Deploying Perception 5.4
OnPremise

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Synopsis

- Are you still using Questionmark Perception Version 4? Already using v5? There are many improvements in v5.4, including the introduction of Questionmark Analytics and Observational Assessments. With these improvements have come changes in the deployment process. An understanding of these changes will help you in transition to v5.4 efficiently.

- This session introduces deployment architecture of v5.4 and outlines recommended practices for configuring it. It is particularly suitable for project managers, system administrators, database administrators and IT specialists.
Topics to be covered:

- **Version 5 Technology**
  - looking 'under the hood'
  - Prerequisites and database requirements
- **Upgrading to v5.4**
  - Best practices
  - Tips for coordinating with other stakeholders in your organization
  - Overview of available documentation and resources
- **Advanced**
  - Configuring server settings for optimal performance
  - Deploying 5.4 in a load balanced environment
V5 – which version? Road map

- 5.2
- 5.3 OD1
- 5.3 OD2
- 5.4 OD1
- 5.4 OD2
- 5.5 OD1
- 5.5 OD2

5.2 SP1
- X
- 5.3 OP Beta
- X
- 5.4 OP
- X
- ?

It's Here!
Version 5 Technology
It’s the Same Perception Only Better!
Summary of Key Changes in v5:

- New Delivery Platform
  - Better Participant Experience
  - More Scalable
  - Enhanced Security
  - Allows Use of Multiple Processors
  - More Robust Save-As-You-Go
  - Mobile Delivery / Auto Sensing
  - 3-Tiered Architecture

- Translation Management

5.4 Questionmark Analytics
New Technology Supported

- Now Uses .NET 2.0 (Not the Older .NET 1.1)
- Uses PHP for participant facing interface
- Supports Windows Server 2008
- Supports Oracle 11
- Wider Browser Support - Including Mobile

5.4 Windows Server 2008 & 2008R2 only

5.4 SQL Server 2008 and Oracle 11g only

5.4.Net 3.5, .Net 4 and AppFabric
New Components / Features

- QPLA
  - Questionmark Presentation Layer Application
- QABS
  - Questionmark Assessment Business Service
- TMS
  - Translation Management System

5.4 Questionmark Analytics and ETL Service

5.4 New Portal Interface for Enterprise Manager
New Reports in Analytics – 5.4 OP

- Course Summary
- Instructor Summary
- Class Summary
- Class Detail

Assessment Results over Time

Survey Frequency Analysis

Item Bank Reports

- Question Status
- Question Type
Questionmark Portal

- Multilingual administrative, reporting interfaces in 6 languages

Questionmark RSS
- Thoughts on Emerging Standards for the Educational Cloud
- Web Seminar: Creating Assessments for Mobile Delivery
- Professor Roddy Roediger on applying the retrieval practice effect to creating and administering assessments
What Has Been Dropped

- Support for Windows 2000
- Support for MSDE
- Office Connector
- WebCT Connector
- Content Packager
- All use of Java
  - D&D, hotspot question types now use DHTML
  - Java question type Java MathML no longer supported
- LDAP functionality has changed

5.4 Windows Server 2003

5.4 SQL Server 2000, 2005 and Oracle 9, 10
Under the hood
Scalability

- Takes Better Advantage of Latest IT Technology
- Three Tiered Architecture
- Supports Multiple Processors
- Much More Easily Clustered Than Version 4
  - Installation Software Aids Load Balancing
  - Software Designed for Clustering
  - No More Progress Files Makes Load Balancing Easier
  - Configuration Now in Database
    - No More Perceptionv4.ini
- Questionmark Analytics
  - Based on industry standard ETL process
  - Fast reporting, minimal impact on assessment delivery
3-Tier Architecture

- Can be Installed on 3 Servers:
  - Separates Presentation and Business Logic for Security
  - More Scalable Configurations

- Presentation Tier
  - Windows Web (PHP) Server

- Business Logic Tier
  - Windows Application Server

- Database Tier
  - Microsoft SQL or Oracle

- Firewall

- Browser
Still Have Option to Deploy as in v4

- It is Possible to Install All Layers on a Single Server

![Diagram showing layers of deployment](Diagram)
3-Tier Architecture
(Focused on Delivery Platform)
3-Tier Architecture (Complete System)
Scalability

- Both Business Logic and Presentation Can be Scaled to Meet Demand

- Increase Presentation Resources
  - Lots of Participants Taking Simple Assessments

- Increase Business Logic Resources
  - More Complex Assessments
Questionmark Assessment Business Service (QABS)

