Deploying the CA bundle iApp

Welcome to the CA bundle iApp deployment guide. This guide provides detailed information on how to deploy the CA bundle iApp to update or replace the default CA bundle on the BIG-IP system. The iApp also contains backup and restore functionality for the CA bundles.

Why do I need this iApp?

The BIG-IP system includes a default CA bundle certificate which contains certificates from most of the well-known Certificate Authorities (CA). However there is no easy way to update the CA bundle on the box to add or remove certificates. This iApp template allows you to add new root certificate authority certificates to the CA bundle. You can also use the iApp to copy and paste new root certificates to the CA bundle.

Products and versions tested

Product	Versions
BIG-IP system	11.5 - 13.0
iApp Template version	f5.ca_bundle.v1.0.1
Deployment Guide version	1.4 (see *Document Revision History on page 9*)
Last updated	12-14-2017

Important: *Make sure you are using the most recent version of this deployment guide, available at*
http://f5.com/pdf/deployment-guides/f5-ca-bundle-dg.pdf

If you are looking for older versions of this or other deployment guides, check the Deployment Guide Archive tab at:
https://f5.com/solutions/deployment-guides/archive-608

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What is F5 iApp?

Introduced in version 11 of the BIG-IP system, F5 iApp™ is a powerful set of features in the BIG-IP system that provides a new way to architect application delivery in the data center, and it includes a holistic, application-centric view of how applications are managed and delivered inside, outside, and beyond the data center. The iApp template for HTTP applications acts as the single-point interface for building, managing, and monitoring these servers. For more information on iApp, see the White Paper *F5 iApp: Moving Application Delivery Beyond the Network at http://www.f5.com/pdf/white-papers/f5-iapp-wp.pdf*.

Prerequisites and configuration notes

The following are general prerequisites for this deployment; each section contains specific prerequisites:

➤ You must be on BIG-IP LTM version 11.5 or later.

➤ We strongly recommend you use the backup functionality in the iApp to backup the original CA bundle before you begin using the template.

➤ **IMPORTANT**: Any changes you make to the CA bundle will remain, even if you delete the iApp application service. Use the backup and restore functionality to revert back to previous versions of the CA bundle.

➤ If you use the iApp to include new root certificates, when you paste the new certificate into the iApp, you must include **-----BEGIN CERTIFICATE-----** at the beginning of certificate and **-----END CERTIFICATE-----** at the end of PEM encoding. Both are required to be considered a valid certificate.

➤ Be sure to see *Troubleshooting on page 8* for assistance with common issues.

➤ **IMPORTANT**: In order to use this iApp template, your BIG-IP user account must have Bash access.

Configuring the CA bundle iApp template

Use the following guidance to help configure the CA Bundle using the BIG-IP iApp template.

Downloading and importing the new iApp

The first task is to download and import the new iApp template.

To download and import the iApp

1. Open a web browser and go to *https://support.f5.com/csp/article/K18929326*.

2. Follow the instructions to download the iApp to a location accessible from your BIG-IP system.

3. Extract (unzip) the **f5.ca_bundle.v<latest version>.tmpl** file.

4. Log on to the BIG-IP system web-based Configuration utility.

5. On the Main tab, expand **iApp**, and then click **Templates**.

6. Click the **Import** button on the right side of the screen.

7. Click a check in the **Overwrite Existing Templates** box.

8. Click the **Browse** button, and then browse to the location you saved the iApp file.

9. Click the **Upload** button. The iApp is now available for use.

Getting Started with the CA bundle iApp

To begin the iApp Template, use the following procedure.

1. Log on to the BIG-IP system.

2. On the Main tab, expand **iApp**, and then click **Application Services**.

3. Click **Create**. The Template Selection page opens.

4. In the **Name** box, type a name. In our example, we use **new-bundle_.**

5. From the **Template** list, select **f5.ca_bundle.v<latest version>**.

Advanced options

If you select **Advanced** from the **Template Selection** list at the top of the page, you see Device and Traffic Group options for the application. This feature is a part of the Device Management configuration. This functionality extends the existing High Availability infrastructure and allows for clustering, granular control of configuration synchronization and granular control of failover. To use the Device and Traffic Group features, you must have already configured Device and Traffic Groups before running the iApp. For more information on Device Management, see the product documentation.

1. *Device Group*
   To select a specific Device Group, clear the **Device Group** check box and then select the appropriate Device Group from the list.

2. *Traffic Group*
   To select a specific Traffic Group, clear the **Traffic Group** check box and then select the appropriate Traffic Group from the list.

Certificate Authority Bundle

This section contains questions about your networking configuration.

1. *Do you want to create a backup of your existing CA bundle?*
   Choose whether or not you want to back up your existing CA bundle at this time. If this is the first time you are running the iApp template, *we strongly recommend selecting **Yes** to back up the CA bundle.*

   - **Yes, back up the existing CA bundle**
     Select this option to have the system back up the existing CA bundle. The next time you run the template, you will see the backup that was just created in next question. The backup has the name you gave the iApp template, followed **_bak**, and then a date and time stamp. For example, **my-ca-bundle_bak_08_31_2016_10_12_14**.

   - **No, do not back up the existing CA bundle**
     Select this option if you do not want to back up the existing CA bundle. Continue with the next question.

2. *Do you want to restore the CA bundle from a backup?*
   Choose whether you want to restore a CA bundle from a backup you created using the iApp previously. If you have not run the iApp before or have not backed up the CA Bundle, you see the message **No restore files found**.

