



Enterprise WAS & Portal on zSeries

Enterprise Deployment of WebSphere & Portal On zSeries Linux at USDA

Chuck Gowans

US Dept. Of Agriculture – National IT Center



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Agenda

- Ø USDA, National IT Center, and Enterprise Shared Services
- Ø Rationale for zSeries
- Ø Design and Deployment Approach
- Ø Efficiencies and Cost Savings
- Ø Next Steps
- Ø Q & A





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USDA

- Ø Leads the Food Stamp, School Lunch, School Breakfast, and the WIC Programs
- Ø The steward of our nation's 192 million acres of national forests and rangelands
- Ø The country's largest conservation agency, encouraging voluntary efforts to protect soil, water, and wildlife on the 70 percent of America's lands that are in private hands
- Ø Responsible for the safety of meat, poultry, and egg products





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USDA

Ø Made up of 29 Agencies (comparable to corporations)

- ü Animal and Plant Health Inspection Service (APHIS)

- ü Farm Service Agency (FSA)

- ü Forest Service (FS)

Ø 11 Offices

- ü Office of the Chief Information Officer (OCIO)

 - ▼ National Information Technology Center (NITC)

- ü Office of Communications (OC)

 - ▼ Owner of usda.gov & myusda.gov Portal application

- ü Office of the Chief Financial Officer (OCFO)





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NITC

- Ø 7 x 24 x 365 Operations at 2 locations – KC & WDC
- Ø Hosting for USDA and Other Departments
 - DOT, DOL, GSA, Coast Guard
- ü 5 Mainframes
 - ✓ Approx. 1900 MIPS – z/OS
 - z9-EC, z9-BC, z800
 - ✓ Approx. 2900 MIPS – Linux IFLs
 - Two z9-ECs
- ü 600+ Client Server/Mid-range/Wintel servers



**NATIONAL INFORMATION
TECHNOLOGY CENTER**

Ø Application Development





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Enterprise Shared Services (ESS)

Ø Departmental e-gov initiative for all 29 agencies

ü e-Authentication

ü e-Grants

ü e-Learning (AgLearn)

ü e-Permits

ü e-Deployment (later renamed to ESS)

✓ WAS & Portal Hosting

✓ Web Content Mgt. (WCM), DM, RM, & BPM

• Stellent

✓ Collaboration

✓ Oracle - DBMS

✓ Google Search Engine





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Enterprise Shared Services (ESS)

- Ø **Business Principles** - Enables greater cross-agency collaboration and use of shared solutions and best practices.
- Ø **Technology Principles** – Promotes consolidation and standardization of technology where appropriate.
- Ø **Data Principles** - Maximizes data sharing and minimizes cost associated with duplicate management efforts.





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Enterprise Shared Services (ESS)

