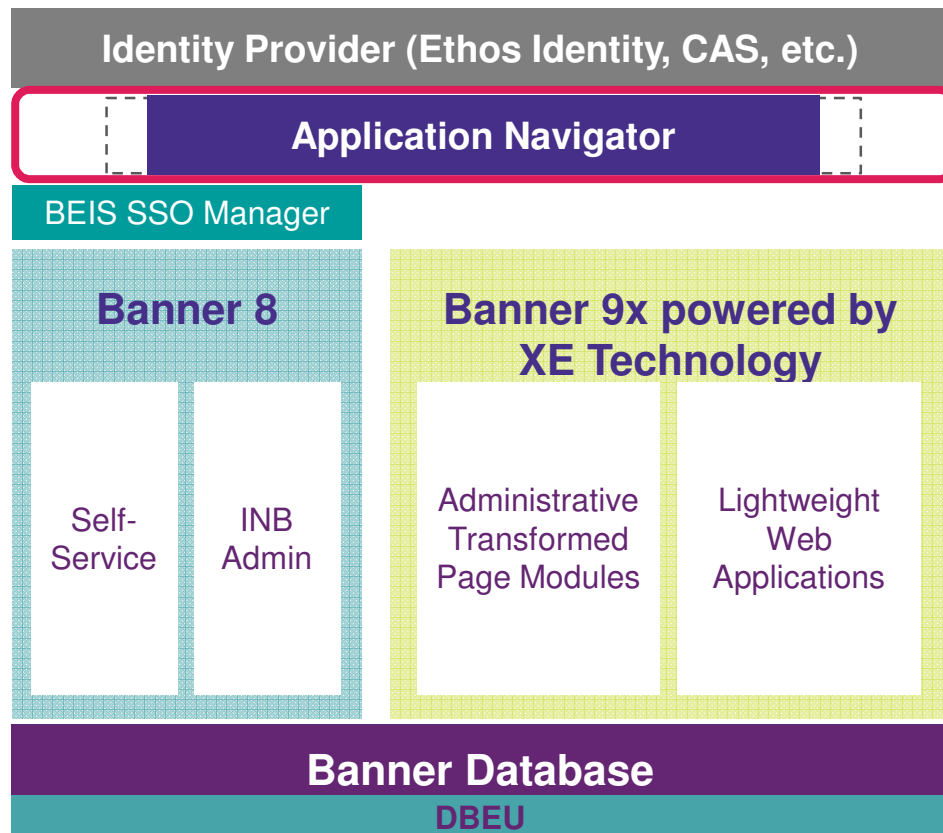
ESM - View Documentation for Downloaded Releases

The screenshot displays the Ellucian Solution Manager interface. At the top left is the Ellucian logo and the text "ELLUCIAN SOLUTION MANAGER 1.6 (BUILD MAIN_ADMIN_20160316.1)". At the top right are links for "Help", "About", and "Sign Out". A left-hand navigation menu includes "Products", "Upgrades", "Deployments", "Links", "Env Settings", "Applications", "App Servers", "Machines", and "Credentials". The main content area is titled "Ellucian University - Environment: TEST TEST DCM3" and shows "Product: Banner General 8.8.4 Documentation Links". Below this is a table of documentation links:

Documentation Links
Banner_General_Object_List_8.8.4.pdf
Banner_General_Release_Guide_8.8.4.pdf
Banner_General_Resolutions_Report_8.8.4.txt
Banner_General_Security_Administration_Handbook_8.8.4.pdf
Banner_General_Upgrade_Guide_8.8.4.pdf
Banner_General_User_Guide_8.8.4.pdf
Banner_General_d_readme_8.8.4.txt
Banner_General_u_readme_8.8.4.txt

At the bottom right of the main content area are two buttons: "Download All" and "OK".

Application Navigator




- Provides a single interface for users to navigate between Banner 8 and 9 administrative pages
- Multiple navigation mechanisms
- Common menu
- Search
- Recently opened list
- Shared globals and coordinated time out support
- Ability to configure landing page look and feel

Application Navigator

The screenshot shows the top navigation bar of the Ellucian University application. On the left, there is a hamburger menu icon, a search icon, and the text "Ellucian University". On the right, there is a user profile icon with the name "VNIKOLOV", a "Sign Out" button, and a help icon. Below the navigation bar is a large banner image of a university building with the word "Welcome" in the center. A search bar is overlaid on the banner with the placeholder text "Search for forms, pages and menus...". At the bottom of the page, there is a dark footer containing copyright information, a release version, and a keyboard shortcuts icon.

