Spirent Landslide® Test System

Release 24.2

Installation Guide

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Table of Contents

1. About this Guide

Introduction

The purpose of this document is to provide the System Administrator with the information necessary to install and activate the Landslide Performance Test System.

This document assumes that the Landslide software is properly installed and licensed on the Landslide appliance.

Related Documentation

Additional documentation for the software used with the system is provided in an online Help format. The Help documentation can be accessed from the Landslide system's home page or through the Help menu in the application window. See "*Logging in to the System*" *on page 44* for instructions on loading the home page after installation is complete.

To install and use the Landslide Tcl API, refer to the **Getting Started > How to Test > Working with Tcl API > Using the Tcl API** online Help topic.

Additional information on using Landslide can be found in the following related resources. Refer to the latest version of the Landslide software Release Notes for the most current information regarding Landslide documentation.

These documents are provided in PDF format:

- Spirent Landslide Test System Installation Guide (this manual)
- Landslide Test Server NIC Configurations (appendix to this manual)
- Landslide Virtual Machine Installation Instructions
- Landslide License Server User Guide
- Landslide Tcl API Object and Perform Function Reference
- Landslide RESTful Programmer's Reference

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Acronyms

The following acronyms are used in this manual.

Acronym	Meaning
C100	C100 Series Test Server
C50	C50 Series System and Add-on Test Server
DUT	DUT Device Under Test
E10 SAS	Landslide E10 Stand-alone Test System
E10 TS	Landslide E10 Test Server
L-C100-M4-TS	Landslide C100 M4 Test Server
L-C100-S4-MGR	Landslide C100 S4 Manager
L-C50-S4-SYS	Landslide C50 S4 System Appliance
L-C50-S4-TS	Landslide C50 S4 Add-on Test Server
L-C50-S5-SYS	Landslide C50 S5 System Appliance
L-C50-S5-TS	Landslide C50 S5 Add-on Test Server
Manager	Test Administration Server Appliance
OTA	Over-the-air
SPT-C100-M4-TS	TS Same as L-C100-M4-TS
SUT	System Under Test
TAS	Test Administration Server
TS	Test Server
vTAS	Virtual Test Administration Server
vTS	Virtual Test Server

Shipment Contents

Standard Landslide System

Check your system to ensure that you have the following items:

For C100 Test Systems

- 1 - Landslide C100 Manager with power cord
- 1 (or more) - Landslide C100 Test Server(s) with power cord (a minimum of one Test Server is required for all systems; you may have more than one depending on the configuration you purchased).
- 0 or more optional E10 Test Server(s)
- 0 or more optional Virtual Test Server(s)

For C50 Test Systems

- 1 - Landslide C50 Test System appliance with power cord
- 0 or 1 - Landslide C50 Add-on Test Server (only one stand-alone, Add-on Test Server can be added to a C50 Test System).

EDGE E10 System

Check your system to ensure that you have the following items:

- 1 - Landslide EDGE E10 appliance
- 1 - Power supply and cord
- 3 - Dual-band (2.4 and 5.8GHz) antennas
- 1 - Ethernet cable

Release Notes

Release Notes contain the latest technical information that may not be included in the product's user documentation.

Hardware and software system requirements are described in the Release Notes.

IMPORTANT:
It is highly recommended that you read all Release Notes before you install or use this product.

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2. System Overview

The Landslide Performance Test System is a comprehensive test system developed for testing wireless packet data core network elements. The standard Landslide Performance Test System uses a modular architecture consisting of one Landslide Manager, and up to 32 Test Server platforms. This modular architecture enables high bandwidth testing with flexible scalability, allowing you to expand your system's capacity by adding Landslide Test Servers to the system as your bandwidth requirements increase.

Deployment

Landslide C100 Test System

The Landslide C100 Test System is deployed on Spirent Landslide C100 rack-mounted server platforms. A typical lab deployment configuration is shown in the following figure.

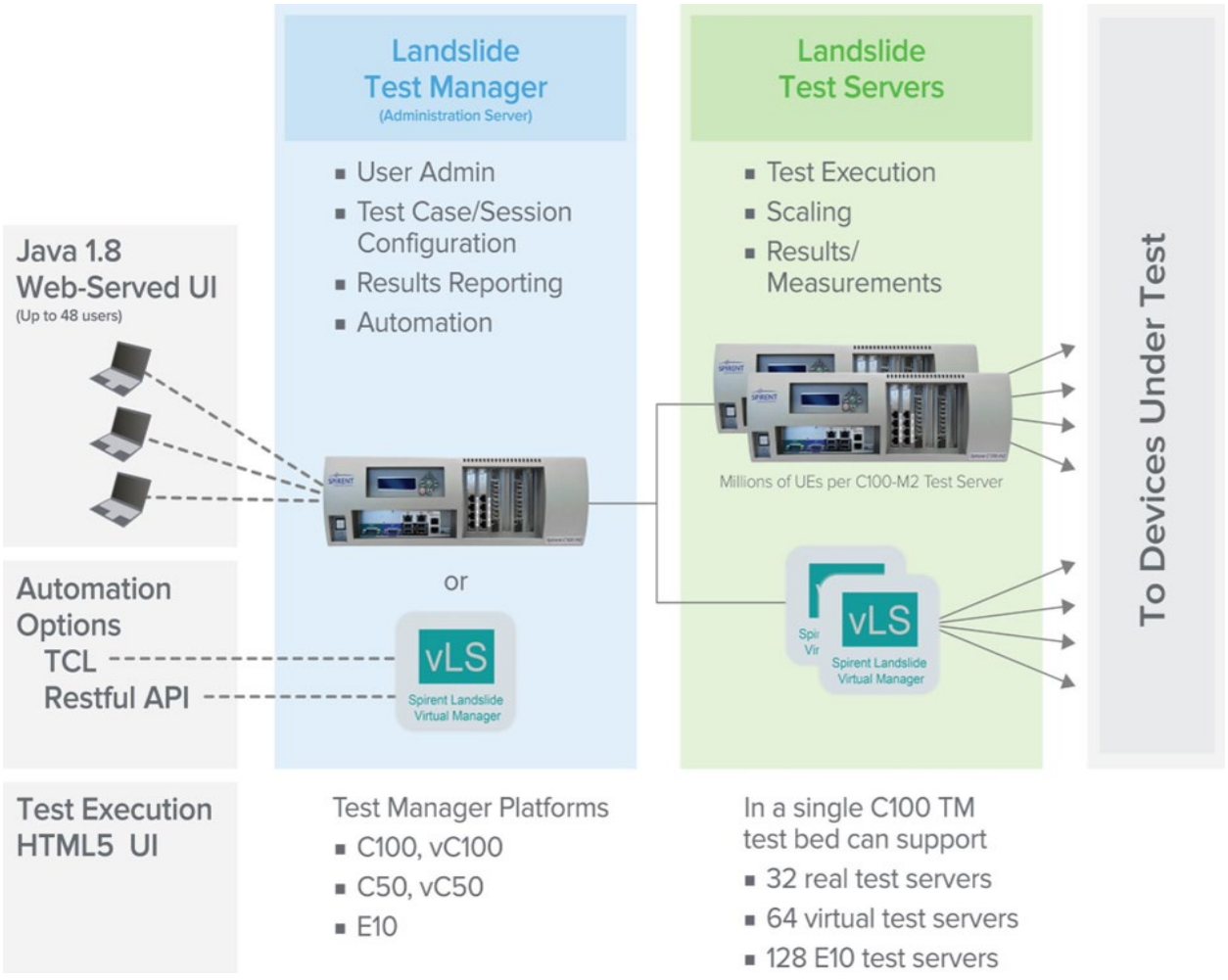

Figure 1. Typical Lab Deployment

The Landslide Manager hosts the Test Administration Server (TAS) software, which serves the user interface through the LAN, acts as the data repository, and controls overall system operations. The Landslide Test Server hosts the Test Server software, which performs the test operations. The Landslides communicate with the Systems Under Test (SUTs) via an Ethernet LAN or a direct Ethernet connection.

A single Landslide system supports from one (1) to thirty-two (32) Test Servers. Users connect to the Landslide test system and access the TAS from a Java Web Client.

Landslide C50 Test System

The Landslide C50 Test System provides an economical solution for customers who require the complete functionality of a full Landslide Test System, but at smaller scale and lower data performance.

The Landslide C50 Test System consists of an integrated TAS Manager and Test Server residing on a single, rack-mountable SPT-C50 appliance. Users can add a single stand- alone, Add-on Test Server for additional scale and performance. In all other respects, the C50 Test System is the same as the C100 Test System.

Landslide Architeture Terminology

The standard Landslide Performance Test System uses a modular architecture consisting of one Landslide Manager, and up to 32 Test Server platforms. This modular architecture enables high bandwidth testing with flexible scalability, allowing you to expand your system's capacity by adding Landslide Test Servers to the system as your bandwidth requirements increase.

Two types of server software are used in the system. In a standard system, the Landslide Manager hosts Test Administration Server (TAS) software, and the Landslide Test Servers host the test server software. The terms TAS and test server are used in the user interface and throughout this documentation when referencing the Landslide Manager and Landslide Test Server software. The term test system is used to refer to the system as a whole.

The Landslide C50-S4 or C50-S5 system, provides a solution for test beds requiring small scale with functional test flexibility and includes/supports as follows:

- Consists of an SPT-C50 appliance with a combined TAS Manager and Test Server process.
- Supports the addition of an optional add-on server when additional scale or end-to-end testing is required. Supports Single process with a maximum of 50K session capacity.

Landslide C100-M4 Test System

The Landslide C100-M4 Test System is deployed on Spirent Landslide C100 rack mounted server platforms. The Landslide Manager hosts the Test Administration Server (TAS) software, which serves the user interface through the LAN, acts as the data repository, and controls overall system operations. The Landslide Test Server hosts the Test Server software, which performs the test operations. The Landslides communicate with the Systems Under Test (SUTs) via an Ethernet LAN or a direct Ethernet connection. A single Landslide system supports from

one (1) to one-hundred and twenty-eight (128) Test Servers. Users connect to the Landslide test system and access the TAS from a Java Web Client.

Landslide EDGE on E10 Test System

The Landslide EDGE on E10 test system is a purpose-built compact wireless packet core data emulator to test and monitor live network performance in real time. Landslide E10 ships with EDGE software which is an integrated Test Manager and Test Server combination with feature support for S1-MME, S1-U, X2, IuCS and IuPs, and WiFi (SWu, SWn). The EDGE software can support up to 50 UEs for LTE/WiFi/3G technologies and up to two (2) eNodeBs.

Landslide E10 Test Server

The Landslide E10 test server is a compact, low scale, platform that can be deployed under a C50-S4 / C50-S5, or vC100 test manager.

NOTE:
The Landslide C50-S4 / C50-S5 system may be upgraded to a full capacity system. Users can add a single stand-alone, Add-on Test Server for additional scale and performance. In all other respects, the C50-S4 / C50-S5 Test System is the same as the C100-M4 Test System.

