

CA INFRASTRUCTURE MANAGEMENT 2.0 VS. CA INFRASTRUCTURE MANAGEMENT 1.0: SPEED AND EASE OF MANAGEMENT

Fewer clicks, less time, less hassle.



CA® Infrastructure Management 2.0
improved speed and ease of management with up to

96%
fewer
clicks

38.7x
faster task
completion

in our tests compared to CA IM 1.0

In today's business environment of virtual workplaces, satellite offices, and cloud computing, infrastructure disruptions can cost a company tens or hundreds of thousands of dollars' worth of revenue and lost IT productivity per hour. An effective infrastructure management suite lets network and systems managers, engineers, and other infrastructure and operations support staff resolve issues proactively and quickly, saving the business the lost time, money, and reputation that a catastrophic infrastructure degradation or failure could cause.

In our labs, Principled Technologies compared the user experience of two management suites, CA Infrastructure Management 2.0 and its predecessor, CA Infrastructure Management 1.0.

Using the CA Infrastructure Management 2.0 solution, our engineers resolved the issues in our simulated scenarios up to 38 times faster than when using the prior version. The CA Infrastructure Management 2.0 solution not only took less time than CA Infrastructure Management 1.0, but also required up to 96 percent fewer mouse clicks, depending on the task.

When support staff perform these tasks repeatedly in the course of their workdays, these time savings rapidly add up. Being able to diagnose and remedy problems as quickly as possible by using the tools at your disposal is essential to avoiding or minimizing the impact that infrastructure events' can have on customers or business end-users. These factors make the choice of CA Infrastructure Management 2.0 a simple one.



A PRINCIPLED TECHNOLOGIES TEST REPORT

Commissioned by CA Technologies

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WHEN QUICK RESPONSE TIME IS CRITICAL

To prevent or mitigate the damage that network and service disruptions can bring, software capable of detecting issues quickly, or even detecting potential issues before they occur, can make all the difference. An effective tool must display large amounts of data in an easily digestible manner, so that the administrator can navigate to, investigate, and resolve the issue with as few clicks and as little friction as possible. Products that have ample data, but no quick and efficient path to that data, become tedious and expensive to use as environments grow and scale over time.

To evaluate the two versions of the CA Infrastructure Management solutions, we evaluated a set of common use cases typical of a large environment dealing with multiple sites, with many types of managed devices, in which infrastructure and operations support staff must locate the source of a network or server performance issue. Our test engineers familiar with the two products used each product’s user interface to resolve each use case. We measured the number of clicks required to arrive at the solution or screen where the data was displayed, as well as the amount of time it took. For more information on the exact steps for each use case, see [Appendix A](#).

OUR FINDINGS

Use case scenario results

In our testing, we found that while both sets of tools offered similar data in their respective feature sets, the CA Infrastructure Management 2.0 solution provided a far more efficient user experience for network and system managers and other support staff. As Figure 1 shows, the experience in CA Infrastructure Management 2.0 was from 1.8 to 38.7 times faster, and required from 50 percent to 96 percent fewer clicks, than the experience in the prior CA Infrastructure Management 1.0 product.

In one of the four cases using CA Infrastructure Management 1.0, our engineers determined that using external aids (a Microsoft® Excel® spreadsheet as well as manual printing) to tally CA Infrastructure Management 1.0 data would be a more efficient path than using CA Infrastructure Management 1.0’s interface alone. When we used Excel, we included the time it took to complete the task, but did not count clicks external to CA Infrastructure Management 1.0.

	Use Case #1		Use Case #2		Use Case #3		Use Case #4	
Solution	Clicks	Seconds	Clicks	Seconds	Clicks	Seconds	Clicks	Seconds
CA Infrastructure Management 2.0	4	28	6	29	2	20	2	17
CA Infrastructure Management 1.0	106	259	12	54*	5	47* (Excel) 775 (manual)	22	74
Advantage	96% fewer clicks	9.2X faster	50% fewer clicks	1.8X faster	60% fewer clicks	2.3X faster (Excel) 38.7X faster (manual)	90% fewer clicks	4.3X faster
*numbers indicate that additional external calculation was required.								

Figure 1: Click counts and times for our use cases, using the CA Infrastructure Management 2.0 and CA Infrastructure Management 1.0 solutions

What does this mean for you?

As your infrastructure scales out to tens or hundreds of thousands of monitored nodes, the time and complexity of performing tasks such as the ones we used for our testing scenarios will not just be an occasional incident, but a constant use of infrastructure and operations staff time.

