

MERMAID

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Data Warehouse Management Database Design Document

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Revision

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1 Introduction

This document details the low-level design for the Data Warehouse Management Database component of the MERMAID system.

Since datasets will be stored within a flat file (directory) system on either the MERMAID server or on the Data Provider's server, a central management system database is required to store the actual data location information as described by the WP 3 deliverable; Products Catalogue Database (D3).

All datasets held within the MERMAID system are identified within the Data Warehouse Management Database, which contains information relating to the physical location and physical attributes of all stored datasets, whether held locally or remotely. The database is accessed using COM components to allow other MERMAID components access to the database.

The database Schema was designed from analysis of the requirements identified from consultation with MERMAID consortium Data Providers and is designed from the start to be implemented using Microsoft SQL Server 2000.

Database table schema are defined in this document but database stored procedures are not covered in this document as these form part of the functionality contained in the Broker Gateway implementation.

2 Database Architecture and Relationships

The data stored in the Data Warehouse is stored within two tables contained in the main MERMAID database as shown in Figure 1 – Data Warehouse Database Structure.

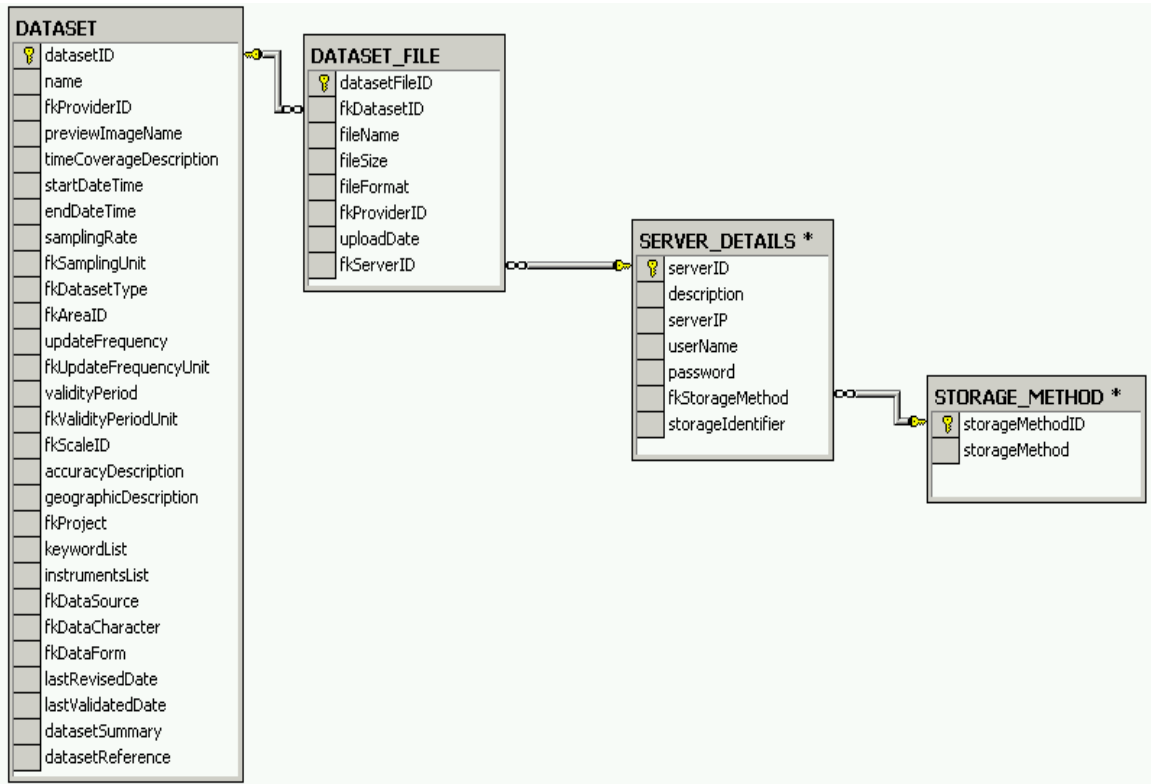


Figure 1 : Data Warehouse Database Structure



3 Table Schema

Where a field relates as a foreign key to another table, this is indicated as well as whether the relation is required or whether it can be set to 'NULL'.

3.1 Dataset File

This table provides the central store of the dataset file information.

Field Name	Data Type	Reqd	Notes
datasetFileID	4 byte integer	Y	Primary Key
fkDatasetID	4 byte integer	Y	Foreign key into the DATASET table.
fileName	varchar(255)	Y	Name of the dataset file uploaded to the MERMAID broker.
fileSize	4 byte integer	Y	size in MB of the dataset file uploaded to the MERMAID broker.
fileFormat	varchar(80)	Y	format of the dataset file uploaded to the MERMAID broker.
fkProviderID	4 byte integer	Y	Foreign key into the PROVIDER table.
uploadDate	datetime	Y	Date and timestamp of the time the dataset file was uploaded to the MERMAID broker.
fkServerID	4 byte integer	Y	Foreign key into the SERVER_DETAILS table.

3.2 Server Details

This table provides the central store of the server and identifies where a dataset file is stored.

Field Name	Data Type	Reqd	Notes
serverID	4 byte integer	Y	Primary Key
description	varchar(80)	Y	Text description of the dataset.
serverIP	varchar(80)	Y	IP address of the server where the file is located.
userName	varchar(80)	Y	FTP username for access to the server.
password	varchar(80)	Y	FTP password for the server where the file is located.
fkStorageMethod	4 byte integer	Y	Foreign key identifier to the type of storage method used
storageIdentifier	varchar(255)	Y	Location of the dataset file on the file server or ODBC name of database where file is located



3.3 Storage Method

This is a pick list table that details the storage methods available for dataset file storage.

Field Name	Data Type	Reqd	Notes
storageMethodID	4 byte integer	Y	Primary Key
storageMethod	varchar(80)	Y	Identifies the method in which the dataset file is stored