- Uses Web Services to Provide Business Logic
- Runs Under Windows
- Receives SOAP Requests From Another Application
  - e.g. QPLA
- Returns an XML Response Message Corresponding to the Request
- Architecture Allows Scalability through Web Farms
- Can be Configured Without Restarting
Questionmark Presentation Layer Application (QPLA)

- Presents Assessments for Web Browsers
- Supports PC and Mobile Devices
- Supports Configurable Templates (.xtmp Format)
- Provides Non-QxQ and QxQ Functionality
- Single Application Providing Replacement Entry Points for Separate V4 Web Applications:
  - Perception.php Instead of Perception.dll
  - Open.php Instead of Open.dll
  - Session.php Instead of Session.php
  - TestCenter.php Instead of Testcenter.dll
Standard Industry Technology

- Use of Industry Standard Technology Means More Robust Delivery and Better Developer Capability
  - Templates Now Based on XML and CSS
  - Transformations from QML to HTML Now Done by Industry Standard XSL\XSLT
  - Questionmark Version 5 no Longer Uses Java
  - Continued Use of Adobe Flash for Some Question Types
  - HTML Design Meets Modern Standards
Auto Sense Device, Browser
V5 Participant Facing Software in 20 languages

- **European**
  - Dutch
  - English
  - French
  - German
  - Italian
  - Norwegian
  - Portuguese
  - Russian
  - Spanish
  - Swedish

- **Asian**
  - Bengali
  - Chinese
  - Hindi
  - Japanese
  - Punjabi
  - Urdu

- **ME/African**
  - Afrikaans
  - Arabic
  - Xhosa
  - Zulu
Questionmark Analytics and the ETL Service

- **Questionmark Analytics**
  - Analytics provides the web front end for new reports
  - Uses the new Questionmark portal interface
  - Creates reports from a new Results Warehouse database
    - A database that uses a design drawn from the field of data warehousing

- **ETL Service**
  - **Extract Transform Load**
  - Extract data from the repository
  - Transforms it using a local database
    - Free versions of database server often good enough
  - Loads it into the Results Warehouse
  - ETL is a Windows Service, not a web application, no user interface, does not require IIS
Databases Architecture before 5.4

- Repository Database Created/Upgraded by SRM – *one database per repository*

- Multiple Repositories could share same physical server or be on different servers
Databases in 5.4

Although we call this “Perception_Main” this is not the repository as you know it… As we gradually become multitenant data will move from the repository to Perception_Main. At the moment, Perception_Main contains application configuration information.
Deployment Architecture

- **Platform changes:**
  - IIS7/Windows Server 2008 (x86, x64, **not** ia64)
  - SQL Server 2008 (R2) or Oracle 11g
  - Upgrade to the right platform **first**

- **AppFabric**
  - Essential for function, not just performance
  - Can run single node or clustered
  - Technology is at an early stage of development
  - Not used by delivery in 5.4, being phased in with Enterprise Manager

- **ETL Server**
  - You only need one
  - Non-critical: runs ETL process periodically (default is 3 hours)
  - Ideally located on a separate server
Participant Authentication

- Generally the Same as in v4
  - Questionmark Authentication
    - `Perception.dll` Becomes `Perception.php`
  - Open Access
    - `Open.dll` Becomes `Open.php`
  - Integration Access (QMWISe, PIP, AICC, SCORM)
  - Browser Authentication
  - Test Center Access

- Improved, Simpler LDAP Authentication
  - Schedule with Participant Authenticated by LDAP
Administrator Authentication

- Changed ‘under the hood’
  - Uses industry standard OpenID protocol
  - User name and password now managed by a separate login application
    - A significant step towards external authentication in future versions

- Bookmark the ‘Login’ page
  - This is the Perception Application

- ...not the user/password challenge screen
  - This is a timed challenge screen to improve the security of the login process
- How can you assess the effectiveness of informal learning?
- Valuable tips on assessment translation, localization and adaptation
- Conference Close-up: Alignment, Impact & Measurement with the A-model
Upgrading to v5.4

Best Practice Advice
Recommended Upgrade Process  
v4 to v5  

1. Talk to us!  
   ▪ Perception is Enterprise-level software  
   ▪ We can help you plan and execute your upgrade  
2. Read About Version 5 in More Detail  
3. Attend a Webinar or Briefing on Version 5  
4. Identify Stakeholders and Hold a Kick-Off Meeting  
5. Backup the Existing System  
6. Do a Trial Conversion and Upgrade  
7. Set a Date for the Upgrade to Happen on Your Production System  
8. Do the Detailed Planning for the Upgrade  
9. Make the Upgrade Happen and Check It  
10. Implement New Version 5 Features That Can Help You
Upgrade – What to Expect

