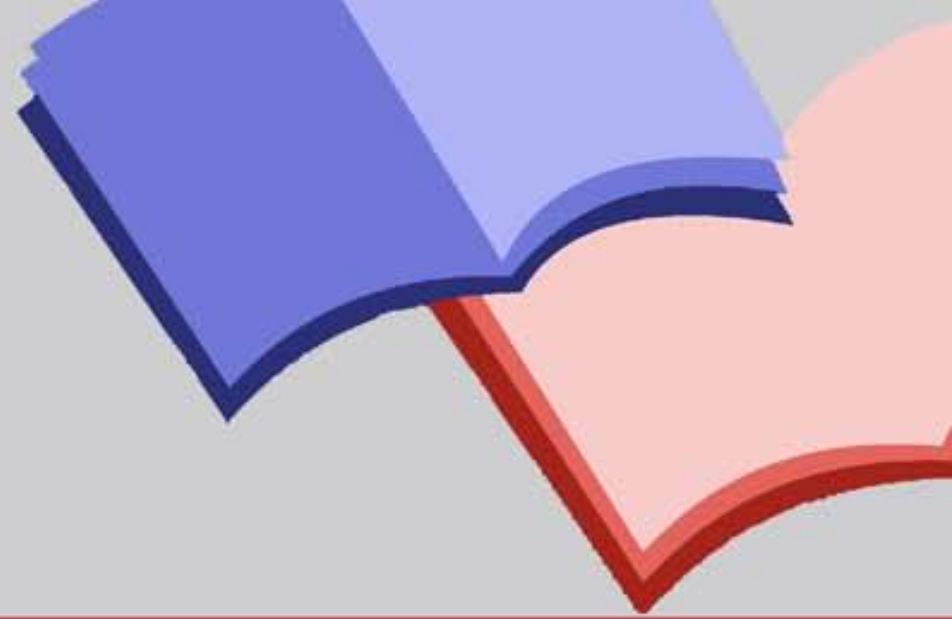


Testing & Certification



Testing Management Software for Multi-functional Devices using SNMP

Situation

Celstream's customer is the world's leading document management technology and services enterprise. The customer's offerings include color and black-and-white printing and publishing systems, digital presses and "book factories," multifunction devices, laser and solid ink network printers, copiers and fax machines.

The client had a set of corporate defined standards and wanted these standards to be incorporated on their multifunctional devices as part of the embedded system in the management interface software of these devices.

Challenge

- Celstream's engineers had to firstly understand the standards developed by the client and then map them to the solution that was to be developed.
- The testing of the management interface software using these standards had to be completed rapidly as the devices were to be launched in the market shortly.
- Celstream had to provide Certification tests for Agent compliance.

- Complete ownership from test development to product validation and delivery
- Close communication with the customer on a weekly basis
- Detailed test status reports
- Aggressive timelines to meet the customer's time-to-market schedule

Celstream Response

Celstream has a well developed testing process and methodology which was diligently used throughout this project. Following this tried and tested process resulted in minimizing time and resource costs for the client.

The testing process included:

- Understanding the product
- Understanding test requirements
- Finalizing the strategy
- Design
- Automation
- Execution/Validation
- Fault repair
- Test status

With Celstream's development and testing teams working in close proximity, we were able to save time and resources. Our team used UNIX® platform and a combination of TCL/TK and Shell Scripts to ensure that this tool and its scripts could be used across various printer programs. This also ensured that the cost of Script Maintenance was visibly minimized for the client. We also undertook complete test suite development for validation of standards and compliance.

The highlights of the solution

- Designed Test Cases
- Defined Test Automation plan
- Scope Selection
 - Identification of Test conditions for automation
- Tool Selection
 - Evaluation, identification of approach, implementation
- Extensible automation
 - Enabled accommodation of changes across device firmware builds and multiple devices
- Minimized cost of script maintenance
 - Library of reusable codes for automated functions

Technology

In developing this solution, Celstream used the following key software platforms and technologies:

- TCP/IP
- SNMP
- NetSNMP
- VxWorks®
- TCL / TK
- Unix® Shell Scripts
- NVRAM Flash
- SNMP Agent Compliance Tests

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