ASX

ASX Signal B

FIX Connectivity Guide

March 2022

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1 Version History

Version	Date	Comment
1.0	November 2021	Initial release
1.1	March 2022	Added sections 4.3 and 7
1.2	March 2022	Added section 7.3

2 Introduction

This guide details the technical connectivity requirements for the new ASX Signal B Service.

This document describes the different connectivity methods available for the Industry Test Environment (ITE) and the production environment.

Information is provided down to the IP and port level. Where applicable, cross-references have been provided to the ASX Information Services – Market Activity Products website.

2.1 Audience

The information contained in this guide is intended to be used by network architects, software developers, business analysts, project managers and others interested in connecting to Signal B.

2.2 Document Outline

This document details the below sections:

- Environment Overview – this section provides an overview of Signal B environments.
- Connectivity Methods – this section provides a list of all available connectivity methods.
- Network Details – this section provides configuration details for each connectivity method.
- Connectivity Testing – this section provides the recommended tests to confirm network connectivity.

3 Environment Overview

There are two Signal B FIX environments.

3.1 Industry Testing Environment (ITE)

The Industry Testing Environment (ITE) is a shared environment allowing Signal B subscribers to test functional capabilities and run conformance testing.

3.2 Production

Initially, in the first months of live operation, the production environment will co-exist with the legacy Signal B setup to provide customers with enough time to migrate to the new Signal B service. The two production systems will run in parallel until the end of the parallel period, at which time the cutover to the new Signal B FIX service will occur.

4 Signal B FIX Connectivity Methods

The Signal B service is built on the ASX Net infrastructure and Signal B customers will be connecting to the FIX Gateway service.

The connectivity methods available are:

- ASX Net
- ALC Switch in Cabinet
- Site-to-site VPN over IPsec (ITE access only)

This section provides specific connectivity details for ASX-managed infrastructure, including IP addresses, ports and topology diagrams. The description of each of these services are applicable for ITE and production.

Please refer to Section 5 - Network Details for target IP addresses and ports for Signal B services.

4.1 ASX Net

ASX Net connectivity is delivered using Customer Premises Equipment (CPE), which is housed in domestic customer data centres.

