Title: Developer Productivity Using WebSphere Application

Michele Choate: Hello, everybody. And thanks for joining our second webcast in our Virtual Developer Days series. My name is Michele Choate and I cover WebSphere Application Server and related products for North America. Our focus in these live events as well as the series of webcasts, which cover the same material, is really the developer. So on our last call we covered the latest specs that developers need to know about—JEE6, JDK7 and OSGI. This week we have as our speaker Soloman Barghouthi, who was the release architect for our latest version of WebSphere Application Server. And he will take us through some of the key highlights that are of interest especially to developers. So with no further ado, Soloman, why don't you take us through that?

Soloman Barghouthi: Thank you, Michele. Welcome, everybody, for the webcast. And we're hoping out of this session we'll get you to understand a lot of the exciting and new things that were introduced with the WebSphere Application Server version 8.5 that was released last June. And we'll also give you kind of highlights of the new stuff that was added as part of the WebSphere 8.5.5 release that's going to release sometime in the next seven days. And this will show you kind of how you, as a developer, this is going to improve your productivity in a huge way.

So in the last session you heard from my colleague Steve on the EE technologies and some of the improvements that took place over the years, and particularly what's going in with EE6 and Java 7. This is a quick chart that basically shows you the timeline. And really the purpose of why I'm showing this chart in here is to show you what release of the application server supported which EE level. And secondly, which I will recap at the end, I want to bring your attention to something now and I will come back again at the end of the presentation to tell you why I was explaining that to you. So if you look, for example, at the WebSphere version 8 release you will see that WebSphere version 8 was based on EE6, Java EE6. And if you look at WebSphere version 8.5, it is also based on Java EE6. And again I'll tell you why this is relevant at the end of this presentation. So stay tuned on that.

All right, so moving on to the next slide. One of the things that continuously I hear from customers when we tell them how great the next release of EE, for example, or when we say the next release of the application server contains this particular level of the EE spec is they come to me and to us in general and say, well, so does that mean if I want to migrate from WebSphere Application Server version 6.1, which supported EE 1.4, into WebSphere Application Server version 8.5, which supports EE 6, that I actually need to migrate my applications and to take advantage of that release and of that EE level? And the answer of course is yes. But then they follow it by a question, well, what if I really don't have the time to do it just yet? Does that mean I cannot migrate to the next release of the application server until I finalize my application migration from an EE perspective? And when I say EE perspective I can give you an example. So EJB2x was the level that was supported in the EE 1.4 release. EJB3.1 is the level that is

supported in the EE 6 level. And are you supposed to migrate your application from EJB2.1 to EJB3.1? And the answer of course is absolutely not. The way things work is that all previous releases of the spec are fully supported by IBM WebSphere Application Server. If you look at this chart on number three you'll see that as a Deployment Manager, which is the highest level in this particular case that I'm showing an example of, you will see that if you have WebSphere 8.5 nodes you have the ability to run EE 6, EE 5, 1.4 and all the way down to 1.2. And that tells you is that you could move up your application into that level of the application server, the latest level. And all you need to do is just worry about any incompatibilities that may have happened in the spec, which IBM would provide you some flex to basically disable these particular incompatibilities. However, we are not going to force you to upgrade your actual application from an, for example, from an EJB2x to EJB3.1. Because that may require some efforts on your side. And as a result of that you could continue to run with older level of the spec even though you are on a release of the application server that supports the latest one. Hope that makes it very clear to you so that you're not, even though you saw the enhancements and some of which will require some coding in your application to take advantage of, but do not feel obligated that that means that if you want to migrate to the next level of the application server that you have to make these enhancements and you have to take advantage of these new features that exist in the spec. All right?

So I want to show you this one chart in here. And this chart basically gives you a quick overview of what went on into WebSphere Application Server version 8.5 and the one that's going to GA in a few days now with the WebSphere Application Server 8.5.5. The purpose of this meeting or this webcast is to focus on the developer aspect of things. And there's one particular item we are going to focus on and that is the Liberty Profile. And if you don't know what that is, that's okay. Because that's what we're going to be covering here. So really quickly, and this is something that I encourage if it sounds interesting to you that you contact your client rep and ask him or her to kind of get somebody from the lab or get somebody from the technical sales team to actually go in details and hold maybe a work session at your shop, at your company to go over the details of it to understand how relevant and how this would be useful to your company. We kind of broke things into three areas. The Developer Experience, which very much I'm going to cover in this webcast. But we'll also have the Application Resiliency and Operational Excellence. The one that I think I want to spend maybe 30 seconds on is the Application Resiliency. This is a huge one. For those of you who are familiar with a product at the application server that IBM used to sell, called WebSphere Virtual Enterprise, this is something that offered things like dynamic clustering, the ability to grow and shrink your clusters, intelligent routing, help management to basically set some policies based on the load of your environment and react to it so you can predict problems before they happen and take certain actions and define all that beforehand. This product that used to be sold separately is now part of the WebSphere Application Server 8.5 ND edition. So for you, just by moving up to the WebSphere Application Server 8.5 ND edition, you actually now basically having your money worth a lot because now you're getting in a way two products. And when I say you're getting them, we're not talking about just shipping them as a separate product. We actually integrated the WebSphere Virtual Enterprise as part of the App Server. That means

you are indeed installing just a WebSphere 8.5 ND edition and you are getting all the functionality that the WebSphere Virtual Enterprise had. So I hope that that kind of stir your curiosity there such that you contact your rep on that.

