



F E D E R A L
S T U D E N T A I D

We Help Put America Through School

Integrated Technical Architecture Release 4.0

The ITA enables the business channels to reduce time to market, reduce costs, and increase performance.

Business Channel Enablement

Reduce Time to Market

- Less custom code to develop
- Minimal setup time for applications
- Development products that are designed and tested to integrate

Reduce Costs

- Reduction in hardware
- Reduction in development
- Shared product specialists

Increase Performance

- Performance test planning
- Performance test execution
- Performance test hardware & software



FSA has already achieved significant financial benefit for the business channels including Financial Partners

- 3 Performance tests for FP Portal which has allowed the application to meet its production loads for every release
- Upgrade to Microstrategy 7i for FP Datamart which resolves the open security & 508 compliance issues
- Saved FP Portal & Students Portal teams significant development time by employing 12 Reusable Common Services
- Moved the PIN site into the ITA environment to ensure robust, consistent performance for FAFSA and other applications
- Led SAIG performance test and resolved problems to increase processing efficiency of student load data



Agenda

ITA Benefits

ITA Defined

FY03 Initiatives

Performance Testing

Application Environments

Reusable Common Services

FY03 Funding Request

Conclusion

Appendix



The ITA consists of Technologies that enable FSA to quickly build and deploy new applications to reduce cost and time to market.

Technologies

Standard Products

- All teams within ITA make use of standard products such as web server, app server, load balancer, search engine and content management tools

Standard Shared Environments

- A common ITA environment has been built to share computing resources across teams

Standard Performance Testing Infrastructure

- ITA has procured all the necessary performance infrastructure and selected the appropriate methodology for teams to meet their performance testing goals

Standard Java-based Reusable Common Services

- Over a dozen reusable services have been built to shorten development time and reduce complexity



The ITA consists of Specialists that enable FSA to quickly build and deploy new applications to reduce cost and time to market.

Specialists

Provide Subject Matter Expertise

- Product experts are full time on the staff to support the troubleshooting of the most complex technical issues

Build Environments

- The ITA team supported the build of over fifty technical environments over the past year. This process is now very fast and trouble free. Future plans include automated build scripts

Assist in Application Design & Development

- The ITA team provided expertise to help application teams troubleshoot application or architecture issues
- ITA is also involved in technical architecture and design reviews – leveraging previous ITA experience



Agenda

ITA Benefits

ITA Defined

FY03 Initiatives

Performance Testing

Application Environments

Reusable Common Services

FY03 Funding Request

Conclusion

Appendix



ITA Initiatives for FY03

New in FY03

Evergreen of Products

- WAS, IHS, ND
- Interwoven
- MicroStrategy
- Autonomy
- LoadRunner
- Solaris 2.8
- Oracle 9 Upgrade (planning)
- HP 11i (planning)



Continuing in FY03

Performance Testing

- More applications coming on board
- Provide hardware, services, software
- Application profiling
- Capacity planning

Environment build out

- Pre-production
 - Development
 - Test
 - Demo
 - Performance
- Does not include code migrations
- Environment design

