Configuring Remote Session_RDP SSH

Last updated by | Razvan Alexandru Costea | May 5, 2022 at 6:37 AM PDT

Tags

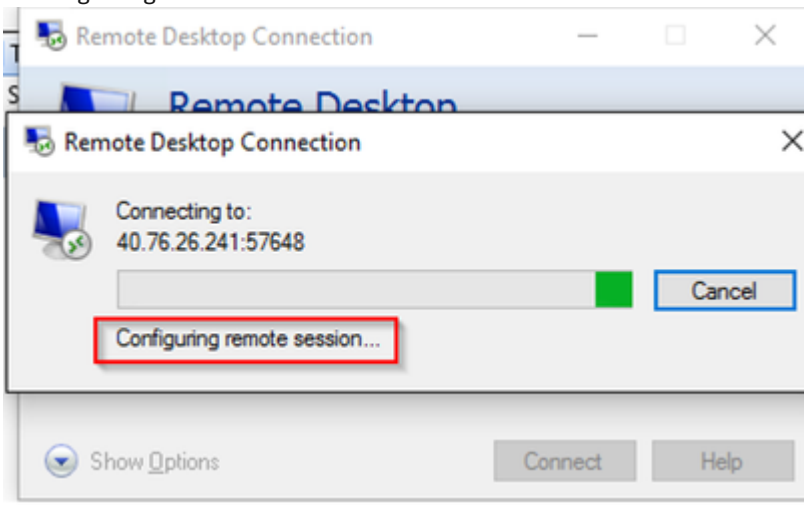
cw.TSG cw.RDP-SSH

Contents

Symptoms

- The VM screenshot shows the OS fully loaded and waiting for the credentials
- If you try to RDP the VM either internally or externally, the RDP connection hang on 'Configuring remote session'

Configuring remote session



- If use an administrative session, you might be able to logging normally:
  `mstsc /v:<SERVER>:<PORT> /admin`

Root Cause Analysis 1

The server is unable to reach the license server or the license server information is not setup on the machine.

Root Cause Analysis 2

Refer to Internal Error TSG - Symptom 3.

References

- RD Licensing Configuration on Windows Server 2012

Tracking close code for this volume

Root Cause	Product	Support Topic	Cause Tracking code	Bug
1	*Azure Virtual Machine Windows*	*Routing Azure Virtual Machine V3\Cannot Connect to my VM\Failure to connect using RDP or SSH port*	*Root Cause - Windows Azure\Virtual Machine\Guest OS - Windows\VM Responding\RDS - Misconfiguration/issues\RDLicense issue\Missing configuration*	

To know how to flag a bug on a case please refer to How to do Proper Case Coding

Customer Enablement

N/A

Mitigation

Backup OS disk

▶ Details

ONLINE Troubleshooting

ONLINE Approaches

Please be aware that the Serial Console Feature option will be today possible in:

1. Azure Resource Management VMs (ARM)
2. Public cloud

Whenever you are in a middle of a troubleshooting and you find the step **<<<<<<INSERT MITIGATION>>>>>>**, proceed to replace that steps with the mitigation section that you need referred below

Using Windows Admin Center (WAC)

