



Perimeter

Single Site Connectivity (SSC) Solution

Version 4.0

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REVISION CONTROL

Modification History	Modified By	Description	Date	Update Information
Document Creation	David M. Schmidt	Revision 1.0	October 28, 2011	Initial Document
Revision/Update	David M. Schmidt	Revision 2.0	April 18, 2012	Added SSC Solution Indirectly Internet Connected .
Revision/Update	David M. Schmidt	Revision 2.1	August 14, 2012	<ol style="list-style-type: none"> 1. Updated Requirements to point to Appendix I. 2. Added Appendix I. 3. Added Revision Control. 4. Introduction step 2 updated to include or Site Survey Form.
Revision/Update	David M. Schmidt	Revision 3.0	December 22, 2014	<ol style="list-style-type: none"> 1. Minor updates to verbiage and summarization updates to SSC Solution Indirectly Internet Connected, Lead Device, and Orbit Traffic Counters, 2. Renamed and updated section Application with Requirements. 3. Renamed and updated Diagram 3 – ShopperTrak Site Equipment Connectivity. 4. Updated Preliminary Application Connectivity Tests # 3 to include ocsf.starfieldtech.com. 5. Moved Appendix I to Appendix II. 6. Added Appendix I FAQ's about Single Site Connectivity (SSC). 7. Updated Appendix II to remove reference of CRL as ShopperTrak doesn't utilize this GoDaddy service.
Revision/Update	David M. Schmidt	Revision 3.1	July 7, 2015	Added Maximum Transmit Unit size to Requirements Physical.
Revision/Update	David M. Schmidt	Revision 4.0	October 9, 2015	<ol style="list-style-type: none"> 1. Requirements Access Controls – Replaced sentence format with table based requirements <ul style="list-style-type: none"> ▪ Name Resolution ▪ Time ▪ Encrypted Transport ▪ Certification ▪ ShopperTrak destinations added to support Strong Encryption, Redundancy, and SHA2 ▪ Table footnotes – Destination Name recommendation ▪ Table footnotes – Future destination IP(s) migration date 2. Added Normal/Direct Proxy Note. 3. Removed Connectivity Tests.

INTRODUCTION

The Single Site Connectivity (SSC) solution is a connectivity service that provides a secure and reliable mechanism for Orbit data retrieval and device management. This document provides an outline of the connectivity product, the services, and the network components necessary to establish a working connection.

To start things moving, you will need to:

- Review this document and be familiar with the contents,
- Fill out the ***IP Map or Site Survey Form*** provided by your ShopperTrak Implementation Project manager, to request a build for your implementation.

SINGLE SITE CONNECTIVITY SOLUTION

OVERVIEW

Service providers and telephone carriers are decreasing support, infrastructure, and service offerings of analog phone lines in favor of faster, more reliable IP offerings and coverage. With a large number of sites now having an IP connection, ShopperTrak has developed the Single Site Connectivity (SSC) solution. This connectivity method utilizes industry accepted security protocols for secure data transmission.

SSC Solution Directly Internet Connected

This option supports sites that are connected directly to the Internet without any access control restrictions and use a cable modem or DSL/ADSL circuit. This is the preferred option for customers without a secure corporate network. [see **Diagram 1**]

SSC Solution Indirectly Internet Connected

This option supports customers with a secure corporate network. While it requires access to the Internet to function properly, the Internet connectivity is not provided directly at the site. It may require customers to make network and security device changes to allow proper Internet connectivity for use by ShopperTrak. Additional information can be found within the REQUIREMENTS section of this document. [see **Diagram 2**]