Reusable Common Services

- Enterprise FTP server
- Support of existing RCS
- SOAP services

Hardware refresh

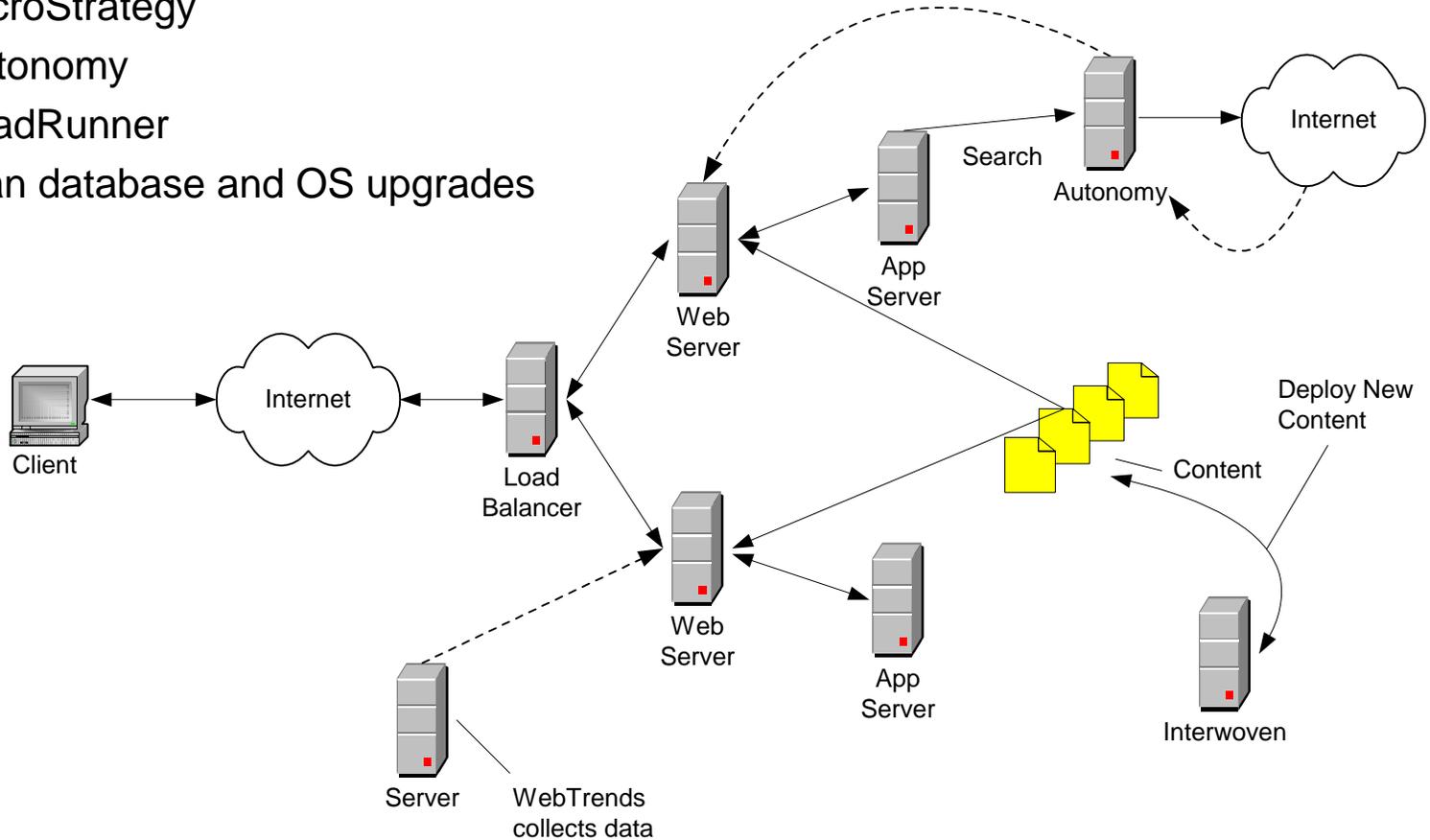
- Support activities - work with CSC
- Work with modernization teams to ensure applications are regression tested



Evergreening

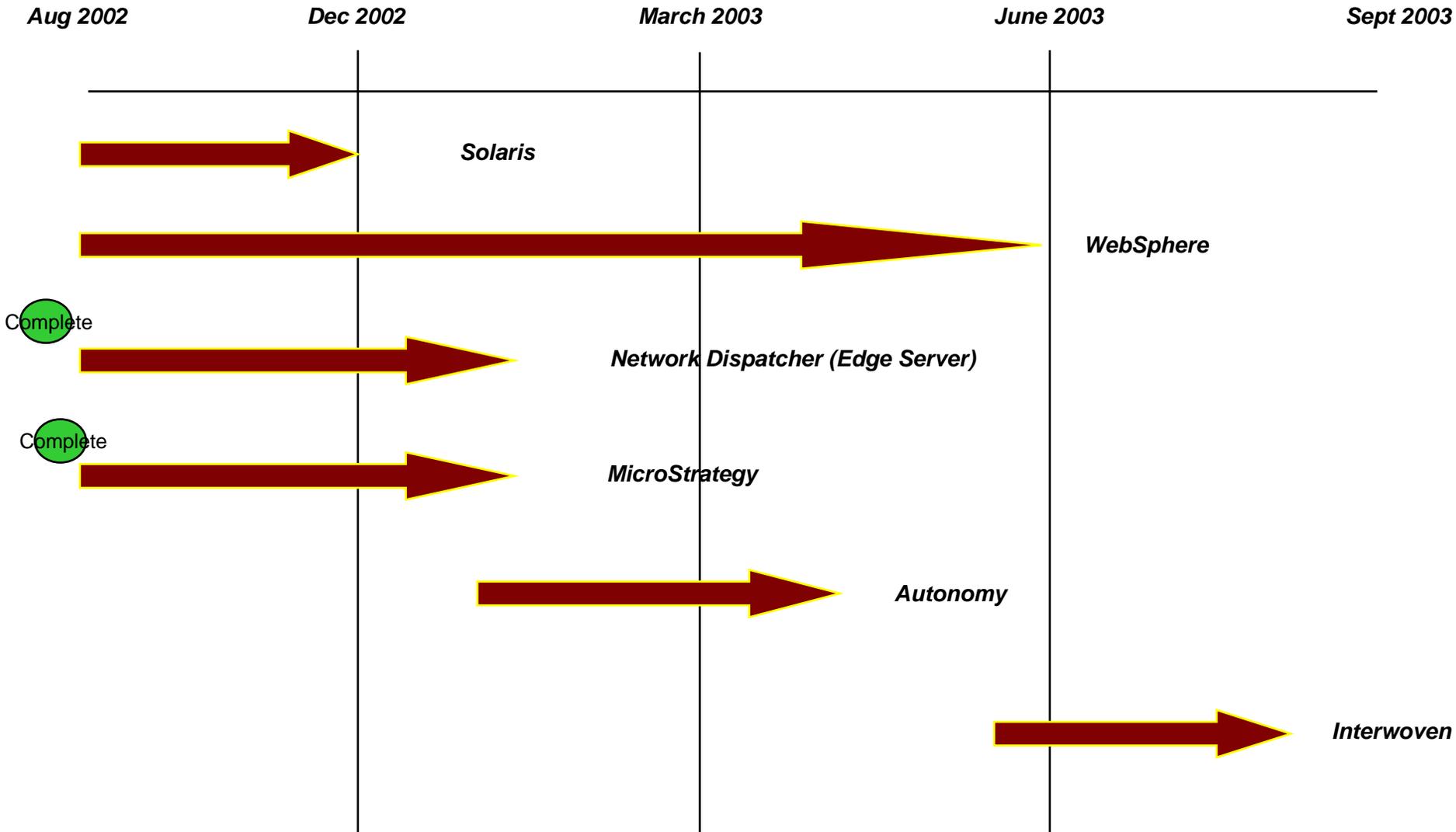
Keeping Business Channels' applications up to date