The TAS software performs control and data services for the system:

- User interface
- Test configuration and control
- Test measurement collection and reporting
- Data repository for test libraries, test results, and system and site configurations
- User authentication and account management
- System maintenance (upgrades, backups, logs, test server configuration, and system status)

The test server software controls the test platforms:

- Provides the protocol stacks
- Provides the emulators requested by the test application
- Reports server status to the TAS

The test applications are designed for specific wireless technologies or networks, and control test operations:

- Emulate the devices necessary to complete a network configuration
- Generate control and bearer plane traffic to the System Under Test (SUT)
- Process and respond to the traffic received from the SUT
- Report test measurements to the TAS

Client Requirements

Hardware and software system requirements are described in the Release Notes. The key enhancements and new features included in the Release Note for each major Landslide release. Refer to the Release Notes for a detailed list of changes.

IMPORTANT:
It is highly recommended that you read all Release Notes before you install or use this product.

3. Initial Installation

This chapter provides configuration instructions for the Landslide Performance Test System.

Standard Landslide System Configuration

Follow the instructions in this section to configure a standard system consisting of a Landslide Manager and one or more Landslide Test Server(s).

System Configuration Overview

The general steps involved in configuring a Landslide test system are outlined below.

1. Install and power up the Landslide C100 Manager and Test Server(s) or the C50 combined Manager and Test Server.
2. Provide an IP address on your management network for the Manager and for each Test Server.

   NOTE:
   - For C50 test systems, a second management network IP address is required only when the Add-on Test Server is part of the system configuration.
   - The management network should be different from the test network that contains the devices/systems under test.
3. Configure the Manager's management port by following the steps in *"Landslide Manager Configuration" on page 16*.
4. Configure each Test Server by following the steps in *"Landslide Test Server Configuration" on page 17.*
5. After you have configured your Test Servers, continue with the instructions in *Chapter 6,* "Getting Started."

Landslide Manager Configuration

The Landslide Manager's management port is located on the front panel of the appliance and is labeled Mgmt Port or 1 (Shown below in Figures 2 and 3). The management port's logical name is eth0, and it handles communications with client PCs and the Landslide Test Servers. The port to the right of the Mgmt Port is labeled 2 and can be provisioned as an alternate management port for communication with a cloud or corporate based license server on a network that is isolated (not reachable) from the management port's network. The alternate management port's name is eth1.

- The manager does not include the test ports in slots 1 through 7.

NOTE:
The C50-based Test System, with combined Manager and Test Server, may include test ports in slots 1 through 7

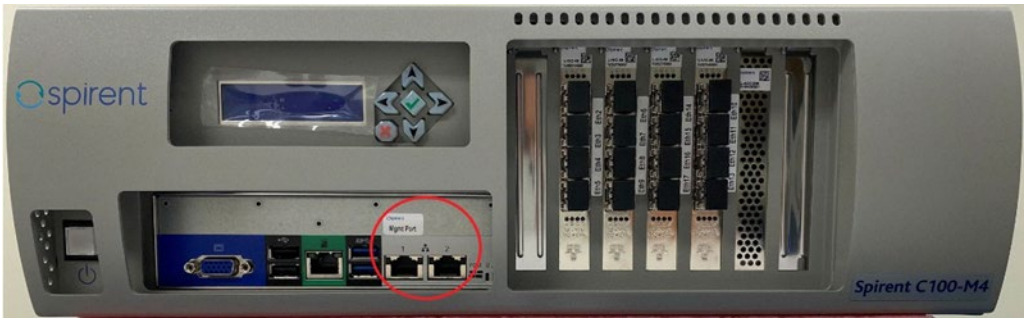

Figure 2. Landslide (C100-M4) Front Panel - Management Port

Figure 3. Landslide (C100) Front Panel - Alternate Management Port

Preform the following steps to configure the Landslide Manager for LAN communication:

Establish an SSH session with the Landslide Manager and configure the management port (see
“

1. Management Port Configuration*" on page 18.*)
2. Remove the standard Ethernet cable from the management port.
3. Connect the Landslide Manager to your LAN via a standard Ethernet connection from the management port to a router or switch.

Landslide Test Server Configuration

All Ethernet ports are accessible from the front of the Landslide Test Server. The management port is in the same location as on the Landslide Manager and is labeled Mgmt Port or 1 and logically named eth0, as on the manager. Port 2 is not used for test server management. The remaining interfaces are located to the right of the management port and are referred to as Test Ports. The management port handles communications with the Landslide Manager, and the test ports handle communications with Systems Under Test (SUT) and other devices involved in a test.

The location of the management port is shown in Figures 2 and 3.

Note:
The names assigned to test ports depend on the number and type of Ethernet NICs installed in the test server. Supported NIC configurations and associated port naming are provided in Chapter 7. *"Appendix - Landslide Test Server NIC Configurations."* As viewed from the front, chassis slot numbers increase from left to right. The leftmost slot is number 1.

Configuring a Landslide Test Server

Follow this procedure to configure the management port for each Landslide TS. After the platforms for the system, including the Landslide Manager, have been configured, continue with the instructions in "*Chapter 6. Getting Started*."

Perform the following steps to configure a Landslide Test Server:

1. Establish an SSH session with the Landslide TS and configure the management port (see "

2. *Management Port* Configuration *on page 18”*)
3. Remove the standard Ethernet cable from the management port.
4. Connect the Landslide to your LAN via a standard Ethernet connection from the management port to a router or switch.
5. Connect the test ports to the test network via a router or directly to the SUT.

Management Port Configuration

Refer to the applicable procedure if you are using IPv4 or IPv6 addressing on the management network of a C100, C50, or E10 server.

- Refer to "*Configure an IPv4 Management Port*" *on page 18*.
- Refer to "*Configure an IPv6 Management Port*" *on page 24*.

The procedures in this section use the following abbreviations:

- TAS – Landslide Manager / Test Administration Server
- TS – Landslide Test Server
- TAS+TS – A combination system comprised of both a Landslide Manager and Landslide Test Server running on the same server.

Follow the procedure in this section to power up a Landslide platform for the first time. This initial configuration procedure designates and configures the management port for each platform. The default test port configuration can be modified using the "Test Server Administration" window within the application, see ***Managing Your System > Test Server> Operations and Maintenance> Managing Your Test Servers*** in the Help documentation.

The management port is dedicated to communications with the Landslide Manager (Landslide Test Server platform) or with the user's client PC (Landslide Manager platform) and is not used for testing on these platforms. The default name and default address of the management port is eth0 and 192.168.0.2, respectively. Use a default mask of 255.255.255.0.

Configure an IPv4 Management Port

Perform the following steps:

1. Configure an Ethernet interface on a laptop or workstation with an IPv4 address and a network mask that will allow communications with the management port. The default management port address is 192.168.0.2.

   Alternatively, a console session can be used by connecting a keyboard and monitor to the front panel of a physical server. Virtual machines require the user to connect to the console via the hypervisor.
2. If a console session is used instead of SSH, skip to step 4.
3. Connect the laptop or workstation to the management port using a standard Ethernet cable.
4. Power up the Landslide platform with the switch located on the front panel. Allow several minutes for the system to start up.

   NOTE:
   If the Landslide platform is already powered on when the cable is connected, the Ethernet link may not auto negotiate properly. In this case, power-cycle the Landslide platform after all connections are made.

5. Log in to the Landslide platform.
   – If connecting to the management port from a laptop or workstation, use SSH. From a command prompt, enter:

     ssh cfguser@192.168.0.2

     When prompted for the password, type **cfguser** and then press **Enter**.
   – If connecting to the console by connecting a keyboard and monitor to the front panel of a physical server or by connecting to a virtual machine's hypervisor, use the cfguser account to log in. The default password is the same as the username.

     login: **cfguser** password: **cfguser**
6. The first time the cfguser user logs into Landslide, the user should be prompted to define the initial network configuration.

   Management port and TAS IP may not be configured on this machine.

   Configure now? (y/n)

   Type **y** and press **Enter** to define the configuration.

   If the user is not prompted with the initial configuration question, type **ipcfg** at the command prompt.

   CAUTION:
   - Do not abort this script when it is executed for the first time on a new platform. Background processes configure the services that should automatically start on boot. If the script is aborted, some services, including SSH, will not start if the platform is power-cycled or rebooted.
   - Do not use arrow keys or the Delete key to correct data entry errors; instead, use only the Shift + Backspace key. If errors are detected after data has already been entered, at the end of the script, answer no to the reboot question and rerun the ipcfg command.

7. A warning will be displayed, and the user will be asked if they wish to continue. Type yes and press **Enter** to continue.

   Note: Do not terminate this utility, otherwise it can lead to system instability! Do you wish to Continue (yes/no) [no]:
8. The user will be prompted to identify the port to be used as the management port. The user must select the recommended and default port number as the management port (eth0) for IPv4 management. Press **Enter** to accept the default value and continue.

   Note: Preferred management port is eth0 Designate management port (eth0/eth0v6 --eth17 eth17v6)[eth0]:
9. The user will be prompted to configure the IP Address mode. Specify **static** or **dynamic**, then press **Enter** to continue.
   Configure TS IP Address mode (static/dynamic) [static]:

   If static is selected, answer the resulting configuration prompts:

   a. Specify a unique IPv4 address for the management port, then press **Enter** to continue.
      <port> <TAS / TS / TAS+TS> IP Address []:

b. Specify the IPv4 network mask, then press **Enter** to continue.

c. <port> <TAS / TS / TAS+TS> Network Mask []:

d. Accept the default configuration to enable automatic speed and duplex negotiation by pressing **Enter** to continue.

e. <port> <TAS / TS / TAS+TS> Auto Negotiate? (yes/no) [yes]:

f. Specify the address for the IPv4 gateway in your network, then press **Enter** to continue.

g. <port> <TAS / TS / TAS+TS> IP Gateway []:

10. The user will be prompted to configure the MTU size for the management port.
Specify the MTU of the management port, then press **Enter** to continue.

<port> <TAS / TS / TAS+TS> MTU size [1500]: (Recommend: 1500; Range: 1000->1500)

NOTE:
Confirm the networking properties assigned to the management port. Failure to use the proper values may prevent communication with the platform.

11. TAS or Combined TAS+TS Only -
The user will be prompted to choose, if desired, to configure an alternate management port for accessing a cloud or corporate-based license server on a network that is isolated (not reachable) from the Management Port's network. In most cases, this should not be configured. The user should press Enter to accept the default value of no and continue.

12. If configuration of the alternate management port is desired, type **yes**, then press **Enter** to continue with the resulting configuration prompts.

NOTE:
Only IPv4 can be used for this step as IPv6 is not currently supported by the cloud or corporate license server.

a. Do you wish to Set Alternate mgmt port to access License Server (yes/no) [no]:

b. Designate the Alternate management port to be used to access the license server, then press **Enter** to continue.

c. The recommended port is eth1. Press **Enter** to accept the default value and continue.

NOTE:
Preferred Alternate management port to access License server is eth1 (Static IP only.) The IP address should not be in the mgmt port network.

d. Designate <TAS / TAS+TS> Alternate management port (eth0/ eth0v6 -- eth2/eth2v6) [eth1]:

e. Specify a unique IPv4 address for the alternate management port, press **Enter** to continue.

<port> <TAS / TAS+TS> IP Address []:

f. Specify the IPv4 network mask, press **Enter** to continue.