Physical Layer

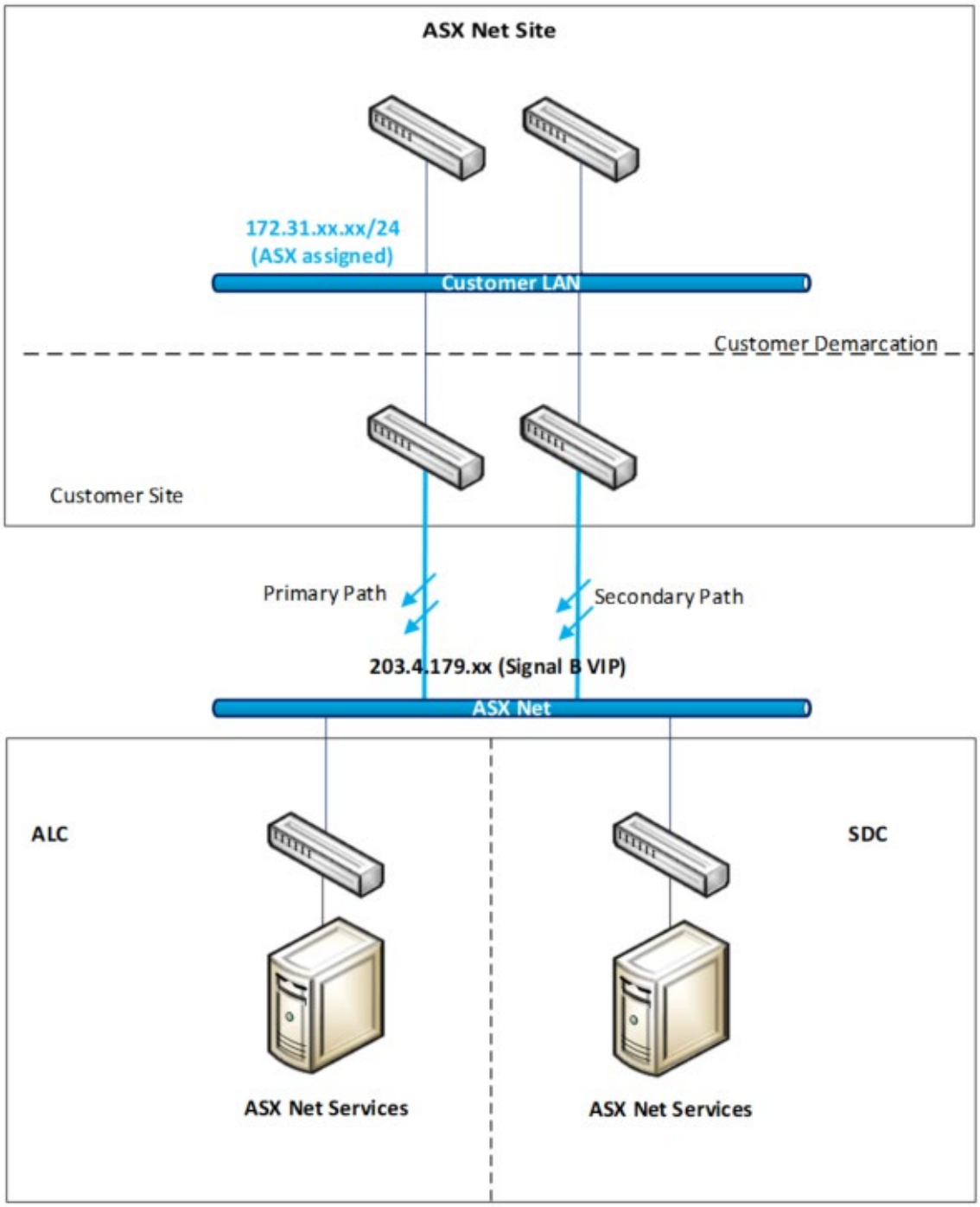
- 2x ASX Net standard routers.
- Media standard is 1000BASE-T RJ45.
- Existing ASX Net customers will use the same physical port as their current "ASX Services connection".
- New ASX Net customers will be required to patch the new physical port allocated by ASX on the CPE.

Customer Addressing

- All addressing is IP version 4.
- Customers will be given an IP range such as 172.31.xx.xx/24 from a pre-defined range.
- Within the provided range, 172.31.xx.1-49 is reserved by ASX. Customers can use 172.31.xx.50-89
- An important check is that the customer is not currently using IPs in the range 172.31.xx.1-49 on existing ASX-facing devices.
- 172.31.xx.32 is the virtual gateway IP on the CPE.
- Customers will be required to NAT their ASX Net connection to the allotted addresses inside the provided IP address range.
- Existing ASX Net customers will need to use the IP address range allocated to them previously.

Customer Infrastructure

- ASX Net does not employ Spanning Tree Protocol (STP) for loop prevention in the customer access VLAN on ASX Net routers. Customers must provide loop protection mechanisms in order to prevent broadcast storms across the VLAN when connected redundantly.
- Each line card on the ASX Net CPE will provide a single MAC address for all services deployed. Customers must cater for this in their network.



Note: everything below the customer demarcation line is managed by ASX. As a routine, the ALC-hosted service will be used and in the event of an incident where this service cannot be recovered, ASX will failover customer connectivity to the SDC-hosted service. In both scenarios, the customer will continue to target the same IP and port.

4.2 ALC Switch-in-Cabinet

ALC Switch-in-Cabinet (SiC) is the method customers use to connect to Signal B when situated in an ALC cabinet. The connection is via the CPE, which is installed in the customer's ALC cabinet. The CPE connects to the ASX network.

