

| CASE STUDY

Kent & Essex Police – Magnolia CMS Intranet



BACKGROUND

The police forces of Kent and Essex work collaboratively to share back office support systems, including their intranet portal. 7,000 police constables and over 6,000 back office staff have access to a shared intranet that contains an extensive archive of pages, documents, images and videos that amount to over 10,000 content items – covering information on everything from the most wanted criminals to canteen lunch menus.

To digitise this library of information, Kent & Essex Police made the decision to implement a new Content Management System (CMS) using the Magnolia platform. With Kent & Essex Police relying on a very small internal development team, whose main responsibilities did not include web development, the initial CMS implementation was basic and it was clear that many improvements could be

made to both the solution and the related development processes.

Following a public tendering process, Priocept was selected to provide development and consultancy services in relation to upgrading the intranet portal and underlying CMS platform.

TOOLING AND INFRASTRUCTURE IMPROVEMENTS

Priocept implemented improved development processes, tooling and infrastructure for Kent & Essex Police. The key components were:

■ **Virtualised Software Development Environments**

– Priocept implemented virtual machines using Vagrant to provide a scripted process for creating and cloning development environments. This approach meant that the configuration of the virtual machines was implemented using infrastructure-as-code and was under version control, allowing changes to be fully audited. This gave developers confidence that code changes made on their local development environments would not behave differently in production.

■ **Automated Tests**

– Priocept used Cypress to automate functional testing of web application features. Tests are automatically triggered following every deployment to the development server. This ensures that any functional issues are immediately and automatically detected after each code commit.

■ **Configuration Management**

– In order to ensure each environment was configured identically, Priocept used Ansible to create infrastructure-as-code scripts that are executed automatically on creation of a Vagrant virtual machine. The Ansible scripts are used to define all environments including development, testing and production servers. This ensures that developers can be sure that environments are identical replicas and helps to eliminate “it works fine on my local machine” issues.

■ **Web Analytics**

– Priocept implemented Google Analytics to collect anonymised web usage statistics for the intranet. This allows Kent & Essex Police to understand which pages were most accessed so that development effort could be directed accordingly.

■ **Continuous Integration and Automated Deployments**

– With teams from both Priocept and Kent & Essex Police working collaboratively on different areas of code, it was important to implement a continuous integration solution to ensure that different developers’ code changes did not conflict with each other. Priocept implemented JetBrains TeamCity to automatically build code on every commit to the Git code repository.

TeamCity was also configured to perform automated deployments to the development environment for testing of any functional issues and one-click deployments were implemented for all other downstream environments.

■ **Error Reporting**

– Priocept implemented Sentry for application monitoring. Sentry provides reporting on all system errors generated by the web application. This allows production issues effecting live users to be proactively discovered and resolved.

WEB PLATFORM UPGRADE AND ENHANCEMENTS

In addition to implementing an improved software development process and supporting technologies, Priocept also completed development work to improve and enhance the Magnolia based CMS. The key improvements included:

■ **Magnolia Upgrade** – Kent & Essex Police were early adopters of Magnolia and had installed version 4.0, which was released in 2009. With thousands of pages, documents and images, upgrading to the latest version of Magnolia was a substantial task. Priocept worked closely with Kent & Essex Police to plan, manage, and execute the upgrade.

■ **Light Modules** – The templates for the intranet sites were stored directly in the Magnolia CMS database. This meant that there was no version control of any CMS code (Freemarker templates, CSS or JavaScript). Priocept corrected this approach by extracting and refactoring templates, styles and scripts, placing these under source control and structuring them as Magnolia Light Modules for improved development efficiency.

■ **REST Services Integration** – Kent & Essex Police had developed an external application to post news articles to Magnolia. Priocept redeveloped the system to make use of Magnolia's extensive REST APIs. Dependencies on legacy integration mechanisms were replaced and user authentication was achieved by integrating with Active Directory.

