digital™

Software Product Description

PRODUCT NAME: ALSTRA Enterprise Version 3.1 **SPD 70.02.00**
TP Deployment for Windows NT, OpenVMS, DIGITAL UNIX

DESCRIPTION

Summary

ALSTRA™ is a framework for rapid application development and deployment (RADD) designed for team development. ALSTRA extends the Visual Basic® (VB) environment with template driven code generation, enabling developers in small and large workgroups to design, develop, and deploy well structured and well documented object oriented Visual Basic applications. ALSTRA is developed and licensed to DIGITAL, by Mirus Data AB, Sweden.

ALSTRA gives application developers access to a rich development environment based on the Windows NT™ or Windows 95® operating system. In this environment, developers can create large-scale, portable, Visual Basic, client/server applications for a range of computing platforms. In ALSTRA, you design your application in an Explorer-style environment using drag and drop techniques. The design information is stored in a repository. ALSTRA generates a complete scalable Visual Basic three software-tier partitioned enterprise application, ready to run without manual coding.

The generated application includes all forms for a MDI environment supporting multiple instances, and access an ODBC compliant database through the ODBC Application Programming Interface (API) for peak performance. As an alternative to a VB client, ALSTRA can generate a web client for Microsoft Transaction Server (MTS) using HTML and VBscript. Business rules are generated as COM/DCOM server objects, which are used by both VB clients and web clients.

The application is generated as source code, and is 100% open and available to the programmer. The generated code can be extensively modified manually and these modifications are kept intact in future regenerations of the application—an exclusive feature of ALSTRA.

Applications with heavy transaction loads require a Transaction Processing (TP) Monitor solution in order to give acceptable performance. ALSTRA applications support the use of MTS (Microsoft Transaction Server) as an option. By upgrading to ALSTRA Enterprise, developers can extend the scalability of their enterprise applications by generating source code for the DIGITAL ACMS*xp* Transaction Processing monitor.

Component Details

There are five major components of ALSTRA:

1. Builder

The Builder provides a framework for application prototyping. This framework includes forms, icons, and modifiable code templates. In conjunction with Microsoft Visual Basic, this environment allows you to define and prototype your application. One or more projects can be set up to complete development.

The Builder allows the application developer to interactively determine the application structure, and the appearance of the forms associated with the application. This logical application definition is stored in a shared database regardless of the type of application to be generated. The developer may choose from several database options depending on the operating system.

The developer can also simulate how the application works, including database operations against the server without having to generate all of the executable code. Visual Basic is utilized to prototype the application in a Windows environment.

2. Utilities

The utilities assist with the creation and setup of your ALSTRA environment, and with the import or creation of your ALSTRA design database. This includes the creation of the dataset, definition of developers who are authorized to use the environment, application messages, and reserved words.

Existing data definitions can be imported or cloned into ALSTRA to be used as an application design base, and can be exported for transfer to a new design base on a new platform.

3. Online Information System

The online information system provides online manuals including a "Getting Started" guide for ALSTRA, a "TP Guide" explaining the details of ALSTRA Enterprise deployment, HELP, and a "Guide Me" feature to help you learn and complete the application development process.

HELP provides comprehensive information about the options, menus, and screens in the development environment.

Online documentation may be easily browsed on screen while working with the tool, and may be printed if desired.

"Guide Me" is always available as a button on the development window, and provides step-by-step instructions to perform specific tasks in ALSTRA.

4. VB/MTS Generator

The generator allows you to generate Visual Basic, ODBC, and COM objects for complete client/server solutions using VB applications and an ODBC database connection. Once your code is designed, the VB Generator will allow you generate, test, and customize the code.

The generator creates the application code for the appropriate platform and environment paradigms that you choose. The VB form, VB code, and the make files are generated before prototyping is completed using Visual Basic. The same generator process is utilized to generate all variations of applications.

