

# GigaSpaces XAP.NET 10.1.1 Core Training

## Using Core Features of GigaSpaces 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.

### 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

## HARDWARE AND SOFTWARE REQUIREMENTS

### Computer Requirements

- RAM: minimum 3 GB of RAM required for exercises and platform to operate, 4 GB and up recommended.
- Disk Space: At least 4 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

### Additional Software Requirements

- PDF Reader
- .NET 4.0 or .NET 4.5
- IDE (any of the below):
  - Visual Studio c# 2013 Community Edition
  - Visual Studio 2010/2012 pro and above
- 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.

## 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

Duration: 0.5 hour

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

#### Lesson 2: XAP Introduction

Duration: 1.5 hour

- 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

Duration: 1 hour

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

#### Lesson 4: Connecting to a Space – My First XAP Application

Duration: 1.5 hour

- 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

Duration: 1 hour

- POCOs - Space Classes
- ISpaceProxy Interface - Basic Read and Write operations
- Lab Session

## 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 Duration: 1.5 hour

- Space Topologies
- Data Model Considerations
- Lab Session

#### Lesson 7: Space Access API Duration: 1.5 hour

- 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 Duration: 1 hour

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

#### Lesson 9 : Messaging - Event Containers Duration: 1 hour

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

#### Lesson 10: Transactions Duration: 1 hour

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

## DAY 3 – XAP API CONTINUES

### GOALS:

- Gain a more complete understanding of XAP functionalities adding
  - Task Executors
  - Space Based Remoting
  - More business logic
  - Scalability
  - Persistency to disk

#### Lesson 11: Task Executors

Duration: 1.5 hour

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

#### Lesson 12: Space Based Remoting

Duration: 1 hour

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

#### Lesson 13: Persistency – Mirror Service

Duration: 1.5 hour

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

#### Lesson 14: Features and considerations

Duration: 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

Duration: 1 hour

- XAP – Why XAP
- Wrap Up