▼ Click here to expand or collapse this section

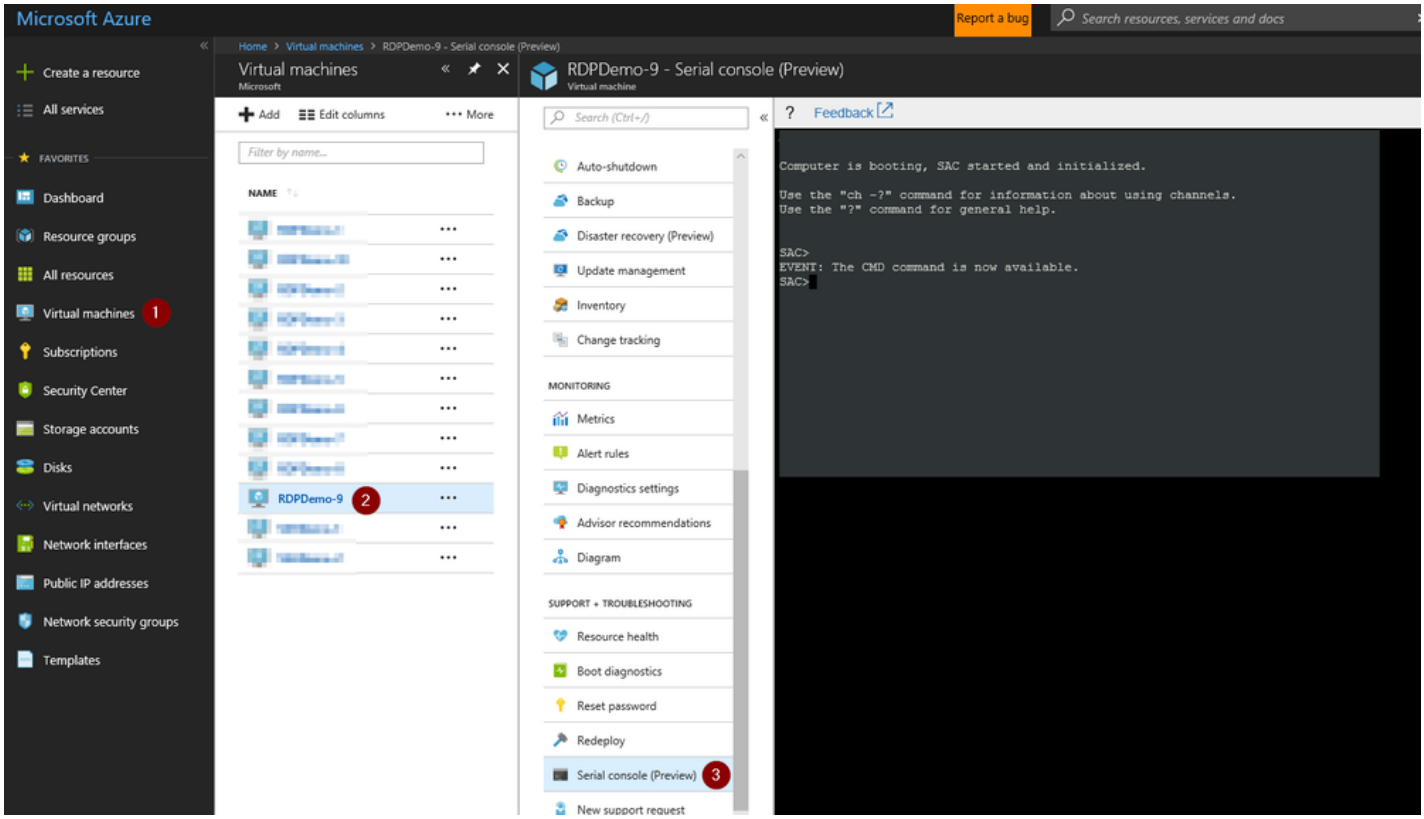
WAC is supported on ARM VMs running Windows Server 2016 or later (not Win10 or any other Windows client version, and not 2012R2/2012/2008R2 versions of Windows Server

See How To Access Thru Windows Admin Center

Using *Serial Console Feature*

▼ Click here to expand or collapse this section
Applies only for ARM VMs

1. In the portal on the VM blade you will have an extra option called *Serial Console* click there
2. If EMS was enabled on the Guest OS, SAC will be able to connect successfully and then you will have a screenshot as the following:



1. If EMS does not connect, it means the Guest OS was not setup to use this feature:
    1. If the issue that you have will repro on a restart and if the customer is OK to enable this feature, you enable this feature. For details refer to Serial Console on the *How to enable this feature*
    2. If on the other hand, the issue will not repro on a restart, then you will need to skip this section and go on normally with the **OFFLINE troubleshooting** section
3. Create a channel with a CMD instance. Type `cmd` to start the channel, you will get the name of the channel

```
SAC>cmd
The Command Prompt session was successfully launched.
SAC>
EVENT:   A new channel has been created.  Use "ch -?" for channel help.
Channel: Cmd0001
SAC>
```

4. Switch to the channel running the CMD instance

```
ch -si 1
```

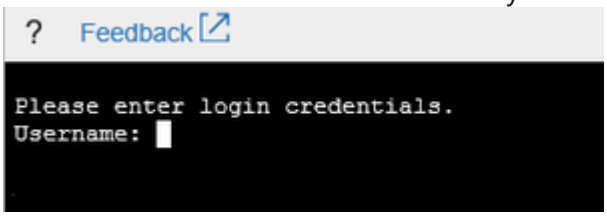
```
SAC>ch -si 1
```

5. Once you hit enter, it will switch to that channel

```
? Feedback
Name:                   Cmd0001
Description:            Command
Type:                   VT-UTF8
Channel GUID:           [redacted]
Application Type GUID:

Press <esc><tab> for next channel.
Press <esc><tab>0 to return to the SAC channel.
Use any other key to view this channel.
```

