

Creating and managing Virtual Desktop Infrastructure in Remote Application Server

- Parallels Remote Application Server 18.3
- Parallels Remote Application Server 19.1

Intro

This article provides a comprehensive overview of what can be accomplished with virtualized resources and how to set up Parallels Remote Application Server (RAS) to work with said virtualized resources.

By adding the Virtual Desktop Infrastructure (VDI) host to the RAS, you can manage the virtual machines on it, create guest clones, and publish virtual desktops and applications from virtual guests.

The following hypervisors are supported:

- Microsoft Hyper-V (Windows Server 2012 R2 up to Windows Server 2022);
- Microsoft Hyper-V Failover Cluster (Windows Server 2012 R2 up to Windows Server 2022);
- VMware vCenter 7.x, 6.7.0, 6.5.0;
- VMware ESXi 7.x, 6.7.0, 6.5.0;
- Scale Computing HC3 8.9, 9.1;
- Nutanix AHV AOS 5.15, 5.20.

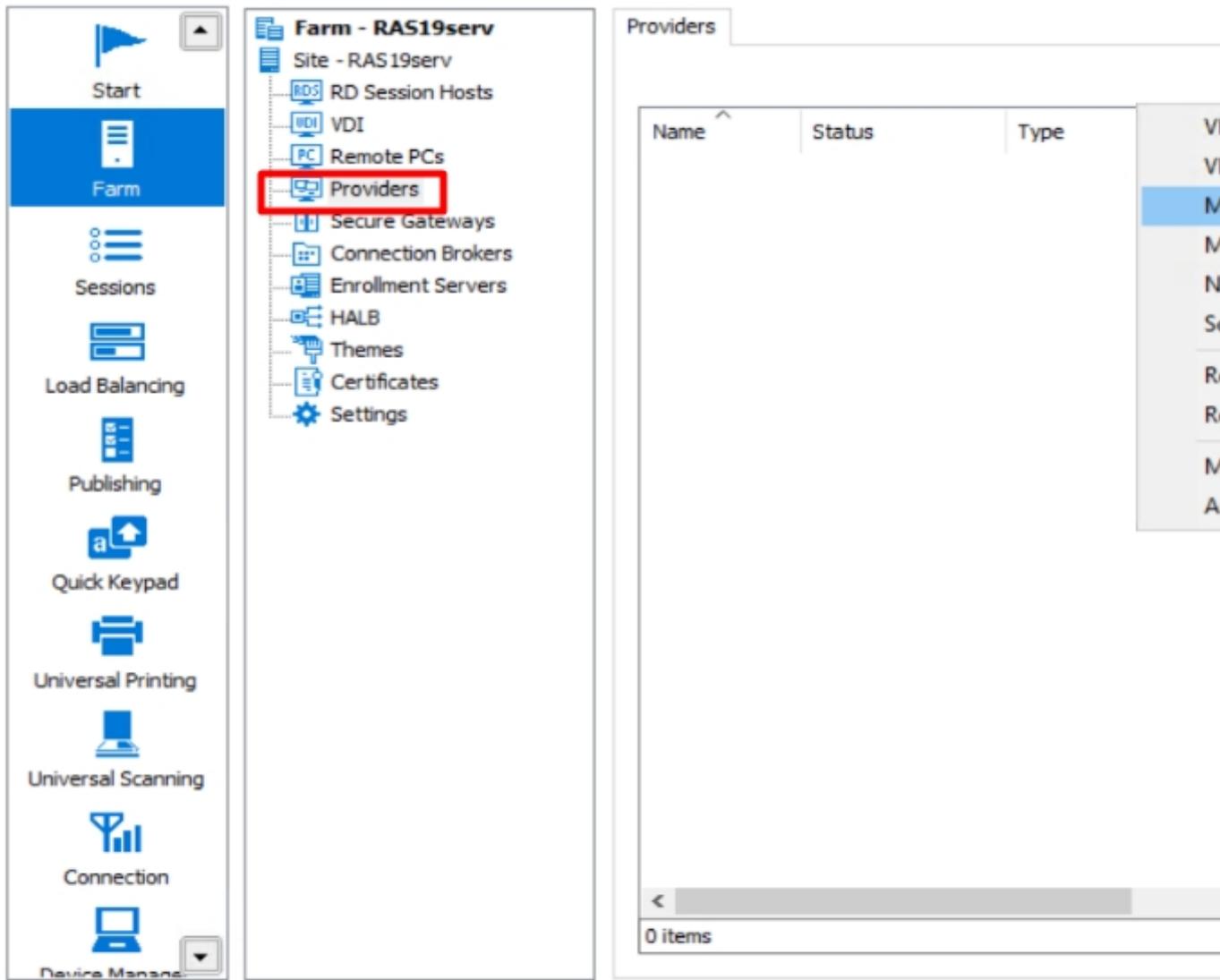
The special VDI provider type Remote PC allows publishing from on-premise PCs or Virtual Machines (VMs) without hypervisor involving. To know more, please follow this KB [How to create Remote PC Pool](#)

RAS also supports Cloud providers such as Azure and AWS.

Adding a VDI Host

In this article setting up RAS VDI using Microsoft Hyper-V will be an example, other hypervisors are adding in the same way.

1. In the **RAS Console**, go to **Farm>Providers**. Click **Plus** icon or **Tasks>Add**. Choose **Microsoft**



Hyper-V.

2. The configuration wizard will appear, specify the parameters:

Add Virtualization Provider - Microsoft Hyper-V

Parallels®

Type: Microsoft Hyper-V

Name: HOST

Description: Lenovo

Connectivity

Address: host.ras.local

Username: rasadmin

Password: ●●●●●●●●●●

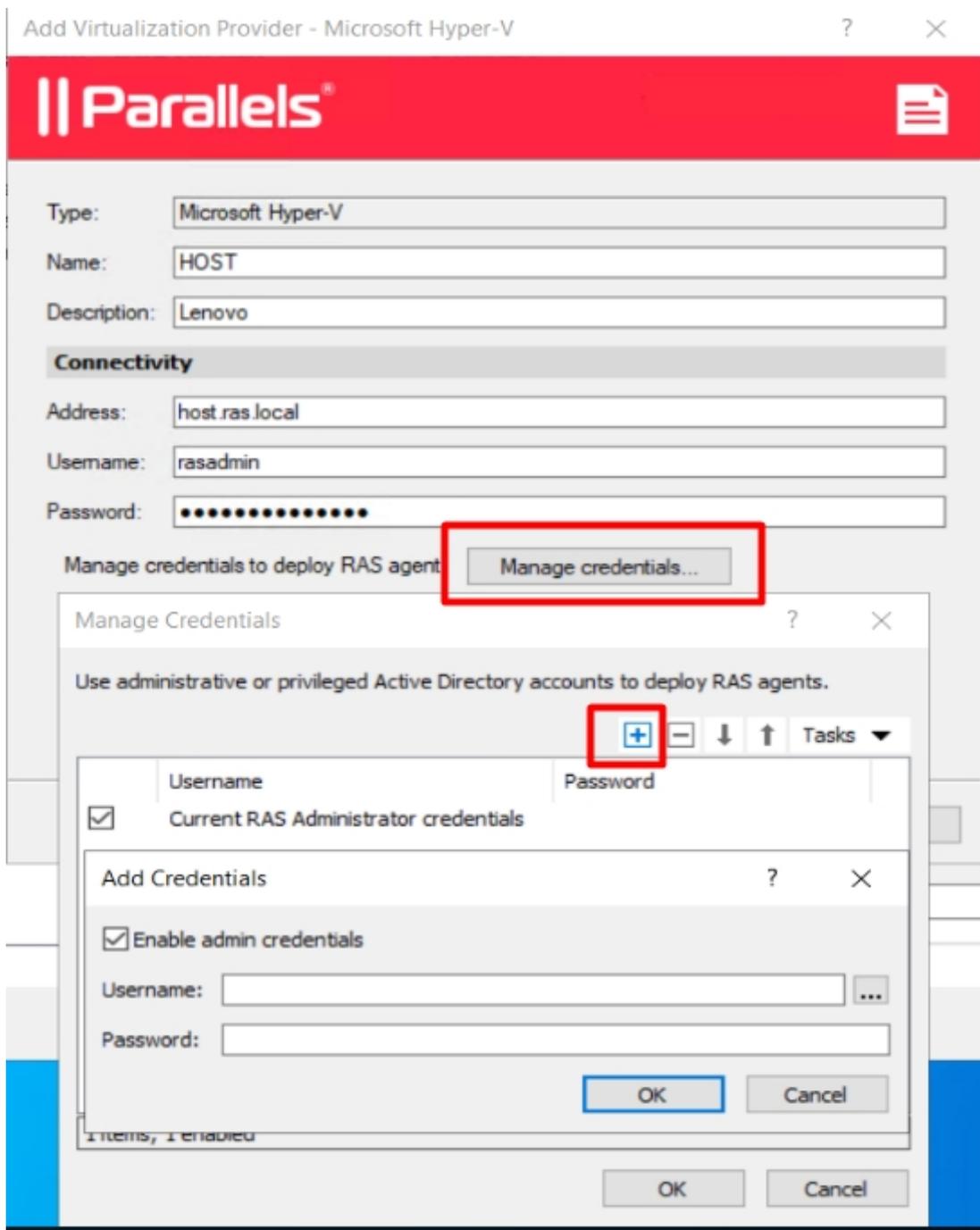
Manage credentials to deploy RAS agent:

[Advanced Settings](#)

< Back

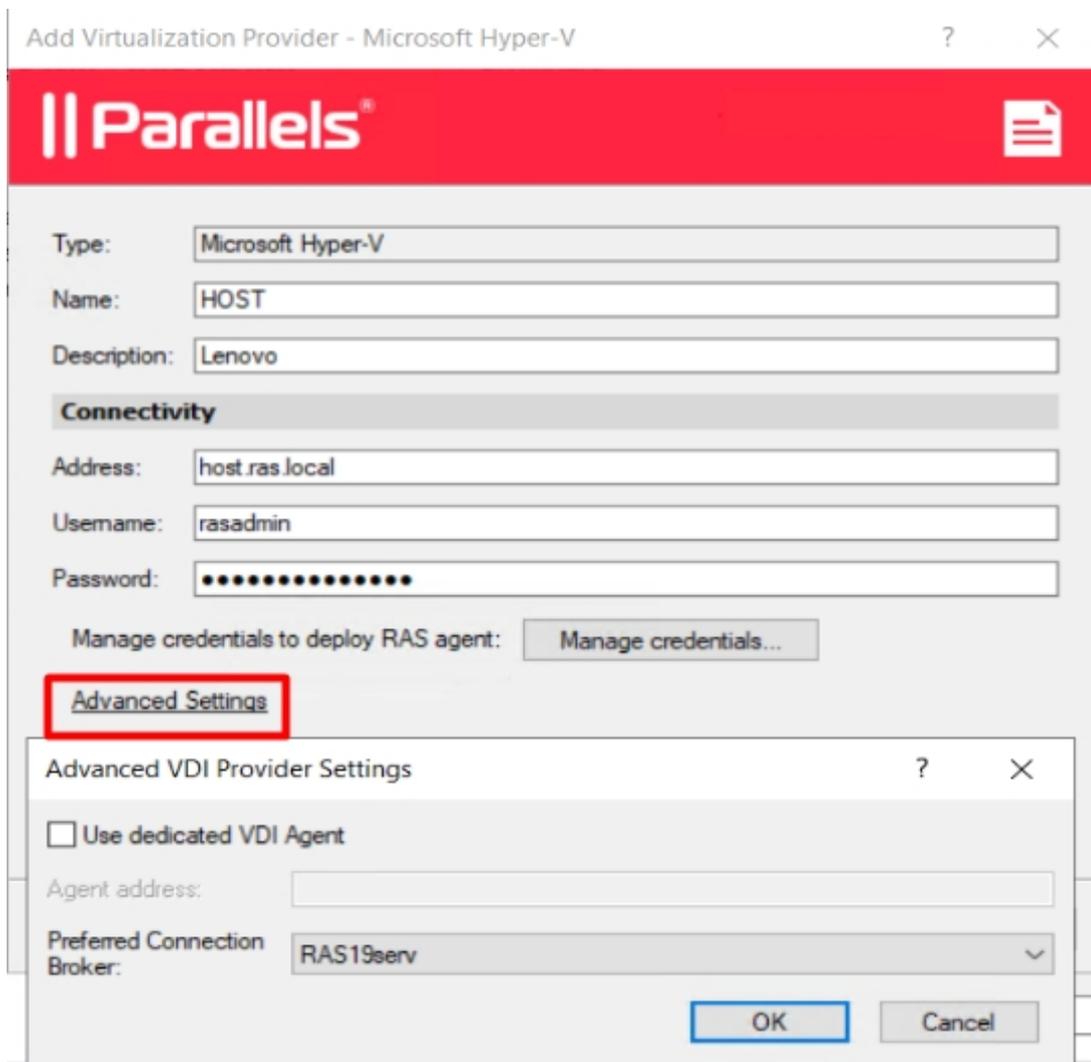
Tip: we do recommend using full permission account for VDI provider, but it could be also limited service account.

In case you're using a different user account to deploy RAS Agent on Guest VM, click **Manage Credentials...**

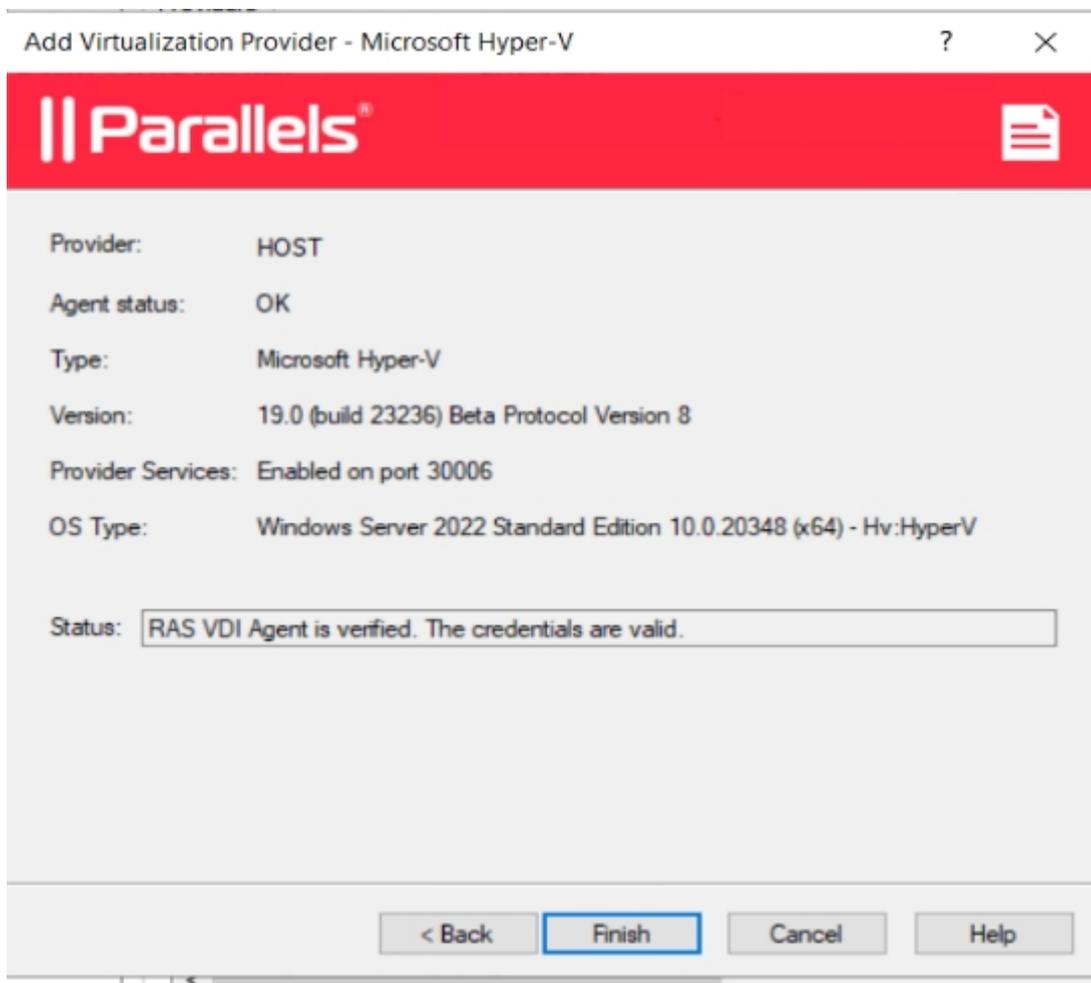


Under **Advanced settings** you can specify to which Connection Broker (CB) this VDI Agent will report.

Tip: if you're planning to use Template to deploy RDSH for auto-scaling feature, we recommend specifying the Primary CB as preferred.



3. Next window will check connectivity and access to hypervisor.



4. Once the Wizard is finished, need to **Apply** settings and wait for synchronization. VDI agent is now requesting a list of available VMs and their info. Depends on the environment, it could take a while.

Providers

Group by Tasks

Name ^	Status	Type	Description	Provider Agent	High availability	T.
<input checked="" type="checkbox"/> HOST	Synchronizing	Microsoft Hyper-V 10.0.20...	Lenovo	RAS19serv	OFF	

< >

1 items, 1 enabled, 1 selected

Close

Apply

Help

4. You can check the Properties of VDI Provider and adjust if needed:

Name	Status	Type	Description	Provider Agent	High availability	T.
<input checked="" type="checkbox"/> HOST	■ OK	Microsoft Hyper-V 10.0.20...	Lenovo	RAS19serv	OFF	

HOST Properties

General | Credentials | Agent settings | RDP printer

Enable provider in site

Name:

Description:

Type:

Subtype:

Host:

Port:

Resource pool:

Dedicated VDI

Agent address:

For specific provi:

OK Cancel Help

Tip: we recommend adjusting the hypervisor subtype according to your environment.

