



Legacy Computer Replacement System (LCRS)

Compro's host replacement solution

About LCRS™

Legacy Computer Replacement System (LCRS) is a drop-in SEL/Gould/Encore host replacement solution that runs unmodified legacy code on Commercial-off-the-Shelf (COTS) hardware/software, delivering 100% code compatibility and dramatically improved performance at a fraction of the cost and risk of traditional re-hosting.

Benefits:

- Executes unmodified legacy applications
- Uses COTS hardware and software
- Plugs into existing subsystems
- Retains legacy timing and improves performance
- Slashes host replacement costs
- More maintainable and reliable
- Reduces risk and speeds deployment
- Assures compatibility and increases frame headroom
- Flexible expandability with reflective memory

LCRS is comprised of the following elements, each of which is further described below.

- COTS system environment (Linux-based hardware/software)
- Compro's Real-Time Environment (RTE)
- Compro's LCRS software

Commercial-off-the-Shelf (COTS) System Environment

LCRS uses COTS AMD computer systems running the SuSE™ Linux distribution. It fully supports most built-in Input/Output (I/O) including:

- Gigabit Ethernet® (for networking and network printers)
- PS2 I/O (console keyboard/mouse)
- Video Out (liquid crystal display console)
- Digital audio tape drives
- Removable hard disk drives

Additional I/O controllers (multi-port serial, small computer system interface, Gould high-speed device, etc.) are also supported.

While COTS offer wonderful performance and maintenance advantages, it also poses long-term supportability risks. In response, Compro's LCRS has migrated from Alpha™, SPARC, and Intel-based products, demonstrating its portability and largely hardware-independent advantage. Bottom line – LCRS can "future-proof" your application.



LCRS Benchmark Performance

Compared to Legacy Systems

Benefits

- Provides dramatic and automatic performance improvement
- Eliminates compute headroom limitations
- Increases spare frame time
- Offers room to grow

Compro's renowned Legacy Computer Replacement System (LCRS) provides a plug-compatible replacement solution for a variety of legacy SEL, Gould and Encore computers, slashing re-host cost and virtually eliminating risk.

Additionally, LCRS delivers a dramatic built-in performance boost. LCRS automatically eliminates compute headroom limitations, offering room to grow and smooth operation.

Legacy System	Relative Performance
RSX	210.50%
32/97 (MACC, Shadow)	265.32%
32/97 (MACC, 64KB Cache)	323.39%
32/97 (MACC, 128KB Cache)	265.89%
32/97 (no MACC, 128KB Cache)	344.61%
32/67 (single board, FPA)	1025.58%
32/67 (3-board, FPA)	1096.90%
32/77 (no SA)	2213.14%

Notes:

1. LCRS configuration includes AMDTM 3.4GHz Phenom™ II X6.
2. Only one CPU core is used for LCRS CPU tasks running as VRSX.
3. LCRS relative performance is an average of several typical real time simulation tasks and Whetstone benchmarks compared to the same tasks run on legacy configurations. All tests are compute-only (no I/O).
4. Actual performance will vary based upon specific LCRS configuration and I/O activity.

Summary

The most important factors when considering system replacement are risk and cost. LCRS virtually eliminates risk by preserving known-functional application code and reduces cost by eliminating application software re-hosting.

In addition, LCRS permits simultaneous venturing into the native COTS world by providing a rich, deterministic real-time development environment that cooperatively executes with the LCRS environment



LCRS Customers

Over 75 Legacy Computer Replacement Systems installed with 45 additional systems in process

- Battelle Memorial Institute F-15E Software Development
- Dyncorp / Pax River Classified Military Program
- Northrop Grumman (TRW) Classified Satellite Program
- Lockheed Martin Simulation Airbus 320 Full Flight Simulator (Thales/Gem)
- Lockheed Martin Simulation Boeing 727-400 Full Flight Simulator (Thales/Gem)
- ITT / Patrick AFB MOTR (RADAR) Development System
- Yuma Proving Grounds Range Radar and Telemetry
- Country of Spain SH-60 LAMPS Simulator
- Boeing Military / Seattle Boeing AWACS Program
- MCAS Cherry Point EA-6B Simulator and Development System
- US Nuclear Regulatory Commission Power Plant Simulator / Trainer
- Indra Systems H-60 FAST Trainer
- Air France Airbus 320 Full Flight Simulator
- CAE / Tampa Royal Saudi Air Force C-130 Development System
- Mitsubishi / Japan Classified Military Simulator
- Japan Defense Agency Classified Military Simulator
- KKI / Germany Power Plant SCADA
- White Sands Missile Range MOTR (RADAR) Host Computer
- Kennedy Space Center MOTR (RADAR) Host Computer
- CSR / Eastern Range RADAR and Telemetry Host Computers
- FDE / NAS North Island H-60 FAST Development System
- CymSTAR C-5 ARPTT Trainer (Lackland, Travis, Dover)
- CAE SimuFLITE / Morristown, NJ Hawker 800/1000 Full Flight Simulator
- Q4 Services, LLC ATR-42 Commercial Flight Simulator





About Us

INFINITE POSSIBILITIES, Performance, Versatility, Competitive Advantage

In the world of evolving technologies, success is achieved by companies willing to challenge established boundaries.

Compro is constantly developing innovative solutions for emerging real-time markets, including rapid transit, process control, and interactive entertainment systems.

Compro's mission is developing products, solutions, and services that provide the speed, power, and reliability required by the most sophisticated and time-sensitive applications in the industry. We create those systems with the potential for compatibility and expansion that will meet tomorrow's most ambitious expectations.

Compro is committed to providing the most comprehensive services necessary to meet every customer's needs.

Compro is known worldwide for its customer-focused leadership in technology, support solutions and innovative "industry-firsts."

To date, Compro has achieved an installed base of over 10,000 systems, representing over 3,000 customers worldwide. These customers are served via our world-wide offices with our Corporate office strategically located in central Florida.

Compro is an international supplier to the flight simulator, data acquisition, and transportation and energy markets and to original equipment manufacturers and integrators (such as Boeing, Lockheed, Thales, EADS, etc.) who serve those markets. Compro develops legacy interfaces and integrates COTS hardware and software that are demanded by today's most challenging real-time environments. Compro's products are involved in open systems, integration for data acquisition, legacy migration, and flight simulation solutions.

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