



DATA CENTER INFRASTRUCTURE MANAGEMENT

SOLUTION BRIEF

THE nlyte SOLUTION

nlyte Software was founded by data center professionals for data center professionals and is the independent provider of data center infrastructure Management (DCIM) solutions. The nlyte DCIM suite provides the predictive intelligence and management controls needed to achieve smarter, more efficient and highly available data centers. The nlyte DCIM suite provides a unique combination of:

- Intelligent capacity planning that delivers actionable information for optimizing the use of power, cooling and space through the optimal placement of data center assets
- Business process automation that improves availability and operational excellence

The nlyte DCIM suite is a cutting-edge web-based solution that provides an attractive and intuitive interface for all users. The nlyte solution has been designed to enable best practice processes. Wherever possible, steps have been automated to reduce user workload, and built-in software rules maintain data accuracy and enforce data center best practices.

The nlyte DCIM solution is built on industry standard technologies, such as the Microsoft® .NET framework, Windows® Server operating system and SQL Server® database, providing a robust, powerful and scalable architecture to fit the requirements of any organization. The user interface is built using powerful Adobe® Flex® to provide a rich interactive graphical interface that enhances the user experience and provides visual representation of relationships and concepts. Due to the intuitive design, users can be up and running with the system in less than one day.

The nlyte DCIM solution is based on a set of best practice processes we call the nlyte Process Cycle. This Process Cycle uses six steps (Discover, Visualize, Model, Control, Report & Predict) to help data center personnel gain control of their data centers and make informed decisions for the planning

and effective management of their data center assets and physical infrastructure.

The nlyte DCIM solution can automatically Discover IT assets, Visualize the physical and virtual infrastructure, Model the Move, Add, Change (MAC) initiatives, Control data center processes and personnel, Report on progress using advanced analytic capabilities, and Predict capacity resources well into the future.

The nlyte DCIM solution is represented in Figure 1.

nlyte KEY FEATURES

- Central repository of data center asset information
- Robust library of specific attributes for data center assets
- Data-driven model of your data center floors and cabinets
- Maps asset relationships and dependencies
- Sophisticated “What If” modeling
- Visualization of data center physical capacities
- Automatically selects best asset allocation

nlyte KEY BENEFITS

- Reduces the cost, time and risk of migrations and consolidations by up to 50%
- Decreases the business risk and expense caused by downtime & catastrophic failure by up to 50%
- Defers the capital expense for new data center build outs by 5 years or more
- Cuts power expenses by 20% annually and reduces power usage effectiveness (PUE) to 2.0 or less
- Improves the operational excellence and optimizes the use of power, cooling and space
- Visibility into key performance indicators
- Supports ITIL® and COBIT® best practices
- Quick identification of capacity issues
- Single system of record for data center asset information

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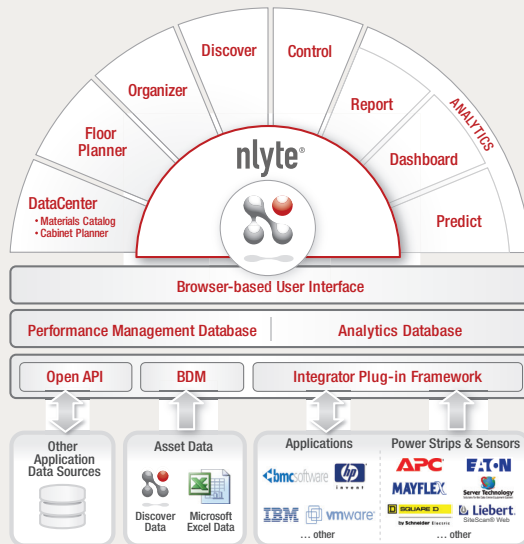


FIGURE 1. nlyte Product Structure and Architecture

The nlyte Modules are represented in the diagram to the left.

