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**Procedure:** Differences between PEM, DER, P7B/PKCS#7, PFX/PKCS#12 (PKI)

**Source:** [**LINK**](http://myonlineusb.wordpress.com/2011/06/19/what-are-the-differences-between-pem-der-p7bpkcs7-pfxpkcs12-certificates/)

**Permalink:** [**LINK**](http://heelpbook.altervista.org/2012/differences-between-pem-der-p7bpkcs7-pfxpkcs12-pki-certification-infrastructure/)

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# [**Differences between PEM, DER, P7B/PKCS#7, PFX/PKCS#12 (PKI)**](http://heelpbook.altervista.org/2012/differences-between-pem-der-p7bpkcs7-pfxpkcs12-pki-certification-infrastructure/)

Different Platforms & Devices requires *SSL certificates* in different formats:

* A **Windows Server** uses **.pfx** files;
* An **Apache Server** uses **.crt**, **.cer** files;

**NOTE**: Only way to tell the difference between **PEM** **.cer** and **DER .cer** is to open the file in a text editor and look for the **BEGIN/END** statements.

**PEM Format**

It is the most common format that **Certificate Authorities** issue certificates in. It contains the “**—–BEGIN CERTIFICATE—–**“ and “**—–END CERTIFICATE—–**“ statements.

Several **PEM** certificates and even the **Private** key can be included in one file, one below the other. But most platforms (example: **Apache**) expects the certificates and **Private** key to be in separate files.

* They are **Base64** encoded **ACII** files;
* They have extensions such as **.pem, .crt, .cer, .key**;
* **Apache** and similar servers uses PEM format certificates;

**DER Format**

It is a **Binary** form of **ASCII PEM** format certificate. All types of **Certificates** & **Private Keys** can be encoded in **DER** format.

* They are **Binary** format files;
* They have extensions **.cer** & **.der;**
* **DER** is typically used in Java platform;

**P7B/PKCS#7**

They contain “**—–BEGIN PKCS—–**” & “**—–END PKCS7—–**” statements. It can contain only **Certificates & Chain** certificates but *not the Private key*.

* They are **Base64** encoded **ASCII** files;
* They have extensions **.p7b**, .**p7c;**
* Several platforms supports it. For example: **Windows OS**, **Java Tomcat**;

**PFX/PKCS#12**

They are used for storing the **Server** certificate, any **Intermediate** certificates & **Private** key in one *encryptable file*.

* They are **Binary** format files;
* They have extensions **.pfx**, **.p12**;
* Typically used on **Windows OS** to import and export certificates and **Private** keys;