All right, so I'm going to the next slide, slide number 5. And this, what I'm going to cover is the Liberty Profile. So the Liberty Profile is something that is highly composable application server. This is something that IBM been working on, as you know, into making WebSphere based on OSGI and componentize the application server. We started this effort back in 6.1 of the app server. And we continued this effort and we finally got to the point where we figured it's actually best for us to kind of continue that effort into a separate profile, if you will, of the application server such that we can truly make it hundred percent based on OSGI. And in the meantime, while we're delivering this lightweight application server, take in all the requirements that we have heard from customers over the years. And a lot of these requirements came from our developers. And these are the things that you are, we're hoping and we're almost confident you are going to be very impressed with what has come with the application server. So if we take the list of items that we have from the beginning—So, and I'm going to run you through them one by one. So start fast and run efficiently. This is some of the requirements that developers want. They want to be able to develop their applications quickly. And to accommodate that or to get that done, they need to make sure that they start fast and it's used smaller footprint on the desktops or laptops or whatever. So with the WebSphere Application Server 8.5.5, you will see the startup time for the app server takes less than three seconds. Yes, you heard it right. Less than three seconds. And less than 50 megabyte of memory as a default out of the box installation of the application server. And when we're talking about default, I mean, certain things, for example, TradeLite application is an example of a configuration that will give you the less than three seconds and less than 50 megabytes. If you don't know what that is, TradeLite is a benchmark, is a public benchmark, open source benchmark. And the light aspect of it comes in with basically servlets, JSPs, JDPC and JPA. So going down, the tooling obviously. So we're giving you an application server, but we're also giving you the tooling that comes along to help you as a developer developing your applications. And you're going to see later in the demo that we will show you how you can get a vanilla Eclipse environment up and running with Liberty Profile. You can download your Eclipse plugin for the Liberty from the Eclipse Marketplace. And through that plugin you will be able to get a runtime of Liberty up and running in no time. Very, very quickly. And of course we're able to do this not only because now we're making it part of Eclipse—And, oh, by the way, if you are running in RAD obviously this will be in RAD as well and it will give you a bit more capabilities. But if you are a shop that is not running RAD and Eclipse, just normal Eclipse is what you're after, you will be very impressed with what you see in here. So going down. And I'm going to skip over these just to kind of keep the flow going. So when I say you're able to download it, that means that the download size is going to be small. And if you look right now, you'll see that from a download perspective we're talking about 50 megabyte of download size for the Liberty Profile. And this is very small, right? I mean, we made it in a way that is extendable. You can build more on top of it, as I will show you later on as we continue to talk about this Liberty Profile. Now one of the key aspects also that we've had in it—

and I'm jumping to the Dynamic Server Profile—is that this is an application server since it's completely hundred percent based on OSGI and takes advantage of all the OSGI framework capabilities. It gives you the capability to have this being dynamic. What does that mean? That means even though we made it very fast to start, that means that you can make any changes that you want to the application server and these will go in effect without the need for you to restart the application server. So picture that you want to add more features to the application. So, for example, you start by saying I'm only going to support web related technologies or web profile related technologies. And later you're going to say, well, I would like to add more onto that. I'm going to add support JAX-WS. You could just add a feature name into your configuration file. And as soon as you save it that would be available and ready for your applications to use. You want to create some data sources. You want to change some configurations. All you really need to do is make the change. And as soon as you save it that would be all that will need to be done. And beyond that, the application server will not get restarted. And that also means that if you are running in a production environment and you're making a change that is needed for one of your applications, that you are not going to be forced to restart the application server and affect the other applications that are running in your environment. So you could understand how huge this is from a production perspective. And of course from a development perspective it's also huge because you're not going to need to restart the application server ever actually. Even though, by the way, with less than three seconds of startup time it wouldn't really matter as much. But this can like tell you where we're going with our assistance to help developers with their productivity. So if we come down now to the other aspects of it, is the unzip, install and deploy. So one of the things that we heard from developers is that, well, this is great when I'm running in a production environment that, and I'm happy with the way the application server operates. But there are some needs for me that I would like to be able to zip up my directory or be able to archive install my Liberty Profile so that I don't have to go through a big installer. Remember, I am doing it, in this particular instance I'm a developer and I have only one machine and I don't really need somebody to manage how many instances of my liberty profile is running, which is typically what a production system would need. And therefore I don't want to go through an installer, which would keep track of these things. Instead I want to download some zip file, unzip it, or a JAR file and basically go from there. And also, when I'm done working I want to be able to store all my applications and configurations in that particular directory and be able to zip it up and give it to my colleague so he or she can to do the work that I started. Let's say because I'm going on vacation, for example. And that you will get now with the Liberty Profile. If you look at this unzip, install and deploy, we're actually literally getting you to the point where you can unzip the Liberty Profile into a directory. You can install the applications in that directory under let's say drop-ins directory that exists already or anywhere else within the user space of that particular Liberty installation. And then after that you can zip up the directory, which contains the Liberty runtime, the JDK if you want to also, the application, the configuration. Give it to your colleague. They can unzip and run. Literally unzip and run. So that shows you how you can actually start sharing your environment in a very positive and quick way. Furthermore, if you're looking at it as a deployer, you can picture how a deployer could actually specify what their environment is going to look