nlyte SOLUTION

- nlyte DataCenter (Materials Catalog & Cabinet Planner)
- nlyte Floor Planner
- nlyte Organizer
- nlyte Bulk Data Manager
- nlyte Discover
- nlyte Control
- nlyte Report
- nlyte Dashboard
- nlyte Predict
- nlyte Performance Management Database
- nlyte Open Web Services API
- nlyte Integrator

nlyte PERFORMANCE MANAGEMENT DATABASE

The nlyte Performance Management Database contains all the data center assets and relationships including the following tables:

Facilities

- Cooling and Power Infrastructure

IT Assets

- Network, Server and Storage Infrastructure

Data Center Infrastructure

- Cabinets
- KVM Switches
- Sensors

Business Systems

- Business Applications
- Business Groups
- Support Groups
- Software

Virtual Environments

- Hosts
- Virtual Servers

nlyte OPEN WEB SERVICES API

The nlyte Open Web Services API allows integration to an existing Configuration Management Database (CMDB). This capability provides federation management, which transparently integrates multiple autonomous CMDBs into a single federated database. The API also enables a variety of other integration capabilities aimed at enhancing the nlyte solution.

nlyte INTEGRATOR

The nlyte Integrator module is an integration framework that enables a variety of integration options for connecting devices and integrating applications with the nlyte DCPM suite. The module is architected in such a way that once the base components are installed, the pluggable nature of its design easily supports the addition of new integration plug-ins to provide an interface to intelligent power strips, PDUs, environmental sensors, and other data center infrastructure asset data managed in nlyte. In addition to data center devices, the nlyte Integrator also supports the ability to plug in interfaces for other software applications, like VMware® and BMC® Remedy®. The plug-ins support new XML based configuration files and software classes for the individual devices being integrated.

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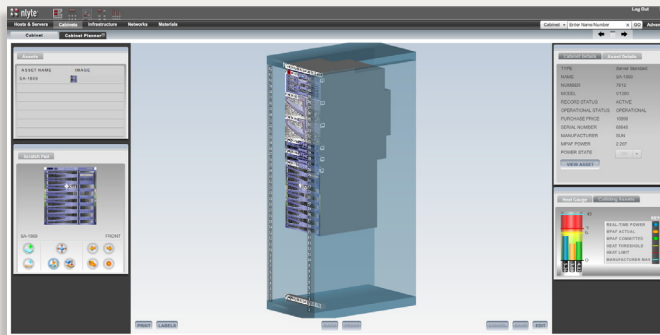


FIGURE 2. nlyte Cabinet Planner

The nlyte Cabinet Planner provides a 3D visual representation of the assets in the cabinet and allows the user to plan how new equipment will be added.

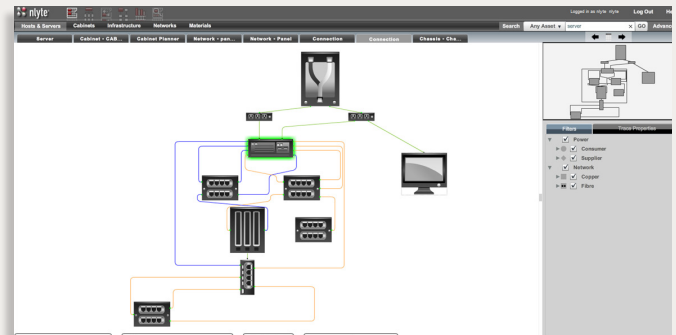


FIGURE 3. nlyte Connectivity Trace

The nlyte Connectivity Trace provides the complete end-to-end network and power cable connections for a server.

nlyte DATACENTER MODULE

The nlyte DataCenter Module allows you to view and manage all the asset information stored in the nlyte Performance Management Database (PMDb). It works in conjunction with the nlyte Materials Catalog so that all the data center specific information, (size, weight, connections, power, etc.), is automatically added to the database. It also provides access to the nlyte Cabinet Planner, where data center Move, Add and Change (MAC) initiatives are modeled before execution. This Module also provides the ability to map the complete power chain from the supplier sub-station's feed, into the data center, through the Uninterruptible Power Supplies (UPSes), Power Distribution Units (PDUs), generators and power strips to the servers. This results in an end-to-end model of the entire power structure for more effective decision making, accurate power costing and immediate risk identification.

