



## Technical Overview

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## Q-Pulse System Overview



A scalable, robust solution based on proven technology, Q-Pulse has been specifically designed to advance your organisation. It does this by presenting improvement opportunities from the analysis of your compliance management records. Importantly, such is the flexibility of the system, it can easily be tailored to manage multiple compliance projects. What's more, it will also scale with you as compliance activities increase.

The tool comprises a series of interacting modules designed to **streamline key compliance functions**. Modules in Q-Pulse include: **Document Management** for managing the change control of your policies and procedures; **Deviation Handling** for capturing and managing incidents, red-flags and near-misses; and **Audit Management** for planning, scheduling, conducting and reporting on your audit and verification activities.

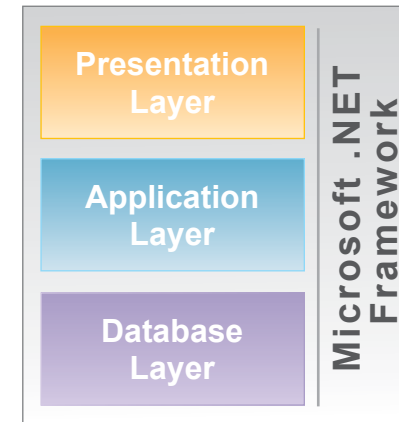
### What does the system offer?

The development strategy of Q-Pulse is centred on the use of an **N-tier design architecture**, utilising **Microsoft's .NET Framework** version 1.1 and **Microsoft's SQL Server** database. This approach ensures a powerful software application that offers:

- A robust and reliable database
- Increased transaction processing capabilities
- Improved system performance
- Increased storage capabilities
- Improved security at both database and user interface levels

Furthermore, by integrating with Microsoft's Active Directory, which provides the means to manage the identities and relationships that make up network environments, the administrative time and effort required to manage Q-Pulse users and groups is significantly reduced. This in turn frees up IT resource to be deployed on other priorities.

## System Architecture



**Q-Pulse is a Windows-based N-tier application that has been built on the Microsoft .NET Framework. This utilises Microsoft SQL Server 2000 database technology and integrates with Microsoft Active Directory (AD).**

### N-Tier

Using an N-tier approach allows for easier maintenance and support. This is due to the fact it is easier to change and upgrade a single specific component than to make changes in a traditional client / server application. Therefore, the impact of application change on the Q-Pulse development cycle is minimised and that upgrades are brought to market in a shorter period of time.

More importantly, however, the N-tier approach offers the greatest flexibility in distribution. This is because the tiers can reside anywhere from a single desktop to servers and clients around the world. This enables Q-Pulse to scale easily from the desktop or local area network to the enterprise or web application level.

### .NET Framework

The .NET Framework is the Microsoft development environment that allows different programming languages & libraries to work together seamlessly. This creates Windows-based applications that are easier to build, manage, deploy, and integrate with other networked systems.



## SQL Server 2000 database

Q-Pulse is based on the Microsoft SQL Server 2000 database. SQL Server 2000 is a robust, scalable, relational database management system that offers a variety of administrative tools to ease the burdens of database development, maintenance and administration. Q-Pulse is available in various database options from an embedded Microsoft SQL Server Desktop Engine to a full enterprise solution on **Microsoft's SQL Server 2000**.

Q-Pulse using the Microsoft SQL Server Desktop Engine (MSDE) is ideal for use in the standalone or local area network environment, where there is traditionally a lower transaction level and limited user base. Importantly, **MSDE** is embedded within Q-Pulse, meaning that it **does not require any proprietary license purchase**.

Q-Pulse using SQL Server 2000 is appropriate for enterprise environments where there are a large number of users, significant transaction level and increased demands on database scalability across a wide area network.



## Active Directory

Windows Active Directory service is the integrated, distributed directory service that is included with the Windows 2003 Server and Windows 2000 Server. Q-Pulse is integrated with user accounts and user groups held in Active Directory. This means that there is no duplication of your network administration efforts and that resources will be freed to address other IT project priorities.