Ellucian® | © 2014-2015 Ellucian Company L.P. and its affiliates. Release: 1.3.1

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 Keyboard Shortcuts

Application Navigation - Transformed Administrative Applications

Personalized Banner Admin Landing Page

The screenshot shows a web application interface for 'Ellucian University'. The top navigation bar includes a menu icon, a search icon, the text 'Ellucian University', a user profile icon for 'VNIKOLOV', and a 'Sign Out' button. The main content area features a large banner image of a university building with the word 'Welcome' overlaid. A search bar is positioned below the banner. Three callout boxes provide instructions: one points to the banner image with the text 'Add your institution name', another points to the search bar with the text 'Search for and open new and legacy Banner forms using normal language or seven character abbreviation.', and a third points to the banner image with the text 'Set your own background image'. The footer contains copyright information for Ellucian, a release version of 1.3.1, and a 'Keyboard Shortcuts' icon.

Ellucian University

VNIKOLOV Sign Out

Welcome

Search for forms, pages and menus...

Add your institution name

Search for and open new and legacy Banner forms using normal language or seven character abbreviation.

Set your own background image

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Keyboard Shortcuts

Banner Forms Transformation

Conversion of all Banner administrative forms to new Java-based administrative pages

- One for One Transformation – If it exists in 8 it will exist in 9
- Move away from Oracle Forms and ZK
- Standardize on Java-based runtime framework serving HTML to browsers

The screenshot shows a traditional Oracle Forms application window titled "Employee: PBAEMPL 8.7.1.7 (SISTEST)". The interface is divided into several sections with various input fields and dropdown menus. Key sections include "General Employee" with fields for Employee Status, Class, Group, and Category; "Termination" with Reason and Date fields; "Leave of Absence" with Reason and Date fields; and "Hiring Location" with Location, College, and Campus fields. The bottom of the window shows a status bar with "Record: 1/1" and a "GO" button.



The screenshot shows a modern web application running on an iPad browser. The URL is "apps06nc.conf.ellucian.com". The page title is "Position Budget NBAPBUD 9.0 (SMPL)". The interface is clean and modern, with a blue header and a white main content area. It features a "Status" section with "Active" selected, a "Type" section with "Single" selected, and "Position Effective Dates" with a "Begin Date" of "07/01/2005". There are also sections for "Budget Roll Rules" and "Budget Authorization". The bottom right corner has a "SAVE" button.

