CYBERARK UNIVERSITY

PSM Load Balancing

CyberArk Training

OBJECTIVES

By the end of this lesson, you will be able to:

- Describe the different solutions for load balancing PSM
- Deploy PSM in Load Balancing mode

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USE CASES

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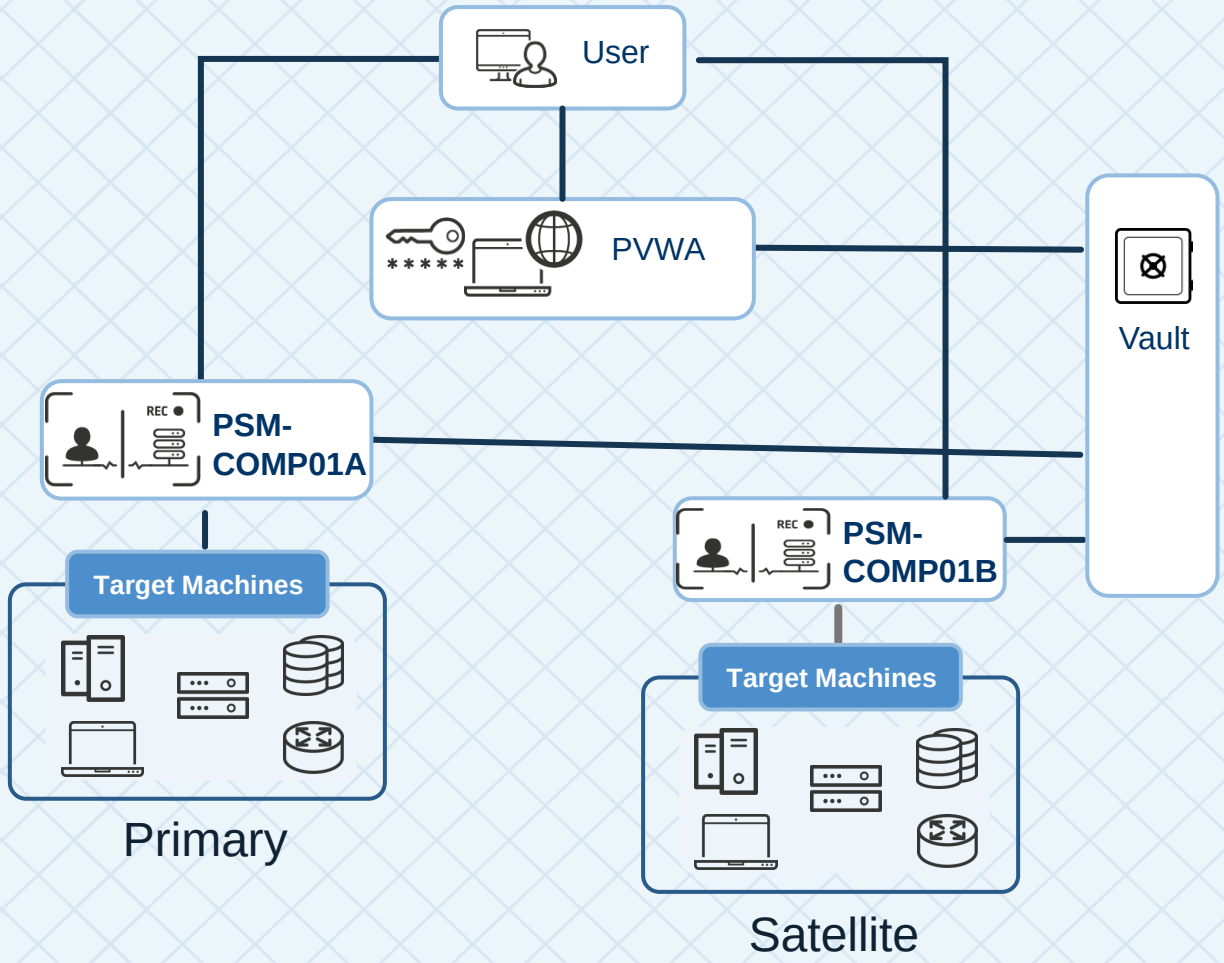
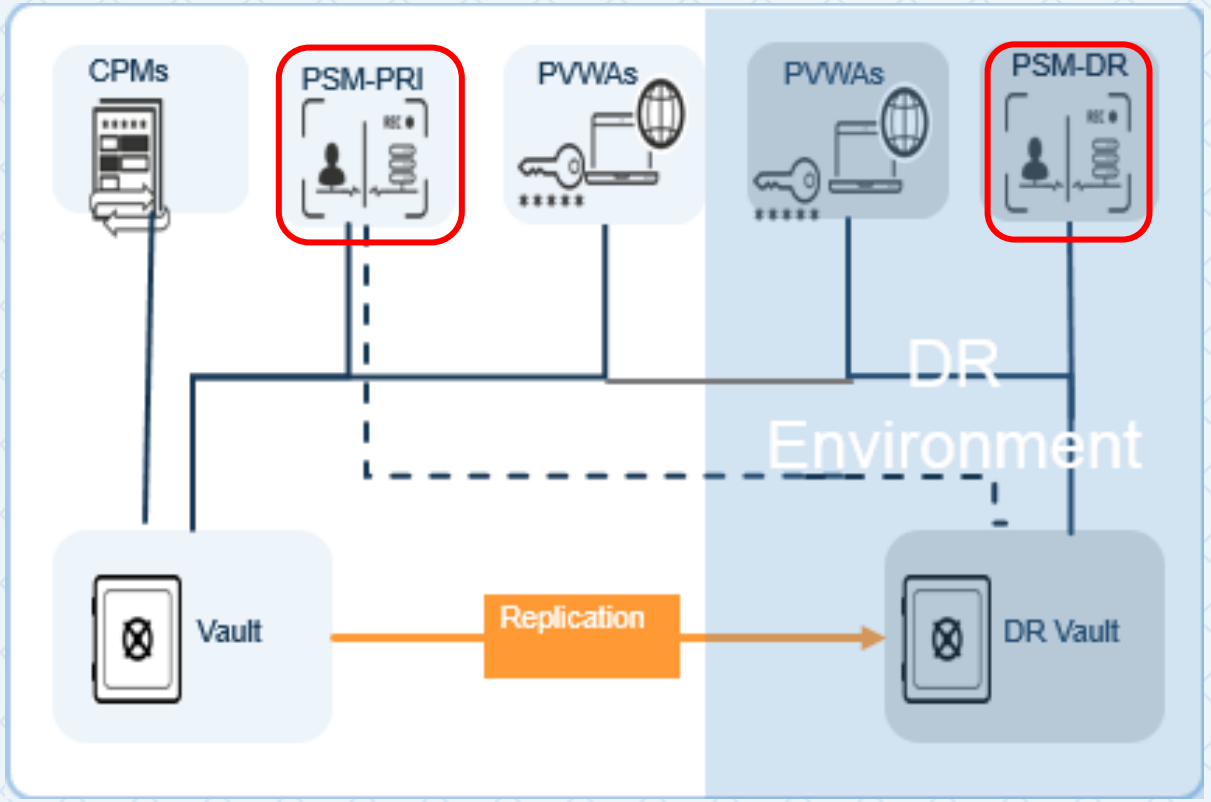
CyberArk Supports Multiple Instances of PSM Servers enabling flexibility in a deployment model

- Disaster Recovery deployment
- Fault tolerance
- Multiple sites
- Performance in a load balanced configuration