In addition, Q-Pulse provides the optional ability to authenticate with user passwords held in Active Directory. For the network administrator, this reduces the number of passwords used on the network. For Q-Pulse users, this means that they only need to sign into the network to be able to access the Q-Pulse system.



## License Options



Q-Pulse is available with two separate license options. This can either be for passive users or concurrent users. The first license option is designed to cater for occasional users of the system and the other option covers regular system users. This means that as a system administrator you have the flexibility to create your user accounts with the license option that is best suited to each individual.

You can choose between:

### Passive Users

Passive users are not required to regularly complete a broad range of compliance activities within Q-Pulse. As a result of this, the functions that they can access have been restricted to the most common compliance actions.

In the **Document Control** module, passive users can:

- View controlled documents
- Raise document change request
- Create personal document search folders
- Access published document search folders
- Acknowledge document distributions
- Approve draft documents

In the **Deviation Handling** module, passive users can:

- Raise deviations and incidents based on your customised incident wizards
- Access published incident search folders
- View the status of their previously raised incidents

### Concurrent users

Concurrent users are full Q-Pulse users and have access to all areas of the system that have been assigned to them by the systems administrator.

## Hardware and Software Requirements



### Client

<b>Processor</b>	Intel Pentium or compatible 500MHz or higher Processor
<b>Operating System</b>	Windows 2000 or later
<b>Memory</b>	256MB of RAM
<b>Hard Disk</b>	150MB

### Server

<b>Processor</b>	Intel Pentium III or compatible, 500MHz or higher Processor
<b>Operating System</b>	Windows 2000 Professional with SP4 or later Windows 2000 Server with SP4 or later Windows Server 2003, Standard or Enterprise
<b>Database</b>	MS SQL Server 2000 Desktop edition (MSDE 2000) MS SQL Server 2000 with SP 3 or later
<b>Additional Server Software</b>	Microsoft Internet Information Server 5.0 (Windows 2000)* or 6.0 (Windows Server 2003)* Microsoft.NET framework [Installed by Q-Pulse] * Must be installed with latest security updates prior to .Net install
<b>Memory</b>	512MB of RAM
<b>Hard Disk</b>	150 MB for Microsoft.NET framework 500 MB for Q-Pulse installation E-mail Integration (Optional)* * SMTP server required

## Customisation Capabilities

Unlike many “off the shelf” software applications that are limited in their customisation options, Q-Pulse contains extensive customisations capabilities. These enable you to shape the application around both your existing business processes and end user roles. Whilst many systems limit customisation to field name modification, the inherent flexibility of Q-Pulse allows you to define a management system tool that is truly “yours” and is therefore much more likely to be embraced by your end users.

### Customisation options in Q-Pulse include:



- Customised problem and opportunity wizards built on your specific recording requirements
- Saved data search folders that are published to all relevant parties
- Customised Q-Pulse “LaunchPad” branded with your company logo
- Branding all Q-Pulse reports with your company logo
- Customised user desktop containing short-cuts to their most frequently used Q-Pulse processes
- Internal report-writing utility allows you to create company-specific reports without any 3rd party application
- Drag-and-Drop of fields into saved user views
- User-defined shortcuts to their saved search folders
- Defined document approval workflows that match the approval process of your organisation
- User-defined problem and opportunity templates that match the activities and workflows of your various incident-handling processes

In short, Q-Pulse will accurately reflect both the business processes and user roles of your management system. This means your staff will be able to easily relate to it and will be therefore significantly more likely to interact with it.