<port> <TAS / TAS+TS> Network Mask []:

g. Accept the default configuration to enable automatic speed and duplex negotiation by pressing **Enter** to continue.

   <port> <TAS / TAS+TS> Auto Negotiate? (yes/no) [yes]:

h. Specify the address for the IPv4 gateway in your alternate management network, then press **Enter** to continue.

   <port> <TAS / TAS+TS> IP Gateway []:

i. Specify the MTU of the alternate management port, then press **Enter** to continue.

   <port> <TAS / TAS+TS> MTU size (Recommend: 1500; Range: 1000->1500) [1500]:

   Specify the IP address of the license server. If using a purchased corporate license server (hosted on the E10 platform), then type the IP address of that server and then press **Enter** to continue.
   Otherwise, if you are using the Spirent hosted cloud-based license server, press **Enter** to accept the default value of 38.99.7.67 to continue.

   <port> <TAS / TAS+TS> License Server ip addr [38.99.7.67]:

13. The user will be prompted to specify the host name of the server. Specify the host name of the server, press **Enter** to continue. Do not use any blank spaces in the Host Name.

    <TAS / TS / TAS+TS> Host Name [osU1404]:

14. TAS or Combined TAS+TS Only - The user will be asked if they would like to configure DNS. If yes, type **yes** and continue with the resulting configuration prompts.
    Otherwise, press **Enter** to accept the default value of no to continue.

    <TAS / TAS+TS> Enable DNS? (yes/no) [no]:

    a. Specify an IP address for the primary DNS server, then press **Enter** to continue.

       <TAS / TAS+TS> Primary DNS Server Address [192.168.1.254]:

    b. Specify an IP address for the secondary DNS server, then press **Enter** to continue.

       <TAS / TAS+TS> Secondary DNS Server Address [192.168.1.254]:

15. TS Only - If the system being provisioned is a Landslide Test Server, the user will be prompted to configure the TAS IP Address mode for the TAS that the TS will connect to. Otherwise, the following prompt is skipped. Specify static or dynamic, then press **Enter** to continue.

    a. Configure TAS IP Address mode (static/dynamic) [static]:

       If **static** is selected, the user will be prompted to configure the TAS IP Address. Specify the IPv4 Address for the TAS and press **Enter** to continue.

       TAS IP Address []:

b. If **dynamic** is selected, the user will be prompted to configure the TAS Host Name. Specify the Host Name of the TAS and press **Enter** to continue.

   TAS Host Name []:

   NOTE:
   This step only applies to a Landslide Test Server that will be communicating with a Landslide Manager. If the static option is selected and the Landslide Manager's IP address is changed after completing the Landslide installations, the Landslide Test Server configurations must be modified to restore communication between the platforms.

16. If you are configuring a Landslide Manager and Landslide Test Servers to communicate using the Landslide provided VPN service, type **yes** and press **Enter** to continue with VPN configuration, otherwise press **Enter** to accept the default value of no to continue.

    Modify VPN Service status (yes/no) [no]:

17. Type **enable** and press **Enter** to enable the VPN Server and continue with configuration. The default option of disable will disable the VPN Service if it has been previously enabled.

    VPN Server Service (enable/disable) [disable]:

    a. Manager Only - If enable is selected while provisioning a Landslide Manager, answer the resulting configuration prompts.

       - Specify a unique internal private IPv4 address that will not be used anywhere else within the Landslide management network. An address such as 10.8.0.1 should work, as this IP address is for use only within the private Landslide VPN network. Press **Enter** to continue.

         Enter the VPN server IP address [10.8.0.0]:

       - Specify the netmask for the VPN server. Accepting the default of 255.255.255.0 by pressing **Enter** is recommended.

         Enter the VPN server netmask (255.255.255.0) []:

    b. TS Only - If **enable** is selected while provisioning a Landslide Test Server, answer the resulting configuration prompts.

       - Specify a unique Client ID for the Test Server's VPN client, press **Enter** to continue.

         Enter the Unique VPN Client ID []:

       - Specify the IPv4 address of the Landslide Manager (NOT the internal IPv4 address configured above, press **Enter** to continue.

         Enter the host IP address (vpn server) []:

         NOTE:
         - If enabling the VPN service, make sure to provision the VPN settings on the Landslide Manager first and that it is up and running before configuring VPN settings on the Test Server.
         - The VPN Service cannot be used in conjunction with WebProxy. These services are mutually exclusive.

18. If you are configuring a Landslide Manager and Landslide Test Servers to communicate using the Landslide provided WebProxy service (implemented to support Landslide containerized test servers), type **yes** and press **Enter** to continue with WebProxy configuration.
    Otherwise, press **Enter** to accept the default value of **no** to continue.

    Enable WebProxy (yes/no)? [no]:

    a. If yes is selected, the user will be prompted to configure the TCP port that the TAS will use to listen for connections.
    Press **Enter** to accept the default port of 9998, or specify a different port to be used and press **Enter** to accept the specified port number.

    b. Specify TCP port that TAS will listen (1-65535), (Prefered:9998) ? [9998]:

    NOTE:
    - WebProxy cannot be used in conjunction with the VPN Service. These services are mutually exclusive.
    - Additional steps are required to complete successful configuration of WebProxy. Refer to the Landslide online Help section "*Web Proxy between TAS and Test Server*" for additional details.

19. A time server is defined for every platform. Landslide supports both NTP and PTP. Specify **ntp** or **ptp** and press **Enter** to proceed with Time Sync Protocol configuration.

    <TAS / TS / TAS+TS> Time Sync Protocol (ntp/ptp) [ntp]:

    - If **ntp** is selected, configure the NTP Server IP, specify the IPv4 address of the NTP server to be used. The TAS management IP address can be used as a common timing source for all test servers as well as other devices.

      <TAS / TS / TAS+TS> NTP Server IP []:

    - If **ptp** is selected, configure the PTP Transport Mode, specify either ipv4 or ethernet and then press **Enter** to select the PTP transport mode.

      PTP Transport Mode (ipv4/ethernet) [ipv4]:

    - If **ipv4** is selected, configure the PTP IP Mode. Specify multicast, unicast, or hybrid for the PTP IP Mode, press **Enter** to continue.

      PTP Transport Mode (multicast/unicast/hybrid) [multicast]:

    - If **unicast** is selected, configure the PTP Master Clock IP, specify a valid IPv4 address for the PTP Master Clock. , press **Enter** to continue.

      PTP Master Clock IP [10.1.1.1]:

20. The initial configuration is complete at this point. Type **reboot** and press **Enter** to reboot the system.

    System must be rebooted for these changes to take effect. If cancel is selected, user must rerun ipcfg to make and apply changes. (reboot/cancel) [reboot]:

    As indicated by the prompt, if the user selects cancel, ipcfg will need to be rerun and the system rebooted. Manual reboot of the test server or restarting the test server in other ways will cause system misconfiguration and instability.

NOTE:
If errors are detected in any of the data entered above, answer cancel to the reboot question and rerun the **ipcfg** command.

Configure an IPv6 Management Port

Perform the following steps:

1. Configure an Ethernet interface on a laptop or workstation with an IPv4 address and a network mask that will allow communications with the management port. The default management port address is 192.168.0.2.

   Alternatively, a console session can be used by connecting a keyboard and monitor to the front panel of a physical server. Virtual machines require the user to connect to the console via the hypervisor.

2. If a console session is used instead of SSH, skip step 4.
3. Connect the laptop or workstation to the management port using a standard Ethernet cable.
4. Power up the Landslide platform with the switch located on the front panel. Allow several minutes for the system to start up.

   NOTE:
   If the Landslide platform is already powered on when the cable is connected, the Ethernet link may not auto negotiate properly. In this case, power-cycle the Landslide platform after all connections are made.

5. Log in to the Landslide platform.
   a. If connecting to the management port from a laptop or workstation, use SSH. From a command prompt, enter:

      ssh cfguser@192.168.0.2

      When prompted for the password, type **cfguser** and then press **Enter**.

   b. If connecting to the console by connecting a keyboard and monitor to the front panel of a physical server or by connecting to a virtual machine's hypervisor, use the cfguser account to log in. The default password is the same as the username.

      login: **cfguser** password: **cfguser**

6. The first time the cfguser user logs into Landslide, the user should be prompted to define the initial network configuration.

   Management port and TAS IP may not be configured on this machine.

   Configure now? (y/n)

   Type **y** and press **Enter** to define the configuration.

   If the initial configuration question does not display, type **ipcfg** at the command prompt.

   CAUTION:
   - Do not abort this script when it is executed for the first time on a new platform. Background processes configure the services that should automatically start on boot. If the script is aborted, some services, including SSH, will not start if the platform is power-cycled or rebooted.
   - Do not use arrow keys or the Delete key to correct data entry errors; instead, use only the Shift + Backspace key. If errors are detected after data has already been entered, at the end of the script, answer no to the reboot question and rerun the ipcfg command.

7. A warning will be displayed, and the user will be asked if they wish to continue. Type **yes** and press **Enter** to continue.

   NOTE:
   Do not terminate this utility, otherwise it can lead to system instability! Do you wish to Continue (yes/no) [no]:

8. The user will be prompted to identify the port to be used as the management port. The user must specify eth0v6 as the management port for IPv6 management. Specify eth0v6 and press **Enter** to continue.

   Note: Preferred management port is eth0
   Designate management port (eth0/eth0v6 --eth17/eth17v6) [eth0]:

9. The user will be prompted to answer a set of configuration prompts for the management port. The port name is shown in the prompt and is enclosed in angle brackets <eth0v6>.

   a. Specify a unique IPv6 address for the management port, press **Enter** to continue.

      <port> IPv6 Address []:

   b. Specify the IPv6 network mask in slash notation - i.e., /64, press **Enter** to continue.

      <port> IPv6 Network Mask []:

   c. Accept the default configuration to enable automatic speed and duplex negotiation by pressing **Enter** to continue.

      Auto Negotiate? (yes/no) [yes]:

   d. Specify the address for the IPv6 gateway in your network, press **Enter** to continue.

      <port> <TAS / TS / TAS+TS> IPv6 Gateway []:

e. Specify the MTU of the management port, then press **Enter** to continue.

<port> <TAS / TS / TAS+TS> MTU size (Recommend: 1500; Range: 1280->1500) [1500]:

NOTE:
Confirm the networking properties assigned to the management port. Failure to use the proper values may prevent communication with the platform.

10. TAS or Combined TAS+TS Only -
The user will be prompted to choose if they would like to configure an alternate management port for accessing a cloud or corporate based license server on a network that is isolated (not reachable) from the Management Port's network. In most cases, this should not be configured. The user should press **Enter** to accept the default value of **no** and continue.
If configuration of the alternate management port is desired, type **yes**, then press **Enter** to continue with the resulting configuration prompts.
11. Do you wish to Set Alternate mgmt port to access License Server (yes/no) [no]:

a. Designate the Alternate management port to be used to access the license server, then press **Enter** to continue. The recommended port is eth1. Press **Enter** to accept the default value and continue. The p referred Alternate management port to access License server is eth1 (Static IP only.)

NOTE: - IP address should not be in the mgmt port network

Designate <TAS / TAS+TS> Alternate management port (eth0/ eth0v6 -- eth2/eth2v6) [eth1]:

b. Specify a unique IPv4 address for the alternate management port, press **Enter** to continue.

