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MSI's DIBOL to C Conversion Process

We thought you might like to know how the DIBOL to C conversion process works, so we have provided an overview of the entire process. As the following explanation illustrates, migrating from DIBOL to C under OpenVMS using CBL and MSI Migration Services is a straightforward and extensively automated process.

DETERMINING THE CONVERSION EFFORT

The amount of effort necessary to carry out a conversion is primarily influenced by the size and complexity of the applications in question. Proper estimation of a conversion effort requires that the software to be converted be analyzed in its entirety. MSI can provide estimations of conversion effort provided we can analyze the applications to be converted. This can be done at the customer site or at our offices. There is no simple formula for estimating a conversion, each application tends to contain unique elements. Conversion effort and cost will depend upon the size and complexity of the applications and the number and experience of the people involved.

CONVERSION MANPOWER

The manpower necessary to accomplish a software conversion may be provided by the customer, by MSI, or by a combination of the two. Usually, this depends on the availability of local resources with the necessary expertise and on time constraints dictated by the customer's business needs.

Details about who will do the work, where the work will be done, and time frames for project completion are defined prior to delivery of a proposal by MSI.

CONVERSION PREPARATION

Successful conversion projects require advanced preparation and planning.

Activities such as:

- **inventorying and organizing the existing applications into logical subsystems;**
 - **developing test data files, scripts, and reports;**
 - **developing an overall Acceptance Test Plan;**
 - **identifying resources for the conversion effort;**
 - **developing a conversion schedule and time line; and**
 - **training of appropriate personnel;**
- are a necessary prerequisite to a successful conversion effort.

Most of these activities can be accomplished in a short period of time and will benefit the overall effort immensely. Development of a comprehensive Acceptance Test Plan is important to verify that the conversion process has accurately and completely converted an application. Once acceptance testing has been completed, the cut-over to live production using the converted software can be made.

PHASES OF A CONVERSION PROJECT

The following sections offer an outline of the conversion planning methodology employed by MSI. The steps outlined below serve as guidelines rather than a strict set of rules, as conversion project planning is always dependent upon ongoing business needs and availability of hardware, software, and personnel resources. Proper planning is the key to any successful conversion. Time frames for a conversion project are strictly dependent on the project's size and complexity.

Phase 1: Planning and Preparation

- a) System operations are analyzed and a time that least interferes with overall operations is selected to begin the conversion process. A conversion schedule is drawn up, ensuring that resources and personnel will be available for the project.
- b) Software applications that are to be converted are inventoried and the code is frozen for the duration of the project. As the application is inventoried, components that are not to be converted are eliminated. Freezing code and procedure changes will prevent the occurrence of modifications on the system during the conversion project that might result in invalid test results during the acceptance test phase.
- c) An Acceptance Test Plan is developed. This is a plan that describes the acceptance testing of the converted software. The plan includes test cases for all major software components and may include criteria for parallel testing. Once these tests have been successfully completed, the application should be ready to run live.

- d) Test data files are generated for initial testing of the converted software. Using the test data files, sample output and interactive screen scripts can be generated to test the software after it has been converted.

MSI offers conversion-planning services designed to assist you in effectively and efficiently planning your conversion. Our extensive experience in software conversions will help you quickly identify key components and resources necessary to ensure a successful conversion project.

Phase 2: Conversion and Initial Testing

Once the DIBOL programs to be converted have been identified and a conversion plan has been developed, actual work on the conversion of code can begin. DIBOL code is converted to C using the following steps:

- a) The applications are scanned to ensure that all of the components necessary to successfully complete the conversion are present.
- b) The DIBOL code is test compiled using the DIBOL compiler to check for any compilation warnings or errors. Any existing warnings or errors are resolved before beginning the conversion of the code to C.
- c) The DIBOL code is run through the translator to create the header and translation files necessary to complete the conversion process.
- d) The DIBOL code is run through the translator a second time using the header and translation files created in *step c*. The results of this pass are scanned for translation warnings and errors. These are resolved.

- e) The DIBOL code is run through the translator again to ensure a clean translation.
- f) Compilation, linking, and testing of the converted code begins.
- g) Code optimization begins.

Steps *e*, *f*, and *g* are repeated as many times as are necessary to achieve the level of optimization desired.

When converting DIBOL to C on an OpenVMS system, any DCL procedures associated with the application should work without modification. If you are converting DIBOL to C to run on a non-OpenVMS system, then DCL procedures associated with the application will need to be rewritten to function under the new operating system.

When delivering a turnkey conversion, MSI uses a suite of internal tools and procedures to automate the DIBOL conversion process as much as possible. This process ensures a rapid and accurate conversion of code.

Once optimization and initial testing of the converted applications have been completed, the applications are ready for final testing using the Acceptance Test Plan. If MSI is delivering a turnkey service, the code would now be delivered back to the customer for acceptance testing.

Phase 3: Acceptance Testing and Cut-over to Converted Applications

- a) After an application has been converted from DIBOL to C, it should be tested according to the Acceptance Test Plan using the test scripts, test data files, and reports generated during *Phase 1* of the conversion project. If desired, parallel runs can be included in the Acceptance Test Plan to confirm that the applications have been converted correctly. Once acceptance testing has been completed

successfully, you are ready to begin production cut-over using the generated C code.

- b) Going live with your application is the last step in the conversion process. The C programs are switched from test data to live data files and the users begin using the new programs. A thorough Acceptance Test Plan will ensure that the production cut-over to the new C-based system goes smoothly. One of the advantages of the CBL conversion solution is that the users will not see any differences in the appearance or functionality of their applications and will require no retraining.

When delivering a turnkey conversion service, MSI travels to your site during acceptance testing and participates in the testing process. We assist you in resolving problems or discrepancies that arise during acceptance testing. You may also opt to have us remain onsite during the production cut-over to help ensure a smooth transition to the converted applications.

SUMMARY

That's the DIBOL to C conversion process in a nutshell. As you can see, the key to a successful conversion is careful planning and a thorough Acceptance Test Plan. MSI is fully equipped to assist you in carrying out a fast and successful conversion of your DIBOL applications to C. Give us a call and let's get things underway.