



SHARED SERVICES CANADA

Request for Proposal for Wide-Area Network (WAN) Provider (P) and Provider Edge (PE) router “Solution”

Solicitation No.	BPM016552	Date	July 11, 2022
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Closing Date and Time	Date and Time August 12, 2022 @ 3:00 PM / 1500 h (referred to in this solicitation as “ Solicitation Closing ”)	
Time Zone	Eastern Daylight Time (EST)	
Destination of Goods/Services	Canada	
Email Address for Submitting your Bid by the Closing Date	Oliver.Librada@ssc-spc.gc.ca	



**Request for Proposal
for
Wide-Area Network (WAN) Provider (P) and Provider Edge (PE) router “Solution”
AMENDMENT 006**

This amendment has been raised to:

- Amend Annex C of the solicitation
- Answer questions posed by potential respondents

****Please see revised Annex C uploaded as separate attachment****

Question 001:

In Annex B, SSC has asked for pricing for Line Cards in Section 2.1a-2.1d and 3.1a-3.1d. These should be removed since in the SoR Annex C, the associated technical requirement for Line Cards has been eliminated from the tender (which makes sense since Line Cards have fallen out of favour in the current generation of routers).

Answer 001:

SSC will not remove the Annex B section for expansion line cards. Should a bidder wish to propose a product meeting all port requirements (including expansion capacity requirements) in a fixed form factor device, the applicable sections in Annex B can be left blank.

Question 002:

We'd like to request a 3-4 week extension to the tender. Although SSC issued a draft copy of the tender, OEM's still need to go through financial approvals internally, set up partnerships with our resellers and update technical compliance documentation with any new products and to accommodate changes introduced by SSC since the release of the draft.

Answer 002:

Due to industry supply chain challenges, SSC does not wish to extend the solicitation any longer than necessary. SSC will extend the solicitation to close on July 29, 2022. Should a further extension be required as the closing date approaches, SSC invites to potential bidder to submit a request at that time.

Question 003:

Due to the vacation season and our OEM has introduced new products that have forced us to re-do the supporting documents for the SoR, we would like to request for an extension. Would Canada please extend the closing date to August 30th, 2022?

Answer 003:

See Amendment 001, Answer to Question 002.

Question 4

Reference: 4.63 - Must propose products from the same Original Equipment Manufacturer for all configurations

Question: Can a Bidder propose “passive” components from third parties (i.e. QSA adapters, breakout cables, brackets, cable management, etc.)?

**Answer 4:**

If the bidder certifies that the components are fully compatible with the proposed platform and won't limit or prevent SSC from obtaining technical support from the OEM, passive components from third parties can be proposed. Transceivers are not considered passive components in this context.

Question 5

Reference: Requirement 8.2 - Must be compatible with ports specified in requirements 1.1, 2.2 and 3.2; and Requirement 9.2 - Must be compatible with ports specified in requirements 1.1, 2.2 and 3.2.

Question: Requirements 8.2 and 9.2 are mandating the support of 10GBase-LR and 10GBase-SR in the ports specified in Requirement 1.1, which is for the WAN P Router Configuration where no 10GbE port is required. As such, we respectfully ask SSC to correct Requirements 8.2 and 9.2 to read: "Must be compatible with ports specified in requirements 2.2 and 3.2".

Answer 5:

SSC has amended requirement 8.2 and 9.2. Please see revised Annex C.

Question 6

Reference: 2.26 - Must have In Service Software Upgrade (ISSU) or equivalent functionality

Question: We respectfully ask that SSC remove this requirement as industry best practice is to run two PE routers in each site for "Dual Homing".

Answer 6:

In many cases, only one link between CE and PE routers is in place due to limited dark fibre availability and no path diversity. As such, the ability to upgrade PE router firmware without traffic interruption is required. SSC will not remove requirement 2.26.

Question 7

Reference: 3.26 - Must have In Service Software Upgrade (ISSU) or equivalent functionality

Question: We ask that SSC remove this requirement as industry best practice is to run two PE routers in each site for "Dual Homing".

Answer 7:

In many cases, only one link between CE and PE routers is in place due to limited dark fibre availability and no path diversity. As such, the ability to upgrade PE router firmware without traffic interruption is required. SSC will not remove requirement 3.26.