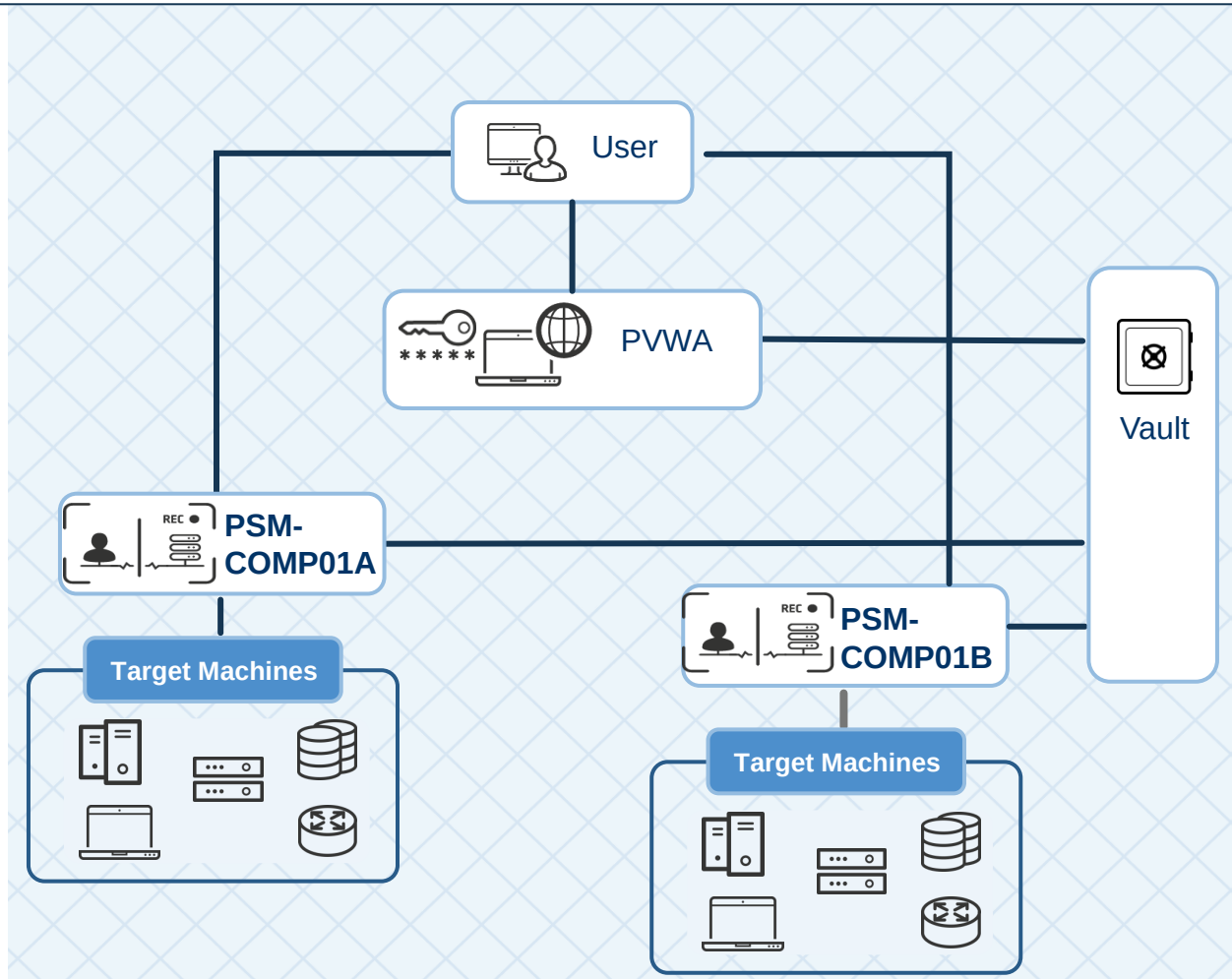
MULTIPLE PSM SERVERS: DISASTER RECOVERY SITE

- PSM can be installed at the primary and DR site locations
- In the event of a disaster at the primary site, to enable the DR PSM the PSMSERVER ID in each Target Account Platform must be updated manually
- PSM Servers can also be configured to automatically failover to the DR vault in the event the primary Vault server is offline



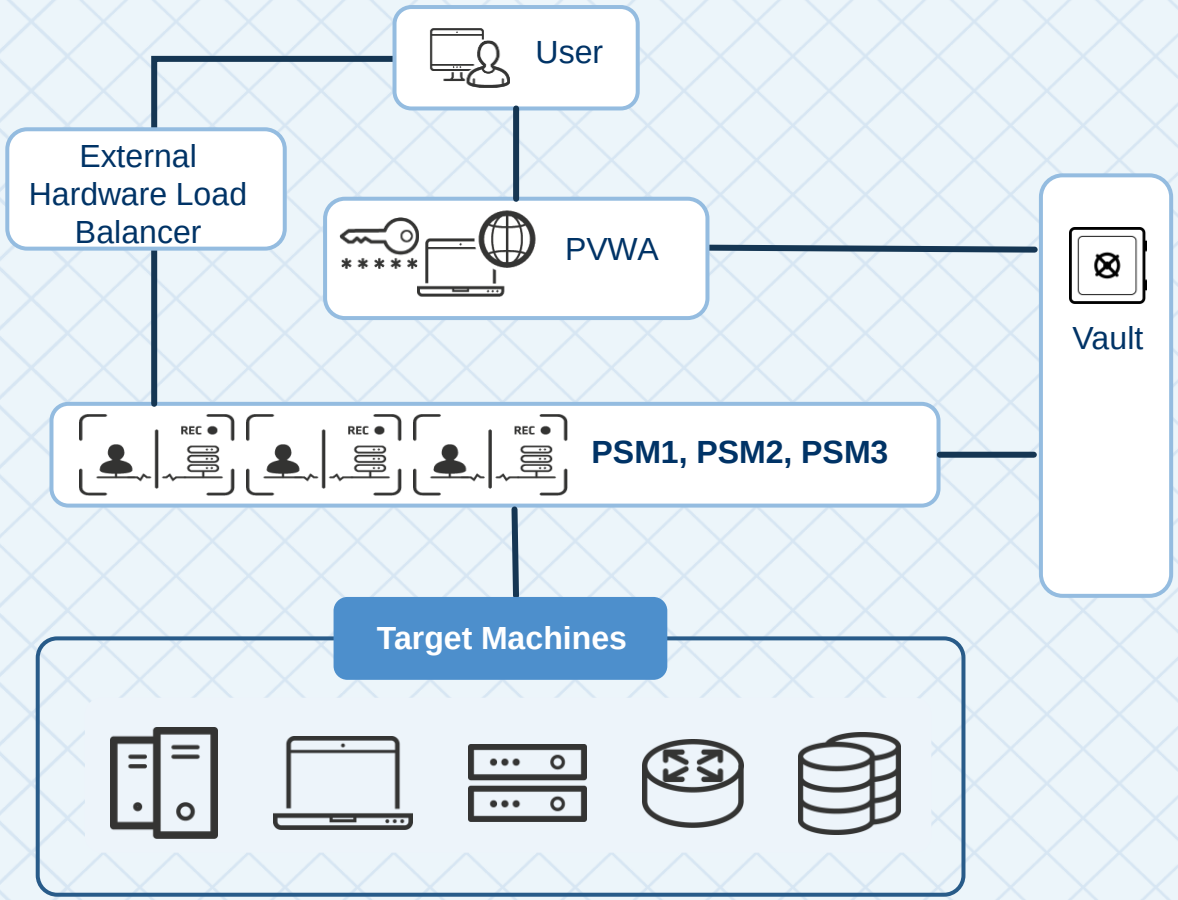
MULTIPLE PSM SERVERS – DISTRIBUTED

- Multiple PSMs can be active simultaneously as standalone or load balanced deployments
- Each PSM server can be assigned to specific Target Account Platforms servicing different target systems or locations
- PSM Servers should be deployed close to the target systems to reduce network traffic across WAN or MAN links



MULTIPLE PSM SERVERS – LOAD BALANCED OR FARMED

- Multiple PSMs can be active simultaneously in a load balancing configuration
- PSMs can be load balanced using an external hardware load balancer



