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Sign up

ZippyDB and Async (XFaaS) training

3 days (21 hours)

Presentation

Our **ZippyDB and Async (XFaaS) training course** will help you master this high-performance, scalable distributed database. ZippyDB is Meta's new jewel with which to build its new Threads social network. ZippyDB uses RocksDB as its underlying [storage engine](#) to provide a key-value data store to offload all the data and challenges associated with large-scale data management. This technology guarantees applications great flexibility in terms of guarantees of durability, availability, adjustable latency and consistency, with the aim of storing small data, [ephemeral](#) and non-ephemeral [values](#). During our training, you'll use ZippyDB and Async (also known as XFaaS) to address challenges such as fast startup of functions, global load balancing and preventing overloading of downstream services. The training session will include the latest resources on this technology.

Objectives

- Understanding authentication and authorization mechanisms
- Analysis and interpretation of performance metrics
- Understanding the XFaaS system
- Initial configuration and parameter optimization
- Mastering the use of ZippyDB

Target audience

- IT professionals
- Systems engineers
- Developers

Prerequisites

- Experience in corporate security
- Basic knowledge of web development

XFAAS TRAINING PROGRAM

INTRODUCTION

- Introducing ZippyDB and its role at Facebook
- Understanding the difference between asynchronous and synchronous execution
- ZippyDB architecture and key components
- History and background
- Large-scale data ecosystem
- Understanding ZippyDB's goals and challenges

FUNDAMENTAL CONCEPTS OF DISTRIBUTED DATABASES

- Introduction to CAP theory and its application to ZippyDB
- Discussion of data consistency models
- Replication and partitioning mechanisms in ZippyDB
- Understanding consensus and fault tolerance
- Exploring data scaling and distribution strategies

INSTALLING AND CONFIGURING ZIPPYDB

- Installation guide
- Initial configuration and parameter customization
- Best practices for system configuration and safety
- Analysis of system prerequisites and dependencies
- Demonstration of a basic ZippyDB configuration

DATA STRUCTURE AND MODELING

- Data modeling principles
- Optimized indexing and query techniques
- Database schema management in a distributed environment
- Tips for designing efficient data structures
- Practical exercises: Data modeling

API AND PROGRAMMING INTERFACES

- Discover the API for basic operations
- Integrating ZippyDB with other services and applications
- Development practices with the ZippyDB API
- Code examples for CRUD operations
- Practical workshops on using the ZippyDB API

HIGH AVAILABILITY AND RESILIENCE

- Strategies for ensuring high availability in ZippyDB
- Failure scenario management and disaster recovery
- Replication and failover techniques
- Importance of capacity planning and data redundancy
- A case study in the resilience of ZippyDB at Facebook

SAFETY IN ZIPPYDB

- Authentication and authorization methods in ZippyDB
- Encryption of data in transit and at rest
- Best practices for distributed data security
- Raising awareness of threats and vulnerabilities
- Workshop on configuring safety aspects

ASYNCHRONOUS PATTERNS AND DESIGN

- Exploration of design patterns: Observer, Pub/Sub, State Machine
- Techniques for managing competition and avoiding race conditions
- Asynchronous middleware: principle and implementation
- Use of specialized libraries for asynchronous patterns
- Practical workshops on setting up asynchronous patterns

PERFORMANCE OPTIMIZATION

- Tuning methodologies for ZippyDB
- Identifying and resolving performance bottlenecks
- Use analysis tools to optimize operations
- Caching and load balancing techniques
- Case study in improving the performance of a ZippyDB instance

DEBUGGING AND TROUBLESHOOTING

- Systematic approaches to troubleshooting ZippyDB

- Using logs to diagnose problems
- Common debugging scenarios and solutions
- Live problem-solving workshop
- Development of a checklist for rapid diagnosis

INTEGRATION WITH OTHER TECHNOLOGIES AND SERVICES

- Exploring the ecosystem of technologies complementary to ZippyDB
- Methods for interacting with cache systems and message queues
- Integrating ZippyDB with other infrastructure components
- Demonstration of ZippyDB integration with an existing application
- Workshop on integrating ZippyDB in a heterogeneous environment

SUSTAINABILITY AND SCALABILITY

- Infrastructure planning for growth and scalability
- Resource management in a context of sustainable development
- ZippyDB architecture evolution strategies
- Environmental impact and cost assessment
- Brainstorming session on future challenges and innovation opportunities

Companies concerned

This training course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Sanction

A certificate will be issued to each trainee who completes the course.