Digital ● Intelligence®

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FREDC™ Data Center

Our Mission

At Digital Intelligence, we combine the knowledge gained from years of providing digital forensics and eDiscovery services with a deep understanding of digital technology to build and deliver solutions that *Give Voice to Digital Evidence™*.

FREDC™

FORENSIC RECOVERY OF EVIDENCE DATA CENTER

FREDC™ - The Turnkey Forensic Network Solution

The Digital Intelligence FREDC™ Data Center is a purpose-built, complete forensic server. With over 100 installations world-wide, FREDC is a proven, solution to departmental forensic acquisition, analysis, case management, and evidence storage needs.

Powerful, Purpose-built Forensic File Server

Built for digital forensics work and drive-speed limited direct-to-network imaging, FREDC stands apart from general purpose file servers. The base FREDC Server-RM™ is powered by dual Intel® Xeon 8-core processors (16 total cores). 128 GB of DDR4 RAM and an 100 TB internal RAID array module are standard on the Server-RM. When increased parallel processing power is needed, FREDC CPUs can be upgraded to a maximum of 28 cores (per Xeon CPU). FREDC's 10 GB Ethernet backbone and 10GbE network switch support ultra-fast connections to forensic workstations, forensic imagers, printers, and other network devices. Dual 10 GB NICs balance network bandwidth and data load for great perfor-mance. Networked forensic workstations can access files for distributed processing or image directly to centralize storage. Each FREDC Server runs SUSE Linux Enterprise Server Software optimized for speed, efficiency, and reliability.

FREDC Server-RM

Proven Technology Used By Customers the World Over

Each FREDC Data Center is built using a standard set of proven FREDC system modules. In addition to the Server-RM, baseline rack-mount modules include a fully configured FRED-RM™ Forensic Workstation (complete with UltraBay 4d™ and ventilated retractable drive cooler), a RAID-RM™ Server Attached Network Storage Module with sixteen 10 TB 7200 rpm hard-drives in hot-swap removable drive trays, intelligent power distribution, network switches, a Qualstar LTO-8 robotic tape drive system (for backup and archival), 19" LCD rack-mount display with full keyboard, and an in-rack UPS. Spare rack locations are available for additional FREDC modules (optional) and future expansion.

The FRED-RM rack-mount forensic workstation ships pre-installed with Windows® 10 Professional 64-bit or open SUSE Linux, ready for use with most forensic software applications and imaging tools.

FREDC showing (from top): network switches, tape subsystem, Server-RM, RAID-RM, monitor and keyboard, KVM switch, FRED-RM and UPS

Optional Modules Expand FREDC Capabilities

As your forensic departmental needs grow and change, optional FREDC modules can be added. This will help ensure FREDC remains a vital part of your forensic infrastructure. For example, if your on-line storage needs grow, additional RAID-RM Storage modules can be added. As the need arises, database server modules (FREDC DB Server™), forensic worker clients (FREDC Duo™), virtual machine servers (FREDC VM Server™), forensic workstations (FRED-RM), and GPU password acceleration tools (DI GPU Powerstation™) can be added.

Case Ready in Days

FREDC systems ship fully assembled after having undergone extensive integration testing to ensure minimal problems during installation. A trained Digital Intelligence Systems Engineer performs the on-site installation of each FREDC. System installation, site testing, and customer training are generally completed within a two-day time-frame. Customers are running cases on a FREDC data center within days of its arrival.

Application Software Resource Sharing & Management

A new FREDC feature enables software license dongle sharing. Dongles connected to FREDC's Server-RM USB 3.0 ports are shared resources for workstations connected to the FREDC 10 GbE network. This FREDC exclusive feature supports a more cost efficient model for departmental software licensing and management.

Designed for Minimal System Admin and Support

Traditional network server support costs can be high. Not so with the FREDC. Each FREDC includes proprietary DI software built to minimize managing a properly running computer network. Workstation installation, system backup, system restoration, drive mapping, single user sign-on, and even bare-metal disaster recovery is made easier by this DI software. Each FREDC delivered to North American customers includes DI's SMS communication module for text-based event notification. Disk drive SMART information, RAID chassis temperature, and other information is monitored and reported via SMS text message.

