

Employ These Four Best Practices to Reduce Network Maintenance Costs

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Over its useful life, maintenance/support charges for network infrastructure can exceed the price paid for the product itself. To reduce network maintenance costs by 25% annually, I&O sourcing leaders should implement the best practices outlined in this research.

Key Challenges

- The lifetime cost of annual maintenance contracts can often equal or exceed the capital cost of network equipment.
- Services and prices offered by third parties, like authorized resellers and system integrators (SIs), may provide compelling options, but can be cumbersome to review.
- Vendors' different annual support contract option costs can vary widely between product types and vendor support options.
- Considering innovative approaches to reduce costs adds complexity to contracts and network support processes.

Recommendations

- Actively negotiate network infrastructure support contracts to fall within the recommended guidelines in this research, which vary by equipment type.
- Invite authorized third parties to bid on maintenance and support.
- Align annual support contract levels with specific business requirements and emerging device management best practices.
- Opportunistically employ other emerging approaches, like self-sparing and usage-based contracts.

Introduction

Gartner's contract review work with hundreds of enterprise clients reveals that those who follow the four best practices described in this research can reduce annual maintenance expenses by 15% to 25%. Optimizing savings on these contracts is important because, over the typical useful life of modern networking devices, maintenance expenses can exceed the capital purchase price. Useful life is an important consideration during planning and budgeting (see "Know When It's Time to Replace Enterprise Network Equipment").

In order to provide a meaningful baseline, we have analyzed the typical maintenance costs for various types of networking equipment from a variety of representative vendors including Arista Networks, Cisco, Citrix, F5, Hewlett Packard Enterprise (HPE), Juniper Networks, Riverbed and Silver Peak. The calculations are based on the list price of the underlying equipment in order to eliminate the wide discrepancy of product discounting we observe in our client base. We have taken into consideration typical discounting on the maintenance services themselves to provide a realistic target benchmark. Many organizations fail to look at the costs of annual service contracts as a percentage of list price for various types of network equipment.

Different classes of network equipment can have vastly different annual support prices as a percentage of list price. We have provided guidelines for the two most prevalent service levels (four-hour hardware replacement and next business day [NBD]; on-site services are not included in this chart). Use this table to estimate a benchmark range for your annual maintenance charges. For example, if you purchased \$100,000 of WAN routers at a 50% discount, to calculate the recommended annual maintenance expense you would first calculate the list price (\$200,000) and then multiply that by the factor in this table (4.5% to 8% for NBD service levels). In this case, you would expect your annual service expenses for these routers to fall between \$9,000 and \$16,000 per year after discount. To estimate for total spend, all purchases across multiple years in each equipment type must be added together.

Geographic region of network equipment locations also introduces support cost differences. Historically, maintenance costs from hardware vendors have commonly been higher in regions outside of the vendor's home region. These regional differences continue today; Gartner's analysis of hundreds of client contracts reveals maintenance prices outside of a vendor's home region can range from 1.25 to 1.75 times the baseline home region price. Table 1 provides our recommended ranges.

Table 1. Typical Cost of Annual Maintenance per Year

Annual Service Contract as Percent of Product List Price Recommendations			
Network Device Type	Next Business Day	Four-Hour Response	Useful Life (Years)
Campus Access	1% to 5%	1% to 8%	7 to 10
Wireless LAN Access Point (WLAN AP)	2% to 4%	NA	5 to 7
Campus Core	3% to 10%	4% to 15%	5 to 7
Data Center (DC) Fixed Form Factor (FFF)	3% to 8%	4.5% to 10%	4 to 6
DC Modular	3% to 10%	4% to 15%	4 to 6
WAN Router	4.5% to 8%	7% to 10%	5 to 7
Application Delivery Controller (ADC)	13% to 15%	NA	4 to 6
WAN Optimization Controller (WOC)	15% to 16%	22% to 25%	4 to 6
Recommendations exclude on-site services.			

