Implementing uPortal
What You Need to Know

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uPortal is an Open Source Product

- Flexibility and Control
- Investment in Technology / Investment in People
- Community Participation

Evolution of the myUBC service

- Adopted uPortal in the Spring of 2000
- Pilot implementation in Fall 2000
- Release 1.6 in 2001
- Release 2.0 in 2002/2003

Current Volumes

- 50,000 registered users (historical)
- 24,000 logins/day by 8,000 users
- 20,000 users over last 30 days
- 200-300 active sessions

The next step

- Scaling for greater capacity
- 2000-3000 active sessions

Planning for an evolving service

- A pilot service
- Production for a single constituency
- Full Enterprise Production

A Channel Strategy

- What are your content sources and to whom are they of interest?
- Channel types
  - Image
  - Inline Frame
  - Webproxy
  - RSS
  - XML Transform
  - Custom native
  - Applet
- What your providers can step up to
- Cameos

Channels and Existing Content

- Existing Web sites
- Applications requiring authentication

Integrating with local infrastructure

- Database
- Authentication
- Identity
- Containers
- Secure connections (HTTPS)

Integrating with local infrastructure - Database

- Data Types
- Drivers
- Connection Pooling

Integrating with local infrastructure - Authentication and User Accounts

- Out-of-the-box
- Single Signon and portal-accessible applications
- LDAP
- CAS
- Local standard
- Roles

Integrating with local infrastructure - Identity

- LDAP / EduPerson
- Population of Person object
- Selection of layout

Integrating with local infrastructure - Containers

- Tomcat
- Apache
- Local Standard

Integrating with local infrastructure - Secure Connections

- Passwords
- All Content
- Mixed Secure / Not secure

Selecting a Platform

- What size hardware?
  - Modest size server
  - multiprocessor
- Operating system

Personalization and Customization

- Personalization – Content is tailored according to that the service knows about the user
- Customization – The user selects and arranges what content he/she wants to see.

Policy: how much do we allow?

Default Layout, Guest Layout

- What will the user see on connection
- What will the user see after login

Appearance and Navigation – Themes and Skins

- Structure – tabs and columns
- Themes – target devices navigation and markup
- Media – Images, logos, clickpoint appearance
- Skins (CSS) – Fonts and colours

Planning the team

What skills we require depends on

- Channel strategy: simple or native, content sources
- Integration of authentication, identity, roles
- Choice of hardware and operating system
- Choice of containers
- Choice of database
- How much customization will be done

The Team - organized around roles

- Project Sponsor
  - Champions the project
- Project Manager
  - Creates the project plan. Organizes and directs resources throughout the project
- Database Administrator
  - Responsible for all aspects of managing the database resource
- Chief Programmer
  - Responsible for all framework programming tasks

The Team – roles continued

- Java Developers
  - Design software solutions for assigned tasks
- Platform Constructor
  - Builds operational service platforms for development and production – hardware and operating system
- Testers – functional
  - Responsible for all functional and regression testing
- Testers – technical
  - Perform volume, load, and stress tests

The Team – roles continued

- Style and Presentation Coordinator
  - Manages the presentation structure, graphic design, navigation, and usability.
- Business Analyst
  - Responsible for user issues, usability, compatibility, communications, documentation. Also liaison with Help Desk, stakeholders, and partners.
- Software librarian
  - Performs all builds, integrations and promotions
- Technical Writer
  - Creates technical and user documentation

The Team – roles continued

- Webmaster
  - Installs and configures the Apache Web Server and the Tomcat container. Manages their interactions
- Graphic Designer
  - Designs and creates images (for skins)
- HTML Developer
  - Creates HTML (skins)
- XSLT/Java Developer
  - Develops XSLT transforms (skins)

The Development Environment at UBC

- The base framework code (e.g. uPortal 2.3.2)
- Local Channels
- CVS Repository
- Local Infrastructure
  - Authentication,
  - Identity
  - Database
- Shared Instances: DEVL EVAL VERF PROD
- Promotion between instances

The Development Environment (cont.)

- Database Instances
- DEVL VERF PROD

Platforms

- Shared Development Platform
  - Sun V120 4GB
- Production Platform
  - Server: SunFire 280R 2x750MHz CPU 4GB, Solaris 8
  - Java Version: 1.4.2
  - Database: Oracle 8.1.7.2
  - Connection Pooling: Oracle with thin JDBC drivers
  - Container: Tomcat 4.1.27
  - Web Server: Apache 2.0.45 (mod_jk2)

The Development Process

- Spans several months
- Iterative with ongoing testing
  - Framework and database access
  - Channel refinement and publication
  - User interface and skins
  - Operational environment, container, and Web Server

Performance: dominated by

- Login rate
- Most popular channels

Tuning

- JVM tuning – mostly garbage collection
  - Algorithms and configuration settings
  - The GC monitor
  - Server or Client mode
- Database Connection pooling
  - Poolman
  - DBMS supported – e.g. Oracle
  - Jakarta DBCP
- Solaris 64 bit mode

Running in production

- Monitoring
- Startup under load

In Production: User Environment

- Browser set – testing

Getting Help

- The JA-SIG Community
- Mailing lists
- Contracting Expertise

Lessons Learned

- The technology is still maturing
- Development times are hard to estimate
- Test test test

Approaches to getting started

- Download the software and try it out
- A pilot project aimed at a single constituency
- Training sessions
- Assistance from contractors
- Join the uPortal community
  - JA-SIG Conferences
  - Developer meetings
  - Mailing lists

Summary

- Channel strategy
- Infrastructure approaches and policies
- Customization decisions
- Platforms
- Implementation team
- Building, Testing, Tuning
- Users expectations

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