

Hosting Your Application at EPA's National Computer Center

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Agenda



- What is EPA's National Computer Center (NCC)?
- What do we host?
- How to deploy your application?

National Computer Center, Research Triangle Park, NC

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EPA's National Computer Center

- Dedicated facility at Research Triangle Park, NC
- LEED* Silver Certification
 - Sustainable design and energy efficient features
- 24,000 sq. ft. computer room supporting:
 - Open Systems
 - Mainframe
 - Telecommunications
 - E-mail
 - High Performance Computing



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Robust Hosting Infrastructure

- EPA's national data center since 1980
- 24x7 operations and onsite support
- Production standards and procedures
- 24x7 maintenance agreements with hardware and software vendors
 - Dell, Microsoft, IBM, Sun, Oracle, etc.
- Industry standard backup solution with offsite storage of backup tapes
- Integrated security environment

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Configuration Assurance

- Pre-deployment standard configuration testing
- Monthly configuration compliance audits
- Continuous vendor patch monitoring
- Routine patch testing and implementation
- Change management process in place
- User registration and account management services available

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Physical Security

- EPA owned and managed facility
- Controlled access - campus and building access
 - Physical barriers for NCC building protection
 - Separate secure building
 - Additional restricted badge access to data center



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IT Security

- Continuous automated intrusion detection
- Monthly vulnerability assessments
- Robust incident monitoring and reporting
- Access to current security information
- EPA computer security incident response procedures
- Third party security reviews
- Background checks completed on all support personnel

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Power/HVAC

- Onsite uninterruptible power supply (UPS)
 - Clean, filtered power
 - Orderly shut downs, if needed
- Onsite generator to power computer room during power emergencies
- Onsite stand alone chiller to cool computer room during emergencies
- Smoke, fire, and water detection



Backup and Disaster Recovery

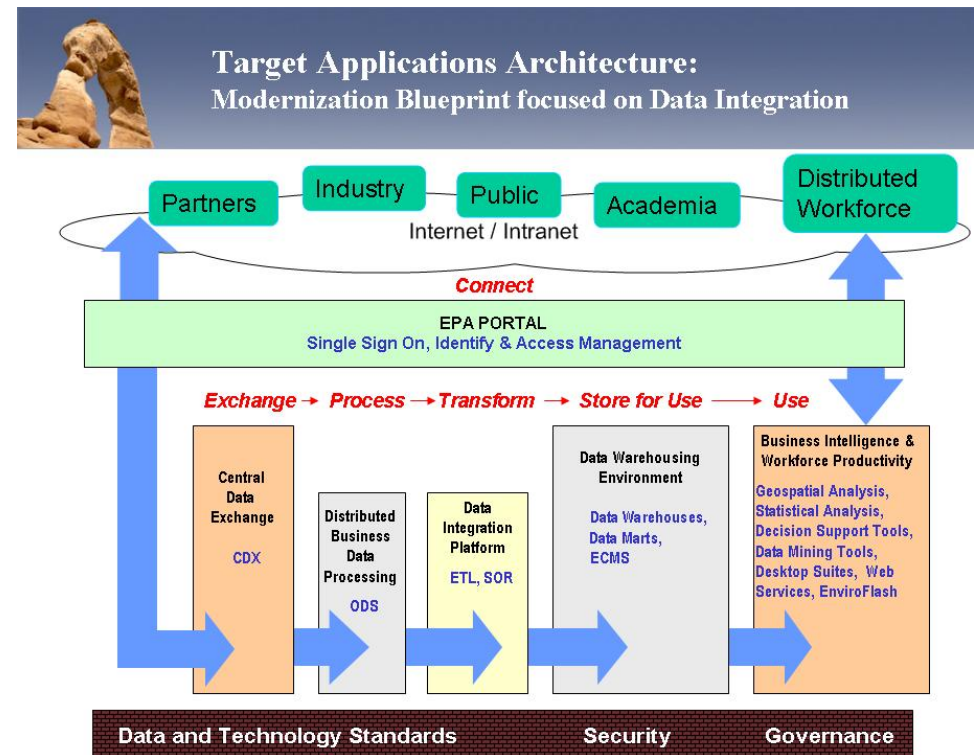
- Disaster recovery plan for critical applications
 - Annual plan tested at recovery site in Boulder, Co
- Custom disaster recovery solutions
 - Disaster recovery solutions will be customized to meet requirements



