Daml Certification Syllabus

Daml Associate

January 2021

Digital Asset

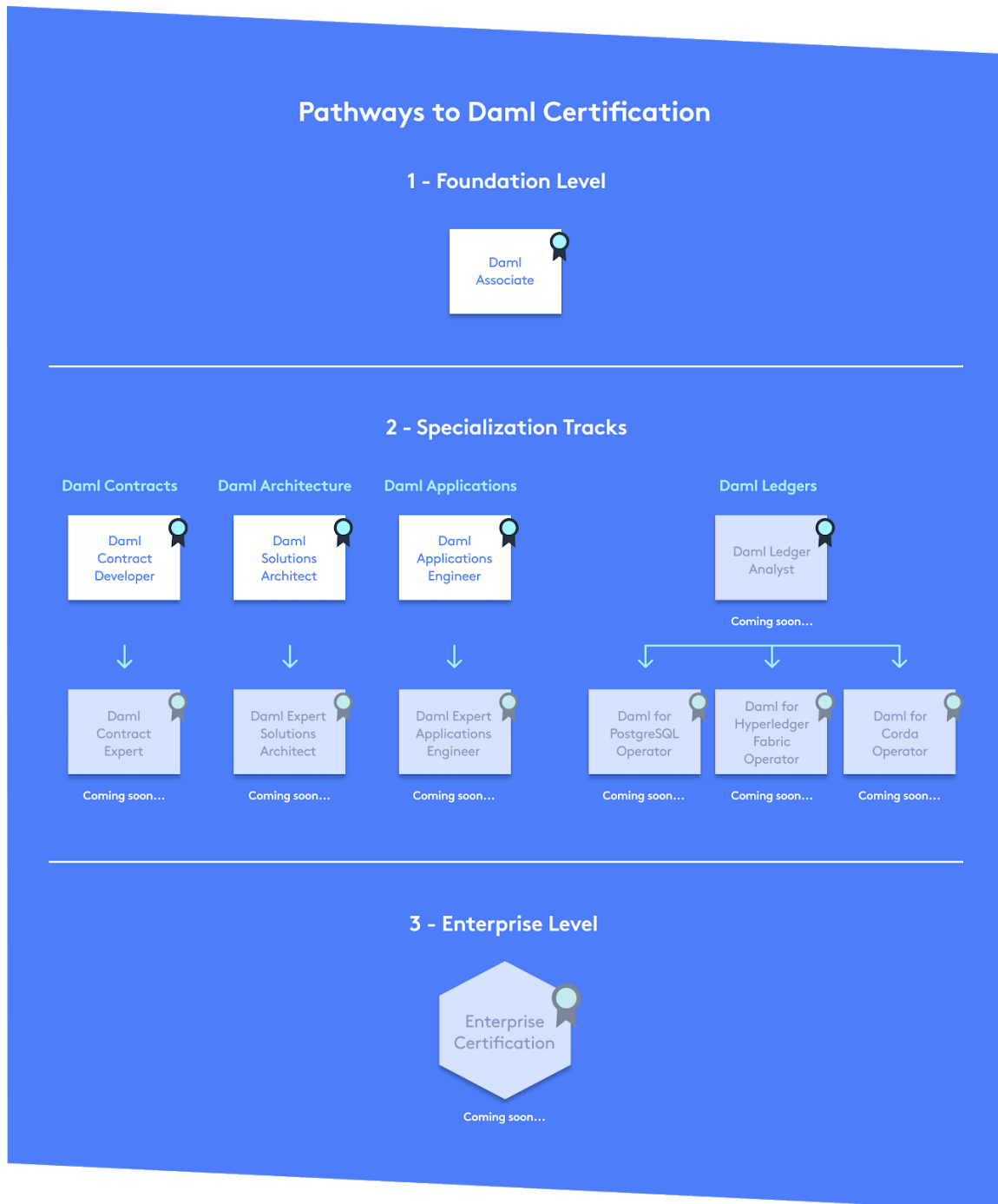**Digital Asset**

Introduction

Daml Associate Exam

The Daml Associate Exam is the entry-level exam that covers a cross section of core Daml topics that are necessary for a developer to build simple end-to-end Daml applications, and ground more specialized knowledge in a foundation of what an overall Daml solution looks like. It requires knowledge and understanding of

- the underlying Daml concepts (e.g., parties, choices, controllers) and how they're influencing the execution of a Daml contract
- components that comprise Daml's application architecture and the connections between them
- SDK tools developers have available when developing a client application
- and lastly how different requirements can influence deployment options.

