

UNDERSTANDING THE BUSINESS VALUE AND FINANCIAL IMPACT OF SD-WAN

Customer Value Assessments provides rich analysis into common challenges of traditional router-centric networks and a compelling justification for upgrading to a business-driven WAN architecture.

Introduction

HPE Aruba Networking is in the business of building secure, self-driving wide area networks (SD-WANs) for our enterprise customers. We know our SD-WAN solutions provide organizations of all sizes and industries with great value. But how do we measure that value, and demonstrate to customers the purchase will bring a strong Return on Investment (ROI)? The answer is with a Customer Value Assessment — a detailed evaluation of an organization's strategic and operational rationale for investing in a next-generation network like a SD-WAN.

A Customer Value Assessment answers three basic questions:

- Why should I consider investing in SD-WAN?
- Why should I partner with HPE Aruba Networking for SD-WAN?
- Why is now the right time for SD-WAN in my organization?

The assessment includes a full analysis of operational and financial benefits, including return on investment (ROI) calculated by year. This analysis enables decision-makers and decision influencers to determine — based on real data — where and when an investment in SD-WAN makes sound business sense.

Reasons to perform a Customer Value Assessment

When does it make sense to work with HPE Aruba Networking to create a Customer Value Assessment?

- When presenting the business case to C-level executives — the Customer Value Assessment provides compelling evidence of the business value and long-term financial benefits of deploying the [HPE Aruba Networking EdgeConnect SD-WAN](#) solution.
- When budget allocations are needed — the Customer Value Assessment helps network teams justify budget for modernizing the wide area network (WAN) edge.
- When evaluating multiple vendors — the Customer Value Assessment will present in plain language and with substantiated metrics how HPE Aruba Networking is differentiated from other vendors.

The Customer Value Assessment is a complimentary consultancy service that HPE Aruba Networking offers our prospects to help them build the business case for SD-WAN.

Customer Value Assessment — A real-world example

A recent Customer Value Assessment produced for a leading distributor in the food industry showed the dramatic impact of SD-WAN on this company’s business. The following summarizes the identified business issues for this customer, the proposed solution, and projected financial impact of implementing the SD-WAN solution.

Business situation

This customer relied on expensive low bandwidth MPLS WAN circuits, with some links fully saturated as bandwidth needs continued to increase due to business growth. The previous WAN architecture was also complex and difficult to manage, and much of the network equipment was near end of life, which greatly limited agility to adopt cloud platforms and software-as-a-service (SaaS) applications. Moreover, the company lacked network visibility, limiting operational efficiency in resolving issues.

How HPE Aruba Networking helps

The HPE Aruba Networking EdgeConnect SD-WAN edge platform will provide the customer with the flexibility to replace MPLS with lower- cost, higher-throughput DIA or broadband connectivity and actively uses all available links, increasing available bandwidth and improving application performance. The HPE Aruba Networking

EdgeConnect platform will also simplify the WAN edge, improving operational efficiency while enabling greater agility to break out locally to SaaS applications and public cloud platforms. In addition, granular analytics and heat maps will enable a tiered support structure and reduce the time and cost of servicing tickets.

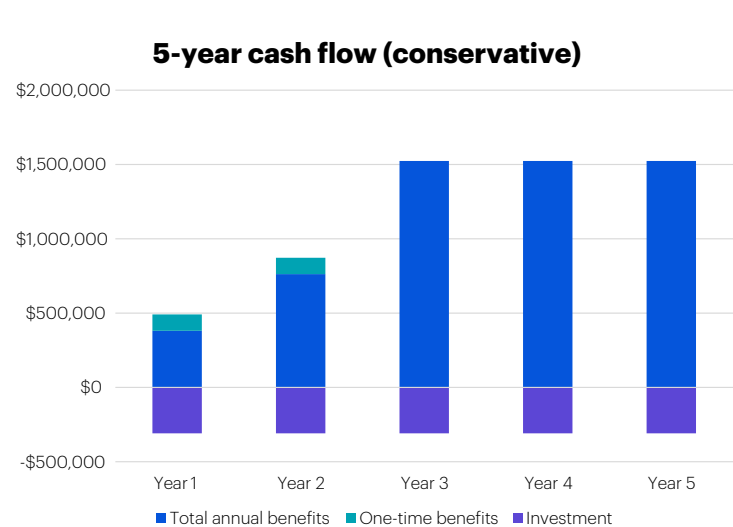
Financial and operational impact delivered by HPE Aruba Networking

By deploying the HPE Aruba Networking EdgeConnect platform, the Customer Value Assessment projected financial benefits of \$1.5 million per year, plus another \$221,000 in one-time benefits. The projected five-year net present value (NPV) was calculated to be \$3.4 million with a payback of 8 months, and a three-month cost of delay of \$172,000 (\$57,000 per month of lost opportunity cost of not adopting the solution).

