# White Paper on netTerrain, An Automated, Graphical IT Documentation System

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IT networks, workflow models, and conceptual designs have one thing in common: they are complex collections of data and relationships. Designed with the user in mind, netTerrain is a comprehensive IT visualization solution that easily handles large amounts of complicated, interconnected information and presents it to the user as it exists in the real-world -- graphically, dynamically, and with relationships that are easy to see and understand.

# Introduction

IT networks, workflow models, and conceptual designs have one thing in common: they are complex collections of data and relationships.  Each system object is associated with unique information.  However, those objects are often maintained in unconnected files and other data sources scattered throughout the organization, including:

- Excel spreadsheets
- Legacy databases
- Network management systems
- Notes
- Employee knowledge
- Traditional diagram tools

These unconnected, complex technologies hurt business performance. The convoluted infrastructures, separate databases, and outdated data architecture environments regularly result in increased troubleshooting time, mismanagement of IT assets, and decreased employee productivity.

In addition, traditional diagram tools depict these systems in flat, unconnected illustrations, and are not well integrated with the organization's existing spreadsheets and databases.  When information changes, the diagrams are no longer accurate and the result is unconnected, flat, and empty drawings that attempt to represent the individual pieces of a single, integrated complex system of interconnected components.

## How netTerrain Can Help

With netTerrain from Graphical Networks, organizations can better manage their complex IT systems.

netTerrain creates a hierarchical, "visual" database of almost any information-rich system. Designed to easily handle large amounts of complicated, interconnected information, it takes data and presents it to the user as it exists in the real world: graphically, dynamically, and with relationships that are easy to see and understand.

# About netTerrain

Graphical Networks' netTerrain products are used around the world to graphically portray complicated IT systems. Businesses are rife with these systems, including corporate networks where end users are connected through wall jacks to patch panels, which, through a combination of routers and hubs, lead to servers. Each piece of equipment is associated with an owner's manual, configuration guide, and internal service history. Even in a modest network, this can equate to thousands of objects and relationships.

That is just the beginning. Most businesses contain an even larger collection of complicated, demanding, and interconnected systems. Upon examining a typical corporate IT network – notwithstanding the IT equipment that make up this network – there are workflows required to upgrade, replace, or fix that equipment. There is a procurement system that is responsible for ordering new equipment and storing the date of purchase and cost. There is also another system, often housed within human resources, that assigns that new equipment to specific offices and employees.

**None of these systems can be efficiently utilized if they are not understood.**

This is where netTerrain can assist. Using this innovative web-based IT visualization solution, data can be consolidated in one place, organized in a way chosen by the user, and depicted graphically. All of which allow anyone within the organization to quickly find the information they need.

netTerrain collects the organization's existing information and embeds it into graphical, hierarchical diagrams that users can query, drill down into, and distribute. It also connects all of an organization's data repositories directly to those diagrams to ensure that those diagrams always reflect current information. It allows users to embed documents, links to vendor websites, and diagram objects that automatically update their appearance to reflect the current status of the objects they represent.

**It is a truly comprehensive enterprise IT visualization tool.**

## Connecting to Databases

While it is possible to manually embed data in netTerrain diagrams, the team at Graphical Networks recognizes that is usually not the preferred method. Information is often housed within an organization's existing spreadsheets and databases. **netTerrain diagrams incorporate this existing enterprise data**, allowing users to access existing data sources and display them with a standard web browser.

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One netTerrain object can be linked to any number of fields in any number of disparate data sources, and works with all frequently used databases. This unique feature gives users the power to visualize data stored in a wide range of locations. With a click on one netTerrain object, users can potentially access information about personnel, marketing, budget, and engineering and production schedules.

Additional users also have the ability to create their own objects that show different datasets and relationships, while simultaneously pulling data from the same sources.

