

How to Reduce Network Equipment Maintenance Costs

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Each year, maintenance costs swallow 15% to 25% of total enterprise IT budgets, and network managers must constantly reduce and control these expenses. Gartner has identified four ways to decrease network maintenance and support costs that can be applied to all types of networking equipment.

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Key Challenges

- Selecting the same level of service for all equipment is a common practice; however, it results in wasted and/or suboptimal expenditures.
- Enterprises don't usually focus as heavily on negotiating best prices for support and maintenance contracts as they do on purchasing network equipment.
- Because managing and controlling network maintenance contracts with different providers and expiration dates is difficult, the renewal process is tedious.

Recommendations

- Negotiate initial maintenance prices at the same time you negotiate equipment purchase prices.
- Ensure that your network equipment has the appropriate maintenance service level, based on business risks, type of equipment, age of equipment and the equipment's relative importance to the business.
- Co-terminate and centrally manage your maintenance contracts by using inventory and contract management software tools or a service provider for inventory management services.

- Take advantage of limited lifetime warranties for less critical and more stable parts of your network.

Introduction

Network managers face several challenges in reducing and controlling their operating expenditures (opex), including negotiating support contracts with vendors, choosing the right level of service for network components and managing multiple maintenance contracts with different expiration dates from multiple vendors. Gartner has identified four ways that network managers can reduce their enterprise network support and maintenance costs. These recommendations can be used for all types of physical and logical networking equipment, including routers, switches, application delivery controllers (ADCs) and WAN optimization controllers (WOCs).

Maintenance Options

Several types of support and maintenance options are available for network equipment.

Manufacturer-Branded, Manufacturer-Delivered Support and Maintenance

Some vendors sell this service directly, but most vendors sell it through authorized channel partners. Examples of this type of support and maintenance contract include Cisco SMARTnet, HP Foundation Care and Juniper Networks J-Care. One of the major selling points of this type of support is that customers have direct access to the manufacturer's technical assistance center when they experience problems. This type of support is predominant in North America and is typically used by enterprises with experienced IT staffs.

Authorized Service Provider Partner Branded and Delivered Support and Maintenance

This method of network support is also known as co-delivery or collaborative support services. An authorized service provider provides support to a customer and is officially certified by the manufacturer. The authorized provider is typically an enterprise's first line of support, takes Level 1 and Level 2 calls, and is ultimately accountable for problem resolution. If unable to solve the problem, the authorized provider can escalate it to the manufacturer's support team. A typical range of savings for this type of contract, compared with a manufacturer-branded contract, would be 10% to 30%.

With these contracts, the end-user organization is typically unable to contact the manufacturer's technical assistance center directly. One of the main limitations is that the authorized service provider still has to rely on the manufacturer for advanced support (senior-level technicians, software fixes, patches and updates). Examples of authorized service providers for network equipment are IBM, Dimension Data, NEC and Orange Business Services. This type of support has higher levels of adoption in EMEA, the Asia/Pacific (APAC) region and Latin America.

Independent Service Provider Delivered Support and Maintenance

This is typically known as third-party maintenance (TPM), and is sometimes referred to as unauthorized maintenance. With these contracts, the end-user organization is unable to contact the manufacturer's technical assistance center. This model is typically used for older, legacy network equipment and for hardware support only (not software). This type of support usually comes with a 50% to 60% savings off the net cost for manufacturer-branded support. Two vendors that offer this type of support are Network Hardware Resale (NHR) and Systems Maintenance Services (SMS).

Price is not the only consideration when negotiating maintenance with TPM providers. The quality of support can vary considerably, depending on staff qualification, well-defined escalation processes and specific geographic reach. Concerns from end-user organizations typically include how to access software updates or upgrades, the quality of the support provided and the financial viability of the TPM vendor. Consequently, we recommend that enterprises do their own due diligence.

Self-Support via Hardware Sparing

This option enables enterprises to avoid external maintenance and support costs altogether. In doing this, the organization forgoes the ability to receive updated technical support from one of the above options. This requires on-site personnel to perform the hardware swap and is typically limited to areas of the network that are older, non-mission-critical, commoditized, or have basic and/or repetitive configurations. This approach often yields a more than 80% savings compared with manufacturer-branded support. (This assumes 1% of production hardware is spared and accounts for shipping and opex costs.) However, there is no option to contact technical support for software issues and/or updates. With this approach, network hardware is considered essentially disposable.

