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ISG 2.x Administration and Deployment Guide

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About Integrated Secure Gateway

The Integrated Secure Gateway (ISG) is the software on the Symantec Security Platform (SSP) appliance used to deploy applications.

Use the ISG command line interface (CLI) to perform the following tasks:

- Connect the SSP appliance to your network
- Connect to the ISG serial console
- Create and run one or more applications
- License applications

The SSP is not a licensed product and only the applications it runs require licenses. For information on licensing, see About Licensing ISG Applications.

About Licensing ISG Applications

Licensing for applications on SSP is managed by ISG (the host) rather than the application itself.

Licenses for applications are managed solely via the ISG command line interface (CLI). License management from within the application (such as the ProxySG CLI) is disabled.

> **IMPORTANT**
> If you make changes to the license, you must restart the application for the changes to take effect.

Only Secure Web Gateway (SWG)-Edition and Advanced Reverse Proxy (ARP) licenses are available for ProxySG applications. As Proxy-Edition licenses are not available, ProxySG applications running on ISG cannot be used in Application Delivery Network (ADN) deployments.

There are two sub-types of licenses:

- **Enterprise:** A single license ID that can be used for multiple ProxySG applications, appliances, and virtual appliances. For example, you could simultaneously use the same license ID for a ProxySG application on ISG and a ProxySG VA running on AWS. Each ProxySG instance or appliance using the license can be a different size. Purchase this license by the number of cores that you will use across all instances and appliances.
- **Node-locked:** A single license ID that can be used for single fixed ProxySG applications running on a single ISG. This license dictates the size, model, and number of ProxySG applications you can have running simultaneously. All applications must be the same model, such as you could purchase a license for two C2S models, but not one C2S and one C2M. This type of license is perpetual as opposed to a subscription.

About Application Serial Numbers and License IDs

Serial numbers are a unique value that identify your appliance. License IDs are the same value as the serial number and are used to identify the license file.

You can view the serial number or license ID by using the ISG CLI command:

```
> show version
```

> **NOTE**
> If you purchased an Enterprise license and are installing the license, use the license ID associated with the license. Enterprise licenses arrive separately from your appliance. For Node-locked licenses, the license IDs are automatically associated with the appliance, meaning you can use the **`show version`** command to view Node-locked license IDs before installing your license. For information on license types, see About Licensing ISG Applications.

About Network Interfaces for Applications and Appliances

The virtual network interface for applications running on ISG is mapped 1-to-1 with the physical network interface of the SSP appliance; for example, if the interface for the application is defined as 0:0, then that interface is mapped to the 0:0 physical interface.

First Steps

Perform the initial configuration steps.

Set Up the Console

Before you set up and configure the appliance, ensure you have performed all steps in the *Symantec Security Platform Quick Start Guide*.

1. Use SSH to connect to the ISG console and when prompted, enter **2** .

```
Welcome to the Symantec S410 Series Appliance Serial Console
Version: ISG 2.1, Release id: 254280
------------------------- MENU --------------------------
1) Command Line Interface
2) Setup console
-----------------------------------------------------------
Enter option: 2
```

2. Enter the number of the interface you want to configure the ISG IP address for and enter the required network information when prompted.

```
Please enter the IP addresses for the S410 Appliance

The following interfaces are available for configuration:

        1. 0:0
        2. 2:0
        3. 2:1
        4. 2:2
        5. 2:3

Enter interface number to configure 1
IP address: ip_address
IP subnet mask: subnet_mask
IP gateway: ip_gateway
DNS server: dns_server_ip_address

Would you like to change any of them? Y/N N
```

3. When prompted, enter the password you want to use for accessing the ISG console and enter the password again to confirm it.
4. When prompted, enter the password you want to use for accessing enable mode in the ISG CLI and enter the password again to confirm it.
5. (Optional) Enter **Y** to secure the serial port and create a setup password. If you don't want to secure the serial port, enter **N**. For more information, see "Securing the Serial Port" in the *SGOS Administration Guide*.
6. Verify the appliance has been successfully configured by connecting to the appliance's CLI via SSH. The following uses an example value for the IP address:

```
The S410 Appliance has been successfully configured.

You can connect to the command line interface or the Web interface to perform additional management
 tasks.
```

```
To connect to the command line interface, open the following location from your SSH appliance: 192.0.2.0

To connect to the Web management interface, go to the following location with your web browser:
 https://192.0.2.0:8082/
```

Install the Application License

Before installing your license, ensure you have your license ID available. For information on locating your license ID, see About Application Serial Numbers and License IDs.