- WAS, IHS, ND
- Interwoven
- MicroStrategy
- Autonomy
- LoadRunner
- Plan database and OS upgrades





FY03 Sequencing Plan





Agenda

ITA Benefits

ITA Defined

FY03 Initiatives

Performance Testing

Application Environments

Reusable Common Services

FY03 Funding Request

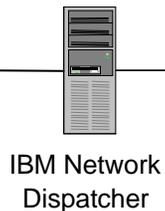
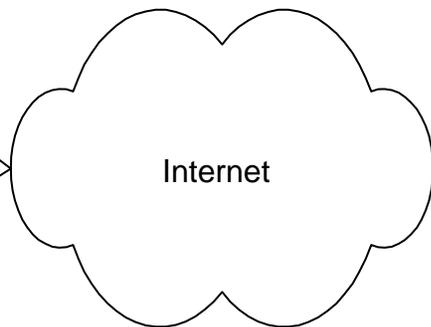
Conclusion

Appendix

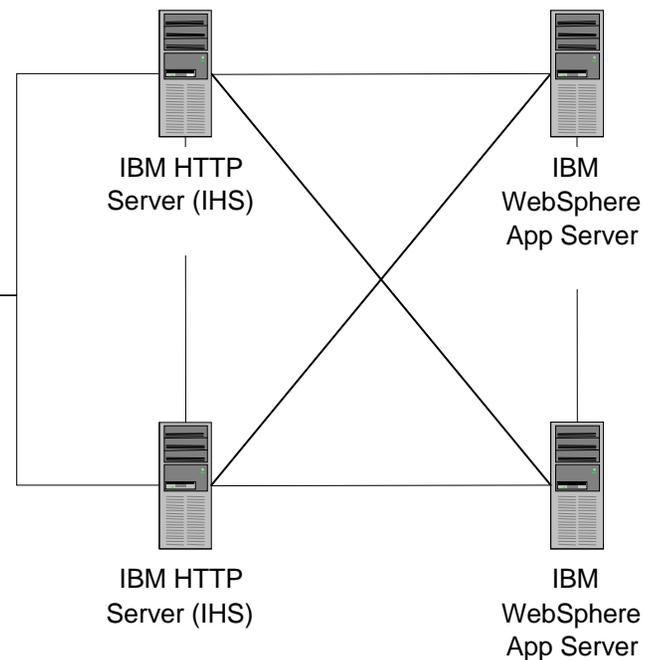
Performance Testing

Simulates real-world conditions under which applications must operate

2 Simulated User Load



1 Performance Environment





Performance Testing

Performance Services

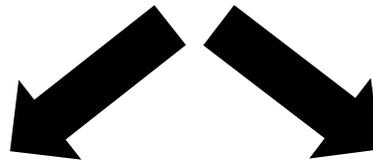
- Goal setting
- Script Building
- Test Execution
- Performance Troubleshooting
- Results Analysis

Schools & FP Applications

- FP Portal Release 2
- ezAudit
- DLWS
- Schools Portal
- FMS/LaRS
- FP Portal Release 3

Student Applications

- NSLDS 2
- Students Portal Release 2
- Students Portal Release 3
- FAFSA 6.0, 7.0
- PIN 6.0, 7.0
- DLSS





