

GIGASPACE XAP .NET 12.2 CORE TRAINING

USING CORE FEATURES OF GIGASPACE XAP

Enter the SBA world with GigaSpaces XAP

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

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.

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|-------------------------------|---|
| AUDIENCE | Developers Project Managers SI Architects |
| KNOWLEDGE REQUIREMENTS | .NET 4.0 or later knowledge Required Experience with Visual Studio 2008 |
| LENGTH | 3 Days |
| BONUS | Plenty of hands-on lab sessions on modifying the BillBuddy applications |

SYLLABUS

Foundations (Day 1)

Course Introduction

XAP Introduction

BillBuddy Application

Connecting to a Space-My First
XAP Application

POCOs - Space Classes

XAP API (Day 2)

Space Topologies and Data

Model

Space Access API

Document API

Messaging -
Event Containers

Transactions

XAP API Continued (Day 3)

Task Executors

Space based
Remoting

Mirroring
Service

Features and
Considerations

Summary

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HARDWARE AND SOFTWARE REQUIREMENTS

Computer Requirements

- RAM: minimum 6 GB of RAM required for exercises and platform to operate, 8 GB and up recommended
- Disk Space: At least 10 GB of free disk space
- Wireless Internet connection (recommended)
- Admin privileges are required to install XAP.NET

Supported Operating Systems

- Windows 7 64 bit only / windows 8 64 bit only / windows 10 64 bit only

Additional Software Requirements

- PDF Reader
- .NET 4.0 or .NET 4.5
- IDE (any of the below):
 - Visual Studio c# 2010/2012 express
 - Visual Studio 2010/2012 pro
 - Visual Studio community addition 2017
- Administration rights in order to
 - Install msi files (GigaSpaces XAP and MySQL)
 - Use USB keys (Disk on keys) and copy the courseware to c: drive
 - Configure system environment variables

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.
- At least 3 electricity outlets next to instructor location

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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 the product structure
- ✓ Run a fully functional BillBuddy application
- ✓ Gain some hands-on experience
- ✓ 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 Introduction

🕒 1.5 hours

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

Lesson 3

BillBuddy Application

🕒 1 hour

- BillBuddy application presentation
- Configuring Visual Studio project for XAP.NET
- Lab Session

Lesson 4

Connecting to a Space – My First XAP Application

🕒 1.5 hours

- My First XAP Application
- Create a Processing Unit with an embedded space
- Deploy Processing Unit to Service Grid Processing Unit Container
- Deploy Processing Unit to Integrated Processing Unit Container
- Lab Session

Lesson 5

POCOs – Space Components

🕒 1 hour

- POCO's – Space Classes
- ISpaceProxy 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 6

Space Topologies and Data Model

🕒 1.5 hours

- Space Topologies
- Data Model Considerations
- Lab Session

Lesson 7

Space Access API

🕒 1.5 hours

- Space Operations
- Read By ID
- Read By Template
- Read By SQLQuery
- Additional Read considerations and options
- Projection API
- Change API
- Aggregations
- Take and Clear Operations
- Write Operations
- Lab Session

Lesson 8

Document API

🕒 1 hour

- GigaSpaces Document API
- The Document Type
- Creating a Document
- Reading and Removing a Document
- Lab Session

Lesson 9

Messaging - Event Containers

🕒 1 hour

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

Lesson 10

Transactions

🕒 1 hour

- Transaction Basics
- 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
- ✓ Task Executors
- ✓ Space Based Remoting
- ✓ More business logic
- ✓ Scalability
- ✓ Persistency to disk

Lesson 11

Task Executors

🕒 1.5 hours

- Task Executors Basics
- Task Executor API
- Distributed Task Executor API
- Lab Session

Lesson 12

Space Based Remoting

🕒 1 hour

- Space Based Remoting Basics
- Space Based Remoting API
- Space Based Remoting Routing
- Lab Session

Lesson 13

Persistency – Mirror Service

🕒 1.5 hours

- Persistency Basics
- Initial load introduction
- Mirror Service Configuration
- Monitoring the Mirror Service
- MySql
- Lab Session

Lesson 14

Features and Considerations

🕒 1 hour

- XAP.NET under the hood
- SLA
- Memory Management
- Admin API
- The XAP Web Based Dashboard – Web UI
- REST API
- Metrics

Lesson 15

Summary

🕒 1 hour

- XAP – Why XAP
- Wrap Up