VMWARE VIEW WITH JUNIPER NETWORKS SA SERIES SSL VPN APPLIANCES
Configuring Secure SSL VPN Access in a VMware Virtual Desktop Environment
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Introduction
Customers running a VMware View environment don’t just want secure access for virtual desktop sessions, they want convenience as well. With this in mind, Juniper Networks® SA Series SSL VPN Appliances extend the security deployment by brokering connections to virtual machines and providing single sign-on (SSO) when users access their assigned virtual desktops. This solution saves precious time and greatly improves the end user experience. Furthermore, SA Series SSL VPN Appliances offer this functionality to any and all internal VMware View deployments and other popular intranet applications.

VMware View 4.5 and PC-over-IP are fully supported and optimized using a standard Network Connect profile. If the intention is to run this particular configuration, simply refer to the current Admin Guide for detailed instructions on configuring Network Connect.

Scope
This document will illustrate the specific steps required to configure this setup, as well as steps to provide SSO so that users no longer have to first log into the SSL VPN and then immediately log into their VMware View client whenever they need to access their virtual desktop.

Design Considerations
An operational VMware View environment and the SA Series are all that are needed to configure secure and convenient virtual desktop access. Note that some of the features supported in thin client configurations, such as clientless access and seamless Java client fallback, are not currently supported in this scenario.

Hardware Requirements
• Juniper Networks SA Series SSL VPN Appliances

Software Requirements
• Network Connect (NC) or Windows Secure Application Manager (WSAM) for use on the client workstation
• VMware View client
• VMware View environment

Figure 1: SA Series in VMware View environment
Description and Deployment Scenario

Administrators should follow each of the following steps to successfully configure SSO from the VMware View client to the backend VMware View environment.

VMware View Connection Server Configuration

- Install VMware View Connection Server.
- Once installed, configure View Server as per the business needs.
- Configure global services to connect to your Virtual Center/VMware ESX server(s) in order to load virtual machines from your existing environment. Note: A security server acts as an SSL offload and is not needed when View is used in conjunction with an SSL VPN.
- Configure the desktop pool(s).
• Set up entitlements.
- Configure desktop sources.
• Install the VMware View Agent on respective virtual or physical machines to be used as desktop sources. They will then automatically be discovered and enabled by View server.

Configure the SA Series for View Connection Server

There are two options for configuring VMware View access via the SA Series:

• Recommended: Use the virtual desktops resource profiles.
  - SSO, client invoked on the fly.
  - Configure a Web resource profile and either WSAM or NC to tunnel the connection.
  - SSO, VMware view portal presented.

Virtual Desktops Resource Profile (Recommended Method)

This best practice approach simplifies configuration and deployment of VMware View Connection Server with the SSL VPN. Furthermore, SSO and seamless delivery are included here.

• Login to the SA Series appliance as an administrator.
• Navigate to “Resource profile-Virtual Desktops.”
• Select type -> “VMware View Manager.”
• Enter the configuration for the VMware view target server:
• Continue: Choose the roles you’d like, and save the bookmark.
With this configuration, when users log into the SA Series appliance, their portal page will now include the VMware virtual desktop as configured:
Configure the Web Resource Profile and Access Method (Alternate Method)

- Log into the SA Series as an administrator.
- Navigate to “Resource profile-Web.”
- Select type -> “Custom.”
- Enter the configuration for the VMware View target server:
- Select “Show ALL Autopolicy types.”
- Enter the URL for the View Connection Server in the “Base URL” input field.
- The Web Access Control policy should fill automatically after doing this.