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Application Hosting Environments

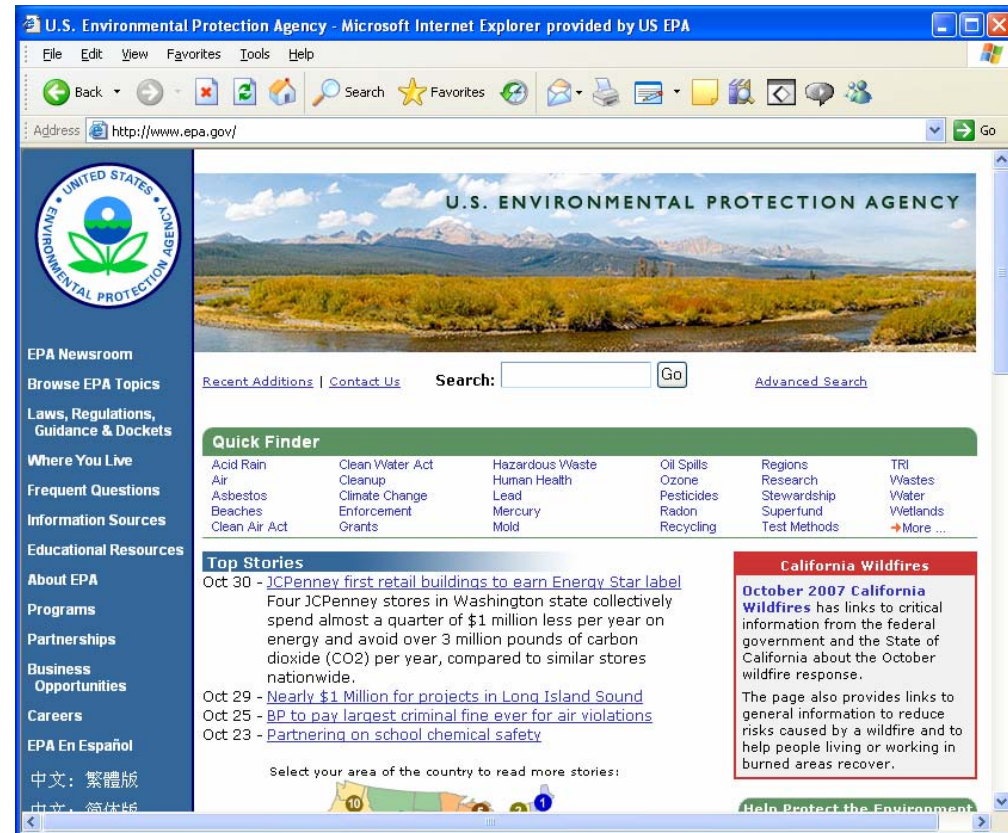
- Enterprise Tools: CDX, ETL, Registries, ECMS, Geospatial, Identity Management, Portal
- Technologies:
 - Static Web pages over one million
 - Domino 250
 - ListServer 118
 - ColdFusion 120
 - Mapping 57
 - Oracle Application Server 135
 - Oracle Database 150



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Application Hosting: Static Web

- www.epa.gov
- 842,000 public pages
- 1.3 million hits/day
- 319 GB per/day
- 376,000 intranet pages
- Apache/Linux on clustered IBM Bladeservers



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Application Hosting: Domino

- Over 250 Applications
 - Lowest cost NCC environment
 - EPA Press Releases
 - Training Applications
 - Adopt Your Watershed
 - Science Advisory Board
 - Toxic Substance Control Act Test Submission Database (TSCATS)