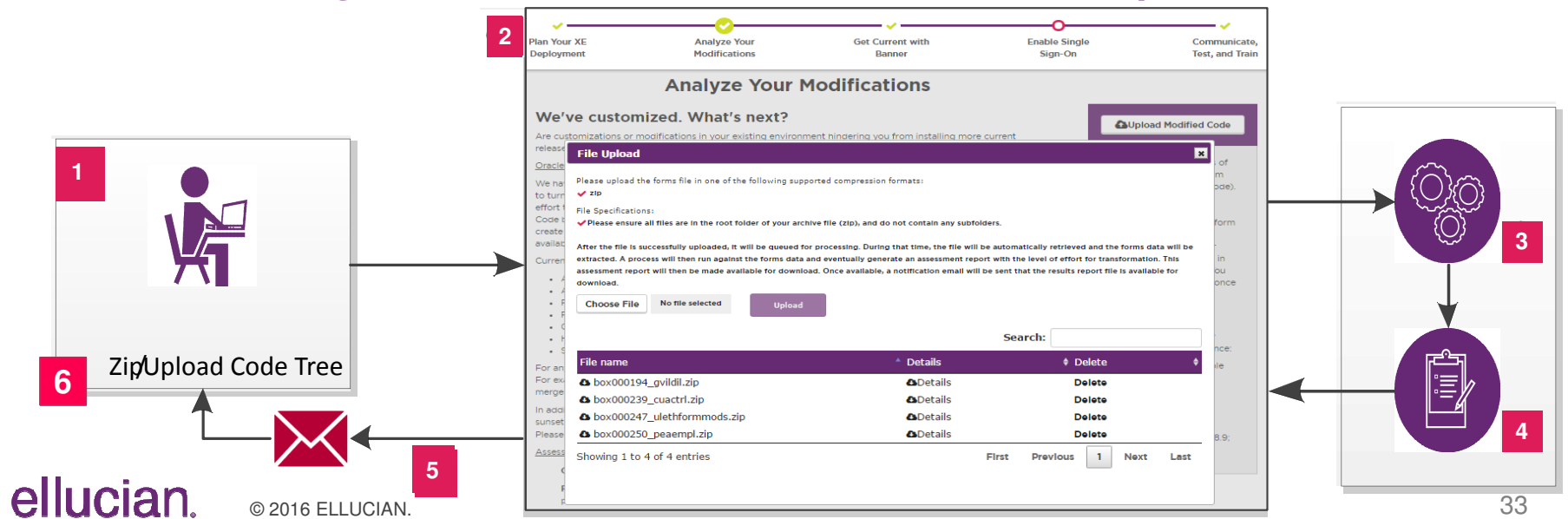
Custom Oracle Forms Transformation

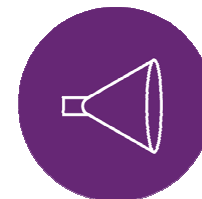
Catalog and review all Banner customizations

- Retire customizations that are no longer required
- Compare with new XE for Banner 9.x out of box functionality
 - Ellucian services are available to assist with business process review and comparisons with Banner 9.x out of box functionality
- Upload remaining customizations to the XE Guide website forms analyzer tool for a work assessment
 - Automated analysis
 - Electronic code submission and feedback

Custom Oracle Forms Transformation

1. XE Guide website accessed through the Ellucian Hub – Analyze Mods page
2. Upload zip/tar of custom FMB files
3. FMBs automatically evaluated based on Banner baseline code set
4. Audit report posted to XE Guide website
5. Email notification sent to submitter
6. Submitter logs back into XE Guide and downloads report





XE Guide: Email Confirmation Example

Dear Ellucian University,

Thank you for submitting your information. Here is a confirmation for the assessment results for your uploaded forms: <filename> which has been posted within the XE guide (within the Ellucian hub (<http://www.ellucian.com/Support-and-Training/Ellucian-Client-Support/>)).

The Level of Effort (LOE) is estimated in days for the different phases of the development, based on the complexity of the analyzed forms (syntax, and structure). The level of effort **does not** include prep and follow-up. Preparation typically includes establishing remote connectivity to your environment, establishing the project environment for your project, and planning the transformation project itself. Follow-up includes documentation, knowledge transfer, and deployment support.

If you are interested in moving forward with the transformation of your net new Oracle Forms to Java Pages, or your Ellucian baseline Oracle Forms modifications to page extensions, please contact your client partner.

In case you have additional questions about this assessment, please contact the Ellucian team at: xeguide@ellucian.com



XE Guide: Assessment Results Example

Report Data

Form name	Lines of Code	Complexity	Conversion Effort(Manual) Unit: Hours	Migration Complexity	Conversion Effort(Automated) Unit: Hours	Form type
PEIESUM	3991	HIGH	248	MEDIUM	4	Baseline Modified
PZRTCPI	2087	HIGH	160	LOW	55	Net new form

Messages / Errors

Error Code	Type	Text	Operation	Date
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Report Data

Form name	Lines of Code	Complexity	Conversion Effort(Manual) Unit: Hours	Migration Complexity	Conversion Effort(Automated) Unit: Hours	Form type
PEIESUM	3989	HIGH	0	MEDIUM	0	Baseline form
PZRTCPI	2087	HIGH	160	LOW	55	Net new form

Messages / Errors

Error Code	Type	Text	Operation	Date
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XE Guide: Assessment Results

Report Term Definitions:

- **Form Name** – Banner INB form name
- **Lines of Code** – Submitted form lines of code
- **Complexity** – Level of submitted form complexity
- **Conversion Effort (Manual)** – Estimation of hours required if form is recoded by hand from scratch
- **Conversion Effort (Automated)** – Estimation of hours required if Ellucian executes the transformation
- **Migration Complexity** – Level of conversion complexity if Ellucian executes the transformation
- **Form type** – Baseline / Net New / Baseline Modified

XE Guide: Assessment Results



Report Data

Form name	Lines of Code	Complexity	Conversion Effort(Manual) Unit: Hours	Migration Complexity	Conversion Effort(Automated) Unit: Hours	Form type
PEIESUM	3991	HIGH	248	MEDIUM	4	Baseline Modified
PZRTCPI	2087	HIGH	160	LOW	55	Net new form

Messages / Errors

Error Code	Type	Text	Operation	Date
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Branding and Extensibility

Goals

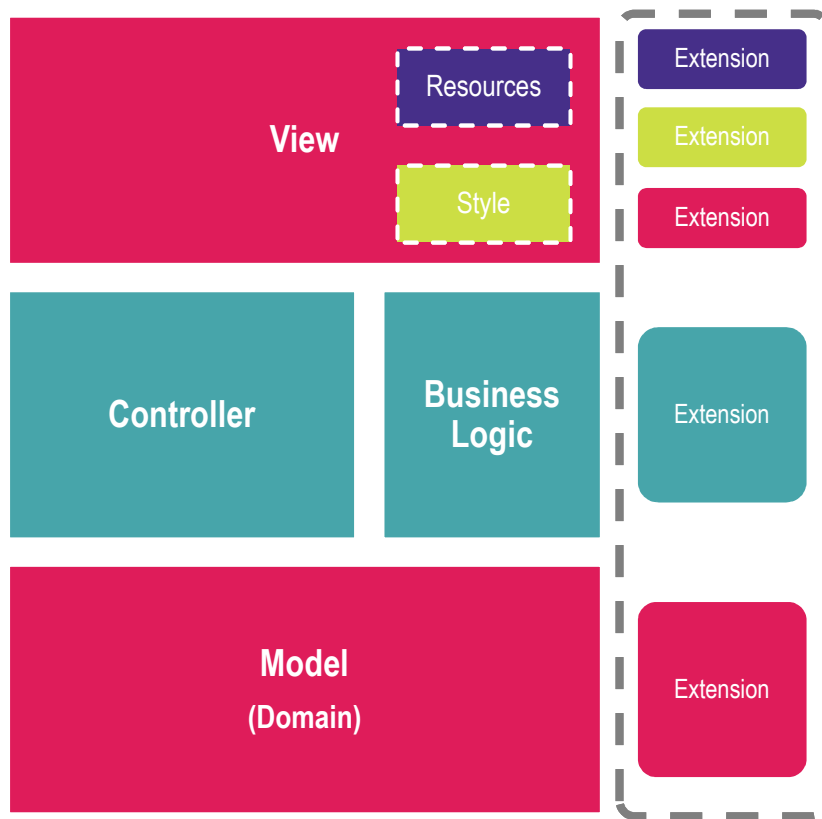
- Eliminate (or at least greatly reduce and simplify) rework associated with upgrades
- Eliminate the need to modify source code
- If source modification is necessary, allow for continuous integration
- Provide tools that facilitate extensibility
- Make tools simple to use

