Software Product Description

PRODUCT NAME: DEC Data Distributor Version 6.0 for OpenVMS AXP **SPD 47.12.01**

DESCRIPTION

DEC Data Distributor manages the distribution of relational data. Operations called transfers define what data and data definitions are to be moved (the source) and where they are to be moved to (the target). The target need not be on the same system or be the same data management system as the source.

Distributing data in this way has several benefits, particularly when the target is on a different system from the source:

- Users can query a database local to them rather than having to access a remote database. This provides faster and more regular access.
- Congestion on the source database is reduced as a result of the use of the target.

Data Sources, Targets and Gateway Dependencies

The following table lists the DEC Data Distributor sources and targets and the DEC DB Integrator (DBI) gateways, if any, required to access them.

Table 1

DEC Data Distributor Sources and Targets

Data Manager	Source	Target	DBI Gateway Requirement[1]
DEC DB Integrator[3]	Y	Y	-
DEC DBMS	Y	N	DBMS
DEC Rdb	Y	Y	-
DSM	Y	N	DSM
IBM DB2	Y	Y	DB2
IBM VSAM	Y	N	RMS
ORACLE	Y	Y	ORACLE
SYBASE	Y	Y	SYBASE
VMS RMS	Y	N	RMS
Others[2]	Y	N	Custom Drivers

Methods of Data Distribution

There are three transfer types: extraction, extraction rollup, and replication. For each type of transfer, the source can be all the table definitions and data within the source database or databases, or a subset of those definitions and data.

Extraction

The target can be a set of tables in any of the target databases identified in Table 1. Each time the transfer executes, the existing data in these tables is deleted and replaced with current data from the source.

Optionally the target may be a DEC Rdb database, as opposed to tables in a DEC Rdb database. In this case a new version of the database is created every time the transfer executes.

Users can update any of the target tables, provided that they have access privilege to do so. If Data Distributor recreates the database files when the transfer next executes, the user updates will not appear in the target database. If the transfer does not create new database files but the user updates were to transferred tables, the user updates will not appear when the table data is refreshed. User updates are preserved when they are to tables not targeted by Data Distributor transfers and the target files are not recreated with each subsequent transfer execution.

[1] The use of a particular database or file system as a source or a target depends on the version of the DBI gateway used. Refer to the *OPTIONAL SOFTWARE* section of this SPD for the DBI gateway products and versions required to achieve the capabilities listed here.

[2] DEC DB Gateway for Custom Drivers provides tools that enable access to data sources that lack turn-key DBI Gateway solutions.

[3] Note that transfer of data to a DEC DB Integrator target database is contingent upon the capabilities of the underlying link databases and the gateways that access them. For example, if the DEC DB Integrator logical database is linked to an IBM DB2 database, which can be a target of Data Distributor transfers, then the transfer to the DEC DB Integrator database can succeed. By contrast, if for example the logical database is based on links to RMS or VSAM files, which cannot be the target of Data Distributor transfers, the transfer to the DEC DB Integrator database would fail.

Extraction Rollup

The extraction rollup function has the same range of source databases as the extraction function. However, an extraction rollup has more than one source database. The source databases can be of different types, for example, one DEC Rdb database and one DB2 database.

The target must be a DEC Rdb database. A new version of the target database is created every time the transfer executes. The result of an extraction rollup, like that of an extraction, can be updated by users, but those updates will not be reflected in the new database created when the next transfer executes.

Replication

A replication transfer initially moves all source data to the target. Subsequent executions of a replication transfer post only the changes made to the source database since the last transfer was executed. Data rows deleted on the source database may be deleted on the target or flagged as archived data. The source of a replication transfer must be a DEC Rdb database. The target can be any of the targets identified in Table 1. If necessary, the target can be rebuilt by reinitializing the transfer.

Tables that are targets of replication transfers should not be updated.

Other Features

Schedules

Each transfer may have a schedule that specifies the times and intervals at which a transfer will execute. A transfer may also be executed anytime on demand, whether or not a transfer schedule is defined.

