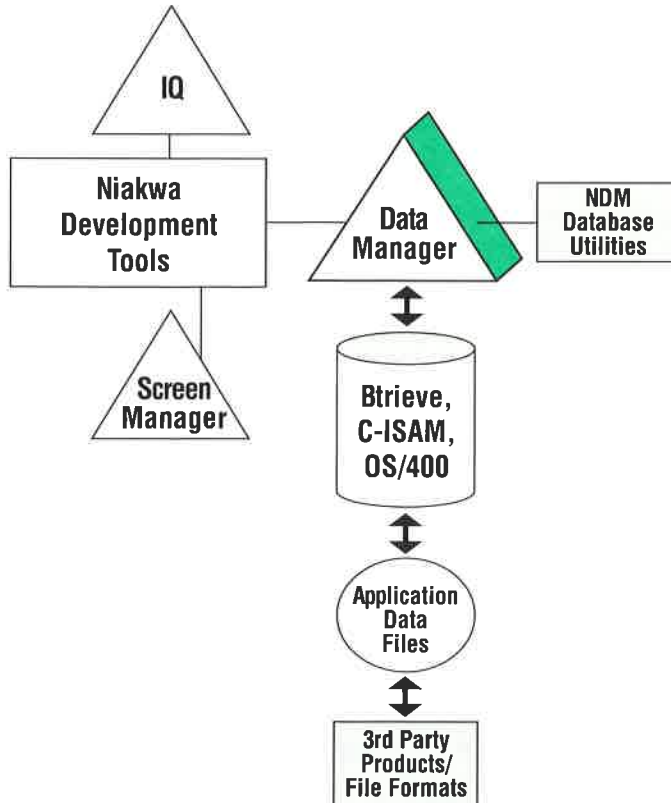


# Niakwa Data Manager Data Sheet



## **Introduction**

The computer industry today is flooded with powerful and exciting products which can both use and enhance your data files. The trick is finding a reliable and portable interface that will provide you the data independence necessary to access these products.

Niakwa's Data Manager (NDM)\* provides the perfect solution. NDM is an Application Program Interface (API) that allows your applications to utilize state-of-the-art native Industry Standard Access Method (ISAM) products to store data, while retaining full portability.

With NDM, you'll experience complete data independence. This freedom to share data files with a variety of third-party products (i.e., Informix, SQL, Xtrieve) will greatly enhance the value and functionality of your applications. End users will be able to generate exciting reports, presentations, and spreadsheets by using NDM to access these products.

The Data Manager was designed so that applications need to be developed only once. After the initial development, moving applications from one platform to another is as simple as obtaining the Data Manager Package (Pak) and supported native ISAM for that specific platform.

This data sheet provides a full orientation to the features, benefits, functionality, and performance of the Niakwa Data Manager.

\*Use of the Niakwa Programming Language is a requirement to run NDM.

**NIAKWA**



NDM consists of a set of subroutines that can be called by the application program by use of simple GOSUB statements (i.e., GOSUB NDM\_CREATE\_FILE).



NDM provides an API to the native ISAMs which, then, perform all of the actual data management for NDM. Supported ISAMs include:

- Btrieve Technologies' Btrieve
- Informix's C-ISAM
- IBM's OS/400



Using these native ISAMs, NDM is able to access a variety of application data files.



Depending upon the third-party product being used, the application files may be read and written to, or read only.

### Benefits

The Niakwa Data Manager provides developers numerous benefits, including:

- Data Independence
- Programmer Productivity
- Performance

### Data Independence

When using an ISAM, data files are independent and, thus, allow third-party products to access your data files. Data independence benefits developers at several levels:

1. Off the shelf query/report tools; such as, Xtrieve, IQ, Crystal Reports, etc. can be used to access your application data.
2. Using easily obtainable conversion programs, your data files can be accessed by third-party products (i.e., Focus, Lotus, and SQL).

This also allows you to add new functionality to your applications with minimal effort.

### Performance

NDM adds minimal overhead to native ISAM performance. Thus, NDM application I/O performance is usually equivalent to that of the native ISAM.