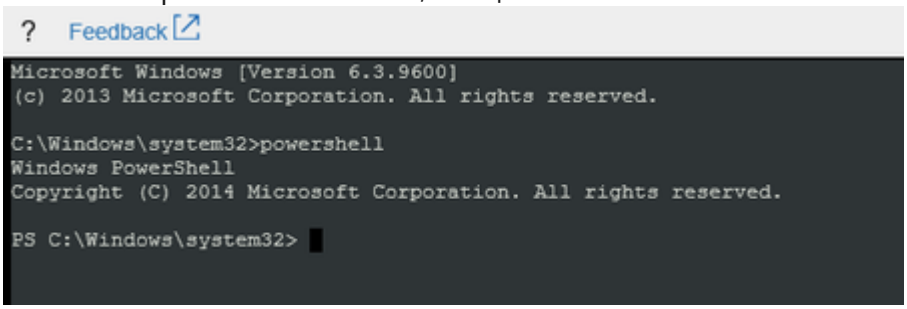
6. Hit enter a second time and it will ask you for user, domain and password:



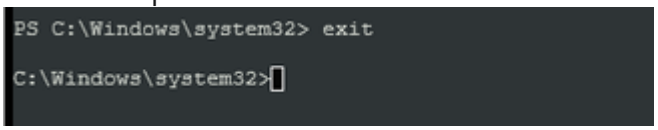
    1. If the machine has connectivity, you could use either local or domain IDs. If you want to use a local ID, for domain just add the hostname of the VM
    2. If the machine doesn't have connectivity, you could try to se domains IDs however this will work if only the credentials are cached on the VM. In this scenario, is suggested to use local IDs instead.

7. Once you add valid credentials, the CMD instance will open and you will have the prompt for you to start your troubleshooting:

    1. At this point, you can do your troubleshooting in bash (CMD) or else, you could start a powershell instance:
        1. To launch a powershell instance, run `powershell`



        2. To end the powershell instance and return to CMD, just type `exit`



8. **<<<<<INSERT MITIGATION>>>>>**

Using *Remote Powershell*

▶ Click here to expand or collapse this section

Using *Remote CMD*

▶ Click here to expand or collapse this section

Using *Custom Script Extension* or *RunCommands Feature*

▶ Click here to expand or collapse this section

Using *Remote Registry*

▶ Click here to expand or collapse this section

Using *Remote Services Console*

▶ Click here to expand or collapse this section

ONLINE Mitigations

▼ Click here to expand or collapse this section

1. In any case, the customer should be able to bypass the license check by using an RDP administrative session. Please ask the customer run the following *from his own machine* to use the **/admin** parameter:

```
mstsc /admin /v: <<DIP>>:<<RDP Port>>
```

   If the port is not specified, the default part *3389* will be used

2. If the machine has the *RDSession Host Role* enabled, ensure the RDLicense information is setup on the machine/environment. On an administrative CMD instance *on the server* run the following:

   1. To know if the *RDSession Host Role is enabled*,

      1. Get the current status of this role:

```
reg query "HKLM\SOFTWARE\Microsoft\ServerManager\ServicingStorage\ServerComponentCache\RDS-F
```

      2. If this key comes up with value *0*, it means the role is disabled so you can skip this step and proceed with the next one.

   2. For domain joined machines, this could be pushed to the domain via policy. The following policy needs to be setup

```
 Computer Configuration\Policies\Administrative Template Policy definition\Windows Component\Remote
Desktop Services\Remote Desktop Session Host\Licensing
```

      - Use the specified Remote Desktop License Servers ==> In here assign the RDLicense Server FQDN or DIP
      - Set the Remote Desktop Licensing mode ==> In here you select the type of CAL to use either Per User or Per Device

      1. Ensure that this server is in the OU with the RDlicense policy

   3. For standalone machines, or member servers where the customer doesn't want to use the GPO approach, you could set this up on the local policy as the following:

```
reg query "HKLM\SYSTEM\CurrentControlSet\Control\Terminal Server\RCM\Licensing Core" /v Licensing
reg query "HKLM\SYSTEM\CurrentControlSet\Services\TermService\Parameters" /v SpecifiedLicenseServ
```

1. If the *LicensingMode* is set to any other value than *4* (Per User) then change this up as the following:

```
reg add "HKLM\SYSTEM\CurrentControlSet\Control\Terminal Server\RCM\Licensing Core" /v Licens
```