Source: Gartner (April 2016)

Analysis

Negotiate Network Infrastructure Support Contracts

When buying new equipment, many I&O and sourcing leaders focus solely on purchase price and fail to factor in the full lifetime costs of maintenance contracts, which they will pay for three to sometimes more than eight years. Organizations need a pricing ratio analysis to optimize network maintenance spending. There are a number of considerations that will impact the maintenance services pricing ratio analysis. Although the following seven considerations have been factored in the recommendations shown in Table 1, we recommend clients also opportunistically apply each to garner additional savings:

1. **Lifetime warranties** — Some product classes, most commonly workgroup switches and some WLAN APs, can be covered under lifetime warranties. In some cases, this will radically decrease the price of annual maintenance to under 1% of the product's list price. However, in other cases, vendors' lifetime warranties do little to lower annual maintenance costs (see "Reduce LAN Equipment Support Costs With Limited Lifetime Warranties" for more details on how to analyze this further).
2. **New product packaging** — This category includes disaggregated hardware and software offerings, such as Cisco One. This packaging model was announced in 2014, but has only been

seen in client quotes in recent months. Since these disaggregated offerings are somewhat new, we have not separately analyzed the effects on the baseline ratios we show in Table 1. As a starting point, we recommend using the existing benchmark ratios to understand whether more recent pricing options are in line with past practices.

3. **Chassis configuration** — The calculations described previously are for a typically configured chassis that is approximately half full. For data center chassis, this would include redundant supervisor or management modules, and a mix of 10 Gbps and 40 Gbps line cards. Some vendors have a single price for annual maintenance regardless of the number of line cards within the chassis. Other vendors will have separate prices for the chassis and individual line cards. There is significant vendor variability in how chassis pricing is offered. In fact, some vendors offer the single configured price on some chassis types, and then separate line card pricing for other chassis types. The individual line card pricing approach is more equitable, since charges are based on the number of interfaces purchased. With vendors that have a single price for chassis-based product support, take care not to overpay for support for chassis with few line cards installed.
4. **Cloud-managed or bundled service offerings** — Cloud managed solutions (such as those from Cisco Meraki or Aerohive), network subscription services (such as those offered by Brocade) or carrier-managed service offerings combine capital expenditure (capex) and operating expenditure (opex) costs into a bundle. In this case, there is no separate charge to analyze, though the data provided in this research can be used to determine the relative costs of the various components included in a bundled offer.
5. **Regional premium** — Some vendors charge a premium for services delivered outside of their home territory. (These premiums are not included in Table 1.)
6. **Contract size or installed base** — In general, a larger installed base, resulting in larger maintenance contracts, will lower the average price paid per unit. The rationale is that it will cost a vendor less to support bigger customers with a large number of similar devices in their infrastructure. Most vendors have explicit pricing for large deployments of common equipment; however, effectively negotiated discounts should be greater when more equipment is covered under maintenance contracts, especially when there are large deployments of common product types. In order to receive the benefits of the larger installed base, it is important to consolidate maintenance contracts and to ensure new additions are co-terminus with existing contracts.
7. **Contract length** — The percentages shown in Table 1 represent the percentages we recommend paying for a one-year contract. Negotiating a multiyear maintenance agreement often decreases price further, though care must be taken not to lock in service for too long or to have a multiyear agreement that ties you to the incumbent equipment vendor for too long in order to balance vendor choice flexibility. The additional multiyear savings should exceed more than the cost of money to result in a net benefit. The only exception to this is when there is a high probability of support costs increasing for certain equipment types — for example, many vendors increase the cost of support for product families that are nearing end-of-support dates.

Recommendation: Carefully analyze the seven maintenance cost drivers described in this research, and leverage the provided ratios to ensure that total costs fall within the prescribed ranges.

Invite Authorized Third Parties to Bid on Maintenance and Support

Often, enterprises employ third parties such as value-added resellers (VARs) or SIs to support their network infrastructure. These resources are typically utilized to perform network installation, upgrade and day-to-day operations support under time and materials (T&M) or project work agreements. The provider gains valuable familiarity and hands-on experience with an organization's specific network environment. Many are authorized to resell vendor-branded maintenance services at a competitive price. For example, a third party that is also providing statement of work (SOW)-based network support may offer a lower maintenance price than a reseller, who may not provide additional professional service options.