The time and effort savings that are possible if you choose CA Infrastructure Management 2.0 can lead to the potential reduction of up to hundreds of person-hours during a year, depending on the size of your department and the size or complexity of your monitored infrastructure.

By providing an easy-to-use, powerful user interface, the faster workflow provided by the CA Infrastructure Management 2.0 solution gives support staff the opportunity to respond faster and prevent or resolve small or large issues quickly, reducing the risks to critical business infrastructure on productivity.

WHAT WE TESTED

We used a combination of physical and simulated LAN and WAN environments to evaluate the features of CA Infrastructure Management 2.0 and the CA Infrastructure Management 1.0 network management products. To do so, we installed some components of each version locally to have more flexibility in adding custom screens and administering the interface. Where we needed more extensive test data for use cases, we used software installed at CA's demo environment.

We evaluated four use cases to simulate real-world scenarios encountered by network and system administrators on a routine basis. Below we describe each of those use cases. In [Appendix A](#) we describe each use case and the click sequences and granular results for each use case. As is often the case, there were different possible paths to complete each scenario. Our goal was to select paths that favored each solution's best attributes.

Use case scenarios

Scenario 1

There is a problem at a site. Evaluate this site's top 10 most utilized servers' CPU and RAM utilization for the past hour and past 24 hours – minimum, maximum, and averages in as few clicks as possible. Modify time ranges via each UI to see differing time windows for this data.

Scenario 2

Proactively manage server capacity in your datacenter. Evaluate what servers are deviating from normal usage for the past month. Determine which server is trending up the most in terms of CPU utilization for the past month. View details for that server usage and evaluate past and future trend lines. Evaluate that individual host's CPU and RAM (min, max, average) for the past month, and then modify time ranges for that host's detail page to view the prior quarter's numbers, to verify the capacity growth issues.

Scenario 3

Users at a site report a recent network slowdown. They also indicate this typically occurs at the same time of day. Investigate the schedule of the issue using CA Infrastructure Management 2.0's and

CA Infrastructure Management 1.0's respective Calendar Heat Chart capabilities. Visually pinpoint the pattern of the slowdown (i.e., if there are normal slowdowns on separate days from 3pm to 4pm).

Scenario 4

Evaluate the trend line activity for the top five utilized interfaces on your enterprise's routers in the past 24 hours in as few clicks as possible, to ensure no dangerous network spikes have occurred over the prior day.

For more information on the scenario testing methodology, see [Appendix A](#).

CA INFRASTRUCTURE MANAGEMENT

CA Infrastructure Management 2.0 is a solution capable of monitoring and analyzing your full infrastructure and providing deep and proactive insight into availability, performance, capacity, application response and other issues that impact services.

What's new in CA Infrastructure Management 2.0

According to CA Technologies, CA Infrastructure Management 2.0 has enhanced capabilities, such as the following:

- **CA Performance Center.** A generation beyond CA's NetQoS Performance Center user interface, the new CA Performance Center provides a wide range of predefined, technology-specific dashboards (e.g., MPLS, Capacity Watch, Server Health, Network Health, VMware), new patent-pending metrics views, additional layers of granular data access and administration, and new integration options with the Web Services Admin API.

Using a single-pane layout, CA Infrastructure Management 2.0 provides graphical reporting of network, server and application performance, while granting insight into network traffic flows, availability, and capacity, using collapsible dashboard modules and flexible dashboard designs. CA Performance Center also features: intra-module search, intra-module paging controls, and allows for zooming charts through click & drag mouse control.

Additionally, CA Performance Center displays data in a more malleable and digestible form for system and network administrators and other operations staff/engineers. Using new data display modules, the administrator has a dense amount of information available with just a mouse hover, or just a single selection. We review some of those user interface advantages below.

In the patent-pending Gauge/Table combination and the Trend/Table combination, the administrator has a dense amount of information available with just a mouse hover – minimum, maximum, and average utilization, along with volatility indicators during the applicable period (see Figure 2).



Figure 2: New Gauge/Table combination modules display large amounts of information in CA Infrastructure Management 2.0 with no clicking required.

Similar to the Gauge/Table combination, the Trend/Table combination below offers an administrator a large quantity of information with just a mouse hover. There are no clicks required to view the usage pattern over a certain time period. Usage spikes and dips are easily spotted with no page navigation necessary.