Skills Required

- CSS
- Property files
- Extensibility Toolset



Banner Extensibility

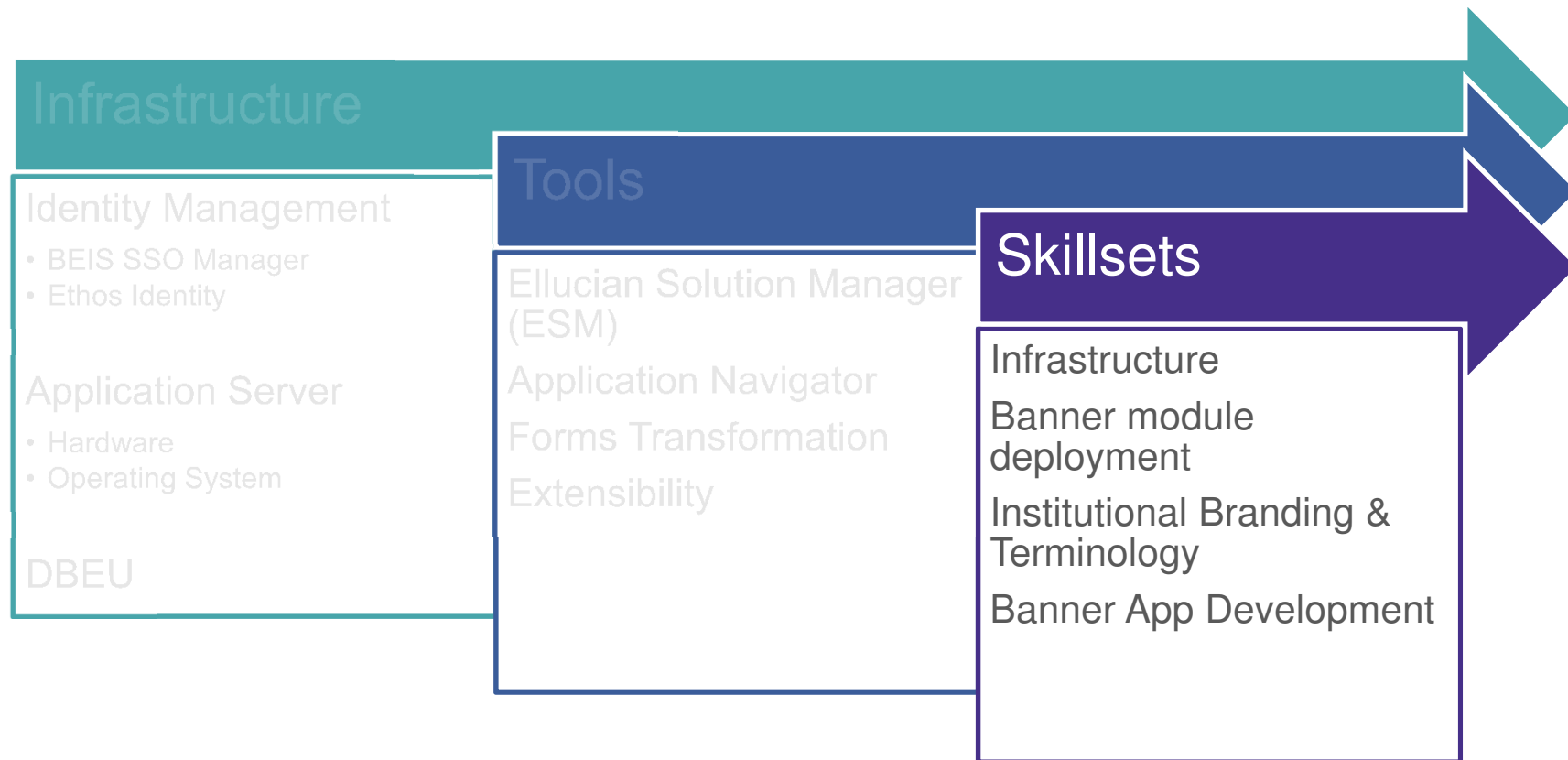


Text level Extensibility Overview

- Supplemental code or code artifacts that change the application
- Made separate from application source
- Not overwritten when the system is upgraded
- “Future-proofs” institutional personalization
- Implementation may vary based on application architecture

Extensibility Tool	Functionality	Availability
Page Builder	Institutions can add XE for Banner Self service pages to support custom processes	Alpha: In progress General Availability: 2 nd half 2016
Theming Tool	Apply branding across multiple XE for Banner applications including colors and logos	Phase 1: 2 nd quarter - manually deployed by institution Phase 2: 2 nd half 2016 - full support
Relabeling Tool	A user interface to support mass label and message string customization	2 nd half 2016
Administrative Extension Tool	Eclipse-based development tools for extending transformed Banner pages	Currently available for delivered XE administrative applications Analyzer tool available on the XE guide page
Configure Page Components (CPC)	Hide fields and sections of a page Reorder fields, sections, tabs Change labels and text Future: Add fields to a page	Available in existing Banner XE Administration and select Self Service Applications Future: Additional applications
Domain Extension Tool (DET)	Provides a mechanism for extending the domain (data access) layer of Grails applications	Available in Banner XE Administration and select Self Service Applications Future: Additional applications
Supplemental Data Engine (SDE)	Add institutional defined fields to capture data Future: Enhanced functionality across all applications	Currently available in Administrative applications Future: availability in Self service applications

