



Kenan Batch Performance Tuning



CROSSJOIN

Perform
to perfection



CROSSJOIN
Perform to perfection

Project in Review

09/02/2012 – 1.0

Kenan Batch Performance Tuning

AGENDA

- KBPT – Dashboard
 - Challenge Identified
 - Results
 - Work done
 - Further Improvements
- Maintenance Framework
 - Healthy Database
 - Stable System
- Q&A



KBPT – Challenge Identified – Goal

- Key Drivers

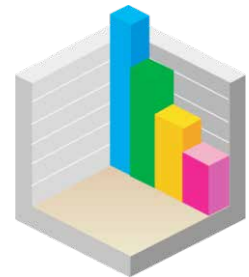
- Business

- End Customer Churning
 - Value for Money (Earlier Bills → Earlier income)
 - Competitiveness, Business Growth
 - New Products, more traffic



- Operations

- Window available for production fixes
 - System Availability
 - SLAs are met
 - Quality of Life



- IT Engineers

- System Maintenance
 - Software Quality -> Quality of Service





KBPT – Challenge Identified – Assessment

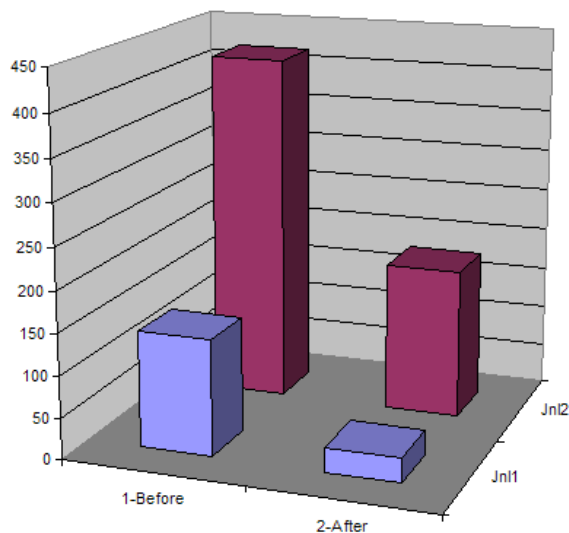
Done interviewes with E2E Billing POC

Implemented high benefit/low impact solutions

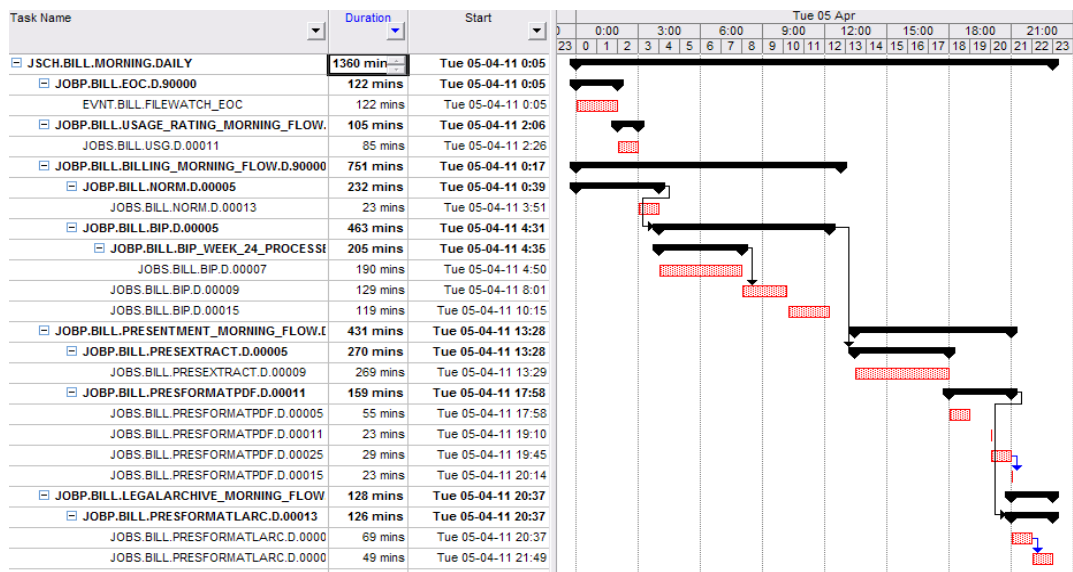
- ✓ Tuned JNL
- ✓ Implemented partitioning enhancements