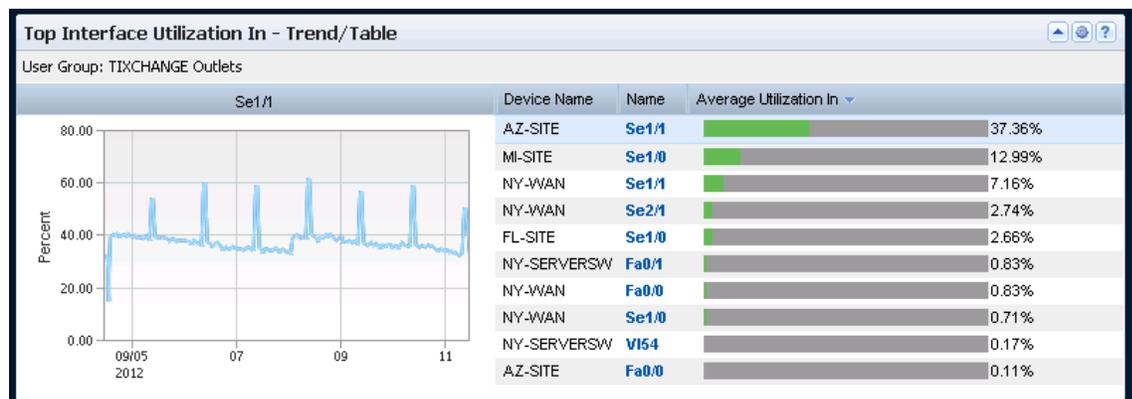


Figure 3: New Trend/Table combination modules display large amounts of information in CA Infrastructure Management 2.0 with no clicking required.

The patent-pending Calendar Heat Chart below offers an administrator a comprehensive view of the month at a granular one-hour interval. Visualizing inter-day and intra-day patterns is quick and painless. Additionally, the administrator has a quick method of isolating patterns that matter: Busy Hour, Business Week Pattern, Calendar Week Pattern, Repeating Hours by Business Day, and Repeating Hours by Calendar Day.

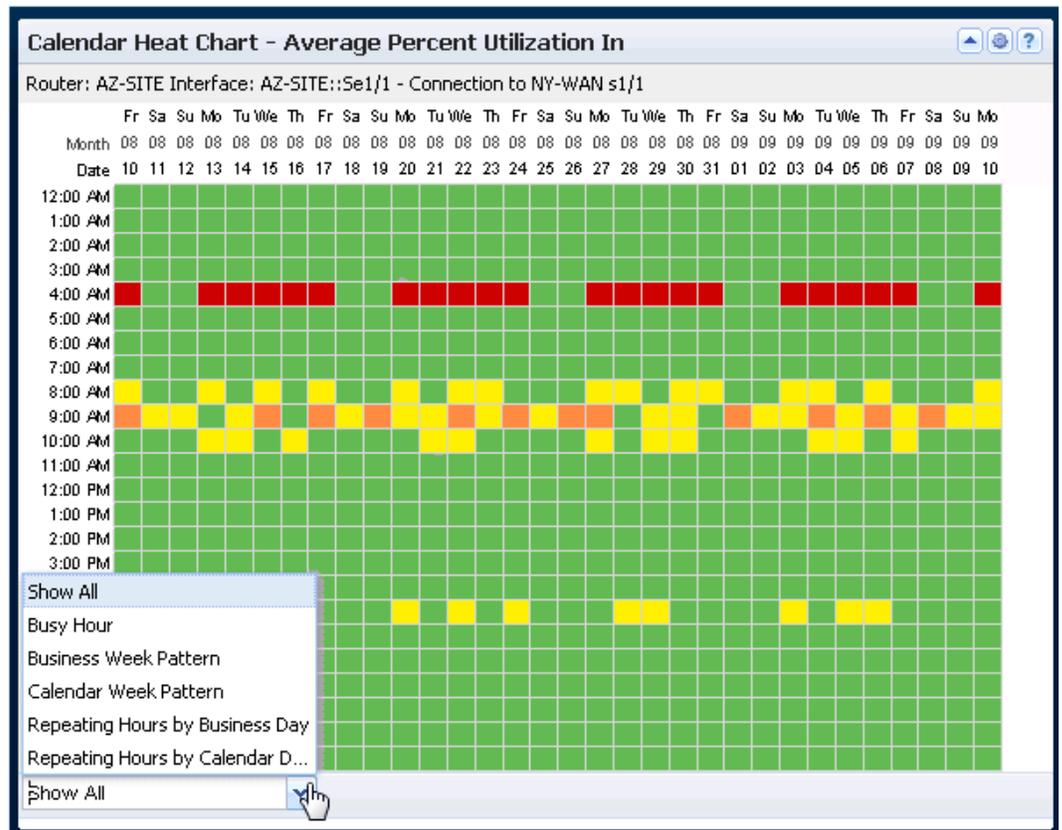


Figure 4: New Calendar Heat Chart module in CA Infrastructure Management 2.0.

