

# SD WAN circuit cost-reduction illustration

## INTRODUCTION

We're often asked how much money we can save with SD WAN, often due to bold claims for huge savings to be made moving international MPLS traffic to the internet. We have always maintained that for UK focussed networks these particular benefits don't arise because MPLS and Internet are similarly-priced. However, that does not mean that there are not savings to be made.

In our [Guide to SD WAN Benefits](#), we highlighted a number of benefits that SD WAN can bring. Many of these benefits are performance related. However, a number of them imply the ability to reduce costs. While some can be hard to quantify, those that relate to circuit cost reductions are easier to illustrate.

This illustration shows two circuit cost reductions that you may be able to seek after moving to SD WAN. We have focussed on two areas for cost reduction:

- Those that derive from the ability to reduce circuit bandwidths
- Those that derive from the ability to remove CoS

We have specifically avoided the movement of traffic from MPLS to Internet, given our point that UK focussed networks do not experience the same price differential as international networks.

If you haven't already seen it, we suggest that you read our [Guide to SD WAN Benefits](#) first.

## COST REDUCTIONS DERIVING FROM BETTER PERFORMANCE FROM TWIN CIRCUITS USING SD WAN

In the Guide to SD WAN Benefits, we saw that for sites with more than one circuit, SD WAN makes it easier to use both of them actively (rather than one active and one passive). With both circuits sharing the load, better performance can be achieved.

The flip side is that we could reduce the circuit speeds of both circuits to achieve the same performance at reduced cost.

How much could this save?

Well, in the UK a typical scenario for a headquarters or a major site would be to have a diverse MPLS connection, in which the backup circuit is the same bandwidth as the active circuit. If we made both of these circuits active, we should be able to halve the circuit speed while retaining similar performance.

Let's look at some circuit prices for resilient circuits at typical speeds to see what the effect of halving the circuit speed would be.

## MPLS UK circuits

Circuit prices in the UK often vary by distance to the nearest Point of Presence (PoP), so to establish a definitive cost saving we would need to quote a specific location. However, we can get a good idea from some representative examples. Here are three that we found using real circuits from a premium carrier. They're all for a wires-only network with the saving derived from halving the circuit speed.

Circuit Type	Saving per annum
A resilient "Flex <u>Local</u> Secure+" 30 Mbps circuit on a 100 Mbps bearer.	£2,385
A resilient "Flex Secure+" 60 Mbps circuit on a 100 Mbps bearer	£1,763
A resilient "Flex <u>Local</u> Secure+" 100 Mbps circuit on a 100 Mbps bearer	£1,956

# VPLS UK circuits

Let’s also consider a resilient VPLS circuit so that we can explore combined cost benefits later in this text. Here is the cost saving for halving the circuit speed from 40 to 20 Mbps.

Circuit Type	Saving per annum
A 40 Mbps Resilient Fibre circuit (RA02 Diverse Plus)	£2,707

For non-core offices, it is common to have a primary MPLS circuit with a secondary internet circuit such as

ADSL. Here the same principle applies, although the actual cost savings would usually be smaller. If the secondary circuit is ADSL then the savings are minimal.

## What about International circuits?

If we look at international examples and stick to MPLS with a secondary circuit initially the same speed as the primary circuit, we find a wide range of savings when halving the bandwidth.

For example, we found:

Circuit Type	Saving per annum
A pair of 60 Mbps circuits on 100 Mbps bearers	£534
A pair of 40 Mbps circuits on 100 Mbps bearers	£2,145
A pair of 200 Mbps circuits on 1 Gbps bearers	£16,8832

Of course, if one halved the bandwidth and switched one of the MPLS circuits to Internet, then the savings could be even higher. This is because international

internet circuits are generally (but not universally) materially cheaper than MPLS. Again, this differential does not hold for UK circuits.

These savings should be considered alongside other savings and benefits (as well as costs), of course. For the resilient and international sites, you may well cover the increased SD WAN hardware and licence costs on these savings alone.

## COST REDUCTIONS DUE TO THE REMOVAL OF COS ON MPLS AND VPLS NETWORKS

As we saw in our Guide to SD WAN benefits, SD WAN uses path conditioning and dynamic application routing, which allows you to avoid buying CoS from your Carrier.