The three main value drivers impacted by the HPE Aruba Networking solution were:

- Reduction in network transport costs by adopting consumer broadband over MPLS
- Reduction in hardware costs via WAN simplification
- Reduction in IT network admin costs through fewer tickets and less firefighting

5-year ROI (conservative)



3-month cost of delay is calculated by multiplying per month project’s NPV (Net Present Value) by 3

Figure 1. 5-year cash flow (conservative)

All values in local currency (\$)

Financial metric	Value
Net Present Value (NPV)	\$3.4M
Modified Internal Rate of Return (MIRR)	Zero net investment
Payback period (months)	8
3 months cost of delay	\$172.1K
Return on Investment (ROI)	267%

Benefit assumptions

- Benefits ramp up to 100% over 3 years at various rates using conservative estimates
- WACC (%): 10%
- 5-year cash flow analysis

The Customer Value Assessment also detailed how the HPE Aruba Networking EdgeConnect platform could assure this food industry distributor of delivering predictable performance over any link with reliable packet delivery. In fact, advanced features like forward error correction (FEC) detect and correct errors in data transmission without the need for retransmission ensuring a high quality of experience over broadband that's as good as MPLS.

One of the key advantages of the HPE Aruba Networking EdgeConnect platform for this customer, and any large enterprise, is that it provides SD-WAN, advanced routing features with BGP, OSPF, a stateful zone based firewall and optional WAN optimization — all in a single, centrally managed unified WAN edge platform.

These advanced features bring operational advantages such as performance consistency to meet application service level agreements (SLAs) and simplified management with automation to define, provision, and orchestrate business-driven application policies. This food industry distributor also benefits from a self-healing network where all available paths are constantly monitored to intelligently steer traffic dynamically across the best path, proactively addressing potential congestion and eliminating help desk tickets.

Ultimately, the Customer Value Assessment summarized for this customer how the HPE Aruba Networking SD-WAN transforms enterprises with a business-first networking model and frees companies from the constraints of a router-centric approach.

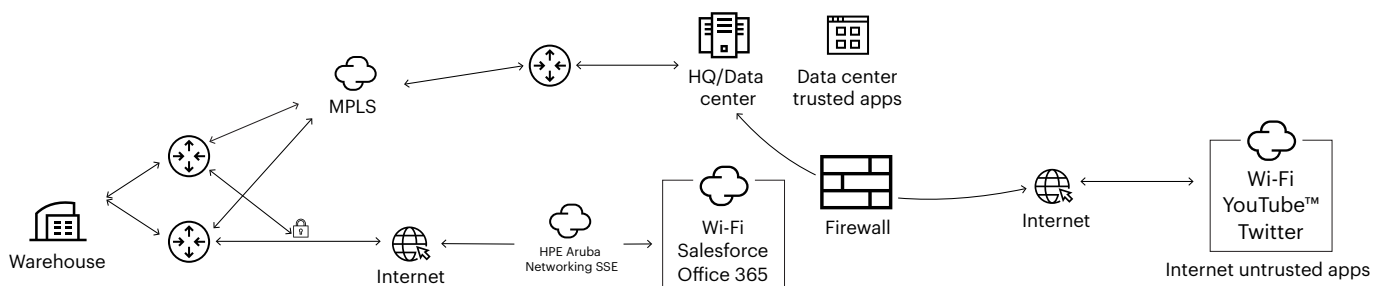


Figure 2. Router-centric MPLS network

Food industry case example — A deeper dive

This food distribution company had a conventional, router-centric WAN architecture, using MPLS as its primary links with manual failover to a dynamic multipoint virtual private network (DMVPN) backup. This network provided connectivity from the company's warehouses to a central data center, and out to SaaS applications and the internet (Figure 2).