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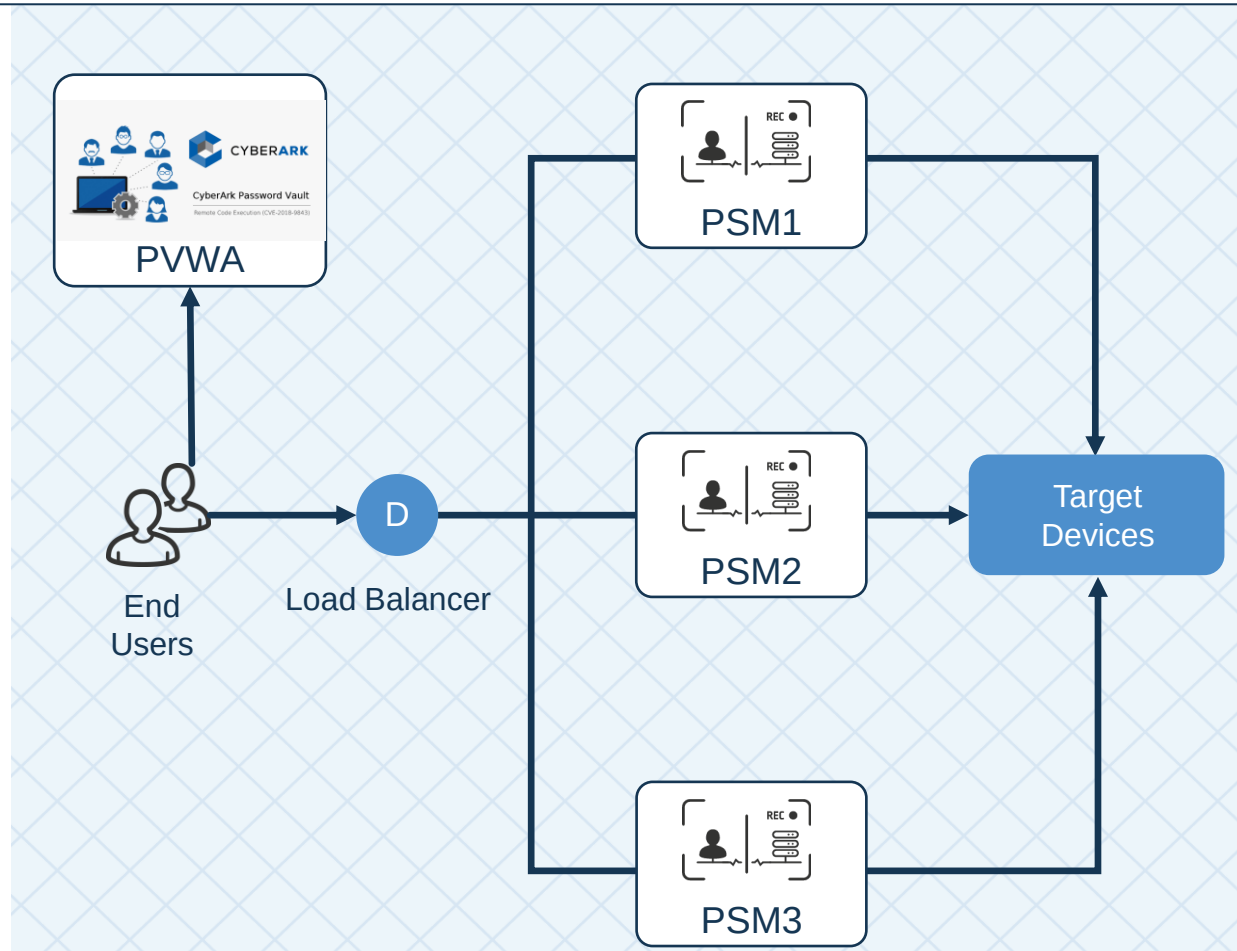
PSM LOAD BALANCING

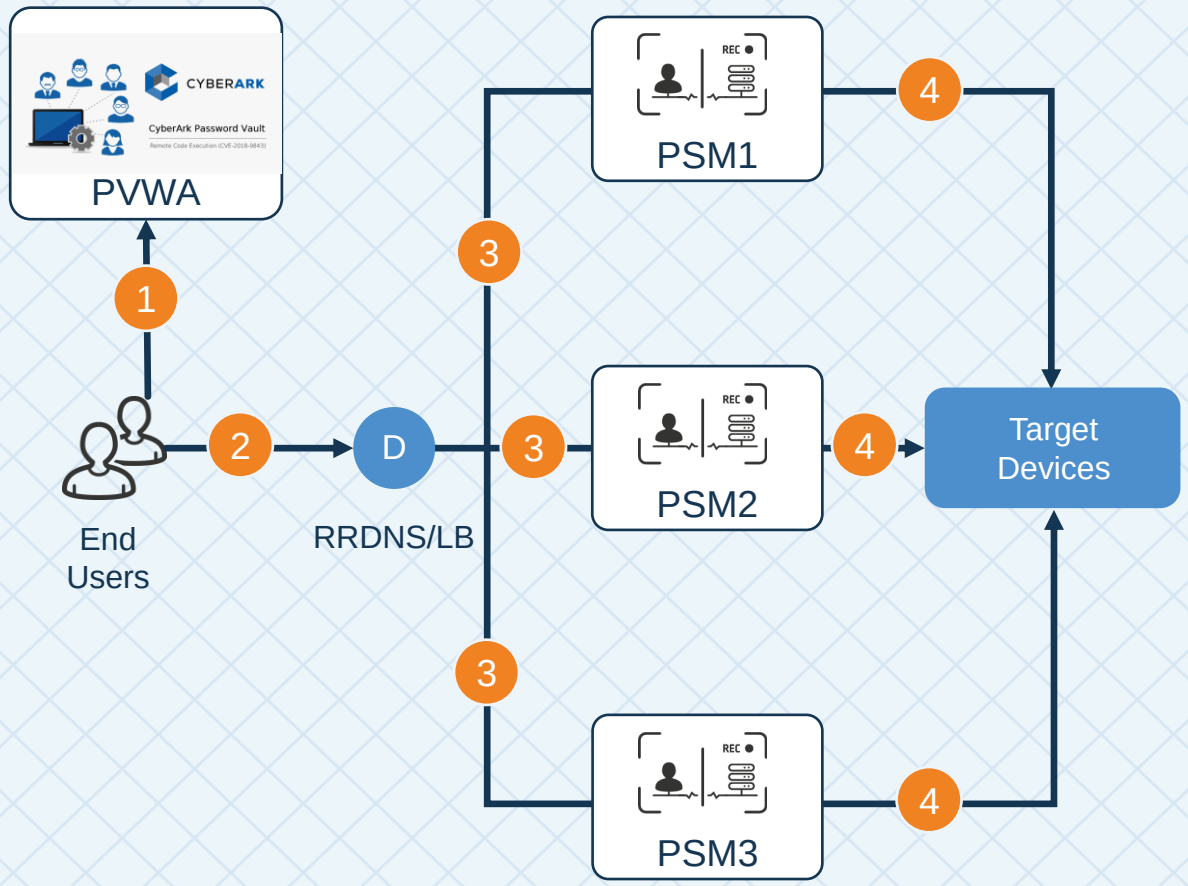
LOAD BALANCING OPTION

- External Hardware Load Balancing:
- PSM connections are directed to a Virtual IP Address that belongs to a load balancer
- The load balancer redirects the incoming connection to a specific PSM server using a basic algorithm, much like a Round Robin DNS



