Rhombus
Energy Solutions

VectorStat®
Distributed Network

SOFTWARE STACK

- Web Client UI
- Visualization Code (HTML, Javascript, JSON)
- Energy Management Applets
- NoSQL Replicated Database
- Secure Data Transport
- Hardware Access Libraries
- Linux OS

Distributed, Scalable, Resilient

VectorStat™ is the state-of-the-art energy management system (EMS) software from Rhombus Energy Solutions. VectorStat is an extensible and open source EMS platform that allows commercial/industrial EV charging and energy storage system (ESS) system integrators to reduce their total cost of ownership and speed the time to market for their products.

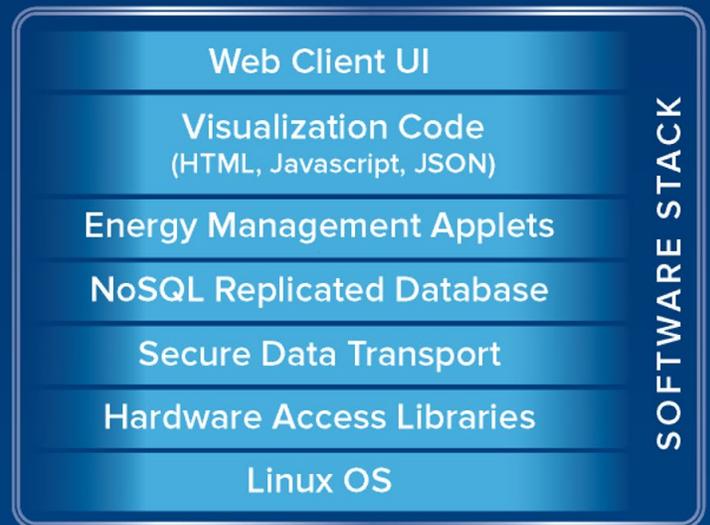## Feature Rich and Easily Extended

The VectorStat solution consists of:

- **Platform Software** which provides the foundational database replication, EMS services, and communications; and
- **Applets** which implement specific energy and power control functions.

Because VectorStat is modular, it can easily be customized or expanded as needed to support other power conversion, storage, and energy distribution systems. VectorStat also supports a variety of communications interfaces and protocols, allowing it to work with both legacy and state-of-the-art equipment.

Designed for Distributed Deployments

Each VectorStat node contains a distributed database instance. Data is replicated between nodes as desired, and all communications are fully encrypted. Even if communications are temporarily interrupted, each node continues to function independently, and the data collected is stored until communications are restored. These features enable a variety of deployment scenarios, and they significantly increase the resiliency of the overall system.

Support for Multiple Configurations and Hardware Choices

VectorStat supports a variety of deployment configurations, including cloud, mesh, star, and standalone topologies. It works as well with lossy or intermittent links as it does with continuous connections, reducing deployment and operational costs. VectorStat can also be integrated within a larger IoT and/or cloud management solution.

Because VectorStat's base functionality and Applets are independent of the hardware being managed and the communications transports utilized, it is easy to adapt it to a variety of deployment scenarios. This allows VectorStat to run on nearly any Linux single-board computers.

VectorStat® Capabilities

VectorStat EMS Key Features

➤ Distributed Architecture

➤ "Industrial-Grade" Encryption for all communications and data replication

➤ Industry-Standard Object Database

➤ Supports integration with open-source and 3rd party modules

VectorStat EMS Supported Network Configurations
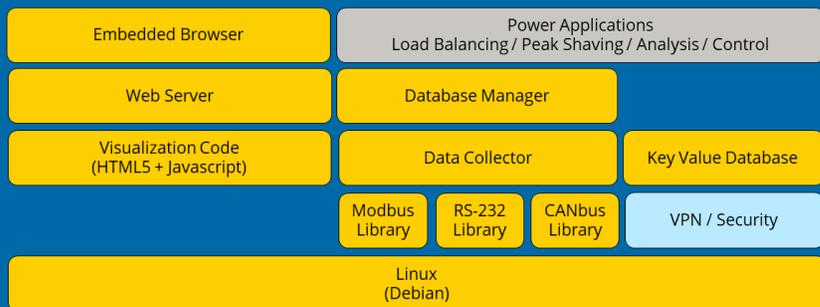
➤ Cloud
➤ Mesh
➤ SCADA "Star"
➤ Direct Connect

VectorStat Integrated Site Controller Key Features

➤ Time-based database with persistent key values

➤ VectorStat nodes can be used to connect disparate equipment to a VectorStat network

VectorStat EMS Standard Communications Interfaces
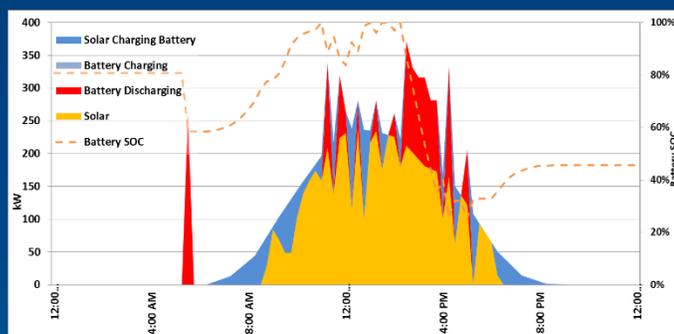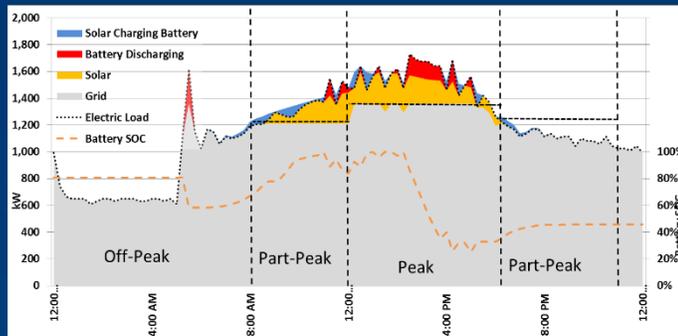
➤ MODBUS
➤ CAN
➤ USB
➤ RS-485

VectorStat Architecture

VectorStat Peak-Shaving Applet