Diagram 1 - Direct SSC Implementation

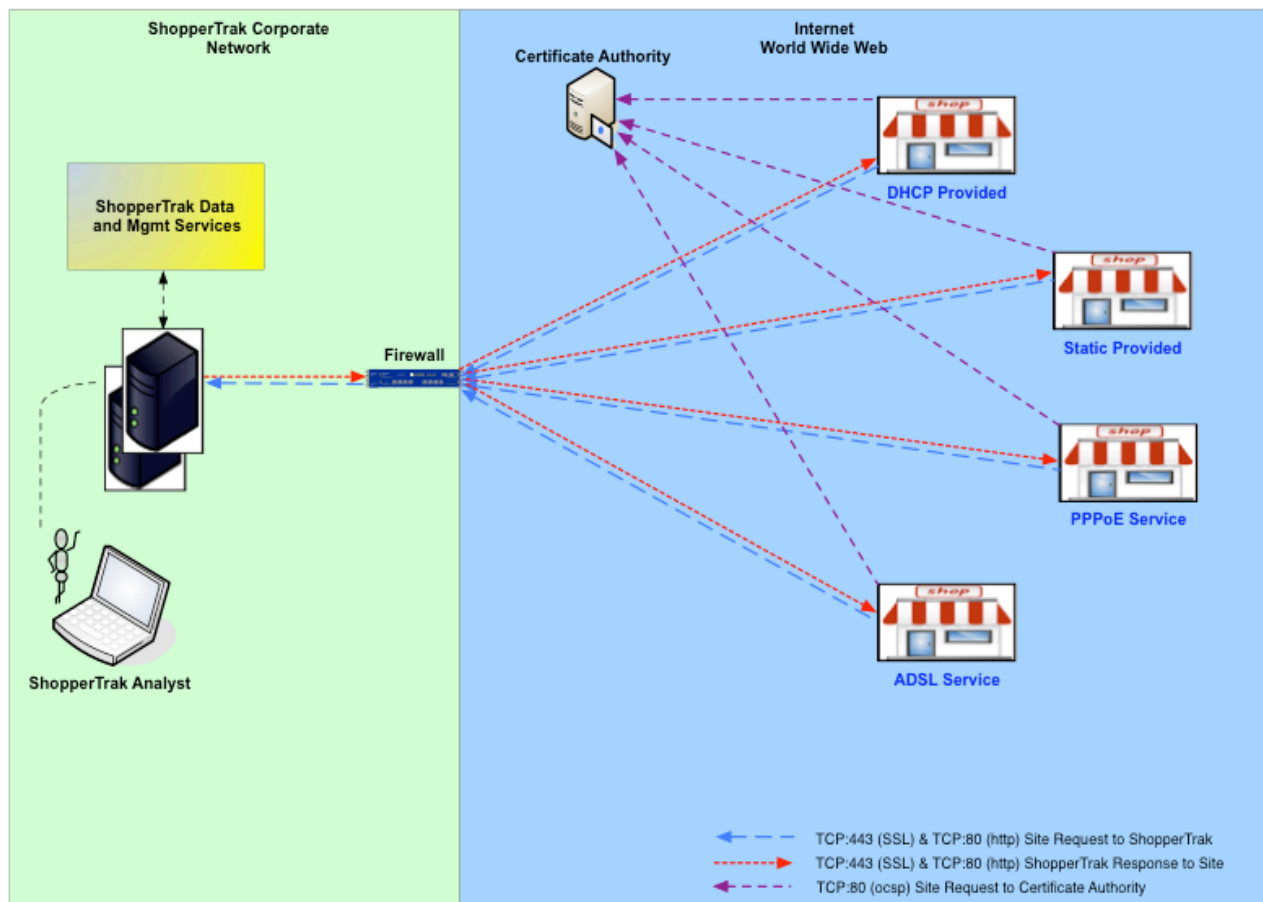
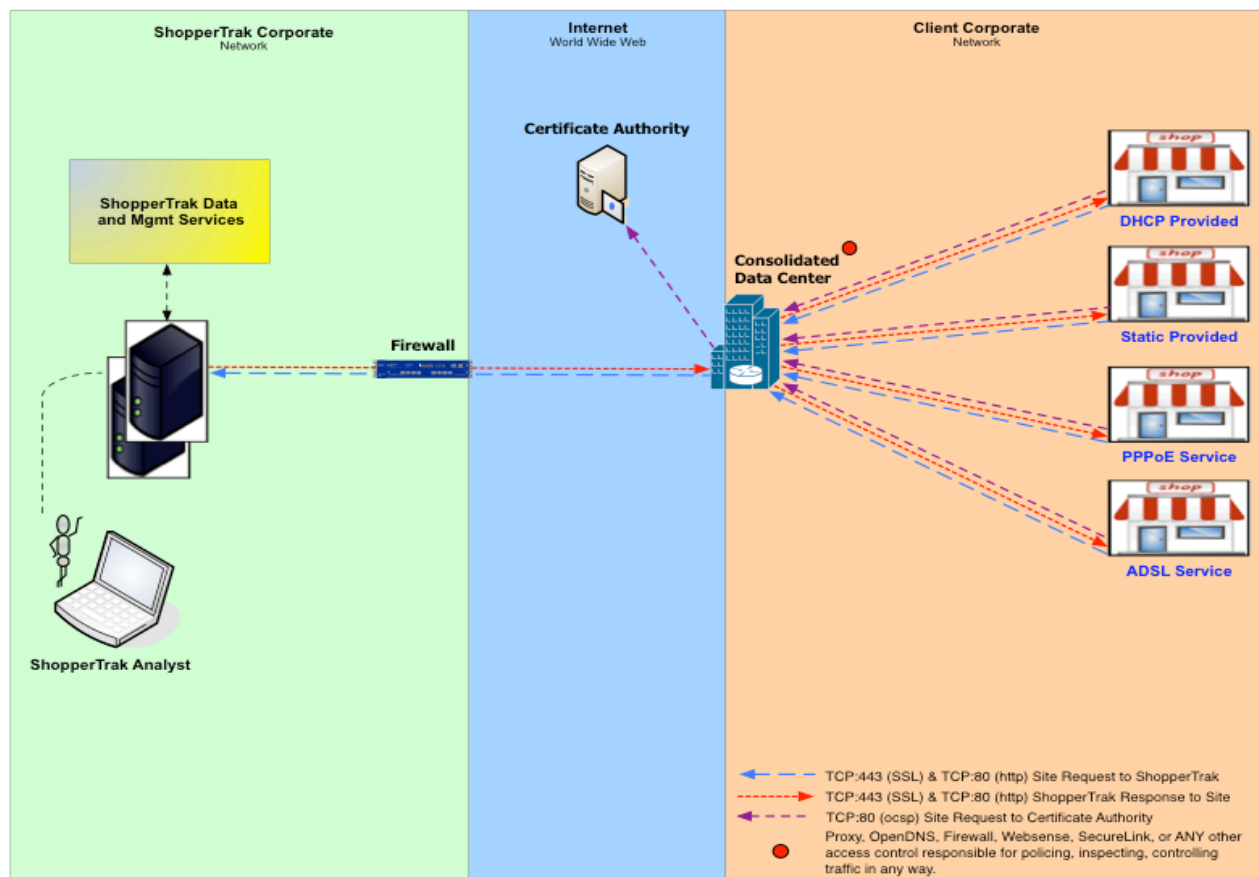


