

Sizing Guide for ProxySG Deployments

SGOS Version 6.1

11 Oct 2010



	Deployment Mode								Licensing		Hardware Spec						
Model	Forward Proxy			Reverse Proxy		WAN Optimization and 'Mixed Use', see notes		Client Manager for ProxyClient	Concurrent Licensed Client		Storage	CPU Cores	Memory	Preinstalled Option Cards	On-board Network Ports	Power Supply	
	Max Internet Bandwidth	Employee Count	Suggested ProxyAV	Max Client Bandwidth	Transactions / Second	Max WAN Bandwidth	Max Active Desktops or ProxyClients	Recommended Max ProxyClients Managed	Without ADN Enabled	With ADN Enabled	Drives	Total Storage (GB)					
210-5	2Mbps	30	AV210-A	10Mbps	200	512Kbps	10	450	30	10	1	80	1	512MB	None	2 port 100BT Passthru	Single
210-10	6Mbps	150	AV210-A^			2Mbps	50	900	150	50	1	137	1	1GB	SSL	2 port 100BT Passthru	Single
210-25	6Mbps	200*	AV510-A^			2Mbps	50*	900	No licensed user limit		1	137	1	1GB	SSL	2 port 100BT Passthru	Single
510-5	12Mbps	200	AV510-A	50Mbps	400	2Mbps	50	900	200	50	2	640	1	2GB	None	2x1000BT	Single
510-10	25Mbps	500	AV1200-A			12Mbps	125	1800	500	125	2	640	1	2GB	2 port 1000BT Passthru, SSL	2x1000BT	Single
510-20	25Mbps	1200	AV1200-A			12Mbps	300	1800	1200	300	2	640	1	2GB	2 port 1000BT Passthru, SSL	2x1000BT	Single
510-25	25Mbps	1500*	AV1200-A			12Mbps	300*	1800	No licensed user limit		2	640	1	2GB	2 port 1000BT Passthru, SSL	2x1000BT	Single
810-5	45Mbps	2500	AV1200-A			12Mbps	500	1350	2500	500	2	144	1	2GB	None	2x1000BT	Single
810-10	45Mbps	3500	AV1200-A	200Mbps	1700	30Mbps	700	4500	3500	700	2	600	2	4GB	2 port 1000BT Passthru, SSL	2x1000BT	Single
810-20	90Mbps	5000	AV1400-A			45Mbps	1000	4500	5000	1000	4	1200	2	6GB	2 port 1000BT Passthru, SSL	2x1000BT	Single
810-25	90Mbps	5500*	AV1400-A			45Mbps	1000*	4500	No licensed user limit		4	1200	2	6GB	2 port 1000BT Passthru, SSL	2x1000BT	Single
9000-5	100Mbps	7500*	AV1400-A	450Mbps	3500	90Mbps	1500*	10,000	No licensed user limit		4	2000	2	4GB	SSL	4 port 1000BT Passthru	Redundant
9000-10	155Mbps	10,500*	AV1400-A	500Mbps	4500	155Mbps	1800*	10,000	No licensed user limit		8	4000	2	8GB	SSL	4 port 1000BT Passthru	Redundant
9000-20	250Mbps	16,000*	AV2400-A	750Mbps	6500	310Mbps	2400*	10,000	No licensed user limit		10	5000	4	16GB	SSL	4 port 1000BT Passthru	Redundant

* Values with asterisks are recommended for sizing, but are not licensed limits

^ for greater than 4Mbps sustained bandwidth, an AV510-A or 2 x AV210-A is recommended

These guidelines show the relative power of Proxy SG appliances. Appropriate configurations can vary significantly from these guidelines and will depend on technical requirements.

Forward Proxy

Assumes 70% peak CPU load with complex policies, 15% SSL, ICAP and limited streaming content. SGOS Proxy Edition is required for forward proxy deployments.

Special rules apply for 'mixed use' configurations, which run both forward proxy and WAN optimization in a single appliance. See Example 3 for rules to handle this situation.

Max Internet Bandwidth

Maximum client side throughput for ProxySG. If you do not have a proxy deployed, use your available internet connectivity as a guide. If a proxy is in place, this number represents the client (internal) bandwidth number. Server (Internet) utilization will typically be lower due to proxy caching.

