

Delphi 7 Studio Product Certification

Study Guide

Version 1.1

Copyright © 2003 Borland Software Corporation.
All Rights Reserved.

Introduction

This study guide is designed to walk you through requisite information to become Product Certified in Delphi 7 Studio Technologies. The material in this document is organized in the following three sections:

- **Exam overview** – Describes the rules and the organization of the exam.
- **Technical Resources** – Recommends training courses, books and manuals that can help you acquire the knowledge required to pass the exam.
- **Exam sections** – Provides sample questions and answers.

Exam Overview

General Details

The exam is organized as follows.

- Online exam (hosted by Prometric Online Testing Centers)
- Maximum time allowed for exam is **60 minutes**
- Exam will contain **60 questions** (total pool of questions is several hundred)
- Minimum score required to pass is **80%** (= maximum of 12 incorrect answers in order to still pass)
- All exam questions are multiple choice. Most questions are of a multiple choice / single answer type.
- Some questions are multiple choice / multiple answer type. No partial credit is given for these types of questions.
- All exam questions are equally weighted. This means that each question counts equally toward the final score.

Organization of Questions

The exam's questions are grouped into the following sections of knowledge.

- Interface and Configuration
- VCL/CLX
- Working with Components
- Pascal/Object-Oriented Programming
- Database Concepts/Data Access Techniques
- dbExpress
- Writing DLLs and Packages
- Windows Concepts
- Component Design Basics
- Internet Programming Basics
- Porting Delphi to Kylix
- XML Concepts

The “Questions Asked” column indicates the type of questions you will be presented with from each section. The questions are chosen at random from a large pool of questions from each section.

Notice many subject areas contain both basic and advanced questions. About 30% of the exam tests fundamental knowledge of the topics listed above. Thus both an advanced and

a fundamental understanding and familiarity of Delphi 7 Studio application development topics (as enumerated above) is necessary to pass this exam.

Resources

Training Course

Delphi 7 Studio Enterprise Essentials. A 5-day instructor led course available through Borland Training. Delivered by Borland Certified Instructors. See <http://www.borland.com/services/training/> for details.

On-line Documentation

Documentation for various version are available on-line at <ftp://ftp.borland.com/pub/delphi/techpubs/>

Books

- Marco Cantu. *Mastering Delphi 7*, Sybex, 2003.
- Additional books are being published. There are also quite a few books on the subjects of Web Services, SOAP, XML and other subjects related to Development.

The majority of answers to the questions in the exam are available from the Borland Delphi 7 Studio Enterprise Essentials courseware. While not required, attending this training course will greatly help you prepare for this exam.

Exam Sections

Interface and Configuration

This section tests your knowledge of the basic Delphi 7 Studio development concepts common to all Development projects.

For this section you will be required to understand and answer questions on the following subjects:

- Intermediate and advanced product configuration and options
- Application Debugger usage
- Using Delphi 7 Studio in a team-development environment

VCL/CLX *and* Porting Delphi to Kylix

This section tests your knowledge of the basics of Delphi 7 Studio's VCL and CLX technologies.

For this section you will be required to understand and answer questions on the following subjects:

- VCL class parentage
- Differences between VCL and CLX Inheritance Parentage
- Basic CLX features
- Using non-graphical VCL and CLX components (e.g. TThread)

Components *and* Component Design Basics

This section tests your knowledge of working with components in Delphi applications.

For this section you will be required to understand and answer questions on the following subjects:

- VCL / CLX Properties, Methods, and Events for less common components
- How to set, copy, and otherwise manage more advanced events (e.g. Drag and drop)

Pascal/Object-Oriented Programming

This section tests your knowledge of Object Pascal use in Delphi applications.

For this section you will be required to understand and answer questions on the following subjects:

- How Object Pascal Modules reference each other

- How Object Pascal Forms act as containers for other components
- Inheritance as used to access class members

Database Concepts/Data Access Techniques

This section tests your knowledge of Delphi 7 Studio's database technologies.

For this section you will be required to understand and answer questions on the following subjects:

- Managing database sessions
- Database management tools
- Intermediate level SQL usage
- Master-detail forms
- Reporting

dbExpress

This section tests your knowledge of dbExpress. Special emphasis on dbExpress as a portable, platform independent data access technology.

For this section you will be required to understand and answer questions on the following subjects:

- Deploying dbExpress (actual)
- ClientDataset capabilities
- Linking dbExpress for stand-alone usage
- Applying updates to unidirectional datasets

XML Concepts

This section tests your knowledge of basic XML concepts.

For this section you will be required to understand and answer questions on the following subjects:

- XML usage and application in Delphi 7 Studio
- Well formed XML (conceptual)
- Limitation of using XML as a stand-alone database technology

Internet Programming Basics

This section tests your knowledge of basic Internet Concepts, standardization practices, and related technologies.

For this section you will be required to understand and answer questions on the following subjects:

- What an RFC is
- How HTML, XML, and other markup technologies can be used in Delphi 7 Studio

Writing DLLs and Packages

This section tests your knowledge of Delphi 7 Studio's support for DLLs and Packages.

For this section you will be required to understand and answer questions on the following subjects:

- Extensions used to identify DLL and Borland Packages
- What components are
- How to install components
- Files required to deploy components

Windows Concepts

This section tests your knowledge of basic WIN32 Interfaces and their use in Delphi WebSnap Applications.