Physical Layer

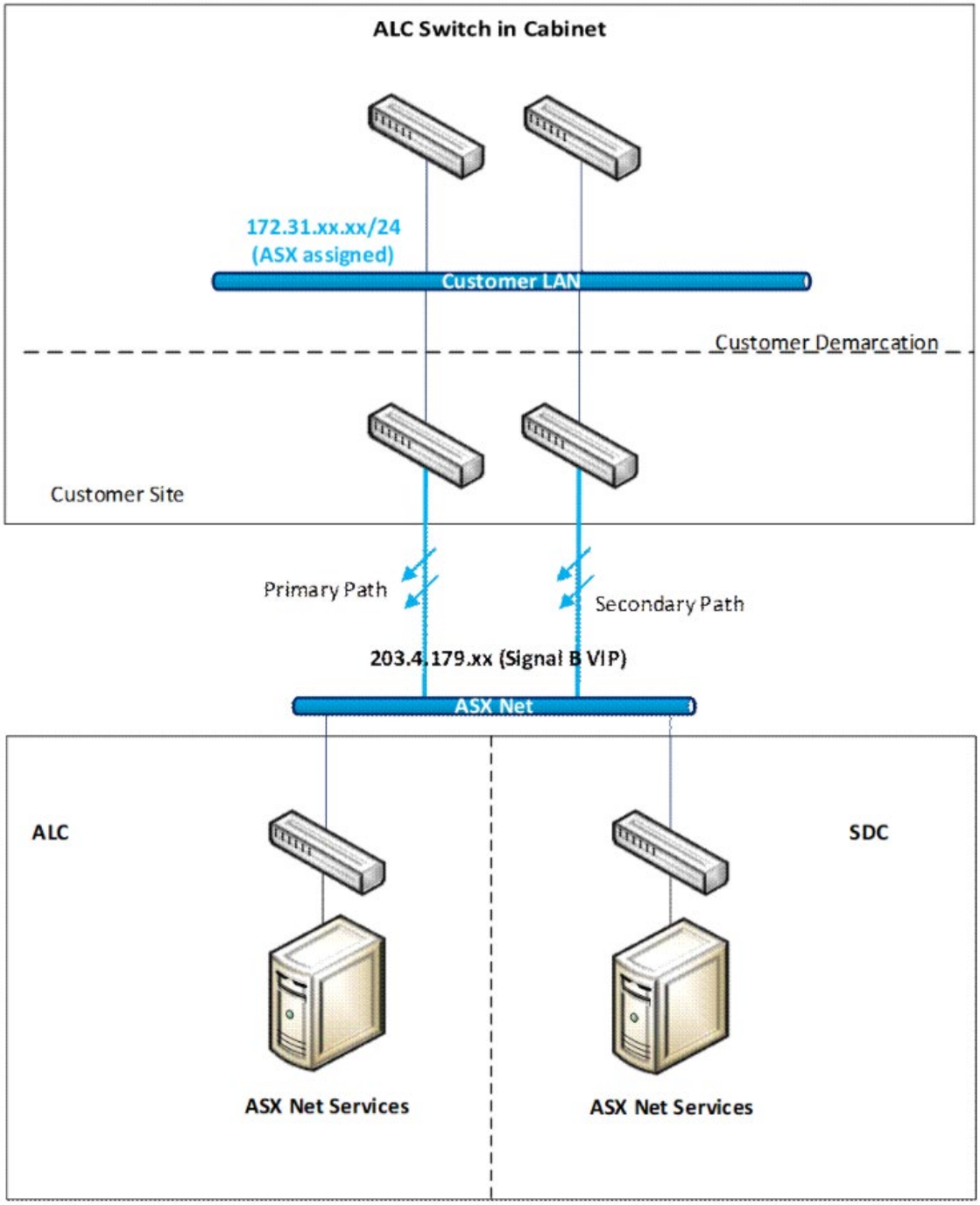
- 2x ASX SiC standard routers.
- Media standard is 1000BASE-T RJ45.
- Existing ALC SiC customers will use the same physical port as their current "ASX Services connection".
- New ALC SiC customers will be required to patch the new physical port allocated by ASX on the CPE.