Ø Architecture – Standard Environments

ü Business Application Support

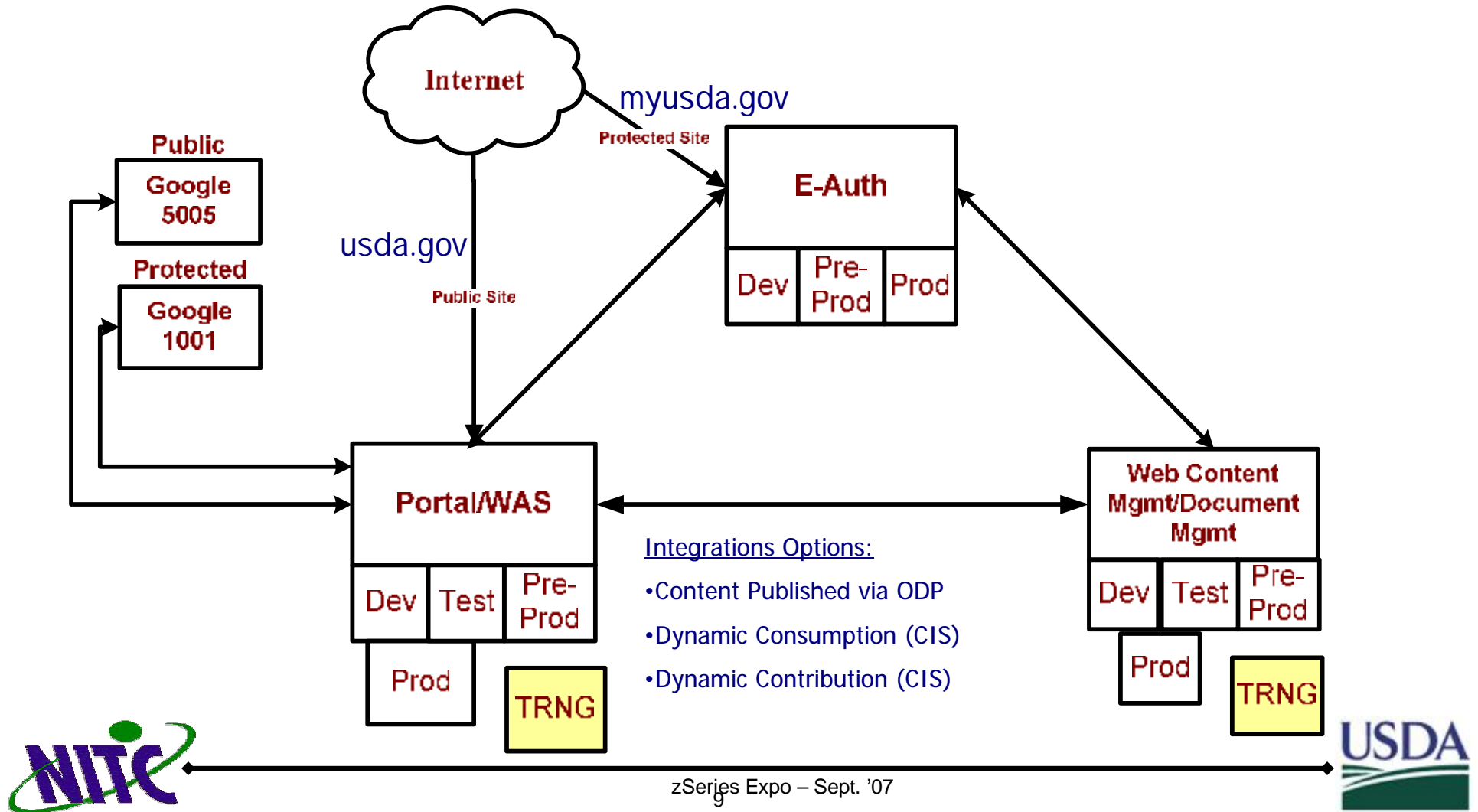


ü Integration Support



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ESS Integration – High Level View





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ESS Integration – Many to Many

- Portal – Stellent
 - Portal – Google
 - Portal – E-Auth
 - WAS – Stellent
 - WAS - Google
 - WAS – E-Auth
 - Stellent – E-Auth
 - Google – E-Auth
 - Directory Integrations
- CIS Interface for Portlets
 - Google Integrations
 - Secured Portal Sites
 - CIS Interface for WAS Apps
 - Google Integrations
 - Secured Sites
 - Secured Access to UI
 - Searching Secured Sites
 - LDAP and AD Population



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The screenshot shows a Mozilla Firefox browser window displaying the USDA Agricultural Marketing Service (AMS) website. The browser's address bar shows the URL "Agricultural Marketing Service - Home - Mozilla Firefox". The website header includes the USDA logo and the text "United States Department of Agriculture Agricultural Marketing Service". Below the header is a navigation menu with links for "Home", "About AMS", "Newsroom", "Opportunities", "Online Forms", "Help", and "Contact Us". The main content area features a search bar, a "Welcome to the Agricultural Marketing Service!" message, and sections for "In the News" and "Spotlights". The "In the News" section lists several recent announcements, such as "USDA Seeks Comment on Proposed Changes to Standards for Grades of Summer Squash" and "USDA Announces Final Rule to Change the Name of the Blueberry Council". The "Spotlights" section is partially visible at the bottom. On the right side, there are two sidebars: "I Want To" with links like "Find an AMS Program" and "Find a Form", and "See Also" with links like "Federal Register Notices" and "Latest Releases". The browser's status bar at the bottom shows the text "Find a Market, Find a Form, Market Information for you".