2. If the *SpecifiedLicenseServers* doesn't exist or if it does but has the wrong license server information, then change it as the following:

```
reg add "HKLM\SYSTEM\CurrentControlSet\Services\TermService\Parameters" /v SpecifiedLicenseS
```

4. If you need to do any change on the registry, you will need to restart the machine so the changes can take effect

5. If the customer doesn't want/have the RDLicense information (CALs) that he needs to purchase to Microsoft for concurrent RDP connections, then RDSession role needs to be removed so RDP is set back to normal which is allow only upto 2 concurrent RDP connections:

```
dism /ONLINE /Disable-feature /FeatureName:Remote-Desktop-Services
```

1. If on top of that, the machine also has the RDLicense role and is not using it, you can remove this role

```
dism /ONLINE /Disable-feature /FeatureName:Licensing
```

6. If after this you still have issues, then check if the machine can reach the license server and that the license server is healthy to even be able to RDP into it

1. It you cannot reach the license server on port 135 from your VM then
    1. Ensure that you don't have any NSG that is blocking the access to that port on the license server
    2. If you don't find anything abnormal, engage *Azure Networking*
        - Product: ***Azure Virtual Networks***
        - Support Topic: ***Routing Azure Virtual Networks V3\Connectivity\Network connectivity problems***
2. If on the other hand the License server is not healthy to allow even RDP connection, you could try to restart the License server and if still that doesn't work, you could engage the RDS team for assistance:
    - Product:***Azure Virtual Machine - Windows***
    - Support Topic:***Routing Azure Virtual Machine V3\Management\Manage or use RDS in Azure***

3. If the machine doesn't have the *RDSession Host Role* enabled nothing on this article helped out, then engage the RDS team for assistance:

    - Product:***Azure Virtual Machine - Windows***

- Support Topic:***Routing Azure Virtual Machine V3\Management\Manage or use RDS in Azure***

OFFLINE Troubleshooting

```
For CRP machines, at any point that you follow end to end any of the OFFLINE mitigation and that doesn't work
```

OFFLINE Approaches

Whenever you are in a middle of a troubleshooting and you find the step **<<<<<<INSERT MITIGATION>>>>>>**, proceed to replace that steps with the mitigation section that you need referred below.

Information

For more in-depth information on these operations, please review: Windows Partitions in Non-Boot Scenarios_RDP-SSH.

Using ***Recovery Script***

▶ Click here to expand or collapse this section

Using ***OSDisk Swap API***

▶ Click here to expand or collapse this section

Using *VM Recreation scripts*

▶ Click here to expand or collapse this section

OFFLINE Mitigations

▼ Click here to expand or collapse this section

1. In any case, you should be able to bypass the license check by using an RDP administrative session which you get when you use the /admin:
   `mstsc /admin /v: <<DIP>>:<<RDP Port>>` If the port is not specified, the default part *3389* will be used
2. If the machine has the *RDSession Host Role* enabled, ensure the RDLicense information is setup on the machine/environment
   1. See if the role is enabled and the role is not enable, skip all this step and go to the next step

      ```
      dism /ONLINE /get-features
      ```

   2. For domain joined machines, this could be pushed to the domain via policy. The following policy needs to be setup

      ```
      Computer Configuration\Policies\Administrative Template Policy definition\Windows Component\Remote Desktop Services\Remote Desktop Session Host\Licensing
      ```

      - Use the specified Remote Desktop License Servers ==> In here assign the RDLicense Server FQDN or DIP

- Set the Remote Desktop Licensing mode ==> In here you select the type of CAL to use either Per User or Per Device

1. Ensure that this server is in the OU with the RDlicense policy

3. For standalone machines, or member servers where the customer doesn't want to use the GPO approach, you could set this up on the local policy as the following:

```
HKLM\SYSTEM\CurrentControlSet\Control\Terminal Server\RCM\Licensing Core\LicensingMode
HKLM\SYSTEM\CurrentControlSet\Services\TermService\Parameters\SpecifiedLicenseServers
```

1. If you need to do this path, after the change the machine needs to be restarted

4. If the customer doesn't want/have the RDLicense information (CALs) that he needs to purchase to Microsoft for concurrent RDP connections, then RDSession role needs to be removed so RDP is set back to normal which is allow only upto 2 concurrent RDP connections:

```
dism /ONLINE /Disable-feature /FeatureName:Remote-Desktop-Services
```