like. And let's say they have hundreds or thousands of servers they want to deploy Liberty on as a standalone. And now you can literally create one zip file that contains everything that you need. And then you can seed that to let's say the Job Manager, which is, this is what this shows you in here in one of these rectangles, is that the Job Manager will get you the ability to push these out if you want to. Or you can use your own way of pushing this particular zip file over, unzip it, start the servers, and you're good to go. So as you can see, this is a huge amount of productivity improvements that we've done with the liberty profile. And of course we're not done yet. We're going to continue to do more. So what else have we done? And the items that look enhanced or new are the things that we've done new in the WebSphere Application Server 8.5.5, the one we're going to GA in a couple of days. The ones that do not have a newer enhance to them, those are the ones that already existed since our last release of the Liberty Profile, which is in June of last year. So in addition to all the coolness that I just talked about, we're now giving you the ability to even extend the Liberty Profile. Let's say if you are a third-party vendor that trying to develop an application and embed Liberty. But as part of what you are doing, you're trying to actually change the way things behave in the application server. Custom registry's one example where we know of one of our customers who actually wanted some behavior or custom registry that is different than what's offered with the application server. Now with the ability to extend the functionality they were able to extend the custom registry to do it in a way that would meet their need. Now picture the ability, if you're doing all that in a straightforward and easy way using the tooling that we offer you. So we're not talking about complexities and PhD in programming to be able to do this. You could easily—We have samples that show you exactly how to do it and it's very, very straightforward. Lastly, in addition to you, with this extensibility, we allow you to add your own features. So picture that, just like we have features that we allow Liberty to be configured with—and I'll show you an example of that in a second—you'll that you can define your own features so that you let the WebSphere Application Server container manage the lifecycle of that particular feature of yours to start it up when needed and shut it down when not needed and read the configuration for it. Again, if you look at our documentation, which I'm going to show you our link later on to, which is wasdev.net, you will see samples of how to do all that good stuff. Okay?

Moving on to the next slide. So this is the wasdev.net website that I was telling you about. Please, I mean, this is easy to memorize. Go ahead and just go to it. You're not going to regret it. This is something that was created literally for developers. It's easy to follow. You'll see all kind of samples. You'll see forms in there and all updates that we may have. You can even download the Liberty Profile from it if you do not want to download it from within the Eclipse plugin, as the demo will show you later on. So give that a shot. Take a look at it. Remember wasdev.net. It's that easy. And I promise you won't regret it once you see the information and what you're going to learn from it. Okay?

Moving on to the next slide. So on slide number seven, this is a simple example. So one of the benefit that we got, like I said, we kind of started with this composable server. But then we also said, well, let's take in all the requirements that we've been hearing

from customers on. And one of which was, as a developer, I really do not want to modify multiple XML files for my configuration. Multiple XML files are great in the case, for example, of a production system in a large stepology. But as a developer, I don't really care for that. I want to just do something quickly in one file because I'm making a change and I'm testing my environment. And of course we've done that in here. So you'll see that there is one file called Server XML file. And if you look, this is the Feature Manager when I was talking about adding features. Like in this case, you're saying I want JSP 2.2 and I want localConnector-1.0. When I mentioned that you can define your own features, once you name your feature it would be added in here under usercall and then your feature. And as you see, this is the endpoint definition. This is how you can define an application. Of course there are other ways of doing it as well and I'm going to show you that in the live demo. And you can define your data sources all within this particular file. You will see that there is a design tab. And I will cover some of that during the demo later on that you can actually do it from the GUI rather than just by entering the XML if you want to.