![Autopolicy: Web Access Control](image)

- Select the check box “Autopolicy: Single Sign-on.”
- Select the radio button “Remote SSO.”
- Select the check box “POST the following data.”
- Enter the resource, e.g. http://<view connection server>.
- Enter the Post URL which is http://<view connection server>:80/index.jsp (or https).
- If the authentication server to the SSL VPN is Active Directory, then add the following data including the angle brackets:

![Autopolicy: Single Sign-on](image)

**Note:** If 2-factor authentication is being used, then it will be necessary to configure a secondary authentication server for Active Directory, using the options `<USERNAME[2]>` and `<PASSWORD[2]>` in order to send the proper user credentials for single sign-on.

**Important:** When WSAM is used, a caching override policy must be utilized, as the 5A Series marks all content as non-cacheable by default. This causes some conflicts with compressed .cab files. To do this, create a “caching” policy with the proper VMware URL path with /*.cab at the end, and with the setting “Unchanged.”
Once the VMware View client is launched, it needs a way to forward the Remote Desktop Protocol (RDP) traffic to the backend virtual desktop instance. To facilitate this, either the NC or WSAM feature may be used, either of which is probably already in use by the remote access users. If users do not have either of these access methods assigned to them, the administrator will have to decide which one is most appropriate for a given role and then assign that feature accordingly.

**Network Connect**
For NC configurations, the following elements are required:
- Enable Network Connect at the user’s role level.
- Configure desired NC split tunneling role options.
- Configure the NC connection profile and IP pool to use.
- Configure NC access control lists (ACLs) in order to allow access to the View Server and optionally the backend virtual machines (if Direct Connect is enabled).

**WSAM**
WSAM can work in application mode if View Connection Server is configured with either tunnel or non-tunnel mode. WSAM in server mode will work only if VMware View is configured in non-tunnel mode. Only one WSAM mode is required, although both may be used.

![VMware VMware](image)
PCoIP (PC-over-IP) Support

PCoIP is a high performance display protocol purpose-built to deliver virtual desktops and to provide end users with the best, total rich desktop experience regardless of task or location. With PCoIP, the entire computing experience is compressed, encrypted and encoded in the datacenter before being transmitted across a standard IP network to PCoIP-enabled endpoint devices.

Using VMware View with PCoIP display protocol end-users benefit from a rich desktop experience on the LAN as well as across the WAN. In conjunction with the SA Series SSL VPN Appliance using IPsec Encapsulation Security Payload (ESP), an end-user is able to connect with PCoIP from a remote location across an encrypted connection back to the datacenter where their desktop resides.

All that is required to configure PCoIP is a Network Connect profile allowing the View client running on the workstation to access the View servers. As PCoIP requires both TCP and UDP, a layer 3 VPN tunnel (NC) is required. To fully optimize any PCoIP session, the Network Connect UDP/ESP transport method needs to be implemented.

Note that the user experience with PCoIP will be different from accessing with RDP only. RDP users can access their virtual desktops using the SSL VPN bookmarks, whereas PCoIP users will simply access the View desktop by first establishing the Network Connect session and then launching the View client as if they were on the LAN. With this configuration, there is no dependency on any particular version of VMware View, so even newer and emerging distributions by VMware are immediately supported.

Troubleshooting/Logging

SA Series SSL VPN Appliances log virtually all transactions/interactions with the VMware View server. Below is an example of some of the granular logging and also custom formats/filters which could be applied.
Summary

With Juniper Networks SA Series SSL VPN Appliances, customers running a VMware View environment can now enjoy the benefit of single sign-on to their virtual desktops as well as any other Web, thin client, or network resources that administrators may have configured. This solution saves administrators time and greatly improves the end user experience.

The Juniper Networks SA Series SSL VPN Appliances provide the following benefits for VMware View environments:

- A hardened security appliance, including Federal Information Processing Standards (FIPS) and Common Criteria solutions
- A single platform for all access methods
- A complete range of authentication methods: tokens, certificates, LDAP, etc.
- SSO capability
- Support for PCoIP protocol and RDP
- Wide range of supported platforms
- Endpoint security scanning and validation
- Detailed administrative and user logging
- Integrated high availability
About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at www.juniper.net.