Employee Count

The total number of employees that can use the system. Employees might have multiple desktops. There is a limit on the number of desktops using the proxy for Internet connectivity. The number is based on the common assumption that 100% of desktops have open web connections at any moment, though up to 80% are used for background tasks. If per user Internet use is known to be lighter, adjust this number accordingly. The number of active clients should never exceed the 'without ADN' licensed concurrent user limit. Values with asterisks (*) are recommended for sizing but are not licensed limits.

Recommended Max ProxyClients Managed

Maximum number of ProxyClient instances connecting to a Client Manager, regardless of the features enabled on the ProxyClient (filtering, acceleration or both).

Licensing

ProxySGs are licensed based on concurrent client IP addresses only. Other parameters such as Max Bandwidth and Transactions / Second are suggested values based on the physical capacity of the system.

Concurrent Licensed Client IPs

Licensed users are measured by the number of unique client IP addresses with open inbound TCP connections to the ProxySG. The measurement is instantaneous and concurrent. It is not based on the average over any time interval. The administrator can configure the ProxySG to either bypass connections from new users, to delay them until another client drops all of its connections or to attempt to accept them. The default is to accept them.

No licensed user limit

ProxySG 9000 series models and models labeled '-25' have no license limit on the number of concurrent users. The hardware configurations of the '-25' models are identical to the '-20' model for each platform. The licensed user limit for the '-20' models are near the hardware's capacity if most features are enabled. Use the '-25' models if the number of users is not known, or if your use of the appliance enables more users to be processed than the license limit allows.

Hardware Spec

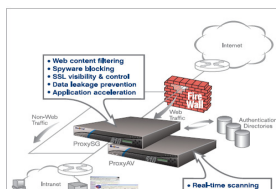
SSL accelerator cards are included where listed. However, a separate license is required to activate SSL termination. Passthru cards can be programmed to act as bridges or independent ports, so a 2x1000BT passthru card can be used a single 2-port bridge or 2 independent Ethernet interfaces.

EXAMPLE 1: Secure Web Gateway Project

- Organization has 1500 employees, all with Internet access
- One Internet gateway with DS3 (45Mbps) connectivity
- Requires N+1 redundancy and room for growth (+30%)

Model	Forward Proxy			Client Manager for ProxyClient Recommended Max ProxyClients Managed
	Max Internet Bandwidth	Employee Count	Suggested ProxyAV	
210-5	2Mbps	30	AV210-A	450
210-10	6Mbps	150	AV210-A^	900
210-25	6Mbps	200*	AV510-A^	900
510-5	12Mbps	200	AV510-A	900
510-10	25Mbps	500	AV1200-A	1800
510-20	25Mbps	1200	AV1200-A	1800
510-25	25Mbps	1500*	AV1200-A	1800
810-5	45Mbps	2500	AV1200-A	1350
810-10	45Mbps	3500	AV1200-A	4500
810-20	90Mbps	5000	AV1400-A	4500
810-25	90Mbps	5500*	AV1400-A	4500
9000-5	100Mbps	7500*	AV1400-A	10,000
9000-10	155Mbps	10,500*	AV1400-A	10,000
9000-20	250Mbps	16,000*	AV2400-A	10,000

Although the organization has 1500 employees, the fact that the customer requires room for growth means that the SG510-25-PR is **not** appropriate.



With bandwidth of 45Mbps, an SG810-5-PR is a possibility. However, the 810-5 models do not have pre-installed SSL cards, so they are more difficult to upgrade. Therefore, the SG810-10-PR is a better option.

To meet the redundancy requirement, the quote should include two of each appliance:
2 x SG810-10-PR and 2 x AV1200-A. The appropriate AV license and service options should be included in the quote.

NOTE: If SSL proxy is required, a separate SSL license (2 x SW-SSL-SG810-10) must be included in the quote. If web filtering is required, the appropriate web filtering licenses should also be included along with the desired service option.