<port> <TAS / TAS+TS> IP Address []:

c. Specify the IPv4 network mask, press **Enter** to continue.

<port> <TAS / TAS+TS> Network Mask []:

d. Accept the default configuration to enable automatic speed and duplex negotiation by pressing **Enter** to continue.

<port> <TAS / TAS+TS> Auto Negotiate? (yes/no) [yes]:

e. Specify the address for the IPv4 gateway in your alternate management network, then press **Enter** to continue.

<port> <TAS / TAS+TS> IP Gateway []:

f. Specify the MTU of the alternate management port, then press **Enter** to continue.

<port> <TAS / TAS+TS> MTU size (Recommend: 1500; Range: 1000->1500) [1500]:

g. Specify the IP address of the license server. If using a purchased corporate license server (hosted on the E10 platform), then type the IP address of that server and then press **Enter** to continue. Otherwise, if you are using the Spirent hosted cloud-based license server, press **Enter** to accept the default value of 38.99.7.67 to continue.

   <port> <TAS / TAS+TS> License Server ip addr [38.99.7.67]:

12. The user will be prompted to specify the host name of the server.

    Specify the host name of the server, then press **Enter** to continue. Do not use any blank spaces in the Host Name.

    <TAS / TS / TAS+TS> Host Name [osU1604]:

13. TAS or Combined TAS+TS Only - The user will be asked if they would like to configure DNS. If yes, type yes and continue with the resulting configuration prompts. Otherwise, press **Enter** to accept the default value of no to continue.

    <TAS / TAS+TS> Enable DNS? (yes/no) [no]:

    a. Specify an IP address for the primary DNS server, then press **Enter** to continue.

       <TAS / TAS+TS> Primary DNS Server Address [192.168.1.254]:

    b. Specify an IP address for the secondary DNS server, then press **Enter** to continue.

       <TAS / TAS+TS> Secondary DNS Server Address [192.168.1.254]:

14. TS Only - Enter the IPv6 address for the Landslide Manager.

    TAS IP Address []:

    NOTE:
    This step only applies to a Landslide Test Server that will be communicating with a Landslide Manager. If the Landslide Manager's IP address is changed after completing the Landslide installations, the Landslide Test Server configurations must be modified to restore communication between the platforms.

15. The VPN Service is currently only supported for an IPv4 management IP Address. Press **Enter** to accept the default value of **no** to skip configuration and continue.

    Modify VPN Service status (yes/no) [no]:

16. If you are configuring a Landslide Manager and Landslide Test Servers to communicate using the Landslide provided WebProxy service (implemented to support Landslide containerized test servers), type **yes** and press **Enter** to continue with WebProxy configuration, otherwise press **Enter** to accept the default value of no to continue.

    Enable WebProxy (yes/no)? [no]:

    a. If **yes** is selected, the user will be prompted to configure the TCP port that the TAS will use to listen for connections. To accept the default port of 9998 press **Enter** or specify a different port to be used and press **Enter** to accept the specified port number.

       Specify TCP port that TAS will listen (1-65535), (Pref- ered:9998) ? [9998]:

17. A time server is defined for every platform. Landslide supports both NTP and PTP. Specify ntp or ptp and press **Enter** to proceed with Time Sync Protocol configuration.

    <TAS / TS / TAS+TS> Time Sync Protocol (ntp/ptp) [ntp]:

    – If **ntp** is selected, configure the NTP Server IP, specify the IPv4 or IPv6 address of the NTP server to be used. The TAS management IP address can be used as a common timing source for all test servers as well as other devices.

      <TAS / TS / TAS+TS> NTP Server IP []:

    – If **ptp** is selected, configure the PTP Transport Mode, specify either ipv4 or ethernet and then press **Enter** to select the PTP transport mode.

      PTP Transport Mode (ipv4/ethernet) [ipv4]:

    – If **ipv4** is selected, configure the PTP IP Mode. Specify multicast, unicast or hybrid for the PTP IP Mode, then press **Enter** to continue.

      PTP Transport Mode (multicast/unicast/hybrid) [multi- cast]:

    – If **unicast** is selected, configure the PTP Master Clock IP, specify a valid IPv4 address for the PTP Master Clock and press **Enter**.

      PTP Master Clock IP [10.1.1.1]:

18. The user will be prompted to configure the alternate IPv4 Address mode for any desired services that may require the use of IPv4. For example, if IPv4 addresses were used in provisioning NTP or PTP in the steps above, configuration of the IPv4 Address mode is required. If no alternate IPv4 management interface is desired or needed, press **Enter** to accept the default value none to skip this step. Otherwise, specify static or dynamic to continue with configuring an alternate IPv4 management address.

    Configure <TAS / TS / TAS+TS> alternate IPv4 Address mode (none/static/dynamic) [none]:

    If **static** is selected, answer the resulting configuration prompts.

    a. Specify a unique IPv4 address for the alternate IPv4 management address, press **Enter** to continue.

       <port> <TAS / TS / TAS+TS> IPv4 Address []:

    b. Specify the IPv4 network mask, then press **Enter** to continue.

       <port> <TAS / TS / TAS+TS> IPv4 Network Mask []:

    c. Specify the address for the IPv4 gateway in your network, then press **Enter** to continue.

       <port> <TAS / TS / TAS+TS> IPv4 IP Gateway []:

19. The initial configuration is complete at this point. Type reboot and press **Enter** to reboot the system.

    System must be rebooted for these changes to take effect. If cancel is selected, user must rerun **ipcfg** to make and apply changes. (reboot/cancel) [reboot]:

As indicated by the prompt, if the user selects cancel, **ipcfg** will need to be rerun and the system rebooted. Manual reboot of the test server or restarting the test server in other ways will cause system misconfiguration and instability.

NOTE:
If errors are detected in any of the data entered above, answer **cancel** to the reboot question and rerun the **ipcfg** command.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC CAUTION:
Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Cautions:
1) Exposure to Radio Frequency Radiation. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

2) Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

3) This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

4) Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

RF exposure warning:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. The equipment must not be co-located or operating in conjunction with any other antenna or transmitter.

For LTE Modem EM7565:
Contains Transmitter Module FCC ID: N7NEM75

For 802.11AC Wifi:
Contains Transmitter Module FCC ID TK4WLE900VX

For LTE Modem EM7430:
No FCC ID Available: Not intended for use in the USA.

4. Landslide E10 System Overview

The Landslide E10 Test System is a compact, purpose-built test system developed for testing and monitoring of live wireless packet data core network elements. For a detailed description of system functionality, refer to the online Help documentation.

Landslide E10 Test System

The Landslide E10 test system is a purpose-built compact wireless RAN and packet core testing tool used to test and monitor live network performance in real time. Landslide E10 ships with Landslide Test Server functionality.

Deployment

The Landslide E10 test system is deployed in the field by connecting an RJ-45 cable between Ethernet ports made available at customer site and management port (eth0) and one of the test ports (eth1 or eth2). E10 includes three (3) Ethernet ports. Two (2) test ports and one (1) management interface as shown in the following figures. Three (3) WiFi RF antenna connectors are provided to attach the antennas included in the shipment.

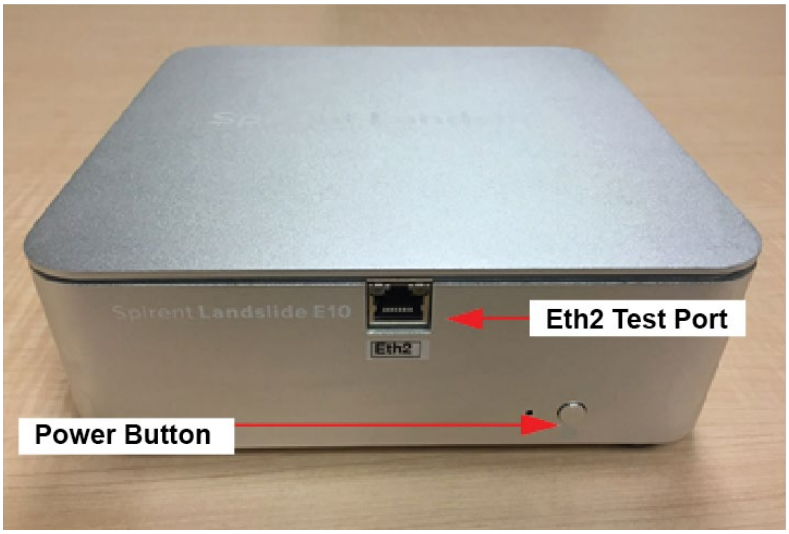

Figure 4. Landslide E10 Front View

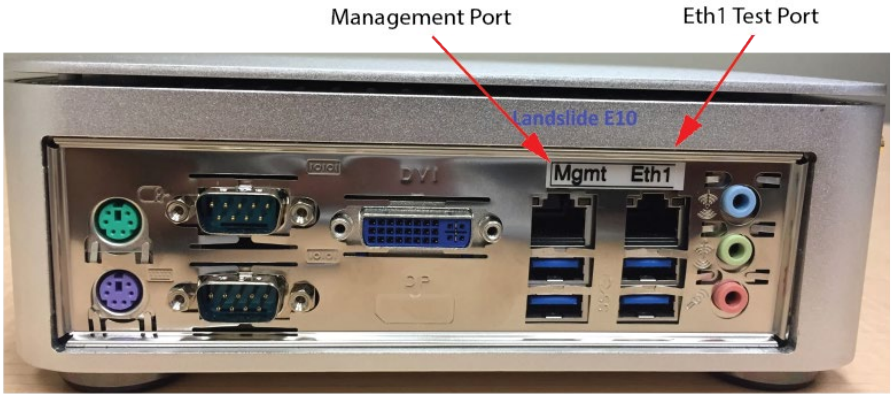

Figure 5. Landslide E10 Rear View

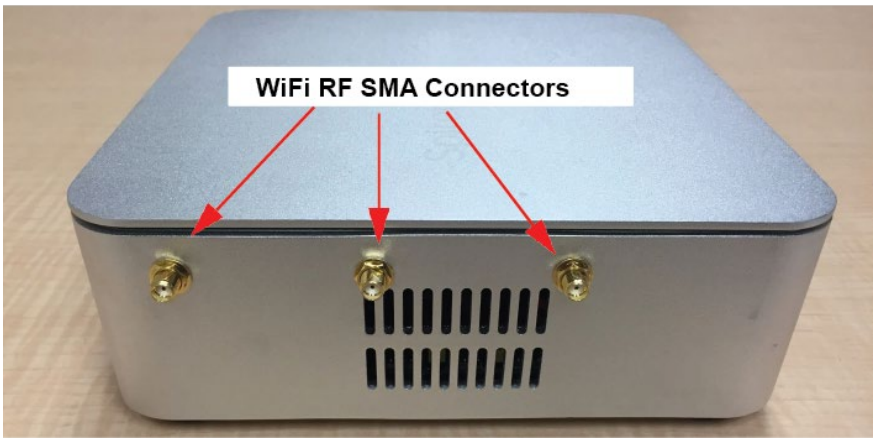

Figure 6. Landslide E10 Side View

System Configuration Overview

The general steps involved in configuring a Landslide test system are outlined below.