The nlyte DataCenter Module gives you the ability to model the power consumption of essential data center devices such as air conditioning units and includes this information into the overall data center power consumption plan. You also have the ability to model the potential infrastructure and business impact of a power failure to the critical powerchain serving the data center and its essential applications. In addition, we can help attain a Power Usage Effectiveness (PUE) rating of 2.0 or less by enabling an accurate calculation of the IT Equipment Power (ITEP) and providing visibility of the Total Facility Power (TFP).

MATERIALS CATALOG

The nlyte Materials Catalog generates a full inventory of your data center assets which will automatically include information

about the relationships between them. In addition to standard details common to all assets, nlyte 'asset type' records hold specific information about individual items of equipment. This includes links to other entities within the nlyte Organizer Module allowing you to map relationships such as ownership, support and relationship interdependencies. By maintaining the specifications of equipment in the nlyte Materials Catalog you eliminate the need to repeatedly create the same record. As a result of understanding specific details about your data center assets and the relationships between them, you will reduce the time required to perform other data center management functions.

CABINET PLANNER

Using the nlyte Cabinet Planner allows you to virtually walk the floor of any or all data centers in your estate looking for the perfect "gap" for that new server. With the nlyte patented Bulk Auto-Allocation technology, you can pick equipment from the Materials Catalog, and the nlyte Cabinet Planner will find all the cabinets that have the right power and network connections to support it. The Bulk Auto-Allocation technology is also smart enough to sort the cabinet options by current power draw, to ensure your data center floor is properly balanced for power and cooling. The nlyte Cabinet Planner lets you model your MAC initiatives before you start moving equipment to ensure you have enough power, cooling and space to support the project.

nlyte DataCenter Key Benefits

- Avoids asset collisions (front & back)
- Optimal asset placement
- Improved service delivery

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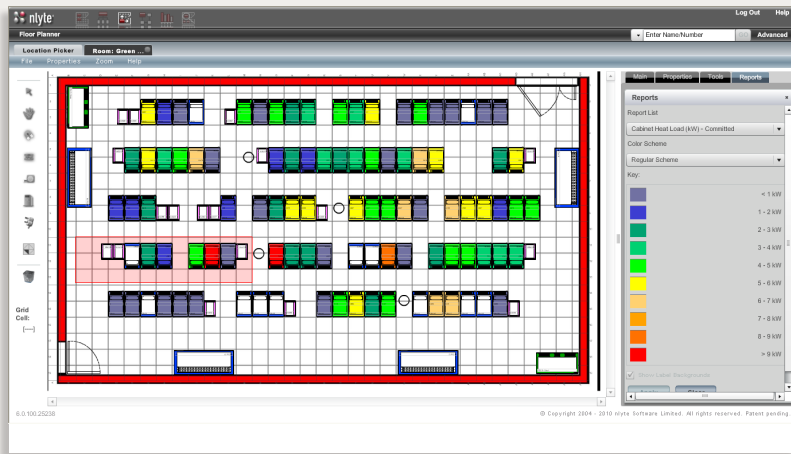


FIGURE 4. nlyte Floor Planner

The nlyte Floor Planner shows the floor plan and displays the color coded kW heat output per cabinet.

nlyte FLOOR PLANNER MODULE

The nlyte Floor Planner Module is a CAD-style graphical interface that enables you to plan and manage the physical layout of the floors and rooms within your data center. It allows you to drag and drop assets onto the floor plan and position them to create the precise room layout you require. Using the nlyte Floor Planner zoom and measuring tools you can position assets to a high degree of accuracy. Plus, the nlyte Floor Planner helps you manage operational issues within the data center such as power provision, use of space, heat control and air flow.

The nlyte Floor Planner presents a layered representation of all the assets on your data center floor. You can create individual layers for each asset category such as cabinets, floor standing servers, cage representations, power infrastructure, air conditioning and networks. These can be displayed together or separately to simplify data center planning and issue resolution. These layers also include a layout layer that holds your floor plan drawings with static equipment and a grid layer that provides you with axes alignment guide lines.