## Utilizing the Built-In Toolkit

With its integration toolkit, built-in import utilities, and ODBC connector, netTerrain can automatically display data from a wide range of third party management systems, including:

- CA eHealth
- CA Spectrum
- CiscoWorks RME
- HP Open View Operations
- Ipswitch What's Up Gold
- Solarwinds Orion Network Performance Monitor (NPM)
- VMWare VCenter / Virtual Center
- MS Visio
- CA netViz

The toolkit also allows netTerrain to significantly automate the process of populating and updating a rich set of computer, network, server, and switch data in its diagrams. Other benefits associated with the toolkit include:

- **Accelerates Data Collection, Refresh, and Display:** Users save time by automating the process of populating and updating a rich set of device data into netTerrain's hierarchical visual maps and diagrams. At regular polling intervals selected by the customer, the integration toolkit collects data and displays it visually in netTerrain; as a result, visual information is made available in real-time, reducing configuration errors and improving capacity planning.

- **Increases Application Uptime:** Enriched with real-time data, netTerrain becomes an even more powerful solution for increasing application availability. Using its powerful built-in search features, this web-based software dramatically reduces downtime by allowing quick, meaningful searches.

- **Changes Icon Color Based on Alert Status:** Through the inclusion of real-time information, users can see clients, networks, applications, and back-end systems,

including the business processes supported by IT, in a single, consolidated view. Users can change the color of an icon to alert its detection by a third party management system and drill down through different views to see the business processes affected by an outage.

## Embedding Data Graphics

**For netTerrain, data makes the difference.** Unlike typical drawing software, netTerrain respects data as much as the ability to draw, allowing it to provide an alternate way to visualize complex systems and data.

By embedding objects with user-defined data, netTerrain arms users with the information they need about their systems. It maintains a catalog of the information contained within all objects in the user's diagrams, which makes it easy to manage, troubleshoot, plan, and make informed decisions.

## Modeling Relationships and Searches

Because computer networks, enterprise models, and assets do not exist on flat pages, netTerrain provides users with the tools that allow them to visualize and understand system-wide relationship*s.* Because its mission is to store and present information graphically and hierarchically, connections between objects are tracked as carefully as the objects themselves.

Users have the power to select two objects in any diagram to see how they are connected. They can examine a global view of their corporate network to present to management, or drill down through a region, site, building, floor, or wiring closet – even as far down as a single port – to provide step-by-step instructions for new employees (see Appendix I).

Because data is maintained in a single database, it takes users only seconds to drill down from the top of the hierarchy to the data center room, equipment, or port level. Users can also perform data searches across the diagrams, locating servers with a certain amount of RAM or equipment with outdated maintenance contracts. Search results can be printed or saved, and users even have the option to change the appearance of an object that meets their search criteria.

# Conclusion

It is very hard to manage an IT network and data center with a simple diagramming tool. These tools contain no common underlying structure, maintain partial amounts of data about network objects, and cannot properly show the relationships between objects across the system.

So, just how does netTerrain differ from these network diagramming tools? In summary:

- All project data is housed within a single repository
- Enterprise-wide searches to find information, graphically, in seconds
- Hierarchical drill-down diagrams to any level of detail, from region to port or application
- Connections are easily represented, even between different diagrams
- Graphics are truly data driven, with user defined properties for nodes and links
- Real-time integration with any external system
- In-depth, comprehensive web-based diagrams, no plug-ins required
- Secure access on a per-role, per-user, per-diagram basis
- Compliance ready: every change is audited and kept in the database
- Full dashboard and reporting