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Rationale for zSeries

- Ø Mainframe Resources Available
- Ø New Cost Model for MF Virtual Linux Servers
 - ü Versus old MF MIPS based cost model
 - ü Based on Client-Server/Mid Range model
 - ✓ Less floor space and environmentalals
 - ✓ Less time to provision new servers
 - ✓ Fewer administrators





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Rationale for zSeries

- Ø Affordable DR using Capacity Backup (CBU)
- Ø Meaningful Accounting for Chargeback
- Ø Software Savings – Fewer, Larger Processors
- Ø Overhead to handle Internet “Spikes”
- Ø Extremely Reliable and Scalable
- Ø Leverage Existing NITC Skill Set (MF & Linux)
- Ø Exploit Mature Mainframe Tools and Processes





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Design and Deployment Approach

Ø NITC' Goals for Deployment:

- ü Leverage existing NITC Infrastructure where possible (Incl. Chg & Config Mgt.)

- ü Minimize SW and Personnel Costs

- ü Deploy based on Vendor/Industry Best Practices

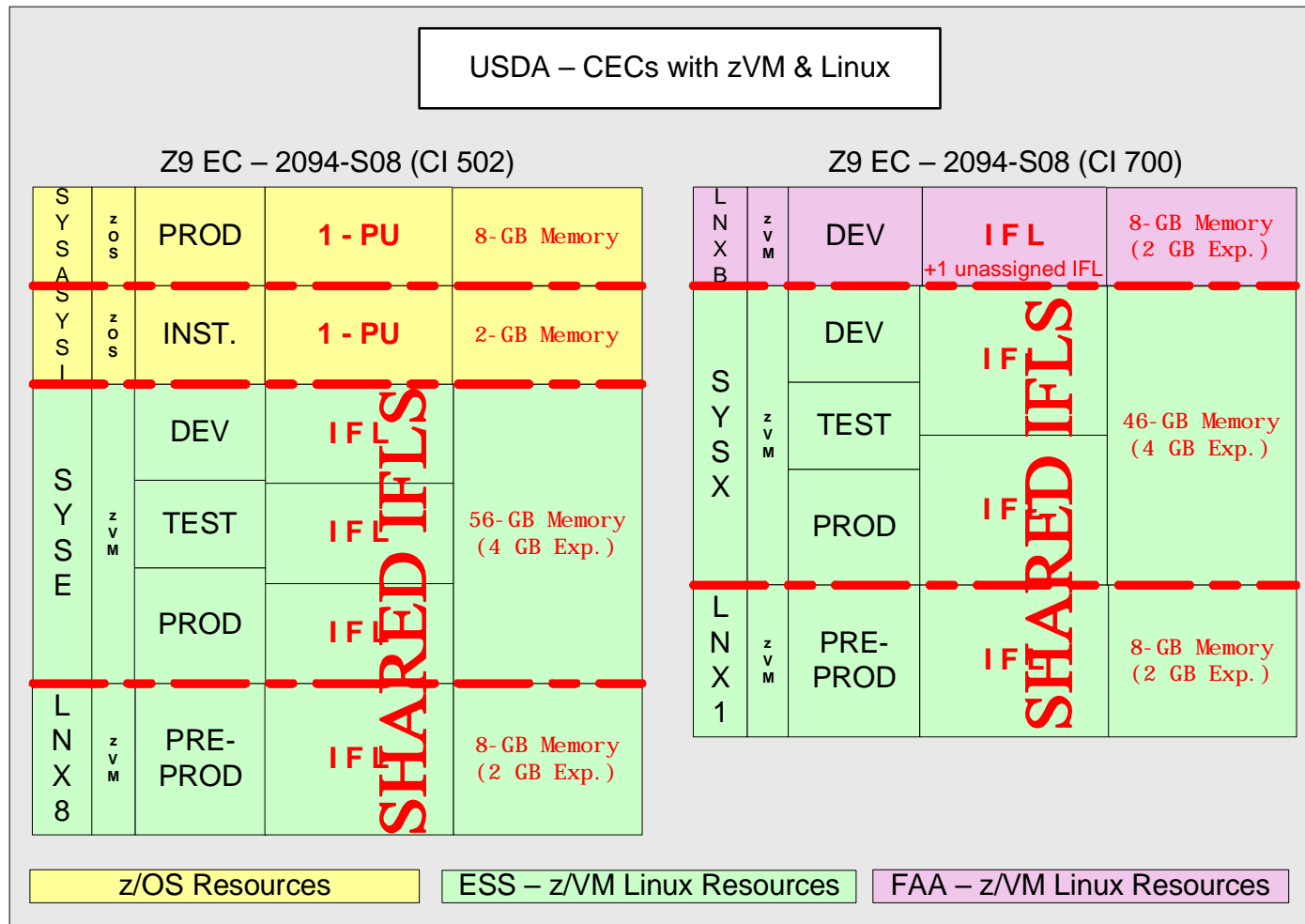
- ü Simplify Disaster Recovery planning where possible