Pre- and Post-Transfer Command Procedures

A transfer can have associated with it DCL command procedures that execute before and/or after a transfer executes. Potential uses of such procedures include:

- Making the network between the source and target systems available
- Notifying users by electronic mail that the transfer has completed and reporting on completion status
- Creating indexes on tables in the target database

Multiple Transfers

A database can be the source for more than one transfer. For example, a DEC Rdb database could be the source for a replication of some tables, an extraction of some columns from other tables, and also one of the source databases for an extraction rollup including yet another subset of the data.

Because the target of an extraction or replication can be a set of tables in an existing database, such a database can be the target of more than one transfer. However, it cannot be the target of an extraction rollup, and no table within the database can be the target of more than one transfer.

A database can be both a source and a target database. For example, a database may be the target of a replication transfer, and may also be the source of other replications.

Centralized Storage of DEC Data Distributor Information

Transfer and schedule definitions and the status of every transfer are consolidated in a DEC Rdb database known as the transfer database.

VMScluster systems may contain both VAX and AXP processors. In a single VMScluster system, VAX computers running DEC Data Distributor and AXP computer systems running DEC Data Distributor share a single cluster-wide transfer database. They also share in the scheduling and execution of transfers.

Syntax

DEC SQL includes DEC Data Distributor statements, such as:

- CREATE TRANSFER, in which the source and target are specified. Specification of the source includes selecting the tables, and the rows and columns of those tables, to be transferred.
- CREATE SCHEDULE, in which the frequency of execution is specified.
- SHOW TRANSFER, which displays the definition of the transfer and that of the associated schedule if there is one, and the status of the transfer, including the date and time at which it last executed.

Security

To create a transfer, it is necessary to have SELECT access to the source database and to the tables transferred. To create a replication transfer, it is also necessary to have CREATE privilege on the source database.

If the target database is created by DEC Data Distributor, it is created with the DEC Rdb default protection. If it is necessary to be more restrictive for an extraction or replication, the database can be created in advance and the target specified as tables within it. Tables are always created with the default protection of the target database system. This can be altered in a posttransfer DCL command procedure.

The data in the transfer database is protected from direct access by users lacking the required privileges.

Portability and Interoperability

DEC Data Distributor is available on both OpenVMS VAX and OpenVMS AXP system platforms. DEC Rdb databases, DB Integrator and the DB Integrator gateways on both of these platforms provide a wide range of targets and sources for extraction and targets for replication transfers.

Relationships with Other Products

DEC Data Distributor requires DEC Rdb. It can be used with any one of the three DEC Rdb packaging options. Sites may use the DEC SQL interface to tailor target databases by creating indexes etc.

Because DEC SQL can perform operations on remote as well as local databases, the operations can be performed from another node on the network to nodes that only have a Run-Time license for the target product.

If CDD/Repository is present on the target system, data definitions from DEC Rdb target databases can be placed in the dictionary by using the INTEGRATE statement of the DEC SQL utility.

DEC Data Distributor for OpenVMS AXP can schedule and execute transfers between DEC DB Integrator, DEC DB Integrator gateways or DEC Rdb servers running on OpenVMS VAX or OpenVMS AXP systems.

Where to Install DEC Data Distributor

It is not necessary to install DEC Data Distributor on every system involved in a transfer. It must be installed on:

- The source system of a replication transfer
- Either the source or the target system of an extraction or extraction rollup transfer. (It may be installed on both.)

Limitations

Because DEC Data Distributor uses a cluster-wide transfer database, only one version of DEC Data Distributor is allowed in a VMScluster system.

Row selection, conditional and value expressions available in a transfer definition are a subset of those supported by the source database management system.

Indexes, constraints, triggers, collating sequences, stored procedures, external functions and access privileges are not copied from source to target databases.

DEC Data Distributor does not provide commit-time replication of changes. That is, updates to the source are transferred to the target when a replication transfer executes, not whenever an update transaction is committed on the source database.

DEC Data Distributor does not support DEC SERdb for Security-Enhanced VMS.

CONFORMANCE TO STANDARDS

DEC Data Distributor extends the functions of DEC SQL to cover the scheduled transfer of data between databases. These functions are not addressed by the current ANSI/ISO standards for SQL.

