

# GigaSpaces XAP 9.7 Administration Training

## ADMINISTRATION, MONITORING AND TROUBLESHOOTING

### GIGASPACES XAP DISTRIBUTED SYSTEMS

Learn about GigaSpaces XAP internal protocols, its configuration, monitoring tools, APIs, and how to manage and troubleshoot production systems

This training introduces the core concepts of GigaSpaces XAP and best practices for installing, administrating, monitoring and troubleshooting the GigaSpaces XAP platform.

#### AUDIENCE

System Administrators

Operations

Support

DevOps

Developers

#### KNOWLEDGE REQUIREMENTS

System administration

#### LENGTH

3 Days

#### BONUS

Hands-on lab sessions

#### SYLLABUS

<p><b>Day 1</b></p> <p>Course Introduction XAP Overview Grid Service Runtime Components Application Level Components Administration and Monitoring tools</p>	<p><b>Day 2</b></p> <p>Application Deployment Grid Service Internals SLA and Deployment Considerations Administration API and Alerts Logging and Monitoring</p>	<p><b>Day3</b></p> <p>Troubleshooting hands on Networking Persistency – Mirror Service Security Troubleshooting Guidelines Summary</p>

## HARDWARE AND SOFTWARE REQUIREMENTS

### Computer Requirements

- RAM: minimum 4 GB of RAM required for exercises and platform to operate.
- 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
- 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

### Class HW required

- Projector 1024\*768 minimum resolution
- White Board
- Erasable Markers
- Desktops or Laptops (see HW Requirements)
- 12-24 ports Switch
- Internet connectivity
- Electricity outlets for all computers/monitors and other equipment.
- At least 3 electricity outlets next to instructor location.

## AGENDA – DAY 1

### Lesson 1: Course Introduction

Duration: 30 minutes

- Course Introduction
- Courseware walkthrough
- Documentation – docs.gigaspace.com
- Lab

### Lesson 2: XAP Overview

Duration: 90 minutes

- Why XAP?
- XAP Terminology Comparison to Common Platforms and Servers
- XAP Runtime Environment
- XAP Application Components
- Configuring your Environment
- GigaSpaces Management Center
- XAP Web Dashboard
- Lab

### Lesson 3: Grid Service Runtime Components

Duration: 75 minutes

- XAP Runtime Environment
- XAP Installation Folders
- Configuring the Runtime Environment
- Lab

### Lesson 4: Application Level Components

Duration: 75 minutes

- XAP Application Components
- Space Topologies
- Processing Unit vs. Processing Unit Instance vs. Space Instance
- Processing Units and Space Proxy
- Scaling Your Space
- GigaSpaces Application Lifecycle
- Lab

### Lesson 5: Admin & Monitoring Tools

Duration: 75 minutes

- Web Management Console (Web UI)
- Management Center (GS-UI)
- Command Line Interface (gs CLI)
- jconsole
- jvisualvm
- Lab

## AGENDA – DAY 2

### Lesson 6: Application Deployment (BillBuddy)

Duration: 45 minutes

- BillBuddy application presentation
- Data Model Basics
- Lab

### Lesson 7: Grid Service Internals

Duration: 100 minutes

- Grid Component Interaction
- Processing Unit Deployment
- How High Availability Works
- Primary Backup Communication
- Space Proxy Failover Process
- Lab

### Lesson 8: SLA and Deployment Considerations

Duration: 100 minutes

- SLA configuration options
- Avoiding big jars deployment
- Rolling Server Patching
- Hot Deployment
- Split Brain
- Lab

### Lesson 9: Administration API and Alerts

Duration: 30 minutes

- Administration and Monitoring API
- Alert API
- Lab

### Lesson 10: Logging and Monitoring

Duration: 45 minutes

- Logging
- Collecting Dump
- Monitoring Statistics
- Lab – Logging Capabilities

## AGENDA – DAY 3

**Lesson 10: Logging and Monitoring – Troubleshooting Hands on** Duration: 60 minutes

- Lab – Memory Troubleshooting

**Lesson 11: Networking** Duration: 30 minutes

- Multicast and Unicast discovery
- Multiple network interface cards
- LRMI communications protocol
- Configuring used ports
- Firewall considerations

**Lesson 12: Persistency – Mirror service** Duration: 75 minutes

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

**Lesson 14: Security** Duration: 75 minutes

- Security Overview
- Security Authorities
- Securing the Service Grid
- Securing a Space
- Security Manager
- Secured Transport Layer
- Lab

**Lesson 14: Troubleshooting Guidelines** Duration: 45 minutes

- Troubleshooting Tools
- General Troubleshooting Tips
- Troubleshooting Common Issues Topics
- Troubleshooting Common Issues Drill Down (If Time Permits)
- Support Contact Info

**Lesson 15: Course Summary** Duration: 15 minutes

- Summary
- Wrap Up