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Apache HTTP.

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Application server. Web server.

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What is application server? Web server?

Web server:

- gets HTTP request
- sends HTTP response (HTML page + images, etc)

Application server:

- Normally has web server functions
- Focused on **server-side dynamic content**
- Interaction with database

Servlet container:

- Something that can run Java servlets

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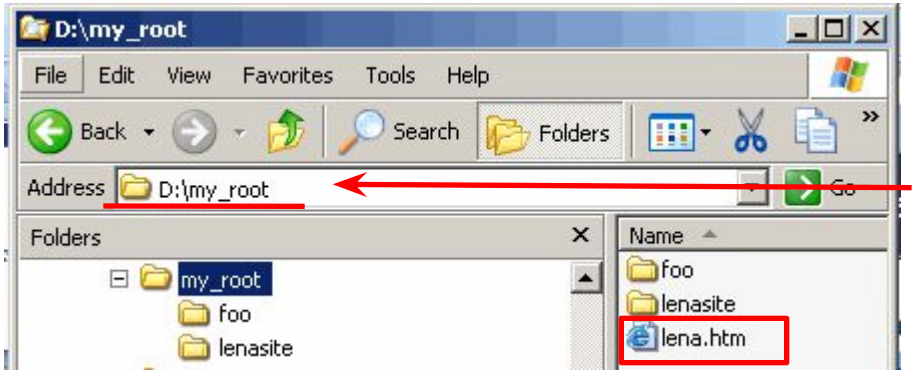
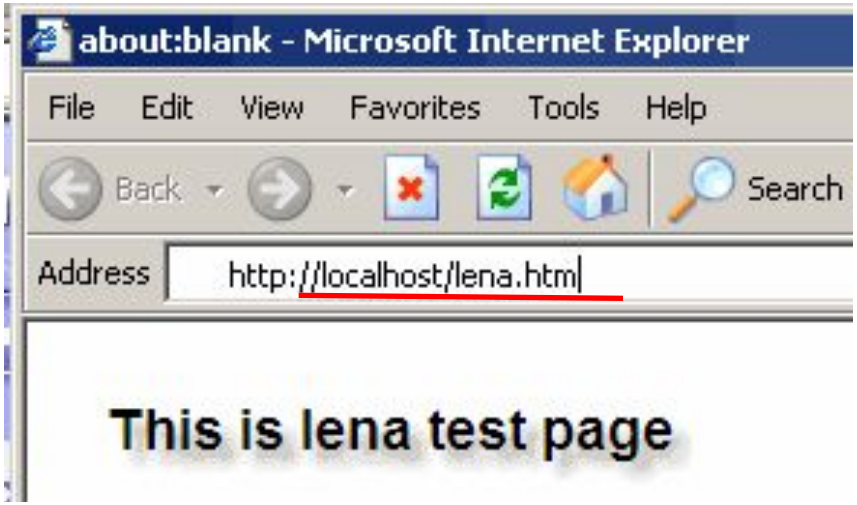
Web server: Path Translation



Web server root directory

Path translation



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What web server can do?

All web servers

- HTTP
- Logging

+ Some can

- Authentication
- Handling of not only static content
- HTTPS support
- Content compression (i.e. by gzip encoding) to reduce the size of the responses (to lower bandwidth usage, etc.).
- Virtual hosting
- Large file support
- Bandwidth throttling

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Web and application servers- examples

Application servers	Web servers
Apache Tomcat	Apache HTTP
JBoss	IIS
WebSphere	IBM HTTP server
WebLogic	Sun ONE

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Current Latest Versions

- Apache Tomcat: 5.5.29, 6.0.35, 7.0.23
- Apache HTTP:2.0, 2.2, 2.4
- IBM HTTP (based on Apache HTTP): 6.1.0.31

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What tester normally does with web\app servers?

Basics

- Start/stop
- Access admin GUI, check version installed
- View/delete logs
- Clear cache

Intern\Advanced

- Deploy application
- Configure virtual folder
- Configure HTTPS
- Configure Application server + Web server
- 2 instances on 1 box
- .....