The source code for the application is produced by the generator. This code can be modified creating additional features or customizations in the application. The code contains markers which delimit portions of the code that will be updated from templates during regeneration from custom changes made in the builder. Code modifications placed outside of these markers are not changed. The latest version of the source code can be used for regeneration, capturing all customizations.

5. TP Generator

One of the features of ALSTRA product set is that developers may scale the application for a large number of users and a high level of database traffic by generating their design as a transaction processing application.

This capability is part of the ALSTRA Enterprise product. ALSTRA and ALSTRA Enterprise are available for purchase separately so you only need to purchase the scaling capabilities you require at a particular time. You can upgrade from ALSTRA to ALSTRA Enterprise by ordering the appropriate upgrade part. The ALSTRA Enterprise package contains software and licenses for application development and deployment to Windows NT, OpenVMS, and DIGITAL UNIX servers.

When you create a new Project in ALSTRA, you can select either ODBC or Transaction Processing for deployment. ALSTRA Enterprise is required in order to generate complete TP solutions.

Middleware Options

You may select from different middleware options depending on the type of client-to-database connection you desire.

ODBC

- All code resides on the client system
- Provides database independent data access interface.
- Reduces network traffic with the use of Extended Fetch
- Faster execution with prepared execution of statements

COM Objects

ALSTRA creates ActiveX server objects with remote Distributed Common Object Model (DCOM) capabilities which are available to both VB clients and web clients. These business objects:

- Reside on the server
- Can provide consistent implementation of widely used business rules.
- Are available for users of other tools that support COM objects, such as Microsoft Excel and Microsoft Project.
- Validate data on the COM Server minimizes network traffic

MTS

- Client connects to the database through MTS
- Business code resides on server as DCOM objects
- Provides COM object management
- Capability of distributed data access

ACMS*xp*

- Provides portable, standards-based Transaction Processing
- Minimizes network traffic with the use of optimized ASCII workspaces
- Transaction handling is possible in a separate software tier
- Data access through embedded SQL™ in compiled 3GL procedures

WWW

- Client connects to database through Microsoft Internet Information Server (IIS) and MTS
- Business code resides on server as DCOM objects
- Browser-based client using HTML and VBscript code
- Efficient data presentation is handled through Microsoft Advanced Data Connector (ADC)

Development Environment Highlights

- Rapid Application Development and Deployment

ALSTRA provides a comprehensive RADD framework designed specifically to offer a development environment capable of building VB client/server applications that manage business-critical data. In addition to prototyping one-tier (ODBC) applications, the Application Generator automatically builds Business Objects as remote DCOM objects for multi-tier VB client/server applications.

- Repository-Driven Framework

A repository holds information and business rules for the Business and Data Services, as well as user interface and appearance issues for the User Services. This environment-independent information is stored in an ODBC-compliant Design Database and is used when building your application.

- Application Objects

Application Objects are high-level software building blocks, containing both User Services and Business Services with built-in business logic and a rich set of predefined functionality. An instance of an Application Object is called a Design Module and a working application consists of a collection of Design Modules connected together to provide the required functionality. The Design Modules are automatically separated into COM object clients and DCOM object servers.

- Multi-user Development Support

By adopting the VB project style, enhanced with Application Objects, the Project Leader can easily have several people working with different parts of a large project. All Design Modules are stored in the common repository and, therefore, are available to everyone, even if they are working with a subset of the overall project. Developer preferences can be customized to provide tool tips, one, two, or zero tool bars, a menu bar, colors, and default startup configurations.

- Code Generator

All necessary VB code such as forms, class modules and standard modules are automatically generated based on your design.

- Template-driven Application Design

The scope and extent of the built-in functionality in the Application Objects is defined in templates. A predefined *template project* serves as the foundation for every Design Module in your application that is used by the code generator. If you alter the Template Project to suit your needs regarding functionality and look and feel, the Application Objects will automatically inherit these alterations and all created Design Modules will function and appear as defined in the Template Project.