- Data Aggregator.** A generation beyond CA Infrastructure Management 1.0's eHealth and NetVoyant products, the new Data Aggregator is powered by a highly scalable, high-performance architecture on a surprisingly small hardware footprint that includes a massive parallel-processing database and multi-threaded, linearly scalable polling. Touting inventory and component discovery, performance monitoring capabilities, and dynamic thresholding, Data Aggregator now natively supports multi-tenancy for controlling role-based access to data. Self-certification of devices and systems is now possible, removing dependencies on time-consuming tasks or external certification services.
- Combined CA Data Aggregator and CA Performance Center.** CA Infrastructure Management 2.0's Data Aggregator is a chief data source for the CA Performance Center console. This presents Reporting, Administration, Data Collection and Normalization, Inventory and Component Discovery, and Threshold Monitoring all under a single user interface, and allows the Data Aggregator feature to be administered via CA Performance Center. The CA Performance Center also integrates and displays data from a variety of data sources such as: CA Infrastructure Management 2.0's CA Network Flow Analysis component; CA add-on components for VoIP, video and application performance management; and even CA Infrastructure Management 1.0's eHealth performance management product.
- CA Network Flow Analysis.** This was formerly branded as CA NetQoS ReporterAnalyzer, and, like the other components in CA Infrastructure Management 2.0, integrates directly with CA Performance Center, providing a unified view into the conditions of the monitored networks. In addition, CA Network Flow Analysis now supports installation of

the Super Harvester component on Red Hat Linux 5.x and localization for Japanese and simplified Chinese.

- **CA Application Delivery Analysis.** CA Application Delivery Analysis is an add-on component that enables administrators to monitor end-to-end application response times in an agentless environment. The service monitors application traffic and automatically establishes baselines from which alerts are derived, based on algorithmically created thresholds. CA Application Delivery Analysis calculates these baselines with awareness of time of day, week, and month, as well as comparing current versus historical performance for the hardware/software combination being monitored. CA Infrastructure Management 2.0 and CA Application Delivery Analysis work together to assist in proactive analysis and triage, as well as give insight into pre- and post-optimization performance levels.

CA Infrastructure Management 1.0

CA Infrastructure Management 1.0 was the prior full-featured network and server monitoring and management suite offered by CA. Designed to handle enterprise-level topologies, the toolset was engineered to support physical, virtual, and cloud-based services using a component-based system which employed discovery, fault isolation, root cause analysis, traffic analysis, and other enterprise-level features.

IN CONCLUSION

Network and system administrators' time is valuable, and every second is critical when a infrastructure issue begins to manifest. A management, alerting, and root cause analysis system that allows staff to quickly locate and troubleshoot a problem is key to providing five-nines uptime SLAs, as well as keeping a business's own staff working at peak efficiency.

In our tests, we found that CA Infrastructure Management 2.0 outperformed the CA Infrastructure Management 1.0 version in tests of ease of use and completion time. The testing demonstrated timing wins for CA Infrastructure Management 2.0 in our four simulated scenarios, by factors of 1.8 to 38.7 times over CA Infrastructure Management 1.0.

When managing large-scale infrastructures, the ability to efficiently triage a large number of devices and network links is essential for maintaining high availability and routine business operations. This is particularly evident when calculating the aggregate time saved when performing the same operations multiple times in a given day. Over time, these aggregate figures can lead to significant savings of time and money for your organization.

APPENDIX A – TESTING METHODOLOGY

Below are four use cases designed to test CA Infrastructure Management version 2.0 versus CA Infrastructure Management version 1.0. We reviewed and tested each use case using a combination of software installed at Principled Technologies and at the CA open access portal demo environment.

We counted clicks inside each respective interface. We counted timings for the complete tasks. We did not count clicks inside Microsoft Excel. Where our engineers felt that the task could more quickly be accomplished in Microsoft Excel and would be realistic, we used Microsoft Excel to supplement the task workflow. In those cases, the Excel work time was included but not the clicks. For Use Case #3, we also timed a manual print approach.