Question 8

Reference: 2.15 - Must have IKEv2, pre-shared key and PKI-based device authentication functionality

Question: There are no other IPsec requirements and/or specifications in this RFP as such, we ask that SSC remove Requirement 2.15.

Answer 8:

SSC has removed requirement 2.15 and 3.15. Please see revised Annex C.

**Question 9**

Reference: Requirement 1.6 - Must have 100GbE breakout into 10GbE transceiver ports...

Question: We ask that SSC remove this requirement as this capability is vendor specific and ensures that only one OEM can meet Requirement 1.6 which will ensure only one technically compliant OEM bid is received by SSC for this solicitation. We respectfully ask that SSC change Requirement 1.6 to allow 40GbE breakout into 4 x 10GbE, which is an industry standard.

Answer:

SSC has amended requirement 1.6 to include both 40GbE and 100GbE breakout. Please see revised Annex C.

Question 10

Reference: 1.2 Summary, (d), iv- that the initial installation and deployment of the WAN P and PE Solution does not fulfill SSC and Client requirements, Canada reserves the right to not proceed with the acquisition of the remaining components of the proposed Solution as detailed in the Contract. Canada also reserves the right to terminate the Contract and enter into a Contract with the Bidder whose proposal was evaluated to be the next best.

Question: Can SSC advise which requirements in the solicitation are "SSC Requirements" and which requirements are "Client Requirements"? Are both sets of requirements (SSC and Client) the same? Further, can SSC confirm that all SSC and Client requirements are fully documented within this solicitation in order for bidders to assess their legal risk?

Answer 10:

The technical requirements in Annex C and the capabilities that are part of the testing plan in Annex D represents SSC's and its clients' requirements for P and PE routers.

Question 11:

Can SSC please advise under what competitive solicitation the in-place P and PE routers were procured?

Answer 11:

The inquiry is not related to the current solicitation.

Question 12:

With respect to the test plan in Annex D, can SSC advise what OEM and models are the in-place CE and PE Routers with which the Bidders products will have to prove interoperability with?

Answer 12:

Existing CE and PE routers are from Cisco Systems. The platforms that will be used for testing purposes will be ASR 1000 and ASR 9000 series devices.

Question 13

Can SSC confirm what date and time is the deadline to ask questions for this solicitation?

Answer 13:

As per Buy and Sell posting description

Deadline for Enquiries: July 24, 2022 (3:00 PM/1500) Eastern Daylight Time (EDT) (11:00 AM) Eastern Daylight Time (EDT). **Enquiries received after that time may not be answered.**

**Question 14**

Reference: Annex B - Items 2.1a, 2.1b, 2.1c, 2.1d, 3.1a, 3.1b, 3.1c, 3.1d

Question: Can SSC confirm that these “Line Card Types” correspond to the Port requirements in Requirements 2.3.1, 2.3.2, 2.3.3, 3.3.1, 3.3.2, and 3.3.3 respectfully?

Answer 14:

SSC confirms. The “Expansion” sections of Annex B are for the bidder to propose the line cards that will be needed to meet the total expansion capacity of Annex C requirements 2.3 and 3.3.

Question 15

Reference: Requirements 1.1, 1.2, 2.1, 2.2, 3.1, 3.2

Question: Can SSC confirm that these port requirements must be met concurrently/simultaneously in any given Configuration (1, 2, or 3)?

Answer 15:

SSC confirms. The bidder must simultaneously meet requirements 1.1 and 1.2 for the P router, 2.1 and 2.2 for the standard PE router, 3.1 and 3.2 for the enterprise PE router.

Question 16

Reference: Requirements 2.6 - Must have optical support for 1GbE, 10GbE and 100 GbE MACsec-capable transceivers

Question: We believe this Requirement is missing the word “ports”. We ask that SSC confirm that Requirement 2.6 should read: “Must have optical support for 1GbE, 10GbE and 100 GbE MACsec-capable transceiver ports”

Answer 16:

SSC has reviewed requirement 2.6 and 3.6 and found that they are already represented through other port and transceiver requirements. The requirements have been removed. Please see revised Annex C.