## Deployment

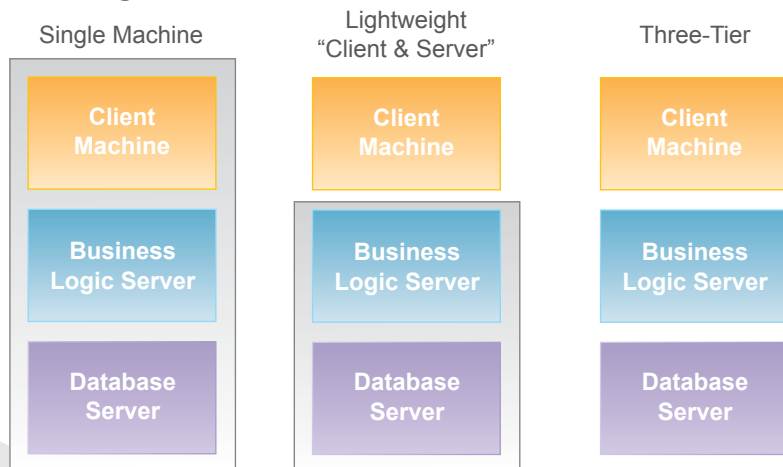
As an N-Tier database application, Q-Pulse offers a great deal of flexibility in deployment across your network. The tiers can reside anywhere from a single desktop to servers and clients around the world. Whether you require Q-Pulse running on a single local area network serving a user base of 50 people or across multiple time zones on a wide area network with thousands of users, there is a deployment option to support your organisation.

The installation and deployment of Q-Pulse is performed via **Windows Installer**, the component of the Windows 2000 and Windows 2003 operating systems that simplifies the application installation process. This means that application deployment tools that support MSI files can be used to deploy the tool. These tools include SMS and Group Policy.

Deployment options for Q-Pulse and their relative advantages are as follows:

Option	Implication	Advantage
<b>1. Single Machine</b>	User interface, Business Logic and Database all exist on same machine	Ideal for stand alone systems with only one user
<b>2. Lightweight "Client &amp; Server"</b>	User Interface exists on Client Machine(s) with both the Business Logic and Database existing on one server	Ideal for local area networks with 10 concurrent users or less
<b>3. Three-Tier</b>	The 3 tiers of the application are distributed between 3 physical tiers; Client Machine(s), a Business Logic Server and a Database Server	Ideal for systems serving a large user base where a dedicated application server and database server optimises system performance

### Deployment Diagram



## Implementation Methodology

The tools and techniques used by our Q-Pulse implementation consultants have been specifically developed to ensure that the knowledge that we have learned on successful Q-Pulse projects is available for reuse on other Q-Pulse deployments. By having a robust, proven framework in place for implementing Q-Pulse, the time and effort taken to implement the solution is minimized. This ensures that your organisation quickly gains advantage from their use of Q-Pulse.

The **Q-Pulse implementation methodology** is split into 6 distinct stages:

<b>Analyse</b>	Detail the strategic objectives of your compliance automation project. Define your technical, functional and reporting requirements. Obtain agreement on these objectives and requirements
<b>Install</b>	Install the software onto your chosen server environment
<b>Configure</b>	Import your user groups and end user details from Active Directory. Configure key areas in the software to match your organisational requirements
<b>Customise</b>	Customise Q-Pulse terminology to match the language of your management system. Define document approval workflows. Create problem and opportunity templates specific to your organisations
<b>Deploy</b>	Deploy the software to all identified end users. Communicate the deployment to all identified end users. Brief the end users on the project objectives and their roles in achieving them.
<b>Train</b>	Train the IT project team on system administration, maintenance and ongoing support. Train the end users on the functionality of Q-Pulse that supports the project's strategic objectives.

This structured approach to the implementation of Q-Pulse ensures that:

- **Risks are minimised** as efforts are based on proven past experiences
- Project **objectives are clearly** defined and tasks carefully managed
- Successful implementations can be **easily replicated** throughout the organisation

Contact us at: Gael Quality\*, Tulloch Gael, Nasymth Avenue, East Kilbride, Scotland. G75 0QR  
Tel: +44 (0)1355 593400 | Fax: +44 (0)1355 579191 | E-mail: [info@qpulse.com](mailto:info@qpulse.com) | [www.qpulse.com](http://www.qpulse.com)

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