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Apache HTTP \IBM HTTP (on the example of Apache)

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Apache HTTPd: Get binary distribution for Windows

http://apache.org/

->HTTP Server ->from a mirror ->Other files ->binaries/ ->win32/-> httpd-2.2.21-win32-x86-openssl-0.9.8m-r2.msi

2 choices:

- httpd-2.2.15-win32-x86-openssl-0.9.8m-r2.msi - with SSL (https) support – **we select this one**
- httpd-2.2.15-win32-x86-no_ssl.msi - without SSL (https) support

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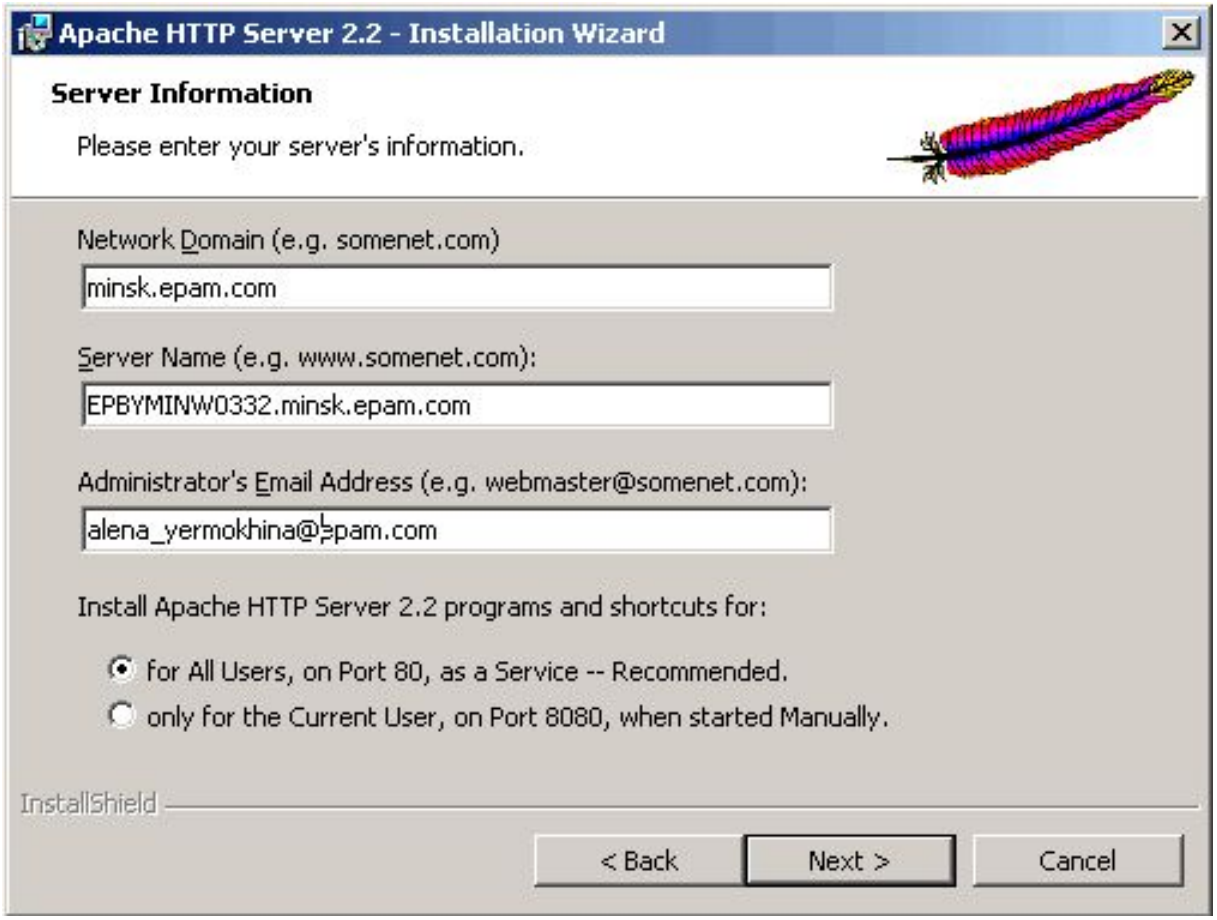
Apache HTTPd: Install