Question 17

Reference: Requirement 4.61 - Must include perpetual licenses where available or the maximum term sold for any term licenses.

Question: Can SSC confirm that a bidder can choose to bid Term Licenses if they wish even if they offer perpetual licenses but with the caveat that the bid Term Licenses must be of the longest term available (i.e. 5 years)?

Answer 17:

SSC requires perpetual licenses for any license offered with a perpetual option. Where no perpetual license exists, the bidder must propose the longest available license term (typically 5 years or 7 years).

Question 18

In Annex C, Item 2.5, SSC is requesting a maximum of 8 RU's. We are aware of only one OEM who makes an 8RU or less router that potentially fulfills this requirement. It's well understood that SSC is looking for bids from more than one OEM (i.e. not just from Cisco), therefore we ask that this specification be changed to a “a maximum of 10 RU's” to open up the RFP to competitive responses from multiple manufacturers.

**Answer 18:**

SSC has amended requirement 2.5. Please see revised Annex C.

Question 19:

In Annex C, Item 2.10, SSC is requesting 6 million IPv6 prefixes. We are requesting to have the number of prefixes reduced to 1 million to align with Annex C, Item 1.11. We believe that 6 million is a carry-over from the DRAFT RFP that was meant to be changed. For background, merchant silicon (ASICs) used in modern routers supports a maximum of 1.2M prefixes.

Further, 1.2M prefixes is nine times the current v.6 FIB table space of the entire internet which is only 130,000 addresses as of yesterday afternoon. The current IPv6 prefix specification limits the solutions available to SSC, drives up costs, and reduces the number of OEM's that can be proposed by bidders. Therefore, we request the specification to be lowered to 1 million or less.

Answer 19

SSC has amended requirement 2.10. Please see revised Annex C.

Question 20

In Annex C, Item 3.10, SSC is requesting 6 million IPv6 prefixes. We are requesting to have the number of prefixes reduced to 1 million to align with Annex C, Item 1.11 (refer to the previous question)

Answer 20

SSC has amended requirement 3.10. Please see revised Annex C.

Question 21

In Annex C, Item 2.15, SSC is requesting IKEv2, pre-shared key and PKI-based authentication. We are requesting that SSC remove this requirement in its entirety since Annex C does not include any requirements for IPSEC which is the encryption method that leverages IKEv2, etc. If SSC insists on leaving 2.15 place, please provide the IPSEC throughput and number of tunnels required per port, line card and chassis.

Answer 21

SSC has removed requirement 2.15 in a prior amendment.

Question 22

In Annex C, Item 3.15, SSC is requesting IKEv2, pre-shared key and PKI-based authentication. We are requesting that SSC remove this requirement in its entirety since Annex C does not include any requirements for IPSEC which is the encryption method that leverages IKEv2, etc. If SSC insists on leaving 3.15 place, please provide the IPSEC throughput and number of tunnels required per port, line card and chassis.

Answer 22

SSC has removed requirement 3.15 in a prior amendment.

Question 23



In the Standard Instructions for Procurement Document v1.4, Section 1.14c, provided in the bid package, SSC states that testing will determine if the proposed product(s) meets the mandatory requirements of the solicitation. Please confirm that all mandatory technical requirements have been provided to bidders in Annex C, Statement of Requirements.

Answer 23

The technical requirements in Annex C and the capabilities that are part of the testing plan in Annex D represents SSC's and its clients' requirements for P and PE routers.

Question 24

Will SSC accept bids based on products that have been publicly announced as going end of sale, end of life and/or end of support?

Answer 24

Per Annex A section 4.3, SSC will seek to replace any platforms subject to an end-of-life announcement with the manufacturer-suggested replacement. As such, a platform already subject of an end-of-life announcement will be considered non-compliant.

Question 25

Due to it being the height of summer holidays and many resources unavailable both on the OEM's and reseller side, we would like to request a 3 week extension.

Answer 25

Due to industry supply chain challenges, SSC does not wish to extend the solicitation any longer than necessary. SSC will extend the solicitation to close on August 5, 2022. Should a further extension be required as the closing date approaches, SSC invites to potential bidder to submit a request at that time.