Check credentials will validate VDI Agent authentication on hypervisor.

General Credentials Agent settings RDP printer

Username:

Check Credentials

Password:

Parallels Remote Application Server Conso... X

 Valid Credentials

OK

OK Cancel Help

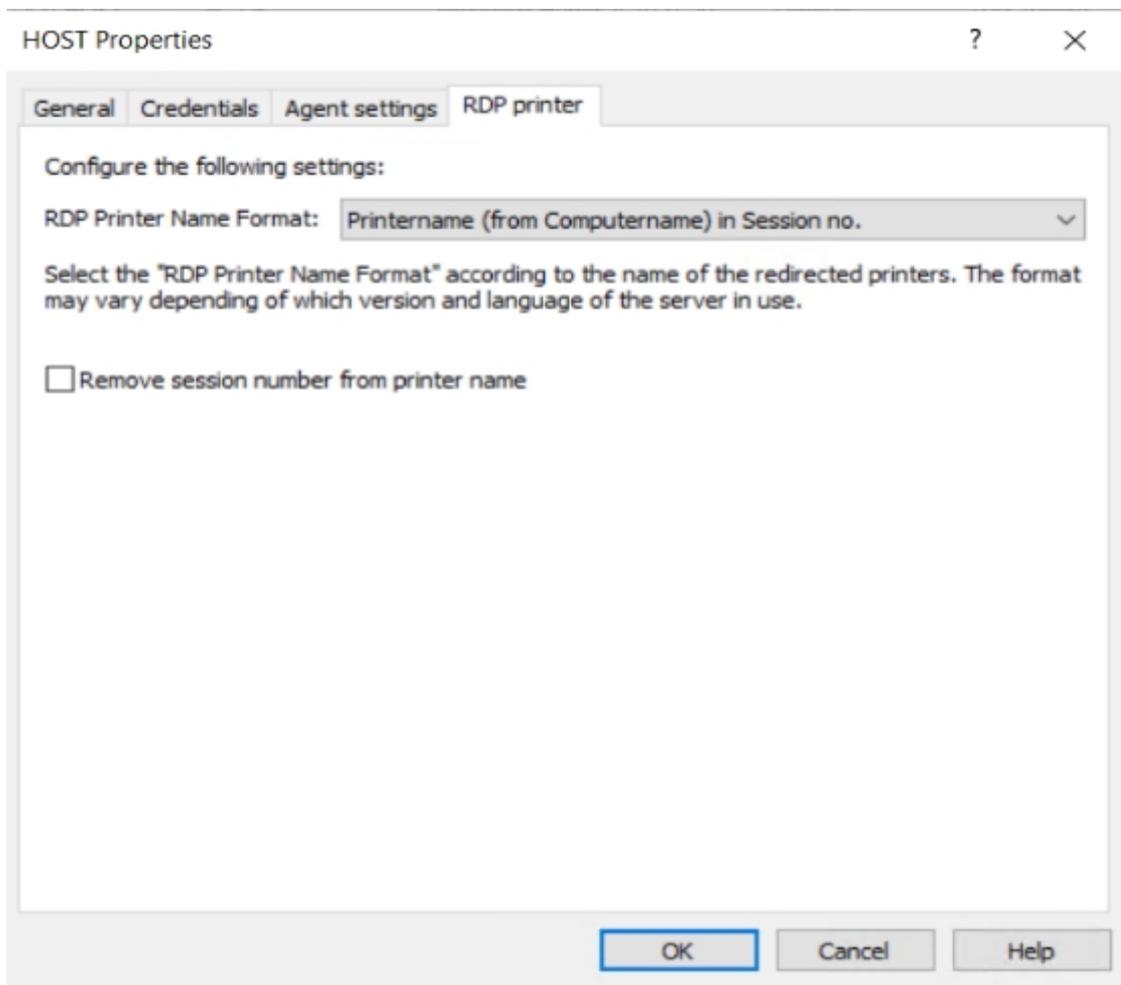
General Credentials Agent settings RDP printer

Preferred Connection Broker: 

- Allow client URL/Mail redirection
- Enable Drag and drop
- Allow file transfer command (Web (HTML5) and Chrome clients)
- Enable drive redirection cache

Configure...

OK Cancel Help



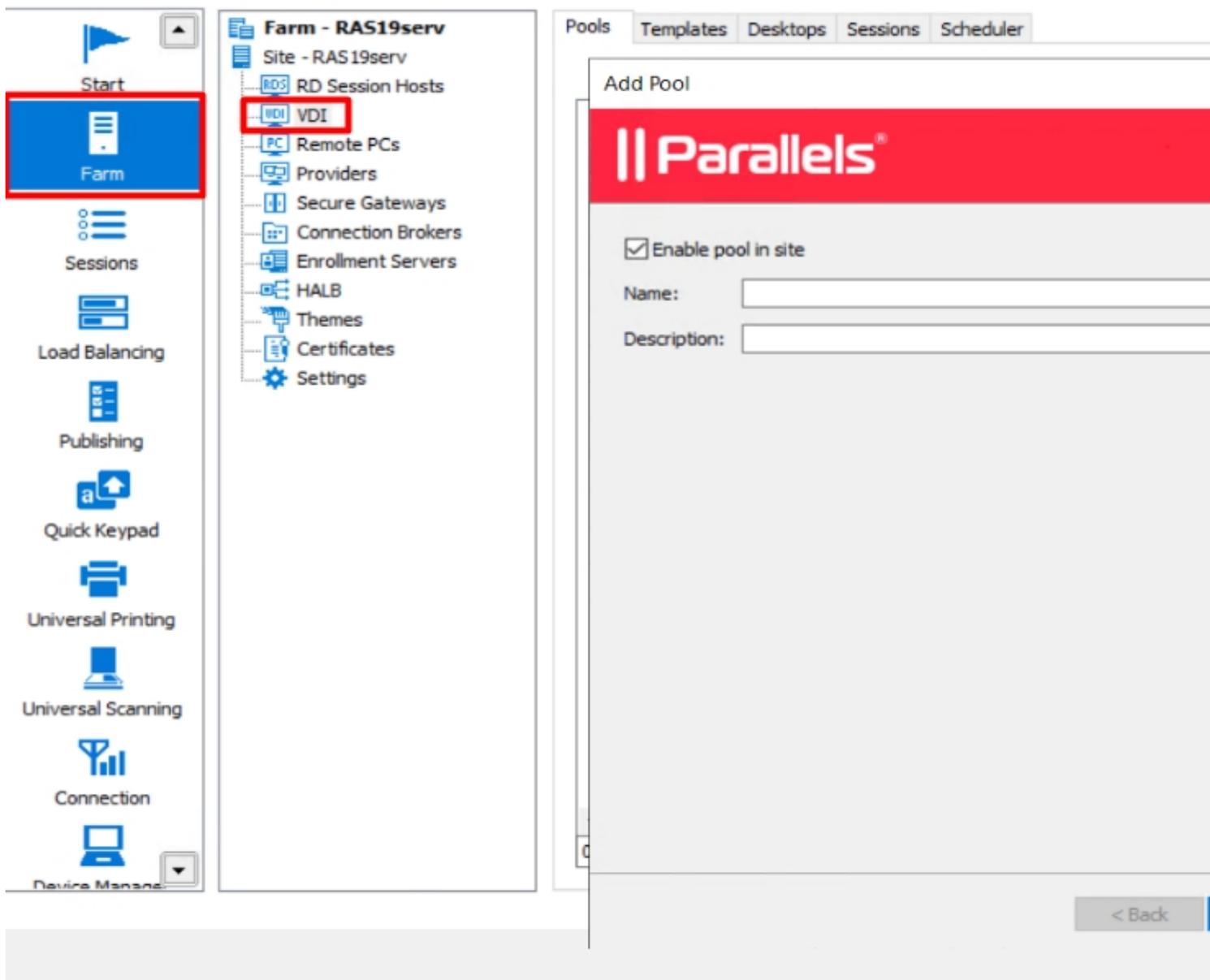
5. Once the VDI agent is in **OK** state, you can continue VDI deploying.

Managing Guest VM Pools

Pools are used to manage and publish from the Guest VMs. In order to publish a resource (even from 1 Guest) need to create a pool for this.