All right, moving down to the next slide. And this is just further down, further explain the simplified configuration. So you'll see this is how you enable the trace and here is how you can define a data service. Now remember, I mean, you'll see that this is similar to what you see in the, what we refer to as the full profile now, which is the, what you knew the application server prior to 8.5 Liberty Profile. Remember in the 8.5 release, by the way, we're shipping the full profile, which is what you already know of, and the Liberty Profile, which is just a subset of the application server that is fully composable and based on OSGI, a hundred percent based on OSGI. This particular configuration, as you can tell, is based on code. It's not all new code that we written from scratch. This is all code that basically was in the application server. We just simply packaged it differently to be able to meet the need of the OSGI program and—I'm sorry—the OSGI framework. Okay?

All right, so going down. Some of the other flexibility we've added is that even though we have one server XML file, that server XML file could point to one configuration, which is whatever, that I just showed you the example earlier. Or you could point to other XML files elsewhere. For example, if you're saying, well, I really like the way things were distributed where I have my resources XML files exist for my data sources and server XML file for security—I'm sorry—secured XML file for security. Well, you could do exactly that. All you need to do is just simply add this include tag inside of your server XML file. And the final outcome of what the server will see is the combination of all of them. So you can distribute things as you want to. You can also do it where you can have your server XML file point to a remote location so that if you have thousands of servers running, all these thousands of servers point to one server XML file. And if you want to make the change, you can make it once and it will apply to all these thousands of servers. All right?

So moving down. One of the, also the huge benefit that the OSGI programming model brought us here is the ability to help you with class visibility. With the Liberty Profile you'll see that everything that is used by the Liberty runtime engine is not visible to the

application. So you do not have to worry about you using some third-party library and find out later that the same library is used by IBM application server and therefore if there's a mismatch between the versions between what your application requires and what the application server is using that you might run into trouble. There's a lot more in that stage. But unfortunately, with the limited time we have on this webcast I'm not going to be able to go in a lot of details on it. But this is something that will help you in a huge, huge way, introducing the amount of issues that you may run into because of the fact that now everything in the app server is completely isolated from the application. That's by default of course, unless you want to expose.

So I want to stress that the Liberty Profile is Web Profile certified, EE Web Profile certified. That means the list of all the features that you see in here are supported. And I think everybody knows what those are and Steve talked about them in the last webcast. So this could be hopefully good enough for you. As a EE Web Profile. Of course we offer more than that as well. And this is part of the full package that you get with the WebSphere Application Server 8.5.5.

So I talked about the extensibility. This is just an example or kind of drilled down on more details on it. And I'm just leaving this for your reading pleasure. I think I, hopefully I covered it in a lot of details in a previous slide.

Caching. Caching is one critical item that you need to make sure that you pay attention to. You have to be come to improve performance of your application and too, but you need to make sure you deal with caching correctly. So DynaCache is one of the items that we did support, that we do support in the full profile of the application server. With 8.5.5 we've added that support as well to the Liberty Profile and as you can see in here.

And this slide basically talks about the fact that, just like we do in the full profile, you can switch from the Liberty implementation of the DynaCache into the something more advanced and capable like the WebSphere Extreme Scale. And you can switch between the two literally without having to touch your application itself. Because it's all just the plugin points of what you need to do is to switch from a Liberty implementation to Extreme Scale without changing your application.

So what happens to performance? And as you can see in here, this is a comparison between the startup and footprint for the WebSphere Application Server Liberty Profile and the other application servers out there. Lightweight application servers, I should say. And as you can see when you look at it, here's the Liberty compares to GlassFish, JBoss and Tomcat. You'll see that Liberty is much better than GlassFish and JBoss, and it comes very close to what Tomcat offers. And of course, you know, 1.7 to 2.3. the benefit that you get with the Liberty Profile in addition to what you see in here is the fact that if you look at the throughput you'll see that the Liberty Profile is the best of all the other application servers out there.

And of course you don't have to take my word for it only. This particular combination or configuration was run using the Trade benchmark. This is an Apache benchmark that

you can configure and run yourself. And the details of the system, as you can see, we're not talking about humongous systems that nobody could come up with. You can try it yourself, download it and run, and verify and get those numbers and see them yourself firsthand.

All right. So in terms of what we offer in the, from the different offerings. So what we have introduced in the 8.5, the Liberty Core edition. And the Liberty Core edition will give you basically the Web Profile, EE Web Profile technologies as part of it. And this is kind of the lowest level of the offerings for the Liberty. Beyond that, you can add more things on top of it. For example, if you want JMS or JAX-WS or MongoDB support, for that you need to be on the WebSphere Application Server base edition. Because base edition comes with Liberty. And of course on top of that, if you are interested in the clustering aspects of the application server, then that's when you get into the next level up. And that would be the WebSphere Application Server ND edition. Liberty Core comes as a product by itself. The base and the, well, or the extended of the Liberty, this comes as part of you acquiring the WebSphere Application Server 8.5.5 base edition and of course the WebSphere Application Server 8.5.5 ND edition. All right. So, and of course if you have z/OS we'll have the packages that will be run on top of that that will be specific to z/OS, like zosTransaction and zosSecurity and WLM.

