



Salesforce.com Certified Force.com Developer

Study Guide

Winter '15

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About the Salesforce.com Certified Force.com Developer Program

The Force.com certification program is for individuals who want to demonstrate their knowledge, skills, and capabilities to build custom applications on the Force.com platform. The program encompasses the breadth of application development on the Force.com platform, including the declarative capabilities, the programmatic capabilities of Force.com code (Apex) and Force.com pages (Visualforce), and application development lifecycle management with cloud computing development as a service.

- The Salesforce.com Certified Force.com Developer certification exam encompasses the declarative capabilities of the Force.com platform. To achieve this credential, a candidate must successfully complete the exam. This exam is a prerequisite to the Salesforce.com Certified Force.com Advanced Developer exam.
- The Salesforce.com Certified Force.com Advanced Developer credential encompasses the programmatic capabilities of the Force.com platform, including Force.com code and Force.com pages. To earn this credential, a candidate must successfully complete three activities:
 1. **The Salesforce.com Certified Force.com Advanced Developer exam:** A multiple-choice/multiple-select proctored exam. This portion of the credential program **must** be passed successfully to move on to the next portion: the programming assignment.
 2. **The Advanced Developer programming assignment:** At scheduled times throughout the year, certification candidates who have passed the Salesforce.com Certified Force.com Advanced Developer exam will be given the opportunity to complete the second portion of the credential program: the programming assignment. A set of requirements and development parameters will be sent to the candidate, and the candidate will have a fixed amount of time to complete and submit the assignment. The candidate will be given the evaluation criteria and detailed instructions on how to complete and submit the final working application. The programming assignment is completed at the candidate's own pace and doesn't require working at a proctored site. However, there will be a deadline for assignment completion.
 3. **The Advanced Developer essay exam:** Upon submission of the programming assignment, the candidate will be required to complete a short-answer proctored exam that covers the specifics of the programming assignment. The candidate will need to go to a testing center and complete the essay exam. The essay exam, in combination with the programming assignment, will be evaluated and scored as the final portion of the Salesforce.com Certified Force.com Advanced Developer certification program.

The Salesforce.com Certified Force.com Advanced Developer credential will be granted to a candidate upon successful completion of all parts of the program.

This study guide provides information about the **Salesforce.com Certified Force.com Developer** exam.

Section 1. Purpose of this Study Guide

This study guide is designed to help you evaluate if you are ready to successfully complete the Salesforce.com Certified Force.com Developer exam. This guide provides information about the target audience for the certification program, the recommended training and documentation, and a complete list of exam objectives—all with the intent of helping you achieve a passing score. Salesforce.com highly recommends a combination of on-the-job experience, course attendance, and self-study to maximize your chances of passing the exam.

Section 2. Audience Description: Salesforce.com Certified Force.com Developer

The Salesforce.com Certified Force.com Developer exam is intended for an individual who has experience developing custom applications on the Force.com platform, including practical application of the skills and concepts noted in the exam objectives below. The candidate has successfully completed the Building Applications with Force.com course (DEV 401) from salesforce.com or an Authorized Training Center or possesses equivalent experience and knowledge. The candidate:

- May not necessarily manage or configure a standard Salesforce application, but has experience with the Salesforce user interface and data model.
- Has broad knowledge of the declarative functionality of the Force.com platform, can describe various use cases for this functionality, and can use this functionality to create applications using the standard Salesforce interface.
- Has a good understanding of the capabilities of the declarative functionality and can identify what application design specifications require the use of Force.com code or Force.com pages.
- Is capable of designing and developing reports/analytics.
- Can identify appropriate solutions to specific business challenges/process requirements by applying knowledge of these features in the current version of the Force.com platform.
- Has invested time in studying the materials from the course and the additional required study materials provided by salesforce.com.

A candidate for this exam is not expected to be able to develop code using the Apex programming language, administer any standard Salesforce application, or use the Force.com IDE or Web Services API. Additionally, candidates are not expected to be able to package or migrate applications.

Section 3. About the Exam

The Salesforce.com Certified Force.com Developer exam has the following characteristics:

- Content : 60 multiple-choice/multiple-select questions
- Time allotted to complete the exam: 90 minutes
- Passing score: 68 percent
- Registration fee: 200 USD; Retake fee: 100 USD
- References: No hard-copy or online materials may be referenced during the exam
- Prerequisites: None required; course attendance highly recommended

Section 4. Recommended Training and References

As preparation for this exam, Salesforce.com Training and Certification recommends a combination of: six or more months of hands-on experience building custom applications and analytics using the declarative capabilities of the Force.com platform; training course completion; and self-study in the areas listed in the Exam Outline section of this study guide.

Salesforce.com Training and Certification recommends the following book, instructor-led and online courses to guide your study:

- Instructor-led course: Building Applications with Force.com (DEV 401)
- Book: [Force.com Fundamentals](#)
- Online course: Building Applications with Force.com Part 1
- Online course: Building Applications with Force.com Part 2
- Online course: Extend Reporting module within Administration Essentials for Experienced Admins
- Documentation: [New Names for Reporting Products and Features](#) (as of Winter '15)

Enroll in instructor-led courses and launch online training from your Salesforce application by clicking the **Help & Training** link in the upper right corner of the screen (requires login) and searching for the desired

courses, listed above. Non-Salesforce customers can register for instructor-led courses here: <http://www.salesforce.com/training>.

