

DALIcontrol Application Note

Inter-Campuses

Overview

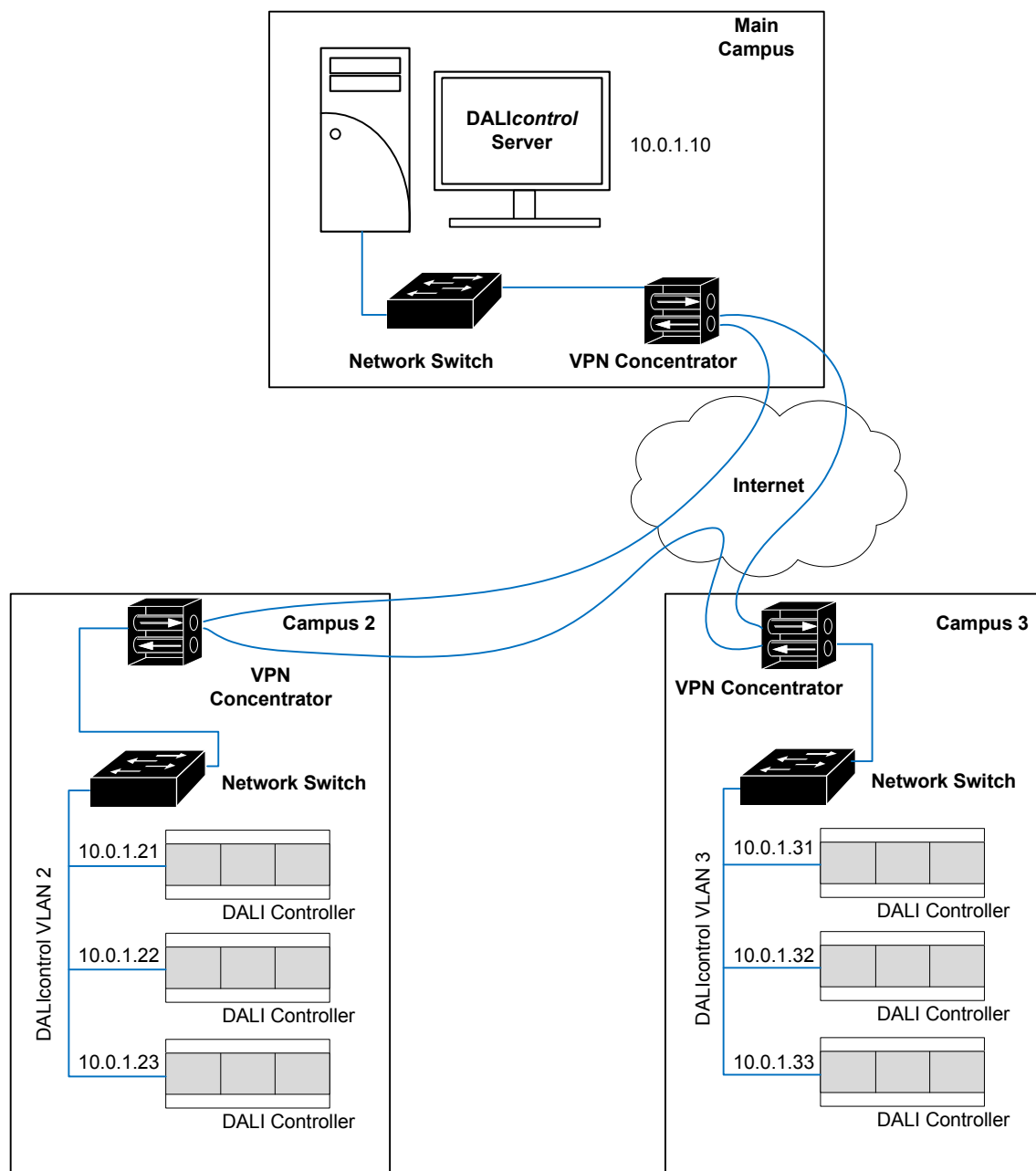
Lighting control, maintenance and management has been localised to individual buildings for a long time. As we enter a new era of green building ratings and government legislation, organisations are trying to maintain and manage lighting more efficiently over different buildings. Most of the time, these buildings are located remotely from each another.

The DALIcontrol software and hardware is designed and manufactured as an open system from the ground up and establishes a lighting control system that not only speaks the DALI protocol but utilises an IP network. As IP networks are available in commercial buildings, the ability for DALIcontrol products to reside upon this IP network and utilises the existing infrastructure as its primary backbone both simplifies and reduces system cost.