All right. So in addition to you saw how I told you it was 50 megabyte. And all you need to do in here is that we give you even furthermore that once you configure your server you can trim down the application server even more by running this minify option to generate the package or the zip file, for example. Well, it will even take away some of the features you're not using. And you can get down your application server from 50 megabyte to as low as maybe 25 or 30 megabytes. So I encourage you to even examine that more and look at it in more details.

The collective aspect of things, Liberty Collectives or the (plus to run?), you can heard the term Liberty Collective and Liberty Clustering. And this picture kind of gives you an (inaudible) of that, is you'll be able to run the collective controller to control the rest of the Liberty Profiles and also be able to create clusters that (inaudible) that collective. And of course you can have Jython or the JConsole or Java to manage that.

All right. Now I'm going to just spend another minute and (inaudible) switch over to the demo after that. So as part of what you're going to see in the demo, you will see that the ability for you to download not only the Liberty Profile but also (inaudible) that you'll be able to download some open source technologies and packages. And this kind of shows you how our direction of going openness. Okay?

Now continue on for the next slide. This is the more details on the core offering of Liberty. And the reason I'm giving you this so you can read it yourself and see more details on it. I've already covered exactly (inaudible) is all about.

And this is a full picture of all the offerings that we have. And again, this is just for you to understand the big picture since you will have the (inaudible) alongside with it. Now

finally, and this is the piece that I want to get to with respect to why I showed you this diagram or this timeline.

(Inaudible) fact that we are using EE 6 in both 8.5 and 8.0. That means that if you are an 8.0 running production right now with WebSphere, as a developer you can download the Liberty (inaudible) for development, develop your application on it, take that application and run it in the WebSphere Application Server 8.0 off of production. This is a fully supported (configuration?) that IBM support will support you hundred percent on it. And if there are any issues we will help you control it. All right. So with that I think my time is up. I'm going to switch it over to get you guys to see the demo.

All right. So on to the demo section of our webcast. What I'm going to show you is exactly what I talked about earlier, is the—I'm going to show you how to set up a Liberty Profile, how to set up a Liberty environment in your Eclipse environment. As a developer, this would be very handy and useful for you. I'm going to show you how to get that going without being on an IBM network or being on your (comfy?) network, for that matter. All that really matters is you are, that you have a connectivity. So you could be doing this from your favorite coffee shop.

So I'm going to start by saying I'm assuming everybody got Eclipse. If you do have RAD, RAD's going to come already with the Liberty Profile in it, the plugin that is ND. And you can download the runtime if you want to. But what I'm going to show you here is the simplest thing, which is literally you've got nothing but Eclipse. In my particular case I have the Juno, Eclipse Juno. So if I go to my Eclipse, About Eclipse, and you'll see that that's what I have. And it's Service Release 2. Okay? So, and you can of course download Eclipse from eclipse.org.

So let's get started. What do you do if you're looking for plugins? The thing that you constantly do is you would go into the Eclipse Marketplace. So let's do that. I go to Help > Eclipse Marketplace. And when this thing comes up I will search for the word "WebSphere." All right? So let this go and search for it. So you will see once the search comes back there are multiple plugins available found for the WebSphere environment. I did talk about the WebSphere Developer Tools, which is these are the tools if you are using Eclipse and you want to develop EE applications. The year before last, I think in November, the IBM team produced the Eclipse plugin that allow you to develop EE applications specific to WebSphere. That means binding and extensions. You do not necessarily need to have RAD for that. In fact, if you only use RAD to develop EE applications in a simple way, then you probably need to just basically get the WebSphere Developer Tools, which is free of charge, to you. You would only pay if you are interested in support. So you'll see there's the WDT for V8. There's a WDT for V7. And of course WDT for 8.5. Now here's something just to go over quickly with other items. There is the WebSphere Application Migration Toolkit. We have not covered that. There's plenty of information about it if you just Google it. It's very beneficial to developers. It gives you the ability to download—I'm sorry—to migrate your application. Also it makes you a better developer because it shows you the best

practices so you can literally use it to examine your application and get some recommendations from the tool on best practices for writing your code.

So if I go down, you will see that there is the WebSphere Application Server V8.5.Next Liberty Profile Developer Tools Beta. As I mentioned, we are going to GA the 8.5.5 release in the next couple of weeks. So it's sometime in June of 2013. That means that as soon as we GA, you will find that the beta is going to be gone and this would be replaced by WebSphere Application Server V8.5.5 Liberty Profile Developer Tools. In my instance I already have it. So I'm not going to waste time downloading it. Of course all you need to do is just literally install it. So I'm going to skip over this since I already have it.