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Apache HTTPd: Start, Stop – 3 ways

- 1. via apache monitor in task bar

- 2. via services

- 3. via command line: httpd (good for troubleshooting) purposes)

```
C:\WINDOWS\system32\cmd.exe

C:\Program Files\Apache Software Foundation\Apache2.2\bin>httpd -k start

C:\Program Files\Apache Software Foundation\Apache2.2\bin>httpd -k stop
The Apache2.2 service is stopping.
The Apache2.2 service has stopped.

C:\Program Files\Apache Software Foundation\Apache2.2\bin>net start Apache2.2
The Apache2.2 service is starting.
The Apache2.2 service was started successfully.


C:\Program Files\Apache Software Foundation\Apache2.2\bin>net stop Apache2.2
The Apache2.2 service is stopping.
The Apache2.2 service was stopped successfully.


C:\Program Files\Apache Software Foundation\Apache2.2\bin>httpd -t
Syntax OK

C:\Program Files\Apache Software Foundation\Apache2.2\bin>
```


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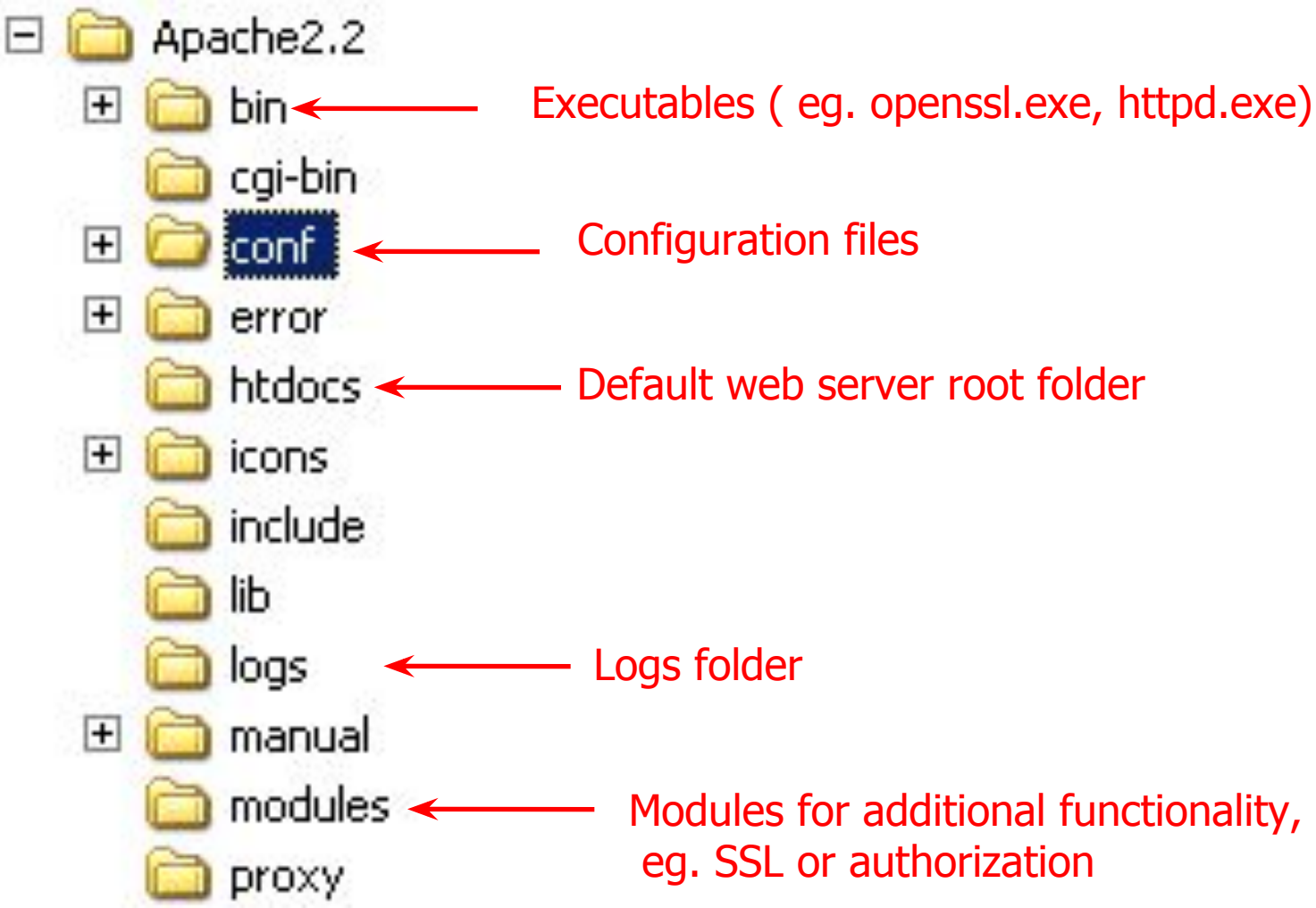
Apache HTTPd: Important folders