USE CASE #1 – SERVER GROUP EVALUATION

There is a problem at a site. Evaluate this site's top 10 most utilized servers' CPU and RAM utilization for the past hour and past 24 hours – minimum, maximum, and averages in as few clicks as possible. Modify time ranges via each UI to see differing time windows for this data.

CA Infrastructure Management 2.0

Start in Infrastructure Overview tab – 4 clicks, 28 seconds

1. Click Site Name.
2. Click Server Health tab. Hover over each server in the Top CPU Utilization Servers – Gauge/Table and note the minimum, maximum, and average. Hover over each server in the Top Memory Utilization Servers – Gauge/Table and note the minimum, maximum, and average.
3. Click Last hour.
4. Choose 24 hours. Hover over each server in the Top CPU Utilization Servers – Gauge/Table and note the minimum, maximum, and average. Hover over each server in the Top Memory Utilization Servers – Gauge/Table and note the minimum, maximum, and average.

CA Infrastructure Management 1.0

Start in the Enterprise Overview dashboard – 106 total clicks, 259 seconds

(6 clicks + (10 clicks * 10 servers))

1. Click the Site name.
2. Click the By Server sub tab.
3. Click the Last hour drop-down menu.
4. Choose Last 24 hours.
5. In the Top CPU Utilization module, click the Show Top drop-down menu.
6. Select 10.
7. Click the top server.
8. Click the Server Performance sub-tab.
9. Click the down arrow on CPU Utilization Trend module.
10. Click Export to CSV.
11. Click Open to open the CSV file. Copy/paste the data into your prepared spreadsheet; return to the dashboard.
12. Click the down arrow on Memory Utilization Trend module.
13. Click Export to CSV.
14. Click Open to open the CSV file. Copy/paste the data into your prepared spreadsheet; return to the dashboard.

15. Click the Back button in the browser to return to the server view.
16. Click the Back button in the browser to return to the group view.

Repeat steps 7-16 for the remaining servers. Use the prepared spreadsheet to analyze the minimum, maximum, and average.

We customized the Enterprise Overview dashboard to include the Performance by Site module. We customized the Site Server Performance dashboard to include the Top CPU Utilization module.

USE CASE #2 – SERVER GROUP AND INDIVIDUAL HEALTH HISTORY AND CAPACITY PLANNING EXERCISE

Proactively manage server capacity in your data center. Evaluate what servers are deviating from normal usage for the past month. Determine which server is trending up the most in terms of CPU utilization for the past month. View details for that server usage and evaluate past and future trend lines. Evaluate that individual host's CPU and RAM (min, max, average) for the past month, and then modify time ranges for that host's detail page to view the prior quarter's numbers, to verify the capacity growth issues.

CA Infrastructure Management 2.0

Start in Server Capacity Watch Lists dashboard – 6 clicks, 29 seconds

1. Click Last hour.
2. Choose Last 30 days.
3. Click the top deviating server under Top Deviations from Normal – CPU/Memory (Table) – CPU Utilization – Server.
4. Click the System Health tab. Note CPU and RAM utilization gauges and trend lines.
5. Click Last 30 days.
6. Choose Last 3 months. Note CPU and RAM utilization gauges and trend lines and where future trend line falls.

CA Infrastructure Management 1.0

Start in the Enterprise Dashboard screen – 12 clicks, some external Excel work required, 54 seconds

1. Click the Last hour drop-down menu.
2. Choose Last 30 days.
3. Click the top server in the Top Deviation From Norm – Device CPU Util.
4. Click the Server Performance sub tab.
5. Click the Last 30 days drop-down menu.
6. Choose Last 3 months.
7. Click the down arrow on CPU Utilization Trend.
8. Click Export to CSV.
9. Click Open to open the CSV file, then copy/paste the data into your prepared spreadsheet.
10. Click the down arrow on Memory Utilization Trend.
11. Click Export to CSV.
12. Click Open to open the CSV file, then copy/paste the data into your prepared spreadsheet. Note the CPU and RAM utilization trend lines and where the future trend line falls.

We added the Top Deviation From Norm – Device CPU Util module to the Enterprise Dashboard screen.

USE CASE #3 – EVALUATE INDIVIDUAL INTERFACE USAGE PATTERNS ON A ROUTER VIA A HEAT CHART GRAPHIC

Users at a site report a recent network slowdown. They also indicate this typically occurs at the same time of day. Investigate the schedule of the issue using CA Infrastructure Management 2.0 and CA Infrastructure Management 1.0's respective Calendar Heat Chart capabilities. Visually pinpoint the pattern of the slowdown, i.e. if there are normal slowdowns on separate days from 3pm to 4pm.