Let's consider a traditional VPLS WAN with several sites, at each of which you have reserved 25% of the bandwidth for prioritising performance sensitive apps such as voice and video. Here are the savings you could expect to make by removing the CoS from these circuits:

Circuit Type	Saving per annum
A 10 Mbps EFM circuit – 100% CoS*	£550
A 40 Mbps Fibre circuit (100 Mbps bearer) – 25% CoS	£491
A 20 Mbps Resilient Fibre circuit (RA02 Diverse Plus) – 25% CoS	£681
A 40 Mbps Resilient Fibre circuit (RA02 Diverse Plus) – 25% CoS	£981

\*For the EFM circuit we actually chose 100% CoS, which might be representative if you’re using the EFM to backup a Fibre circuit.

# COMBINING THESE COST SAVINGS

In reality we might expect to seek both the cost saving from reducing bandwidth and that from removing CoS. Let’s look at a VPLS example to see how that might look.

Circuit Type	Saving Type	Saving per annum
<b>A 40 Mbps Resilient Fibre circuit (RA02 Diverse Plus)</b>	Halving the Bandwidth	£2,707
	Removing CoS	£981
<b>Total</b>		<b>£3,688</b>

## IN SUMMARY

We can see from these illustrations that there are savings to be had purely from circuit cost reductions. However, bear in mind that SD WAN brings costs of its own.

- Firstly, SD WAN is an overlay that you will be running on top of an underlay.
- Secondly, the combination of SD WAN hardware and licences is usually more expensive than a traditional router.

This means that your case for SD WAN will have contributions both to costs and savings, alongside the impact of the performance and management benefits that we discussed in our [Guide to SD WAN benefits](#).

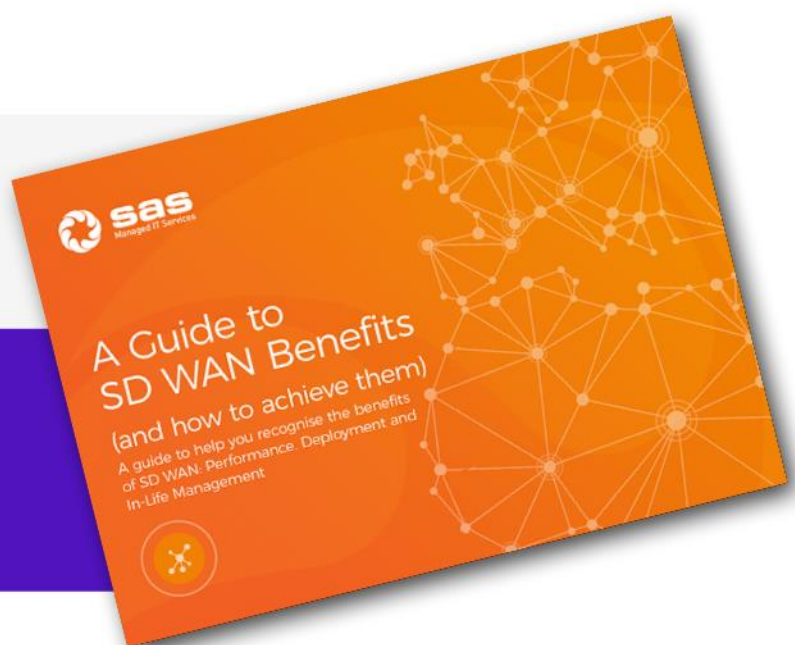
Incidentally, we're seeing change in the way Cisco charges for software on devices like switches, and we anticipate a change to routers in the future. This may reduce the differential between traditional WAN routers and SD WAN, making SD WAN more attractive.

Ultimately, you'll need to look at the detailed costs and cost savings for your own particular case. We have modelled the cost implications for items such as hardware, licensing and circuit changes so we can help you to explore that if you would like. Please get in touch to ask.

Or for more information on SD WAN, please see our [Guide to SD WAN](#).

You can download the full guide here >>

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Or if you'd like to talk to us about SD WAN, you can [book a meeting here >>](#)