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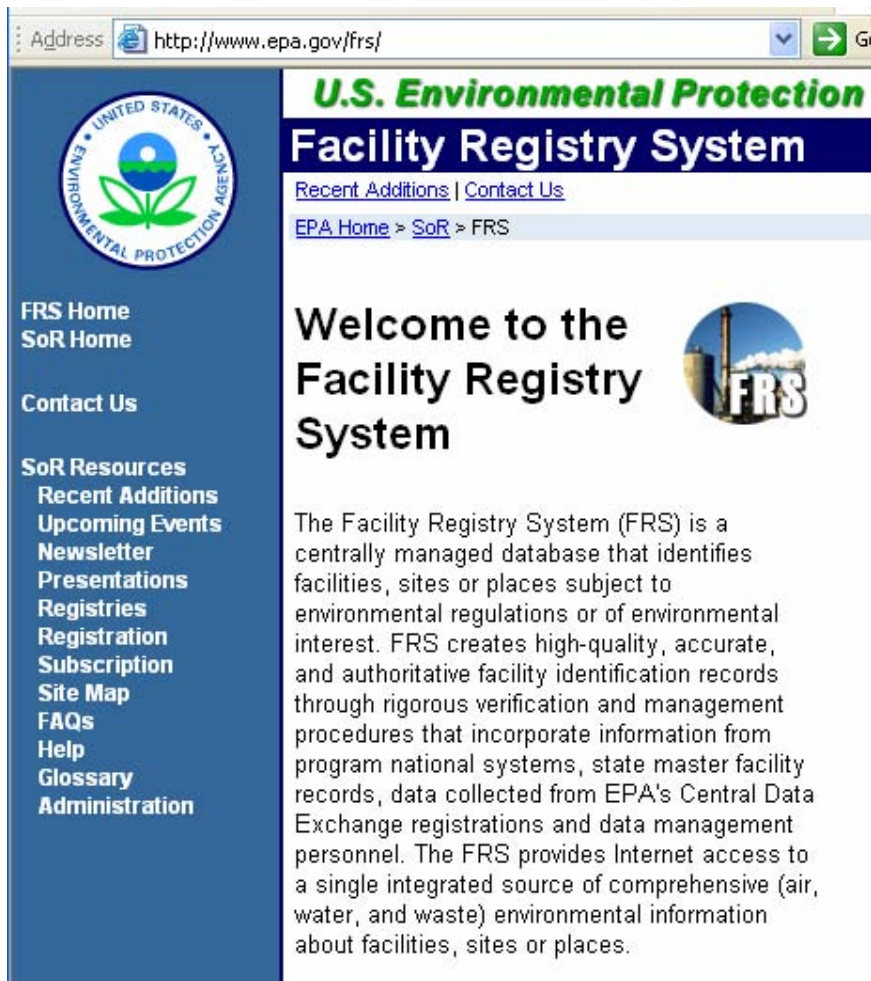
Application Hosting: Cold Fusion

- 120 Applications
 - Rapid Application Development
 - Front end to Oracle databases
 - AirNow
 - Allowance Tracking System/CAMD Bus System
 - ASSERT



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Application Hosting: Oracle Application Server



The screenshot shows a web browser window with the address bar displaying <http://www.epa.gov/frs/>. The page features the EPA logo on the left and a navigation menu with links such as "FRS Home", "SoR Home", "Contact Us", "SoR Resources", "Recent Additions", "Upcoming Events", "Newsletter", "Presentations", "Registries", "Registration", "Subscription", "Site Map", "FAQs", "Help", "Glossary", and "Administration". The main content area is titled "U.S. Environmental Protection Facility Registry System" and includes a "Welcome to the Facility Registry System" message. A circular logo with "FRS" and a factory icon is also present. The text below the welcome message describes the FRS as a centrally managed database that identifies facilities, sites, or places subject to environmental regulations or of environmental interest. It states that FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, data collected from EPA's Central Data Exchange registrations, and data management personnel. The FRS provides Internet access to a single integrated source of comprehensive (air, water, and waste) environmental information about facilities, sites, or places.