For this section you will be required to understand and answer questions on the following subjects:

- Message passing
- EXE, DLL, and module usage
- Basic file and memory management concepts

Sample Questions

1) Which three of the following techniques can positively affect performance when using TQuery components to perform queries against SQL Servers?

- A) Calling the Prepare method.
- B) Setting RequestLive to True.
- C) Setting UniDirectional to True.
- D) Setting CachedUpdates to True.
- E) Calling the ExecSQL method instead of the Open method when retrieving a result set.

2) Which two of these statements about working with calculated TFields are true?

- A. Any TField value can be modified in the OnCalcFields event.
- B. A Dataset's State property is set to dsCalcFields during the OnCalcFields event.
- C. Calculated TFields can optionally be stored in the physical table by setting the Stored property to True.
- D. The OnCalcFields event will get called when a field value changes only if the AutoCalcFields property is set to True.

3) Which of these statements best describes the most likely situation in which the "Compiler optimization" compiler option should be unchecked?

- A. Optimizations may cause spontaneous recursion resulting in stack overflow.
- B. The increase in performance resulting from optimizations may cause timing and synchronization problems on older systems.
- C. Optimized executables may report an incorrect .EXE checksum causing certain operating system utilities to report the file as having been corrupted.
- D. Optimizations may cause local variables to be eliminated and looping code to be rearranged.

4) Under Delphi, compiled packages are stored under which file type?

- A) EXE
- B) DPK
- C) PRJ
- D) BPL

5) What is the prescribed procedure for sharing an Object Repository in Delphi?

- A) Enter a shared directory path using the Environment Options dialog.
- B) Create a manual entry for a shared directory in the Windows Registry.
- C) The Object Repository is not a multi-user feature and, thus, cannot be shared.

D) Manually edit DELPHI.INI and create an entry named BASEDIR in the Object Repository section.

6) You have created a form named MyDialogForm to use as a dialog box in your application. Which line of code will display MyDialogForm as a modal window?

- A) MyDialogForm.Show;
- B) MyDialogForm.ShowModal;
- C) MyDialogForm.DisplayModal;
- D) ShowModal(MyDialogForm);

7) Which components are visual components in Delphi?

- A) TColorDialog
- B) TTabSheet
- C) TTimer
- D) TThread

8) The VCL representation of TCustomControl is an immediate descendant of:

- A) TObject
- B) TWinControl
- C) TControl

D) TFrameControl

9) Data validation may be performed in the *OnValidate* event. To which component does this event belong?

A) The Dataset component

B) The Datasource component

C) The DBControl component

D) The Field component

10) All VCL components inherit from their CLX counterparts.

A) True

B) False

Answers to Sample Questions

1) Which three of the following techniques can positively affect performance when using TQuery components to perform queries against SQL Servers?

- A) **Calling the Prepare method.**
- B) Setting RequestLive to True.
- C) **Setting UniDirectional to True.**
- D) **Setting CachedUpdates to True.**
- E) Calling the ExecSQL method instead of the Open method when retrieving a result set.

2) Which two of these statements about working with calculated TFields are true?

- A. Any TField value can be modified in the OnCalcFields event.
- B. **A Dataset's State property is set to dsCalcFields during the OnCalcFields event.**
- C. Calculated TFields can optionally be stored in the physical table by setting the Stored property to True.
- D. **The OnCalcFields event will get called when a field value changes only if the AutoCalcFields property is set to True.**

3) Which of these statements best describes the most likely situation in which the "Compiler optimization" compiler option should be unchecked?

- A. Optimizations may cause spontaneous recursion resulting in stack overflow.
- B. The increase in performance resulting from optimizations may cause timing and synchronization problems on older systems.
- C. Optimized executables may report an incorrect .EXE checksum causing certain operating system utilities to report the file as having been corrupted.
- D. **Optimizations may cause local variables to be eliminated and looping code to be rearranged.**

4) Under Delphi, compiled packages are stored under which file type?

- A) EXE
- B) DPK
- C) PRJ
- D) **BPL**

- 5) What is the prescribed procedure for sharing an Object Repository in Delphi?
- A) **Enter a shared directory path using the Environment Options dialog.**
 - B) Create a manual entry for a shared directory in the Windows Registry.
 - C) The Object Repository is not a multi-user feature and, thus, cannot be shared.
 - D) Manually edit DELPHI.INI and create an entry named BASEDIR in the Object Repository section.
- 6) You have created a form named MyDialogForm to use as a dialog box in your application. Which line of code will display MyDialogForm as a modal window?
- A) MyDialogForm.Show;
 - B) **MyDialogForm.ShowModal;**
 - C) MyDialogForm.DisplayModal;
 - D) ShowModal(MyDialogForm);
- 7) Which components are visual components in Delphi?
- A) **TColorDialog**
 - B) **TTabSheet**
 - C) TTimer
 - D) TThread
- 8) The VCL representation of TCustomControl is an immediate descendant of:
- A) TObject
 - B) **TWinControl**
 - C) TControl
 - D) TFrameControl
- 9) Data validation may be performed in the *OnValidate* event. To which component does this event belong?
- A) The Dataset component
 - B) The Datasource component
 - C) The DBControl component
 - D) **The Field component**

10) All VCL components inherit from their CLX counterparts.

A) True

B) False