Question 26

Will Canada please clarify why the SSC WAN P and PE RFP is being issued as a separate procurement rather than under the existing SSC Network Solutions Supply Chain Supply Arrangement that includes a number of pre-determined generic categories? The equipment Canada is requesting under this current procurement meets the technical requirements under the NSSC WAN category where multiple OEMs have been positioned as offering compliant solutions. The NSSC SA was developed and established over a number of years of SSC and Industry working collaboratively to create a procurement vehicle that will fulfill Canada's specific and generic Network Services requirements. SSC, Suppliers and OEM's have invested a significant amount of time and effort in responding to as well as maintaining and managing the NSSC SA in order to allow simplify and expedite procurement of Networking Services and equipment and we would like to understand why it is not being utilized.

Answer 26

Network Solutions Supply Chain Supply Arrangement (NSSC) is not a mandatory procurement vehicle for networking requirements.

Question 27

Will Canada please clarify why the SSC WAN P and PE RFP is being issued as a separate procurement rather than under the existing SSC Network Solutions Supply Chain Supply



Arrangement that includes a number of pre-determined generic categories? The equipment Canada is requesting under this current procurement meets the technical requirements under the NSSC WAN category where multiple OEMs have been positioned as offering compliant solutions. The NSSC SA was developed and established over a number of years of SSC and Industry working collaboratively to create a procurement vehicle that will fulfill Canada's specific and generic Network Services requirements. SSC, Suppliers and OEM's have invested a significant amount of time and effort in responding to as well as maintaining and managing the NSSC SA in order to allow simplify and expedite procurement of Networking Services and equipment and we would like to understand why it is not being utilized.

Answer 27

Network Solutions Supply Chain Supply Arrangement (NSSC) is not a mandatory procurement vehicle for networking requirements.

Question 28

Reference: Requirements 1.5, 1.6, 1.7

Question: Can SSC confirm that the bidder is required to add any SKUs and pricing for the required components for Requirements 1.5, 1.6, and 1.7 in Annex B in Columns A and C and their set their quantity at "0" in Column D? That is to say, although the bidder is including these components in Annex B (at the same discounting that was applied to the rest of WAN P Router Configuration 1) the said components will not be evaluated for Financial purposes.

Answer 28

All components required to meet a mandatory requirement must be part of the financial evaluation. The quantity must be set to 1 for any required components not already listed in Annex B.

Question 29

Reference: Requirement 2.3

Question: Can SSC confirm that the bidder is required to add any SKUs and pricing for the required components for Requirement 2.3 in Annex B in Columns A and C and their set their quantity at "0" in Column D? That is to say, although the bidder is including these components in Annex B (at the same discounting that was applied to the rest of WAN PE Router Configuration 1) the said components will not be evaluated for Financial purposes.

Answer 29

All components required to meet a mandatory requirement must be part of the financial evaluation. The quantity has been defined in Annex B for requirement 2.3 line cards and should be left unchanged.

Question 30

Reference: Requirement 3.3

Question: Can SSC confirm that the bidder is required to add any SKUs and pricing for the required components for Requirement 3.3 in Annex B in Columns A and C and their set their quantity at "0" in Column D? That is to say, although the bidder is including these components in



Annex B (at the same discounting that was applied to the rest of WAN PE Router Configuration 2) the said components will not be evaluated for Financial purposes.

Answer 30

All components required to meet a mandatory requirement must be part of the financial evaluation. The quantity has been defined in Annex B for requirement 3.3 line cards and should be left unchanged.

Question 31

Reference: Requirements 2.1, 2.2, 2.3.1, 2.3.2, 2.3.3

Question: Can SSC confirm that while Requirements 2.1 and 2.2 must be met simultaneously, they (2.1 and 2.2) need not be met simultaneously with Requirements 2.3.1, 2.3.2, and 2.3.3.

Answer 31

Requirements 2.1 and 2.2 must be met simultaneously in the base configuration of the proposed platform. This can be considered the minimum port count.

The proposed platform must also be able to be expanded to reach the count specified in 2.3.1, 2.3.2, and 2.3.3 simultaneously. This can be considered the maximum port count.