Applications using NDM generally realize substantial performance gains due to NDM's elimination of file access bottlenecks. Each data file is designated as a stand-alone file. One user may lock a file while a second user continues to access other files. In addition, support for record locking allows applications to reduce or eliminate the need for file locking, thus, multiple users can update data in the same file concurrently.

Application performance is also significantly improved by use of native ISAM capabilities (i.e., buffering and caching).

### Features

The Niakwa Data Manager provides:

- **Multiple Indices**  
Each key may contain up to 8 segments. A total of 24 key segments per file may be defined.

### File and Record Locking

Support for both file and record locking is provided. This allows multiple users to access different records in a file simultaneously without encountering conflicts.

### Native File Storage

All data is stored in expandable, stand-alone native files. You'll never receive a file full warning.

### SEEK Functions

Searching for specified key values, seek functions support =, >, <, >=, <=, start-of-file, and end-of file specifications.

### Transaction Start, End, Abort

These features allow operations to be logically grouped into transactions. Partially completed transactions can be backed out of the database in the event of an error or hardware failure.

### Data Conversion Functions

NDM's data conversion facilities automatically convert native ISAM data types to NPL data types, as specified in a programmer defined data dictionary. This allows the application to work with different ISAMs without modification while maintaining data in the native format so that it is fully accessible by third-party products.

### Data Dictionary Files

NDM's data dictionary files simplify file maintenance by allowing you to efficiently catalog and track data files, formats, and indices.

### Utility Programs

The NDM Utility Programs allow for the easy creation and maintenance of data dictionary files and other support files. Also included are utilities for migrating user data files from one platform to another.

### Field Type Support

NDM supports not only NPL, but also native field types. This allows for more convenient and complete programming capabilities.

### Special API Functions

These functions provide access to native ISAM specific features.

### Platform Specific Toolbox Feature

NDM provides access to extended platform specific features. This provides you the opportunity to utilize a variety of convenient development features.

### Packaging

NDM is sold in packages, including:

### NDM Development Software

Available for all platforms supported by NDM, the development software must be installed on each development system.

### NDM Development Documentation

The Programmer's Guide and hardware/OS specific instructions are available for all operating environments supported by NDM.

### NDM RunTime Package

The NDM RunTime Package is unsecured and copyable (no user limit or security) which makes NDM a very cost effective data management tool. NDM is packaged and sold by operating system as follows:

- MS-DOS environments (MS-Windows/NetBIOS/Novell NetWare/386/DOS-Extender)
- Intel UNIX
- AIX (IBM's RS/6000)
- IBM's OS/400

### Auxiliary Components

#### Error Handling

NDM error codes are identical across operating environments and native ISAMs, thus, applications can check for error code values and act accordingly.

#### NDM Utilities

NDM provides a method for easily creating, deleting, viewing, and modifying NDM support and application data dictionary files (a commented source code version is available upon request).

Maximum Limits				
Description	NDM	Btrieve	C-ISAM	OS/400
Record Length	4090*	32767	32767	32766
Key Length	120*	255	120	255
No. of Keys/File	8*	119	unlimited	100
No. of Segs/Key	24*	119	8	119

\*Extended on platforms where larger values are supported.

System Requirements			
Hardware	Operating System	Operating Environments	ISAM Supported
IBM and 100% Compatibles	MS-DOS 3.1 or greater	Novell NetWare 2.11 or greater. MS-Windows 3.0 or greater.	Btrieve 5.0 or greater.
Approved Intel-based 80386 or greater	Intel UNIX	Altos UNIX AT&T UNIX Interactive UNIX SCO UNIX	C-ISAM 4.00 or greater for the specific operating environment in use.
IBM RS/6000	AIX Version 3.XX or greater.	C-ISAM 4.00 or greater.	C-ISAM 4.00 or greater.
IBM AS/400 Server	OS/400 V2RM0 or greater.		Native AS/400
IBM 80286 and 100% Compatible or greater Clients	MS-DOS 5.0 or greater.	MS-Windows 3.1 or greater.	

### Online Help

Bundled into the NDM Utility, this facility provides a convenient on-line reference to all NDM API calls.

### Field Type Conversion

NDM provides functions for easy conversion between NPL and native ISAM-supported field types.