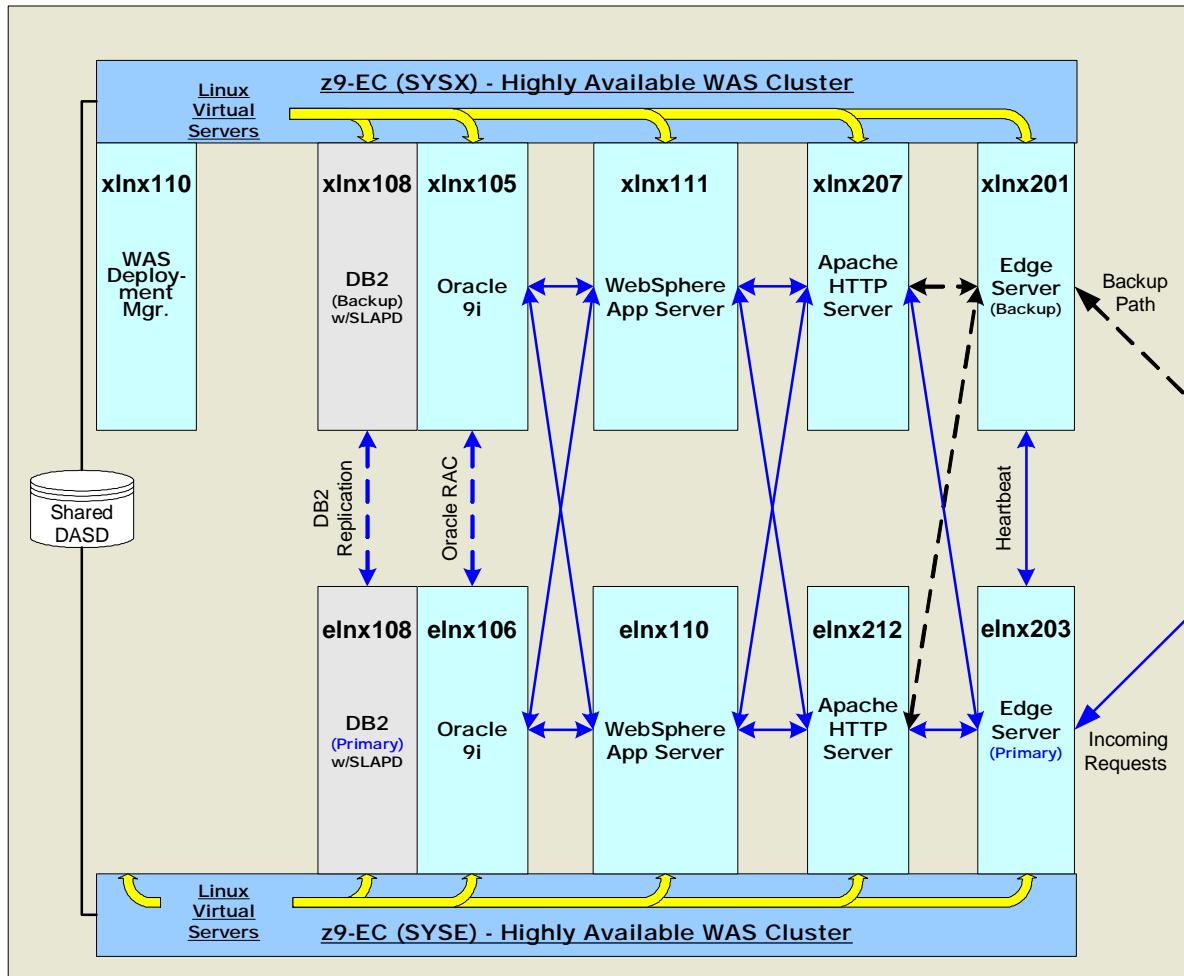
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Design and Deployment Approach