1. Connect to the ISG via SSH.
2. To access the CLI, enter **1**.
3. Enter enable mode:

   ```
   enable
   Password:
   #
   ```
4. Type the command:

   `# licensing load id license_id username username password password`

   If the license loaded successfully, the CLI displays the message `License update was successful for license id license_id.`

Install an Application Image

Before you create and start an application, load the application image onto the ISG. ISG is the platform on which an application runs.

1. From the appliance serial console, enter configuration mode

   ```
   # config
   ```
2. Load the application image:

   ```
   (config)# images
   (config-images)# load application_location_URL
   ```

Create a ProxySG Application

To run the ProxySG application you must first create it.

1. From the ISG CLI, in configuration mode, create the ProxySG application:

   ```
   (config)# applications
   (config-applications)# create sg sg_name model model_name license-id license_id image-id image_id
     ok
   ```

   For information on the different license types available for your appliance, see Platform and Performance Reference.
2. Start your application:

   ```
   (config-applications)# start application_name
      ok
   ```

Manage Applications

View application information, attach the serial console to running applications, and edit existing applications.

Create Applications

1. Connect to the ISG via SSH.
2. Access the CLI and enter configuration mode.
3. Create the application:

```
(config)# applications
(config-applications)# create sg sg_name model model_name license-id license_id image-id image_id
  ok
```

For information on the different license types available for your appliance, see Platform and Performance Reference.

Edit Applications

1. Connect to the ISG via SSH.
2. Access the CLI and enter enable mode.
3. Stop the application that you want to edit:

```
(config-applications)# stop application_name
```

NOTE
To edit an existing application, your application must be in a Created or Stopped state.

4. Edit the application:

```
(config-applications)# edit application_name  model_type | image-id image_id
```

The following example shows how to view the application configuration, stop the application, and change the model from a C2L to a C2S:

```
(config-applications) view SG1

NAME  TYPE  VCPU  MEMORY  MODEL      STATUS     LICENSE ID   IMAGE ID
-------------------------------------------------------------------------
SG1    SG     2    20 GB   C2L        Running    000090007   sg-6.7.5.6-252532

(config-applications)# stop SG1
  ok
(config-applications)# edit SG1 model C2S
  ok
```

Start and Stop Applications

1. Connect to the ISG via SSH.
2. Access the CLI and enter configuration mode.
3. Do one of the following:
   - Start an application:

     ```
     (config-applications)# start application_name
     ```

   - Stop an application:

     ```
     (config-applications)# stop application_name
     ```

Remove Applications

1. Connect to the ISG via SSH.
2. Access the CLI and enter configuration mode.
3. Remove the application:

```
(config-applications)# delete application_name
```

View Application Information

To view application information, such as license IDs, image IDs, and other properties that are associated with your applications, use the `applications view` command (in either enable or configuration mode). For example:

```
(config-applications)# view
NAME  TYPE  VCPU  MEMORY  MODEL      STATUS     LICENSE ID   IMAGE ID
------------------------------------------------------------------------
SG1    SG     2     20 GB   C2L        Running    000090007   sg-6.7.5.6-252532
SG2    SG     2     20 GB   C2L        Running    000090007   sg-6.7.5.6-252532
SG3    SG     2     20 GB   C2L        Running    000090007   sg-6.7.5.6-252532
(config-applications)# view SG1
NAME  TYPE  VCPU  MEMORY  MODEL      STATUS     LICENSE ID   IMAGE ID
------------------------------------------------------------------------
SG1    SG     2     20 GB   C2L        Running    000090007   sg-6.7.5.6-252532
```

Connect to the Application Serial Console

From an application serial console, you can access the application's command line to perform tasks, such as initial configuration.