Now once you have it installed on your system, all you need to do at this point is literally go into the Servers tab, which is this is how it's going to look like when you open up Eclipse. Right click on it and do New and Server. You will see now that you're going to see the WebSphere Application Server V8.5 Liberty Profile. I'm going to select that. Now notice when I select it, so far I only have the plugin. I do not have the runtime. So if you click on the Add, you will see that you will get the option, you know, to do a download or install. Okay? So if I click on the download or install, you'll see that I have both options. One option is to point to an archive or a JAR file that has the Liberty in it. For example, if I download it from the IBM network, I could just install it that way. Or in your instance, you do not have anything and that's what I've been saying in your case. So we're going to say, okay, well, we need to download it. And you have two options. Option number one is to get the GA level that we produced last June or the one that I'm going to be showing you and I hope everybody will try is the 8.5.Next Beta. And as I mentioned, this is going to be updated with the real GA level in the next week or so, as we are going to GA the WebSphere V8.5.5 for the Liberty Profile.

So if I click Next—And this is something that is new in the 8.5.5 and I talked about do it in my presentation. One of the things that we're going after here is to show you how open the Liberty Profile is. We do allow you to extend the runtime if needed. We allow you to incorporate your own features into the Liberty Profile. In addition to that, our openness and our support for open source, what you're going to see in here is that we are going to give you the option you can download the Liberty Profile by itself or if you are interested in downloading the Liberty Profile with some of the common open source libraries out there—You'll see, for example, if you are interested in developing your code with Hibernate. So WebSphere comes with open JPA. But if Hibernate is something that you are interested in you can do, install it and it will install the Liberty Profile alongside with the runtime JARs for the Hibernate and a working sample fully installed into the application server such that as soon as you install it and you start the server you will see that you have now an application ready to go. So not only do you not have to worry about getting open source libraries yourself, now we can actually download them for you through this depository, or the plugin, sorry, I should say. But also you'll have the sample code that you can use as a starting point for your developer, for your development.

So going down the list you'll see, for example, PrimeFaces. You'll see Lift. You'll see ICEfaces and so on and so forth, and Spring. What I would like to also mention here is that if you look at this list, this list is going to continue to grow. So don't come here once and assume that this is only the only list that is available. We're going to continue to add more libraries as we see fit and as we hear back from you guys saying, you the customer saying that you want more of these to actually also be available for download and in sample format. So kind of make it a habit to check this particular Eclipse plugin when you come in. To just literally say I'm going to install it just to see what's out there. If you go to the wasdev.net, W-A-S-D-E-V.net, which is the website or where we keep the Liberty Profile documentation forum samples, you will see access, you will have access to the repository also. So you can download the open source libraries and the samples directly from there if you are not interested in downloading them through the plugin.

In this instance, I'm going to click Next. And I just want to show you how it looks like. In my case I picked, for example, Hibernate. If I do Next, first you're going to accept the license terms and agreement. And you go Next. And you will see that it will tell you exactly—Of course it will ask you for a destination to install the Liberty Profile. But notice that what it's going to install here is the Liberty Profile runtime. Of course this is beta. Once we are in GA mode, this could be GA. And the HibernateSample.jar. Now what that contains is the sample code and the actual runtime for Hibernate libraries. And these will be fully installed. And all you need to do is literally start the server and create the server and you will have the application up and running. And you can just start running it right away. That's how simple and easy we're making things for you.

All right. So let me skip over this. In my case, I can say that I already have the Liberty Profile installed. In fact, if you look at it, it's located in the V85NextLibertyBeta2Eclipse. And I'll show you why I'm showing you this in a second.

So I'm going to go Next. Again, I selected this. I'll go Next. Now in here I'm going to create a server. I'm going to call it, let's say, it's FantasticServer. I'm going to click Next and I'm just going to say Finish.

Now this is it. This is all I needed to do to actually create the server. Now I don't know if you were paying attention here. But notice that now that I, before I start the server I want to show you the layout of how things look. So if we drill down into the file system. So this is the directory by which I have Liberty installed. This is how the Liberty runtime looks like. You have the libraries that contain all the OSGI bundles. You have the bin directory that contains the commands to start the server, for example, if you're doing it outside the tool. And also you have the user directory, which is really the directory that is completely yours. IBM will not touch this directory whenever we do any updates as if this all contain user information. If you click down on it, under servers you will see here is the FantasticServer that I just created it. Notice that you have apps directory. This is just simply for you to centralize the applications if you want to put them in one place. But you also have this dropins directory. Dropins directory is a monitored directory that allows you to drag and drop your application so that you can have it installed without

any effort. And I will show you a sample of that in a minute. So I'm going to keep the directory open on dropin, so I can drag and drop example application that I have prepared for this particular purpose.