Creating a New Pool

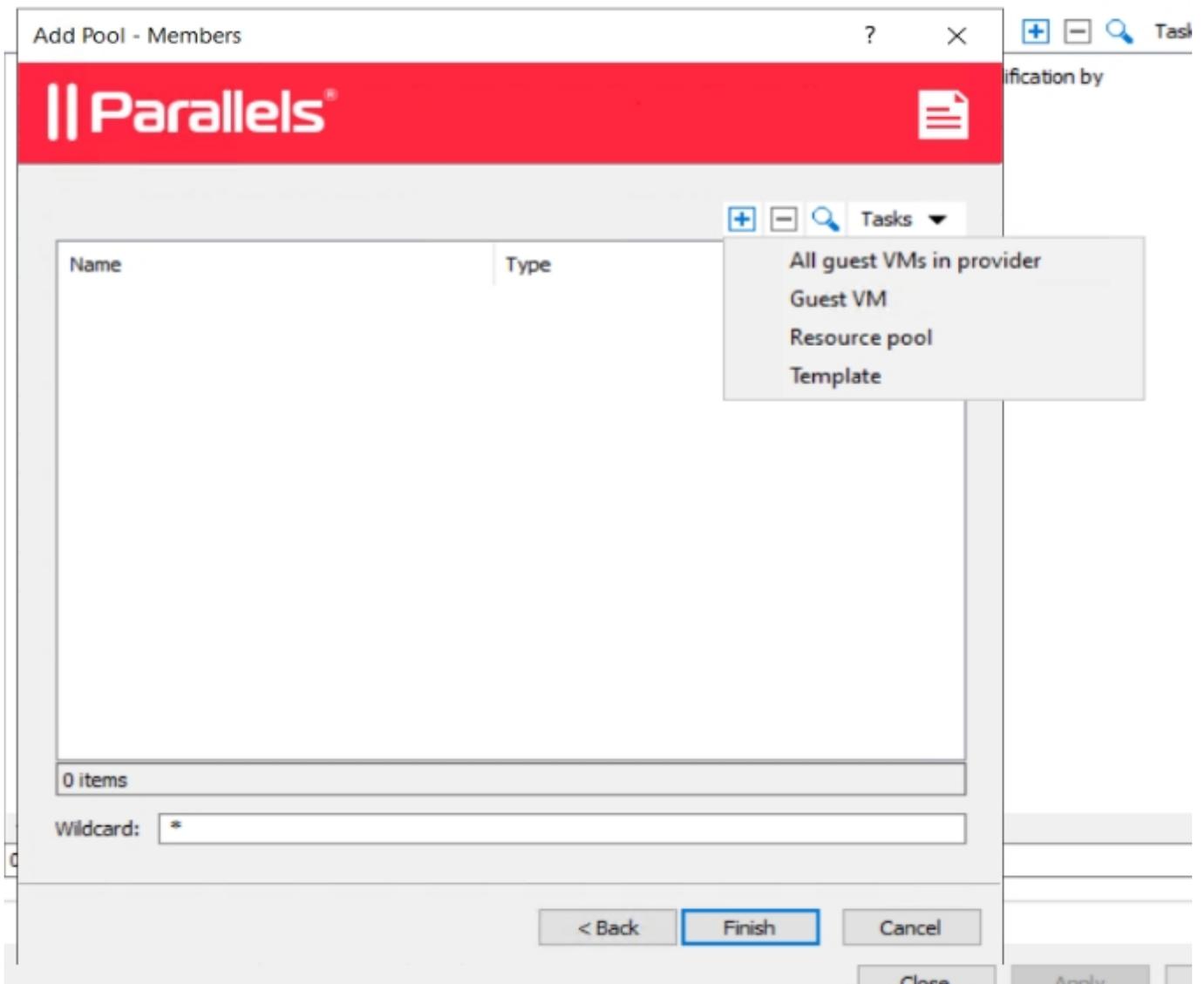
1. To create a new pool select go to **VDI>Plus** icon or **Tasks>Add** or right-click on a field:



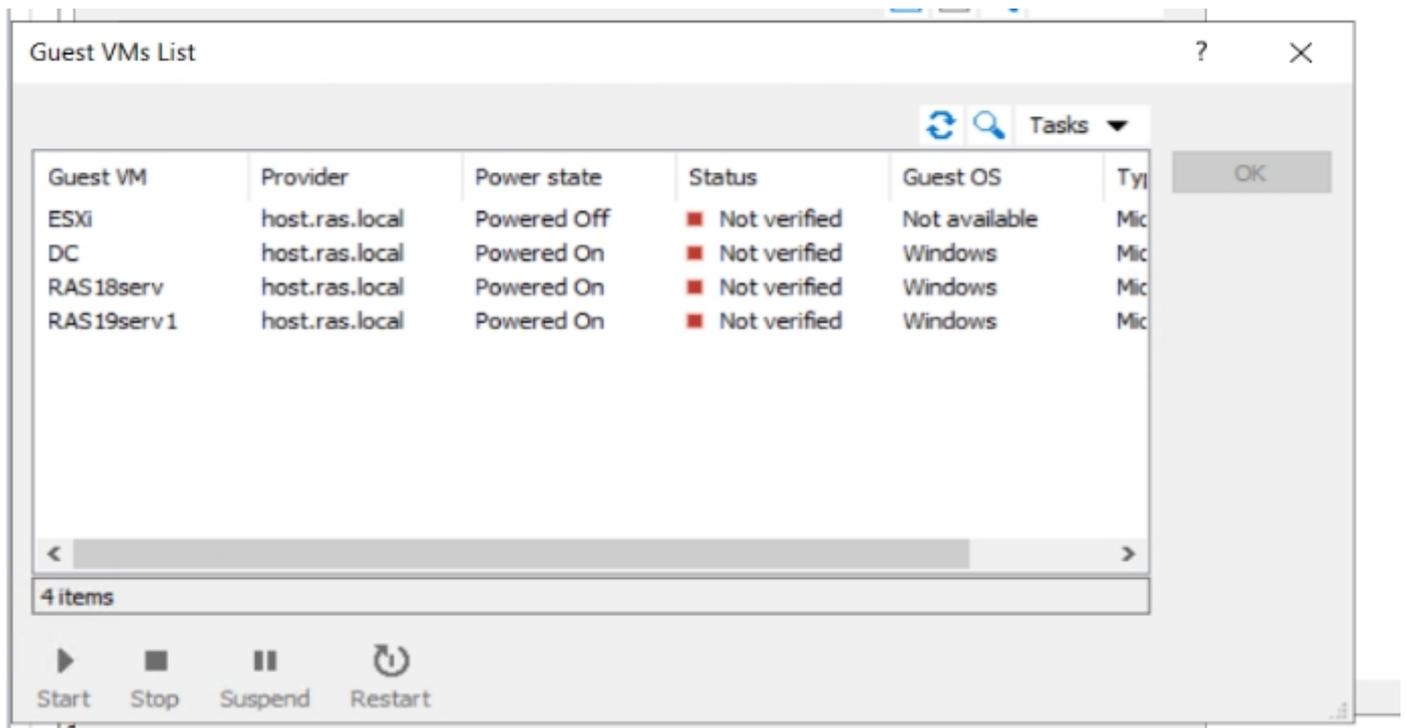
2. Specify the source of VMs for this pool.

Resource Pool: RAS also supports native pools of certain virtualization solutions. Therefore, if should you have a pool already set up on one of your VDI hosts, you can add that native pool to a Parallels pool.

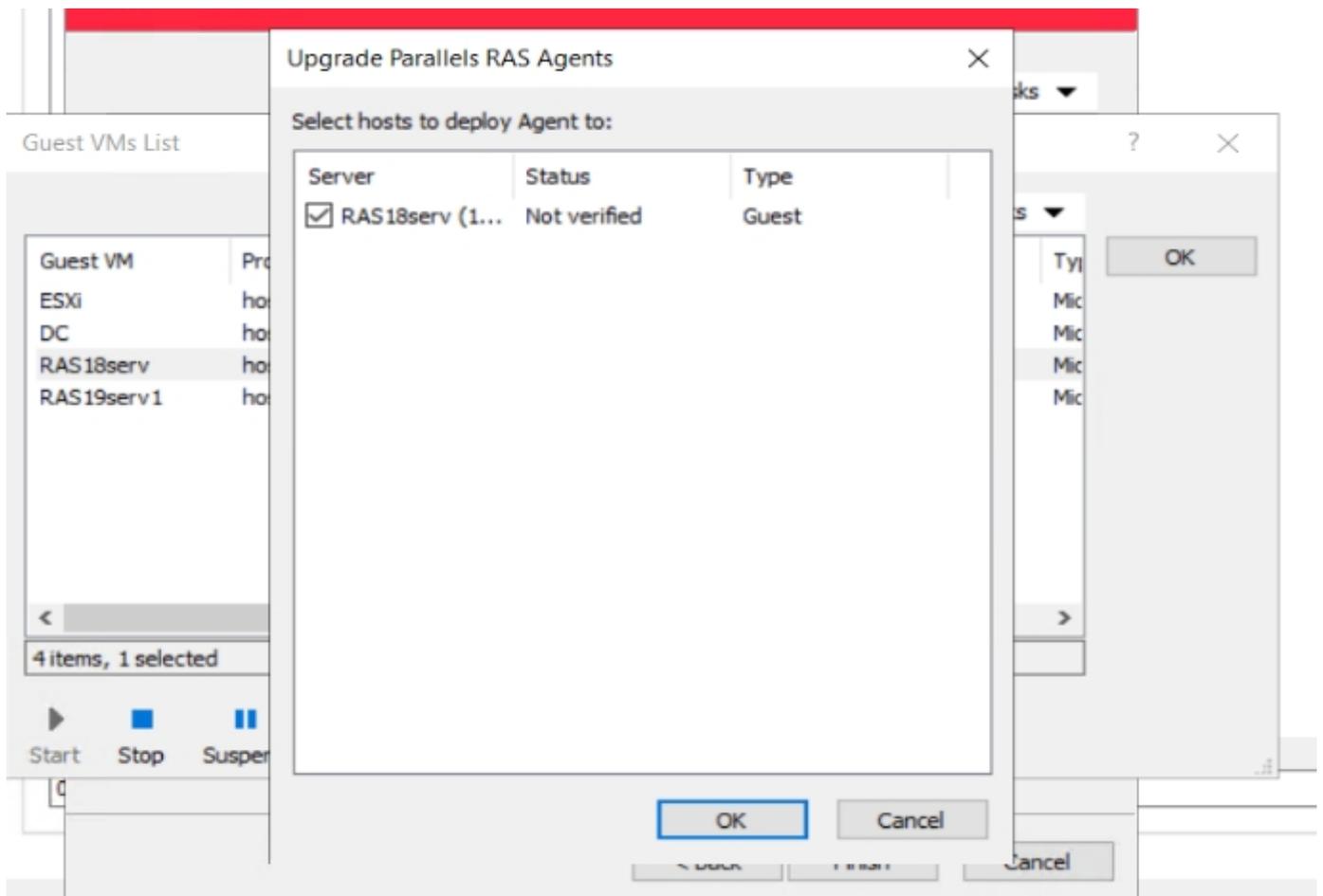
Template: VMs which are made from the particular Template will be automatically added to this pool. **Note:** the Template shouldn't be configured for RDSH approach.



