# CAPITA

Prism & LDS

A technical overview

ABSTRACT: *This paper provides a high-level technical introduction to Prism and how it integrates with the deployed Library Management System via a component called LDS. It describes what LDS is and how it works with Prism. In concludes with configuration and hardware options libraries have when looking to decommission older Prism 2 servers as they move to Prism 3.*

Prism is our next generation OPAC and discovery interface; it is a fully hosted Software as a Service (SaaS) web application. Since its launch in 2008 customers have enjoyed the benefits of what SaaS gives them: a fully managed service, deployed in Capita data centres, administered entirely by Capita with a regular feed of new feature releases. This differs considerably from the on-premise deployment architecture, of its predecessor Prism 2, which required customers to have hardware installed in their data centres, a need for dedicated local system administration and a less frequent release cycle of new features.

Although all search and discovery and user interface components are part of the Prism application, there are Prism features which require a real-time hook into the Library Management System. Features such as live item availability, borrower login, reserve and renew – plus all data in the My Account pages require integration with the Library Management System.

The glue between the Capita hosted Prism application and the deployed Library Management System is a component we call "Local Data Services" (LDS). LDS is an integration platform that enables this integration via a portfolio of web services – ensuring that Prism and the Library Management System remain in sync in real-time.

A typical workflow would be the place reservation workflow as outlined here:

Fig 1 – Example workflow between Prism and LDS
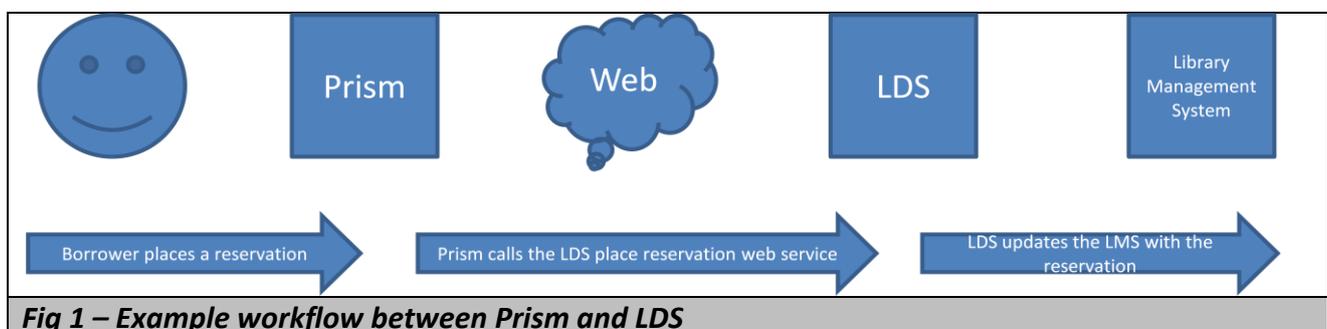
In this example an end user has discovered an item on Prism that they wish to place a reservation on. When they place this reservation on Prism, in the background Prism makes a call to a web service in LDS, via the web. When LDS receives this request it updates Alto accordingly and responds back to Prism saying that the reservation was successful. Other Prism to LDS interactions follow this workflow pattern whether that be Prism requesting the item availability of a work, or a borrower logging, or a borrower viewing their Loan History in the "My Account" area.

Architecturally Prism is a single web application servicing multiple customer catalogues. In the hosted environment we do not deploy a separate Prism application per-customer; however Prism has the ability to know which customer catalogue it is surfacing by implementing a "multi-tenant"

application design. A tenant in this context is a specific customer catalogue, identified by the URL. For example

- The tenancy for Leicestershire Libraries is: http://prism.talis.com/leicestershire/
- The tenancy for Manchester Metropolitan University Library is: http://prism.talis.com/mmu/

Each tenancy contains the catalogue data for each customer, plus the user interface and branding designs plus configuration specific to that tenancy. One item that can be configured is the location of the LDS for that tenancy, so that when a "place reservation" request is made by a borrower at Leicestershire Libraries, Prism knows to contact the Leicestershire Libraries LDS component.

The system architecture looks like this:

Fig 2 – Prism & LDS System architecture
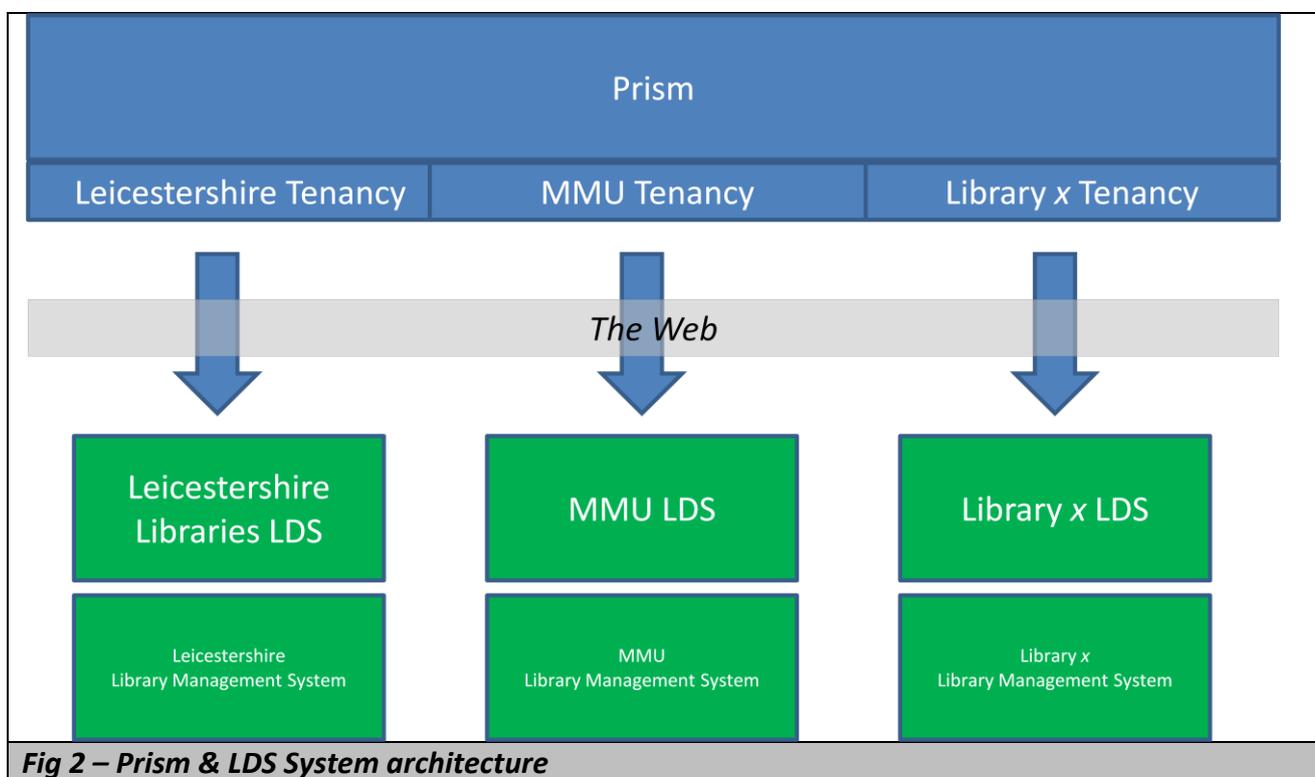
Prism is designed to scale out to many tenancies and is hosted on a bank of load balanced web servers in our secure data centres, with an application design suited for the addition of new servers by Capita as required.

However, because we host Prism in our data centres, Prism requires a tunnel into each customer's network in order to access the LDS component.

Providing this tunnel can be a challenge because it requires ports to be accessible by Prism and moreover we aim to ensure that the hosted Prism application is the only application "on the web" which can access the secured LDS component.

The first generation of LDS was typically deployed on existing Prism 2 hardware which was already installed in customers' LMS server infrastructure. One of the benefits that this delivers is that our customers could make use of existing web servers and firewalls to both route traffic from Prism and secure their Library System by limiting access to only the Prism IP range (which we provide).

However, in order to respond to our customers' need to reduce their total cost of ownership and reduce hardware footprint the latest generation of LDS is now installed on the "main" LMS server – thus in principle allowing a customer to decommission redundant Prism 2 hardware when they are fully using Prism 3.