Hybrid Approaches

Some organizations employ a hybrid support strategy that uses two or three of these support types to further optimize maintenance expenditure. The decision among approaches is typically based on the location, criticality, type and age of the equipment.

Analysis

Negotiate Initial Maintenance Contract Pricing When You Negotiate Equipment Purchase Prices

Enterprises often apply less diligence to price negotiations for maintenance contracts than they do to the purchase of network equipment. We recommend that enterprises negotiate their support and maintenance contracts when purchasing network equipment. Before selecting network equipment vendors, consider the total cost of ownership (TCO), including full life cycle service contract prices. Once the vendor has been selected and the hardware has been purchased, it will often require support and maintenance; however, at that point, enterprises have little leverage. Furthermore, the negotiated support/maintenance discount can serve as the basis for future negotiations. For

example, if you negotiated a 30% discount for your maintenance, then you can start future negotiations at the same level.

More than 80% of vendor maintenance contracts are one- to three-year deals. Although most vendors provide additional discounts for multiyear commitments, organizations should consider using these incentives to drive better discounts. However, IT leaders must take into account the type of equipment being covered and the cost of money. For example, if you get only an additional 1% additional discount for prepaying three years of maintenance, that is probably not a good use of capital. Conversely, if you're considering a maintenance contract for your data center core switches, a multiyear contract is a likely to be a good fit, because the useful life of this type of equipment is more than six years, so you will want to be covered throughout its minimum useful life (see "Know When It's Time to Replace Enterprise Network Equipment").

Ensure That Network Equipment Has the Appropriate Maintenance Level

One Size Does Not Fit All

Gartner recommends a risk-based approach when applying maintenance and support service levels to networking hardware/software. Not every device requires the same level of maintenance, and some require no maintenance at all. Consider how critical that equipment is to the business, and assess the risk of having a lower level of service. Always consider the type of equipment involved and the relative impact of its failure on the business.

For example, a large manufacturing enterprise would not want to have a critical access switch that provides connectivity to hundreds of servers down for half a day, with the estimated time to repair (ETTR) not scheduled until the next business day. This could stop production at a potentially huge financial cost. For this specific case, the risk of paying for a low-maintenance level is too high.

Similarly, consider a large retail company with 2,000 stores nationwide and workgroup switches serving 50 non-VIP users per site. The network has been stable for more than five years, and local hardware spares are available. In this case, the client could contract for a lower level of service, or possibly no service, to save money on maintenance expenses. It's also possible to reduce maintenance contract levels by having redundant pairs of devices or by having spare parts on-site. Some vendors offer special prices on the purchase of spares, which makes this type of analysis worthwhile, especially for larger installations.

Enterprises must maintain updated network documentation and inventory, and identify the SLAs associated with a device to assess the best type of maintenance service level for each network component. Several network configuration and management tools provide consistent maps of the network (see "Take a Four-Step Network Configuration and Change Management Approach to Stem Disasters").

Pricing Ranges

Gartner typically observes the following price ranges for maintenance compared with hardware/software acquisitions costs:

- For routers and switches, one year of maintenance typically accounts for 5% to 10% of the initial net purchase price.
- For ADCs and WOCs, one year of maintenance typically accounts for 15% to 25% of the initial net purchase price.

These estimates are based on extended (i.e., discounted) pricing, not list pricing.

The variance in these ranges directly correlates to the level of coverage purchased. Table 1 shows the levels of maintenance services generally available and their associated uptick, when compared with a standard offering of eight hours per day/five days a week (8/5) with next business day (NBD) replacement service. (Support and maintenance levels of service vary among vendors and geographies.)

Table 1. Common Maintenance Service Levels and Costs

Support and Maintenance Levels of Service	Typical Premium Above 8/5 NBD
8/5 NBD	—
8/5 NBD on-site	30% to 50%
8/5/four-hour hardware replacement (8/5/4)	40% to 60%
8/5/4 on-site	100% to 120%
24/7/4	60% to 80%
24/7/4 on-site	120% to 140%
24/7/2	100% to 140%
24/7/2 on-site	150% to 180%

Source: Gartner (May 2014)

Co-terminate and Centrally Manage Your Maintenance Contracts

Networks are not static. There's a constant churn of new equipment coming in and old equipment being repurposed and retired. Managing and controlling maintenance contracts can be challenging, especially when dealing with a large variety of network devices on many contracts, with separate vendors and expiration dates.