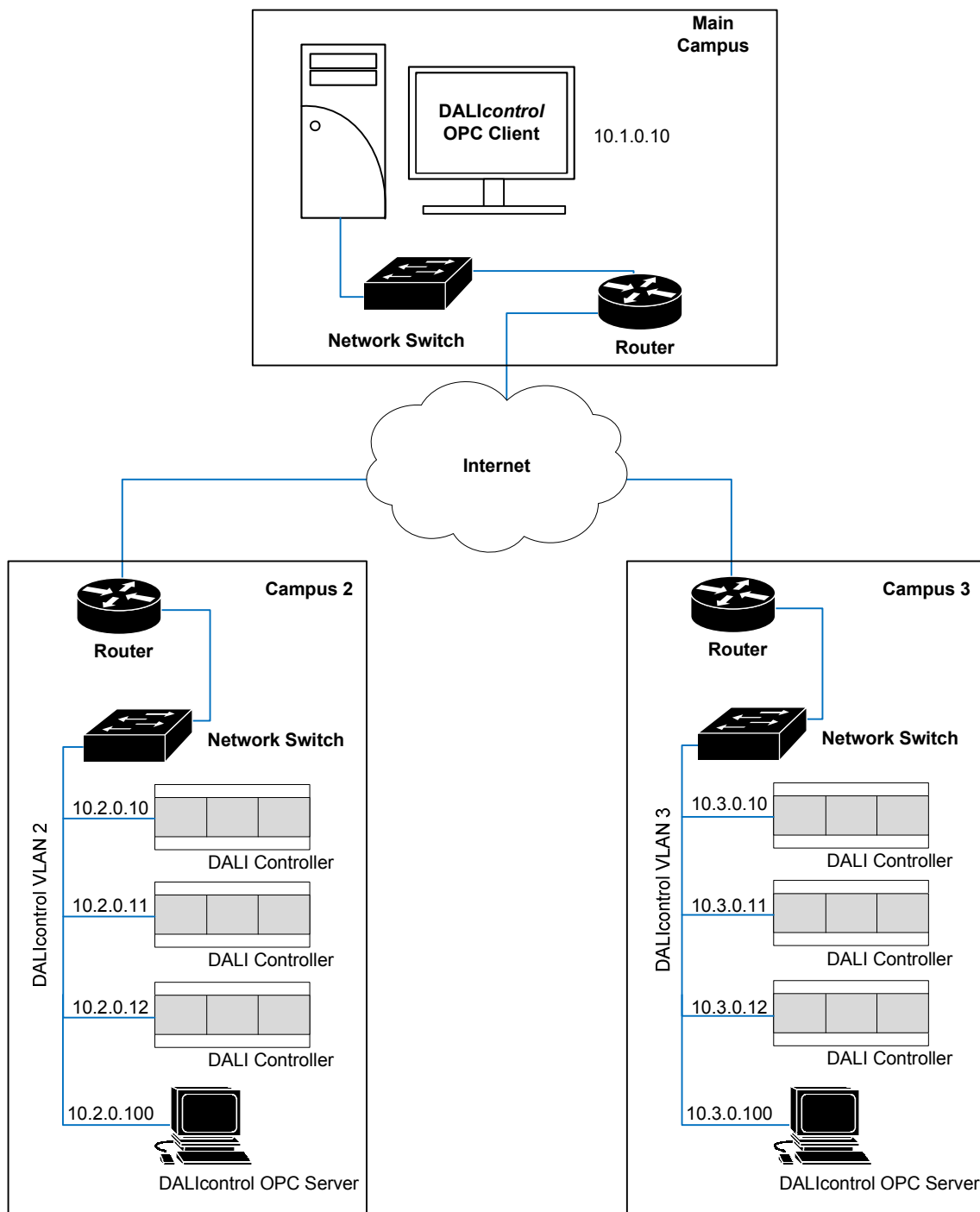
This document describes how lighting control, maintenance and management of various building can be achieved from a centralised location with DALIcontrol using the examples of Virtual Private Network (VPN) and router over internet.

Example Layout & Features

- Virtual Private Network (VPN)



- Router over Internet



Control Strategy – Inter-Campuses

- **DCBM Line Controllers**

The solution offered by DALIcontrol is based on its clever DCBM line controllers. These are installed around a building on an IP network and use time schedules, push buttons, switches, and sensor inputs to control lighting on DALI communication lines. DALI ballasts are controlled by commands that can be sent to individual ballasts, groups of ballasts or broadcast to all ballasts on the line. No relays or dimmers are required as the lighting output control is designed in the lighting ballast itself.

