Hôpital Erasme

InterSystems Symposium, June 7th, 2011

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Agenda

• The Hospital
• EAI in ERASME
• Road map
• Why ENSEMBLE ?
• Tools
• Metrics
• Administration
• Sample custom dev
Hôpital Erasme

• 860 beds
• 3000 employees
• 26000 admissions per year
• 260000 out-patients per year
• 700 doctors
• 1400 nursing staff
EAI at Erasme

- Legacy (’90s): e*gate, ICAN/JCAPS
- July 2009: need to consolidate and for next generation EAI, evaluating
  - JCAPS 6.x
  - Biztalk 2003
  - ENSEMBLE 2009
- November 2009: ENSEMBLE selected as next generation EAI
- EAI Team today: 2 devs, 2 admins
Why ENSEMBLE?

Ensemble pros

● many healthcare standards and tools of the trade built-in and have a wide installed base
● local database engine : native state storage
● availability/stability is very good
● performance is good enough
● availability and skill in the benelux team, trainings
● common (messaging) tasks require no or little code

Ensemble cons

● MUMPS/COS legacy has steep learning curve, need to train (and motivate) developers
ROAD MAP

2010
- Q3 HL7 reports and results routing (ORU), flat files (delimited or fixed length), laboratory results (OUL)
- Q4 SIU traffic, more reports, statistics

2011
- Q1 more reports, HL7 patient data (ADT)
- Q2 HL7 invoicing (DFT), sql databases inputs
- Q3 more HL7 patient data
- Q4 monitoring and reporting, administrative tools, upgrading

2012
...

...
PROTOCOLS

- MLLP
- TCP
- FTP
- Files
- SQL (MS-SQL, Interbase, Progress,…)
- (2012…DICOM)
APPLICATIONS

- DIAMIC
- GLIMS
- Carestream RIS
- ULTRAGENDA
- HIS
- XTENSO OAZIS
- INFOHOS
- GERA
- MUSE
- In-house devs
- ...
TOOLS

- version control: no built-in tool (for now), but quite easy to implement.
- Packaging and deployment (zip files)
- Auditing of production changes (spreadsheet log)
- Documentation (FOP/PDF)
METRICS – may 2011

• Production database is 25Gb
• It holds 8 000 000 messages, 30 days activity worth
• 1 adt message every 30 secs average
• 1 siu message every 30 secs average
• 20000 reports per month
• 1 lab results per 30 secs average

…
ADMINISTRATION

• Sun Solaris/SPARC 64 failover cluster
• Monitoring: system monitor, email alerts (distribution list for administrators)
• Backups: full + incremental (local); later taped by Legato Networker
• Purge: maintains 40 days worth messages in the database
• Archiving: all incoming traffic (and some outgoing) is exported as files and zipped by home-made java package
AGGREGATION - custom dev example

- N input messages, 1 output message
- Schedule based aggregation (1 batch per day, per week, ...)
- For invoicing messages (DFT and alike)
- Messages remain stored in the database until batch output is produced.
- The task scheduler triggers the end of a batch