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Apache HTTPd: Log files

C:\Program Files\Apache Software Foundation\Apache2.2\logs

access.log

host Date/time What was requested Status, size

```
127.0.0.1 - - [17/Jan/2008:13:04:08 +0200] "GET /blablabla.htm HTTP/1.1" 404 211
127.0.0.1 - - [17/Jan/2008:13:04:23 +0200] "GET /lena.htm HTTP/1.1" 200 9
```

error.log

```
[Thu Jan 17 13:03:54 2008] [warn] RSA server certificate CommonName (CN) `test certificate' does
    NOT match server name!?
[Thu Jan 17 13:03:54 2008] [warn] Init: (EPBYMINW0332.minsk.epam.com:443) You configured
    HTTP(80) on the standard HTTPS(443) port!
[Thu Jan 17 13:03:54 2008] [notice] Child 5368: Child process is running
[Thu Jan 17 13:03:54 2008] [notice] Child 5368: Acquired the start mutex.
[Thu Jan 17 13:03:54 2008] [notice] Child 5368: Starting 250 worker threads.
[Thu Jan 17 13:03:54 2008] [notice] Child 5368: Starting thread to listen on port 80.
[Thu Jan 17 13:03:54 2008] [notice] Child 5368: Starting thread to listen on port 443.
[Thu Jan 17 13:04:08 2008] [error] [client 127.0.0.1] File does not exist: D:/apachetest/blablabla.htm
```


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Apache HTTPd: main configuration file HTTPD.conf

#- comment

Listen 80 – port on which server listens

LoadModule ssl_module modules/mod_ssl.so – adds additional module (just uncomment)

DocumentRoot "D:/apachetest"

ServerName www.domain.tld

<Directory >

Options FollowSymLinks

AllowOverride None

Order deny,allow

Deny from all

Satisfy all

</Directory>

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Make file and folder accessible via http

1. **file:**

put file (eg, test.htm) here: C:\Program Files\Apache Software Foundation\Apache2.2\htdocs

Go to http://localhost/test.htm

2. make other folder document root folder:

Httpd.conf:

modify DocumentRoot

modify <directory>

3. make accessible folder outside DocumentRoot:

After <IfModule alias_module>, create <directory entry>

Insert Alias /111 D:/111

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HTTPd.conf: Create \change index file

- <IfModule dir_module>
- DirectoryIndex lena.htm
- </IfModule>

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HTTPd.conf: Change port

- Listen 81
- Listen 443

- Server can listen several ports at the same time

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Apache: more complex tasks

- **Set up SSL**
- **Configure Apache +Tomcat**
- **Configure Apache authorization**