On the surface, the company's network appears to be perfectly suitable. However, what would happen in the event of an MPLS outage on any one of the circuits? The legacy network had no resiliency or automated failover built-in, so in the event of a circuit cut or router failure most users in branch locations would be unable to access the company's business applications. This would quickly lead to lost productivity, and potentially, the inability to fulfill customer orders. Yet, building in resiliency by adding more circuits to a router-centric WAN only increases complexity and administrative overhead. Plus, it adds significant cost to an already expensive service.

Like many companies today, this customer is also moving workloads into public platform-as-a-service (PaaS) environments and adopting more SaaS applications. A traditional, router-centric WAN is simply not designed for these modern trends. Therefore, this company required a network with much more agility and resiliency, less complexity, and greater throughput to increase application performance and deliver a consistent, high-quality user experience.

Addressing business issues with SD-WAN enablers

The HPE Aruba Networking Customer Value Assessment broke down the company's business issues into six key areas, mapped to SD-WAN enablers that would address the issues in each area. Table 1 summarizes this analysis.

Table 1. Business issues and SD-WAN enablers

Business area	Issues	Enablers
Circuit costs	Dependent on MPLS at > 6x the cost of broadband	SD-WAN that meets performance SLAs on consumer broadband
Architecture	Complexity of multiple devices for routing, security, WAN Opt., etc.	Single edge appliance unifies SD-WAN, routing, firewall, and WAN Opt.
Automation and agility	60–90 days to deliver circuits; no proactive issue resolution; high MTTR for network troubleshooting	Zero touch provisioning; self-healing network; single dashboard to enable tiered support
Visibility	Limited visibility causes reactive vs. proactive management; unable to right-size bandwidth	Robust tools to gain real-time view of bandwidth utilization and application performance
Cloud	Network designed for on-premises applications; latency issues accessing PaaS and SaaS	SD-WAN architecture delivers consistent application performance on-premises and in cloud
Reliability	Fair level of carrier diversity but at a high premium	Broad internet diversity at lower cost

Reducing MPLS dependency and costs

MPLS circuit costs were increasing as the company added links to achieve redundancy, which pushed the cost to greater than six times the cost per Mbps of that for commercial broadband.

HPE Aruba Networking EdgeConnect SD-WAN will enable replacement of MPLS with lower cost broadband connectivity, whether site-by-site or using a hybrid WAN approach that leverages both MPLS and broadband internet connectivity.

HPE Aruba Networking SD-WAN optimizes the performance of WANs by enabling secure connectivity across all geographic locations with better agility and reliability. This allows enterprises to maximize available bandwidth for mission-critical applications using techniques such as intelligent traffic steering across optimal paths, create business intent policies, to reduce latency and increase application performance.

Simplifying the WAN architecture

The company's router-centric architecture was expensive and complex, requiring multiple devices and extensive integration. Complexity matters, the legacy network hardware was approaching end of life, and in some cases, was no longer supported. This aging infrastructure was responsible for many of the network issues, including inefficient application management and provisioning, and difficulty maintaining security and policy enforcement across all applications.

HPE Aruba Networking addresses these challenges with the HPE Aruba Networking EdgeConnect SD-WAN edge platform, designed as one single solution, the HPE Aruba Networking EdgeConnect gateway delivers cybersecurity, application visibility, WAN optimization and control in one platform.

The EdgeConnect solution Integrates enterprise-grade cybersecurity features such as adaptive DDoS, IDS/IPS to detect and mitigate unpredictable threats for business continuity.

HPE Aruba Networking SD-WAN can be combined with HPE Aruba Networking SSE for unified SASE or with a broad ecosystem of SSE partners such as Zscaler, Netskope, Palo Alto Networks, to automate orchestration for cloud-based next-generation security services and additional Layer 7 traffic inspection.

Enabling network automation

Due to a lack of tools, the customer had no tier 1 support to do simple triage. Consequently, network engineers (tier 3 support) were spending about 40 percent of their time on ticket handling. Standing up new sites was also slow, requiring about two weeks of dedicated engineering time. Limited visibility to overall network health also caused a reactive rather than proactive approach to management, with no automation to preventively resolve issues and avoid tickets. This resulted in a higher-than-necessary meantime to repair (MTTR) for network issues. Moreover, poor visibility made it difficult for the customer to determine if bandwidth was right sized according to each site's peak and average utilization.