1. Connect to the ISG via SSH.
2. Access the CLI and enter configuration mode.
3. Access the application's serial console:

```
(config-applications)# attach-console application_name
```

The following is an example output of the command:

```
(config-applications)# attach-console SG1
Connected to domain sgos
Escape character is ^]
System starting up...

In MP mode; two processors active
Executing image: Version: SGOS 6.7.5.3, Release id: 249936 64-bit, gdb, optimized
Manufacturing MBR on directory-3 - Slot 3 (KVM VirtIO Disk N/A N/A)
This is a new system.

Press "enter" three times to activate the serial console

****************** CONFIGURATION ALERT ******************
System entering configuration wizard for the following reasons:
- Cannot find a network adapter configured with an IP address and subnet.
- The console password or 'enable' password is not set.
****************** CONFIGURATION ALERT ******************

--------------- CONFIGURATION START ------------------
Welcome to the Blue Coat SG-VA Series configuration wizard.
```

```
This appliance's serial number: 0000990007
     ------------------------------------------------------------------------
     You can get field help by entering a question mark ? in the fields.
     You can move backwards through the steps by pressing the UP arrow.
     You can exit the wizard without saving your entries by pressing ESC.
     ------------------------------------------------------------------------
Step 1: How do you plan to configure this appliance?
     a) Through a manual setup
     b) Through a Director-managed setup
        Your choice: []
```

Manage Images

Install Images

1. Connect to the ISG via SSH.
2. Access the CLI and enter configuration mode.
3. Install the image:

```
(config-images)# load image_url
```

View Image Information

1. Connect to the ISG via SSH.
2. Access the CLI and enter either enable or configuration mode.
3. Do one of the following:
   - View all downloaded images:

     ```
     (config-images)# view
     ```

   - View a specific image:

     ```
     (config-images)# view image_id
     ```

   - View all ProxySG images:

     ```
     (config-images)# view sg
     ```

Remove Images

1. Connect to the ISG via SSH.
2. Access the CLI and enter configuration mode.
3. Remove the image:

```
(config-images)# delete image_id
```

Manage Licenses

Perform administrative tasks for your application licenses.

Install Licenses

Before installing your license, ensure you have your license ID available. For information on locating your license ID, see About Application Serial Numbers and License IDs.

1. Connect to the ISG via SSH.
2. Access the CLI and enter enable mode.
3. Install the license:

   ```
   # licensing load id license_id username username password password
   ```

   If the license loaded successfully, the CLI displays the message `License update was successful for license id license_id.`

Remove Licenses from ISG

1. Connect to the ISG via SSH.
2. Access the CLI and enter enable mode.
3. Remove the license:

   ```
   # licensing delete id license_id
   ```

View Installed Licenses

1. Connect to the ISG via SSH.
2. Access the CLI and enter enable mode.
3. Do one of the following:
   - View all licenses:

     ```
     # licensing view
     ```

   - View a specific license:

     ```
     # licensing view [id license_id]
     ```

   - View the node-locked license:

     ```
     # licensing view-node-locked
     ```

Upgrade Instructions

Perform the following steps to upgrade the ISG via the ISG command line.

IMPORTANT
Downgrading to ISG 1.67.5.3 is not supported.