- 135 Applications
 - Major Agency systems including Envirofacts, STORET, FRS, AQS
 - Primary J2EE environment
 - Native support for Oracle and PL/SQL

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Application Hosting: Oracle Database

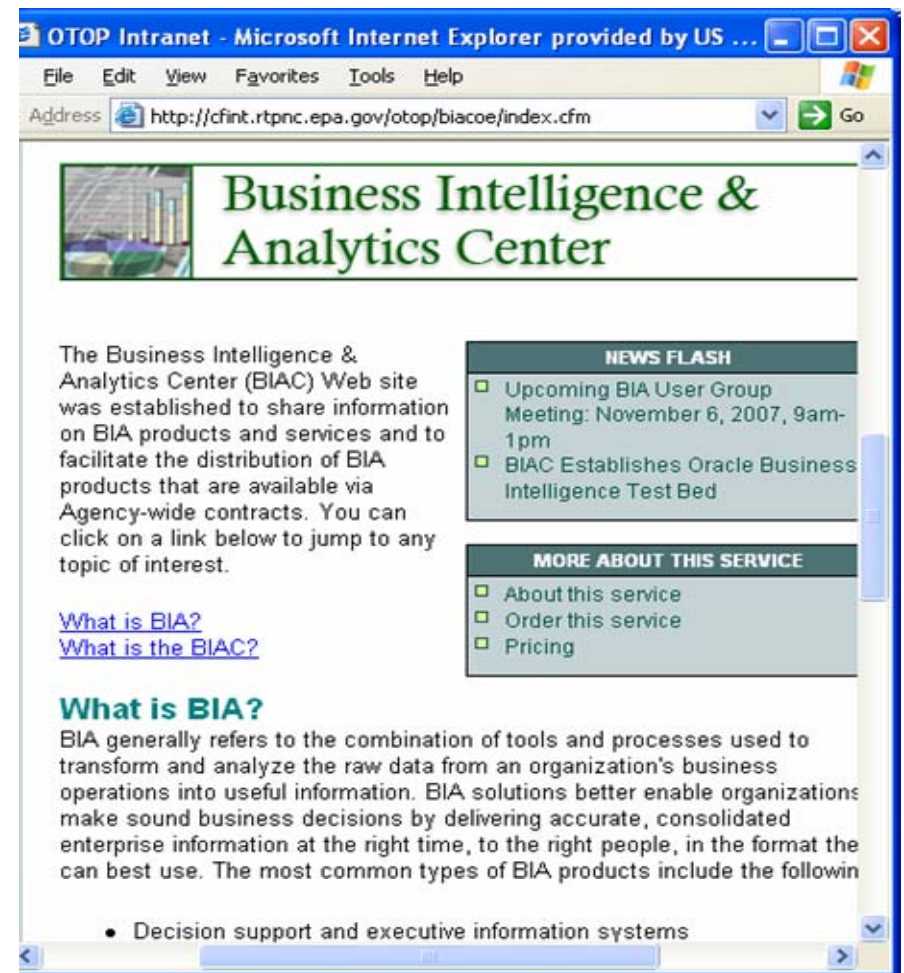
- Enterprise Architecture platform
- Industry and technology leader
- Over 150 EPA databases
- Robust support – 30 database technical consultants and DBAs
- Envirofacts and virtually every mission support system



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Application Hosting: Business Intelligence and Analytics

