Migration and upgrade of Teamcenter Enterprise from Solaris to Linux

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TcEnt 8.x to 9.0; Solaris to Linux

GLOBAL   PRODUCT   DATA
INTEROPERABILITY
S U M M I T
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- For 20+ years Dinesh has executed PLM implementations at major Aerospace, Automotive, Medical, Consumer Products and High Technology companies.

- Dinesh holds a BS in Electrical Engineering from Indian Institute of Technology, Delhi, India and MS in Computer Engineering from Technical University, Darmstadt, Germany.

Rationale to Migrate to Linux and Upgrade

- Teamcenter Enterprise (TcEnt) on Solaris servers continues to be used by many programs with no immediate need to migrate to Teamcenter Unified.

- Solaris servers have reached their end of life, though still supported by Oracle are on a phase out path.

- Server hardware failure can cause unacceptable long outages waiting for spare parts.

- TcEnt is a critical application for programs using this PLM tool
  – Enables Product Delivery, Support, Test and Validation
  – Must be hosted on a stable, well supported and industry standard hardware and OS

- Upgrade from TcEnt 8.x (2010) to latest version 9.0 to retain continuous support from Siemens.

Migration and upgrade in one go

- **Migration to Linux and Upgrade to TcEnt in one swoop**
  - Upgrade to latest version TcEnt 9.0 for continued long term support by Siemens
  - One full regression test, instead of two
  - One outage at each installation instead of two
  - Can execute the hardware migration and upgrade over a single weekend

- **Physical vs Virtual Servers**
  - We would have liked to deploy the solution on virtual Linux servers
  - Siemens recommended physical servers due to heavy load
  - On small installations we may use virtual Linux servers

Choice of Linux over Windows server

- Linux is as close to Sun OS as you can get.
- All our tools and utilities for development, administration and support are Unix based.
- Moving the source code management to Linux required very little effort.
- Didn't have to change anything for interfaces to other systems   (ERP, MES, CITIS, Harnesses, Global Services, etc.).
- Some code is OS specific, that would require a significant conversion effort to run under Windows.
- All the development, administration and support resources were already trained and experienced in Unix.

- Acquired a Linux virtual server for development.
- Installed TcEnt 9.0 MP07 for Linux on the development server.
- Moved the source code to Linux.
- Created multiple development environments to support different installations
- Recompiled and made minor changes to the NGC customization.
- Unit tested the thin and admin clients, OMF, reports, interfaces and utilities as much as possible.
- Prepared an installable NGC customization module to deploy in User Acceptance Testing (UAT) and then eventually in production.

Preparing User Acceptance Test (UAT) Environment

- Acquired a Linux server for UAT.
- Installed TcEnt 9.0 MP07 for Linux on the UAT server.
- Installed all the required Siemens modules and the NGC custom module.
- Replaced the OOTB databases with a copy of the production databases.
- Applied the database changes resulting from the new TcEnt version.
- Applied the admin changes (Rules, conditions, introduced in TcEnt 9.0 MP07)
- Enabled and tested interfaces: Global Services, eQube, CITIS, ERP, MES, Harness, Reconciliation.
- Tested customer and supplier access
- Ensured that UAT's data and functionality matches current production system by executing a successful regression test performed by admin, support, engineers, configuration management, data management groups, which included all features used by each group.
- Documented the entire installation and configuration process to streamline and ease the production implementation.

Level of Effort

- Prepare Development Environments and unit test: 900 hours.

- Prepare UAT environment and full regression test: 600 hours.

- Prepare Production Environment and switch over: 500 hours.

- No major issue. We had access to the right, experienced knowledgeable resources.

- Various native TcE GUIs (OMF, DWE, MVI) are not available on Linux. Required us to make special configuration to provide these tools for limited use on a few Windows PCs.

- Our TcE customizations and stand alone programs required a few missing libraries, that we had to track down and install.

- Some functions had different signatures, which required additional coding and regression testing.

- Duplicating and validating the production TcEnt installation with its directories, vaults, staging areas, support scripts, crontabs, user/groups, various interfaces, etc. was challenging.

Business Benefits

- Stable, new, higher performance hardware in compliance with corporate direction.

- Mitigated the risk of long outage, waiting for spare parts in case of hardware failure.

- Upgraded to the latest version of TcEnt 9.0 software for long term support by Siemens.