3. In this article, **Guest VM** was chosen. **Status** shows if VDI Guest Agent is reporting to VDI agent.



In case of adding a VM which has never been added to VDI, need to install RAS VDI Guest Agent on it.



4. Installing the RAS VDI Guest Agent. RAS VDI Guest Agent is responsible for communication between Guest VM and RAS. Guest Agent is supported on the following OS:

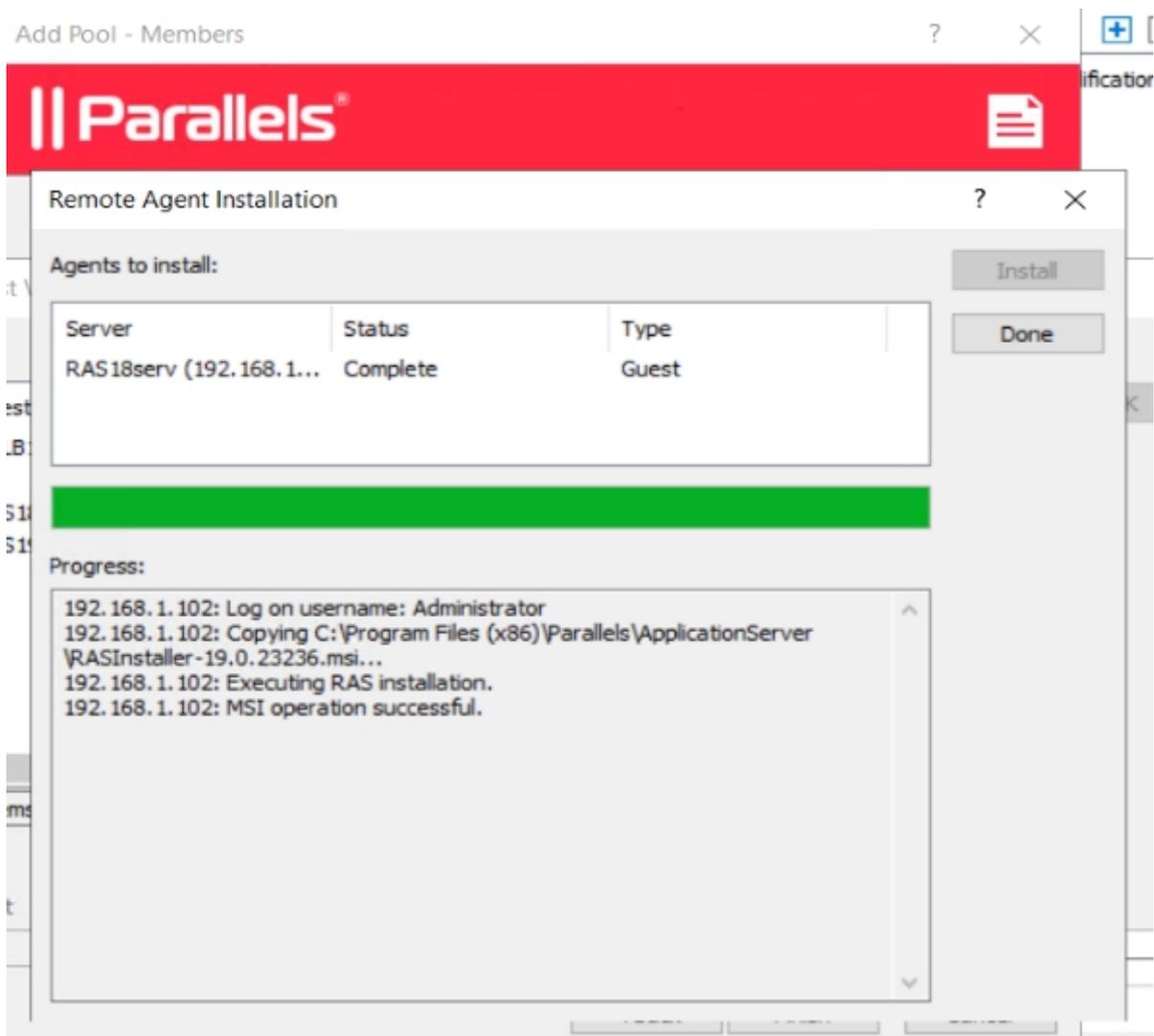
- Windows Server 2008 R2, 2012, 2012 R2, 2016, 2019, 2022;
- Windows 7 up to Windows 11.

For communication between VDI Guest Agent and Remote Application Server farm, the following ports should be open:

- TCP&UDP: 30006 destination RAS VDI Agent

Note: in case of Guest VM is situated on a different from RAS VDI Agent (RAS Connection Broker server) subnet, use the following KB to apply the setting [KB Parallels: Virtual guests and VDI agent located in different subnets](#)