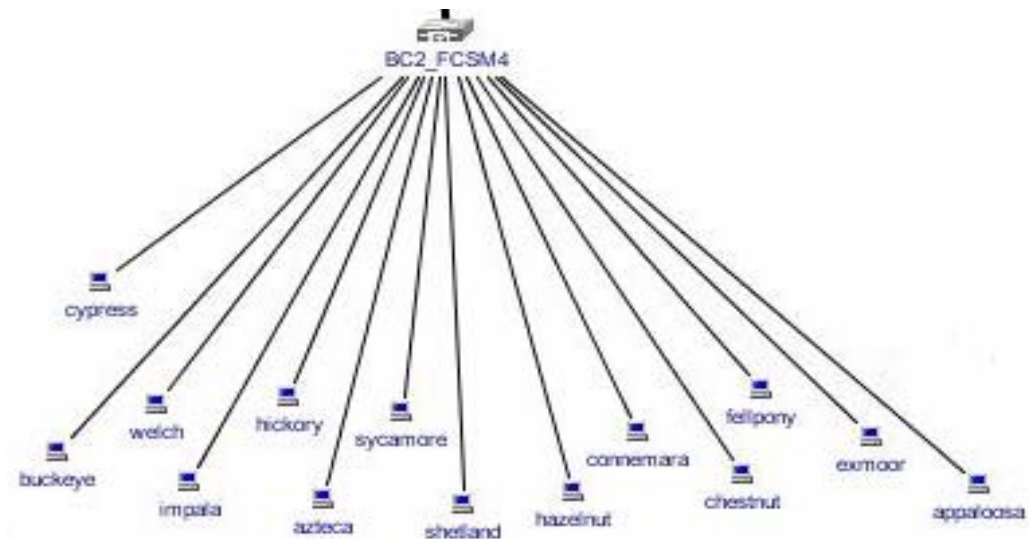
- Enterprise Tools
 - Business Objects
 - SAS
 - Informatica Powercenter
- ORBIT
- AQS Data Mart
- TRI Data Mart



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Hosting Technologies: Blades and BladeCenters

- High Density
 - Space Saving
 - 14 dual CPU servers
- Redundancy
 - Network switches
 - Power supplies
 - Management
- Intel Processors
 - Windows
 - LINUX
- Boot from SAN



Hosting Technologies:

System P - UNIX

- Highly scalable
 - 16 processors
 - 768 GB RAM
- Dynamic LPARing
- Virtualization
 - Micro-partitioning
- High availability
- Management features
- Supports database processing



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Application Hosting Upgrade Schedule

<http://yosemite.epa.gov/OEI/webguide.nsf/deploy>

Category	FY07 Q4	FY08 Q1	FY08 Q2	FY08 Q3	FY08 Q4	FY09 Q1
Application Servers (Shared)						
ColdFusion	7	7	7	7	7	7
Domino	7	7	7	7	7	7
Oracle Application Server	10.1.2.0.2 10.1.2.2.0	10.1.2.0.2 10.1.2.2.0	10.1.2.2.0	10.1.2.2.0	10.1.2.2.0	10.1.2.2.0
Oracle Application Server (J2EE)	1.3	1.3	1.3	1.3	1.3	1.3
Oracle Application Server (Agency Portal)	10.1.2.0.2 (Portal 10.1.4)	10.1.2.0.2 (Portal 10.1.4)	10.1.2.0.2 (Portal 10.1.4)	10.1.2.0.2 (Portal 10.1.4)	10.1.2.0.2 (Portal 10.1.4)	10.1.2.0.2 (Portal 10.1.4)
Oracle Application Server (Portal components within shared OAS environment)	10.1.2.0.2 10.1.2.2.0	10.1.2.0.2 10.1.2.2.0	10.1.2.2.0 Rel. 2	10.1.2.2.0 Rel. 2	10.1.2.2.0 Rel. 2	10.1.2.2.0 Rel. 2
GIS (J2EE)	1.5.0_06	1.5.0_06	1.5.0_06	1.5.0_06	1.5.0_06	1.5.0_06
GIS (JRUN; Legacy only)	4	4	4	4	4	4
JRUN (Legacy Only)	4	4	4	4	4	4
Tomcat	4, 5 5.5	4, 5 5.5	5.5	5.5	5.5	5.5

Deploying Your Application

What does ADC mean?