Infrastructure, Tools and Skills



Understand Required Skillsets

Infrastructure

- Java Platform
- Application server
 - Configuration
 - Application deployment
 - Tuning
- Oracle Database
- Identity Management

Banner module deployment

- Configuration via property files

ESM

- Jenkins
- <https://jenkins.io/index.html>



Understand Required Skillsets

Institutional Branding & Terminology

- CSS
- Property files
- Extensibility Tools

Banner Application Development

- Source Code Management with Git
- Model-View-Controller pattern
- Lightweight Web apps & APIs
 - Grails Web Framework / Groovy
 - Backbone, jQuery, AngularJS
 - Spring, Hibernate
- Administrative applications
 - Eclipse, Frames, Foundations
 - Java (server side)



Understand Required Skillsets

Training Courses Available

- <http://www.ellucian.com/Support-and-Training/Course-Catalog/>

If you are interested in a course that is not currently scheduled or would like to bring a course on-site, please contact us at edservices@ellucian.com.

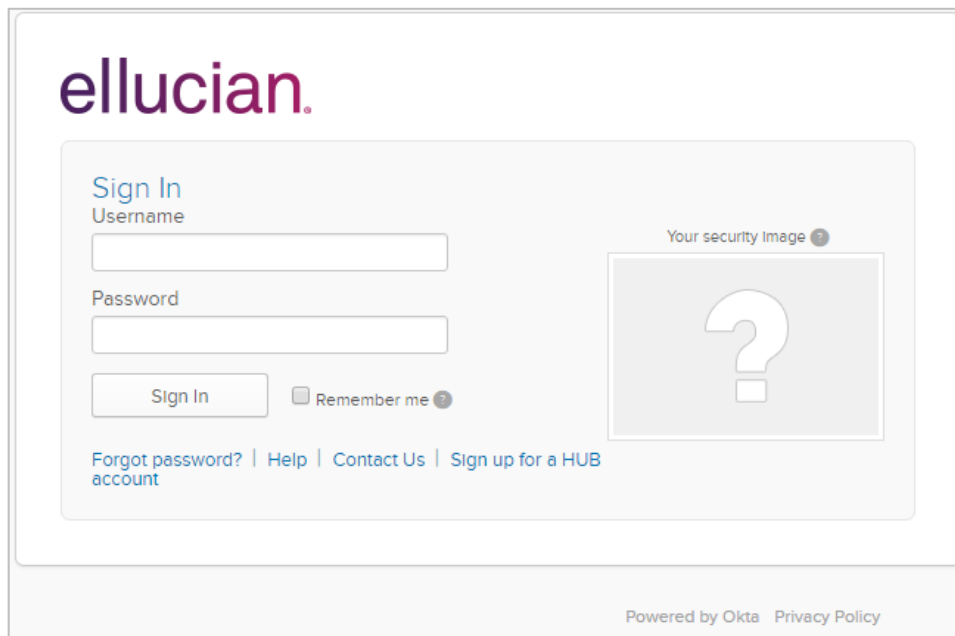
Advance & SmartCall **Banner** Colleague Degree Works Luminis PowerCampus Recruiter