1. Install and power up the Landslide E10 combined Manager and Test Server(s).
2. Provide an IP address on your management network for the Manager and for each Test Server.

NOTE:
The management network should be different from the test network that contains the devices/systems under test.

3. Configure the Manager's management port using the steps in "*Landslide Manager Configuration" on page 16*.

4. Configure each Test Server using the steps in *"*Landslide Test Server Configuration*"* *on page 17*.

After you have configured your Test Server, continue with the instructions in *Chapter 6, "*Getting Started*"*

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:
Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC CAUTIONS:

1) Exposure to Radio Frequency Radiation. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.
2) Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.
3) This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
4) Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

RF exposure warning:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. The equipment must not be co-located or operating in conjunction with any other antenna or transmitter.

For the 802.11AC version:
Contains Transmitter Module FCC ID: TK4WLE900VX

For the 802.11n version:
Contains Transmitter Module FCC ID: RYK-WPEA128N

5. Installing U1 OTA Modules on the Landslide E10

This chapter provides important information on mounting U1 Over-the-Air (OTA) module(s) to the E10 carrier and connecting to the E10.

Introduction

The U1 over-the-air module adds expanded RF-testing capabilities to Landslide systems. While designed to work with E10 test servers or stand-alone systems, the U1 is compatible with any Landslide system equipped with one or more USB connections.

Before You Begin

Package Contents

Check the contents of the package to ensure it is complete. Each U1 LTE OTA module is shipped with:

- 1 U1 OTA Module
- 2 LTE antennas
- 2 USB cables
- Instruction sheet

Each E10 Carrier for U1 is shipped with:

- 1 E10 Carrier for U1
- Instruction sheet

IMPORTANT:

- Refer to "*Federal Communication Commission* ***Interference Statement***" for important information pertaining to RF transmitters.
- It is highly recommended that you review all Release Notes before you install or use the Landslide E10 appliance and OTA Modules.
- **RF Exposure Warning:**This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. The equipment must not be co-located or operating in conjunction with any other antenna or transmitter.
- **For the U1 LTE OTA Module:** Contains Transmitter Module FCC ID: N7NMC7455

SIM Card Insertion and Removal

1. Insert the SIM cards into the OTA Modules before installing the OTA models. SIM cards are not included with the U1 OTA module and must be supplied by the user.
2. The SIM card is installed on the top carrier plate of the module. Insert the full-size SIM card into the slot until you hear a click, and it latches the SIM card. As shown in the following figure.

Figure 7. Landslide E10 – SIM Card Insertion and Removal

3. To remove the SIM card, use a small flat screwdriver (or fingernail) to push it in until it clicks. It will disengage the retention spring and release the SIM card. As shown in the following figure.

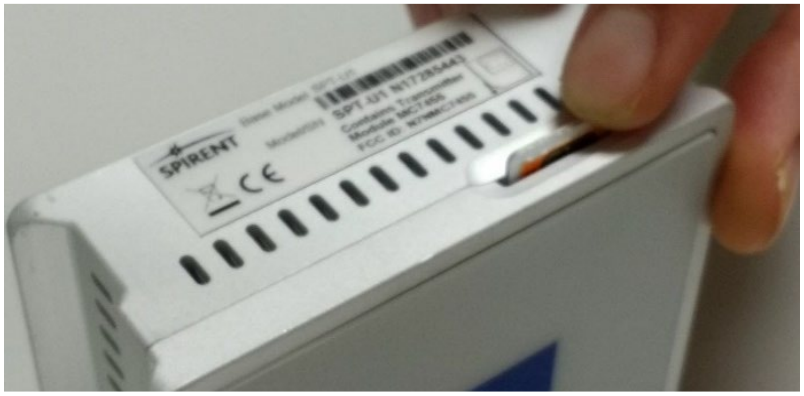

Figure 8. Landslide E10 – SIM Card Insertion and Removal

NOTE:
The SIM card release is under spring tension; use care when removing the cards.

Installing the U1 OTA Module on the Landslide E10

Perform the following steps:

1. Remove the Spirent Landslide-branded cover of the E10 Appliance. Use your finger or a small flat-head screwdriver to pry the top cover off. As shown in the following figure.

Figure 9. Landslide E10 – Cover Removal

2. Place the new Module Carrier Plate on the Landslide E10 appliance. Orientate the plate so the spring tabs are facing toward the sides of the E10 Appliance. As shown in the following figure.

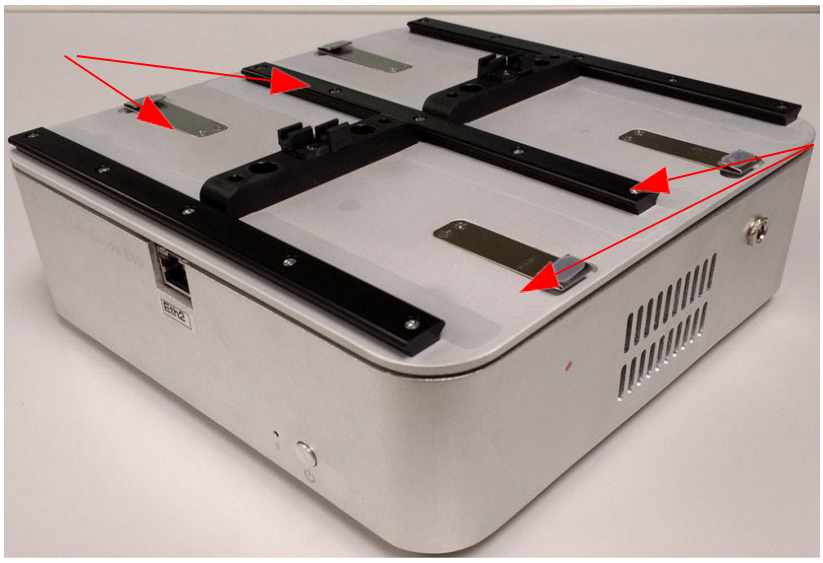

Figure 10. Landslide E10 – Module Carrier Plate

3. Inserting the U1 OTA module.
   a. Set the module on the plate so that the USB port is facing away from the E10.
   b. Ensure that the antenna ports are also facing outward.

c. Slide the U1 OTA module under the guide rails, until it stops. The spring tab will click into the locked position. As shown in the following figure.

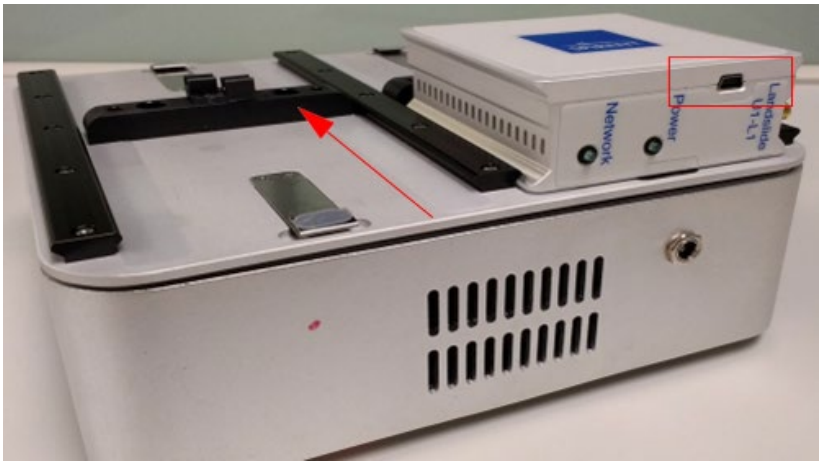

Figure 11. Landslide E10 – Module Carrier Plate

d. Repeat step 3a – 3c for each additional module. All antenna ports and mini- USB ports must be facing outward. As shown in the following figure.
Each E10 with top plate can accommodate up to four U1 OTA modules.

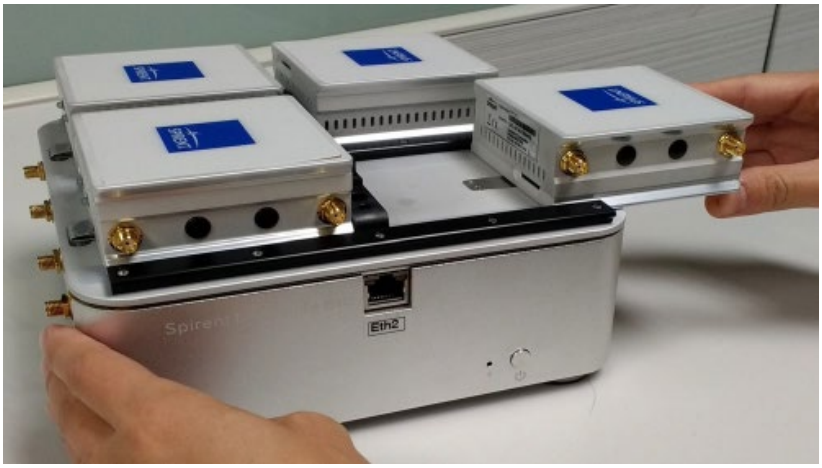

Figure 12. Landslide E10 – Module Carrier Plate

4. Connect all antennas and USB cables required.

Connecting the USB Cables and Antennas

Installing USB cables

Perform the following steps:

1. The following figures in this section show how to connect the modules to the USB ports on the Landslide E10.
   - Figure 19 shows the USB Connections.
   - Figure 20 shows the port numbering.
   - Figure 21 shows the port numbering.

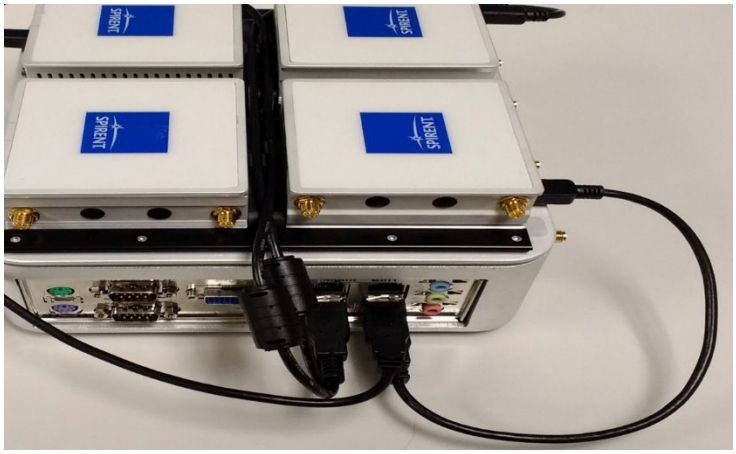

Figure 13. USB Cable Connections

2. Use long USB cables for modules furthermost from the E10 rear I/O panel USB ports.
3. Use short USB cables for modules closest to the E10 rear I/O panel USB ports.