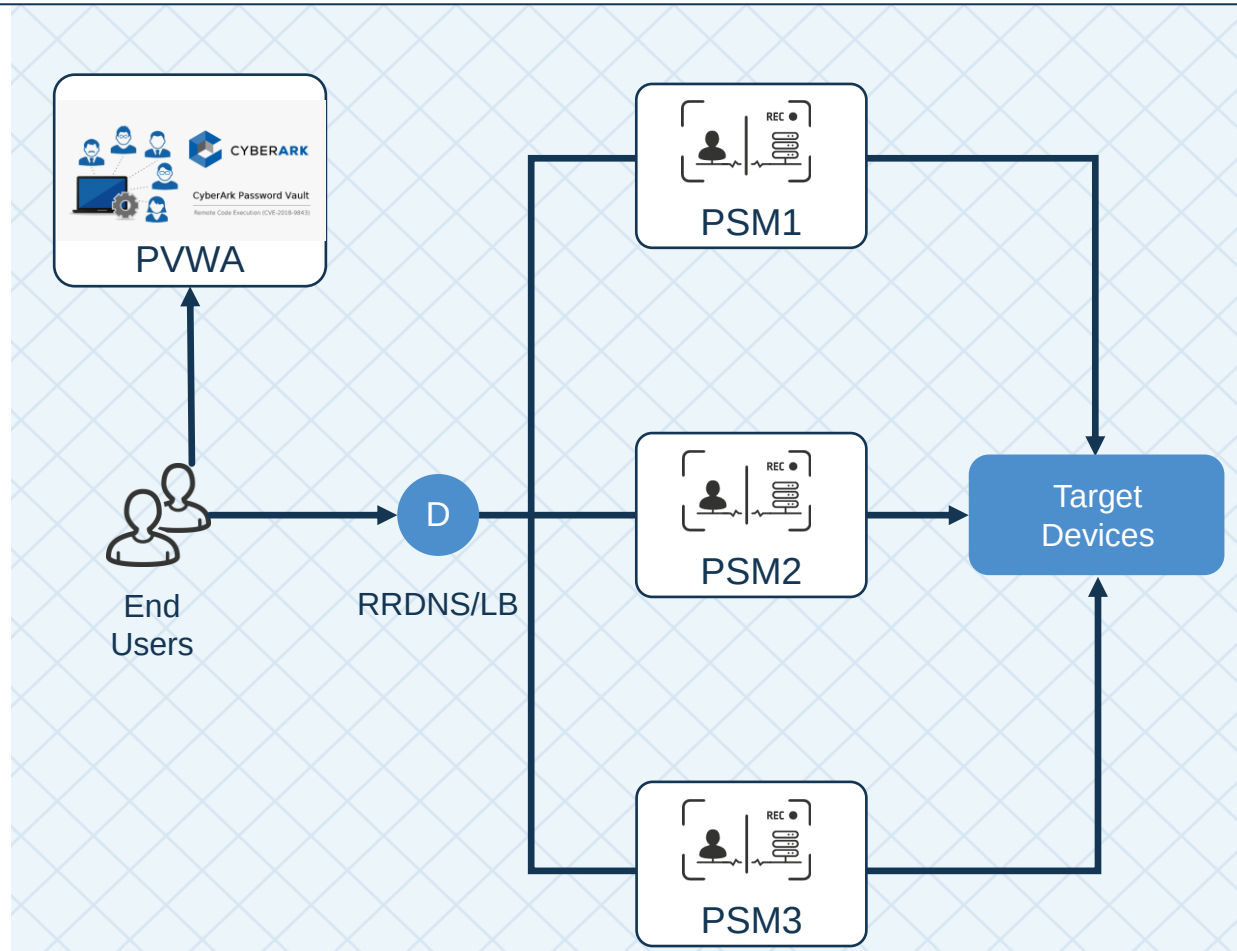
EXTERNAL LOAD BALANCING WORKFLOW

1. It all starts from a user authenticating to the Vault via the PVWA and launching a Connection Component
2. The PVWA initiates an RDP connection sent to a Virtual IP address representing the Load Balancer
3. The Load Balancer algorithm determines which pool member will receive the request
4. The PSM connection process proceeds normally to the target device



EXTERNAL LOAD BALANCING DEPLOYMENT

- Install individual PSMs in a standalone configuration
- Configure a 3rd party load balancer to handle incoming connections to a pool of standalone PSM servers
- In the PVWA, configure a logical PSM Server ID to represent the VIP
- Assign the logical PSM Server ID to the target platforms



EXTERNAL HARDWARE LOAD BALANCER

	External LB
ActiveX	Yes
RDP File	Yes
RemoteApp	Yes
RDP Proxy	Yes
Supports out of domain deployments	Yes
Live Monitoring	Yes
Direct connection to PSM servers	No (Relies on bandwidth of LB to proxy all RDP sessions from end user to PSM)
Application layer load balancing	No (Potential lack of even load distribution across PSMs (“session stacking”)

PROS/CONS –HARDWARE LOAD BALANCING

PROS

- Simple to configure
- Supports majority of PSM capabilities (ActiveX, RDPFile, RemoteApp, RDGateway, Live Monitoring)
- Supported in out-of-domain (WORKGROUP) PSM deployments
- Fully documented on docs.cyberark.com
- Provides options for health monitoring of downed PSM servers (network availability, service availability
- Live monitoring is supported

CONS

- Relies on load balancer algorithm for load distribution (“Round Robin” by default)
- Potential lack of even load distribution across PSMs (“session stacking”)
  - can be mitigated by configuring a “Least Connections” load balancing method on the load balancer instead of “Round Robin”, if supported”
- Relies on throughput/bandwidth of load balancer to continuously proxy all RDP sessions from end user to PSM

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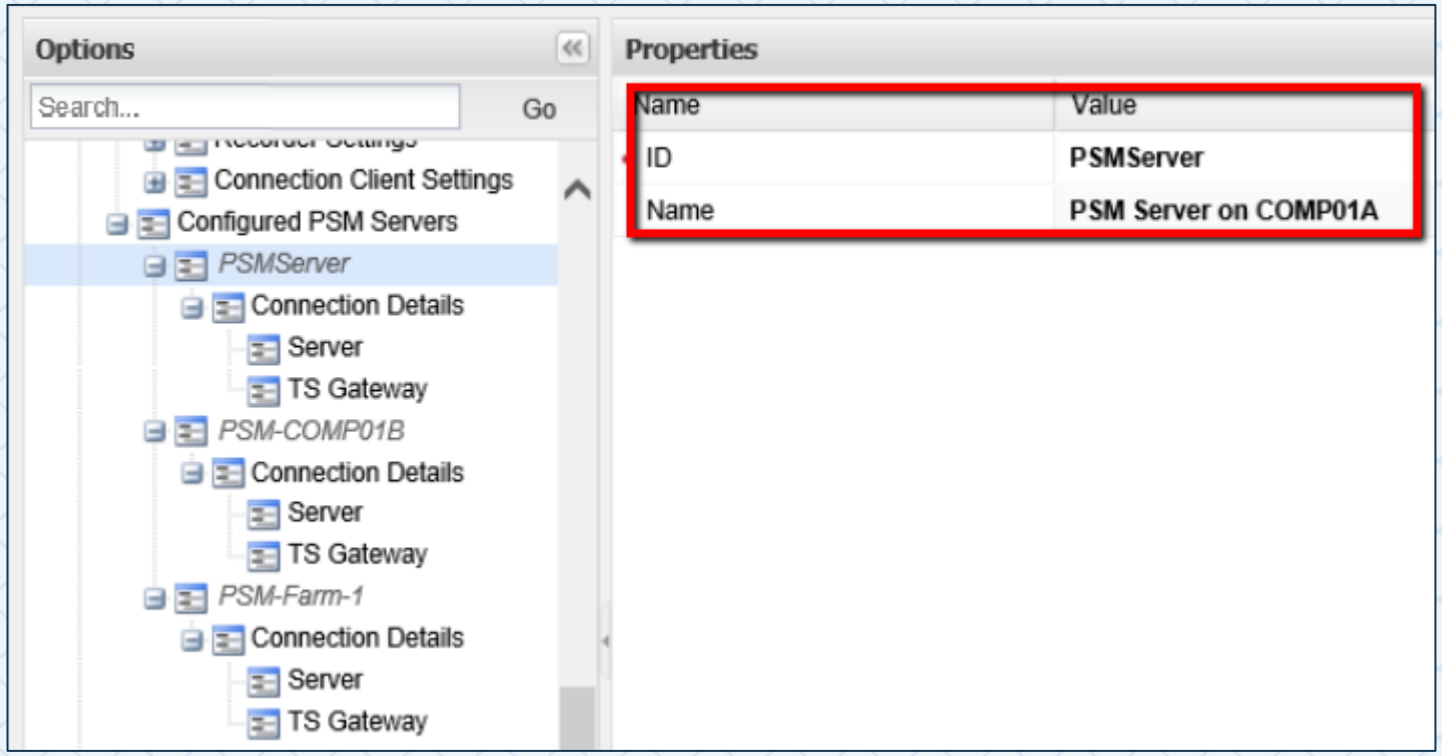
INSTALLATION AND CONFIGURATION