A standard DALI line is a network of up to 64 DALI light sources (ballasts, transformers, emergency fittings, etc.) Only this limitation traditionally restricted DALI systems to smaller buildings or to provide multiple non-integrated systems within one site.

The DCBM line controller breaks the barrier of the 64 devices on the DALI network by cleverly combining the strength of IP networks, together with DALI, to produce a unique offering. DCBM DALI line controllers have built-in intelligence so they continue to run schedules and other control functions even when disconnected from your computer or network. The Line Controllers do not require a server to run as they have their own microprocessor and memory.

- **Each Campus**

DCBM DALI line controllers within each campus will be connected and communicate with each another over the IP network. Line controllers will be located within a virtual local area network (VLAN) which provides a segmentation of services and allows for broadcast filtering, security, address summarization and traffic flow management preventing accidental access and control of the buildings lighting control system.

- **Remote DALIcontrol Server - VPN**

VPN provides the infrastructure that connects remote campuses into a centralized network. It is capable of providing the experience that various campuses are all directly connected onto one central network. For a remote user to connect, it typically requires authentication and encryption technologies to provide a secure path through the Internet. Table 1.0 shows the various DCBM softwares and their compatibility with this set up.















- **Remote DALIcontrol OPC Client – Router over Internet**

DALIcontrol OPC server and client offer connectivity across campuses to monitor loads and switch them. With this configuration, line controllers in a campus will not be able to communicate with controllers from another campus keeping them strictly isolated between campuses. However, configuring of DALI fittings and DCBM line controllers (ie scanning, addressing, programming of DALI fittings and line controllers) are not able to be carried out remotely between campuses with configuration unless VPN could be established between the campuses or remote desktop can be achieved. Table 1.0 shows the various DCBM softwares and their compatibility with this set up.

- **Future Expansion**

As future campuses are established, they can be easily added to the DALIcontrol system and connected back to the Main Campus in a similar fashion hence providing an easy scalability solution.

Software Functionality Table

Devices	Software Functionality	Inter-Campus functionality VPN	Inter-Campus functionality ROUTER OVER INTERNET
DCBMManager	DALIcontrol software that searches for DALI line controllers on the network.		
DCBMWizard	DALIcontrol addressing and configuration software for DALI Electronic Control Gear and Devices.		
DCBMMonitor	Lighting Management software for intelligent control of one or more DALI lighting control lines. Building Monitor provides configuration for DALI line controllers with Real Time Clock, automatic scheduling integrated inputs and outputs, DALI points, scenes, sequences and status monitoring.		
DCBMReporter	Reports on the health and performance of DALI emergency devices. DCBMReporter is a tool used by building management to produce regular reports. These reports can be converted to PDF or CSV (Excel) format and incorporated into building management reporting databases.		
DCBMTrace	DALIcontrol software used to log commands issued by line controllers over the IP network.		
DALIcontrol touch screen	DALIcontrol touch screen configured to trigger lighting commands and sequences.		
DALIcontrol OPC	OPC is a broadly supported communications standard supported by many Building Management Systems and a large selection of general automation applications.		

Resource Links

For information including Product Datasheets, Installation Instructions and Downloads visit

<http://www.clipsal.com/dalicontrol>

It is recommended that a Clipsal DALIcontrol System Partner be engaged on projects involving integration for design, programming and commissioning.

Clipsal DALIcontrol System Partner have undertaken specialist training so they are equipped to provide the technical services and support to help you successfully implement a DALIcontrol lighting system.

In addition, Clipsal DALIcontrol System Partner will provide professional detailed documentation and specifications for projects including handover training to the client.

Engaging a Clipsal DALIcontrol System Partner provides key benefits to the contractor, consultant and the end user including the manufacturers support from project design through to completion. A Clipsal DALIcontrol System Partner will also be able to educate the Building manager on how to run reports on the fittings for an installation.

A major advantage of the DALIcontrol system is the ease of installation and commissioning. The five-pin 'soft-wiring' system reduced labour costs and the distributed architecture enabled sections to be tested and commissioned ready for the tenant as each area is installed.

For further information:

Clipsal DALIcontrol M3 Soft Wiring Solutions:

www.clipsal.com/cablemanagement

DALIcontrol:

www.clipsal.com/dalicontrol

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