Agenda

ITA Benefits

ITA Defined

FY03 Initiatives

Performance Testing

Application Environments

Reusable Common Services

FY03 Funding Request

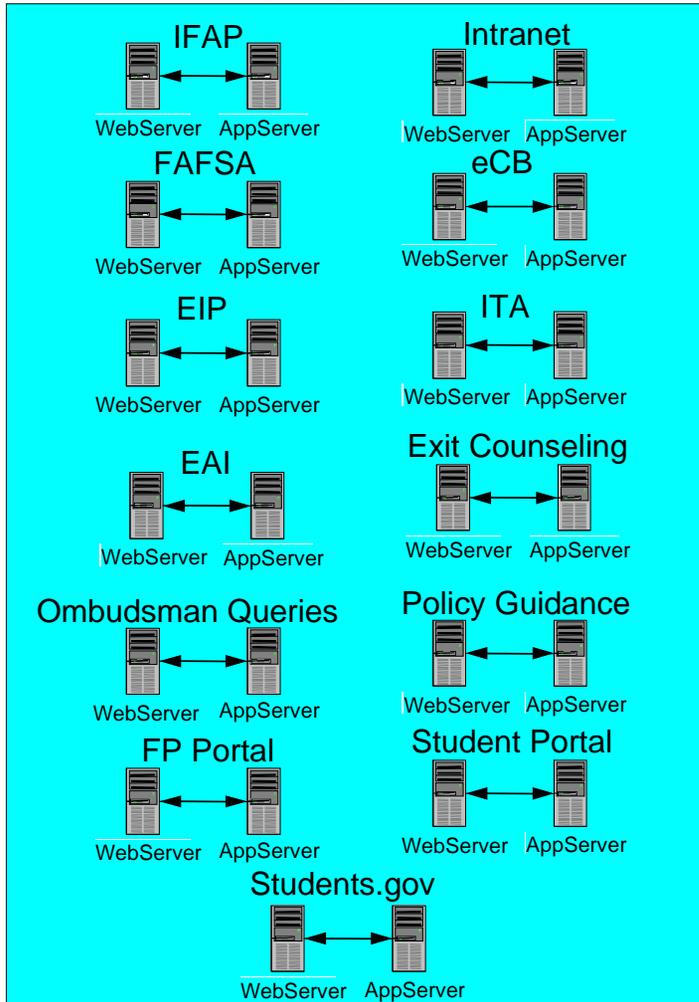
Conclusion

Appendix

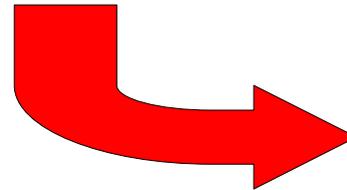
Environment Consolidation

ITA will continue to offer environment build out services which offer server consolidations and cost reductions.