### ISAM Feature Support

A "toolbox" feature supports specific native ISAM functions not supported by all native ISAMs.

### BESDK

The BESDK feature supports mixed language programming by providing object files, source code, and example MAKE procedures for external routine integration.

### Export to IQ

NDM allows you to easily export the data dictionary and key description components of your Btrieve files

into an IQ data description file, thus, allowing end users passive access to their data files for report generation purposes.

### Supported Environments

AIX	NetBIOS
Intel UNIX	Novell NetWare
MS-DOS	OS/400
MS-Windows	386/DOS-Extender

NOTE: SuperDOS, Xenix, and VMS are currently unsupported.

### Technical Support

Niakwa provides one of the most prompt and comprehensive support systems in the industry today. In 1993, 99% of all Niakwa support calls were responded to within one hour, with an average resolution time of 15 minutes or less.

# Niakwa Data Manager Functions

## File Manipulation Calls

NDM\_CLOSE\_FILE  
NDM\_CREATE\_FILE  
NDM\_CREATE\_FILE\_FROM\_CATALOG  
NDM\_CREATE\_INDEX  
NDM\_CREATE\_KEY\_TABLE  
NDM\_DELETE\_FILE  
NDM\_DELETE\_INDEX\*  
NDM\_OPEN\_FILE  
NDM\_OPEN\_FILE\_FROM\_CATALOG  
NDM\_SET\_CURRENT\_INDEX

## Information Type Calls

NDM\_GET\_ISAM\_ERROR\_CODE  
NDM\_GET\_CATALOG\_ENTRY  
NDM\_GET\_CONFIGURATION  
NDM\_GET\_CONVERSION\_TABLE\_LIST  
NDM\_GET\_CURRENT\_INDEX  
NDM\_GET\_DEFAULT\_FIELD\_TYPE  
NDM\_GET\_ERROR\_DESCRIPTION  
NDM\_GET\_FILE\_STATUS  
NDM\_GET\_FORMAT\_SPEC\_FOR\_KEY  
NDM\_GET\_FORMAT\_SPEC  
NDM\_GET\_HANDLE\_SIZE  
NDM\_GET\_LIMIT\_HIGHWATERS  
NDM\_GET\_OPEN\_FILE\_LIST  
NDM\_GET\_POSITION\*  
NDM\_GET\_RECORD\_LENGTH\_FROM\_DD  
NDM\_GET\_TOOLBOX\_STATUS  
NDM\_GET\_TRANSLATION\_TABLE

## Record Manipulation Calls

NDM\_APPEND\_UNIQUE\_KEY\_RECORD  
NDM\_DELETE\_RECORD  
NDM\_INSERT\_RECORD  
NDM\_READ\_RECORD\_BY\_KEY  
NDM\_READ\_RECORD\_BY\_POSITION  
NDM\_REWRITE\_RECORD  
NDM\_SET\_POSITION\*  
NDM\_SET\_READ\_BLOCKING  
NDM\_UNLOCK\_ALL\_RECORDS

## Conversion Calls

NDM\_CONVERT  
NDM\_CREATE\_CONV\_TABLE\_FOR\_KEY  
NDM\_CREATE\_CONVERSION\_TABLE  
NDM\_CREATE\_CONV\_TABLE\_FOR\_KEY\_FROM\_CAT  
NDM\_CREATE\_CONV\_TABLE\_FROM\_CAT  
NDM\_DESTROY\_CONVERSION\_TABLE

## Configuration Calls

NDM\_INITIALIZE  
NDM\_SET\_TOOLBOX\_STATUS  
NDM\_SET\_TRANSLATION\_TABLE  
NDM\_SET\_MAX\_KEY\_SEGS  
NDM\_TRANSACTION\_ABORT\*  
NDM\_TRANSACTION\_COMPLETE\*  
NDM\_TRANSACTION\_START\*

## IBM AS/400 Specific Calls

NDM\_ESTABLISH\_CONNECTION  
NDM\_SET\_INDEX\_FILE\_NAME  
NDM\_CREATE\_DEFINED\_FILE  
NDM\_GET\_INDEX\_FILE\_NAME