EXAMPLE 2: Forward Proxy Cluster

- Internet gateway control with 7500 users
- 100Mbps metro-Ethernet Internet link
- Special considerations: N+1 redundancy, room for growth and limited rack space

With a 100Mbps Internet link and 7500 users, the SG9000-5-PR would be sufficient for a single-box deployment, although the SG9000-10-PR would provide room for growth.

A simple cluster of 2 x SG9000-5-PR could also meet the redundancy requirement. However, a better cluster would include 3 x SG810-20-PR. This cluster would provide several benefits:

- Less space: 3 rack units for the SG810 cluster versus 8 rack units for the SG9000 cluster.
- Headroom in the unlikely case of failure: the SG810 cluster can handle 10,000 users if one box fails; in comparison, the SG9000 cluster would handle 7500 users if one box fails.
- Cost: the list price of the SG810-20-PR cluster is about 10% less than the SG9000-5-PR solution.

Model	Forward Proxy		
	Max Internet Bandwidth	Employee Count	Suggested ProxyAV
210-5	2Mbps	30	AV210-A
210-10	6Mbps	150	AV210-A^
210-25	6Mbps	200*	AV510-A^
510-5	12Mbps	200	AV510-A
510-10	25Mbps	500	AV1200-A
510-20	25Mbps	1200	AV1200-A
510-25	25Mbps	1500*	AV1200-A
810-5	45Mbps	2500	AV1200-A
810-10	45Mbps	3500	AV1200-A
810-20	90Mbps	5000	AV1400-A
810-25	90Mbps	5500*	AV1400-A
9000-5	100Mbps	7500*	AV1400-A
9000-10	155Mbps	10,500*	AV1400-A
9000-20	250Mbps	16,000*	AV2400-A

EXAMPLE 3: 'Mixed Use' Branch Appliance

- The branch has 200 active employees, all with Internet access
- 4 Mbps link to the WAN optimization concentrator
- 6 Mbps link to an ISP for direct to net access
- Requires room for growth (+20%)
- No ICAP, SSL or filtering. 70% CPU utilization.

This appliance is to be configured with both Secure Web Gateway forward proxy and WAN optimization functions enabled. For this situation, use the following sizing guidelines:

- Calculate the user count: Determine the active user count for all traffic and compare that number with the WAN optimization active user count.
- Calculate the bandwidth: Add the WAN and ISP bandwidth (not offered load) and compare that number to the WAN sizing guidelines. If using Blue Coat Web filter, take 75% of the bandwidth in the sizing guide. If using another filtering product, take 50%, or ask a sizing expert for assistance.
- Use the more restrictive factor (bandwidth or user count) to determine the correct appliance, remembering to allow room for application growth and for new functions (ICAP, increased SSL load) that are expected in the future.
- Only Proxy Edition models (-PR) should be considered because a secure web gateway is required.

Analysis:

- User count: 240 (200 plus 20% growth)
- Bandwidth: 12 (10 Mbps plus 20% growth)

From the WAN Optimization Sizing Guide:

SG510-10-PR: 12Mbps / 125 users
SG510-20-PR: 12Mbps / 300 users
SG810-10-PR: 30Mbps / 700 users

- Choose the unit that supports the most restrictive factor. In this, case that is the SG510-20 as it meets both the 240 user requirement and the 12 Mbps bandwidth requirement.

Now consider the same case, but with one difference: the customer also wants Blue Coat Web Filter.

Analysis:

- User count: 240 (200 plus 20% growth)
- Bandwidth: 12 (10 Mbps plus 20% growth)
- Since Blue Coat Web Filter is being used, adjust the WAN optimization bandwidth down by 25%:

From the WAN Optimization Sizing Guide:

SG510-10-PR: ~~12Mbps~~ 9Mbps / 125 users
SG510-20-PR: ~~12Mbps~~ 9Mbps / 300 users
SG810-10-PR: ~~30Mbps~~ 22.5Mbps / 700 users

- Choose the unit that supports the most restrictive factor: In this case, the SG510-20 does not offer the 12 Mbps required, so the SG810-10 is the correct choice.

NOTE: If SSL proxy is required, SSL licenses will need to be included in the quote for all branch offices that require it. If web filtering is required at the branch offices, the appropriate web filtering licenses and service offerings should also be included in the quote.