Recommendation: Invite authorized third parties (of vendor maintenance services) to bid, in order to optimize price and competitive leverage.

Align Annual Support Contract Levels With Specific Business Requirements

Once a solid estimate of annual costs (based on Table 1) is established, network managers can further reduce their annual maintenance spend by ensuring they match their service levels with business requirements, which can vary by device type, network architecture, criticality and geography. We observe that:

- Enterprises often erroneously apply the same level of maintenance to all equipment types and locations. For example, remote location infrastructure has a lower impact from outages versus core data center switching, which may be relied upon by all locations.
- Organizations mistakenly pay twice for high availability by paying for on-site replacement for gear that is installed as a fully resilient design and can withstand an outage. Instead, they should optimize contracted service levels to align with their network architecture design resiliency approach.
- Conversely, organizations may expose their networks to undue risk by using limited lifetime warranties when they need more (on-site replacement, 24/7 support or software upgrades).

The difference in price between basic service levels, such as eight hours per day/five days a week (8/5) with NBD hardware replacement coverage to two- or four-hour on-site support, often doubles the maintenance price.

I&O sourcing leaders should be familiar with and assess the performance requirements of different classes of equipment, and not subscribe to service offerings that provide more than is necessary to meet business needs. We also find that the more the networking and procurement teams understand about their support requirements, the more willing vendors are to negotiate on discount and price. Having an accurate inventory of installed equipment, their respective functions and the appropriate level of service required (including no service as an option) will often allow the procurement group to lower the negotiated services contract by an additional 10% to 15%.

Table 2 aligns recommended service levels by equipment type. Some equipment types may shift service levels based on the amount of redundancy built in to the design, the mission-critical nature

of locations or applications running on the infrastructure, as well as the availability of skilled staff to install replacement equipment.

Table 2. Recommended Service Levels by Equipment Category

Service Level	Candidate Network Equipment Types
Self-Sparing	Wireless APs, campus access switches, DC FFF top of rack (ToR) switches
NBD	ADCs, branch office WOCs, campus core components, AP controllers
Four-Hour Hardware Replacement	WAN routers, DC chassis, DC WOCs
On-Site Four-Hour Response	DC core, core routing

Source: Gartner (April 2016)

Once a target cost is established, it becomes much easier to compare contract proposals with targeted costs and to identify possible discrepancies requiring further analysis.

Recommendation: Ensure that business requirements align to maintenance service offers that match the level of criticality of a network device type's role within the overall network design.

Employ Other Emerging Approaches

Other approaches, such as self-sparing for high-volume workgroups or ToR switches, can further reduce absolute spending levels (see "Self-Sparing and Fixed Form Factor Switches Can Help You Get a New Data Center Network"). In addition to using this practice on relatively commoditized workgroup switches and wireless access points, this approach can be applied for newer ToR data center switches, and in large campus networks FFF aggregation and core switches.

Finally, on-demand and subscription pricing for network equipment represent two new opportunities to control both equipment and maintenance costs, as payments can be tied to short-term changes in user requirements. We expect to see an increasing number of offerings available on the market that can benefit organizations with fluctuating user populations, or those reducing the size of their IT requirements as applications and processes are migrated to public cloud offerings.

Recommendation: Actively employ alternatives to traditional vendor-defined options to better manage costs by analyzing specific network support needs to identify opportunities, such as self-sparing and balancing coverage levels to align with business fluctuations.

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Self-Sparing and Fixed Form Factor Switches Can Help You Get a New Data Center Network"

"Reduce LAN Equipment Support Costs With Limited Lifetime Warranties"

"Know When It's Time to Replace Enterprise Network Equipment"

Evidence

The information in this research was derived from over 500 Gartner client inquiries on network vendor maintenance contract and pricing, conducted during 2011 through 2015.

More on This Topic

This is part of an in-depth collection of research. See the collection:

- [How to Optimize Your Network Spending](#)

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