HARDWARE REQUIREMENTS

Processors Supported

AXP: DEC 3000 Model 300 AXP Workstation,
DEC 3000 Model 400 AXP Workstation,
DEC 3000 Model 400 AXP Server,
DEC 3000 Model 500 AXP Workstation,
DEC 3000 Model 500 AXP Server

DEC 4000 Model 610 AXP System

DEC 7000 Model 610 AXP System

DEC 10000 Model 610 AXP System

Disk Space Requirements (Block Cluster Size = 1):

The following counts refer to the disk space required on the system disk. The sizes are approximate; actual sizes may vary depending on the user's system environment, configuration, and software options.

Disk space required for installation:	11,000 blocks 5.6M bytes
Disk space required for use (permanent):	8,000 blocks 4.1M bytes

Other Hardware Required:

All processors require mass storage units to backup and restore established databases.

CLUSTER ENVIRONMENT

This layered product is fully supported when installed on any valid and licensed VMScluster configuration without restrictions. The *HARDWARE REQUIREMENTS* section of this product's Software Product Description detail any special hardware required by this product.

Multiple versions of this software cannot be run on a single system or VMScluster at the same time.

OpenVMS VMScluster configurations are fully described in the VMScluster Software Product Description (42.18.xx) and include CI, Ethernet, and Mixed Interconnect configurations.

SOFTWARE REQUIREMENTS

- OpenVMS AXP Operating System V1.5
- DEC Rdb for OpenVMS AXP V6.0

  Full Development, Interactive or Run Time Option

VMS Tailoring:

The following OpenVMS classes are required for full functionality of this layered product:

- VMS Required Saveset
- Network Support
- Programming Support
- Secure User's Environment
- Utilities

For more information on OpenVMS classes and tailoring, refer to the OpenVMS AXP Operating System Software Product Description (SPD 41.87.xx).

OPTIONAL SOFTWARE

- DEC DB Integrator for OpenVMS AXP V1.0

  To access DEC DB Integrator logical databases residing on the network as sources or targets for data transfer. You may use the Full Development, Interactive or Run Time Option.
- DECnet V1.5 for OpenVMS AXP

  To transfer data between network nodes
- DEC DB Integrator Gateway for DB2, Version 3.0, for OpenVMS AXP

  To access DB2 databases residing on IBM systems as sources or targets for data transfer
- DEC DB Integrator Gateway for ORACLE, Version 3.0, for OpenVMS AXP

  To access ORACLE databases residing on the network as sources or targets for data transfer
- DEC DB Integrator Gateway for SYBASE, Version 1.0, for OpenVMS AXP

  To access SYBASE databases residing on the network as sources or targets for data transfer
- DEC DB Integrator Gateway for RMS, Version 3.0, for OpenVMS AXP

  To access VMS RMS files on OpenVMS Systems on the network and VSAM data sets on IBM MVS systems as sources for data extraction
- DEC DB Integrator Gateway for Custom Drivers, Version 3.0, for OpenVMS AXP

  To access data sources that lack a turn-key DBI Gateway solution through customer-implemented drivers
- DEC DB Integrator Gateway for DSM, Version 1.0

  To access Digital Standard M (DSM) globals as sources for data transfer
- DEC DB Integrator Gateway for DBMS, Version 1.0, for OpenVMS AXP

  To access DEC DBMS databases as sources for data extraction

GROWTH CONSIDERATIONS

The minimum hardware/software requirements for any future version of this product may be different from the requirements for the current version.

DISTRIBUTION MEDIA

This product is available only on the Digital CD-ROM Software Library for OpenVMS AXP.

ORDERING INFORMATION

Traditional Software Licenses: QL-0QWA*-AA
Software Media/Documentation: QA-03XAA-H8
Software Documentation: QA-VDRAA-GZ
Software Product Services: QT-0QWA*-**

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Notes:

* Denotes variant fields. For additional information on available licenses, services and media refer to the appropriate price book.

SOFTWARE LICENSING

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For more information on the License Management Facility, refer to the OpenVMS Operating System documentation.

SOFTWARE PRODUCT SERVICES

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Warranty for this software product is provided by Digital with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.