   - **No, do not restore the CA bundle from a backup**
     Select this option if you do not want to restore a CA bundle from a backup.

   - *Select an existing backup file from the list*
     To restore a CA bundle backup file, select the appropriate file from the list. Make sure you restore the correct file; again backups have the name you gave the iApp template, followed **_bak**, and then a date and time stamp. For example, **my-ca-bundle_bak_08_31_2017_10_12_14**.

3. *Which root certificate authority certificates should be added to the CA bundle?*
   Select any root CA certificates you want to add to your new CA bundle. Note that these are root Certificate Authority (CA) certificates. You can add root certificates in the next question.

   From the Options box, select the certificate(s) you want to include. You can select multiple certificates by holding the **Ctrl** key. Click the Add (**<<**) button to move the certificates you chose to the Selected box. The iApp adds any root CA certificates in the Selected box to the new CA bundle.

4. _**Which root certificates do you want to add to the CA bundle?**_
   If you want to add root certificates to the new CA bundle, paste the certificate in the **Certificate** field.

   > **Note:** _The iApp performs OpenSSL verification on each certificate and returns any related error code. Include a name for each root certificate for easier identification._

   - **Certificate**
     Copy and paste the certificate you want to add. You must copy and paste entire PEM encoding for the certificate: **-----BEGIN CERTIFICATE-----** through **-----END CERTIFICATE-----**.

   - **Name**
     Type a name for this certificate. This is name is just an identifier for the certificate used by the iApp; you can type any name in this field.

5. _**Do you want to remove any existing CA bundle backup files?**_
   If you have previously run the iApp template and created backups of your CA bundle, you can use this section to remove those backups from the system. Any existing backups appear in the Options box.

   To permanently remove a backup file from the system, from the Options box, select the backup file(s) you want to remove. You can select multiple backups by holding the **Ctrl** key. Click the Add (**<<**) button to move the certificates you chose to the Selected box. The iApp deletes any backup files in the Selected box.

Finished

Review the answers to your questions. When you are satisfied, click the **Finished** button to submit the template.

Modifying the iApp configuration

The iApp Application Service you just created can be quickly and easily modified if you find it necessary to make changes to the configuration. The Strict Updates feature of the iApp prevents users from manually modifying the iApp configuration (Strict Updates can be turned off, but use extreme caution). iApp allows you to re-enter the template, make changes, and then update the template. The modifications are automatically made to any of the associated objects.

To modify the configuration

1. On the Main tab, expand **iApp** and then click **Application Services**.

2. Click the name of your CA bundle Application Service from the list.

3. On the Menu bar, click **Reconfigure**.

4. Make the necessary modifications to the template.

5. Click the **Finished** button.

Troubleshooting

This section contains troubleshooting steps in case you are having issues with the configuration produced by the template.

➤ **Why am I receiving the following error regarding an invalid certificate:**
_"Invalid Certificate Present: '<My_Cert_Name>'; Received the following error while validating Certificate: unable to load certificate" ?_

If you see an invalid certificate present error, check to make sure the PEM entered includes **-----BEGIN CERTIFICATE-----** at the beginning of certificate and **-----END CERTIFICATE-----** at the end of PEM encoding. Both are required to be considered a valid certificate.

➤ **How can i check to see the last changes made to the CA bundle made by the iApp?**

Logs containing CA Bundle changes can be found in two locations.

- Username, timestamps, and certificate changes are logged in **/var/log/ltm**,

- iApp specific changes are logged in **/var/tmp/scriptd.out**.

➤ **I deleted the Application Service produced by the iApp template. When I use the iApp to try to create a new Application Service, and try to restore to a backup file found in the drop-down list, why do I get an error?**

If you used the iApp template back up the CA bundle, and then later delete the Application Service (term for the configuration produced by the iApp), if you try to use a new instance of the iApp to restore a previous backup created by the previous instance of the iApp on the initial configuration attempt, you receive an error. This is a known issue when first creating a new instance of the iApp after deleting a previous instance.

Until the next version of the iApp, to workaround this issue, after deleting an application service, when you start a new instance of the iApp template, first name and then save the template file. Use the Reconfigure option to re-enter the iApp. You can then select any of the backup files and restore the CA bundle.

Document Revision History

Version	Description	Date
1.0	New deployment guide for the CA Bundle iApp template	08-30-2016
1.1	- Updated this guide for the fully supported CA bundle iApp (f5.ca_bundle.v1.0.0) available on downloads.f5.com. In addition to being fully supported by F5 Networks, this version of the template contains the following fix: Corrected an issue where the iApp was incorrectly marking some certificates as duplicates. - Added support for BIG-IP version 12.1.2 and 13.0.	08-24-2017
1.2	Added a new important note to *Prerequisites and configuration notes on page 3* stating the BIG-IP user account must have Bash access.	09-21-2017

1.3	Updated the guide for v1.0.1rc1 of the iApp template, now available on downloads.f5.com in the Release-Candidates directory.
	This maintenance release contains no visible changes to this guide or the iApp presentation, but contained the following changes:
	  - Removed the unused procedure "is_aws" from the iApp code.
	  - Resolved an issue that would result in an error when using BIG-IP version 11.5.
		10-12-2017

1.4	Updated the guide for v1.0.1 of the iApp template, now available on downloads.f5.com. This is the fully supported version of the changes to the template made in v1.0.1rc1. There were no additional modifications.	12-14-2017