The minimum and maximum port counts are separate and should not be combined.

Question 32

Reference: Requirements 3.1, 3.2, 3.3.1, 3.3.2, 3.3.3

Question: Can SSC confirm that while Requirements 3.1 and 3.2 must be met simultaneously, they (3.1 and 3.2) need not be met simultaneously with Requirements 3.3.1, 3.3.2, and 3.3.3.

Answer 32

Requirements 3.1 and 3.2 must be met simultaneously in the base configuration of the proposed platform. This can be considered the minimum port count.

The proposed platform must also be able to be expanded to reach the count specified in 3.3.1, 3.3.2, and 3.3.3 simultaneously. This can be considered the maximum port count.

The minimum and maximum port counts are separate and should not be combined.

Question 33

We are concerned with the amount of time that is required to complete a full RFP, especially when a competed vehicle already exists that could be used to fill these requirements. The additional time taken to go through an RFP process delays delivery times and further exposes the Crown to global supply constraints. To respect the investment made by government and industry into the existing vehicle and to improve response and delivery times, would the Crown please cancel this RFP and reissue under NSSC?

Answer 33



Network Solutions Supply Chain Supply Arrangement (NSSC) is not a mandatory procurement vehicle for networking requirements.

Question 34

Due to the complexity of ensuring a compliant response upon receiving answers to questions, would the Crown please ensure that a minimum of 10 FGWD is provided between final answers and bid closing.

Answer 34

SSC acknowledges the request.

Question 35

Based on the current economic uncertainties, world-wide supply chain issues, unpredictability of cost of materials, inflation and fluctuating exchange rates, Suppliers are not able to reasonably assess a 7 year fixed price for OEM products and the level of risk is unquantifiable. In order to provide a fair and reasonable evaluation for the initial and subsequent equipment purchases over the next seven years, we recommend that Canada adjust the pricing requirements such that Bidders provide the current OEM MSRP pricing for each line item with a committed discount on the yearly MSRP. (We have noted that SSC has attempted to address this with the "Economic price adjustments in firm price contracts" clause)

Answer 35

SSC will not change the economic price adjustment clause at this stage.

Question 36

Annex C: Items 4.65. Canada asks that the technical requirements must be met in a single device per configuration. Would the Crown please confirm that a single logical device, operated as a single point of management/configuration, consisting of a router and one or more remotely-slaved line-cards meets this requirement?

Answer 36

SSC requires a single physical device per configuration.

Question 37

Annex C: Since items 2.15 and 3.15 are only applicable for IPSEC, which is not a requirement, would the Crown please remove items 2.15 and 3.15?

Answer 37

SSC has removed requirement 2.15 and 3.15 in a prior amendment.

Question 38

Annex C: Item 4.13 requires compliance to RFC 4125, which describes a bandwidth constraint model for Diffserv-aware MPLS Traffic Engineering (DS-TE) called 'Maximum Allocation Model (MAM)'. Since RFC 4125 remains in experimental status (not a standard), please confirm that a vendor who documents that they support the MAM bandwidth constraint model for DS-TE will be compliant with this requirement, or remove requirement 4.13 in its entirety.

**Answer 38**

SSC confirms that the bidder's substantiation of the capabilities described in RFC 4125 will be considered compliant.

Question 39

Annex C: Items 5.2, 6.2, 7.2. These requirements appear to relate to 1GbE capable transceiver ports. Would the Crown please confirm that items 5.2, 6.2 and 7.2 must be compatible with ports specified in requirements 2.3.3 and not 2.2?

Answer 39

SSC has modified requirements 5.2, 6.2 and 7.2. Please refer to revised Annex C.

Question 40

Annex C: Items 8.2, 9.2. These requirements appear to relate to 10GbE capable transceiver ports. Would the Crown please confirm that items 8.2 and 9.2 must be compatible with ports specified in requirements 1.5, 2.2 and 3.2, and not 1.1

Answer 40

SSC has modified requirement 8.2 and 9.2 in a previous amendment.

For requirement 1.5, the 10GbE port speed can be met using breakout cables so SSC will allow the bidder the substantiate this capability separately from requirement 8.2 and 9.2.

