

Job Zone Reporting

R·I·T Office of
Cooperative Education and Career Services

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The logo for NOBY is a circular emblem with a stylized 'N' and 'B' on the left and 'OBY' on the right, all in a bold, blocky font. The text 'NOBY' is centered within the circle.

NOBY

Advisor: Dan Pedersen

Customers:
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Project Overview

- Office of Cooperative Education and Career Services
- Data reporting and analysis system
 - Tracks student's progress
 - Maintains employer listings
 - Provides job related statistics

Customer Problem

- Current system has been in production use since 1999
- Two-tier architecture limited extensibility
- Code bloat negatively affected performance
- The system is not easily maintained

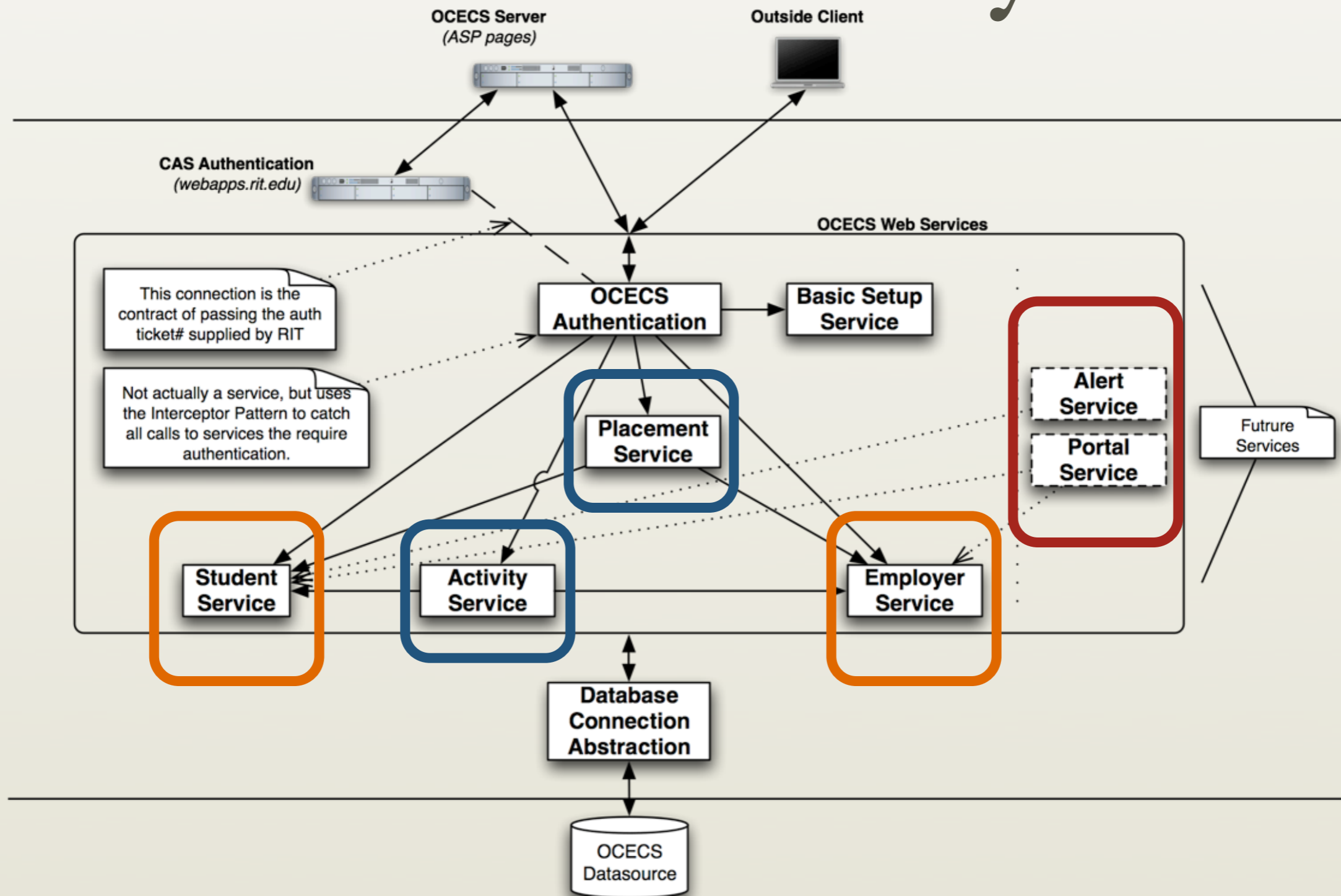
Customer Needs

- Extensible & maintainable system
- Data available to outside clients
 - Housing
 - Financial Aid
 - Companies
- Security to protect sensitive data
- Performance increase over current system

Satisfying Needs

- Created 3-tier architecture
 - Extensibility and maintainability
- Web Services
 - SOAP allows for wide access to data
- Interceptor secures all services
 - CAS used for authentication
- Reduced bloat of two-tier Architecture

