

GIGASPACE XAP 14.X CORE TRAINING

USING CORE FEATURES OF GIGASPACE XAP AND XAP API

Enter the SBA world with GigaSpaces XAP and its built-in development framework

This training is designed to provide you with the knowledge required to build high throughput, low latency applications for scaling with GigaSpaces XAP.

You will not only learn how to code such applications, but you will also gain a better understanding of how GigaSpaces XAP is a unique enabler of highly transactional, high volume, low latency applications, as well as exactly what types of architecture GigaSpaces XAP is best suited for.

AUDIENCE	Developers Project Managers SI Architects
KNOWLEDGE REQUIREMENTS	Java working knowledge IntelliJ IDE knowledge is a plus
LENGTH	3 Days
BONUS	Plenty of hands-on lab sessions on modifying the BillBuddy applications

SYLLABUS

Foundations (Day 1)

Course Introduction

XAP Overview

Grid Service Component

BillBuddy Application

Connecting to a Space-My First
XAP Application

Processing Unit Creation

Space Classes and Data Model

XAP API (Day 2)

Java Spring Introduction

Space Access API

Advanced Space Access API

Aggregation API

Messaging - Event Containers

Transactions

XAP API Continued (Day 3)

Task Executors

Space based remoting

Mirroring Service

Additional API

Configuration & other
considerations

Summary

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HARDWARE AND SOFTWARE REQUIREMENTS

Computer Requirements

- RAM: minimum 4 GB of RAM required for exercises and platform to operate, 6 GB and up recommended.
- Disk Space: At least 6 GB of free disk space
- Wireless Internet connection (recommended)
- User with sufficient privileges for creating environment variables and execute processes
- Linux/Mac OS/Windows - Trainees should have a user with Administrator privileges (to edit system files for environment variables)
- Windows OS - Trainees should have write/Execute on root folder of HDD(C:)

Supported Operating Systems

- Windows 7, 8, 10 (64 bit)
- Linux (64 bit)
- Mac OS X (64 bit)

Additional Software Requirements

- PDF Reader
- IntelliJ IDE (Community addition is fine)
- Web Browsers: Mozilla, Chrome. (MS Internet explorer is not supported)

Classroom HW requirements

- Projector 1024*768 minimum resolution
- White Board
- Erasable Markers
- Desktops or Laptops (see HW Requirements)
- Internet connectivity for all participants
- Electricity outlets for all computers/monitors and other equipment

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DAY 1 – FOUNDATION

GOALS

- ✓ Understand the paradigm and implications of Space Based Architecture (SBA), viewed in light of Tier Based Architecture (TBA)
- ✓ Understand XAP API
- ✓ Understand the product structure
- ✓ Run a fully functional BillBuddy application
- ✓ Develop your first XAP application

Lesson 1

Course Introduction

🕒 0.5 hour

- Introduction and background of the trainer, participants, labs and expectations
- Lab Session

Lesson 2

XAP Overview

🕒 1 hour

- Why XAP?
- XAP Terminology Comparison to Common Platforms and Servers
- XAP Runtime Environment and XAP Application Components
- XAP Management Center (gs-ui)
- XAP Management Console (gs-webui)
- Lab Session

Lesson 3

Service Grid Runtime Components

🕒 0.5 hour

- XAP Runtime Environment
- Configuring your Environment
- Lab Session

Lesson 4

Application Level Components

🕒 1.5 hours

- XAP Application Components
- Space Topologies
- Processing Unit vs. Processing Unit Instance vs. Space Instance
- Lab Session

Lesson 5

BillBuddy Application

🕒 1 hour

- BillBuddy application presentation
- Configuring Eclipse for XAP
- Lab Session

Lesson 6

Connecting to a Space – My First XAP Application

🕒 1 hour

- Deploy an In-Memory-Data-Grid (Space)
- My First XAP Application
- Lab Session

Lesson 7

Processing Unit

🕒 1 hour

- Create a Processing Unit with an embedded space (Stateful PU)
- Deploy Processing Unit using Integrated Processing Unit Container and deploy to the grid
- Lab Session

Lesson 8

Space Classes and Data Model

🕒 1.5 hours

- POJOs – Space Classes
- Object Meta Data
- Data Model Considerations & Embedded vs. Non Embedded Relationships
- GigaSpace Interface – Basic Read and Write operations
- Lab Session

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DAY 2 – XAP API

GOALS

- ✓ Gain more practical understanding of Space Base Architecture
- ✓ Lots of hands-on experience
- ✓ Coding and configuration
- ✓ Experience complex space access
- ✓ Experience XAP messaging

Lesson 9

Java Spring Introduction

🕒 1 hour

- Spring origin and rational and Bean lifecycle
- Spring Demo
- Spring Annotations
- XAP API and Spring
- Lab Session

Lesson 10

Space Access API

🕒 1.5 hours

- Space Operations
- Read By Id, Template, SQLQuery
- Take and Clear Operations
- Write Operations
- Processing Unit – Stateless PU
- Lab Session

Lesson 11

Advance Space Access API

🕒 1.5 hours

- Space Iterator
- Projection API
- Write Multiple
- Change API
- Geospatial Queries
- SQL Functions
- Lab Session

Lesson 12

Aggregations

🕒 1 hour

- Aggregations
- Aggregation Functions
- Lab Session

Lesson 13

Messaging - Event Containers

🕒 1.5 hours

- Messaging and Event Containers Basics
- Event Containers API
- Event Driven Architecture
- Lab Session

Lesson 14

Transactions

🕒 1.5 hours

- Transaction Basics and Enabling Transactions
- Read Modifiers
- Pessimistic and Optimistic Locking
- Lab Session

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DAY 3 – XAP API CONTINUES

GOALS

- ✓ Gain a more complete understanding of XAP functionalities by adding business logic to your space
- ✓ More business logic
- ✓ A web front-end
- ✓ Persistency to disk

Lesson 15

Task Executors

🕒 1.5 hours

- Task Executor basics and API
- Server Side Injection
- Distributed Task Executor API
- Lab Session

Lesson 16

Space Based Remoting

🕒 1.5 hours

- Space Based Remoting basics and API
- Space Based Remoting Routing
- Lab Session

Lesson 17

Persistency – Mirror Service

🕒 1.5 hours

- Persistency Basics
- Mirror Service Configuration
- Monitoring
- MySQL DB
- Lab Session

Lesson 18

Additional API

🕒 1.5 hours

- Web Application
- Local Cache/View
- Application
- Administration and Monitoring API
- Alert API
- REST API
- Metrics
- Lab Session (Optional)

Lesson 19

Configuration

🕒 1.5 hours

- Avoiding Big Jars deployment
- SLA
- Memory Management
- Maven
- XAP MemoryXtend
- Off Heap RAM
- Quiesce Mode

Lesson 20

Summary

🕒 1.5 hours

- Summary
- Wrap Up