1. Stop all existing applications by running the following command for each application:

```
(config-applications)# stop application_name
```

2. Load the ISG image that you want to upgrade to:

```
# installed-systems load image_location_URL
```

3. Restart the ISG:

```
# restart
```

4. (Only if upgrading from ISG 1.67.5.3) Previously existing applications are put into the Created state and do not have an associated default image. To associate a default image with the applications, do the following:
   a) Load an application image onto the ISG:

```
(config-images)# load application_location_URL
```

   b) Retrieve and record the image ID:

```
(config-images)# view Image ID           Type   Version   Release ID   In Use sg-6.7.5.3-250069  SG
 6.7.5.3   250069       0
```

   c) Assign the image ID to each of the existing applications:

```
(config-applications)# edit application_name image-id image_ID
```

5. Start each application and verify that each starts properly and contains all previously existing data.
6. (Only if upgrading from ISG 1.67.5.3) Delete the previous ISG 1.67.5.3 image:
   a) Locate the ISG 1.67.5.3 image:

```
# installed-systems view
1. Version : 2.2.1.1, Release ID : 253965, Locked : false, Booted : true
 BuildType : CreationTime : 2020-08-17T13:38:42+0000, BootTime : 2020-08-26T02:00:03.348+0000
 DisplayName : ISG 2.2.1.1, Release ID: 253965
2. Version : 1.67.5.3, Release ID : 251920, Locked : false, Booted : true
 BuildType : CreationTime : 2020-06-16T13:03:11+0000, BootTime : 2020-08-25T22:53:20.352+0000
 DisplayName : ISG 1.67.5.3, Release ID: 251920
 Default system to run on next hardware restart: 1
 Current running system: 1
 System to replace next: None
```

   b) Delete the ISG 1.67.5.3 image (in this example, the image is labeled 2):

```
# installed-systems delete 2
```

Platform and Performance Reference

Table 1: Total Physical Resources for the Appliance and Virtual Resources Available for Applications

The following table lists the total resources available on the SSP appliance model and the resources from that total that are available for virtual applications.

	Resources Available for Applications			Total Resources on the SSP Platform		
SSP Model	**vCPUs**	**RAM (GB)**	**Disk**	**vCPUs**	**RAM (GB)**	**Disk**
S410-10	16	32	400 GB	20	48	2x480 GB
S410-20	32	80	800 GB	40	96	2x960 GB
S410-30	48	160	800 GB	64	192	2x960 GB
S410-40	64	320	1.6 TB	80	384	2x1.9 TB

Table 2: ProxySG Models and Fit Per Appliance Model

The following table lists the resources required for each ProxySG model and the number of instances of that ProxySG model that can fit on the various SSP appliance models.

	Resource Requirements Per ProxySG Model				Number of Model Instances Supported Per SSP Appliance			
ProxySG Model	**vCPU**	**RAM (GB)**	**Disk (GB)**	**Connection Count**	**S410-10**	**S410-20**	**S410-30**	**S410-40**
C2S	2	12	1x200	15,000	2	4	4	8
C2M	2	16	1x200	20,000	2	4	4	8
C2L	2	20	1x200	25,000	1	4	4	8
C4S	4	20	1x200	25,000	1	4	4	8
C4M	4	24	1x200	37,500	1	3	4	8
C4L	4	32	1x200	50,000	1	2	4	8
C8S	8	32	2x200	50,000	1	2	2	4
C8M	8	64	2x200	87,500	0	1	2	4
C8L	8	80	2x200	125,000	0	1	2	4
C16XS	16	32	2x200	50,000	1	2	2	4
C16S	16	80	2x200	125,000	0	1	2	4
C16M	16	128	4x200	200,000	0	0	1	2
C16L	16	160	4x200	250,000	0	0	1	2
C24S	24	80	2x200	125,000	0	1	2	2
C24M	24	160	4x200	250,000	0	0	1	2
C24L	24	256	8x200	375,000	0	0	0	1

Table 3: Max Performance Deployment

The following table lists the recommended configurations for maximum performance per SSP appliance model.

SSP Model	ProxySG Model	Instance Count	Total vCPU	Total RAM (GB)	Total Disk (GB)	Total Connections
S410-10	C16XS	1	16	32	400	50,000
S410-20	C16XS	2	32	64	800	100,000
S410-30	C24S	2	48	160	800	250,000
S410-40	C16S	4	64	320	1,600	500,000


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