Diagram 2 - Indirect SSC Implementation



ARCHITECTURE COMPONENTS

ShopperTrak Data and Management Services

This service is responsible for providing an organized, redundant way of receiving data from Orbit devices, as well as providing a management path for each device. Orbit devices can receive configuration and flash-firmware updates through this service. This service communicates with the Lead Device at sites connected via the SSC solution. Secure shell (SSL) protocol is used to communicate with the Lead Device.

SITE COMPONENTS

ShopperTrak Site Equipment

An Orbit Network consists of the following devices [see **Diagram 3**]:

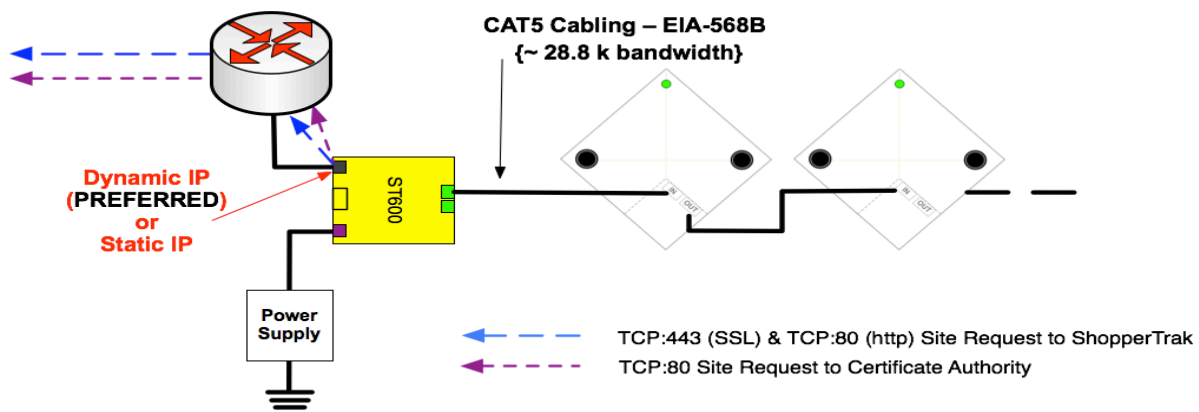
Lead Device

The Lead Device is terminated to the site network and is responsible for 3 main functions. Powering the Orbits, facilitating data transfer between the Orbit and ShopperTrak, along with Communicating over the Internet to ShopperTrak and our third party certificate provider.