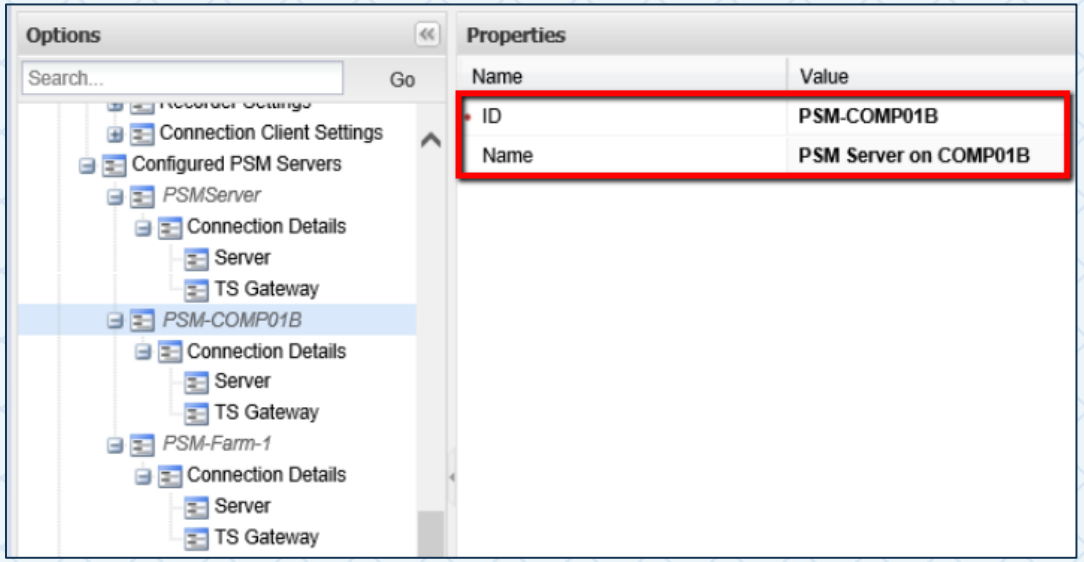
INSTALLING MULTIPLE PSM SERVERS

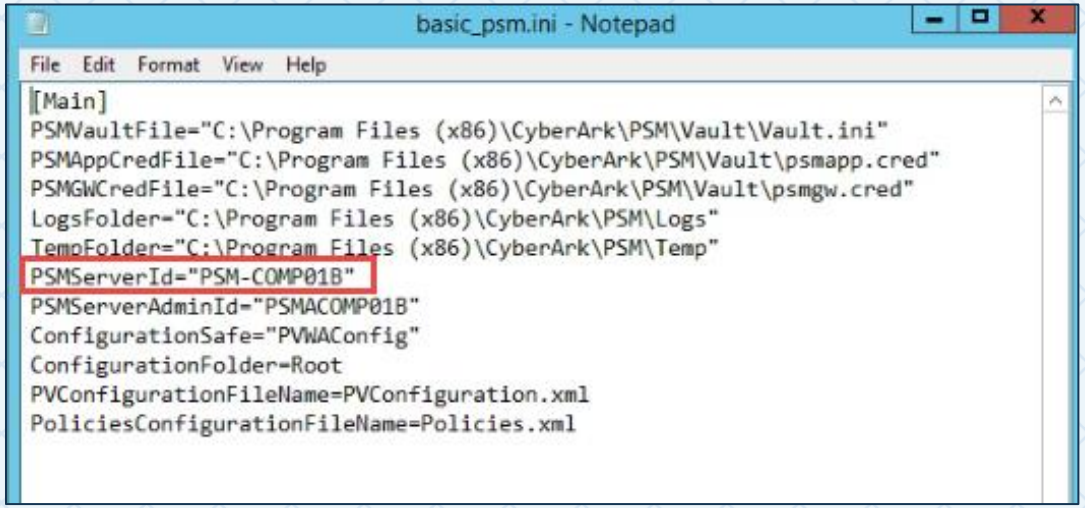
- Step One: Install the first PSM. The default ID of the first PSM server is **PSMServer**



INSTALLING MULTIPLE PSM SERVERS

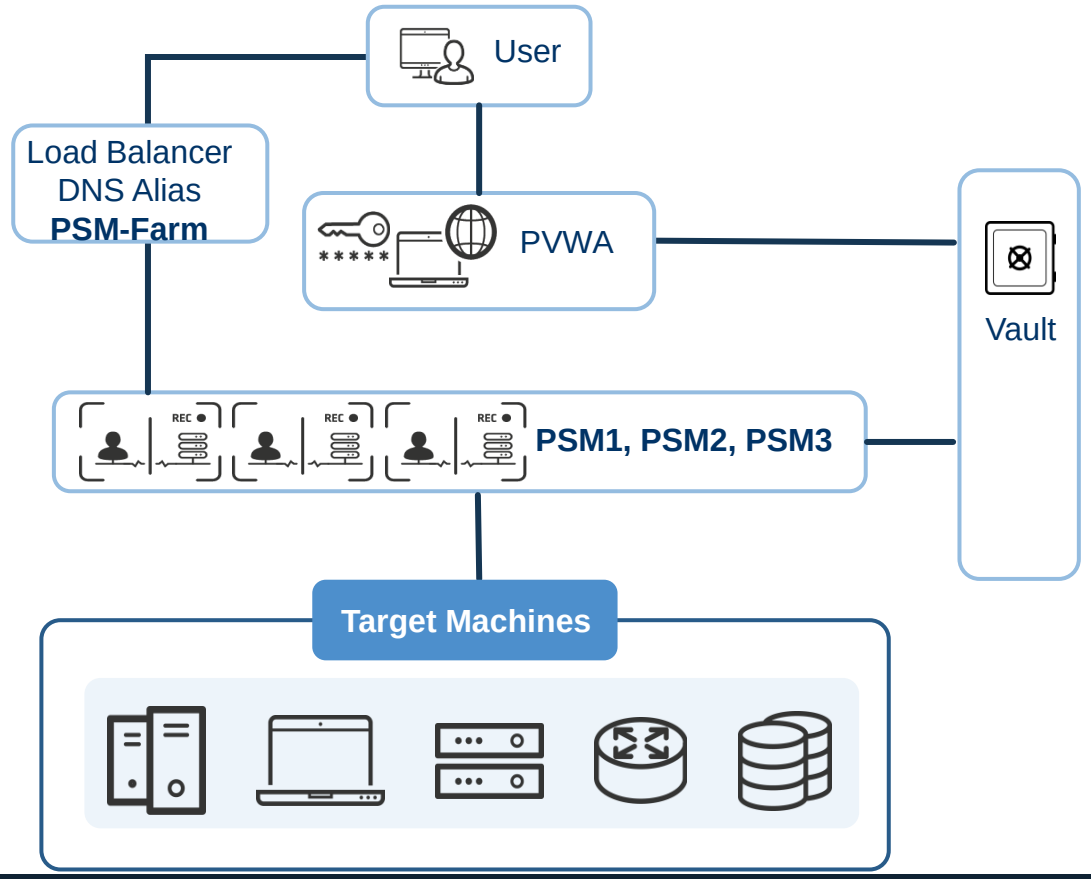
- Step Two: Install additional PSM servers in identical configurations
  - Operating System
  - CyberArk software Version
  - Installation directory paths
  - Client software
- The IDs of additional PSM servers are by default **PSM-<*computer name*>**
- Renaming PSM servers is as easy as renaming the PSM Server ID in the PVWA, and in the PSM servers basic_psm.ini
  - Restart the Cyber-Ark Privileged Session Manager service

