

GigaSpaces XAP 9.x 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

KNOWLEDGE REQUIREMENTS

System administration

LENGTH

2 Days

BONUS

Hands-on lab sessions

SYLLABUS

- GigaSpaces Overview
- Service Grid Components
- Product Walkthrough
- Admin & Monitoring tools
- Core Concepts
- XAP Runtime Environment
- System Runtime Walkthrough
- SLA and Admin API
- Logging and Alerts
- Networking
- Security
- Web Application Support
- Troubleshooting Guidelines

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 XP/7/8

Additional Software Requirements

- PDF Reader
- Java JDK 7u21 (Install in a directory with a short path, without spaces)
- Web Browsers: Mozilla, Chrome. MS Internet explorer is not supported (<http://wiki.gigaspace.com/wiki/display/XAP95/Starting+the+Management+Console>).

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

Part 1: Course Introduction

Duration: 1.0 hour

- Introduction and background of the trainer, participants, labs and expectations
- Lab Session - Install & Configure Training Material

Part 2: GigaSpaces Overview

Duration: 0.5 hour

- Challenges of Tier Based Architectures
- Why XAP Platform
- XAP Admin Features Overview

Part 3: Service Grid Components

Duration: 0.5 hour

- GSC - Grid Service Container
- GSM - Grid Service Manager
- LUS – Lookup Service
- GSA - Grid Service Agent
- Typical Deployment Architecture
- Additional Service Grid Components

Part 4: Product Walkthrough

Duration: 0.5 hour

- XAP Folder Structure and Files
- Key Environment Variables

Part 5: Admin & Monitoring tools

Duration: 0.5 hour

- Management Center
- Web Dashboard (Web UI)
- Command Line Interface (CLI)

Part 6: Core Concepts

Duration: 1.5 hour

- Space (In Memory Data Grid)
- Lab Session – Data Grid
- Processing Unit (PU)
- Lab Session – Processing Units and CLI
- The Service Grid
- Mirror Service (Asynchronous Persistence)

Part 7: XAP Runtime Environment

Duration: 1.5 hour

- Grid Component Interaction
- Processing Unit Deployment
- Runtime Process Configurations
- How High Availability Works
- Lab Session - Troubleshooting Deployment

Part 8: System Runtime Walkthrough

Duration: 1.00 hour

- Examine common scenarios: system boot-up, shut-down, as well as simple fail-over scenarios
- Using the scripts to launch grid components and deploy applications
- Reading and understanding the logs
- Using the monitoring tools
- Run a Complete Demo GigaSpaces Application
- GigaSpaces Application Lifecycle

Part 9: SLA and Admin API

Duration: 1.5 hour

- SLA configuration options
- Cluster Schemas
- Zones
- Lab Session – Troubleshooting Runtime
- Admin API

Part 10: Logging and Alerts

Duration: 1.0 hour

- Logging Overview
- Logging Configuration
- Rolling file handler
- Logging Integration with GUI
- Lab Session - Troubleshoot Memory Shortage
- Alerts Overview
- Predefined Alerts
- Alert Configuration
- Alert Integration with GUI

Part 11: Networking

Duration: 0.5 hour

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

Part 12: Security

Duration: 1.0 hour

- Security Overview
- Security Authorities
- Securing the Service Grid
- Securing a Space
- Security Manager

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- Secured Transport Layer
 - Lab Session – Security

Part 13: Web Application Support

Duration: 0.5 hour

- Features Overview
- Deployment Instantiation Modes
- Packaging / Directory Structure
- LBA – Load Balancing Agent

Part 14: Troubleshooting Guidelines

Duration: 0.75 hour

- Troubleshooting Tips
- GigaSpaces Support Process

Part 15: Summary

Duration: 0.25 hour

- Summary
 - Wrap Up
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