Question 41

Annex C: Item 14.2. Would the Crown please confirm that it will accept a transceiver that will be compatible with the requirements on or about July 29th 2022?

Answer 41

SSC requires the proposed product to be compliant at the time of the evaluation of the bid. The RFP closing date is now after July 29, 2022.

Question 42

Reference: Requirement: 1.5 - Must have support for 10GbE, 100GbE and 400GbE MACsec-capable transceivers. All product codes, licensing and pricing must be included in the Annex B with the same discounting that was applied to the rest of WAN P Router Configuration 1.

Question: Is SSC requesting just the required licenses and Line Cards, etc., to be compliant with Requirement 1.5 or is SSC also asking for additional transceivers and breakout product codes (i.e. 10GbE, 100GbE and 400GbE MACsec-capable transceivers over and above the transceivers already listed in Requirements 5 to 15)?

Answer 42

SSC is seeking all line cards, transceivers and breakout cables required to meet mandatory technical requirements only.

Question 43



In "Annex C, item 2.4 requires 1 Tbps of system throughput, which is inconsistent with the 496 Gbps system throughput required to meet items 2.3.1, 2.3.2 and 2.3.3. In order allow lower-cost solutions that increase competition, would the Crown please change the requirement to 'Must have 794 Gbps of system throughput', which is 60% greater than the aggregated throughput needed to simultaneously support items 2.3.1, 2.3.2 and 2.3.3?

Answer 43

SSC will not change requirement 2.4.

Question 44

Annex C: Item 4.9 requires compliance with RFC 2925 or RFC 4560. The industry provides remote ping, traceroute and lookup operations through a variety of remote procedure calls, not just through MIBs. The industry is moving towards telemetry streaming which places less load on the routers. Unless changed, this requirement limits competition to very few (possibly only one) equipment vendors.

In order to have an open competition, would the Crown please either:

- Modify requirement 4.9 to 'Must meet RFC 2925 or RFC 4560 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations; or provide remote ping, traceroute and remote telemetry operations via published APIs and open RPC protocols.', or;
- Remove requirement 4.9 in its entirety.

Answer 44

Answer will be posted week of August 1st

Question 45

Annex C: Item 4.57. The Crown requires 'Hierarchical Path Computation Element (PCE) Discovery, Path Computation Element Protocol (PCEP) or equivalent functionality'. Elsewhere, the Crown requires that proposed solutions:

- 'Must have segment routing functionality' (item 4.42), and;
- 'Must meet RFC 2460 Internet Protocol, Version 6 (IPv6) Specification' (item 4.10)

Please confirm that the Crown wants these features to work together? That is, that the functionality in item 4.57 m

ust have SRv6-PCE functionality?

Answer 45

Answer will be posted week of August 1st

Question 46

Annex C: Item 4.42. The Crown requires 'Must have segment routing functionality'. Elsewhere, the Crown requires that proposed solutions:

- 'Must have Open Shortest Path First version 2 (OSPFv2) routing functionality' (item 4.28), and'
- 'Must have Open Shortest Path First version 3 (OSPFv3) routing functionality' (item 4.29)



SR IGP Flexible Algorithm allows user-defined segments to be optimized for specific constraints. Would the Crown please confirm that these features must work together such that the segment routing functionality (item 4.42) includes SR IGP Flexible Algorithm calculations that choose paths based on OSPF Metric Delay?

Answer 46

Answer will be posted week of August 1st

Question 47

Annex C: Item 4.53. The Crown requires 'Must have Command Line Interface (CLI) functionality for monitoring performance statistics'. Elsewhere, the Crown requires that proposed solutions:

- 'Must have segment routing functionality' (item 4.42), and;
- 'Must have Intermediate System-to-Intermediate System (IS-IS) functionality for IPv4' (item 4.49)
- 'Must have Intermediate System-to-Intermediate System (IS-IS) functionality for IPv6' (item 4.50)

Please confirm that the Crown wants these features to work together? That is, that the performance monitoring functionality in item 4.53 must have the ability to monitor ISIS dynamic (measured) delay in the SR environment?

Answer 47

Answer will be posted week of August 1st

ALL OTHER TERMS AND CONDITIONS REMAINS THE SAME