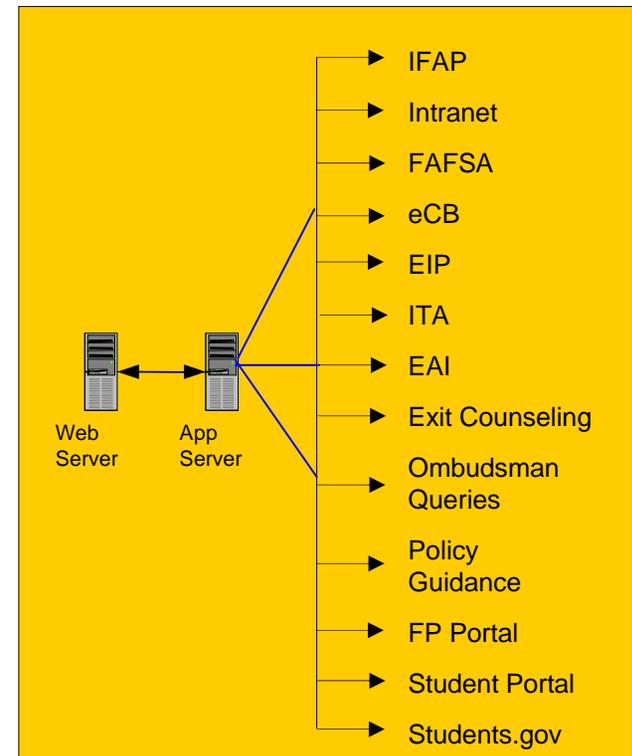
Before ITA



Shared Environment



After ITA



Application Environments – Benefits

Today's ITA Environments

Rapid Environment Build Out

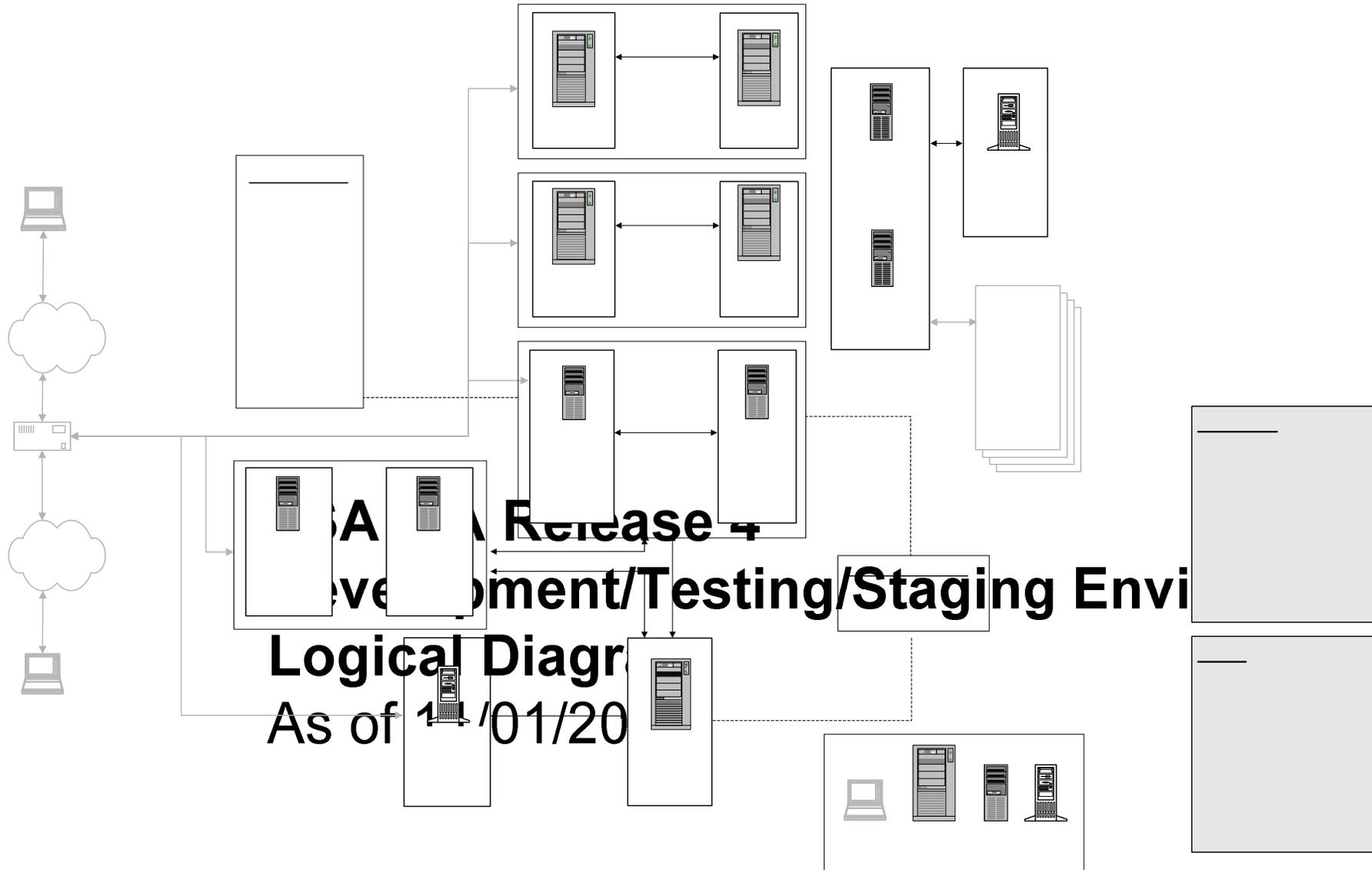
- Leverage existing expertise and relationships to expedite build of new environments

Shared Environments

- IFAP, FP Portal, Students Portal, Exit Counseling, Ombudsman Queries, Intranet, FSA Coach, and eCB – share the same environment