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Design and Deployment Approach



zLinux Virtual Servers – Production Topology

- ü Allows resource utilization to be tracked per customer
- ü Dev/Test Systems are not HA Clusters



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Design and Deployment Approach

Ø zLinux Virtual Servers – Topology

- ü SuSE Linux - SLES8
- ü Websphere/WAS Portal (5.0.2)
- ü Oracle 9i (User Data stores only)
- ü DB2-UDB v8
 - ✓ WAS/WPS configuration data only
 - ✓ LDAP stores for WAS/WPS
- ü Deployment Manager
- ü Edge Servers
- ü Apache HTTP Servers (req'd PHP)



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Efficiencies and Cost Savings

- Ø z/VM & Linux – SW Maint. Purchased from IBM
- Ø Virtual Server Advantages
 - ü Cloned Images from a Standard Template
 - ü Shared Disk for Common Images
 - ü Simplified Maintenance & Patch Mgt.
 - ü Simple/Low-cost Migrations to New Technology





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Efficiencies and Cost Savings

- Ø z/VM Automation to Shut Down Unused Env.
 - ü Reclaims Processor Cycles and Memory
- Ø Exploit ShadowImage™ and NITC DR Process
 - ü Reduced Down Time
 - ü Proven DR Processes
- Ø Akamai Used to Keep Cycles Off The Systems