Customer Addressing

- All addressing is IP version 4.
- Customers will be given an IP range such as 172.31.xx.xx/24 from a pre-defined range.
- Within the provided range, 172.31.xx.1-49 is reserved by ASX. Customers can use 172.31.xx.50-89
- An important check is that the customer is not currently using IPs in the range 172.31.xx.1-49 on existing ASX-facing devices.
- 172.31.xx.32 is the virtual gateway IP on the CPE.
- Customers will be required to NAT their ALC SiC connection to the allotted addresses inside the provided IP address range.
- Existing ALC SiC customers will need to use the IP address range allocated to them previously.

Customer Infrastructure

- The ALC SiC service does not employ Spanning Tree Protocol (STP) for loop prevention in the customer access VLAN on ASX Net routers. Customers must provide loop protection mechanisms in order to prevent broadcast storms across the VLAN when connected redundantly.
- Each line card on the ALC SiC CPE will provide a single MAC address for all services deployed. Customers must cater for this in their network.

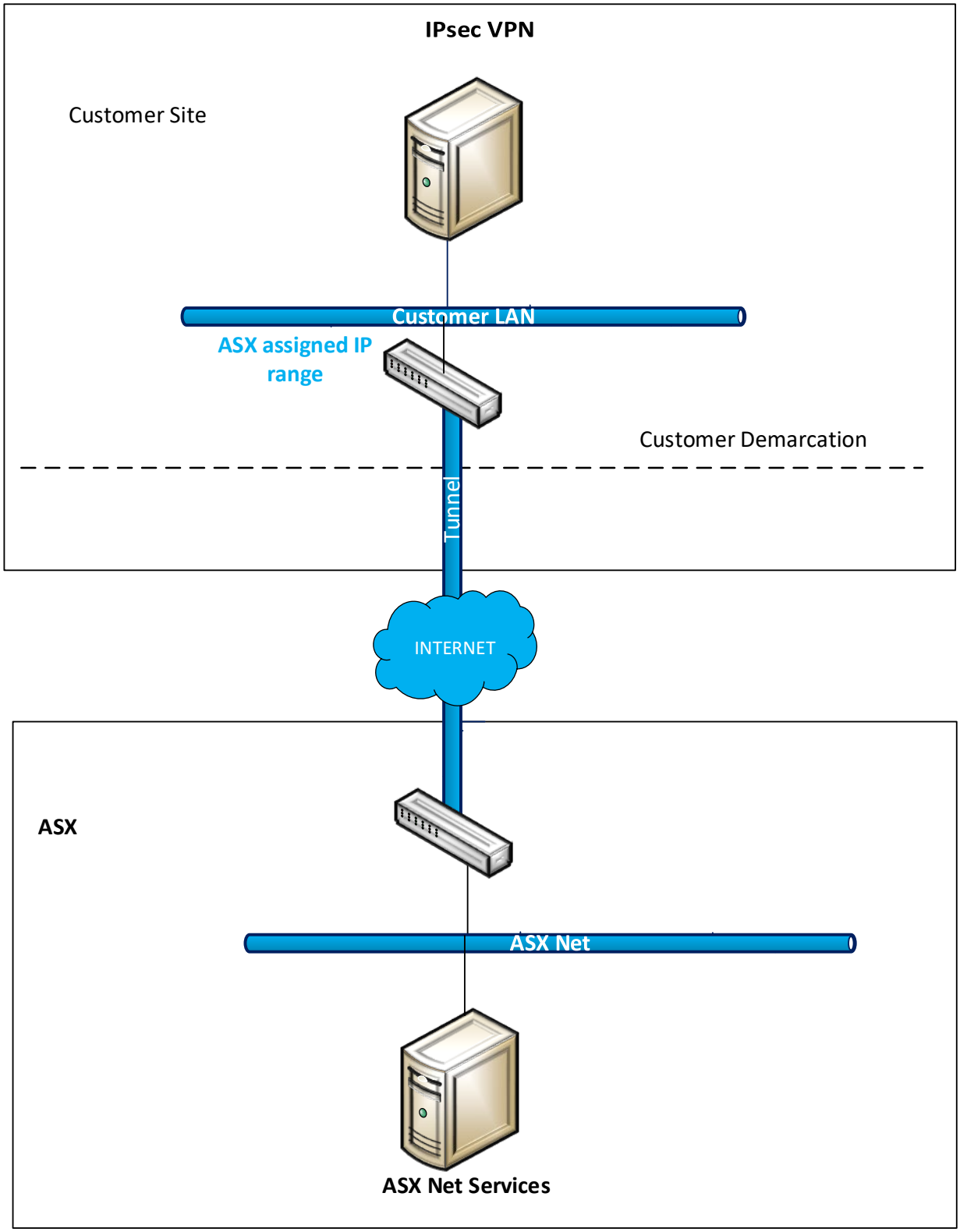


Note: everything below the customer demarcation line is managed by ASX. As a routine, the ALC-hosted service will be used and in the event of an incident where this service cannot be recovered, ASX will failover customer connectivity to the SDC-hosted service. In both scenarios, the customer will continue to target the same IP and port.

4.3 Site-to-Site VPN Over IPsec (ITE access only)

For customers who do not have an ASX Net site or any ALC cabinet(s), ASX offers connectivity to Signal B service using site-to-site VPN over IPsec. This connectivity method is only available for Signal B ITE access, not for the production Signal B service.

- Any ISP can be utilised.
- Customers will need to provide a unique public IP source for this connection.
- In the setup of the IPsec tunnel, the VPN endpoint IP address and source NAT will be supplied by ASX.
- Customers will be required to NAT connections utilising the IPsec tunnel within a specific IP address range provided by ASX.