So now let me show you how the runtime looks like. If you expand it again, I haven't started the server yet. And all I want to show you in here is literally when you double click on the Server Configuration. And this is going to bring up the server XML file. So if I click in the source, this is how it looks like. I mentioned the features. This is the Feature Manager where you can add more features dynamically as you need. Remember when I showed you the list of all the features that we have per edition, this is where these features go in. If you click on the Design tab and see how easy it is. Click on the Feature Manager. If you come here and click Add, you will see this is the list of all the features that we have. Now in this particular instance, I have the ND edition of the Liberty Profile. And hence I have the clustering capability, as you see in here in these features. Here's the collective, the cluster. Of course you have everything else from ejbLite, which is part of the Web Profile. Blueprint, Bean Validation and so on and so forth. And I'm just going to click, let's see, jaxb, for example. Notice that if you go to the source you'll see there's how the feature got added into jaxb.

Now I'm not going to save anything right now because I want to start the server just to show you how fast the server starts. And then we'll make some changes and we'll go from there. So if I go in here and I click Start, and now the server's going to get started. And voila. Look how long it took. The server got started in a really, really fast. And you probably noticed how fast it took the server to start on my system. So, I mean, this is really incredible how I was able to get an application server created. From an Eclipse plugin I could point to the WebSphere runtime to download the Liberty Profile. It's only about 50 megabytes or so. So it's going to be really fast to download and install. Beyond that, I created the server and I was able to start it up.

Now let me show you the pieces about making changes. So let's say if I go into the feature manager and I do Add. And like I said, I just want to pick anything. I just want to show you how as soon as you save—And pay attention how I made a change right now and that started the beanValidation. If I click, it will ask to save it. Notice that it automatically went into effect and it took 0.78 seconds. Now I know that this is within the runtime or within the Eclipse plugin. But notice that as soon as you save it, even if you are not within Eclipse, if you just simply start the Liberty server, all this will be dynamically done for you, to just give you a couple of examples. And I really encourage every single one of you to kind of play with it yourself to find out exactly what capabilities it has.

So if I click on the Server Configuration, for example, you will see that if I want to install an application, I click on Application. And now you can install it that way. Or if I want to go ahead and create a data source, just click Data Source in here. And you'll see now here's you can create a data source of whatever you want. So it's really straightforward and easy for you to do. Simple for you to do your configuration. And everything that

you do from a configuration perspective—for example, let me just add anything in here—you'll see that it will be added right away for you in the XML format.

All right. Now let's move on to the next thing. Again, I'm not going to save it in here. What I'm going to show you at this point is I will drag and drop my application. Remember this is the folder that I created that was under the FantasticServer called dropins directory or dropins. And this is my sample application. It's just a simple servlet in JSP. So I'm going to drag and drop. And I would like for you to pay attention to the output screen right here because this is where the action's going to take place. And you're going to see how it's easy to install. So drag and drop. And I'm going to do a copy. And notice that right away now I have an application up and running in 1.083 seconds. This is really great and fantastic. And now if I take this URL, which is where things are installed, and I'm going to show you how I'm going to run it. And now if I go in and do WorkingServlet, and notice now here's I have an application that is up and running in no time. That I was able to install an application server, install a plugin, pour into the runtime, and download and install the runtime for the Liberty Profile, create an application server in no time, start it up in lightning fast speed, and drag and drop my application and install it.

Now imagine what this can do to your environment and to your shop from a productivity perspective to your developers. Again, my name's Soloman Barghouthi. Thank you so much for listening to this demo. And I look forward to hearing your comments on it. And please feel free to contact me. My contact information is available as part of the webcast. And let's go try Liberty. Thank you so much. Bye bye.

Michele Choate: All right, Soloman, thanks very much for taking us through that demo and also the update before that. And great job. I think it's wonderful to have Soloman on the line since he's from the development lab and was a release architect. So he is available for questions if anyone has a question. You'll see a green Q&A button in the bottom left of your screen. You can click on that. And there's also a content button out there that you can click on the get Soloman's presentation and download it to your PC. So while we wait for your questions, we have a couple for you. We want to poll the audience right now to find out, first, what version of WAS you're running. And if you're running more than one version, you can check them all. So we'll go ahead and start the poll to ask you that question. What version of WAS are you running in production? And we'll go ahead and show you the results once you all vote on that. And again, if you have a question go ahead and queue those up in that, by hitting the Q&A button on your screen. So what is the result of our poll? What versions of WAS is everyone on? Takes a couple minutes for the tally to happen. So pulling that up now.