Done platform analyses

- ✓ Analyzed UC4 and studied chain dependence of the 350+ jobs that comprise the billing scheduler
- ✓ Analyzed Arbor platform and database and Cacti infrastructure indicators



KBPT – Challenge Identified – Assessment



Defined

E2E billing chain bottlenecks

- ✓ Identified critical paths to
- ✓ Defined approach to monitor and control E2E billing
- ✓ Proposed compressed scheduler to separate actual performance issues from scheduler gaps

KBPT – Challenge Identified – Goal – from SOW

•Success Criteria:

→ Billing Daily Schedule E2E Compressed duration in 12 hours.

→ M01 separate goal of 18 hours

How to Measure ?

→ Compressed Duration excludes gaps resulting from:

- scheduling fixed start time
- down times for bug fixes and/or operational interventions

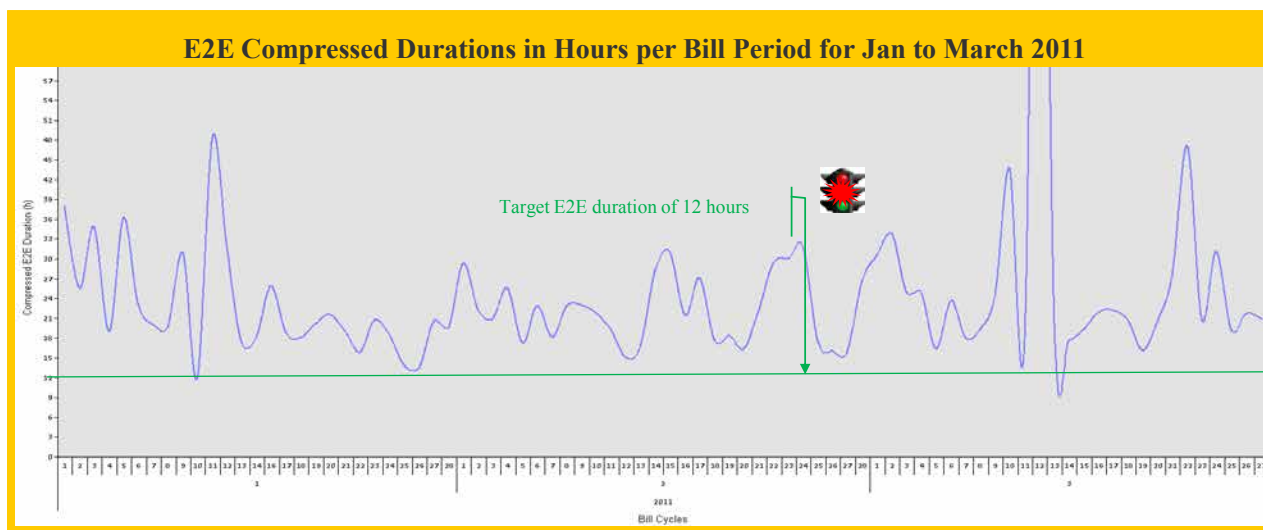
•Future Proof:

- Maintenance Framework
- Keep Monitoring & Control
- React in time
- Proact for prevention