Orbit Traffic Counters

An Orbit is ShopperTrak's proprietary overhead video sensor device. It counts people passing through foot traffic entrances and exits. Multiple Orbits can be configured behind a Lead Device to provide a closed-loop counting solution. ShopperTrak works with customers to determine the optimal number of Orbits needed for each location. The Orbit draws its power from the Lead Device.

Diagram 3 – ShopperTrak Site Equipment Connectivity



Note: Orbit ES may be used in place of above sample utilizing Orbit 5 and ST600.

REQUIREMENTS

The following identifies what is needed for proper functionality of the SSC service:

Physical

- Ethernet port
 - Standard Ethernet Port (No Power over Ethernet requirement (PoE))
 - Identification of what specific equipment (Switch, Router, Firewall, ISP provided equipment, etc.) we should be terminated into and it's location within the site
 - Maximum Transmit Unit (MTU) of 1500 used as default for ShopperTrak Lead Device.
- Power receptacle
 - Should provide 24/7 power
 - ShopperTrak provides the required global power adaptors per the install location

Logical

- IP addressing
 - Dynamic (DHCP) – **PREFERRED**
 - Static
 - A single IP address for Lead Device (no matter how many orbits are installed)
 - Default Gateway for provided IP address
 - Subnet Mask for provided IP address
 - Primary DNS IP address (ShopperTrak only supports a single DNS IP address)
 - IF Normal/Direct Proxy request is required – **NOTE: Transparent Proxy PREFERRED if required**
 - Proxy IP/Proxy DNS Name
 - Proxy Port
 - ShopperTrak DOES NOT support proxy authentication
 - ShopperTrak DOES NOT support auto-proxy configuration scripts (i.e. PAC or WPAD)

Access controls (Required Traffic Flows)

Description	Protocol	Service	Destination Port	Destination Name(s)	IP(s)
Name Resolution * Service Record (SRV) * A Record	UDP/TCP	DNS	53	_sm._tcp.sitemanager.shoppertrak.com. ** sm1.shoppertrak.com ** sm2.shoppertrak.com ** sm3.shoppertrak.com ** sm4.shoppertrak.com ** sitemanager.shoppertrak.com ** FUTURE sm1.shoppertrak.com ♦♦ sm2.shoppertrak.com ♦♦ sm3.shoppertrak.com ♦♦ sm4.shoppertrak.com ♦♦	SRV Record 216.118.195.191 216.118.195.192 216.118.195.193 216.118.195.194 216.118.195.125 FUTURE 52.0.173.19 ♦♦ 52.22.19.51 ♦♦ 52.3.127.157 ♦♦ 52.22.19.63 ♦♦
Time	TCP	HTTP	80	See Above	See Above
Encrypted Transport	TCP	TLS	443	See Above	See Above
Certification	TCP	OCSP	80	ocsp.godaddy.com ocsp.starfieldtech.com	See Appendix II Service OCSP

**** ShopperTrak STRONGLY SUGGESTS use of *.shoppertrak.com for your Destination Name controls**
♦♦ FUTURE Destination Name(s) and IP(s) migrating by December 2015

SPECIAL NOTE: If your Access controls perform reverse DNS (rDNS) as part of the validation/verification/approval process please also include *.secureserver.net as GoDaddy uses global load balancing and you will be returned a CNAME from the respective data center as part of the reverse lookup.

Considerations

Site Internet access varies greatly, from a direct connection through a cable modem or DSL/ADSL circuit, to a complex corporate network infrastructure. With any Internet connectivity there are devices, both logical and physical, that can control, prohibit, police, or allow communication. In addition, other factors can inhibit Internet access including, but not limited to, corporate network and security, governmental regulations, and/or Internet service provider controls. Manipulations to such equipment may be required to allow proper communication flow. Examples of such equipment include: Proxy servers, OpenDNS, DNS blacklisting, Websense, SecureLink, Access Control Lists, Intrusion Prevention, and Firewall Policies.

APPENDIX I – FAQ’s about Single Site Connectivity (SSC)

What is Single Site Connectivity?

- SSC connectivity is an improved connection method by which ShopperTrak store equipment uses to communicate with ShopperTrak for the purposes of installation, support, maintenance, and data collection

What are the benefits of Single Site Connectivity?