While this capability delivers significant cost saving benefits it does pose a security challenge. Please refer to the diagram below:
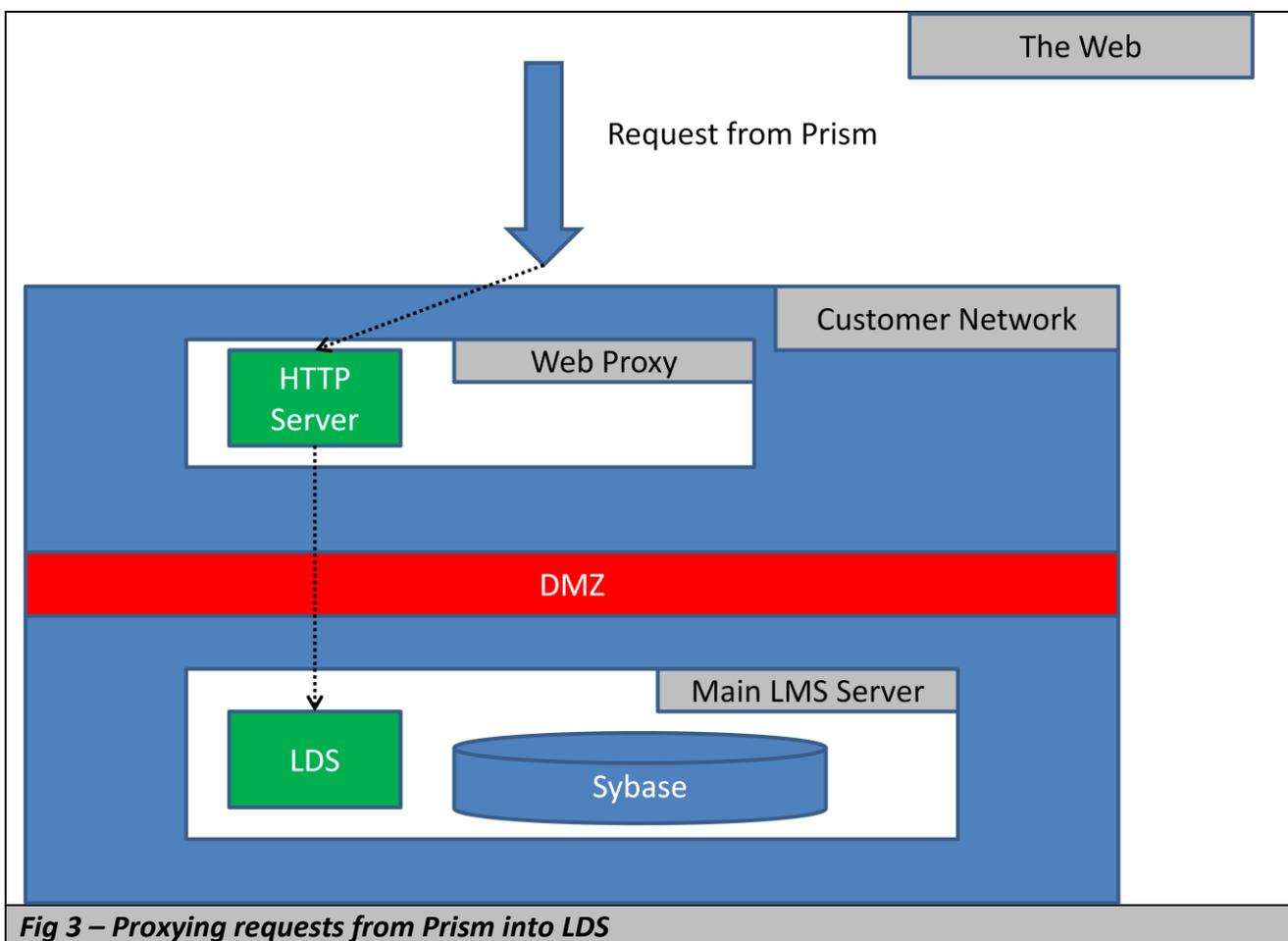
Fig 3 – Proxying requests from Prism into LDS

Because the LDS component and web services are now deployed onto the live LMS server we need to seriously consider the security of allowing web traffic directly through to this server.

Therefore to ensure that those customers whose security policies dictate that they can't have a web application (listening on port 80) installed within their LAN we recommend as an option that they use a web proxy as illustrated in the diagram above. And that this web proxy only accepts requests to LDS when they come from the Prism application IP range.

The two options that customers have in this are:

- For those customers who need a web proxy through their DMZ they can re-use an existing HTTP server that is already in their network and with Capita guidance re-use this server and decommission existing Prism 2 hardware
- For those customers who need a web proxy through their DMZ but do not have an existing HTTP server in their network they can re-use existing Prism 2 hardware to serve as a HTTP server.

Therefore, in summary the "Web proxy" in Fig 3 above could be an existing web server in the customer network that can be reused (therefore being able to decommission older Prism 2 hardware) or if there isn't an existing web server, existing Prism 2 hardware could be used. In either case a virtual server would be suitable and more cost effective than a physical server.

For those customers who use the Authority Web Service then you will still need either a Linux server or a Windows server available in your technical infrastructure, accessible by Alto and able to connect to the main LMS server. This can either be a virtualised server or physical and we can look to use existing servers you might already have in this environment, such as a Decisions server.

	Option 1	Option 2
Web (HTTP) Proxy for LDS	Existing web server already in infrastructure (physical or virtualised)	Existing Prism 2 server (physical or virtualised)
Authority Web Service	Existing Linux or Windows server already in infrastructure (physical or virtualised)	Existing Prism 2 or Decisions server (physical or virtualised)
Fig 4 – Summary of Options		

For further reading about Prism, please refer to:

http://www.capita-softwareandmanagedservices.co.uk/software/Pages/libraries-prism.aspx

For further reading about LDS and our technical strategy please, please refer to:

http://www.capita-softwareandmanagedservices.co.uk/software/Documents/libraries-soa-whitepaper-may11.PDF

If you have any questions or wish to discuss further please either raise a support call or contact your account manager.