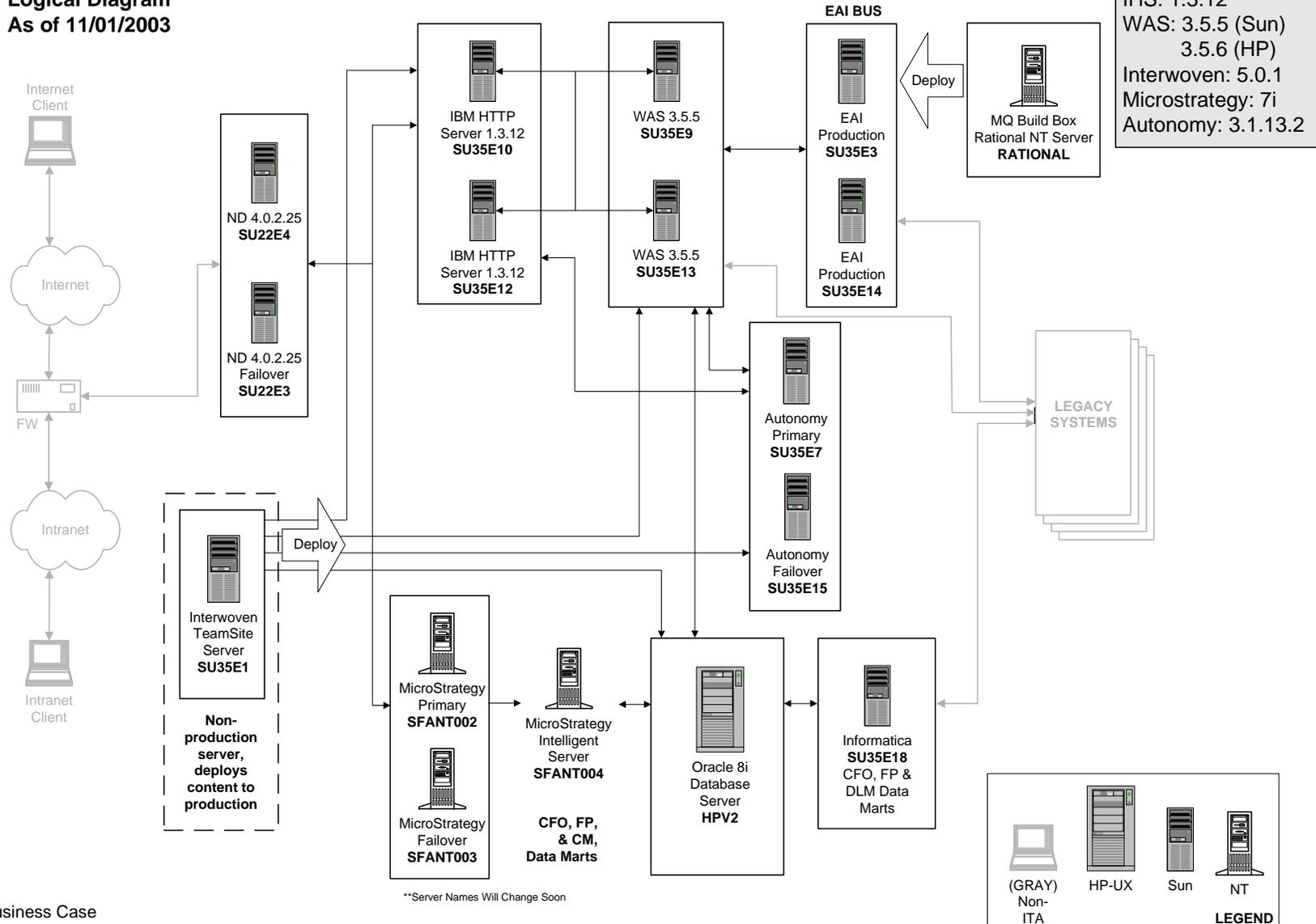
Cost Effective

- Costs are shared by applications within an environment
- Implementing lessons learned from previous projects by saving application teams valuable time and effort



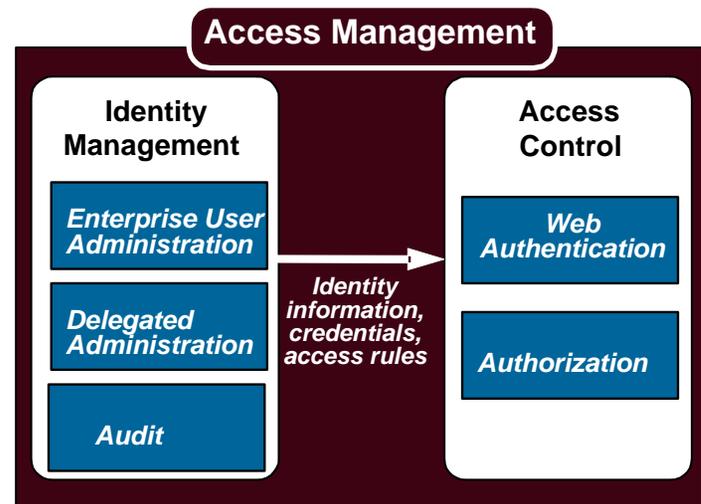
ITA Environment Production

FSA ITA Release 4 Production Environment Logical Diagram As of 11/01/2003



Environments & Security

- Applications make use of SSL
 - Encrypted traffic for sensitive student data
 - 128 bit
- Security Services
 - VDC
 - Intrusion detection, firewalls, security hardening
 - Tech Arch
 - Simple Java Authentication Service
 - PIN Site – match against SSA
 - Moving to a standard Identity & Access Management Solution
 - FSA is behind on security tools compared to USDA ...identity mgt system
 - Access Control
 - Identity Management