The screenshot shows a Microsoft Internet Explorer browser window displaying the OTOP Intranet. The address bar shows the URL: <http://cfint.rtpnc.epa.gov/otop/resources/adc/ApplicationDeploymentChecklist.cfm>. The page header includes the OTOP logo, the Office of Environmental Information logo, and the text "Making IT Work for You! Office of Technology Operations & Planning". A search bar is visible on the right. The main content area is titled "Application Deployment Checklist (ADC)" and contains several sections:

- Navigation Links:** [What is the ADC?](#), [How do I know if my application requires an ADC?](#), [How do I submit an ADC?](#), [What happens once I submit an ADC?](#), [How long will it take to review and approve my application?](#), [What can I do to help the deployment process?](#), [Is there someone I can reach if I have a question?](#)
- Action Links:** [Submit an ADC](#), [Current status of ADCs](#), [Steps in the Process](#), [Security Plan Requirements](#), [Find Your Technical Contact](#), [Decommissioning Applications](#), [ADC System Login](#)
- Submit ADC Button:** A button labeled "Submit ADC" is located below a graphic of a clipboard with a checklist and the text "ADC APPLICATION DEPLOYMENT CHECKLIST".

What is the ADC?

The Application Deployment Checklist (ADC) is a tool used to guide you through the application deployment process. All web-based applications hosted in EPA's National Computer Center (NCC) in Research Triangle Park, NC are required to

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Application Deployment Checklist (ADC)

- The document
 - Tangible document
 - Captures customer requirements
- The tool
 - On-line application which is available to the customer as well as the technical staff on the EPA Network
 - Document communication between parties
 - Track status of deployment efforts
- The process
 - The process used by NCC and CSC to review new deployments
 - The 'checklist' part of ADC; to ensure each application receives the appropriate reviews

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When is an ADC required?

- To deploy a new application in the National Computer Center
- To deploy a major change to an application:
 - New platform, interface, or technology
 - Major (X.0) version change
 - More than 10% code change
- Not required for minor releases using same technology that don't change security profile

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The ADC Process

The Application Deployment Checklist (ADC) is a process used by NCC and CSC to review applications being deployed into EPA's National Computer Center (NCC).

The process includes the following stages:

- Initial Review
- Staging Review
- Production Review

*Security Policies and Procedures Requirement

*Billing Requirement

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Roles & Responsibilities: NCC Point of Contact

- Federal EPA staff
- Point of contact for the customer
- Federal coordination of the deployment
- Communicates working capital and financial requirements to the customer
- Assists in determining the need for security plans for the ADC