FRED C Is the Turnkey, Local Forensic Cloud

If your organization is sized such that a forensic network with centralized admin, processing, and RAID secure evidence storage makes sense, consider the FREDC Data Center. The FREDC solution is a proven network solution. It's powerful enough to run your organization today and flexible enough to expand as your needs grow in the future. FREDC is the perfect backbone for forensic network processing.

Rigorously Tested and Optimized for Leading Software Packages

All FRED system configurations are exhaustively tested using leading forensic software packages. This methodology produces systems optimized for exceptional performance when conducting digital forensic examinations.

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FRED C™ - Forensic Recovery of Evidence Device Technical Specifications	
FEATURE	**Server RM - Forensic File Server Module**
Processors	Dual Intel® Xeon Silver Series 4110 CPUs, 8 core, 2.1 GHz, 11 MB cache. Availabe CPU options: Silver Series: 4, 10, and 12 cores Gold Series: 4, 8, 10, 12, 14, and 18 cores Platinum Series: 24 and 28 cores Note: FRED C systems include two (2) Xeon processors, effectively doubling the core counts shown above
Memory	128 GB PC4-21300 DDR4 2666 MHz ECC memory (256, 512, and 768 GB memory options available)
Chipset	Intel® C621
Software	OpenSUSE Linux Enterprise Server, Symantec® Ghost
Hard Drive Storage	100 TB internal RAID array (80 TB RAID6, 10 x 10TB drives)
DVD/CD/Blu-ray	BD-R/BD-RE/DVD±RW/CD±RW Blu-ray burner, dual-layer combo drive
Networking	2 port Intel® 10 GbE network adapter (RJ45-copper)
Expansion and Connectors	4 USB 2.0 ports, 10 USB 3.0 ports, and 6 USB 3.1 ports
Power	1200 Watt modular power supply
Chassis	4U rackmount
FEATURE	**FRED RM Workstation - Forensic Workstation Module**
Processors	Intel® Core i7-7800K 3.5/4.0 GHz 6 Core CPU, 8.25 MB Cache (6, 8, 10, 12, 14, 16, and 18 core CPU options available)
Memory	64 GB PC4-21300 DDR4 2666 MHz memory (128 GB options available)
Chipset	Intel® X299
Software	Microsoft Windows® 10 Professional 64-bit, openSUSE Linux, Symantec® Ghost
Hard Drive Storage	Up to eight (8) storage drives in FRED-RM modules: Operating System - 512 GB NVMe SSD Database/Cache/Temp - 512 GB SSD SATA III hard drive Case/Data - 2 TB 7200 RPM SATA III hard drive Optional: A second NVMe drive and four (4) SATA drives in hot-swap drive bays. Many drive capacities/types are available
Drive Bays	4 x 2.5" SATA drive bay chassis 1 x 2.5/3.5" SATA, shock mounted, removeable 1 x HotSwap USB 3.1 connected SATA, shock mounted, removable tray
DVD/CD/Blu-ray	BD-R/BD-RE/DVD±RW/CD±RW Blu-ray burner, dual-layer combo drive
Forensic Imaging / Write Blocking	DI UltraBay 4d™ forensic bridge - write blocks SATA,SAS,USB3.0/2.0/1.1, IDE, FireWire, and PCIe SSD storage devices; Touch-screen user interface supports local, on-screen access of device information including: • Storage media details • LUN selection • Management of HDD protected regions • File system partitions (independent of the FRED OS) Supports simultaneous and sequential forensic imaging of multiple storage devices; Supports hot-swap device connection; Available exclusively from DI on FRED systems
Hard Drive Cooler Shelf	DI exclusive extendable / extractable imaging work-shelf with integrated ventilation (for drive cooling)
Media Card Reader	DI Forensic Media Card Reader - user selectable read/write or read only access
Networking	Dual Intel® 10/100/1000 Mbps gigabit Ethernet adapters 1 port Intel® 10 GbE network adapter (RJ45 copper)
Expansion and Connectors	4 USB 2.0 ports 11 USB 3.0 ports 3 USB 3.1 ports 2 USB 3.1 Type C ports 1 write blocked SATA port - front access, read/write switchable through UltraBay 4d 1 write blocked SATA or SAS port, front access, read/write switchable through UltraBay 4d 1 write blocked PCIe port, front access, read/write switchable through UltraBay 4d 1 write blocked USB 3.0/2.0/1.1 port, front access, read/write switchable through UltraBay 4d 1 write blocked IDE port - front access, read/write switchable through UltraBay 4d 1 write blocked FireWire 1394 A/B (400/800 MB/s) port, front access, read/write switchable through UltraBay 4d
Storage Controllers	8 ports Intel® 6 Gb/s SATA controller, 2 x Intel® M.2 x 4 PCIe Socket, 2 x U.2 connector
Audio	Realtek® S1220A 7.1 channel high definition audio CODEC
Power	1200 Watt modular power supply
Chassis	4U rackmount