Agenda

ITA Benefits

ITA Defined

FY03 Initiatives

Performance Testing

Application Environments

Reusable Common Services

FY03 Funding Request

Conclusion

Appendix

Reusable Common Services

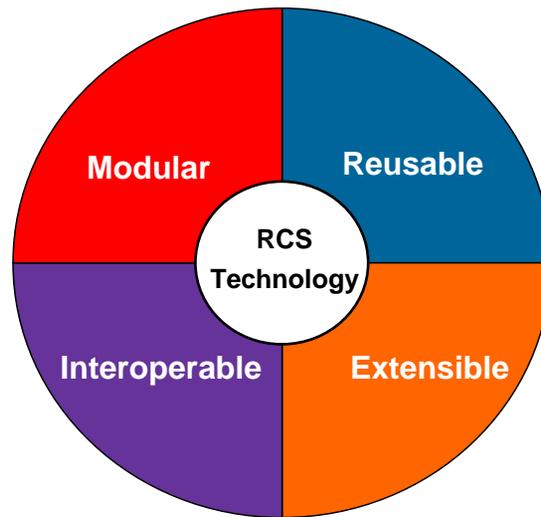
In FY03, the ITA team is wrapping up the RCS while supporting the existing services

New Services in FY03

- Enterprise FTP Server
- SOAP Framework
- Support of Existing Services

Key Tech Arch Services R2

- XML Helper Framework
- Web Conversation Framework
- Object Pooling Framework
- User Session Framework
- FTP Framework
- Configuration Framework
- Web Services Framework
- JSP Tag Library Framework
- Scheduler Framework



Portal Services

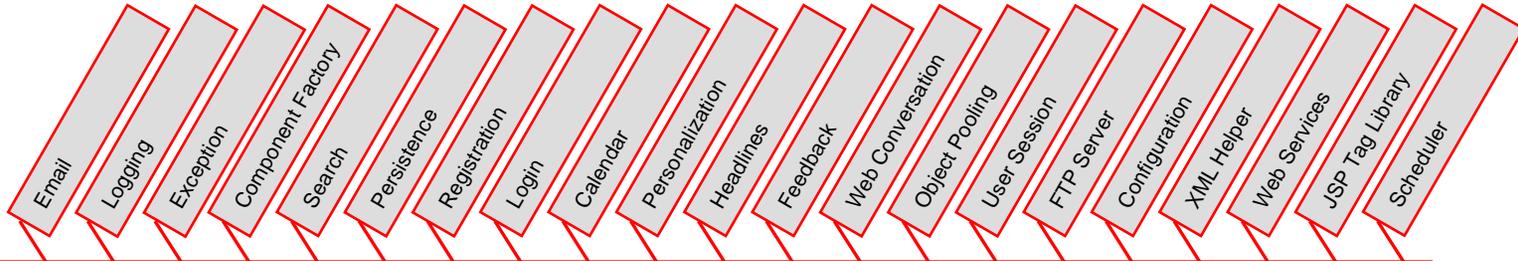
- Registration
- Login
- Calendar
- Personalization
- Headlines
- Feedback

Key Tech Arch Services R1

- Logging Framework
- Exception Handling Framework
- Mail Framework
- Persistence Framework
- Component Factory
- Search Framework



RCS implementations by FSA applications



Application	ITA R2.0 RCS Components						ITA R3.0 RCS Portlets						ITA R3.0 RCS Components									
IFAP		●		●	●																	
EAI		●	●																	●		
eCampus Based	●	●	●		●																	
Enterprise Portal		●	●		●	●																
Policy Guidance DB	●	●			●																	
FP Portal	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	
Students Portal	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	
Ombudsman Site Redesign					●																	
Students.gov	●																					
FAFSA 6.0		●																				
FAFSA 7.0		●			●																	
NSLDS II	●	●	●	●	●	●							●	●	●	●	●	●	●	●	●	●
FSA Intranet					●																	
ezAudit	●	●	●	●	●	●							●	●	●						●	
Schools Portal	●	●	●	●	●	●	●	●	●	●	●	●	●									

● Current Service
 ● Planned Service
 ● Opportunity Areas



Agenda

ITA Benefits
ITA Defined
FY03 Initiatives
Performance Testing
Application Environments
Reusable Common Services
FY03 Funding Request
Conclusion
Appendix



Conclusion

- ✓ The Integrated Tech Arch is comprised of a number of services, poised to deliver value to application teams.
- ✓ FSA has realized significant value for its Business Channels through Integrated Tech Arch.
- ✓ Enhanced customer service will improve integration activities.
- ✓ FSA will obtain further financial benefit and cost savings in FY02 & FY03.
- ✓ Business Channels can continue to expect Integrated Tech Arch to enable them to reduce time to market, reduce costs, and increase performance.