1. If on top of that, the machine also has the RDLicense role and is not using it, you can remove this role

```
dism /ONLINE /Disable-feature /FeatureName:Licensing
```

5. If after this you still have issues, then check if the machine can reach the license server and that the license server is healthy to even be able to RDP into it

1. It you cannot reach the license server from your VM then engage *Azure Networking*
   - Product: ***Azure Virtual Networks***
   - Support Topic: ***Routing Azure Virtual Networks V3\Connectivity\Network connectivity problems***
2. If on the other hand the License server is not healthy to allow even RDP connection, you could try to restart the License server and if still that doesn't work, you could engage the RDS team for assistance:
   - Product:***Azure Virtual Machine - Windows***
   - Support Topic:***Routing Azure Virtual Machine V3\Management\Manage or use RDS in Azure***

3. If the machine doesn't have the *RDSession Host Role* enabled nothing on this article helped out, then engage the RDS team for assistance:
   - Product:***Azure Virtual Machine - Windows***
   - Support Topic:***Routing Azure Virtual Machine V3\Management\Manage or use RDS in Azure***

Escalate

1. If this doesn't work out, please reach out to the Unable to RDP-SSH SME channel on teams for advise providing the case number, issue description and your question
2. If the RDP SMEs are not available to answer you, you could engate the RDS team for assistance on this.

1. Ensure you collect the Windows Performance SDP package from the VM and upload that into the DTM workspace.
    1. This would be easily done by running the following script on Serial Console on a powershell instance:

```
#Create a download location and setup the console to prioritize TLS1.2 connections
remove-module psreadline
[Net.ServicePointManager]::SecurityProtocol = "tls12, tls11, tls"
md c:\temp

#Download the Windows SDP file
$source = "https://aka.ms/getTSSv2"
$destination = "c:\temp\TSSv2.zip"
$wc = New-Object System.Net.WebClient
$wc.DownloadFile($source,$destination)

#Expand and run the SDP package for Setup, Network and Performance
Expand-Archive -LiteralPath $destination -DestinationPath C:\temp

#recommended to run the new packages:
C:\temp\TSSv2.ps1 -SDP Setup
C:\temp\TSSv2.ps1 -SDP NET
C:\temp\TSSv2.ps1 -SDP Perf

#Note: you still can run old SDP packages, in case is required:
C:\temp\psSDP\Get-psSDP.ps1 Setup
C:\temp\psSDP\Get-psSDP.ps1 Net
C:\temp\psSDP\Get-psSDP.ps1 Perf
```

    2. Collect the following files to the DTM workspace of this case:
        1. `C:\MS_DATA\SDP_Setup\tss_DATETIME_COMPUTERNAME_psSDP_SETUP.zip`
        2. `C:\MS_DATA\SDP_NET\tss_DATETIME_COMPUTERNAME_psSDP_NET.zip`
        3. `C:\MS_DATA\SDP_Perf\tss_DATETIME_COMPUTERNAME_psSDP_PERF.zip`
2. Cut a problem with the following details:
    - Product: ***Azure\Virtual Machine running Windows***
    - Support topic: ***Routing Issue with Remote Desktop Service (RDS) on Azure\Issue with connectivity using RDS***

After work - Cleanup

If you are uncertain that we may need this snapshot by the end of this case for RCA purposes, then just leave it.

1. If the issue is already fix and no further RCA analysis is needed, then proceed to remove the OS Disk backup we created at the beginning of the case
    1. If the **disk is managed** using the portal so the snapshot section and select the snapshot you created previously as a backup.
    2. If the **disk is unmanaged** then
        1. If this is an CRP Machine - ARM, then no further action is required
        2. If this is an Classic - RDFE machine, then

1. Check the storage account where the OS disk of this machine is hosted using Microsoft Azure Storage Explorer right click over the disk and select *Managed Snapshots*
2. Proceed to delete the snapshot of the broken machine

Need additional help or have feedback?

To engage the Azure RDP-SSH SMEs...	*To provide feedback on this page...*	*To provide kudos on this page...*
Please reach out to the **RDP-SSH SMEs** for faster assistance. Make sure to use the **Ava process** for faster assistance.	Use the **RDP-SSH Feedback** form to submit detailed feedback on improvements or new content ideas for RDP-SSH. ***Please note*** the link to the page is required when submitting feedback on existing pages! If it is a new content idea, please put N/A in the Wiki Page Link.	Use the **RDP-SSH Kudos** form to submit kudos on the page. Kudos will help us improve our wiki content overall! ***Please note*** the link to the page is required when submitting kudos!