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Daml-Certification Program

This entry-level exam represents a foundation necessary for taking any of the more advanced certifications. It tests your knowledge on a wide range of topics that are covered in more details in different specializations.

Pathways to Daml Certification

1 - Foundation Level

Daml Associate

2 - Specialization Tracks

Daml Contracts	Daml Architecture	Daml Applications		Daml Ledgers

Daml Contract Developer

Daml Solutions Architect

Daml Applications Engineer

Daml Ledger Analyst

Coming soon…

Daml Contract Expert — Coming soon…

Daml Expert Solutions Architect — Coming soon…

Daml Expert Applications Engineer — Coming soon…

Daml for PostgreSQL Operator — Coming soon…

Daml for Hyperledger Fabric Operator — Coming soon…

Daml for Corda Operator — Coming soon…

3 - Enterprise Level

Enterprise Certification

Coming soon…

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Prerequisites

- Solid understanding of standard computer science concepts
- Installation of Daml Connect, or access to the web SDK at daml.com/websdk

Exam Outline

Exam Organization

The exam takes 60 minutes to complete and will be conducted online at the time of your choosing. It consists of 30 questions of different types, ranging from technical definitions to code analysis and connecting underlying Daml concepts with system requirements. It is expected that candidates will use the [Daml developer documentation](#) and SDK as aids during the exam.

The 30 exam questions will be separated into five main topics. The total score on each topic counts as a percentage of your final score as shown below. Each topic will be scored separately, with all questions for a topic having the same weight.

The exam score will be the total of the topic scores. To be Daml-certified, you must have a total exam score of 70%.

Exam Topics

Daml Language Basics (20%)

- Daml Template structure and syntax
- Basics of choices and controllers
- Composing choices
- Parties and authority
- Testing templates via Daml Script
- Daml Contracts and Privacy

Daml Application Architecture Basics (20%)

- Interacting with a Daml Ledger
- Ledger authentication and authorization
- Ledger API
- Recommended application architecture and its components

Client Application Development (20%)

- JSON API
- Frontend libraries and their use
- Error messages

Overview of SDK tooling (20%)

- Daml Assistant
- Daml Navigator
- Daml REPL
- Daml Script
- Daml Sandbox

Deployment options (20%)

- Daml supported ledgers
- Deploying to a Daml ledger via daml assistant
- Interacting with a deployed ledger via SDK tool

Example Questions

Correct answers are marked in **bold**

Templates

Select all that apply for Daml templates and contracts:

- **Templates start with the keyword `template`**
- Contracts start with the keyword `contract`
- **Templates define data types that can be stored in a contract**
- Every template corresponds to exactly one contract

Interacting with a Ledger

Select all that are true when interacting with a ledger:

- **If a transaction x uses a contract created in another transaction y, transaction xs ledger time will be greater than or equal to the ledger time of the referenced transaction y**
- Ledger API exposes different services depending on what library/binding is used
- **Ledger API can be used to query the Daml packages deployed to the ledger**
- Ledger API is structured as a set of five separate data streams

Daml Assistant

Which command installs the newest SDK release version?

- **daml install latest**
- daml install update
- daml upgrade
- daml latest

Frontend libraries

Daml comes with the following front-end libraries:

- **@daml/ledger - Daml ledger object to connect and directly submit commands to the ledger**
- **@daml/react - React hooks to query/create/exercise Daml contracts**
- **@daml/types - Primitive types of the Daml language and their serialization**
- @daml/template - React hooks to query/create/exercise Daml templates
- @daml/iam - Daml IAM object to check user authorization and authentication

Deploying to a Ledger

Select all that apply: When you deploy to a Daml ledger with the daml deploy command:

- **You can specify a timeout between the requests (with the --timeout argument)**
- You can allocate parties (with allocate-parties argument)
- You can delete templates (with --delete-template argument)
- **You can use client key (.pem) and certificate chain (.crt) files in a mutual authentication process (with --cacrt and --pem arguments)**
- **You can specify the ledger host and port (with --host and --port arguments)**