Open Source Call Centres

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What makes a system Open Source?

- 68 OSI-approved “Open Source” licenses
  - Examples: GPL, BSD, Apache, MPL, etc...
  - Source code must be included with distributed application
  - No discrimination against any person or group, and the package must be language and technology neutral
  - License cannot be for one piece of software only
  - License must not restrict other bundled software

Taken from OSI (Open Source Initiative) - http://www.opensource.org
What Open Source Software Works in the Call Centre?

- Call Routing and PBX software
- Customer Relationship Management (CRM)
- VOIP Soft Phones
- Web Browsers
- Instant Messaging Applications
- Office and Productivity Applications
- Other Infrastructure services (email/web/etc...)
Case Study: 100 Seat Call Centre

- Call centre moving off of a proprietary system to a totally Open Source platform

- Requirements:
  - Inbound/Outbound/Blended call handling capability
  - Agent computers with CRM integration
  - Work-at-home agents capability
  - Full recording of all calls
  - Local and Remote blind monitoring of all agents
  - ODBC database access to raw call logs
Case Study: Hardware

- 4 x Quad T1 cards needed for T1 connections
- 4 x Dual-core Xeon Asterisk servers
- One Dual-core Dual-CPU MySQL server
- One Dual-core Apache/PHP webservice
- One High-capacity archive server for recordings
- 100 existing 1GHz Celeron Agent computers
- 12 supervisor monitor phones and computers
Case Study: Server Software

- CentOS 4 Linux
- Asterisk 1.2 PBX
- MySQL 5.0 database
- Apache 2.0, PHP 4.4, eaccelerator webserver
- Perl scripting engine
- VICIDIAL 2.0 call centre suite
Case Study: Agent Software

- Ubuntu Desktop Linux
- Firefox web browser
- Pidgin Instant Messaging client
Case Study: Reliability - Performance

- Better than 99.999% system uptime during production hours since launch in September 2007*

- Operating efficiency grew overall since the switch to the new system

- Total agent wait-time dropped as compared to the old system

* uptime calculation does not include downtime that is scheduled in advance, carrier downtime or power outages
Case Study: Scalability

- Original System designed for 100 seats. Option of expanding to 200 seats possible by adding four more Asterisk servers and 100 more agent stations
- Further expansion beyond 200 seats is possible with addition of another database server and web server
- No licensing costs for expanding the system
Case Study: User Interface

- Call centre agent screen:
  - Web-based VICIDIAL agent screen in Firefox using AJAX
  - Internal CRM application displays customer information inside of VICIDIAL agent screen
  - Agent IAX Soft-phones for telephony integration
Case Study: Work-at-Home Agents

- Work-at-home Agent requirements:
  - Pentium III 700MHz or better
  - Windows(2000/XP)/Ubuntu Linux supported by company IT staff
  - DSL or Cable Internet connection
  - VPN set up to give access to internal network
- Software used is the same as in-house agents
  - Firefox web browser
  - Soft-phone for telephony
Case Study: Manager Interface

- Call centre manager screen:
  - Web-based VICIDIAL manager screen in Firefox
  - All reporting for agent and campaign performance is web-based

- Blind monitoring of agents possible through cordless phone going through ATA VOIP adapter or soft-phone on manager computer
Case Study: Audio Recording

- All calls are recorded in Asterisk to local RAM drives, then mixed to local hard drive, then compressed into MP3 audio format, then sent by FTP to the audio archive server.
- Audio is retrievable through the VICIDIAL manager interface web pages
- Non-sale recordings are purged after a set time on the archive server
Case Study: Administration

- Minimal Systems Administration needed for ongoing operations
- Log files and temporary recordings are automatically purged regularly
- Leads can be loaded by web-based form or directly through ODBC connection
- Some small configuration changes require configuration file editing, everything else is managed through web-based administration
Case Study: Costs

- 7 new servers purchased: $30,000
- 4 x Quad T1 cards: $6,000
- Existing Agent stations used: $0
- Existing IT staff time: already budgeted
- Consultant setup costs: $20,000
  - Includes installation and several customizations of the software
- Ongoing guaranteed support: $12,000/year
- All licensing: $0
Live Demo of Agent/Manager Screens
Thank you!

For more information, go to:

www.eflo.net