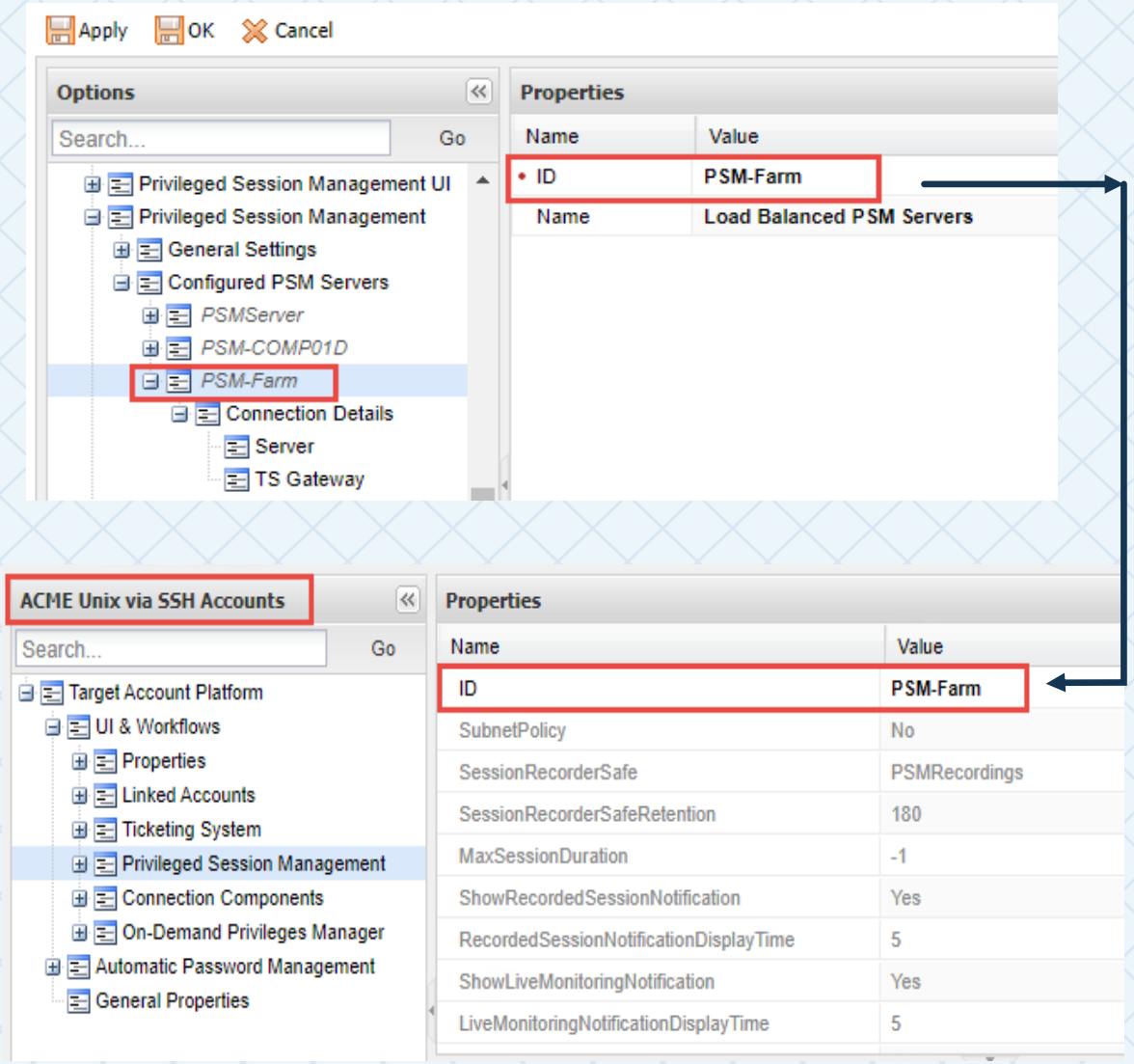




INSTALLING MULTIPLE PSMS: LOAD BALANCING

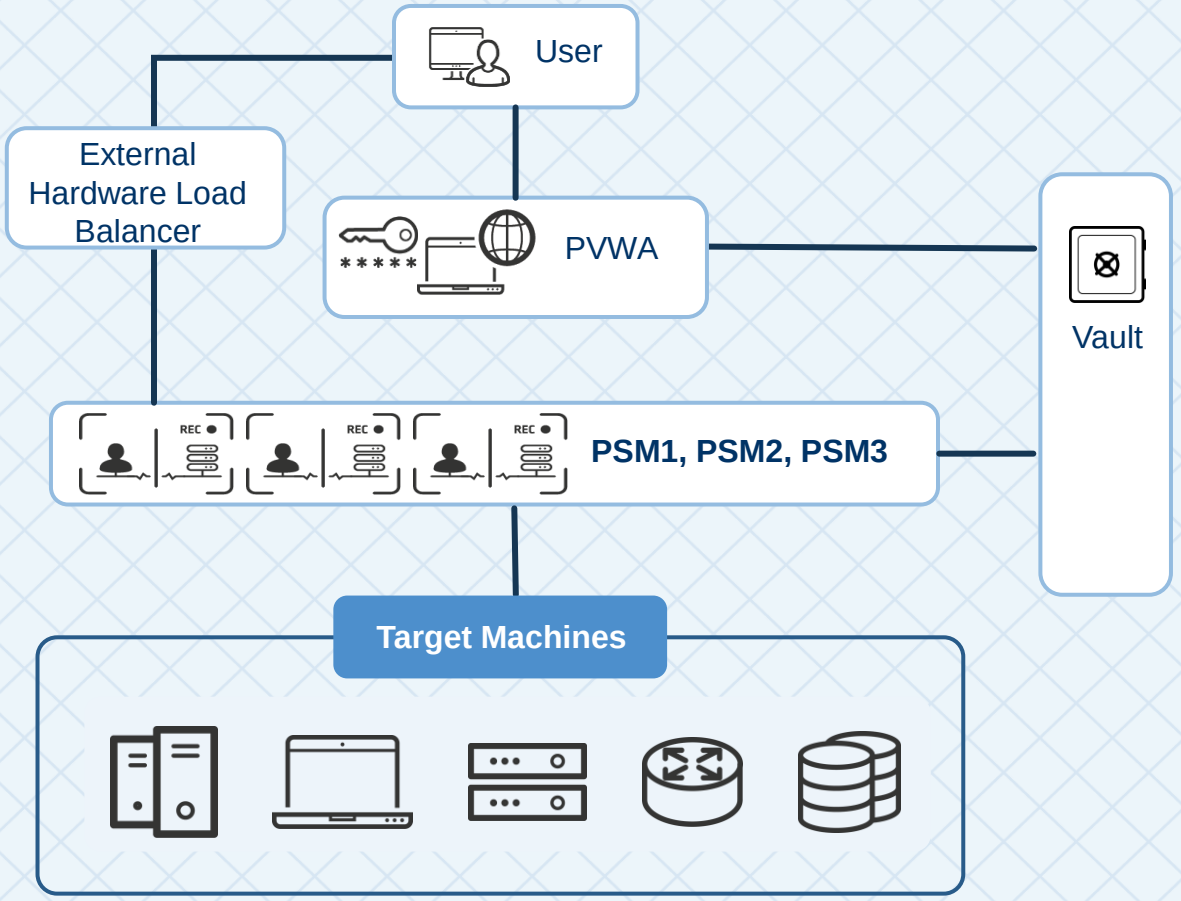
- Create a new entry for the load balanced Virtual IP, using the VIP as the server address and associate each platform with the PSM Server VIP name.