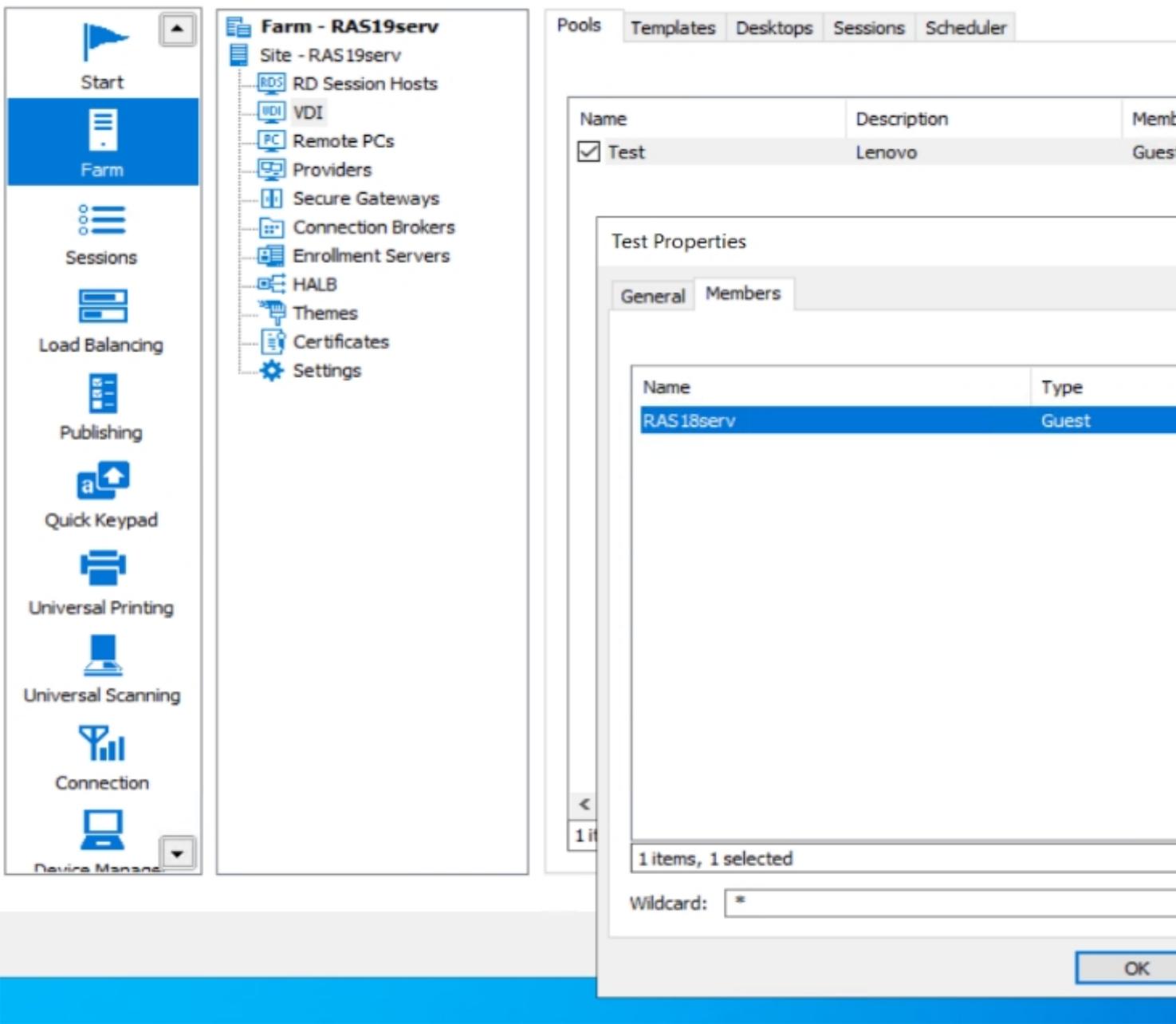
Adding Agent



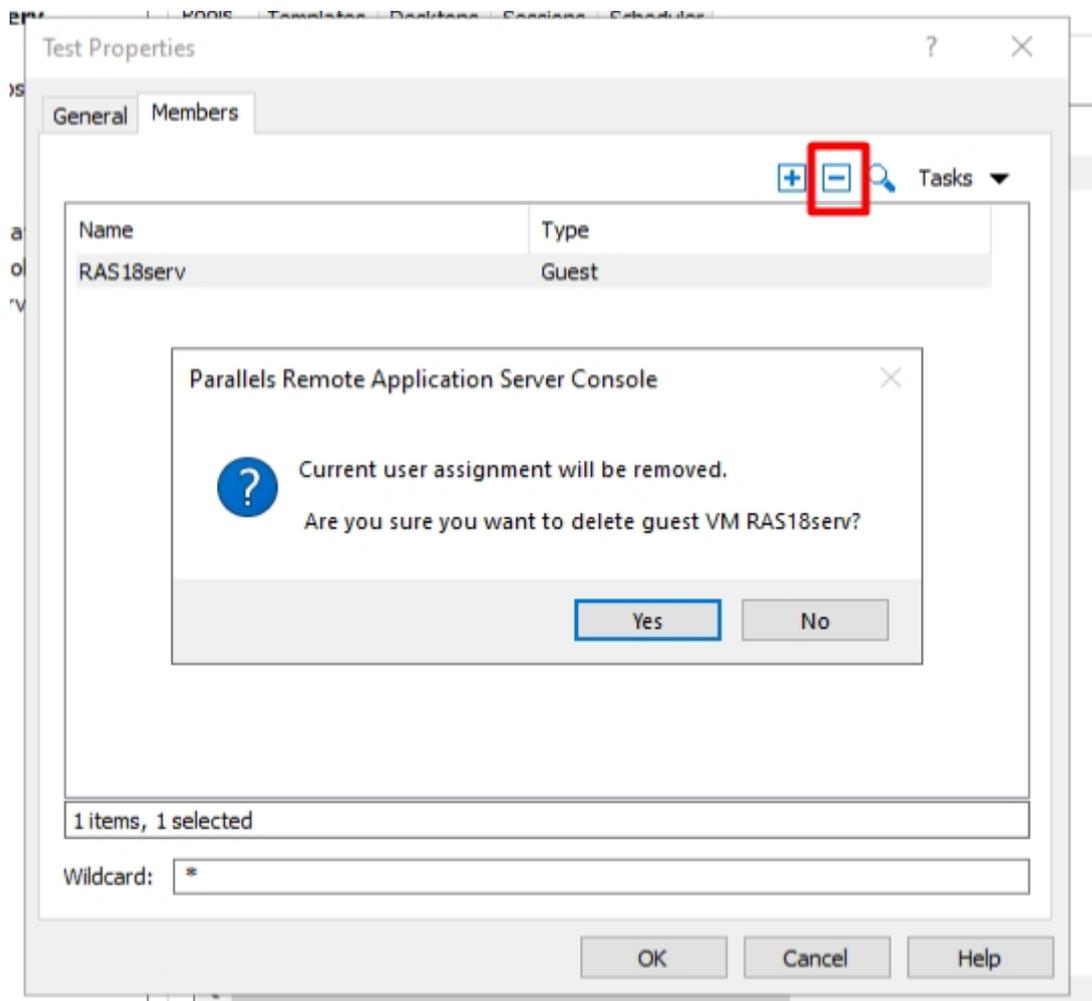
Requirement for VDI Guest Agent push installation:

- The firewall must be configured on the server to allow push installation. Standard SMB ports (139 and 445) need to be open. See also Port reference for the list of ports used by Parallels RAS.
- SMB access. The administrative share (\\server\c\$) must be accessible. Simple file sharing must be enabled.
- Your Parallels RAS administrator account must have permissions to perform a remote installation on the server. If it doesn't, you'll be asked to enter credentials of an account that does.
- The VM should be joined to an AD domain.
- The RAS Installer also verifies the OS state. If the target machine is in Reboot pending or Waiting for updates states, the installation could be failed.

5. Added to a Pool Guests are specified in a list.



You can also delete the VM from the Pool using **Minus** icon or right-click>**Delete** on VM.



6. Once the machine is added to Pool, you can observe it on Desktops tab.

Note: freshly added machine is in Random assignment. It means any user which was able to open a published from this Pool resource, randomly followed to such machines.

The screenshot displays the Remote Desktop Services console interface. On the left is a navigation pane with icons for Start, Farm, Sessions, Load Balancing, Publishing, Quick Keypad, Universal Printing, Universal Scanning, Connection, and Device Manager. The main area shows a tree view for 'Farm - RAS19serv' with sub-items: Site - RAS19serv, RD Session Hosts, VDI, Remote PCs, Providers, Secure Gateways, Connection Brokers, Enrollment Servers, HALB, Themes, Certificates, and Settings.

On the right, the 'Pools' tab is active, showing a table of Guest VMs:

Guest VM	Guest VM state	User	Assignment	IP Address
RAS18serv	Powered On		Random	192.168.1.1

At the bottom of the table, a scroll bar and the text '1 items' are visible.

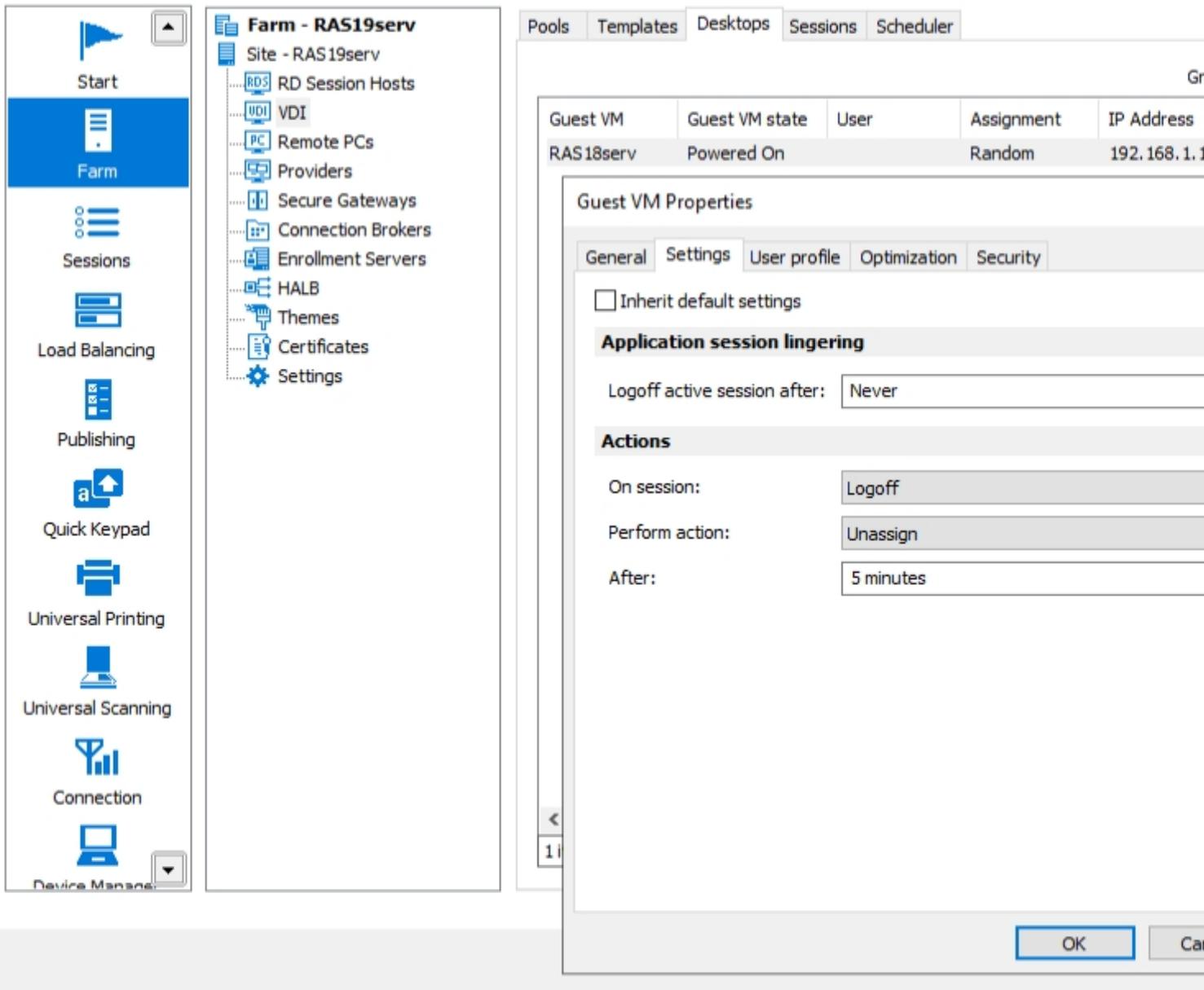
After the user is followed to any machine in the pool, the VM becomes **Persistent** for this particular user. Now, all published from this Pool resource will be opened on this machine. Right-click on Guest will allow you to manage **Assignment**.