# Appendix I: Sample Diagrams
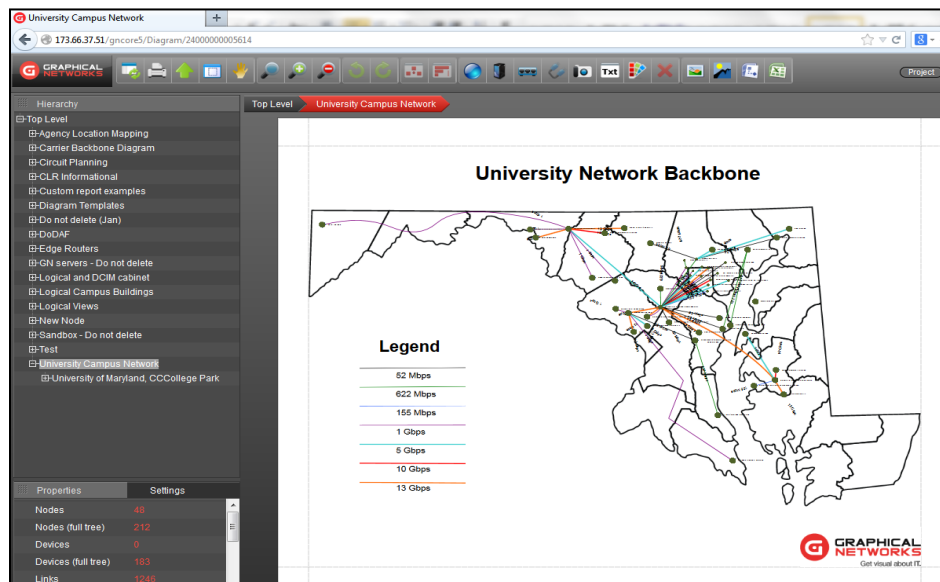


**Figure 1:** Typical Global View
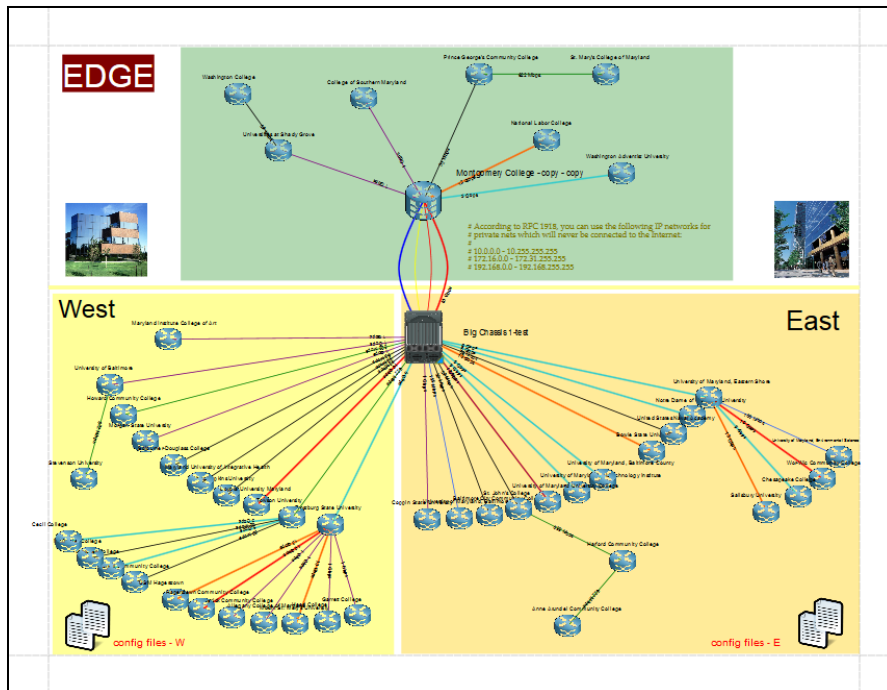