To help identify potential threats and issues, the nlyte Floor Planner includes real-time ad hoc capacity reports. As work continues within your data center, nlyte monitors the different performance thresholds that apply to each device. If your operations result in these thresholds being approached or exceeded, nlyte color codes the affected device on the appropriate layer of the report's graphical output. From the color coded results of each report you can quickly identify any jeopardized asset and click on it to drill down into the detail.

nlyte's graphical presentation of this information makes it easy for you to track the asset chain in order to understand where potential issues exist and how to resolve them.

nlyte Floor Planner Key Benefits

- Faster hot spot identification
- Optimal asset placement
- Improved service delivery

nlyte ORGANIZER MODULE

The nlyte Organizer Module allows you to create and report upon the relationships between your data center resources and the business groups within your organization.

nlyte business groups allow you to define the hierarchical organizational structures within your business. Using these, you can establish single or shared ownership of the assets in your data center. These relationships allow you to record and report on usage of the equipment by business group, to assign costs for this usage for charge back purposes and to identify which groups will be affected by loss of services.

nlyte support groups allow you to define the support groups within your business and their hierarchical relationships. You can use this information to assign exclusive and shared maintenance and issue resolution responsibilities for data center assets and business applications and, subsequently, to charge for these services.

nlyte Organizer Key Benefits

- Improved service delivery
- Improved Mean-Time-To-Repair (MTTR)
- Mitigates risk from outages

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FIGURE 5. nlyte Discover Summary Screen

The Discover tab in the nlyte web application provides summary information of created and associated assets.

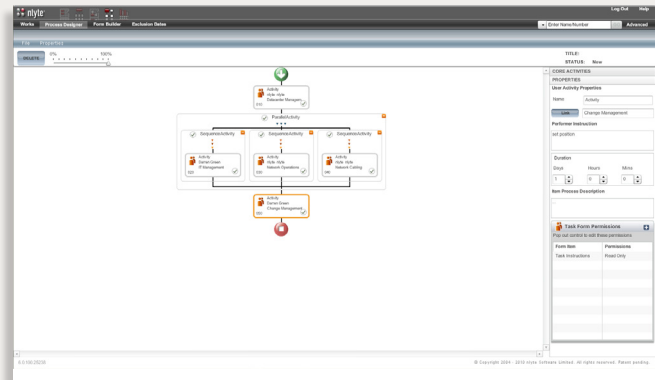


FIGURE 6. nlyte Control Screen

The nlyte Control Module shows a graphical view of the defined workflow.

nlyte DISCOVER MODULE

You can't manage what you can't find. With nlyte, there are multiple options for asset data collection.

The nlyte Bulk Data Manager (BDM) enables you to get your asset data out of ad hoc solutions, such as spreadsheets and Visio diagrams, and loaded quickly at a minimal cost, or you can use the nlyte Discover Module to find your assets automatically, populate the nlyte Performance Management Database (PMDB) and keep it up to date.

The nlyte Discover Module provides the ability to scan the data center network to automatically locate and collect physical assets and their properties. The nlyte Discover Module uses a non-intrusive, agent-less, active-passive, low network bandwidth discovery technology to inventory a data center's networked IT assets and automatically load this information into the nlyte PMDB.

The following devices and properties are captured: manufacturer, model, serial number, operating system, IP addresses, MAC addresses, number of processors, memory installed, disk installed, Network Interface Cards (NICs) installed and processor information.

nlyte Discover Key Benefits

- Accurate life cycle management
- Reduced audit time
- Faster implementation and time to value

nlyte CONTROL MODULE

The nlyte Control Module provides the ability to define and control the execution of service request processes, using graphical workflow and automated execution.

The workflow execution includes sending alerts and reminders to ensure timely completion. Using details captured as the workflow is processed, nlyte Control allows you to define service driven processes in line with your current business activities, enabling you to efficiently model complex business processes, streamline existing workflow applications and manage progress. This includes task and e-mail alerts to ensure timely completion of service requests. Using information captured as the workflow progresses, you can drive the route through the process in a certain way or repeat it until a satisfactory state has been achieved.