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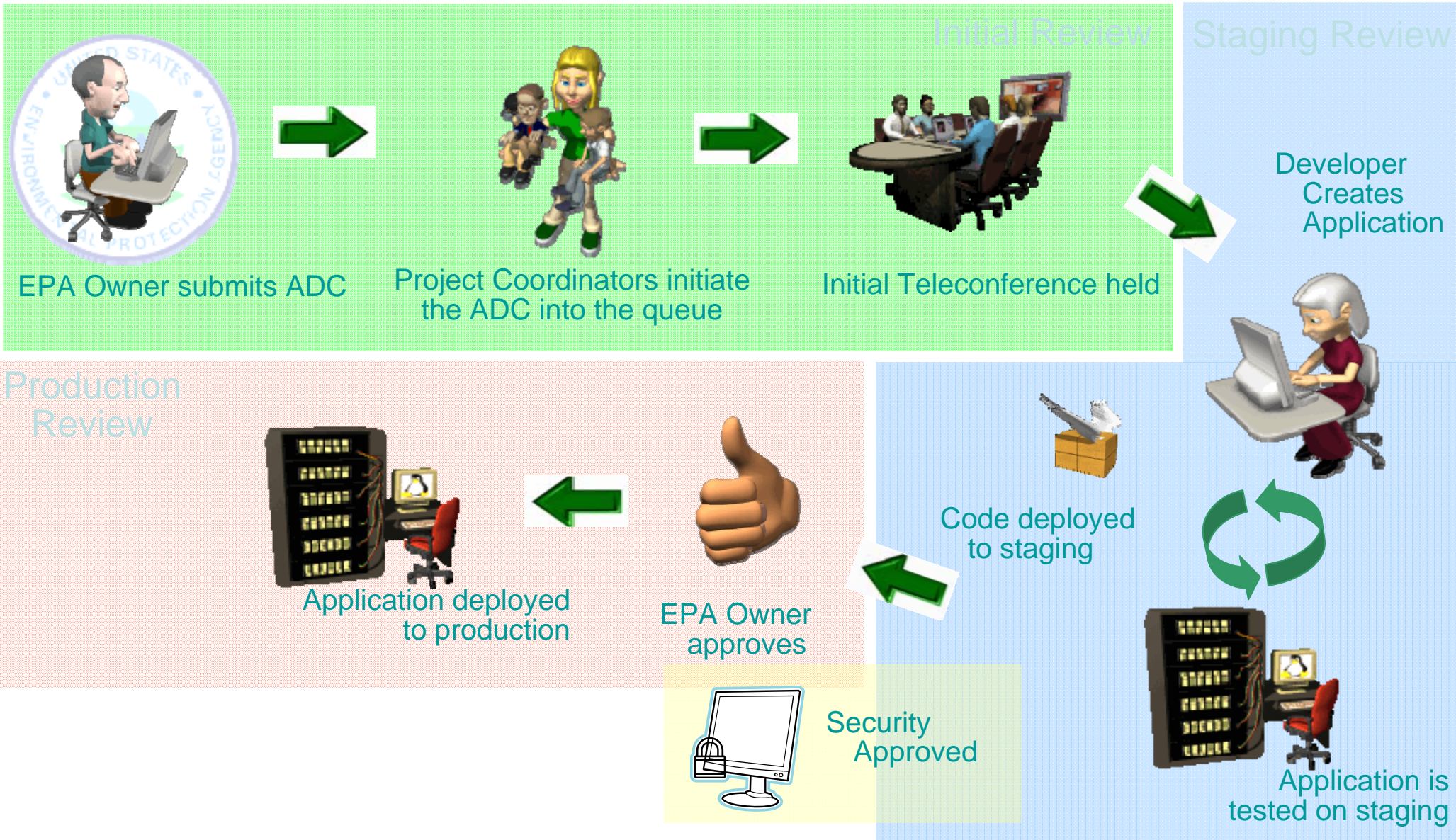
Roles & Responsibilities: EPA Application Owner

- Is the person financially responsible for the ADC
- Defines the concept of the application and provides initial requirements to the development team
- Coordinates code development, testing, and verification of application
- Coordinates the development of the security document
- Provides final approval for the application to move into production

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The ADC Process: Overview



Initial Review

- Customer submits online ADC form
- NCC reviews ADC for completeness
- NCC assigns federal Point of Contact (POC) and contractor Technical Project Manager (TPM)
- Hold initial phone call with application owner, developers, NCC reviewers and POC
- Review the initial requirements for the application and plan the review steps
- Discuss costs and WCF orders

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Initial Review...

Billing Requirement



- Annual subscription, order placed in eBusiness by ITS-EPA Billing Rep
 - XS – Application Support (deployment)
 - UH – Application Hosting (hosting environment)
- Based on Actual Usage; space allocation and TSSMS account data acquired
 - UC – Disk Storage (storage needs)
 - U3 – Account/User Management (number of uses per TSSMS account)
- Unique to meet each application/customer's specific needs
 - TZ – Technical Consulting (development, monitoring, etc)

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Staging Review

- Application code is deployed to the staging environment
- The customer verifies functionality
- NCC personnel review code:
 - Java review
 - Cold Fusion review
 - Database review
 - ASP.NET review

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Production Review

- Final testing and verification
- Signed security plan or receipt of certification
- Customer requests move to production environment
- Customer tests and verifies functionality
- NCC gives final approval to deploy
- Customer verifies successful deployment
- NCC closes ADC