In contrast, HPE Aruba Networking provides a single management interface with HPE Aruba Networking Orchestrator, enabling global application visibility, real-time and historical reporting, WAN utilization and application performance monitoring, and QoS policy creation and management. True zero touch provisioning from HPE Aruba Networking enables the customer to stand up sites faster with no need for technical staff on-site. The customer can use HPE Aruba Networking Orchestrator to build a fully self-healing network that constantly monitors all available paths and dynamically steers traffic, proactively eliminating tickets. In addition, the intuitive interface with auto-populated dashboards enables lower-skilled resources to perform simple checks and troubleshooting that previously required a more skilled engineer to perform manually, helping to reduce MTTR.

Modernizing the network for assured performance in the cloud

The food industry company's previous network was designed for applications and services hosted on-premises in its enterprise data center. Circuit failover was disruptive and affected user productivity and revenue streams. The company had a fair amount of carrier diversity, but at a significant cost premium. With ongoing adoption of PaaS and SaaS, application performance would further suffer due to the high latency of backhauling cloud-destined traffic through its data center.

Moving to a business-driven HPE Aruba Networking SD-WAN, the customer gained a highly available WAN architecture with tunnel bonding and automated, sub-millisecond failover for high network reliability and assured application performance on-premises and in the cloud. HPE Aruba Networking further assures high application performance by automatically detecting poor link performance and steering specific types of application traffic to optimal paths. With SD-WAN, the customer also has much greater diversity of internet providers, providing more resilience and flexibility.

HPE Aruba Networking SD-WAN solution

An SD-WAN from HPE Aruba Networking enables the food industry company to achieve more resilient, higher-performing, and lower-cost access to trusted corporate applications than the previous router-centric WAN. It also makes accessing SaaS applications and PaaS environments much more efficient.

To build this SD-WAN, the customer first deployed the HPE Aruba Networking Orchestrator and HPE Aruba Networking EdgeConnect SD-WAN appliances. The HPE Aruba Networking EdgeConnect appliances can be deployed to completely replace traditional and legacy edge routers. The ability for HPE Aruba Networking EdgeConnect to support a variety of flexible deployment configurations is an example of the product's key differentiator for HPE Aruba Networking.

With the appliances deployed and connected to the network, the HPE Aruba Networking Orchestrator automatically builds tunnels and pushes out pre-configured policies to the remote HPE Aruba Networking EdgeConnect appliances. The company's trusted business applications, such as voice, video, and ERP traffic, traverse the MPLS link, while HPE Aruba Networking EdgeConnect enables local breakout directly to the internet. Deploying a virtual HPE Aruba Networking EdgeConnect appliance in a cloud-hosted environment such as Amazon Web Services (AWS) or Microsoft's Azure network, further extends the SD-WAN to thousands of SaaS applications, thus, improving performance and control over that traffic.

Built-in resiliency and automated failover

Unlike the company's previous network, the HPE Aruba Networking SD-WAN provides built-in network resiliency by enabling application traffic to traverse both the MPLS and broadband links simultaneously, and automatically failover from one to the other in less than a millisecond should one of the underlay links experience congestion or go down. To provide an additional level of resiliency, a low orbit satellite link could also be added to the mix as another bandwidth option. HPE Aruba Networking Orchestrator path policies can be configured to use the LTE network during an outage (Figure 2).

With the LTE option, during an outage, HPE Aruba Networking EdgeConnect will seamlessly re-route traffic to the LTE path and the users stay connected. Since the re-routing happens in less than a millisecond, it's likely the end users will be completely unaware that a link outage has even occurred. This kind of configuration and real-time re-routing of traffic would have been very complex to configure and very expensive to implement in the legacy WAN. But with the HPE Aruba Networking SD-WAN it is fast, easy, and economical.

Return on investment

In addition to detailing the operational benefits achievable with the HPE Aruba Networking SD-WAN, the Customer Value Assessment also uncovered dramatic financial benefits for this food industry company. As highlighted in the summary early in this document, the company should expect, as a conservative estimate, \$1.5 million in annual savings by adopting the proposed HPE Aruba Networking SD-WAN solution. Upside savings could be closer to \$3.5 million annually.