Keep the Good Figures

KBPT – Challenge Identified – GAP



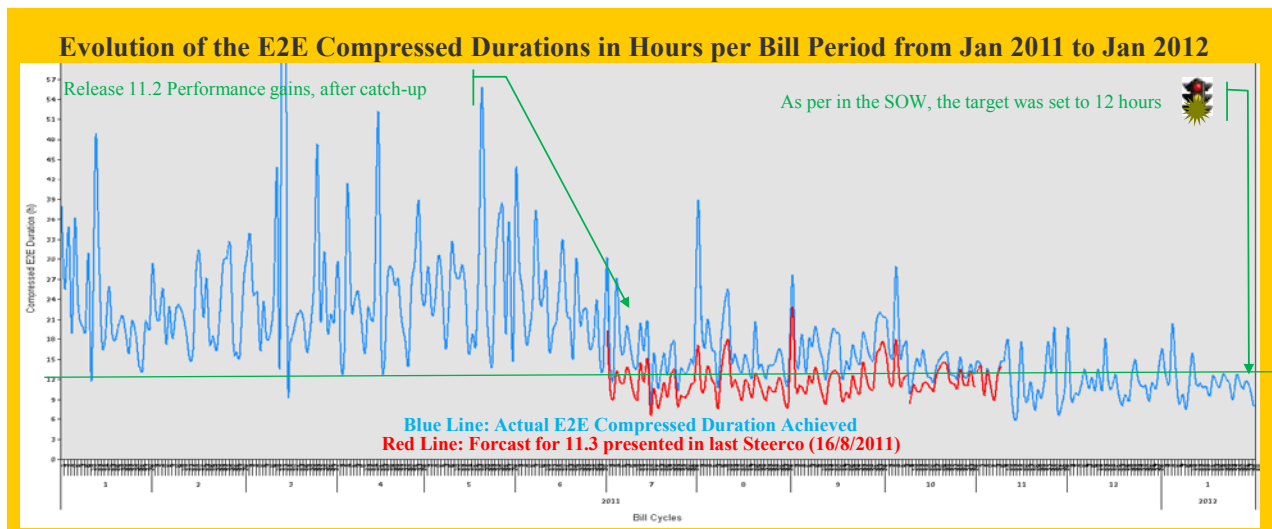
Critical Challenges:

1. Delays in Billing chain directly impacting invoice delivery
2. E2E Duration much larger than goal (average ~24h), impacting windows for invoice verification and for maintenance operations.
3. Highly unstable performance with very varied bottlenecks.





KBPT – Results – Per Bill Cycle



Achievements:

1. System performance and stability allowing for on time invoice delivery and maintenance operations
2. Goal of 20 hours for 11.2 achieved after post - release stabilization
3. Forecast for 11.3 achieved In November 2011
4. SOW Goal achieved in January 2012 after minor fixes



Note: As agreed, cutoffs are implemented to exclude functional and operational issues: J.BILL.OBJOB.D.00005, 30min; J.BILL.OBJOB.D.00007, 50min; JOBS.BILL.OPTIRETOUR.D.00011, 15min; J.BILL.COLLD.00031, 40min