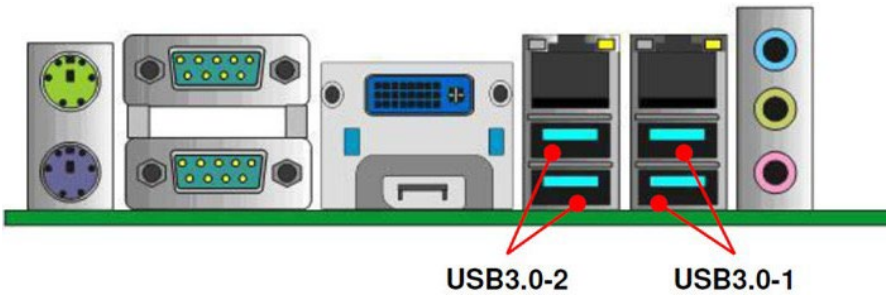

Figure 14. Rear I/O Panel of the E10

Figure 15. USB Port Numbering

NOTE:
Landslide software configuration of the OTA modules is determined by rear panel USB port, U1 OTA 1/Port1, OTA2/Port 2, etc.

4. Drape the long USB cable over the antenna.

Figure 16. Long USB Cable Placement - step 2

Connecting the Antennas

Perform the following steps to connect the two antennas to each module:

1. Insert each antenna into the SMA connectors on the side of the module.

Figure 17. Connecting the Antenna to the U1 OTA Module

2. Grip the antenna nut, rotate and tighten, to secure the antennas to the module. Ensure that antennas are properly threaded onto the SMA connectors. When properly seated, the antennas should take approximately 3.5 to 4 rotations to tighten.

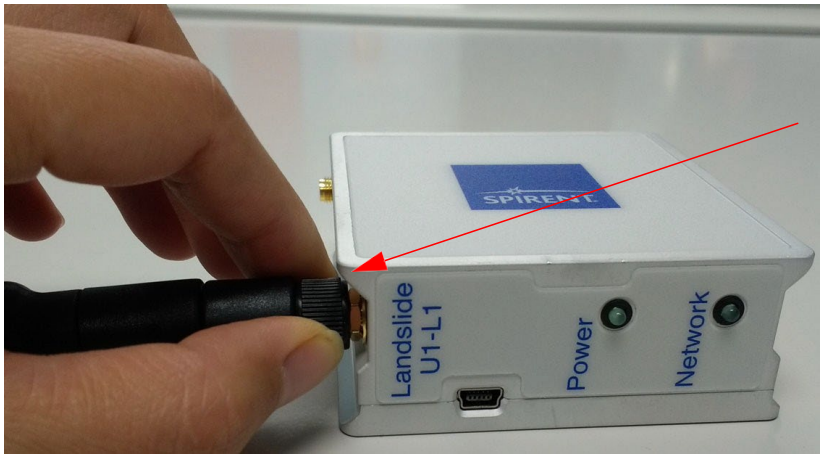

Figure 18. Securing the Antenna to the Module

3. Grip the antenna body and rotate the pivot to the upright position. Pivot must be in the upright position.

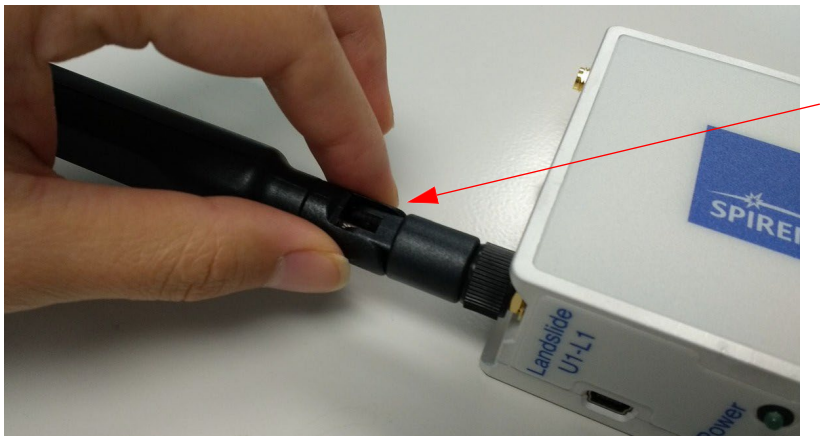

Figure 19. Placing the Pivot in the Correct Position

4. Flip the antennas up to a 90-degree position.

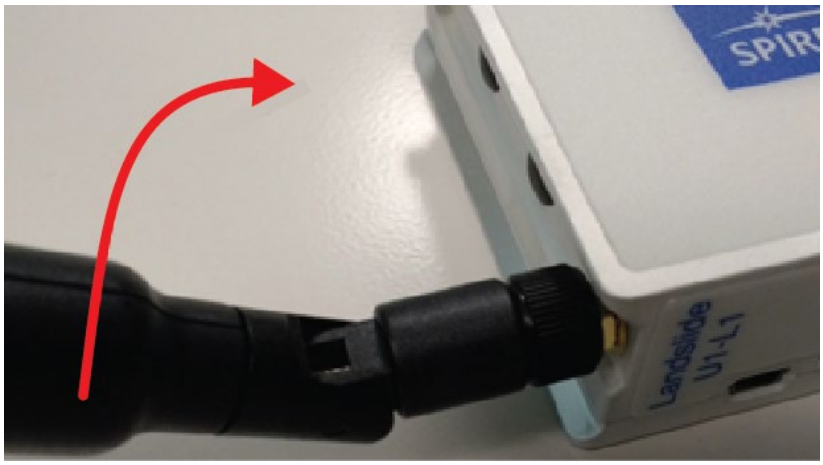

Figure 20. Placing the Pivot in the Correct Position

5. Repeat steps 1 -4 to install additional antennas on each module.

To Unlock and Remove the U1 OTA Module(s)

Perform the following steps:

1. Remove all antennas and USB cables.
2. Press the retaining spring to release the U1 UTA. As shown in the following figure.

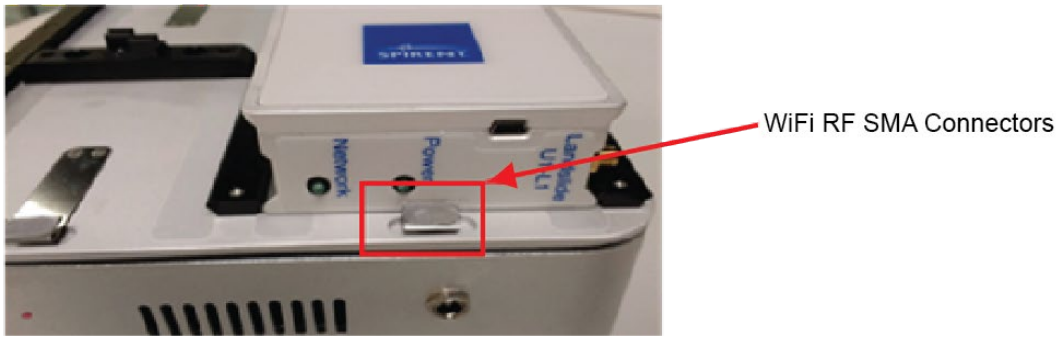

Figure 21. Module Carrier Plate

3. Slide the module out.

6. Getting Started

This chapter describes the System Administrator's initial log in to the Landslide Performance Test System and the process for securing the system.

Logging in to the System

After the Landslide system installation is complete, follow the procedure below to log in to the system for the first time.

Important:
Do not attempt to access the Landslide Manager (TAS) until you have installed and configured Java as instructed.

Perform the following steps to log in to the Landslide system:

1. Configure the IP address and netmask of a laptop or workstation with an address that can communicate with the Landslide Manager.
2. Open the client browser and enter the IP address or host name of the Landslide Manager in the address bar. Press **Enter** or click **Go** to load the Landslide system home page.
3. Open the Help documentation using the **User Guide** link on the home page.
4. Follow the instructions in the **Getting Started > Accessing the Test System > Starting the Landslide Client Help** topic to start the client application.
5. The system is delivered with one user account defined: the Super User. This is the account that will be used for the initial login.
   a. In the Landslide Client window, enter **sms** for the Username.
   b. Enter **1b2c3d4** for the Password, and then click **Login**.
   If the login is successful, the main application window opens; otherwise, an error message explaining the reason for the login failure is displayed.

NOTE:
If this is your first login, the Software End User License Agreement (EULA) dialog may appear. You must read and accept the EULA in order to proceed with using your Landslide Test System. In all cases, including the non-appearance of the EULA, continued use of the Landslide software is an implicit acceptance of the terms and limitations of the EULA

Tips:

- Disable any pop-up blocker or add the Landslide Manager to the list of allowed sites.
- If you receive an error message stating that the server cannot be found, verify that you entered the correct address, and that your platform is in, or has access to, the Landslide Manager's subnet.
- You must accept the EULA to access and use Landslide.

- Refer to the Managing Your System > About System Management Online Help topic for information about preparing the system for test operations.

Adding Test Servers to the System

Use the Test Server Administration window to add your test servers to the system database.

NOTE:
The C100 series and C50 series appliances are separately licensed and cannot be combined to create mixed test systems.

Refer to **Managing Your System > Test Servers > Operations and Maintenance > Adding a Test Server and Deleting a Test Server** online help topics for detailed instructions.

Installing the Tcl API

To install and use the Landslide Tcl API, refer to the **Getting Started > How to Test > Working with Tcl API > Using the Tcl API** online Help topic for detailed instructions.

Securing the System

The default passwords for the Super User account and the cfguser account should be changed after installation in order to secure the system.

The Super User password can be changed while logged in as the Super User. Follow the procedure in the **Managing Your System > Users > Changing Your Password** Help topic.

The cfguser account, which was used to access the configuration tools during installation, is also used to access the TAS Manager and perform system maintenance. The password for this account can be changed through the TAS Manager console. Refer to the **Managing Your System > System Maintenance** Help topics for information on this and other system management tasks.

Securing the System

The default passwords for the Super User account and the cfguser account should be changed after installation in order to secure the system.

The Super User password can be changed while logged in as the Super User. Follow the procedure in the **Managing Your System > Users > Changing Your Password** Help topic.

The **cfguser** account, which was used to access the configuration tools during installation, is also used to access the TAS Manager and perform system maintenance. The password for this account can be changed through the TAS Manager console. Refer to the **Managing Your System > System Maintenance** Help topics for information on this and other system management tasks.

Default Passwords

- The default password for the sms account is **a1b2c3d4**
- The default password for the cfguser account is **cfguser**

IMPORTANT:
If you change the passwords to your system, be sure to record them in a secure location. The passwords are encrypted in the system memory, and Spirent cannot recover them for you.

7. Appendix - Landslide Test Server NIC Configurations

This appendix contains important information regarding your shipment of Spirent Landslide compatible network interface cards (NICs). Landslide Test System test ports are located on the C100 Test Server, the C50 combined Manager and Test Server, or the C50 Add-on Test Server. The NIC configurations in this appendix have been selected to achieve the highest data throughput performance possible. Other configurations are possible, but can result in degraded throughput performance, re-ordering of port names or other unexpected behavior.

General

The Landslide appliance operating system discovers installed NICs and assigns logical port names to the NIC ports in a specific order that cannot be overridden. This order is dependent on number, location and type of NIC installed in the appliance. This discovery and logical port assignment cannot be changed by the user. Appliance NIC placement and port assignment is optimized to provide the best attainable performance for the Landslide application.