These numbers come from extensive research, using actual circuit costs from the customer, known costs from industry vendors, and information from the HPE Aruba Networking knowledgebase. In every Customer Value Assessment, the stakeholders are presented with all sources of data and assumptions so they can provide their own input and adjust the financial impact as necessary. This provides assurance to all parties that the financial figures are well substantiated and realistic.

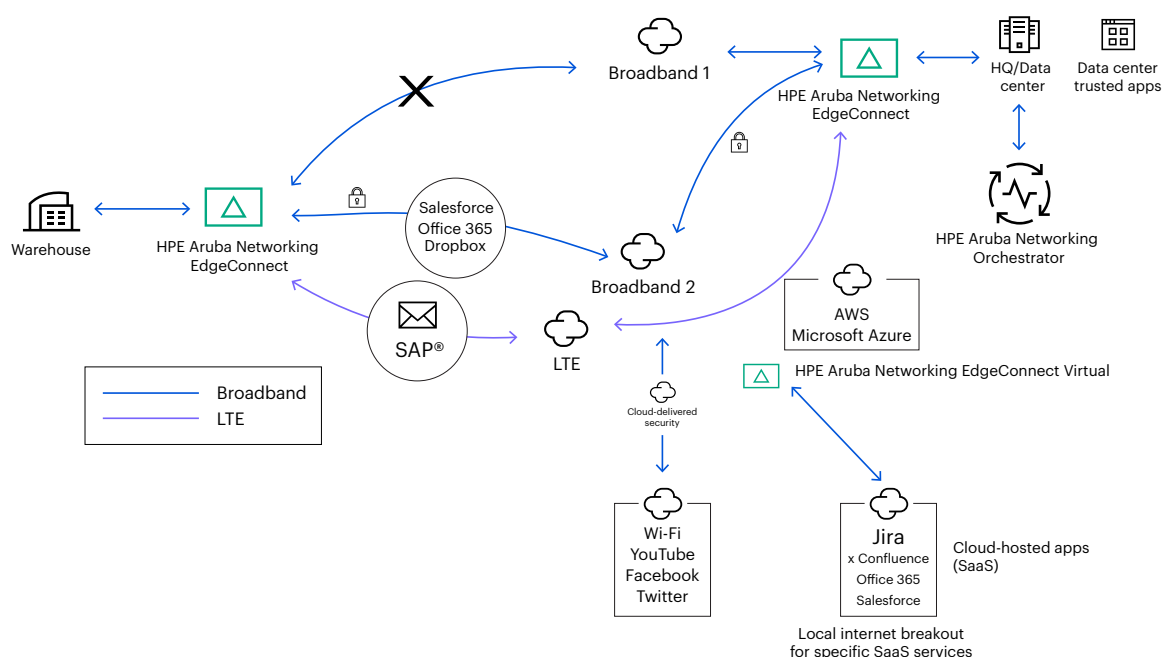


Figure 3. Built-in network resiliency

Table 2 provides an overview of the key value drivers for achieving the projected financial savings, including conservative and target estimates for potential improvement and value.

It's important to factor in that the HPE Aruba Networking SD-WAN solution for this customer not only reduced network transport, equipment, and network admin costs, but did so while also increasing available bandwidth substantially.

Conclusion

SD-WAN from HPE Aruba Networking provides compelling operational and financial benefits over traditional router-centric WAN architectures. The Customer Value Assessment performed for this representative customer in the food industry illustrates this point with clear, measurable fact-based evidence.

Additional findings from the Customer Value Assessment also point to strategic and differentiated benefits of the SD-WAN, which can be relevant to nearly any organization, not just the subject company of this Customer Value Assessment. For example, some strategic benefits include:

- **Increased carrier diversity** — Due to greater diversity among broadband providers compared to MPLS carriers, and because more broadband links can be added at lower cost than MPLS
- **Reduced coordination costs** — HPE Aruba Networking facilitates easier communication and collaboration across multiple teams within an organization
- **Improved productivity** — Less network downtime means end users can stay focused on their tasks without unexpected disruption and distraction

