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

Day 1
- Course Introduction
- XAP Overview
- Service Grid Runtime Components
- Application Level Components
- Administration and Monitoring Tools
- Metrics

Day 2
- Application Deployment
- Service Grid Internals
- SLA and Deployment Considerations
- Administration API and Alerts
- Logging and Monitoring

Day 3
- Networking
- Persistency – Mirror Service
- Maintenance Tasks
- Security
- Troubleshooting Guidelines
- Summary
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)

Supported Operating Systems
• Windows 7, 8, 10 64 bit only (recommended: Linux Ubuntu VM on win machine for configuring XAP metrics)
• Linux
• Mac Os

Additional Software Requirements
• PDF Reader
• Java JDK 7u55 or above (Install in a directory with a short path, without spaces)
• Zip software

Classroom HW requirements
• 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
Lesson 1  
**Course Introduction**  
مادة: 30 دقيقة  
• Course Introduction  
• Courseware walkthrough  
• Documentation – docs.gigaspaces.com  
• Lab

Lesson 2  
**XAP Overview**  
مادة: 90 دقيقة  
• 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 Components**  
مادة: 75 دقيقة  
• XAP Runtime Environment  
• XAP Installation Folders  
• Configuring the Runtime Environment  
• Lab

Lesson 4  
**Application Level Components**  
مادة: 75 دقيقة  
• 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**  
مادة: 75 دقيقة  
• Web Management Console (Web UI)  
• Management Center (GS-UI)  
• Command Line Interface (gs CLI)  
• Jconsole  
• Jvisualvm  
• Lab

Lesson 6  
**Metrics**  
مادة: 75 دقيقة  
• Metrics Architecture  
• Metrics Basic Configuration  
• Grafana Dashboards  
• Lab (Optional)
AGENDA DAY 2

Lesson 7
Application Deployment (BillBuddy)
45 minutes
- BillBuddy application presentation
- Data Model Basics
- Lab

Lesson 8
Grid Service runtime environment
100 minutes
- Grid Component Interaction
- Processing Unit Deployment
- How High Availability Works
- Primary Backup Communication
- Space Proxy Failover Process
- Lab

Lesson 9
SLA and Deployment Considerations
100 minutes
- SLA configuration options
- Avoiding big jars deployment
- Rolling Server Patching
- Hot Deployment
- Primary Election Process
- Off Heap RAM
- Lab

Lesson 10
Administration API and Alerts
30 minutes
- Administration and Monitoring API
- Alert API
- Lab

Lesson 11
Logging and Monitoring
90 minutes
- Logging
- Collecting Dump
- Monitoring Statistics
- Lab
Lesson 12
Networking  
30 minutes  
- Multicast and Unicast discovery  
- Multiple network interface cards  
- LRMI communications protocol  
- Configuring used ports  
- Firewall considerations

Lesson 13
Persistency – Mirror service  
75 minutes  
- Persistency Basics  
- Mirror Service Configuration  
- Monitoring  
- HSQLDB  
- Lab

Lesson 14
Maintenance Tasks  
45 minutes  
- Architecture Recap  
- Quiesce Mode  
- Safe Shutdown  
- Rolling Server Patching  
- Hot Deployment  
- Lab

Lesson 15
Security  
60 minutes  
- Security Overview  
- Security Authorities  
- Securing the Service Grid  
- Securing a Space  
- Security Manager  
- Secured Transport Layer  
- Lab

Lesson 16
Troubleshooting Guidelines  
45 minutes  
- Moving to Production Checklist  
- Troubleshooting Tools  
- General Troubleshooting Tips  
- Troubleshooting Common Issues Topics  
- Troubleshooting Common Issues Drill Down  
- Support Contact Info

Lesson 17
Summary  
15 minutes  
- Summary  
- Wrap Up