Agenda

ITA Benefits

ITA Defined

FY03 Initiatives

Performance Testing

Application Environments

Reusable Common Services

FY03 Funding Request

Conclusion

Appendix



Services Overview - Details

FSA Applications & Interaction with Technical Architecture Teams				Development Test	Performance Test	Staging	Production	WebSphere	IBM HTTP Server	Autonomy	Informatica	Informatica	MicroStrategy	Vapor/URL	Siebel	Oracle BI	Java-based Reusable Common Services	FTP Server	Web Services	DBA Services	Tech Arch Reviews	Development	Outsourcing	Products SWE Support	Security	Performance Testing	ITA Product Upgrade	Adaptics	MS/Server	MSS	Data Integrator	Deploy	eCM	Configuration Management		
Existing Applications	ITA	EAI	Migration Date	ITA Environments				ITA Architecture								ITA RCS Components	NEW RCS	ITA Services				EAI Services				Solution Excellence										
IFAP	✓		10/2000	●	●		●	●	●	●	●	●	●	●		●			●	●		●	●		●							●				
Schools Portal	✓		10/2000	●	●		●	●	●	●	●	●	●	●		●			●	●		●	●		●							●				
FP Datamart	✓		4/2001	●	●		●	●	●	●	●	●	●	●		●			●	●		●	●		●							●				
FAFSA 6.0	✓		6/2001	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●							●				
EAI	✓		6/2001	●	●		●	●	●	●	●	●	●	●		●		●	●		●	●		●								●	●			
eCampus Based R1 & R2	✓		6/2001	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●											
Exit Counseling	✓		10/2001	●	●		●	●	●	●	●	●	●	●		●			●	●		●	●		●											
FARS Retirement	✓		10/2001	●	●		●	●	●	●	●	●	●	●		●			●	●		●	●		●											
Ombudsman Queries	✓		10/2001	●	●		●	●	●	●	●	●	●	●		●			●	●		●	●		●							●	●			
Program Guidance DB	✓		10/2001	●	●		●	●	●	●	●	●	●	●		●			●	●		●	●		●								●	●		
Students.gov	✓		11/2001	●	●		●	●	●	●	●	●	●	●		●			●	●		●	●		●								●	●		
FP Portal	✓		12/2001	●	●	●	●	●	●	●	●	●	●	●		●		●	●	●	●	●	●	●	●	●							●	●		
Students Portal	✓		12/2001	●	●	●	●	●	●	●	●	●	●	●		●		●	●	●	●	●	●	●	●	●							●	●		
NSLDS		✓	12/2001													●										●	●	●	●	●	●	●	●	●		
FSACoach	✓		1/2002	●	●		●	●	●	●	●	●	●	●		●			●	●		●	●		●									●		
DLSS		✓	1, 5/2002																						●	●	●	●	●	●	●	●	●	●	●	
PEPS		✓	2, 4, 6, 7/2002																						●	●	●	●	●	●	●	●	●	●	●	
COD		✓	2, 4, 6/2002																						●	●	●	●	●	●	●	●	●	●	●	
eCB		✓	2/2002	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●		
CPS		✓	4/2002																						●	●	●	●	●	●	●	●	●	●	●	
FMS	✓	✓	4/2002																						●	●	●	●	●	●	●	●	●	●	●	
LOWeb		✓	4/2002																						●	●	●	●	●	●	●	●	●	●	●	
SAIG		✓	4/2002																						●	●	●	●	●	●	●	●	●	●	●	
Ombudsman Site Redesign	✓		4/2002	●	●		●	●	●	●	●	●	●	●		●			●	●		●	●		●								●	●		
FSA Net Redesign	✓		6/2002	●	●		●	●	●	●	●	●	●	●		●			●	●		●	●		●								●	●		
FFEL			TBD																															●	●	
DLOS			TBD																															●	●	
ITA	✓		6/2002	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●								●	●		
CM Datamart			6/2002																															●	●	
Rational Support Team			6/2002																															●	●	
PIN Site	✓		7/2002	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●								●	●		
FAFSA 7.0	✓		6/2002 - 9/2003	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●	●	
eZ-Audit	✓		7/2002	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●	●	
Ombudsman Site Redesign	✓	✓	6/2002 & 7/2003	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●	●	
NSLDS II	✓	✓	Fall 2002 & 7/2003	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●	●	
CRM4FSA	✓	✓	10, 11/2002 & 7/2003	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●	●	
Mellon		✓	10/2002																																●	●
LaRS		✓	8, 11/2002		●																														●	●
CPS R2		✓	11/2002 & 7/2003																																●	●
PEPS	✓	✓	11/2002 & 1/2003																																●	●
eServicing	✓		TBD	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●	●	
SAIG	✓	✓	7/2003	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●	●	
FSA Extranet	✓		TBD	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●	●	
FSA University	✓		TBD	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●	●	
ISR Support	✓		TBD	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●	●	
COD	✓	✓	7/2003	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●	●	
DLSS R2	✓	✓	7/2003	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●	●	
DMCS	✓	✓	7/2003	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●	●	
FMS R5	✓	✓	7/2003	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●	●	
Portals Release 3.0	✓		TBD	●	●	●	●	●	●	●	●	●	●	●		●			●	●		●	●		●									●	●	

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