The nlyte Control Module also has an icon-driven graphical process designer and form builder to define services, and an operational work desk to initiate service requests and monitor and manage their execution. By defining regular processes, automating execution and driving staff interaction, it helps you coordinate and standardize operational effort to increase efficiency and productivity of service request delivery.

nlyte Control Key Benefits

- Improved service delivery
- Reduced server deployment time
- Enforces ITIL and COBIT best practices

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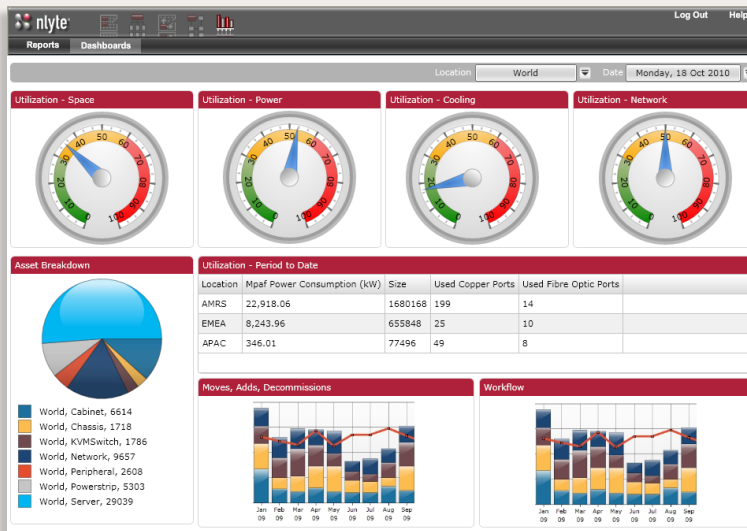


FIGURE 7. nlyte Main Operational Dashboard

The nlyte Main Operational Dashboard shows a graphical view of power, cooling, space and network utilization. In addition it shows Moves, Adds and Changes over time.

nlyte ANALYTICS

nlyte Analytics is a set of fully integrated business intelligence capabilities allowing data center professionals, managers and executives to quickly gain visibility into the information and key performance indicators that help optimize the critical resources of power, cooling and space leading to reduced data center operating expenses and extended data center life. Users can gain detailed visibility into the current status of the business, enabling them to track how their data center operations are performing against strategic goals and how day-to-day execution is aligned with the broader corporate strategy.

nlyte Analytics comprises of three fully integrated modules, in support of intelligent capacity planning, all based on a completely new and highly optimized business intelligence architecture utilizing best practices in data warehousing, analytics and dimensional modeling. The three modules provide business users with a variety of data visualization and manipulation options: nlyte Dashboard, nlyte Report and nlyte Predict.

nlyte DASHBOARD MODULE

The nlyte Dashboard Module makes available a number of pre-defined dashboards which, through state-of-the-art data visualization, provides senior management the critical operational metrics required to manage today's sophisticated data center facilities. Users can, for example, see a high level roll-up of capacity data for power, cooling, space and network connections across an entire data center estate, incorporating full drill-down and time-series analysis. Customers also retain full flexibility to create, deploy and maintain their own dashboards using the nlyte Dashboard Manager, which provides the ability to create customized management dashboards using an easy to understand wizard-driven, drag-and-drop interface and an extensive array of data visualization components such as gauges, charts and maps.

nlyte Dashboard Key Benefits

- Visibility into key performance indicators
- Helps optimize critical resources of power, cooling and space
- Tracks how data center operations are performing against strategic goals

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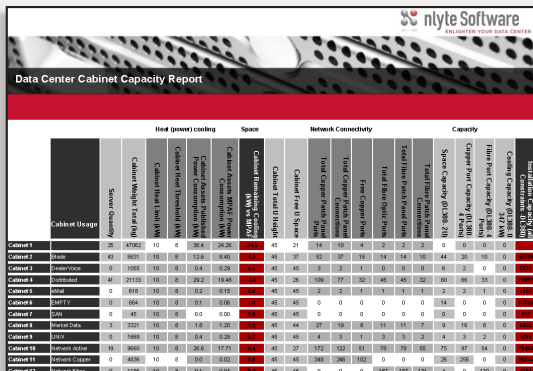


FIGURE 8. Sample nlyte Report

This Data Center Cabinet Capacity Report provides detailed information regarding cabinet weight, heat, power, cooling, space and network connectivity.

nlyte REPORT MODULE

The nlyte Report Module provides detailed business intelligence to support daily operations, ongoing management and strategic planning.