Table 2. Business value drivers and projected benefits of SD-WAN

Value driver	Baseline	Improvement factor	Savings range	Assumptions
Reduction in network transportation costs with EdgeConnect SD-WAN (standard)	\$1M in circuit spend per year	54%–95%	\$545K–\$958K	Default Estimates: No backup circuit requirement per site and assuming one 20 Mbps MPLS primary circuit requirement per site and \$1,681/month is the cost for 20 Mbps MPLS primary circuit based on global benchmark prices
Reduction in cost of downtime (business impact)	12–36 hours of downtime per year	31%–38%	\$331K–\$1.2M	31% reduction in downtime and its associated costs to the business
Accelerated site opening	2.5 new sites opened per year	80%–90%	\$216K–\$324K	15% revenue is generated at new vs. existing site
Reduction in cost of downtime (user productivity)	12 downtime hours per year	31%–38%	\$186K–\$684K	\$25 is the average FTE cost per hour
Reduction in self-managed router costs	50 routers	100%	\$140K–\$140K	Avoid the router OpEx costs of \$2,809 associated with upgrading or maintaining legacy WAN routers
Improved IT network FTE productivity with network automation	3 networking FTE's	16%–32%	\$49K–\$95K	\$50 is the cost per hour for networking professionals
Reduction in firewall costs	50 firewalls	100%	\$17K–\$19K	Avoid the firewall OpEx costs of \$348 associated with upgrading or maintaining legacy WAN firewalls
Reduction in cost associated with WAN Optimization	5 WAN optimization appliances	100%	\$15K–\$15K	Avoid the WAN Op OpEx costs of \$3,078 associated with upgrading or maintaining legacy WAN Op appliances
Reduction in cost associated with WAN Optimization	5 WAN optimization appliances	100%	\$86K–\$86K	Avoid the one-time hardware costs of \$17,100 associated with upgrading or maintaining legacy WAN Op appliances
Reduction in firewall costs	50 firewalls	100%	\$14K–\$15K	Avoid the one-time hardware costs of \$288 associated with upgrading or maintaining legacy WAN firewalls

Table 3. Reduction in network transportation costs with EdgeConnect SD-WAN (standard)

Reduction in network transportation costs with EdgeConnect SD-WAN (standard)	Conservative estimate	Upside estimate	Source
(A) Number of branch sites	50	50	Total 50 branch sites
(B) Number of primary circuits	50	50	Assuming one 20 Mbps MPLS primary circuit requirement per site
(C) Number of secondary/tertiary circuits	0	0	Default estimates: No backup circuit requirement per site
(D) Monthly cost for primary circuit across all sites	\$84,048	\$84,048	\$1,681/month is the cost for 20 Mbps MPLS primary circuit based on global benchmark prices
(E) Average reduction in circuit costs as a percentage (primary)	54%	95%	Considering, 54% & 95% savings for primary circuit for conservative and upside scenario, based on HPE Aruba Networking EdgeConnect SD-WAN Solution
(F) Monthly cost for backup circuit across all sites	\$0	0%	
(G) Average reduction in circuit costs as a percentage (secondary)	64%	95%	Considering, 64% & 95% savings for secondary circuit for conservative and upside scenario based on HPE Aruba Networking EdgeConnect SD-WAN solution
Expected annual benefits	\$544,631	\$958,147	Calculations: (D * E * 12) + (F * G * 12)

Table 4. Benefit ramp

	Year 1	Year 2	Year 3	Year 4	Year 5
Annual benefit realization	25%	50%	100%	100%	100%

In addition, HPE Aruba Networking brings additional benefits that other SD-WAN vendors cannot match. These include:

- **Complimentary training** — HPE Aruba Networking invests in our customers' success by providing SD-WAN training and certification, absorbing the costs, valued at \$64,000–\$72,000 (the cost for training 8 people for two days at \$4,000–\$4,500 per person per day)
- **Lower implementation costs** — Labor costs to implement the HPE Aruba Networking SD-WAN are \$45,000–\$58,000 less compared to competitors
- **On-demand WAN optimization** — The HPE Aruba Networking EdgeConnect SD-WAN edge platform includes the optional [HPE Aruba Networking Boost](#) WAN optimization performance pack as part of the unified solution, lowering demand on the network by more than 30 percent compared to vendors requiring a separate device

With flexible provisioning, secure connectivity, multi-path control, reliable performance, and centralized orchestration — all with an attractive return on investment — HPE Aruba Networking offers the most complete and economical SD-WAN solutions on the market today.

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