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Next Steps

Ø Phase-II rollout of WAS/Portal Environments

ü All the latest “Certified” versions

- SUSE SLES9 (64bit)
- WAS/Portal v6 (Was-XD)
- DB2 v9
- Oracle 10g

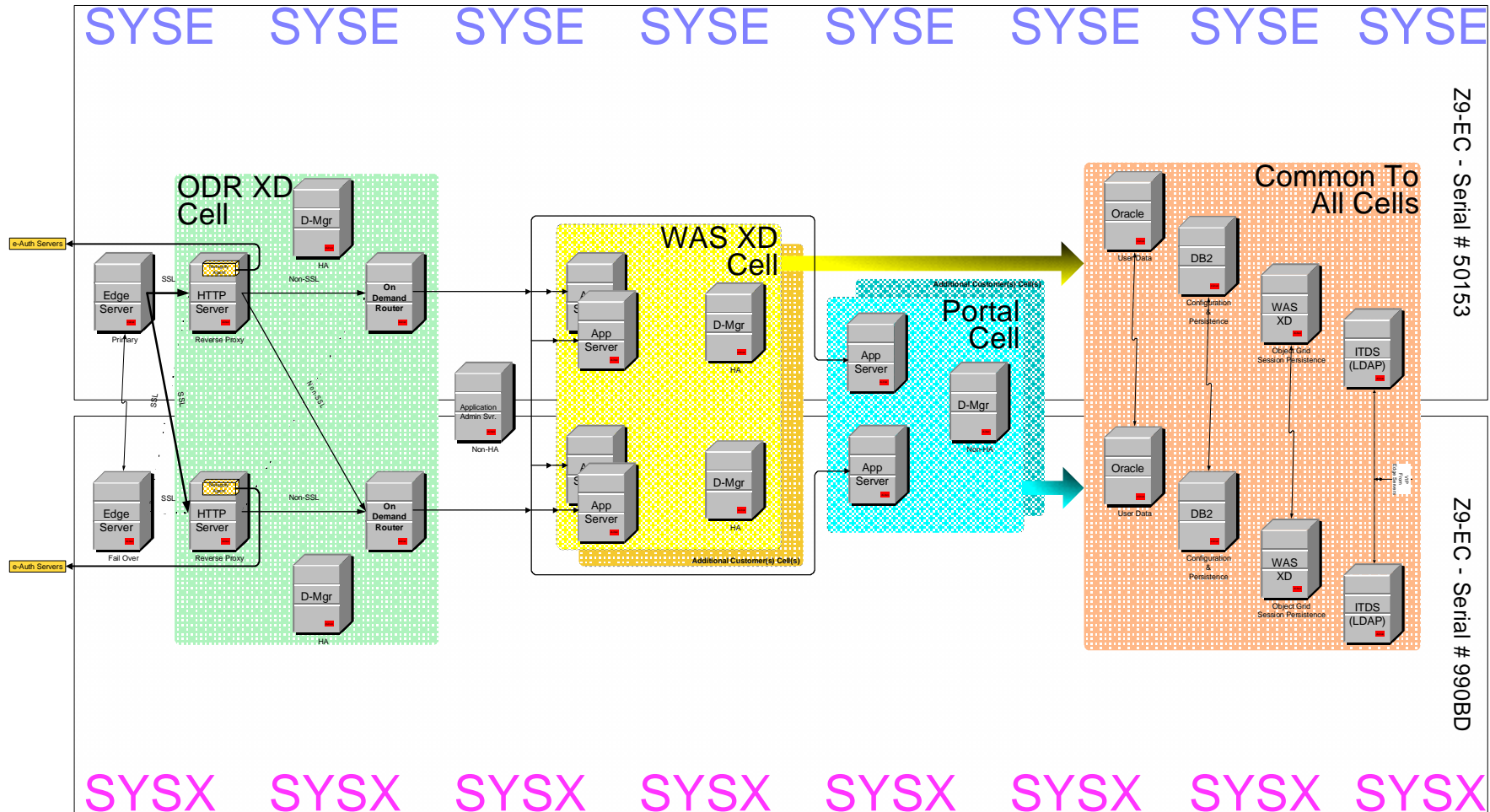
Ø Shorten WAS/Portal Deployment Times

ü 6.x Versions designed with Cloning in mind



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ESS – Phase-II – WAS/PORTAL Topology



Z9-EC - Serial # 501F53

Z9-EC - Serial # 990BD





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Next Steps

- Ø Continue to Maximize ROI
 - ü Bigger/Faster IFLs for zLinux LPARs
- Ø Shorten WAS/Portal Deployment Times
 - ü 6.x Versions designed with Cloning in mind





U.S. Department of Agriculture eGovernment Program

Any Future Questions?

call or e-mail -

Chuck Gowans

NITC Enterprise Architect

chuck.gowans@usda.gov

(816) 926-2345