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Security Review

- Identify risks and make sure that application will not compromise security of the NCC General Support System
- Review security plan to identify risks and work with application owners to mitigate those risks
- Advise application owner of any known residual risks associated with the general support system or network
- Identify any necessary firewall or network modifications or additions

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The ADC Process: After Production

- Reasons to open an ADC
 - a new technology is added
 - the application is being moved to a new environment
 - more than 10% of the data structure changes
 - to track the deployment activity of a major release at the owners request
- Request to retire an application
 - If EPA Application owner decides not to pursue the project, they can simply request the ADC be closed at any time.
 - If code has been deployed to either the Staging Environment or the Production environment, the application must go through the Decommissioning Process within the ADC.
 - http://intranet.epa.gov/webmast3/webguide/adc_decommission.html

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Why Submit an ADC?

- Creates a tracking item for both NCC and the customer
- Initial review call provides common understanding of your application and what we need to do to support it
- Milestone schedule gives joint due dates to work toward
- Periodic updates of application status from ADC coordinator

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How Long Does the ADC Process Take?

It Depends...

- On when you submit the ADC
- How well your application developer understands the NCC environment and follows NCC guidelines for supported technologies
- Whether the application will run in the shared environment or requires a dedicated environment
- How well your security plan addresses risk
- How long it takes to complete WCF order

ADC Database - Microsoft Internet Explorer provided by US EPA

Address: <http://cfint.rtpnc.epa.gov/adc/reviewcenter/index.cfm?ADCNumber=2285&fuseaction=home.Overview>

developing a detailed schedule. Once available the milestones seen below will be adjusted to match that schedule.

D. Woods (ADC Coordinator), 10/30/07 :
DWoods - 8/29/07: Security Plan is expected for this application.

L.Stender (Security Lead), 10/30/07 :
Security Production Review status changed to None

L.Stender (Security Lead), 10/30/07 :
Security Production Review status changed to Under Review

Milestone	Date Due	Status
Complete application design and finalize hosting requirements	12/31/07	In Progress
Complete hosting diagram and determine if dedicated servers will be required	01/01/08	Pending
Determine if firewall rules will be required	02/28/08	Pending
Submit Firewall rule requests if needed	03/31/08	Pending
Build out staging environment	07/31/08	Pending
Build out production environment	08/31/08	Pending
Receive initial code release to staging	08/01/08	Pending
Complete initial code release testing in staging	08/31/08	Pending
Receive CDX and Application Security Plans for review at the NCC	08/01/08	Pending
Return comments on security plans to customer	08/15/08	Pending

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What Can I Do to Speed the Deployment Process?

- Comply with Agency standards
- Meet with NCC staff early to discuss your plans and educate your developers about the NCC application hosting environment
- Have full documentation ready: ADC form, database design, etc.
- Establish early: WCF orders, TSSMS accounts, Oracle accounts, developer access requests, port requests
- Complete application security plan up front

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Customer Feedback: We have heard you

- ADC too complex
- Don't understand how to answer the questions
- Would like more of a timeline/status
- Want a single POC



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Customer Feedback: What we are doing

- All ADC's have
 - NCC Federal Point of Contact (POC)
 - ITS-EPA Technical Project Manager (TPM)
- All ADC's now have standard deliverables and milestones
- All ADCs are reviewed weekly by TPM and POC
- Changes to ADC coming to simplify form
 - Base ADC and technical supplements

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EPA Standards and Information Sources

- **Application Deployment Checklist:** intranet.epa.gov/adc
- **Web Guide:** www.epa.gov/webguide
- **ITA Roadmap:** intranet.epa.gov/otop/itroadmap/
- **Developer Pages:** intranet.epa.gov/developers/
- **The Road Ahead:** Plans to make application hosting information available via the EPA Portal, to make it easier to grant access to external developers

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Contacts

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Overview, policy, service, costs

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919-541-7679

John McQuaid, Application Services Manager

General questions

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ADC Coordinators, ITS-EPA Contractors

ADC status and on-going operational questions

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Questions?

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