The templates supplied by DIGITAL are subject to enhancement. The developer is responsible for merging their custom template changes into future templates supplied by DIGITAL.

- Import Database Facilities

The developer can import the database structure from an existing ODBC-compliant database into the Design Database, automatically populating the repository with Data Services information. In addition, the Copy Database facility enables you to copy a complete Design Database from one physical ODBC-compliant database to another, such as from MS Access to MS SQL Server.

- Generate Native SQL Scripts

The Data Services information stored in the Repository can be generated into native SQL script files for a number of different target databases.

Deployment Environment Highlights

- Partitioned Applications

The generated applications follow a three-tiered logical application architecture, and deploy flexibly through encapsulated, shared and reusable components. This *Logical Services Model*, where a service is a collection of selected features that respond to requests for specific activities, automatically partitions your application into User Services, Business Services and Data Services. Partitioned applications give you a number of advantages and enhance the application's reusability, flexibility, manageability and maintainability. These logical application partitions can be deployed across one, two, or three hardware tiers.

- Middleware Independence

Visual Basic based applications can be generated using ODBC or COM objects. The VB form and logic remains the same regardless of the middleware or type of application selected.

The interface for the generated business objects is completely independent of the actual middleware used for communicating with the data source. A user of the business object is unaware of what mechanism is used when requesting database services.

- High Performance

The generated application uses many techniques for high performance, including:

- COM server objects

Usage of early binding. Requiring minimal amount of calls to the COM object server, using techniques such as parameter passing.

- ODBC

The ODBC API is used during prototyping and during VB or MTS database operations for good server resource usage and remote database access performance. ALSTRA Enterprise generates ACMS*xp* applications with program code containing embedded SQL statements for best performance during high-volume transaction processing.

- Built-in VB Features

Your application will benefit from a rich set of built-in Visual Basic features without requiring extensive manual coding:

- MDI Environment Support.
- Predefined Menus, Popup Menus, ToolBar and StatusBar.
- Support for Tabs (TabStrip Control).
- Drag and Drop Support.
- Field-level Validations Support.
- Built-In Event Handling (record browsing, editing and database actions and so on).
- Support for multiple instances of forms.
- Support for connections between Design Modules.
- Advanced error handling, trapping all errors and displaying the call tree.
- Utilization of VB language features, such as Collections, Property Procedures, With...End With and For Each...Next.
- Separation of form and function.

Internationalization Features

ALSTRA allows for localization of messages and localized language input for 1 byte character sets as supported by VB.

Sample Applications

Sample applications are included with the product.

Documentation

The ALSTRA information set is available online with the ALSTRA VB Development kit and ALSTRA Enterprise TP Development kit. A hardcopy of the "Getting Started" booklet is provided for your reference.

The user information set consists of:

- *Read Before Installing (hardcopy only)*
- *Getting Started Step-by-Step*
- *TP Guide*
- *README file*
- *Help System*
- *Software Product Description (hardcopy only)*

STANDARDS SUPPORTED

Industry Specifications

When used with ACMS*xp*, ALSTRA Enterprise creates Standard Task Definition Language (STDL) code in accordance with:

- Open Software Foundation (OSF) Distributed Computing Environment (DCE)
- Multivendor Integration Architecture (MIA)
- NMF/Spirit

- X/Open

Industry Practice

ALSTRA is compatible with the following industry practices:

Utilizes Microsoft Visual Basic, the *de facto* industry standard user interface development tool.

HARDWARE REQUIREMENTS

Processors Supported For Application Development

PC with Intel® 80486/33 Mhz or greater processor, 30 MB available disk space or greater, 16 MB RAM or greater, with a Windows 95 or Windows NT Version 4.0 operating system.

Processors Supported For Application Deployment

An Alpha or Intel PC with Windows 95 or Windows NT Version 4.0 operating system is supported for application deployment. In a client/server configuration, the systems listed above are suitable as user client systems, and Alpha or VAX processors with OpenVMS, Windows NT, or DIGITAL UNIX® are suitable as application servers.