CA Infrastructure Management 2.0

Start in Interface Capacity dashboard – 2 clicks, 20 seconds

1. Click the top interface (Name column) deviating from normal range in the Top Deviations from Normal (Interface) – Utilization Out – Router module.
2. Click the Calendar Heat Charts tab. Inspect the heat charts, complete with axis labels and gridlines, for predictable patterns.

CA Infrastructure Management 1.0 (Excel)

Start in Routers/Switches Overview dashboard – 5 clicks, external Excel work required, 47 seconds

1. Click the top interface deviating from normal range in the Top Deviation From Norm - Interface Utilization module.
2. Click the arrow next to Utilization in Calendar Heat Chart.
3. Click Export to CSV.
4. Click Open.
5. Run the pre-created macro in Excel using keyboard shortcut to parse the data into a Calendar Heat Chart visual pattern, complete with labels and gridlines, which do not exist in version 1.0. Examine the data to see daily patterns.

We added the Top Deviation From Norm – Interface Utilization module to the Routers/Switches Overview dashboard.

CA Infrastructure Management 1.0 (Manual)

Start in Routers/Switches Overview dashboard – 775 seconds

1. Click the top interface deviating from normal range in the Top Deviation From Norm - Interface Utilization module.
2. Take a screenshot of the Utilization in Calendar Heat Chart.
3. Paste the screenshot to Microsoft Word.
4. Print the Microsoft Word document.
5. Repeat steps 2 through 4 for the Utilization Out Calendar Heat Chart.
6. For each printed Calendar chart, use a straight edge and pencil to add gridlines to the CA Infrastructure Management 1.0 Calendar Heat Chart, allowing for administrator determination of the issue, and to bring it up to the same viewing quality as the CA Infrastructure Management 2.0 calendar heat chart.

USE CASE #4 – EVALUATE TRENDS FOR TOP 5 UTILIZED INTERFACES

Evaluate the trend line activity for the top five utilized interfaces on your enterprise's routers in the past 24 hours in as few clicks as possible, to ensure no dangerous network spikes have occurred over the prior day.

CA Infrastructure Management 2.0

Start in Interface Capacity Watch List dashboard – 2 clicks, 17 seconds

1. Click Last Hour drop down.
2. Click 24 Hours. Hover over each of the top interfaces shown in the two modules titled "Top Interface Utilization Out – Trend/Table" and "Top Interface Utilization In – Trend/Table".

CA Infrastructure Management 1.0

Start in Routers/Switches Overview dashboard – 22 clicks, 74 seconds

(2 clicks + (2 clicks * 5 interfaces IN) + (2 clicks * 5 interfaces OUT))

1. Click the Last Hour drop down.
2. Click 24 Hours.
3. Click the first interface in the Top Utilization Interface Out. View the trend line in the Interface Utilization Out Trend/Baseline Detail module.
4. Click back in the browser.

Repeat steps 3 and 4 for the remaining four interfaces (for utilization IN).

5. Click the first interface in the Top Utilization Interface In. View the trend line in the Interface Utilization In Trend/Baseline Detail module.
6. Click back in the browser.

Repeat steps 5 and 6 for the remaining four interfaces (for utilization OUT).

We added the Top Utilization Interface Out and Top Utilization Interface In modules to the Routers/Switches Overview page.

ABOUT PRINCIPLED TECHNOLOGIES



Principled Technologies, Inc.
1007 Slater Road, Suite 300
Durham, NC, 27703
www.principledtechnologies.com

We provide industry-leading technology assessment and fact-based marketing services. We bring to every assignment extensive experience with and expertise in all aspects of technology testing and analysis, from researching new technologies, to developing new methodologies, to testing with existing and new tools.

When the assessment is complete, we know how to present the results to a broad range of target audiences. We provide our clients with the materials they need, from market-focused data to use in their own collateral to custom sales aids, such as test reports, performance assessments, and white papers. Every document reflects the results of our trusted independent analysis.

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Our founders, Mark L. Van Name and Bill Catchings, have worked together in technology assessment for over 20 years. As journalists, they published over a thousand articles on a wide array of technology subjects. They created and led the Ziff-Davis Benchmark Operation, which developed such industry-standard benchmarks as Ziff Davis Media's Winstone and WebBench. They founded and led eTesting Labs, and after the acquisition of that company by Lionbridge Technologies were the head and CTO of VeriTest.

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