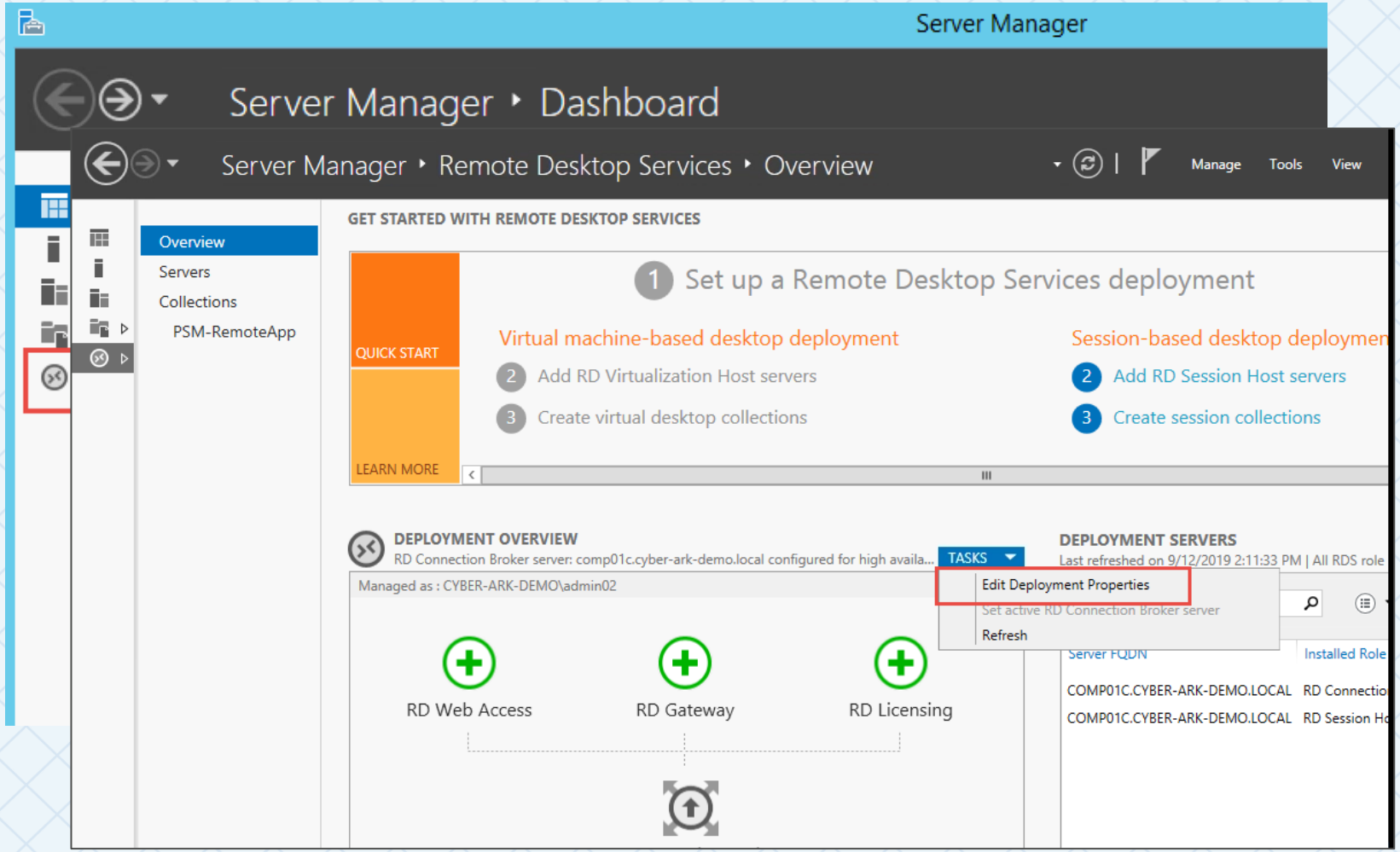
MULTIPLE PSM SERVERS – DIGITAL CERTIFICATES

- A Digital Certificate from a Trusted Certificate Authority should be used for RDP/SSL Server Authentication
- When a load balancer is used, the Certificate must support Subject Alternative Names or SAN's to prevent Certificate Errors and allow an SSL connection to terminate at the PSM Server
- Prepare the customer to provision or acquire a Digital Certificate from a Trusted Certificate Authority
- Enable SSL passthrough to protect the communications between the load balancer and the PSM nodes
- See CyberArk Docs for more information. Search on "Example of how to configure a load balancer"



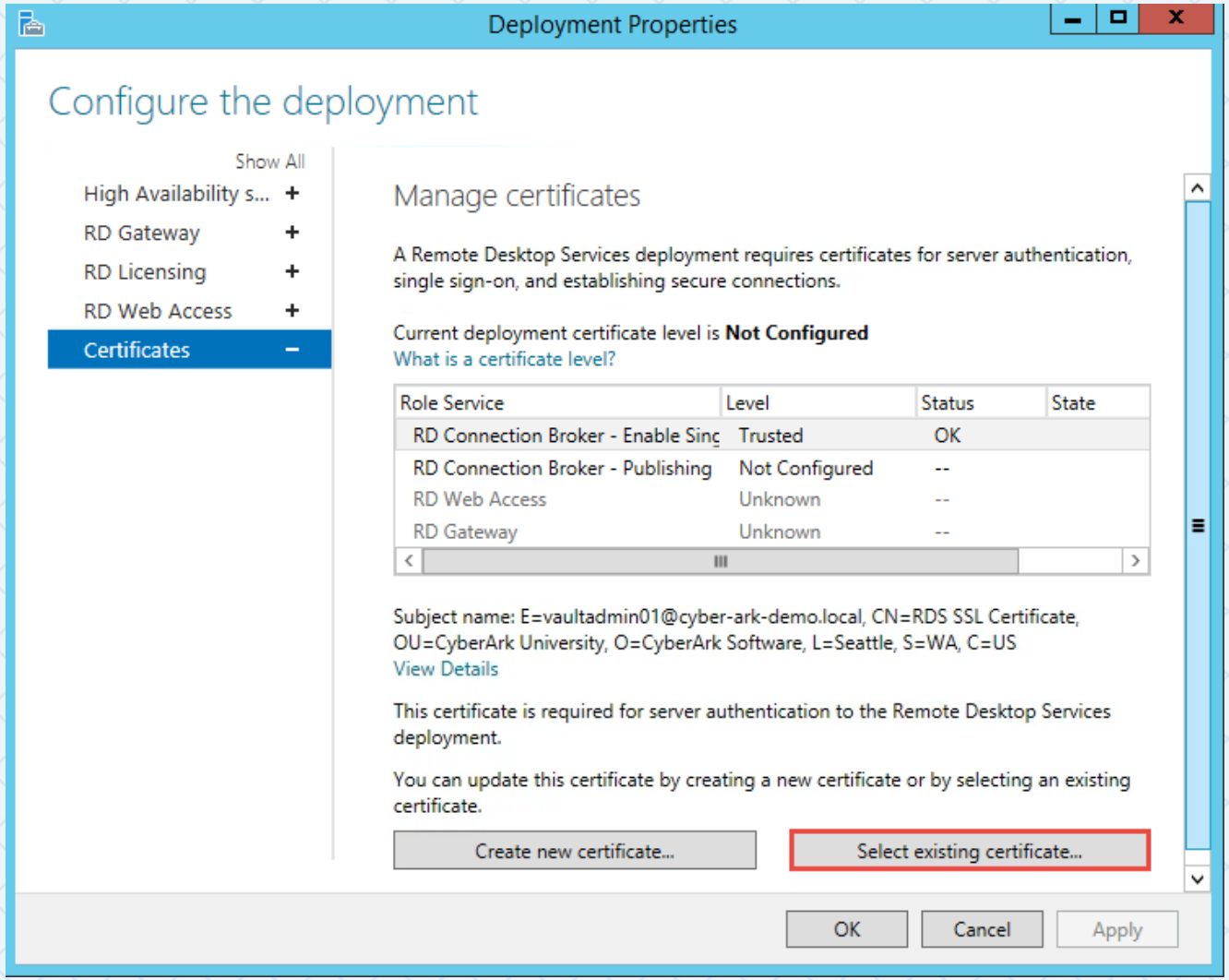
MULTIPLE PSM SERVERS – DIGITAL CERTIFICATES

- Update the PSM Servers Remote Desktop Session Host with the new SSL Certificate
- Each PSM Server in the pool must have its own individual SSL Certificate with a Subject Alternative Name defined for the VIP