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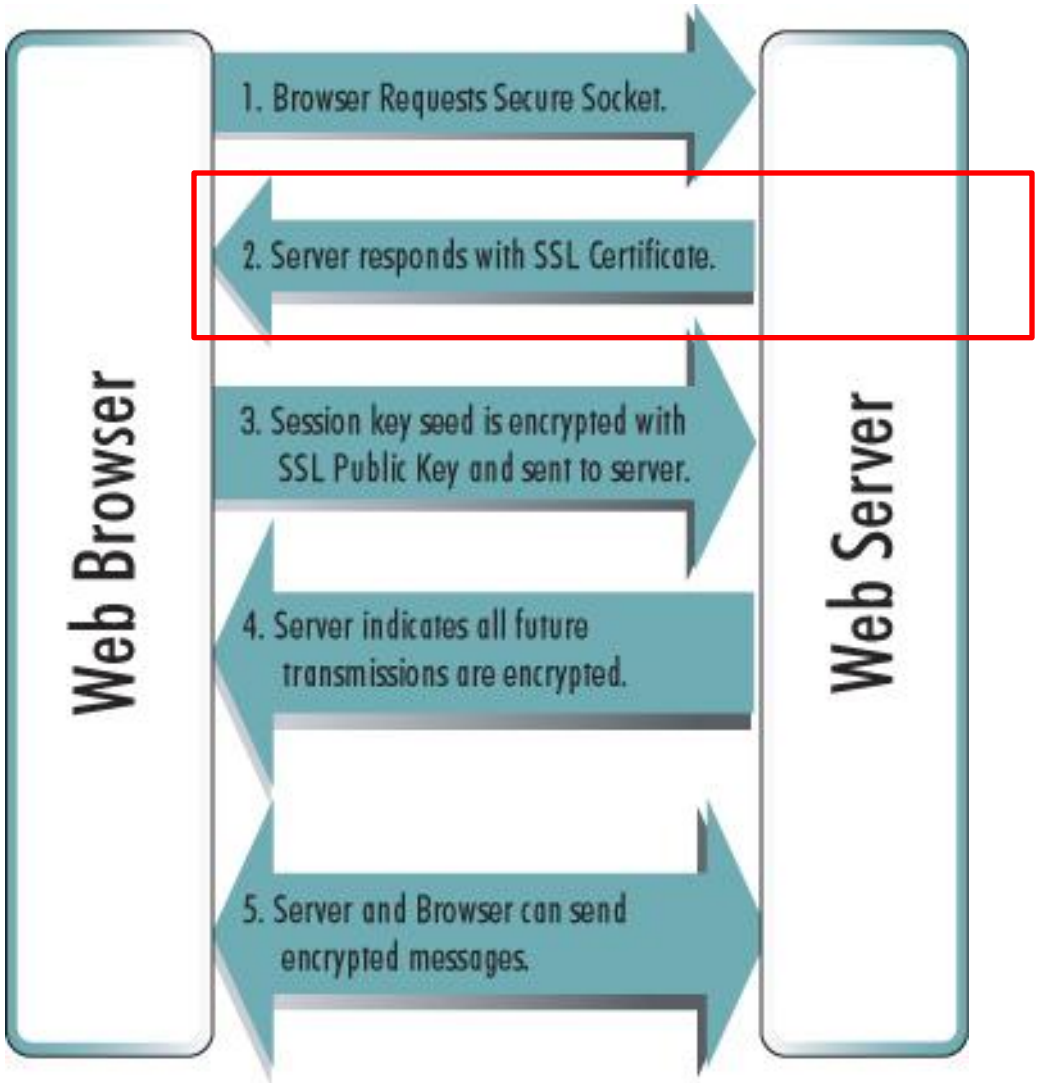
SSL



1. We need to generate certificate and tell web server about it

1. We need only test certificate (self signed)

1. If user says "trust certificate, the rest is done automatically, by browser/server

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Apache HTTPd: Configuring SSL

- **Make sure openSSL installed**
- **Get certificate**
  - private key
  - certificate signing request
  - certificate
  - certificate in DER form
- **HTTPD.conf:**
  - Listen port 443
  - Turn on SSL

Detailed instructions : Apache and SSL.doc

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Why this is needed?

- Apache has better performance for production needs
- Apache: more flexibility to configure than Tomcat as web server
- Apache load balances several tomcats
- Customers have this configuration, so we may have to test it.

Detailed instructions :
Tomcat_Apache_Configuration.doc

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Set up apache authorization.

Detailed instructions:

Apache SSO Setup.doc

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