Installing iDRAC Certificate Using RACADM Commands

This Dell Technical white paper provides detailed information about generation of iDRAC certificate by using RACADM CLI.

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Revisions

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<th>Description</th>
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<tr>
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Executive Summary

This document provides details about generation of iDRAC certificate that includes signing and adding the signed certificate to the trusted store on management stations using RACADM CLI.

Running RACADM commands are the most-opted method for managing Dell servers using a command line interface (CLI). Dell is investing to continually improve and add more functionality to RACADM.

Introduction

When you try to connect to iDRAC using Remote RACADM, and if there is an invalid certificate warning before running a command, it is indicated that the iDRAC IP address being connected to might not be from a trusted source. Following are the tasks to address the certificate warning scenario.
1 Generating Certificate Signing Request (CSR)

The first task in certificate installation is to create a Certificate Signing Request (CSR) and download it by getting it signed by a Certificate Authority. Following sequence of RACADM commands are used to configure the parameters for creating a CSR. The sample values shown here are for illustration purpose only. For more information about the objects or supported values, refer to the RACADM Command Line Reference Guide for iDRAC7 and CMC available at dell.com/support/manuals.

1. Make sure that the DNS RAC name is same as the common name specified in the security group of iDRAC by running any of the following commands. On iDRAC6 servers, config commands are supported and on iDRAC7 servers, set commands are recommended, though config commands are also supported.

   - The set command
     
     racadm set iDRAC.NIC.DNSRacName iDRAC-SSL-Certificate

   - The config command
     
     racadm config –g cfgLanNetworking –o cfgDNSRacName iDRAC-SSL-Certificate

2. To configure a DNS domain name, under iDRAC registration, click Enable. On iDRAC6 servers, config commands are supported and on iDRAC7 servers, set commands are recommended, though config commands are also supported.

   - The set command
     
     racadm set idrac.NIC.DNSDomainName xyz.com
     racadm set idrac.NIC.DNSRegister Enabled

   - The config command
     
     racadm config –g cfgLanNetworking –o cfgDNSDomainName xyz.com
     racadm config –g cfgLanNetworking –o cfgDNSRegisterRac 1

3. To configure the iDRAC security group-related parameters for CSR generation, run one of the following commands:

   - The set subcommand
     
     racadm set iDRAC.Security.CsrKeySize 1024/2048
     racadm set iDRAC.Security.CsrCommonName iDRAC-SSL-Certificate
     racadm set iDRAC.Security.CsrOrganizationName XYZ
     racadm set iDRAC.Security.CsrOrganizationUnit Unit1
     racadm set iDRAC.Security.CsrLocalityName LocName
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- The config subcommand

```
racadm config -g cfgRacSecurity -o cfgRacSecCsrKeySize 1024/2048
racadm config -g cfgRacSecurity -o cfgRacSecCsrCommonName iDRAC-SSL-Certificate
racadm config -g cfgRacSecurity -o cfgRacSecCsrOrganizationName XYZ
racadm config -g cfgRacSecurity -o cfgRacSecCsrOrganizationUnit Unit1
racadm config -g cfgRacSecurity -o cfgRacSecCsrLocalityName LocName
racadm config -g cfgRacSecurity -o cfgRacSecCsrStateName StateName
racadm config -g cfgRacSecurity -o cfgRacSecCsrCountryCode US
racadm config -g cfgRacSecurity -o cfgRacSecCsrEmailAddr abc@xyz.com
```

4. When all the required parameters are configured successfully, CSR is generated using the `sslcsrgen` subcommand. This subcommand uses the parameters specified under the iDRAC.Security group for generating a CSR. The command syntax is given here.

```
racadm sslcsrgen -g -f idraccsr.txt
```

**Note:** The file option is supported only through Remote RACADM interface or Local RACADM interface.
2 Submitting Certificate Request

After the CSR file is successfully generated and downloaded to the client file system, open the CSR file in a Notepad or MS-Word application, and then copy the contents between the begin and end points as indicated in the screenshot here.

