GigaSpaces XAP.NET 10.0 Administration Training

Administration, Monitoring and Troubleshooting GigaSpaces XAP.NET 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

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

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.gigaspaces.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
- Initial load introduction
- 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