CGI vs Servlet

CGI (Common Gateway Interface) is the very first attempt at providing users with dynamic content. It allows users to execute a program that resides in the server to process data and even access databases in order to produce the relevant content. Since these are programs, they are written in the native operating system and then stored in a specific directory. A servlet is an implementation of Java that aims to provide the same service as CGI does, but instead of programs compiled in the native operating system, it compiles into the Java bytecode which is then run in the Java virtual machine. Though Java programs can be compiled into the native code, they still prefer to compile in the Java bytecode.

The first advantage of servlets over CGI is in its platform independence. Servlets can run on any operating system just as long as a JVM is installed, which means that you would not be having any problem even if you choose to switch operating systems. With CGI, switching operating system is a difficult and laborious process as you would need to recompile the programs in the new operating system.

Since you are running independent programs in CGI, they create their own process when they are executed, something that does not happen with servlets as they just share in the memory space of the JVM. This can lead to problems relating to overhead, especially when you increase the number of users exponentially. It also creates vulnerability issues as the program is not controlled in any way once it is run on the server.

Later on, the more common method when using CGI is via scripts. This reduces the time needed in creating programs and are generally more secure. With CGI, you can run scripts right away, while servlets, you would need to translate the script into Java and compile it into a servlet which adds a little bit to the loading time.

Summary:

1.CGI are usually executables that are native to the server's operating system, though servlets can also be compiled to the native OS it can be compiled to Java bytecode which is then run on a JVM
2.CGI programs are platform dependent while servlets are platform independent
3.CGI programs run as separate processes on the computer while servlets run on the JVM
4.CGI can be more vulnerable to attacks than servlets
5.CGI can directly process scripts while it needs to be translated and compiled to before it can be run as a servlet

Read more: [Difference Between CGI and Servlet | Difference Between | CGI vs Servlet](http://www.differencebetween.net/technology/difference-between-cgi-and-servlet/#ixzz2lBduhsKp) http://www.differencebetween.net/technology/difference-between-cgi-and-servlet/#ixzz2lBduhsKp

Advantages of Servlets over CGI

Servlets are server side components that provides a powerful mechanism for developing server web applications for server side. Earlier CGI was developed to provide server side capabilities to the web applications. Although CGI played a major role in the explosion of the Internet, its performance,

scalability and reusability issues make it less than optimal solutions. Java Servlets changes all that. Built from ground up using Sun's write once run anywhere technology java servlets provide excellent framework for server side processing.

Using servlets web developers can create fast and efficient server side applications and can run it on any servlet enabled web server. Servlet runs entirely inside the Java Virtual Machine. Since the servlet runs on server side so it does not depend on browser compatibility.

Servlets have a number of advantages over CGI and other API's. They are:

1. **Platform Independence**
   Servlets are written entirely in java so these are platform independent. Servlets can run on any Servlet enabled web server. For example if you develop an web application in windows machine running Java web server, you can easily run the same on apache web server (if Apache Serve is installed) without modification or compilation of code. Platform independency of servlets provide a great advantages over alternatives of servlets.

2. **Performance**
   Due to interpreted nature of java, programs written in java are slow. But the java servlets runs very fast. These are due to the way servlets run on web server. For any program initialization takes significant amount of time. But in case of servlets initialization takes place first time it receives a request and remains in memory till times out or server shut downs. After servlet is loaded, to handle a new request it simply creates a new thread and runs service method of servlet. In comparison to traditional CGI scripts which creates a new process to serve the request.

3. **Extensibility**
   Java Servlets are developed in java which is robust, well-designed and object oriented language which can be extended or polymorphed into new objects. So the java servlets take all these advantages and can be extended from existing class to provide the ideal solutions.

4. **Safety**
   Java provides very good safety features like memory management, exception handling etc. Servlets inherits all these features and emerged as a very powerful web server extension.

5. **Secure**
   Servlets are server side components, so it inherits the security provided by the web server. Servlets are also benefited with Java Security Manager.

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