Contact Us

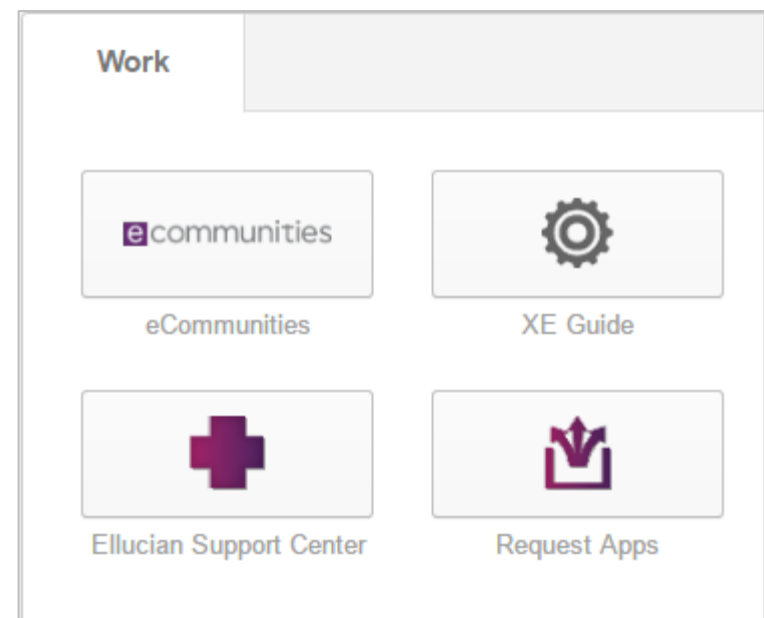
Banner Technical						
Banner Technical: Banner Administration using XE Technology				\$1,280.00	-	DETAILS
Banner Technical: Banner Administration using XE Technology	Virtual	11/08/2016 - 11/09/2016		\$1,280.00	12	REGISTER
Banner Technical: Banner Administration using XE Technology	Virtual	09/13/2016 - 09/14/2016		\$1,280.00	12	REGISTER
Banner Technical: Banner Administration using XE Technology				\$3,000.00	-	DETAILS
Banner Technical: Banner Enterprise Job Scheduler by Automatic: Applications Manager v8 Basics				\$1,920.00	-	DETAILS
Banner Technical: Banner FGAC (Fine-Grained Access) Security				\$1,920.00	-	DETAILS
Banner Technical: Banner General Technical with an Overview of XE Technology	Virtual	05/16/2016 - 05/18/2016		\$1,920.00	6	REGISTER
Banner Technical: Creating a Git Infrastructure for Banner	Virtual			\$560.00	-	DETAILS
Banner Technical: Creating a Git Infrastructure for Banner	Virtual	06/01/2016		\$560.00	10	REGISTER
Banner Technical: Extending Banner Self Service XE Apps	Virtual			\$2,560.00	-	DETAILS
Banner Technical: Extending Banner XE Admin Apps	Virtual			\$2,560.00	-	DETAILS
Banner Technical: Implementing Single Sign-On in Banner 8 and XE Applications				\$1,280.00	-	DETAILS
Banner Technical: Implementing Single Sign-On in Banner 8 and XE Applications	Virtual	11/10/2016 - 11/11/2016		\$1,280.00	12	REGISTER
Banner Technical: Implementing Single Sign-On in Banner 8 and XE Applications	Virtual	07/14/2016 - 07/15/2016		\$1,280.00	12	REGISTER
Banner Technical: Implementing Single Sign-On in Banner 8 and XE Applications	Virtual	09/15/2016 - 09/16/2016		\$1,280.00	12	REGISTER
Banner Technical: Installing and	Virtual			\$560.00	-	DETAILS

Ellucian HUB Account

- **Sign up for an Ellucian HUB account if you don't have one**
 - ellucian.okta.com
- **Follow the Banner Technical group (and others) on eCommunities**
- **Log into and review the XE Guide website**



The screenshot shows the Ellucian sign-in page. At the top left is the "ellucian." logo. Below it is a "Sign In" section with a "Username" field, a "Password" field, and a "Sign In" button. To the right of the password field is a "Remember me" checkbox. Further right is a "Your security image" section with a placeholder image containing a question mark. At the bottom left of the sign-in section are links for "Forgot password?", "Help", "Contact Us", and "Sign up for a HUB account". At the bottom center of the page is the text "Powered by Okta Privacy Policy".



Preparing for Banner Powered by Ellucian XE

- 1** Ellucian XE Strategy and How it Applies to Banner
 - 2** Banner 8 and Banner 9.x – Coexistence and Where to Start
 - 3** Infrastructure, Tools and Skillsets
-



User Group

Thank you!



ellucian.

Mike Bates

Mike.Bates@ellucian.com