Alpha, VAX, MicroVAX, VAXstation, and VAXserver processors are supported for application deployment with the exceptions noted below.

Processors Not Supported

MicroVAX I, VAXstation I, VAX–11/725,
VAX–11/782, VAX–11/730, VAXstation 8000

Other Hardware Requirements

- A CD-ROM is required for installation of the ALSTRA kit.
- Any device required by the prerequisite or optional software.

Disk Space Requirements

DIGITAL Application Generator Kits

Kit Type	Space During Install	Space After Install
VB Development for Windows	23 MB	23 MB
ACMS*xp* Server for OpenVMS Alpha	10,000	10,000
ACMS*xp* Server for Windows NT	6 MB	6 MB
ACMS*xp* Server for DIGITAL UNIX (license only)	0	0

These counts refer to the disk space in blocks required on the destination disk, unless indicated. The sizes are approximate; actual sizes may vary depending on the user's system environment, configuration and software options (one block = 512 bytes).

OPTIONAL HARDWARE

Any device supported by the prerequisite or optional software.

SOFTWARE REQUIREMENTS

For Application Development

- Windows 95 or Windows NT V4.0.
- Visual Basic version 4.0 32-bit or version 5, Professional or Enterprise Edition.
- One of the following databases is required for storage of the ALSTRA application design. This database can either be installed on the PC for standalone development, or on a server for workgroup development:

ALSTRA Development Databases

Software	Windows	OpenVMS	DIGITAL UNIX
Oracle Rdb	–	V6.0 - V7.0	–
Microsoft SQL Server	V6.5	–	–
Oracle	–	V7	V7
Microsoft Access	95	–	–

- ODBC driver for selected database.

For Transaction Processing Generation

The following charts show the required software for generating complete source code for Transaction Processing solutions for ACMS*xp*. Where several compiler options are shown, only one compiler is required.

Requirements for ACMS*xp *Generation

Software	Windows NT	OpenVMS Alpha	DIGITAL UNIX
Operating System	V4.0	V6.2 or V7.1	V4.0B
ACMS*xp*	V3.0	V3.0	V3.1
ACMS*xp* Desktop	V3.0	V3.0	V3.0
DIGITAL DCE Application Developer's Kit	V1.1C	V1.4	V2.0A
DIGITAL DCE Runtime Services	V1.1C	V1.4	V2.0A
DIGITAL DCE Cell Directory Server	V1.1C	V1.4	V2.0A
DIGITAL DCE Cell Security Server	V1.1C	V1.4	V2.0A
DEC TCP/IP Services for OpenVMS	–	V4.1	–
RMS Journaling License	–	V6.2	–
DECnet/OSI	–	V6.3	–
DEC C	–	V5.0	–
One of the following:			
DEC COBOL	–	V2.3	V2.4
Microsoft Visual C++	V4.2	–	–

DCE Cell Security Server and DCE Cell Directory Server are required to be running on one system within the DCE cell. In addition, the DIGITAL UNIX Alpha Developer's Extension package is required for development on DIGITAL UNIX.

Refer to the following Software Product Descriptions for additional details: ACMS*xp* for OpenVMS (SPD 50.53.xx), ACMS*xp* for Windows NT, (SPD 60.52.xx), ACMS*xp* for DIGITAL UNIX (SPD 50.66.xx).

SOFTWARE LICENSING

This software is furnished only under a license. For more information about DIGITAL's licensing terms and policies, contact your local DIGITAL office.

ALSTRA offers a Concurrent Use license. Each Concurrent Use license allows any one individual at a time to use the product.

Run-Time Environment

No ALSTRA run-time license is required.

License Management Facility Support (LMF)

The OpenVMS and DIGITAL UNIX components of this product support License Management Facility.