Tip: you can assign a Guest to any user prior to establishing a session.

The screenshot displays the RemoteApp and Desktop Connections console. On the left, a navigation pane shows the 'Farm' configuration for 'RAS19serv'. The main area shows a tree view of the farm components, including 'Site - RAS19serv', 'RD Session Hosts', 'VDI', 'Remote PCs', 'Providers', 'Secure Gateways', 'Connection Brokers', 'Enrollment Servers', 'HALB', 'Themes', 'Certificates', and 'Settings'. On the right, the 'Sessions' tab is active, showing a table of guest VMs. The table has columns for 'Guest VM', 'Guest VM state', 'User', 'Assignment', and 'IP Address'. One row is selected, showing 'RAS18serv' in a 'Powered On' state, with user 'ras01@ras' and a 'Persistent' assignment. The IP address is partially visible as '192.168.1.'. A red box highlights the 'User' and 'Assignment' columns for the selected row. At the bottom, a status bar indicates '1 items, 1 selected'.

Guest VM	Guest VM state	User	Assignment	IP Address
RAS18serv	Powered On	ras01@ras	Persistent	192.168.1.

Under **Guest VM>Properties>Settings** you can also specify the different scenarios in order to user Guests efficiently.



Sometimes, a newly added machine already has a **User** and **Random** assignment. This could cause an unexpected behavior. The cause could be a bypass RDP-session to this Guest.

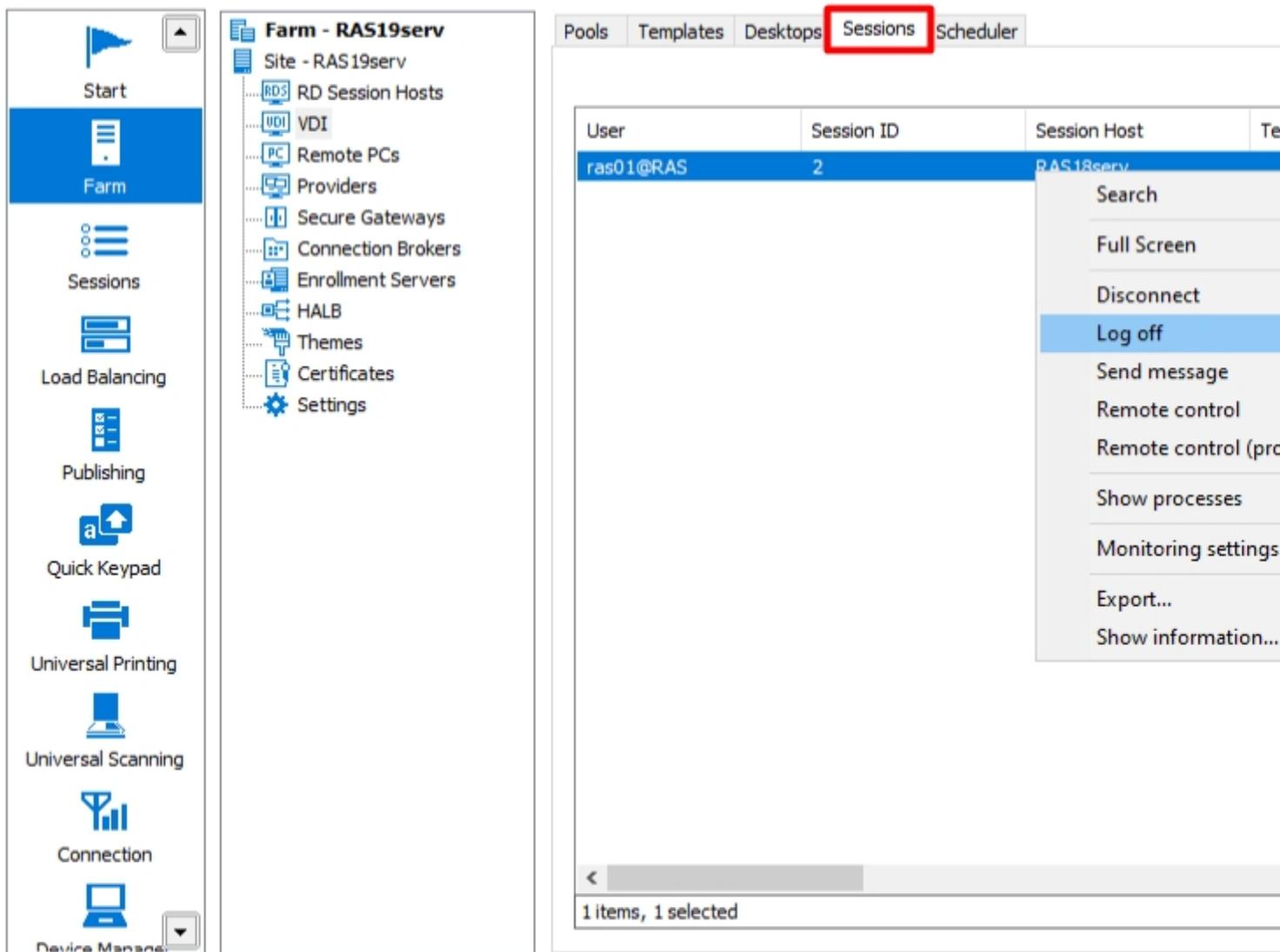
Farm - RAS19serv

- Site - RAS19serv
 - RD Session Hosts
 - VDI
 - Remote PCs
 - Providers
 - Secure Gateways
 - Connection Brokers
 - Enrollment Servers
 - HALB
 - Themes
 - Certificates
 - Settings

Guest VM	Guest VM state	User	Assignment	IP Ad
RAS18serv	Disconnected	rasadmi...	Random	192.1

< 1 items, 1 selected

Prior to **Unassign** the user, log off the session on **Sessions** tab.