- Database is Not Actually Converted as in v3 to v4 Process
- New tables are Added, but There is No Actual Transformation / Conversion of Records
- New Application Databases in 5.4 are required
  - Including ETL Service/Staging Database
- Templates
  - Standard v4 Templates Upgraded Automatically
  - Customized Templates will Need Manual Upgrading
    - Functional Settings are Migrated
    - Look and Feel Will Need to be Re-Done
Backup and Restore the Existing System to Trial Server

- **Objective:** Create a Functional Snapshot of v4 Software and Data to Perform a Trial Upgrade to v5

- Backup System and Repository Files
  - C:\perception4
  - C:\Program Files\Questionmark\perception4\server

- Backup Repository Database

- On your *Trial* Servers
  - Restore the Database Backup
  - Copy Version 4 files
  - Create an ODBC connection to your repository (use the same name!)
Upgrading to/Install v5

1. Install pre-requisites for Perception Server
   a) PHP and AppFabric are pre-requisites for use of Perception Server
      i. You will also need to install SQL Server (Express) for ETL
   b) We provide guidance on using Microsoft’s Web Platform Installer

2. Run v5 installer
   a) Installer detects if requirements for hard drive space are sufficient
   b) Installer checks for previous versions of Perception
   c) You are prompted for path to application data: e.g. C:\Perception4\ to access existing resource files
   d) Perception Version 5.4 is installed
   e) Configuration Application is started
   f) v5.4 databases are created and configured (more later)
   g) Configure Application launches Shared Repository Manager
      i. Repository Upgrade Wizard is used to update the repository
   h) The template settings used by the previous Version 4 templates are copied to the corresponding templates for Version 5
Upgrading the Repository

- Use Shared Repository Manager
- V4 repositories will be highlighted in red to indicate they need to be upgraded
- Select the repository that needs upgrading and choose the Repository Upgrade Wizard menu option
Upgrading the Repository

- The Repository Upgrade Wizard will prompt you to find and select the Perceptionv4.ini file
  - C:\Program Files\Questionmark\Perception4\server
- This is so it can import the v4 settings into the v5 repository
  - In v5, configuration settings are stored in the database
- At the end of the upgrade process, the repository will appear as below in Shared Repository Manager

![Shared Repository Manager screenshot](image-url)
FAQ

- Can AM v4.x and AM v5.x Co-Exist on the Same Machine?
  - Yes

- Can Perception Server v4.x and v5.x Co-Exist on the Same Machine?
  - No

- Can I Import v4.x Qpack into a v5.x Repository?
  - Yes, but Custom Template Caveats Apply
  - Yes, Qpack as of v4.3
Upgrading from v5.x to v5.4
Upgrading to v5.4

- Talk to us!
  - Perception is Enterprise-level software
  - We can help you plan and execute your upgrade
- Start with a clean server if you are changing platform
- Install pre-requisites for Perception Server
- Run v5.4 installer
  - Similar to before but hands over to the Configuration App
- Run v5.4 Configuration App
  - Guides you through creation of new databases (more later)
  - Configures the service end points so Presentation tier can talk to Business tier
  - Hands off to SRM to upgrade repository
  - Links up the repository database to the ETL and RW databases
Documentation

- Talk to us!
- What’s new in Perception Version 5
- Current Documentation Available:
  - Install Guides
  - Best Practice Guide: Upgrading Questionmark Perception from Version 4 to Version 5
- Most Product User Guides Available
  - [www.questionmark.com](http://www.questionmark.com)
Installation Demonstration
Advanced Configuration
Multi-tiered Installation

- **Perception Application Server**: Install all Perception applications except the Questionmark Presentation Layer for Assessments.
- **Assessment Delivery Web Server**: Install only the Questionmark Presentation Layer for Assessments PHP application.
- **ETL Services Server**: Install only the ETL service application.
- **Other**: Choose individual features to install.
Multi-tiered

- With the installer you can install components:
  - Perception Application Server
    - QABS, Enterprise Manager and friends
    - The Configuration Application runs on this machine
  - Assessment Delivery Web Server
    - QPLA on its own (presentation tier)
  - ETL Services Server
    - This machine must have database software installed
    - Yes, you can install this on your database server
      - But ETL process may compete for resources
      - Best to run off peak
        - Configuration settings for ETL are in the database itself – talk to us
Questions?

- Thank you for your participation and attention.
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