





Campus IM Deployment: A Case Study

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Past (Early '06 – July '07)



Historical Background

What is the background of this project?

- Improve communication toolset
- Provide online technical support
- Replace office “popping-in” with IM chat

IM in Education

- Ask a Librarian
- Bb Vista



Project Need

Holes in the communication stack IM can fill

- Vs. email
 - More immediate, more synchronous
 - Encryption by default
 - Multimedia (file transfers, video, audio)
- Vs. telephone
 - Multimedia
 - Presence, elimination of phone tag
 - Scalable multiuser communication
- Vs. course management system (Bb Vista)
 - Flexibility
 - Applicability to entire campus
 - Applicable to enterprise functions



Project Goals

- Installable thick client
- Web Client
- Clients must be brandable
- Provide on-line assistance
- Integration with commercial IM networks
- Development API
- Plugins



System Requirements

- Protocol choice
 - XMPP/Jabber
 - Numerous server implementations, open and closed source
 - Well documented, open, concise standard
 - Used in Google Gtalk
 - Large user base
 - Many libraries in several different languages
 - Large development community
 - No cost
 - Future integration with social networking sites, Facebook, Twitter



System Requirements

- JiveSoftware Openfire
 - Open source XMPP server, written in Java
 - Java Development API, Smack
 - Java Thick Client, Spark
 - Flex Web Client, Sparkweb
 - Plugin API
 - IM Network Gateways
 - Large development community
 - Support available
 - Fastpath



Funding

Initiative Process

- Submitted a Strategic Initiative
- Reviewed by the Budget Advisory Council
- Funding Received
 - Hardware
 - Software
- Overall time span, 1 year



Present (July '07 - Today)



Development

- Integration
 - Banner
 - Use student course information to create roster groups.
 - Peoplesoft HRMS
 - Use employee department information to create roster groups.
 - Service Desk Plus
 - Use fastpath transcripts to create work orders.
 - iPlanet 5.1, user directory
 - Create dummy user accounts
 - Store group information



Development

- Jive Plugin
 - Created in house using the Openfire plugin api
 - Facilitates the creation of groups from transactional data sources. (Banner/Peoplesoft)
 - Writes group information into a directory structure in the iPlanet 5.1 LDAP directory. The directory structure used was designed specifically for this purpose.
 - Uses Java reflection api to dynamically load classes which extract group information from the data source. Data source adapters can be added without recompiling the plugin.
 - Facilitates the manual alteration of groups.
 - Facilitates the creation of managed user accounts.
 - Writes user entries into a separate org. unit from automatically created user accounts



Deployment

- Hardware
 - VMWare Cluster
 - 6 Sun Fire x4200, 1 Sun Fire x4150, 1 Dell Poweredge 2950
 - Openfire server deployed on one 1 proc, 2GB ram VM
- Software
 - Operating System: Windows Server 2003
 - Backend Database: MS SQL Server 2008
 - Openfire 3.5.1
- Web Client
 - Deployed on main web server, Apache 2.2
- Thick Client
 - Client Management
 - Deployed on faculty, staff, and lab computers through Zenworks
 - Available for download from the IM server
 - New versions deployed through the IM server
 - User Documentation
 - University created user guide available on VSU website
 - <http://jive.valdosta.edu>
 - Training materials and hands on classes available regularly to groups of faculty and staff



Current Features

- Class based student roster groups
- Department based faculty/staff groups
- Fastpath utilization by VSU IT Helpdesk
- IM Gateways for AIM, ICQ, MSN, Yahoo, Gtalk, XMPP
- Centrally hosted web and desktop client
- Encrypted Communications
- File Transfers
- Multiuser conferencing



Testing

- Testing phases
 - Spring 2008
 - Selected IT members, Aux. Services, and Campus Secretaries
 - 20 to 30 concurrent users
 - Scrapped our first group management system
 - Summer 2008
 - All IT staff members
 - Mandatory use for all IT staff members
 - Avg. 50 concurrent users
 - Fall 2008
 - Release campus wide

Release

- Released campus wide, Fall 2008
 - Branded the new service as Jive



- Public Awareness Activities
 - Campus Wide Email Announcement (faculty/staff/students)
 - Student Newspaper Article (faculty/staff/students)
 - <http://www.vsuspectator.com/2008/09/17/vsu-jives-online-with-new-instant-messaging-system/>
 - “The Happening”, campus fair (students)
 - T-Shirt giveaway
 - Instructional Classes (faculty/staff)

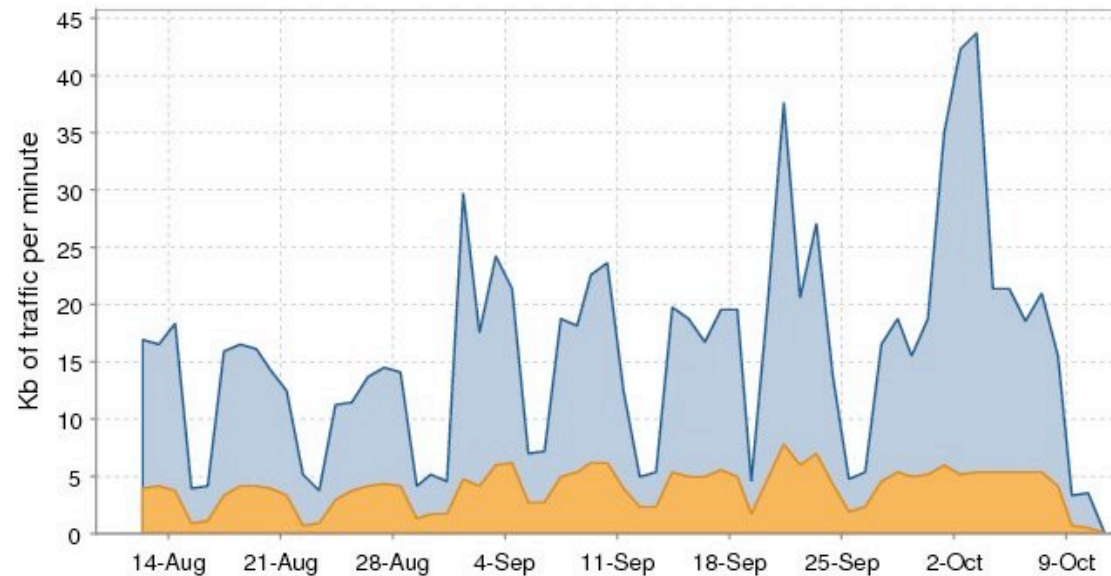


Release

- Usage Statistics
 - We have seen a 40% increase in concurrent connections since campus wide release.

1. Server Traffic

Kb of traffic per minute





Future



Challenges

- **Increasing Usage**
 - Goal of reaching 500 concurrent connections on a daily basis
 - Approximately 5% of total usage population
 - Plans
 - Increase campus awareness by releases in the VSU Connection newsletter and VSU News website
 - Visits to classes, impromptu demos in the front of students
 - Integration with popular social networking sites like Facebook and Twitter.
- **Active Directory Migration**
 - Plan to move from iPlanet to Active Directory
 - Rewrite parts of the Jive plugin to create users and groups using the active directory format.



Future Development

- Audio/Video messaging
- Integration with future VoIP development
- Fastpath Adoption for more departments
 - Student Success Center
 - Admissions
 - Financial Aid
- Integration with the VSU campus alert system.
- Enterprise Application Messaging
 - Nagios
- Distributed Group Management



Questions?

Thank you...