Vendors usually have their own controls to manage contracts and expiration dates, but tend to use them primarily at contract renewal. Telecom and networking managers typically use rudimentary methods to manage their maintenance contracts. An up-to-date, accurate inventory is crucial to creating a successful maintenance strategy and avoiding problems caused by inadvertent coverage gaps.

To make it easier to manage the renewal process, we recommend that IT managers negotiate with the maintenance providers to co-terminate key contracts. In addition, organizations with networks of more than 1,000 devices should invest in inventory and contract management tools (if their service providers don't offer them) to help them gain better control and develop good network maintenance strategies.

A number of telecom expense management (TEM) platforms provide solid asset and inventory capabilities, along with contract management capabilities. Examples include Tangoe, IBM, Dimension Data, Telesoft, Veremark and MSDL (see "Critical Capabilities for Telecom Expense Management"). In addition, most networking vendors offer proprietary inventory tools embedded in their management platforms. Examples of inventory tools include Cisco Prime, HP Intelligent Management Center, Juniper Space and Extreme Networks NetSight.

Take Advantage of Limited Lifetime Warranties for Less Critical and More Stable Parts of Your Network

Limited lifetime warranties are available for some campus and data center switches. Due to configuration commonality and increased mean time between failures (MTBF), the useful life of this type of equipment has increased by seven to 10 years (see "Know When It's Time to Replace Enterprise Network Equipment"). Historically, most network equipment was designed to have an MTBF of approximately 100,000 hours (roughly 11 years). Failures often occur in power supplies and fans. Looking at new hardware design, fixed-form-factor switches are being designed with increased MTBF — in many cases, 200,000 hours or more.

Although organizations can expect reduced support and maintenance costs as a result of limited lifetime warranties, they should examine the details of these warranties to determine whether they actually reduce their lifetime support and maintenance costs (see "Network Equipment Lifetime Warranties: Enterprise Savings or Vendor Marketing?" [Note: This document has been archived; some of its content may not reflect current conditions.]). For example, some limited lifetime warranties may exclude power supplies and/or fans, and wireless LAN (WLAN) antennas are often excluded from limited WAPs warranties. Enterprises need to carefully examine "the fine print" about what is covered on these often-limited lifetime warranties.

Normally, lifetime warranties include hardware replacement, with shipping arrangements that can vary from NBD to 10 days. Some vendors require customers to return equipment before the vendor replaces it. On the technical support side, vendors' limited warranties usually provide support during weekdays within normal business hours. For some devices, this can suffice. However, it's important to evaluate the impact that a prolonged failure will have on the network. When the equipment is a workgroup switch that affects a few dozen users at most, the risk may be minimal, especially when local spares are available. However, risk escalates rapidly when the failure involves a core switch or a router that can impair major portions of a network. Similarly, a the failure of a device such as an ADC can cause key applications to go down.

When a business depends on network infrastructure for business continuity, lifetime warranties on selected network devices may not suffice. For mission-critical and/or nonresilient network components, we recommend standardizing on higher levels of maintenance and on-site coverage when skilled network engineers are scarce. However, managers must take into consideration

differences across geographies, because some regions may lack higher support and maintenance service levels. In some locations, enterprises may depend on independent service providers for repair or hardware replacement.

Organizations that require 24/7 coverage, or any on-site coverage, will need to purchase an upgraded service package. Examine the details of the program, whether it maps to the support needed to meet your requirements and whether it matches the SLAs required by your business.

Looking Ahead

Several current trends are disrupting the networking equipment market, including software-defined networking, network disaggregation and white-box switching (see "Ending the Confusion About Software-Defined Networking: A Taxonomy"). Although these technologies are at least 18 months away from significant mainstream adoption, these trends can lead to:

- New paradigms in how organizations manage the network hardware life cycle (i.e., disposable, fit-for-purpose hardware)
- New vendor maintenance/support models

This should ultimately lead to new opportunities for reduced and optimized maintenance costs (see "Dell and Cumulus Networks Aim to Take 'BYO Switching' Mainstream").

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"

"Segment Your Network to Save Money and Reduce Vendor Lock-in"

"Don't Waste Money on Year-End Networking Purchases"

"Rightsizing the Data Center Network — The Move Toward Fixed Form Factor Core"

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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