Extensibility



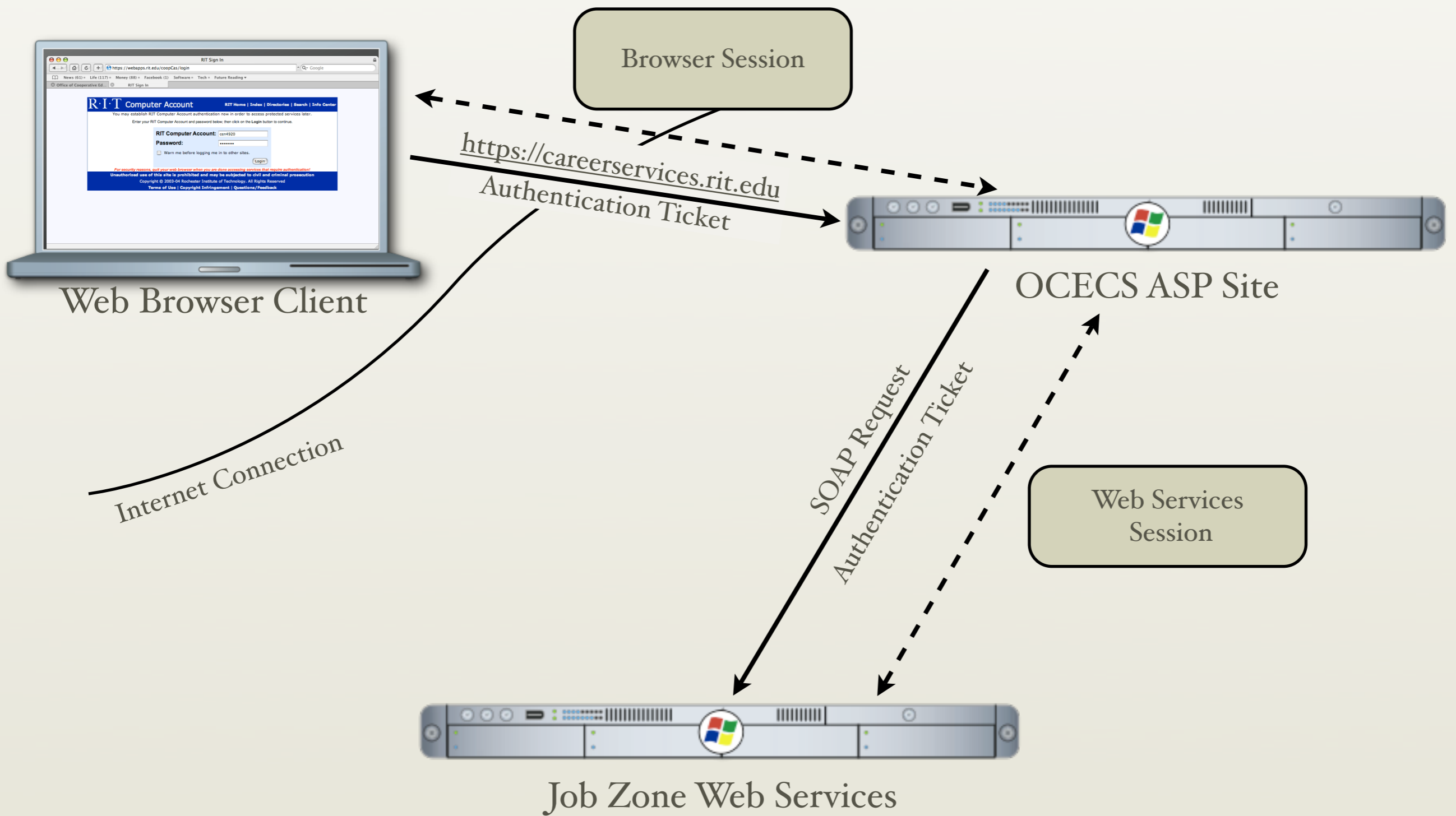
Multi-client Support

- SOAP allows for access to data for a wide range of possible clients
- Client must conform to SOAP & security model

DEMO

Security

- Use of SSL Certificates
- Make use of existing DCE authentication using Central Authentication System
- Hold session data in server memory to prevent injections



Performance

- Performance measurements were based on load times of equivalent requests
- Over all requests there was a 41% decrease in load time

Tradeoffs

- Using web services does not necessarily mean performance increases
- Performance increase was more a result of implementing cleaner and more modular code
- Security forced web services to be stateful

Requirements

- Implemented all requirements in SRS
- New features
 - Gender searching
 - Searching for international companies with international students as Co-ops

Status

- Acceptance testing is in progress as the OCECS staff makes prototypes of existing functionality
- Full unit/functional test suite
- Deployment code delivered Tuesday, May 5th
- API documentation done

To-Dos

- Clean up code
 - Commenting
 - Debugging relics
- More extensive load tests
- Technical document

Deployment

- IIS configuration settings
 - SSL
 - .NET configuration
- Application connection Strings
- SQL server

Future work / goals

- OCECS will take over development
- Additional services to be added
 - Alert & Portal Services
- Finish the presentation tier for current services
- Work with outside clients
 - Financial Aid
 - Housing

What went well

- Frequent communication with customer
- Established architecture design first
 - Drove the requirements
 - Reinforced our understanding of system
- Extra time spent to finalize SRS
 - This prevented scope creep and changing requirements

Challenges

- Steep learning curve
- Consumed majority of winter quarter
- Challenging requirements elicitation
- Defining an appropriate scope for the time allotted for the project
- Securing the system