The nlyte Report Module gathers operational data from your business activities to build a growing resource of metrics. Then, you can extract this data and present it as valuable information to help you understand and manage your business.

The nlyte Report Module provides a library of standard reports:

Trending and forecasting reports: enables you to manage assets over time; showing you how you have been using the assets in your business and predicting the effects if you continue to do so.

Capacity planning: gives you immediate insight into the status of your resources, such as network connections, usage, cooling and space within rooms and cabinets; showing you what is in use and what is available immediately.

Contingency planning: enables you to understand the relationships between assets and the implications of possible events; showing you dependences between devices and the knock-on-effects of device failures.

nlyte Report Key Benefits

- Faster, automated report delivery
- Easy user-defined reports
- Quicker, chargeback recovery

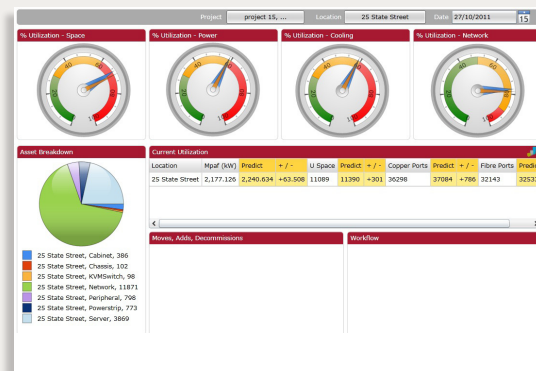


FIGURE 9. Sample nlyte Dashboard

The nlyte Predict Module uses dashboards to show the impact of a project on data center space, power, cooling and network capacities.

nlyte PREDICT MODULE

The nlyte Predict Module provides the ability to forecast and predict the future state of your data center's capacities based on "what if" models.

In a way, overspending for capacity that you don't need is worse than not having enough capacity to complete a new project. Either way, the consequences of missing the mark and not accurately projecting your data center's needs for power, cooling and space will cost you dearly. Before you start your new data center build, plan your data center migration or consolidation project, or think about swapping out old equipment for new, you need to know if your facility's capacity is up to the task. The nlyte Predict Module allows you to precisely model and forecast your data center's capacity and analyze the impact of changes so you can plan, not react.

The nlyte Predict Module forecasts the exact capacity impact of data center projects on space, power, cooling and networks based on "what if" consumption. Once a forecast has been approved you can simply commit it: the planned capacity is reserved and work orders are automatically generated providing a visual installation guide for installation teams to move equipment in and out of the data center.

nlyte Predict Key Benefits

- Improved capacity planning and project lifecycle management
- Proactive versus reactive data center management
- Accurate data center lifespan prediction

DATA CENTER INFRASTRUCTURE MANAGEMENT

COMPONENTS	nlyte EXPRESS EDITION	nlyte STANDARD EDITION	nlyte ADVANCED EDITION	nlyte ENTERPRISE EDITION
PRICE	\$1K/month for < 200 racks ¹ \$2K/month for 200+ racks ¹	See sales representative	See sales representative	See sales representative
DATACENTER	●	●	●	●
FLOOR PLANNER	●	●	●	●
BULK DATA MANAGER	●	●	●	●
ORGANIZER	●	●	●	●
INTEGRATOR		●	●	●
WEB SERVICES API		●	●	●
CONTROL			●	●
REPORT ²			●	●
DASHBOARD ²				●
PREDICT ²				●
DISCOVER				●

FIGURE 8. nlyte Product Packaging

1. International pricing is available upon request
2. nlyte Analytics Modules