- ASX will contact customers to discuss the details for the setup.


IPsec VPN
Customer Site
Customer LAN
ASX assigned IP range
Customer Demarcation
Tunnel
INTERNET
ASX
ASX Net
ASX Net Services

5 Network Details

5.1 Signal B FIX Gateway Connectivity Details

Service Name	Address	Port
Signal B FIX Gateway – ITE	203.4.179.58	4500
Signal B FIX Gateway – Production	203.4.179.56	4500

6 Connectivity Testing

The following tests are recommended to confirm network connectivity to the Industry Testing Environment (ITE) and production environment. This testing is available during service hours 07:00 to 20:30 AEDT/AEST on trading days.

Operation	Test Example	Expected Result
FIX Gateway – ITE	telnet 203.4.179.58 4500	Connection established
FIX Gateway – Production	telnet 203.4.179.56 4500	Connection established

7 Enabling Transport Level Security (TLS)

7.1 Enabling Transport Level Security (TLS)

Signal B supports Transport Level Security (TLS) v1.2 encryption; it does not rely on native FIX encryption.

To setup connectivity to the ITE and production Signal B services, customer applications are required to trust a certificate issued by the DigiCert public certificate authority.

To prepare their applications for connectivity, customers can use their own library of trusted certificates, or download the Root and/or Intermediate Certificates from the DigiCert Trusted Root Authority Certificates page.

7.2 DigiCert Root and Intermediate Certificates Links

DigiCert Global Root CA

Download PEM | Download DER/CRT

GeoTrust RSA CA 2018

Download PEM | Download DER/CRT

7.3 Hostname Entries

In the case where a hostname is required for TLS setup, the following details can be used for each of the Signal B environments, by adding the hostnames and IP addresses to “hosts” files for DNS lookup purposes.

Environment	Hostname	IP Address
ITE	signalb-ite.asx.com.au	203.4.179.58
Production	signalb-prod.asx.com.au	203.4.179.56

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