

# GigaSpaces XAP 10.0 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><u>Day 1</u></p> <p>Course Introduction XAP Overview Service Grid Runtime Components Application Level Components Administration and Monitoring Tools</p>	<p><u>Day 2</u></p> <p>Application Deployment Service Grid Internals SLA and Deployment Considerations Administration API and Alerts Logging and Monitoring</p>	<p><u>Day 3</u></p> <p>Networking Persistency – Mirror Service Web Application Support Security WAN Gateway Troubleshooting Guidelines Summary</p>

## HARDWARE AND SOFTWARE REQUIREMENTS

### Computer Requirements

- **RAM:** minimum 4 GB of RAM required for exercises and platform to operate, 5 GB and up recommended.
- **Disk Space:** At least 10 GB of free disk space
- **Wireless Internet connection** (recommended)

### Supported Operating Systems

- Windows 7, 8
- Windows XP
- Linux
- Mac Os

### Additional Software Requirements

- PDF Reader
- Java JDK 7u55 (Install in a directory with a short path, without spaces)
- Zip software

### 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: Service Grid 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
- SSD support
- 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: 90 minutes

- Logging
- Collecting Dump
- Monitoring Statistics
- Lab

## AGENDA – DAY 3

### 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
- HSQLDB
- Lab

### Lesson 13: Web Application

Duration: 45 minutes

- Web Application Basics
- Configuration
- HTTP Global Session Replication
- Lab

### Lesson 14: Security

Duration: 60 minutes

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

### Lesson 15: WAN Gateway

Duration: 45 minutes

- WAN use cases
- WAN Gateway
- Architecture
- Configuration
- Lab

### Lesson 16: Troubleshooting Guidelines

Duration: 45 minutes

- Troubleshooting Tools
- General Troubleshooting Tips
- Troubleshooting Common Issues Topics
- Troubleshooting Common Issues Drill Down
- Support Contact Info

### Lesson 17: Summary

Duration: 15 minutes

- Summary
- Wrap Up