Supported NICs and IPSec Cards

Part Number	Type	Description	Notes
L-NIC-31A	Quad-port, 1Gbps fiber Ethernet server adapter	1 GbE, 10/100/1000Base-SX	C50-S5, C100-M4, C100-M4R*
L-NIC-32A	Quad-port, 1Gbps copper Ethernet server adapter	1 GbE, 10/100/1000Base-T	C50-S5, C100-M4, C100-M4R*
L-NIC-31B	Quad-port, 1Gbps fiber Ethernet server adapter	1 GbE, 10/100/1000Base-SX	C50-S5, C100-M4, C100-M4R*
L-NIC-32B	Quad-port, 1Gbps copper Ethernet server adapter	1 GbE, 10/100/1000Base-T	C50-S5, C100-M4, C100-M4R*
L-NIC-66	Quad-port, 10 Gbps SFP+ Ethernet server adaptor	10 GbE, SFP+ 10GBASE-SR 850nm MMF	C50-S5, C100-M4, C100-M4R*

Part Number	Type	Description	Notes
L-NIC-73	Dual-port, 25 Gbps, SFP28 Ethernet server adaptor	25 GbE, SFP28 25GBASE-SR (850nm MMF) & 25GBASE-CR (direct attach twinaxial copper) (SFP28 25GBASE-LR, 1310nm SMF optics available)	C100-M4, C100-M4R*
L-NIC-74	Dual-port, 40 Gbps, QSFP+ Ethernet server adaptor	40 GbE, QSFP+ 40GBASE-SR4 (850nm MMF) & 40GBASE-CR4 (direct attach twinaxial copper) (QSFP+ 40GBASE-LR4,1310nm SMF optics available)	C100-M4, C100-M4R*
L-NIC-75	Dual-port, 100 Gbps, QSFP28+, Ethernet server adaptor	100 GbE, QSFP28 100GBASE- CR4 (direct attach copper) 100GBASE-SR4 (850nm MMF optics available) 100GBASE-LR4 (1310nm SMF optics available)	C100-M4, C100-M4R*
L-ACC-008	High-performance IPSec Accelerator Card	High-performance IPSec Accelerator Card	C100-M4, C100-M4R*
L-ACC-6002	Optical Transceiver SFP+ 10GBASE-LR, SMF 1310NM	SFP+ 10GBASE-LR 1310nm, single-mode fiber transceiver	L-NIC-66 only
L-ACC-6004	Optical Transceiver QSFP+ 40GBASE-LR4, SMF 1310NM	QSFP+ 40GBASE-LR4 1310 nm, single-mode fiber transceiver	L-NIC-74 only
L-ACC-6005	Optical Transceiver QSFP28 100GBASE- LR4, SMF 1310NM	QSFP28 100GBASE-LR4 1301nm, single-mode fiber transceiver	L-NIC-75 only

Part Number	Type	Description	Notes
L-ACC-6006	Optical Transceiver QSFP28 100GBASE- SR4, MMF 850NM	QSFP28 100GBASE-SR4 850nm, multi-mode fiber transceiver	L-NIC-75 only

NOTE:
The C100-M4R is a revised C100-M4 with the same capacity and performance characteristics, but a slightly different motherboard layout which requires differentiation for NIC and IPSec card configuration.

Supported NIC Configurations and Port Names

As viewed from the front of the appliance, motherboard slots are numbered sequentially one (1) to six (6) starting on the left. Slot 6 is unused. NIC ports are numbered sequentially from top to bottom, as seen when installed.

NOTE:
Revision G of the C100 and C50 chassis makes provision for a seventh slot, slot 0, located to the left of slot 1. Slots 0 and 6 are not used by Landslide. In all other respects revision G, and later, chassis are identical to earlier revisions.

The standard factory default C100-M4 test server configuration includes two L-NIC-32B quad-port, copper Ethernet NICs installed in slots 1 and 2. These NIC ports are labeled as eth2 through eth9. Optional add-on test server appliances support the NIC configurations as detailed in the following tables.

C100-M4 Test Server Supported NIC Configurations

The following tables describe the NIC configurations that are supported on the C100-M4 test servers.

NOTES:

- Slots 0 and 6 are unused
- L-ACC-008 is optional for most C100-M4 configurations
- C100-M4 test servers can support one or two L-ACC-008 IPSec accelerator cards. Contact Spirent Customer Support for information about supported configurations.
- The C100-M4R (revised C100-M4) is not covered in this section as a different motherboard layout requires differentiation for NIC and IPSec card configuration. Please refer to the following C50-S5 and C100-M4R Test Server Supported NIC Configurations section.

One, two, three or four quad-port 1Gbps, 4x, 8x, 12x or 16x 1 Gbps ports:		
Slot	**Card**	**Ports**
0	Unused	NA
1	First quad-port, 1 Gbps (L-NIC-31A/B, L-NIC- 32A/B)	eth2, eth3, eth4, eth5
2	Second quad-port, 1 Gbps (L-NIC-31A/B, L- NIC-32A/B)	eth6, eth7, eth8, eth9
3	Fourth quad-port, 1 Gbps (L-NIC-31A/B, L- NIC-32A/B)	eth14, eth15, eth16, eth17
4	Third quad-port, 1 Gbps (L-NIC-31A/B, L-NIC- 32A/B)	eth10, eth11, eth12, eth13
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Unused	NA

One or two quad-port 10 Gbps NICs with no additional NIC cards, 4x or 8x 10 Gbps ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First quad-port 10 Gbps (L-NIC-66)	eth2, eth3, eth4, eth5
2	Empty	NA
3	Empty	NA
4	Second quad-port 10 Gbps (L-NIC-66)	eth6, eth7, eth8, eth9
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Unused	NA

Three or four quad-port 10 Gbps, 12x or 16x 10 Gbps ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First quad-port, 10 Gbps (L-NIC-66)	eth2, eth3, eth4, eth5
2	Second quad-port, 10 Gbps (L-NIC-66)	eth6, eth7, eth8, eth9
3	Fourth quad-port, 10 Gbps (L-NIC-66)	eth14, eth15, eth16, eth17
4	Third quad-port, 10 Gbps (L-NIC-66)	eth10, eth11, eth12, eth13
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Unused	NA

One quad-port, 10 Gbps NIC and one, two, or three quad-port 1 Gbps NICs, 4x 10 Gbps ports and 4x, 8x or 12x 1 Gbps ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	Quad-port 10 Gbps (L- NIC-66)	eth2, eth3, eth4, eth5
2	First quad-port, 1 Gbps (L-NIC-31A/B, L-NIC- 32A/B)	eth6, eth7, eth8, eth9
3	Third quad-port, 1 Gbps (L-NIC-31A/B, L-NIC- 32A/B)	eth14, eth15, eth16, eth17
4	Second quad-port, 1 Gbps (L-NIC-31A/B, L- NIC-32A/B)	eth10, eth11, eth12, eth13
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Unused	NA

Two quad-port 10 Gbps NICs and one or two quad-port 1 Gbps, 8x 10 Gbps ports and 4x or 8x 1 Gbps ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First quad-port 10 Gbps (L-NIC-66)	eth2, eth3, eth4, eth5
2	First quad-port, 1 Gbps (L-NIC-31A/B, L-NIC-32A/B)	eth6, eth7, eth8, eth9
3	Second quad-port, 1 Gbps (L-NIC-31A/B, L- NIC-32A/B)	eth14, eth15, eth16, eth17
4	Second quad-port 10 Gbps (L-NIC-66)	eth10, eth11, eth12, eth13
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Unused	NA

Three quad-port 10 Gbps NICs and one quad-port 1 Gbps, 12x 10 Gbps ports and 4x 1 Gbps ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First quad-port 10 Gbps (L-NIC-66)	eth2, eth3, eth4, eth5
2	Second quad-port 10 Gbps (L-NIC-66)	eth6, eth7, eth8, eth9
3	Quad-port, 1 Gbps (L- NIC-31A/B, L-NIC-32A/B)	eth14, eth15, eth16, eth17

Three quad-port 10 Gbps NICs and one quad-port 1 Gbps, 12x 10 Gbps ports and 4x 1 Gbps ports		
Slot	**Card**	**Ports**
4	Third quad-port 10 Gbps (L-NIC-66)	eth10, eth11, eth12, eth13
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Unused	NA

One or two dual-port, 25 GbE, 40 GbE or 100 GbE NICs with no additional NIC cards, 2x or 4x 25/40/100 GbE Ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First dual-port 25/40/100 GbE NIC (L-NIC-73/74/75)	eth2, eth3
2	Empty	NA
3	Second dual-port 25/40/100 GbE NIC (L-NIC-73/74/75)	eth 4, eth 5
4	Empty	NA
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Unused	NA

Three or four dual-port 25 GbE, 40 GbE NICs with no additional NIC cards, 6x or 8x 25/40 GbE ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First dual-port 25/40 GbE NIC (L-NIC-73/74)	eth2, eth3
2	Second dual-port 25/40 GbE NIC (L-NIC-73/74)	eth 4, eth 5
3	Fourth dual-port 25/40 GbE NIC (L-NIC-73/74)	eth 8, eth 9
4	Third dual-port 25/40 GbE NIC (L-NIC-73/74)	eth 6, eth 7
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Unused	NA

Three dual-port 100 GbE NICs with no additional NIC cards, 6x 100 GbE ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First dual-port 100 GbE NIC (L-NIC-75)	eth2, eth3
2	Second dual-port 100 GbE NIC (L-NIC-75)	eth 4, eth 5
3	Fourth dual-port 100 GbE NIC (L-NIC-75)	eth 8, eth 9
4	Empty	NA
5	Third dual-port 100 GbE NIC (L-NIC-75)	eth 8, eth 7
6	Unused	NA

Four dual-port 100 GbE NICs with no additional NIC cards, 8x 100 GbE ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First dual-port 100 GbE NIC (L-NIC-75)	eth2, eth3
2	Second dual-port 100 GbE NIC (L-NIC-75)	eth 4, eth 5
3	Third dual-port 100 GbE NIC (L-NIC-75)	eth 6, eth 7
4	Empty	NA
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Unused	NA

NOTE:
The L-ACC-008 IPSec Accelerator is not supported with this configuration

One dual-port, 25 GbE, 40 GbE or 100 GbE NIC and one, two or three quad-port 1 GbE or 10GbE NICs, 2x 25/40/100 GbE ports and 4x, 8x or 12x 1 or 10 GbE ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	Dual-port 25/40/100 GbE NIC (L-NIC-73/74/75)	eth2, eth3
2	First quad-port,1 Gbps (L-NIC-31A/B, L-NIC-32A/B) or 10Gbps (L-NIC-66)	eth4, eth5, eth6, eth7
3	Third quad-port,1 Gbps (L-NIC-31A/B, L-NIC-32A/B) or 10Gbps (L-NIC-66)	eth12, eth13, eth14, eth15
4	Second quad-port,1 Gbps (L-NIC-31A/B, L-NIC-32A/B) or 10Gbps (L-NIC-66)	eth8, eth9, eth10, eth11
5	Optional L-ACC-008 IPSec Accelerator	NA

One dual-port, 25 GbE, 40 GbE or 100 GbE NIC and one, two or three quad-port 1 GbE or 10GbE NICs, 2x 25/40/100 GbE ports and 4x, 8x or 12x 1 or 10 GbE ports		
Slot	**Card**	**Ports**
6	Unused	NA