7. Now, you have a Pool a Guest VM in it, so it's possible to publish a resource using VDI.

Publishing Resources from VDI Pool

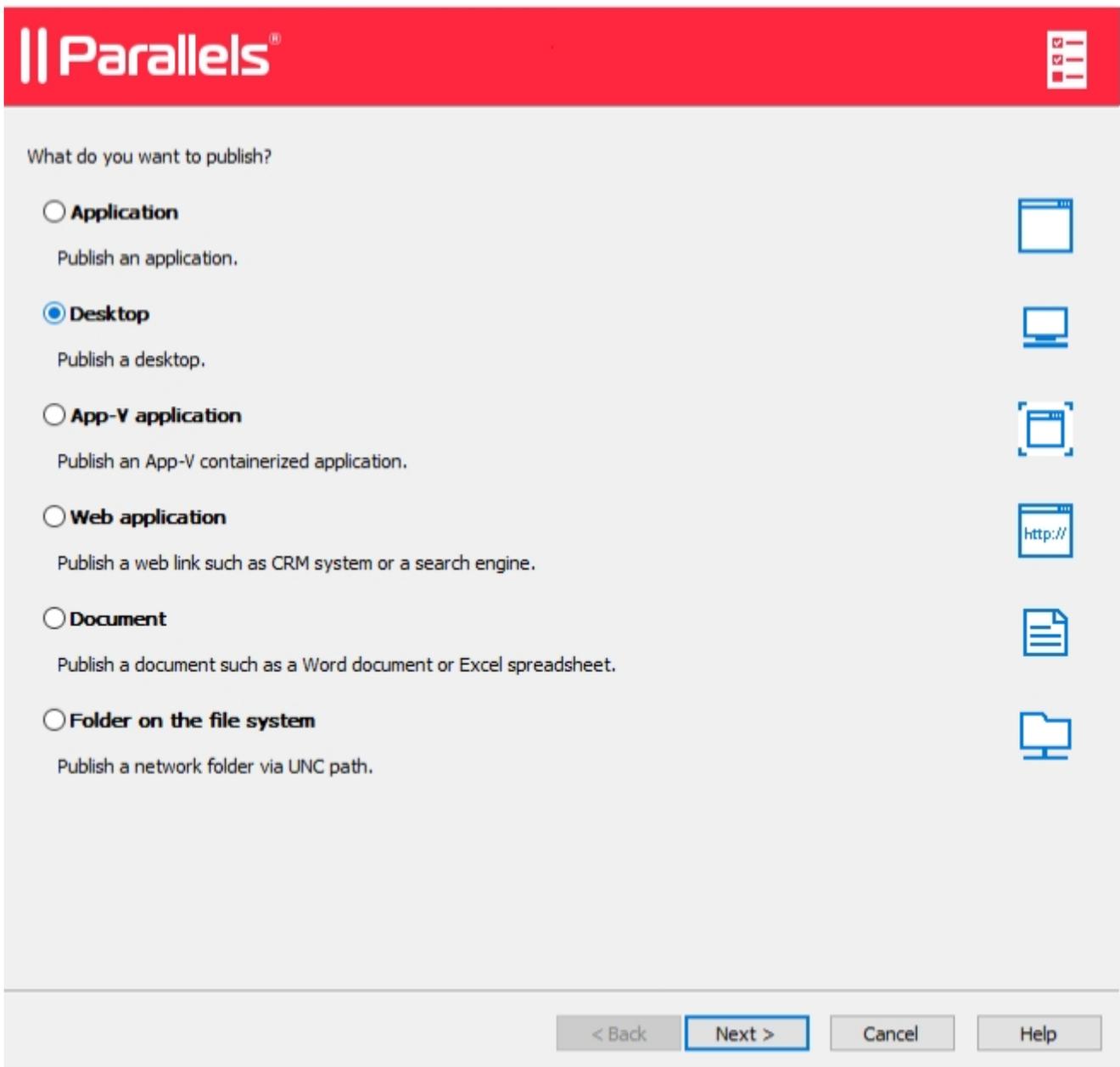
By following the procedure below, you will be able to publish the **Desktop** from the VDI pool:

1. Click **Add** from the **Publishing** category to launch the publishing wizard.

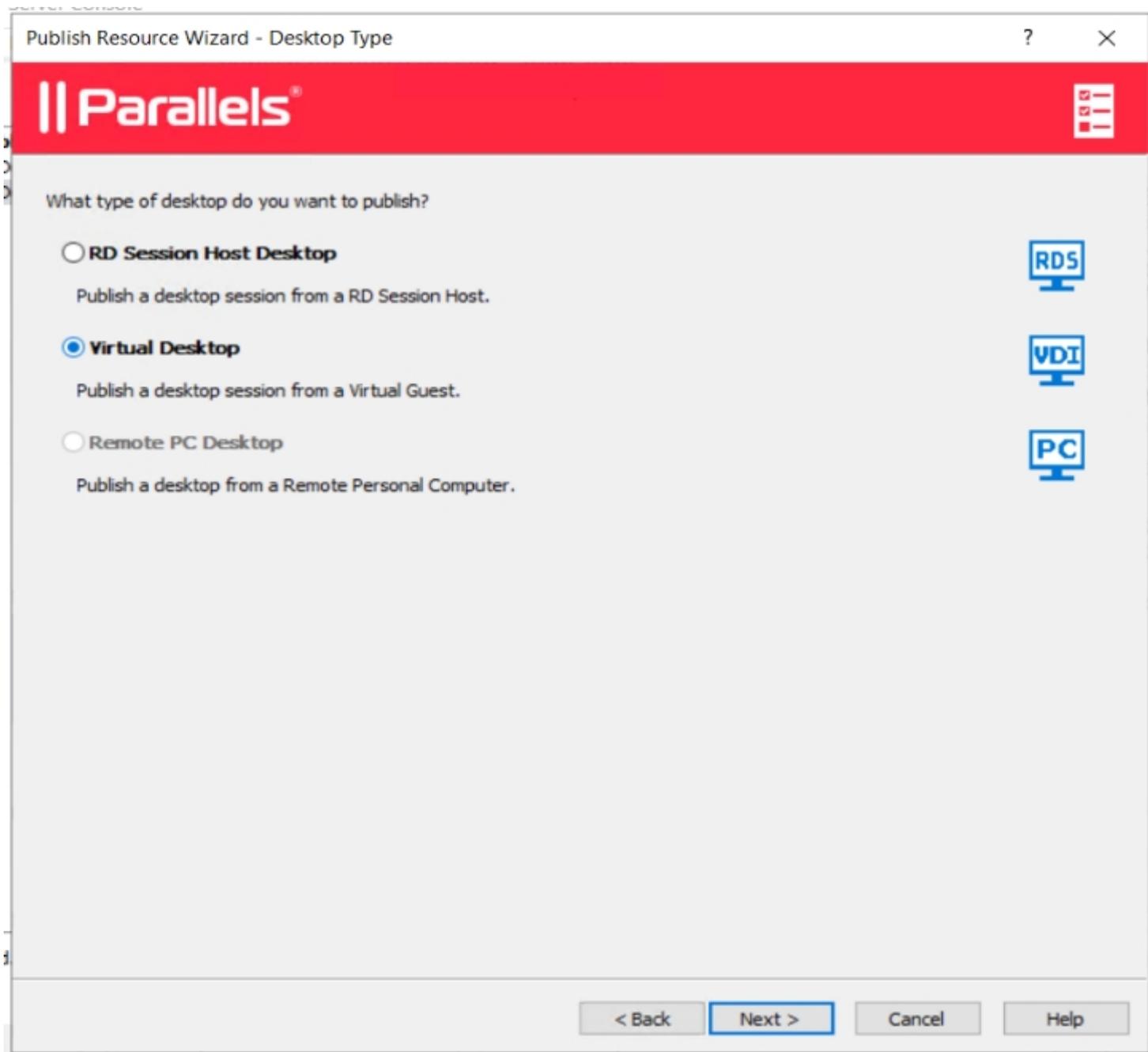
The screenshot displays the RemoteApp and Desktop Connections console. On the left, a navigation pane lists various tasks: Start, Farm, Sessions, Load Balancing, Publishing (highlighted with a red box), Quick Keypad, Universal Printing, Universal Scanning, Connection, and Device Management. The main area shows a tree view under 'Published Resources' with 'Desktop' and 'Desktop Folder' (highlighted with a red box). At the bottom, a toolbar contains buttons for '+ Add...', '+ New Folder...', '- Delete', '↑ Move Up', '↓ Move Down', '✓ Enabled', and '↑ S'. The right pane shows the 'Information' tab for the selected resource, displaying details such as Application, Description, Last modification by, Modified on, Created by, Created on, Status, Target, Start In, Parameters, Concurrent licenses, Session Sharing, Settings for Site RAS19serv, Published from, Create Shortcut in Start Menu under 'RAS Remote Desktops & Ap', Own Filters, Allow if no other rule matches, Available in Site(s), and Preferred routing is disabled.

Property	Value
Application:	#2: Desktop Folder
Description:	Microsoft Windows Explo
Last modification by:	Administrator
Modified on:	Fri Jun 24 11:32:00 2022
Created by:	Administrator
Created on:	Fri Jun 24 11:32:00 2022
Status:	Enabled
Target:	%SystemRoot%\Publishh
Start In:	%SystemRoot%\
Parameters:	/e,/select,::{2227A280-3
Concurrent licenses:	Unlimited
Session Sharing:	Enabled
Settings for Site RAS19serv:	
Published from:	All Servers in Site
Create Shortcut in Start Menu under 'RAS Remote Desktops & Ap	
Own Filters	
Allow if no other rule matches	
Available in Site(s):	RAS19serv
Preferred routing is disabled	<

2. Choose an item to publish.



3. In the second step of the wizard select **Virtual Desktop**.



4. In the **Publish from** check the desired Pool.



Any Guest VM from pool

Name
<input checked="" type="checkbox"/> Test

Specific Template

Name	Provider
------	----------

< Back Next > Cancel Help

5. Specify the published resource configuration.

Publish Resource Wizard - Desktop

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Desktop

Name:

Description:

Start automatically when user logs on

Exclude from session prelaunch



Properties

Desktop Size: X

Multi-Monitor:

Persistent

6. Choose the desired state of the published Desktop and click **Finish**.

Note: The same procedure applies when publishing a different resource.

VDI Templates

In order to get info about the Templates and how to publish resources from the Template, use the following KB [Deploying Remote Application Server Templates](#)

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