In addition, Salesforce.com Training and Certification recommends reviewing online Documentation, Tip Sheets and User Guides by searching for the topics listed in the Exam Outline section of the study guide and studying the information related to those topics. Documentation, Tip Sheets and User Guides can also be accessed through **Help & Training**. Documentation is also available in PDF format here: <https://na1.salesforce.com/help/doc/en/sf.pdf>.

Section 5. Exam Outline

The Salesforce.com Certified Force.com Developer exam measures a candidate's knowledge and skills related to the objectives listed below. A candidate should have hands-on experience developing custom applications on the Force.com platform and have demonstrated the application of each of the features/functions below.

Objective	Weighting
Application Design	5%
List and describe components of an application	
Describe the model-view-controller design paradigm	
Given a scenario, determine whether sufficient information is available to plan/build/design an application	
Overview of Force.com Platform	5%
List and describe the steps required to design and deploy a successful application built using the declarative capabilities of the Force.com platform	
List and describe the building blocks of an application provided by the Force.com platform	
Data Model	32%
Describe how to create a functional data model for a business application	
Given a scenario, select the features required to create a functional data model for a business application	
Describe the properties and implications of choosing one object relationship type over another and distinguish among relationship types	
Given a scenario, distinguish among object relationship types, describe how to create relationships, and determine which relationship should be recommended	
List and describe the features used to set permission and data access in a custom app	
Given a scenario, select the appropriate feature (e.g., profiles, defaults, roles) to provide appropriate permissions and data access in a custom app	
List and describe optional (Salesforce-enabled) features for managing the application (e.g., create audit fields, encrypted fields, multicurrency)	
User Interface	15%
List and describe the components of any Force.com application user interface (e.g., tabs, applications, detail pages, list views)	
Given a scenario, determine the capabilities and constraints of the declarative framework for building a user interface (e.g., what can and can't be done in a page layout)	
Describe use cases for how Force.com pages can extend the user interface in the declarative framework and when to do so	
Describe the capabilities and functionality of Force.com sites	
Business Logic	23%
List and describe how to create formulas, validation rules, and workflow rules	
Given a scenario, determine which Force.com feature to use to solve a business requirement and/or	

describe how to apply the solution	
List and describe the capabilities of the Force.com approval processes	
Given a scenario, select the appropriate features of Force.com approval processes to satisfy business requirements	
List and describe the features of the Force.com platform for debugging and monitoring automated business processes	
Describe use cases for extending business logic through Force.com code	
Data Management	10%
List and describe the capabilities and constraints of import wizards	
List and describe the capabilities and constraints of API-based tools for managing data	
List and describe the functions of the Force.com Data Loader	
Describe use cases and functions of external IDs and upsert	
Given a scenario, determine appropriate uses of the GUI and command-line interface for the data loader	
Describe the characteristics of Force.com record IDs	
Reporting	10%
List and describe capabilities and constraints of reporting on the Force.com platform	
Given a scenario, determine methods for analyzing and displaying data	

Section 6. Sample Exam Questions

The following questions are representative of those on the Salesforce.com Certified Force.com Developer exam. These questions are *not* designed to test your readiness to successfully complete the certification exam, but should be used to become familiar with the types of questions on the exam. The actual exam questions may be more or less difficult than this set of questions.

1. Within a custom recruiting application, Universal Containers uses a custom position object to track positions. Positions expire 90 days after they have been approved. A Workflow Rule is in place to send an email to the hiring manager listed on a position 15 days before the expiration date.

What will happen if the expiration date of a position is extended by 30 days?

- A. An email will be sent 15 days before the original expiration date.
 - B. An email will be sent 15 days before the updated expiration date.
 - C. An email will be sent on the original expiration date.
 - D. An email will not be sent.
2. A developer wants to ensure that when a parent record is deleted, child records are *not* deleted. Which relationship should the developer choose?
 - A. Lookup.
 - B. Master-detail
 - C. Many-to-many
 - D. Master-to-master
 3. Which statement is *true* about a custom tab?
 - A. It can only be included in one application.
 - B. It can only be included in standard applications.
 - C. It can be included in as many applications as desired.

D. It can only be included in custom applications.

4. When would a developer use upsert and external IDs?
(There are *two* correct answers.)

- A. To integrate with an external system.
- B. To migrate customizations from sandbox to production.
- C. To load related records without knowing Salesforce record IDs.
- D. To use the Web Services API to query for data.

5. A group of executives has requested a convenient way to see daily metrics without having to log in to Salesforce.

How would a developer accomplish this goal?

- A. Set the users' home page layouts to include a dashboard.
- B. Create a Workflow rule that sends a link to the dashboard in an email.
- C. Schedule the dashboard for daily refresh and email distribution.
- D. Create a series of daily recurring events providing the dashboard link.

Section 7. Answers to Sample Exam Questions

- 1. B
- 2. A
- 3. C
- 4. A, C
- 5. C

Section 8. Maintaining a Certification

Successful completion of online, release-specific Salesforce.com Certified Force.com Developer exams is required to maintain this credential. Release exams are published three times a year for each of the Salesforce.com product releases throughout the year.

The initial cost of the certification includes the Salesforce.com Certified Force.com Developer exam plus two online release exams. In subsequent years, an annual maintenance fee of \$100 will be charged when registering for every third release exam, to keep the certification current. The maintenance fee includes the three release exams and access to the supporting training material. Salesforce.com Certified professionals will be notified automatically when new release training material and exams become available.