Two dual-port 25 GbE, 40 GbE or 100 GbE NICs and one or two quad- port 1 GbE or 10GbE NICs, 4x 25/40/100 GbE ports and 4x or 8x 1 GbE or 10 GbE ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	Dual-port 25/40/100 GbE NIC (L-NIC-73/74/75)	eth2, eth3
2	First quad-port,1 Gbps (L-NIC-31A/B, L-NIC-32A/B) or 10Gbps (L-NIC-66)	eth4, eth5, eth6, eth7
3	Third quad-port,1 Gbps (L-NIC-31A/B, L-NIC-32A/B) or 10Gbps (L-NIC-66)	eth12, eth13, eth14, eth15
4	Second quad-port,1 Gbps (L-NIC-31A/B, L-NIC-32A/B) or 10Gbps (L-NIC-66)	eth8, eth9, eth10, eth11
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Unused	NA

Two dual-port 25 GbE, 40 GbE or 100 GbE NICs and one or two quad- port 1 GbE or 10GbE NICs, 4x 25/40/100 GbE ports and 4x or 8x 1 GbE or 10 GbE ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First dual-port, 25/40/100 GbE NIC (L-NIC-73/74/75)	eth2, eth3
2	Second dual-port, 25/40/100 GbE NIC (L-NIC-73/74/75)	eth4, eth5
3	Third dual-port, 25/40/100 GbE NIC (L-NIC-73/74/75)	eth10, eth11
4	Quad-port,1 Gbps (L-NIC-31A/B, L-NIC-32A/B) or 10Gbps (L-NIC-66)	eth6, eth7, eth8, eth9
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Unused	NA

C50-S5 and C100-M4R Test Server Supported NIC Configurations

The following tables describe the NIC configurations that are supported on the C50-S5 and C100-M4R test servers.

NOTES:

- Slot 0 is unused
- L-ACC-008 is optional for most C50-S5 and C100-M4R configurations.
- The C100-M4R is a revised C100-M4 with the same capacity and performance characteristics, but a slightly different motherboard layout which requires differentiation for NIC and IPSec card configuration.

One, two, three or four quad-port 1Gbps, 4x, 8x, 12x or 16x 1 Gbps ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First quad-port, 1 Gbps (L-NIC-31A/B, L-NIC- 32A/B)	eth2, eth3, eth4, eth5
2	Second quad-port, 1 Gbps (L-NIC-31A/B, L- NIC-32A/B)	eth6, eth7, eth8, eth9
3	Third dual-port, 25/40/100 GbE NIC (L-NIC-73/74/75)	eth10, eth11, eth12, eth13
4	Fourth quad-port, 1 Gbps (L-NIC-31A/B, L- NIC-32A/B)	eth14, eth15, eth16, eth17
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Empty	NA

One or two quad-port 10 Gbps NICs with no additional NIC cards, 4x or 8x 10 Gbps ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First quad-port 10 Gbps (L-NIC-66)	eth2, eth3, eth4, eth5
2	Empty	NA
3	Second quad-port 10 Gbps (L-NIC-66)	eth6, eth7, eth8, eth9
4	Empty	NA
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Empty	NA

Three or four quad-port 10 Gbps, 12x or 16x 10 Gbps ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First quad-port 10 Gbps (L-NIC-66)	eth2, eth3, eth4, eth5
2	Second quad-port, 10 Gbps (L-NIC-66)	eth6, eth7, eth8, eth9
3	Third quad-port, 10 Gbps (L-NIC-66)	eth10, eth11, eth12, eth13
4	Fourth quad-port, 10 Gbps (L-NIC-66)	eth14, eth15, eth16, eth17
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Empty	NA

Three or four quad-port 10 Gbps, 12x or 16x 10 Gbps ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	Quad-port 10 Gbps (L-NIC-66)	eth2, eth3, eth4, eth5
2	First quad-port, 1 Gbps (L-NIC-31A/B, L-NIC- 32A/B)	eth6, eth7, eth8, eth9
3	Second quad-port, 1 Gbps (L-NIC-31A/B, L-NIC-32A/B)	eth10, eth11, eth12, eth13
4	Third quad-port, 1 Gbps (L-NIC-31A/B, L-NIC- 32A/B)	eth14, eth15, eth16, eth17
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Empty	NA

Two quad-port 10 Gbps NICs and one or two quad-port 1 Gbps, 8x 10 Gbps ports and 4x or 8x 1 Gbps ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First quad-port 10 Gbps (L-NIC-66)	eth2, eth3, eth4, eth5
2	First quad-port, 1 Gbps (L-NIC-31A/B, L-NIC-32A/B)	eth6, eth7, eth8, eth9
3	Second quad-port 10 Gbps (L-NIC-66)	eth10, eth11, eth12, eth13
4	Second quad-port, 1 Gbps (L-NIC-31A/B, L-NIC-32A/B)	eth14, eth15, eth16, eth17
5	Optional L-ACC-008 IPSec Accelerator	NA

Two quad-port 10 Gbps NICs and one or two quad-port 1 Gbps, 8x 10 Gbps ports and 4x or 8x 1 Gbps ports		
Slot	**Card**	**Ports**
6	Empty	NA

Three quad-port 10 Gbps NICs and one quad-port 1 Gbps, 12x 10 Gbps ports and 4x 1 Gbps ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First quad-port 10 Gbps (L-NIC-66)	eth2, eth3, eth4, eth5
2	Second quad-port 10 Gbps (L-NIC-66)	eth6, eth7, eth8, eth9
3	Third quad-port 10 Gbps (L-NIC-66)	eth10, eth11, eth12, eth13
4	Quad-port, 1 Gbps (L- NIC-31A/B, L-NIC-32A/B), L-NIC-32A/B)	eth14, eth15, eth16, eth17
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Empty	NA

One or two dual-port, 25 GbE, 40 GbE or 100 GbE NICs with no additional NIC cards, 2x or 4x 25/40/100 GbE Ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First dual-port 25/40/100 GbE NIC (L-NIC-73/74/75)	eth2, eth3
2	Empty	NA
3	Second dual-port 25/40/100 GbE NIC (L-NIC-73/74/75)	eth4, eth5
4	Empty	NA
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Empty	NA

Three dual-port 25 GbE, 40 GbE NICs with no additional NIC cards, 6x 25/40 GbE ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First dual-port 25/40 GbE NIC (L-NIC-73/74)	eth2, eth3

Three dual-port 25 GbE, 40 GbE NICs with no additional NIC cards, 6x 25/40 GbE ports		
Slot	**Card**	**Ports**
2	Second dual-port 25/40 GbE NIC	eth4, eth5
3	Third dual-port 25/40 GbE NIC (L-NIC-73/74)	eth6, eth7
4	Empty	NA
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Empty	NA

Three dual-port 100 GbE NICs with no additional NIC cards, 6x 100 GbE ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First dual-port 100 GbE NIC (L-NIC-75)	eth2, eth3
2	Empty	NA
3	Third dual-port 100 GbE NIC (L-NIC-75)	eth 6, eth 7
4	Empty	NA
5	Second dual-port 100 GbE NIC (L-NIC-75)	eth4, eth5
6	Unused	NA

NOTE:
The L-ACC-008 IPSec Accelerator is not supported with this configuration

Four dual-port 25 GbE, 40 GbE NICs with no additional NIC cards, 8x 25/40 GbE ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First dual-port 25/40 GbE NIC (L-NIC-73/74)	eth2, eth3
2	Second dual-port 25/40 GbE NIC (L-NIC-73/74)	eth4, eth5
3	Third dual-port 25/40 GbE NIC (L-NIC-73/74)	eth6, eth7
4	Fourth dual-port 25/40 GbE NIC (L-NIC-73/74)	eth8, eth9
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Empty	NA

One dual-port, 25 GbE, 40 GbE or 100 GbE NIC and one, two or three quad-port 1 GbE or 10GbE NICs, 2x 25/40/100 GbE ports and 4x, 8x or 12x 1 or 10 GbE ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	Dual-port 25/40/100 GbE NIC (L-NIC-73/74/75)	eth2, eth3
2	First quad-port,1 Gbps (L-NIC-31A/B, L-NIC-32A/B) or 10Gbps (L-NIC-66)	eth4, eth5, eth6, eth7
3	Second quad-port,1 Gbps (L-NIC-31A/B, L-NIC-32A/B) or 10Gbps (L-NIC-66)	eth8, eth9, eth10, eth11
4	Third quad-port, 1 Gbps (L-NIC-31A/B, L-NIC-32A/B) or 10Gbps (L-NIC-66)	eth12, eth13, eth14, eth15
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Empty	NA

Two dual-port 25 GbE, 40 GbE or 100 GbE NICs and one or two quad- port 1 GbE or 10GbE NICs, 4x 25/40/100 GbE ports and 4x or 8x 1 GbE or 10 GbE ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	Dual-port 25/40/100 GbE NIC (L-NIC-73/74/75)	eth2, eth3
2	First quad-port,1 Gbps (L-NIC-31A/B, L-NIC-32A/B) or 10Gbps (L-NIC-66)	eth4, eth5, eth6, eth7
3	Second quad-port,1 Gbps (L-NIC-31A/B, L-NIC-32A/B) or 10Gbps (L-NIC-66)	eth8, eth9, eth10, eth11
4	Third quad-port, 1 Gbps (L-NIC-31A/B, L-NIC-32A/B) or 10Gbps (L-NIC-66)	eth12, eth13, eth14, eth15
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Empty	NA

Three dual-port 25 GbE, 40 GbE GbE NICs and one quad-port 1 GbE or 10GbE NIC, 6x 25/40 GbE ports and 4x 1 GbE or 10 GbE ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First dual-port, 25/40 GbE NIC (L-NIC-73/74)	eth2, eth3
2	Second dual-port, 25/40 GbE NIC (L-NIC-73/74)	eth4, eth5

Three dual-port 25 GbE, 40 GbE GbE NICs and one quad-port 1 GbE or 10GbE NIC, 6x 25/40 GbE ports and 4x 1 GbE or 10 GbE ports		
Slot	**Card**	**Ports**
3	Third dual-port, 25/40 GbE NIC (L-NIC-73/74)	eth6, eth7
4	Quad-port,1 Gbps (L-NIC-31A/B, L-NIC-32A/B) or 10Gbps (L-NIC-66)	eth8, eth9, eth10, eth11
5	Optional L-ACC-008 IPSec Accelerator	NA
6	Empty	NA

Three dual-port 100 GbE NICs and one quad-port 1 GbE or 10GbE NIC, 6x 100 GbE ports and 4x 1 GbE or 10 GbE ports		
Slot	**Card**	**Ports**
0	Unused	NA
1	First dual-port, 100 GbE NIC(L-NIC-75)	eth2, eth3
2	Quad-port, 1 Gbps (L-NIC-31A/B, L-NIC-32A/B) or 10Gbps (L-NIC-66)	eth4, eth5, eth6, eth7
3	Third dual-port 100 GbE NIC (L-NIC-75)	eth10, eth11
4	Empty	NA
5	Second dual-port 100 GbE NIC (L-NIC-75)	Eth8, eth9
6	Empty	NA

NOTE:
The L-ACC-008 IPSec Accelerator is not supported with this configuration.