---BEGIN CERTIFICATE REQUEST-----
MIIMTCCCAhkCqAqGwyoYbcAYJgkHvBAYTAk1OM8kFwYDQVQIEyBDX0oawWp2YF0
ZVQIYX1R1Hg9FyYDQVQHJX9DZXJ0awWp2YF0ZUShbNUXHA6BqVBAoTE0N1cmRj
Zm1jYXIXU2edXPrp2xSTA8kHvBAeFEE1/cmcRmZm1jYXIXR3VdXKXhJYAcgDV
SAMBFM14EYxKFLWVTCL0DZJ0awWp2YF0ZETgHOCGCg9S1bSDQEBAYJY6aQ2VY9d1m
a9Nn9G02VgQer9Fpbi5bOwqgLbXAO9GCg9S1bSDQEBAAUA61bDwAwgExE
A1WBAQDrAXII-bz-aIIKXfdjxJwULiYTquXKbEoIUuuePc9yY0X9EnEx5+S9/A3r
87/1WwAM6GUlLxLqoPbS89y9WDjXK856DjX8t8jXxV0n6Y8ERGxW8f+eU9Mz
FK966fIa1rI4UqVzja=1krvYUueIRQ6Gq/AJDLLMe2JMN30G3d7j8erz1lMdM70
RbgPF5xKOPFEXH9RQ0Uhr70RegK3/qYc49uHa+1LBq/fUpv02SFH6EzrDvH5VnZ9Qe
n/QRcF3WhgkrRj1VRFYiOe3ZBxGnp/q2EAO1VAYWe01LiLNW4d9FqPTnW1EjDz
89X0j1y1x9ZSukBv0YMK9dxBhB9A0MBAGJ1A3jBqkhk1G90BCQXeFhMQ58Bj
aGFvbGVU2ZUC0GFz3c3vcmQyV9J9IoX0nQXQEBQADqEBAAAAHEU7e5e7jI
YJwMAWjMxRs0zgKqAtlZ0d99lS0C8iEaRgJWqD9V9690L79kJG2Q0cK1So4qV
4+D4F82XzgpnC199e/71/1alq5FS50oaxzbeS6FryYd94M8dkvuVZ9U/0Y
ObWIGjOac7o5dW5sM3t3/93/Nywp1wLEDNDKfG0772v2VhnMuw2C-eqkeJ1Nw065
6q80DVvXk86f8C5mIGF6a0d/VKybJgj25wJ3t6dW12aS5FUMQ2/F6ba51L
AYK9hGyX9kL75ryf1I1dRkz+TmFP7K4XHlN0D8Gx5oRvB5A20Z
-----END CERTIFICATE REQUEST-----

Figure 1  A Sample Certificate

1. In the Address bar of a browser, type https://<IP_address>/certsrv

Figure 2  Certificate Authority—Home Page
2. On the Microsoft Directory Certificate Services page, click Request a certificate, and then click advanced certificate request.

![Certificate Request](image)

Figure 3  Certificate Request

3. Click Submit a certificate request by using base-64-encoded CMC or PKCS #10 file or submit a renewal request by using a base 64-encoded PKCS #7 file

![Advanced Certificate Request](image)

Figure 4  Advanced Certificate Request

4. In the Saved Request box, paste the certificate data that you copied earlier. From the Certificate Template drop-down menu, select Web Server, and then click Submit. An appropriate certificate is issued.

![Submit a Certificate Signing Request](image)

Figure 5  Submit a Certificate Signing Request
5. To issue a Signed Certificate, click **Base 64 encoded**.
6. To download the **Base-64 encoded format** certificate, click **Download Certificate**.

---

**Figure 6** Signed Certificate Download Option
3 Uploading CA Certificate to iDRAC

1. The certificate issued by the Certificate Services has to be uploaded to iDRAC as a web server certificate for authenticating any client connection requests. To perform this operation run the following command.

   `racadm sslcertupload -t 1 -f certnew.cer`

2. To make sure that the certificate has been uploaded to iDRAC successfully, run the following command.

   `racadm sslcertview -t 1`
4 Installing iDRAC Certificate on Windows Systems

If the Windows Management Station is already part of the same domain as certificate authority, then the whole setup process is complete. There will not be any certificate warning observed during the next Remote RACADM session. Else, if MS-Windows is not part of the same domain as certificate authority, then complete the following tasks:

1. On the **Welcome** page, click **Download a CA certificate chain or CRL**.

![Welcome Page](image)

Figure 7 Welcome Page

2. On the **Download a CA Certificate, Certificate Chain, or CRL** page, click **Download CA Certificate**.

![Download CA Certificate](image)

Figure 8 Download CA certificate


4. To point to a DNS server of the domain of the Root CA, configure the DNS settings for name resolutions in the networking.

5. To run Remote RACADM command, at the command line interface, use the iDRAC FQDN as a remote endpoint while running any remote RACADM command.

   `racadm -r iDRAC-SSL-Certificate.xyz.com -u admin -p passwd getsysinfo`
5 Installing iDRAC Certificate on Linux Systems

1. Convert the certificate in DER format to PEM format (using openssl command line tool):

   openssl x509 -inform pem -in [yourdownloadedderformatcert.crt] -outform pem -out [outcertfileinpemformat.pem] -text

2. Find the location of the default CA certificate bundle on the management station. For example, for RHEL 5 64-bit, it is /etc/pki/tls/cert.pem.

3. Append the PEM formatted CA certificate to the management station CA certificate. For example, run the cat command:

   cat testcacert.pem >> cert.pem

4. To point to a DNS server of the domain of the Root CA, configure the DNS settings for name resolutions in the networking.

5. To run Remote RACADM command, at the command line interface, use the iDRAC FQDN as a remote endpoint while running any remote RACADM command.

   racadm -r iDRAC-SSL-Certificate.xyz.com -u admin -p passwd getsysinfo
Conclusion

The sections covered in this document discusses about the generation and installation of iDRAC Certificate by using the RACADM commands. This helps to avoid certificate-related warnings observed while connecting to iDRAC using Remote RACADM or iDRAC GUI using a Web browser. For more information about generating and uploading a Server Certificate using iDRAC GUI, refer to the iDRAC User’s Guide available at dell.com/support/manuals.