



# Rocket® D3 Database Management System

Delivering Proven Multidimensional Technology to the Evolving Enterprise

## Efficient Performance:

Delivers high performance via efficient file management that requires minimal system and memory resources

## Scalability and Flexibility:

Scales with your enterprise, from one to thousands of users

## Seamless Interoperability:

Interoperates with varied databases and host environments through connectivity tools

## Data Security:

Provides secure, simultaneous access to the database from remote or disparate locations worldwide

## Cost Efficient:

Reduces operating and system management costs—D3 systems can be easily managed part-time by non-technical staff

## Proven Technology

For over 30 years, the Pick Universal Data Model (Pick UDM) has been synonymous with performance and reliability; providing the flexible multidimensional database infrastructure to develop critical transactional and analytical business applications. Based on the Pick UDM, the Rocket® D3 Database Management System offers enterprise-level scalability and efficiency to support the dynamic growth of any organization.

Rapid application development and application customization requires an underlying data structure that can respond effectively to ever-changing business requirements. Rocket D3 is simplistic in its structure, yet allows for complex definitions of data structures and program logic.

Our D3 .NET API provides compatibility with the Microsoft .NET Framework to extend transactional access to the Pick UDM from all Microsoft Visual Studio supported languages including Visual Basic,

C#, and C++. In addition, Java developers can access the D3 data files using its Java API. The MVS Toolkit provides access to data and business processes via both SOAP and RESTful Web Services.

## Why Developers Choose D3

D3 is the choice of more than a thousand application developers world-wide—serving top industries including manufacturing, distribution, healthcare, government, retail, and other vertical markets. Rocket D3 database-centric development environment provides software developers with all the necessary tools to quickly adapt to changes and build critical business applications in a fraction of the time as compared to other databases; without compromising data integrity and with low administration costs. For creating real-world applications, our software's way of managing information has proven vastly superior to other database schemas.

## The Rocket D3 Toolbox

Rocket D3 development tools are intimately knowledgeable of the MultiValue data structure, which facilitates rapid development without the need to interface with low-level functions:

### Rocket® D3 .NET API

Supports Microsoft's .NET Framework and provides a native bridge between a .NET application and a D3 data source

### Rocket® D3 Java API

Allows Java developers access to D3 multi-dimensional data from their preferred Java IDE

### Rocket® FlashConnect

Provides full-featured Web-to-D3 connectivity for D3 to read and write to Web pages natively in real-time

### Rocket® MVS Toolkit

Enables developers to easily create and deploy MultiValue Web services for D3, exposing both Pick/BASIC subroutines and Access queries (AQL) as Web Services via SOAP or RESTful APIs

### Rocket® D3 Hot Backup

Ensures availability of data by providing high-performance replication of D3 data files from a production server to a secondary failover server



## Features

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### Multi-dimensional Database

- ❖ MultiValue:
 

Transcending the limitations of two-dimensional relational models, the D3 MultiValue database model adds additional dimensions to reflect true business data modeling. MultiValues, along with their sub-Values and associated sub-MultiValues, permit the stacking of data and/or keys within a field or fields and eliminate the need for dependent tables and joins.
- ❖ Limitless:
 

Files may consist of an unlimited number of records. Records may have up to two billion fields. Fields may be up to 2GB (numeric or string). A process may open up to 32,000 files.
- ❖ Dynamic:
 

Fields can change dynamically, thus having no length or data type restrictions. Adding fields to a file does not require reformatting or restructuring.

### Integrated Data

- ❖ Data Dictionaries:
 

Field definitions are stored in an integrated data dictionary providing for conversions, formatting and self-documentation. Multiple definitions may be used on all fields. The dictionaries also provide the interface for database triggers.

### Data Access

- ❖ AQL:
 

D3 includes a powerful English-like query and command language, Access Query Language (AQL), most useful for creating result sets and reports.
- ❖ Connectivity:
 

The Open Systems File Interface (OSFI) allows D3 applications access to “foreign” files and relational database structures. The Rocket OpenDB product allows seamless access to data in an RDBMS. Relational data can be read, written and selected as if it is D3 data.
- ❖ ODBC Support:
 

D3 MultiValue data is available through ODBC and SQL. The D3 ODBC interface supports the use of relational front-end tools which facilitates reporting and sharing information with applications based on relational database technology. D3 has multiple avenues to move or access data, including OSFI/ODBC, SQL/ODBC, .NET, Java, and more.

### File Management

- ❖ Disks:
 

The file system may reside on top of a group of host-system files or on a raw storage device for maximum performance. Additional storage devices may be added at any time without rebuilding the D3 database.
- ❖ Rapid Data Access:
 

A hashed indexing scheme on primary record keys assures access to data elements with a minimum of disk reads regardless of database size. This D3 distributed disk management enhances performance.
- ❖ Secondary Indexing:
 

Cross-indexing is supported for fast access to records via secondary keys. Balanced-tree index maintenance and synchronization is performed automatically by the system during all updates.
- ❖ On-Line File Resizing:
 

An online file resizing utility is provided to keep files in an optimal state without interrupting processing or user access to data.
- ❖ File Level Encryption Utilizing AES-128 Encryption:
 

Efficient encryption of data offers enhanced file security.
- ❖ Scalability:
 

True 64-bit version provides larger addressing space per process and larger core memory for faster application performance.

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## System

- ❖ Security:  
Multilevel security supports user and account passwords and file access restrictions including update name and date stamping. Supports SSL and SSH communications. Host Authentication offers enhanced user security by validating the user within the O/S.
- ❖ Enterprise Licensing:  
Allows multiple connections from a client to share a single license. Supported clients include both the .NET and Java (Windows only) MVSP clients, and Rocket wIntegrate's Telnet and SSH connections.
- ❖ Memory:  
Through shared program object code usage and virtual memory management, D3 requires as little as one-fifth the memory per user of other database products.
- ❖ Importable/Exportable:  
Import and Export features facilitate complete movement of data between environments. Files can be maintained where most often used, and portability between versions of D3 makes data and programs transportable between development and production systems.

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