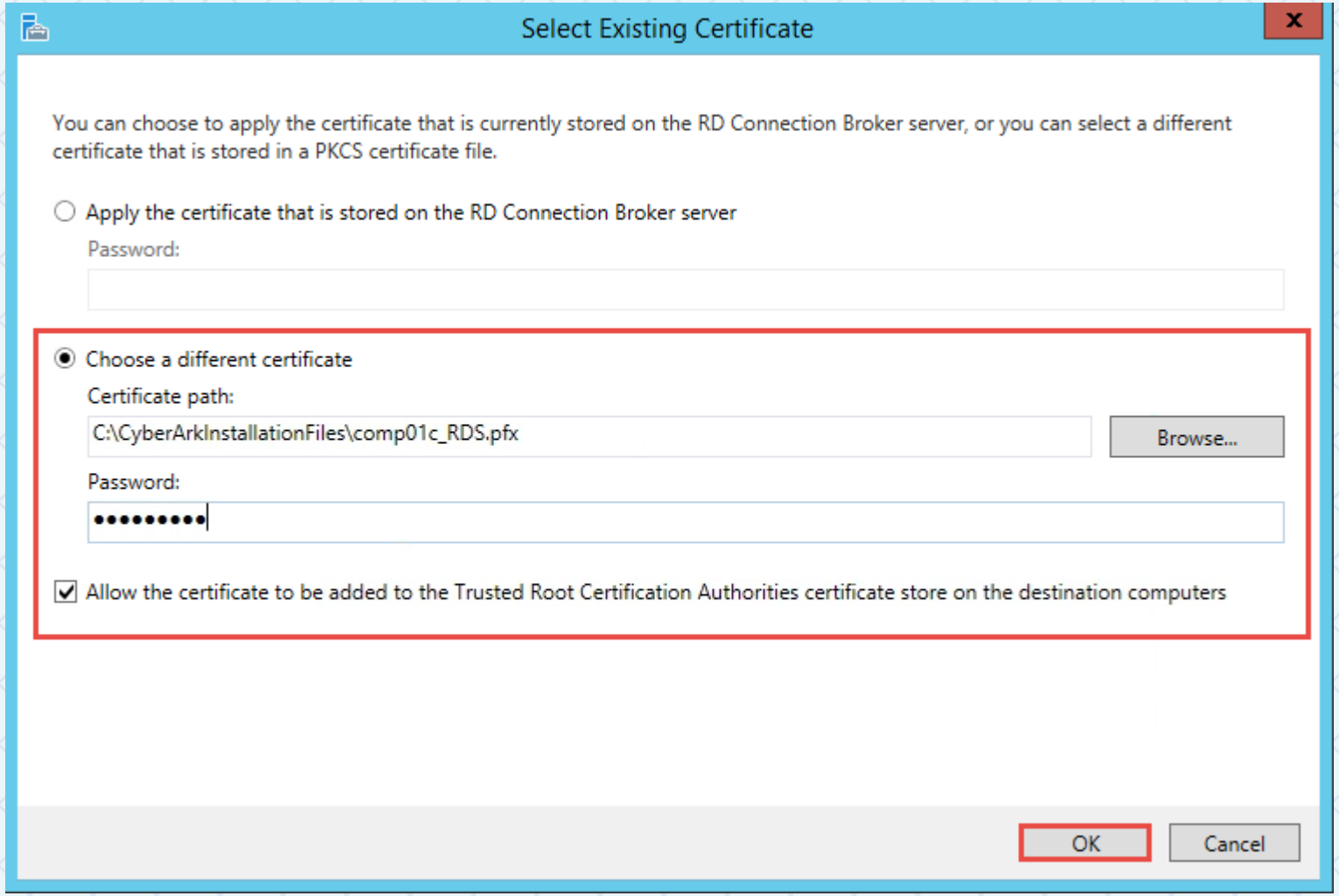
MULTIPLE PSM SERVERS – DIGITAL CERTIFICATES

- Adding the RDS SSL certificate directly to the Windows Certificate Store will not be effective. The certificate must be updated in Server Manager RDS Deployment properties.



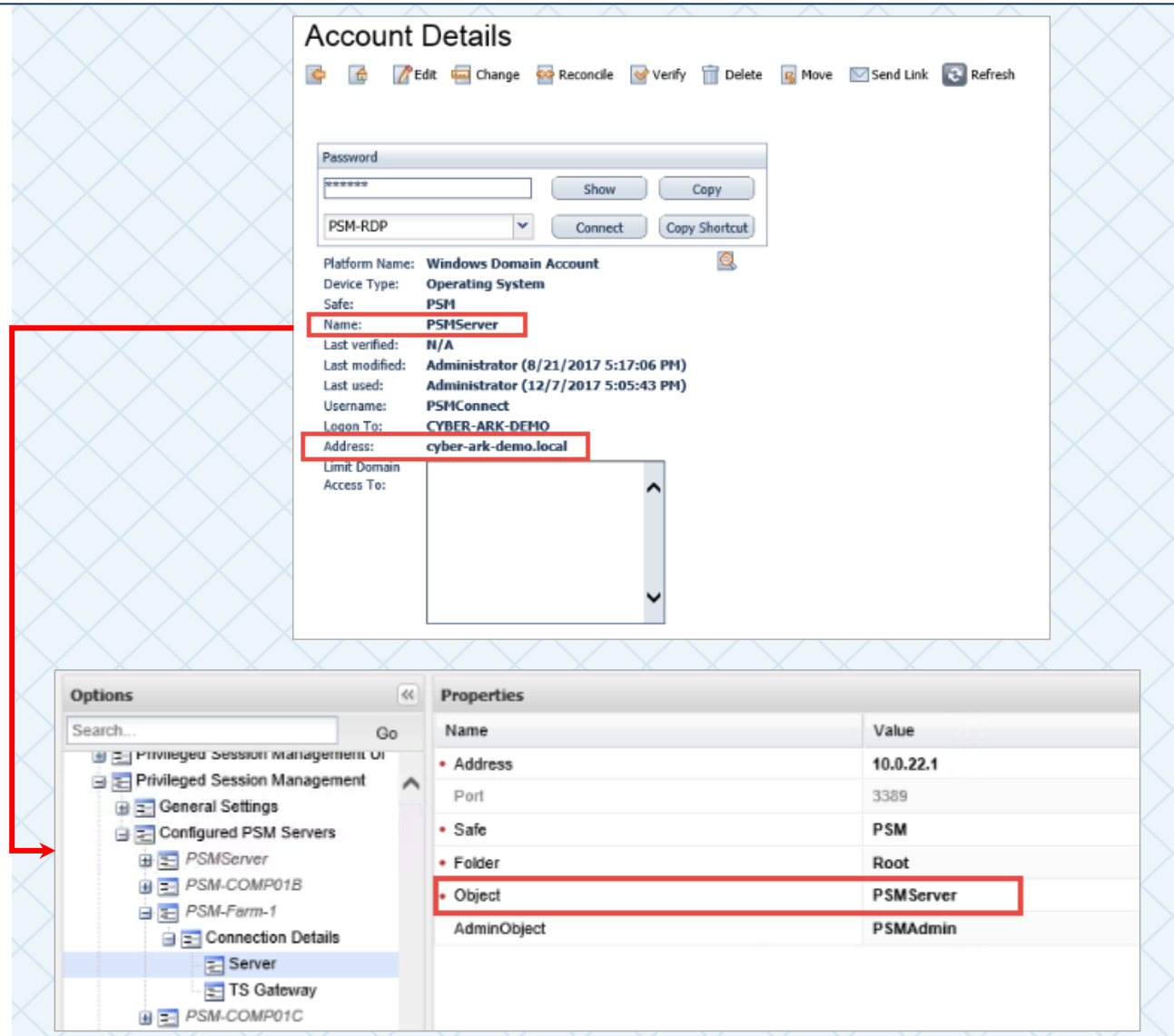
MULTIPLE PSM SERVERS – DIGITAL CERTIFICATES

- Enter the password set by the Certificate Administrator for this certificate.



MOVING THE PSM USERS TO THE DOMAIN

- Moving the PSMConnect user to the domain is only required if ActiveX is the connection method, in a load balanced environment.
- If using RDP files or HTML5GW, there is no need to move PSMConnect to the domain.
- After creating the domain users, configure the load balancer and other PSM entries to use the new domain objects
- Note that to allow live session monitoring in a load balanced environment with RD connection broker, the PSMAdminConnect user must remain a local user



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THANK YOU