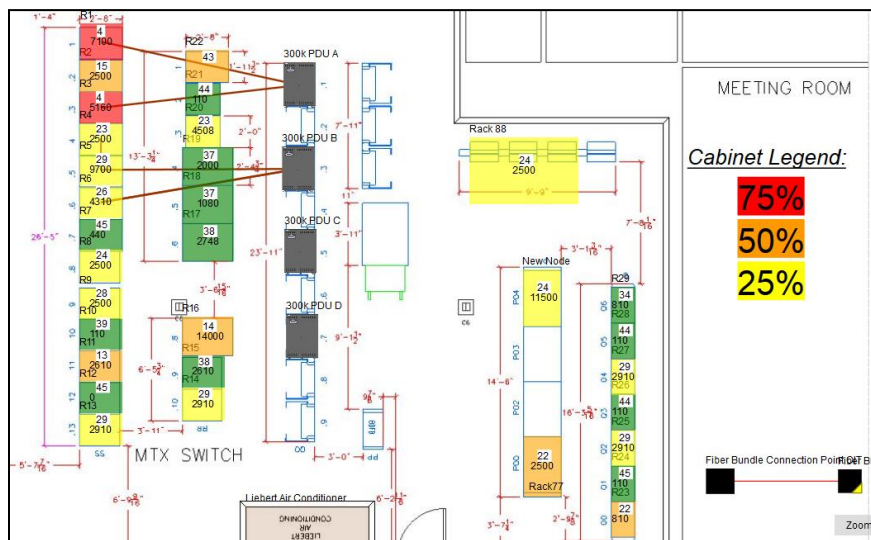
**Figure 2:** A Network View example
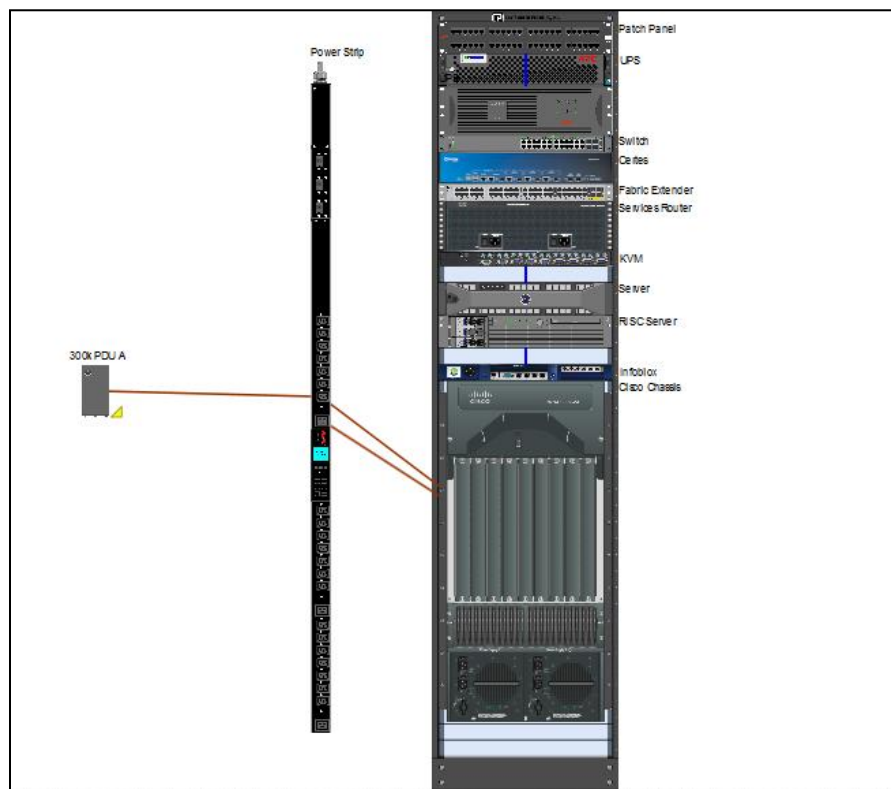