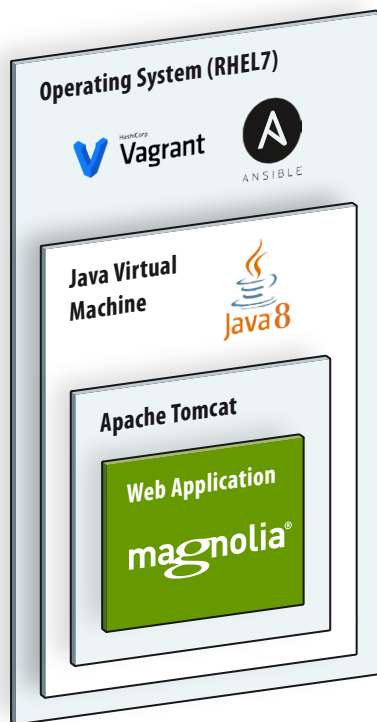


Figure 1: Technology platform

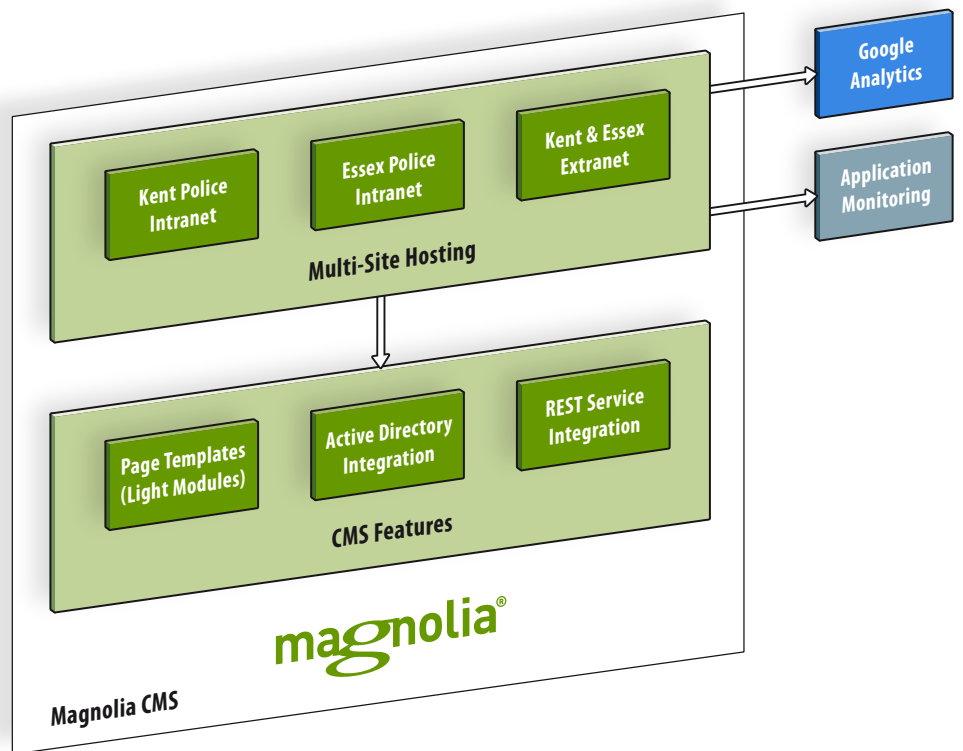


Figure 2: Solution overview

CONCLUSION

Priocept stabilised and improved Kent & Essex Police's software development processes by building streamlined and automated tools that significantly reduced build time for the web development team.

Priocept also drew on their expertise as the UK's leading Magnolia partner to provide consultancy and development services to upgrade and enhance the CMS. Priocept aligned the implementation with Magnolia best practices, which

improved the efficiency of content editing and the overall maintainability of the system.

PRIOCEPT

SOFTWARE ENGINEERING ■ E-COMMERCE ■ CONTENT MANAGEMENT

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