License units for the OpenVMS-based TP servers for this product are allocated on a Unlimited Use basis:

- The Unlimited Use License is an umbrella term used to describe the set of capacity style license offerings. License types included under this umbrella are Traditional and Cluster-wide.

For more information on the License Management Facility, refer to the OpenVMS Operating System Software Product Description (SPD 25.01.xx), the DIGITAL UNIX Alpha Operating System Software Product Description (SPD 41.61.xx), or the *License Management Facility* manual of the Operating System documentation set.

OPTIONAL SOFTWARE

Optional Software for PC

- Visual Basic Enterprise Edition is required for advanced workgroup development features.
- If workgroup (server) file sharing is desired, a file sharing tool is required.
- For web deployment: Internet Information Server, Internet Explorer, Advanced Data Connector, Visual Studio or ActiveX Pad are required.
- Network services for client/server connection

Optional Runtime Server Databases

With AMCS*xp*, one of the following databases may be used such as:

Software	Windows NT	OpenVMS	DIGITAL UNIX
Oracle Rdb	–	V6.0 - 7.0	–
Microsoft SQL Server	V6.5	–	–
Oracle	–	V7	V7

Optional Software for OpenVMS

Software	OpenVMS VAX	OpenVMS Alpha
DEC LSE	V4.2-V4.3	V4.2

Software	OpenVMS VAX	OpenVMS Alpha
DECset Release	V11.2-V12.0	V12.0
Oracle Trace™	V2.2	V2.2

GROWTH CONSIDERATIONS

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

Year 2000

This product complies with the DIGITAL guidelines for Year 2000 operation.

Because this product generates application code using data fields selected by the developer, the developer must ensure that his or her definition and usage of the data fields will function correctly across the millennia.

DISTRIBUTION MEDIA

The ALSTRA kit contains CD-ROM media for installation on Windows.

ALSTRA Enterprise contains CD-ROM and/or licenses for installation on OpenVMS, Windows NT, and DIGITAL UNIX.

ORDERING INFORMATION

ALSTRA Enterprise Packages

License Type	Part Number
1 Developer/CD-ROM/Media pkg	QB-5VPAA-AA
5 Developer/CD-ROM/Media pkg	QB-5VPAA-AB

Additional Developer and Server kits

License Type	Part Number
Add 1-Developer ALSTRA Enterprise	QB-5YAAA-SA
Add 1 ACMS*xp*/NT Server	QB-57RAA-SA
Add 1 ACMS*xp*/UNIX Server	QL-2STA9-AA
Add 1 ACMS*xp*/OpenVMS Alpha Server	QA-5AFA9-AA

Upgrade kits

License Type	Part Number
Upgrade from ALSTRA to ALSTRA Enterprise	QB-5VPAA-AC
Upgrade from DIGITAL Application Generator to ALSTRA Enterprise	QB-3QUAA-MA

Evaluation Kit

An Evaluation Kit is available which is an edition of the product limited in its capabilities, but which allows the developer to work with the user interface and features of the product. The ALSTRA Enterprise Evaluation Kit has the same prerequisites as ALSTRA Enterprise, and must be accompanied by an ALSTRA Enterprise loan-of-product in order to function properly. Contact your local DIGITAL office for details.

Documentation

On-line documentation is provided with the ALSTRA products.

The above information is valid at time of release. Please contact your local DIGITAL office for the most up-to-date information.

SOFTWARE PRODUCT SERVICES

A variety of service options are available from DIGITAL. For production Transaction Processing applications, we recommend Mission Critical Support services. For more information, contact your local DIGITAL or DIGITAL Partner office.

SOFTWARE WARRANTY

The specific warranty for Windows kits is contained on the license agreement included within the kit.

Warranty for OpenVMS-based software is provided by DIGITAL with the purchase of a license for the product as defined in the Software Warranty Addendum to this SPD.

TRADEMARK INFORMATION