FEATURE	**RAID-RM™ - Server Attached Network Storage Module**
Default FREDC Storage	Master Unit - 160TB RAID array module (140TB RAID6) 16 bay, 3U rackmount RAID enclosure (multilane SAS attached) 16 - 10TB, 7200 RPM hard drives in hot-swap removable drive trays Optional 14TB hard drives available (224TB / 196 TB RAID 6)
Optional Storage	Additional RAID-RM storage modules available, capacities as shown above
Power	Dual redundant 460 Watt power supply
Chassis	3U rackmount

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	FRED-C™ - Forensic Recovery of Evidence Device Technical Specifications (continued)
FEATURE	**System Backup - Qualstar Q24 Robotic Tape Library Module**
Tape Changer	Qualstar LTO-8 drive, 24 slot library, SAS interface
Media Set	LTO-7 media set 15 data media cartridges (6TB/15TB capacity)
Software	BRU Server basic edition backup
Enclosure	2U rackmount

FEATURE	**Network Module**
10 GbE Network	10 Gigabit (copper) network switch 1 fully managed, line-rate 10G copper 'Base-T' rackmount switch. Supports up to 48 10 GBase-T (RJ45) and 4 SFP+ ports
Cat 6A Patch Panel	Two (2) - 24 port rackmount Cat 6A patch panel for a total of up to 48 patch panel ports
Cat 6A Cables	Two (2) - 25 x 1 ft. for a total of 50 cables
Enclosure	6U rackmount

FEATURE	**Display and Access Module**
Monitor / Keyboard	19 " LCD rackmount display with integrated keyboard/track pad
KVM	8 port KVM switch with IP remote access
Cables	KVM cable set - 2 USB, 1 P/S2 cables
Enclosure	1U rackmount

FEATURE	**Electrical Power**
UPS - 120V	3000 VA rackmount Uninterruptable Power Supply, 120V rackmount power strip. Requires 30 amp dedicated circuit with NEMA L5-30R receptacle at install location
PDU - 120v	12 outlet, 15 amp, 30 amp dedicated circuit with NEMA L5-30R receptacle at install location
Optional UPS - 230V	Optional 3000 VA rackmount Uninterruptable Power Supply, 230V Requires 230 volt, 16 amp dedicated circuit with one of the following receptacles at the install location: IEC-320 C20, Schuko CEE 7 / EU1-16P, or British BS1363A
Optional PDU - 230V	10 outlet, 16 amp, 230V rackmount power strip

FEATURE	**42U Rackmount Enclosure Module**
Rack	Rackmount enclosure w/doors and ventilation fans - 23.5" (w) x 36" (d) x 84" (h)

Utility	**FRED-C™ System Management Utilities**
FCCInstall	Prepare stock workstation for use with the FRED C Datacenter
DIWIMS	Create and maintain functional images of connected workstations
NetLogon	Forensic workstation drive mapping and time sync
DIDRE	"Bare metal" recovery of the server to a known good state
SMS Comm	Notifies designated parties of a system warning or critical event via SMS text

Module	**Optional Rackmount Modules Available for FREDC™ Forensic Data Center Systems**
FREDC RAID-RM Storage	160TB (raw), 140 TB RAID6 storage module. Rackmount 3U configuration
FREDC DB Server	Database Server for FREDC™. Rackmount 4U configuration
FREDC VM Server	Virtual Machine Server. Rackmount 4U configuration
DI GPU PowerStation	GPU based decryption acceleration module. Includes 4 NVIDIA® GeForce™ GTX 1080Ti graphics accelerator cards. Rackmount 4U configuration
FRED-RM Workstation	FRED-RM Forensic Workstation module (see above). Rackmount 4U configuration
FREDC™ DUO Worker	Processing worker module. Rackmount 1U configuration