**Figure 3:** Data Center Floor Plan

**Figure 4:** Individual Rack



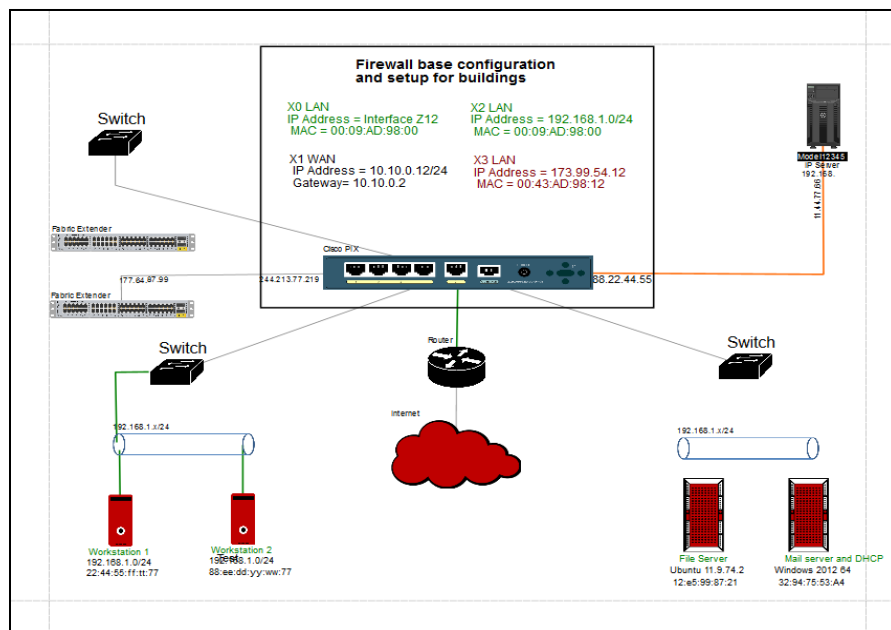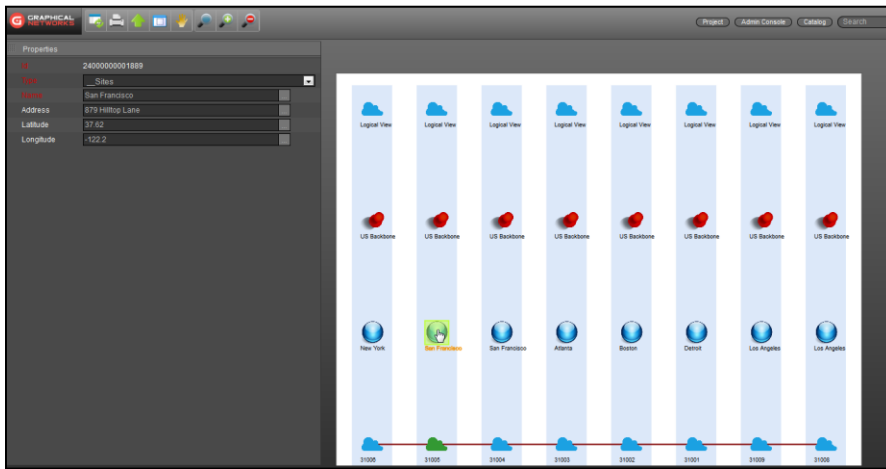**Figure 5:** Logical depiction example
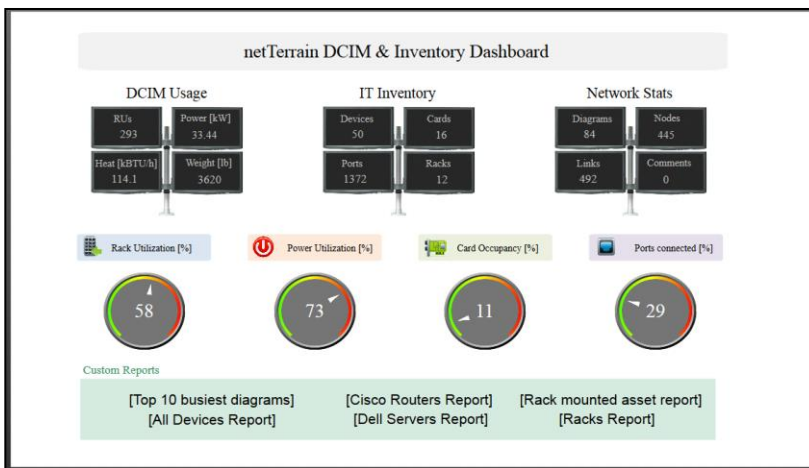
Figure 6: Circuit Layout Record


Figure 7: Dashboard view