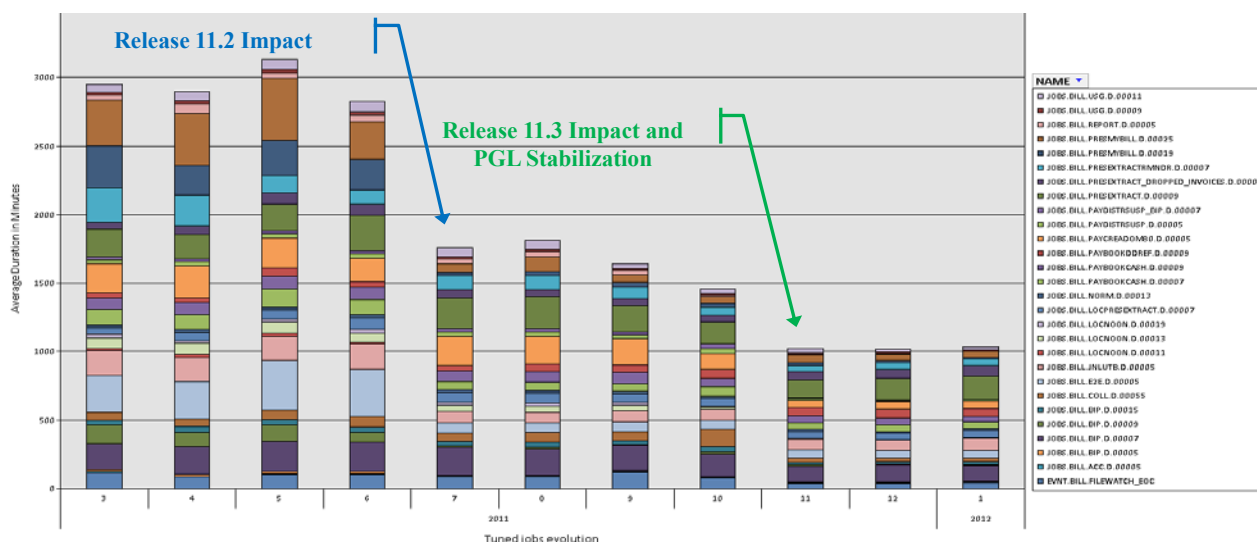


KBPT – Work done

140 Improvement Initiatives:

- 28 Jobs Tuned with overall positive side effects in the entire chain
- Delivered partitioning Management scripts and Database health checks
- Reviewed and Optimized Database configuration

Tuned Jobs Evolution – Average Monthly duration in minutes



KBPT – Further Improvement

Bellow follow a few targeted improvements

3 hours gains, for M10 with limited redesign (script coding changes)

- The Presentment flow can be further improved by implementing the recommendations on the PDF and AFP (print files) flow proposed by Crossjoin centered on PresFormatPDF5.
 - This is critical to eliminate the peak remaining in M10, and improve scalability for cycles containing significant amounts of both residential and enterprise Customers

0.5 Hours gains, for M01, with Work-Flow changes in DataStage

- The MyBill Chain can be Further improved by implementing the recommendations proposed by Crossjoin on PresMyBill25

3 Hours Gains, for M04, with limited redesign, functionality migration between Datastage and Database

- The Preextract Flow can be re-structured to obtain further gains for large volume proforma or bill cycles (to address peak remaining in M04) and days when it is decided to process Dropped Invoices.

Overall System Stability – Transversal Gains (Qualitative)

- Changing the usage rating from specific batch windows to continuous processing (near real time) to distribute the load.
- Migration of non billing E2E aggregated report out of the billing database, since it has heavy resource consumption



Maintenance Framework

To answer to the question –”How to maintain performance and avoid returning to the pre-KBPT situation?” the project Statement of work includes the Maintenance Framework component, with which Crossjoin® expects to provide to Telenet a set of processes, methodologies and tools that will address the following needs:

Kenan DB Sanitized:

Implement corrective procedures, ensuring Kenan database reaches the level of sanitization expected by Telenet.

Keep the system stable.

Ensure the scripts and processes proposed by Crossjoin® are integrated into Telenet maintenance methodology

Maintenance Framework – Kenan DB Sanitized

The goal of maintaining the Kenan DB Sanitized comprises:

Maintaining Oracle Support

The current Oracle database version is no longer supported. An upgrade to version 11g would not only insure the Oracle support but also reduce management effort and improve quality of the performance and stability of the production environment. An upgrade management approach and methodology is presented in the Maintenance Framework Document

Database automated operations

The KBPT delivered automated database health and Maintenance scripts:

- The Automated Database Maintenance Framework (ADMF) provides a set of checks and reports on the database condition, to keep the database of Arbor healthy, sanitized and intact.
- The Autonomous Partitioning Script APS does forward partitioning to insure that the partitioning work is done in advance, before the data content is populated, in order to have the correct partitioning done with a good performance.
- The Database Archiving process was reviewed in line with the APS script.

The Maintenance Framework document supplies the Methodology for managing Database Periodical Maintenance Review of key aspects that need to be kept adequate with the normal database evolution, (partitioning, index fragmentation and statistics)



Maintenance Framework – System stability

The Maintenance framework document presents the necessary steps for the goal of maintaining the Kenan System Stability comprising:

Measuring and Controlling the Production Environment.

The Maintenance framework document reviews how to, and what to measure in production, to enable the adequate control of the environment, enabling preventive and reactive detection of problems, and efficient root cause analysis of issues.

Change management performance impact analysis

Here are presented the steps in the platform change life cycle when performance analysis should come into play, and the focus is on how to maintain the system stability and performance considering the fact that the platform is in continual change to answer to Telenet business dynamic.

It is presented a governance model, with performance management roles and responsibilities and communication channels focusing on the goal of having a system stable and in good performance