- Current and improved products and services supported with this connection method
- Allows for consolidated site communication (ISP broadband services)
- Quicker problem resolution due to enhanced error codes on the device
- For current customers utilizing legacy communication methods, end of life product discounts may apply
- Improved Security (see security benefits below)

Are there any additional benefits for current customers?

- The price of new store opening installations will remain the same as today
- Hardware cost savings
 - There is no longer a need for a modem or analog phone line, or CGW server, and/or VPN hardware in the corporate data-center
 - Since there is no longer a modem/analog line/CGW server/VPN need, you see other cost savings including power, related software, and any outside contracts/maintenance agreements related to the hardware
- Software cost savings
 - No requirement for any “back-office” PC gathering equipment or software (licenses and related software packages)
- Personnel cost savings
- One less item that would require a physical resource to monitor, maintain, support, and keep secure
- **NOTE:** Upgrade costs may need to be realized in the future if you were to take advantage of Real Time or other products ShopperTrak may offer

Are there any security benefits?

- Uses TLS/SSL, an Internet industry accepted standard for secure communications
- All connections source from In-store ShopperTrak equipment outbound
- No inbound connections from ShopperTrak to store equipment
- Most secure and current communication offering from ShopperTrak
- All ST600’s and Orbits will be upgraded to the latest software code available

What ShopperTrak equipment is required?

- Orbit traffic counter
- ST600 – Lead Device
 - Provides power to Orbits
 - Responsible for communicating with ShopperTrak
 - Responsible for transporting data from Orbits to ShopperTrak

What operating system is on the ST600?

- The ST600 runs a thin Linux GNU

Is this connectivity type PCI compliant?

- This connectivity solution only processes traffic counts, it does not collect any credit card or PII information

What type of IP addressing is supported?

- ShopperTrak can support either static/fixed or dynamic (DHCP) addressing. ShopperTrak strongly suggests the use of DHCP
- Addressing provided should be LAN addressing, generally uses private addressing

What are my in-store physical requirements?

- An open, available Ethernet port with the proper access controls ideally on a non-PCI segment
- 24/7 power source near the ST600
- Cat5e/Cat6 cabling between the Orbits and the ST600 (ShopperTrak installs this as part of our standard installation)

Where is the ShopperTrak equipment placed in my store?

- Orbits are mounted in or on the ceiling near the store entrances
- ST600 is located near the network equipment (Back Office, cash wrap, store room, etc.)

How much bandwidth is used for the ShopperTrak solution?

- ShopperTrak can use up to 250mb per month per single Orbit installed locations. The number is calculated as follows:
 - Check-in ~20 to 30K performed every 5 minutes (288 times a day)
 - Data Stream ~15 to 20K performed nightly between midnight and 5am local site time zone
 - Snapshots (Picture) ~350 to 400K typically performed during installation/validation phase or due to an issue seen during problem determination requiring one
 - Configuration files ~10 to 15K typically performed during the installation/validation phase or due to an issue seen during problem determination requiring an update to the current configuration
 - DVR (video) up to ~5M typically performed during the installation/validation phase or due to an issue seen during problem determination requiring one

How much data can be stored locally on the device?

- The Orbit can hold up to 90 days of traffic counts

APPENDIX II – Go Daddy OCSP Services

The following taken from Go Daddy's OCSP online documentation should be used when adjusting any access control policies both hardware and software as mentioned within the Considerations section of this document.

<http://support.godaddy.com/help/article/6723/verifying-a-certificates-validity-on-your-computer>

► Access to CRL and OCSP Services

CRLs and OCSP use HTTP to retrieve information from the following servers. If you are a network administrator for your organization, make sure all computers in your network that might encounter a digital certificate issued by us can access these CRL and OCSP services.

Service	DNS Hostname(s)	Destination IPs	Port	
CRL	crl.godaddy.com certificates.godaddy.com crl.starfieldtech.com certificates.starfieldtech.com	72.167.18.237	tcp/80	ShopperTrak does NOT use GoDaddy CRL services.
		72.167.18.238		
		72.167.239.237		
		72.167.239.238		
		188.121.36.237		
		188.121.36.238		
		182.50.136.237		
		182.50.136.238		
		50.63.243.228		
50.63.243.229				
OCSP	ocsp.godaddy.com ocsp.starfieldtech.com	72.167.18.239	tcp/80	These are what ShopperTrak will use for certification.
		72.167.239.239		
		188.121.36.239		
		182.50.136.239		
		50.63.243.230		

This table is subject to change over time as we expand our services.