And as Soloman said, WAS 8.5.5 will be available on June 14. And if you are a WAS customer, under Support you can download that when it GA's on the 14th. And otherwise you can get it still on wasdev.net. And in case you want to look at the other things you can download, you can Google WebSphere Developer Works and see the other things that are available for you to download like the Worklight Studio that we'll

talk about next week when Steve is back and he's going to take us through mobile development. The Worklight Studio is out there for download.

Do we have a tally yet on our first poll? All right. So good. And let's go ahead and—So that's most of you are on WAS 7. But we have quite a few on WAS 8 and still some on WAS 6.1, which goes out of support this September.

So let's go ahead and poll the second question. For those of you on WAS 6.1 or interested in knowing its—Think the next question is… Yeah. Have you begun migrating yet? For those of you on WAS 6.1, have you begun migrating yet? Because WAS 6.1 goes out of support September 30 of this year. So we want to help you get migrated to one of the later versions, hopefully WAS 8.5, which as Soloman said, first came out last June. And we had our service release, which included some function that Soloman mentioned that will come out in a couple days. So let's see the tally on that. Just a simple question. Yes, no. Have you begun migrating? And then hopefully once we see those—Yes, 50… Wow, that's funny. 50/50.

All right, so we have some questions that have come in, Soloman. The first one is are there plans to add JCA support to the Liberty Profile?

Soloman Barghouthi: All right. So can you hear me okay?

Michele Choate: Yep.

Soloman Barghouthi: Yeah. So JCA support, among other items, are some of the things we are looking into. And then this is as much as I can talk about publically. If this is something that you want details on it, I recommend that you contact your client rep and they can get you ahold of myself or somebody else in the lab where we can give you more details about our future plans.

Michele Choate: All right. And somebody else. What is the difference between a new Liberty collective and a full WAS cluster?

Soloman Barghouthi: All right. So, and the reason we named it collective rather than continue to use the same name as you're used to before, is that it's a bit different. So in a way think of the collective, for those of you familiar with the application server, as a cell. So the collective is just a thing that you can manage multiple Liberty servers. These servers could be standalone servers or they could be clusters of Liberty servers. And this collective will have what's called a collective controller. And again think of the collective controller from, if you are a WebSphere full profile user, as AD Manager. So this is the thing that manages all these standalone Liberty servers or the Liberty clusters. Hopefully that makes sense to you. If it doesn't, our documentation explains it in great details. Or feel free to shoot me an email and we can have another session maybe with your company on this where I can drill down in more details on it and show you examples and downloads of it.

Michele Choate: Right. Thanks, Soloman. And you talked about never restarting. Somebody asked are we including JRebel?

Soloman Barghouthi: No, we're not. We're not. There was an announcement couple of months ago on JRebel that it starts supporting the WebSphere 8.5 Liberty Profile. The capability that we're talking about with never restarting, this is something that we gained as part of us using the OSGI framework. So JRebel is supported, but JRebel does not ship with WebSphere. We're just simply using straight OSGI technologies to do that. And I bet if you Google JRebel and Liberty, you'll be able to find exact details on it. But it is something that is fully supported by JRebel also, if you are a JRebel user.

Michele Choate: Okay. And another question someone asked. Does the drag and drop work with EAR files as well?

Soloman Barghouthi: Yes, yes, yes. So you have three kind of options to deploy in the Liberty Profile. You can use a WAR file, an EAR file or an EBA file. And the .eba is what you use if you're writing OSGI applications. If you've heard of the OSGI blueprint programming model, this produces an EBA extension. So, yes, you can use any of these three and it will work in the Liberty Profile in the dropins directory.

Michele Choate: Okay. And last question is you mentioned that something is free to download. So the question is what is free to download? Liberty Core or regular WAS? And where do you get it?

Soloman Barghouthi: Oh. What's free to download is everything that is used for development is free to download. And this is by the way have been, this is not something new in WebSphere. You could even, in previous releases of WebSphere, if you are using WebSphere for Developer edition, you can get that for free. Of course you only pay for support if you are interested in that. Now where you get the Liberty Profile for developers. I showed you in the demo an example of how you can use the plugins to do it. But you can also download it directly from wasdev.net. So if you go to wasdev.net there will be a download tab. If you click on it, it will give you the option to download the latest, basically the beta that's available at that point. Or you can give you the option to download the actual GA release. So if you do it today, you will get the beta and you will see the beta and the 8.5 that GA'd last June. If you do it on Friday, which is the 14th of June, you will actually end up seeing basically just the one that we just GA'd, which is the 8.5.5 release.

Michele Choate: Great. Okay. And as I was mentioning during the polling questions, if you want WAS for Developers, which is basically WAS but licensed for use on a developer workstation for free, you can download that. Just Google developerWorks, no space, and WebSphere. And you'll get the developerWorks site where you can download WAS for Developers for version 6.1 or 7 or 8 or 8.5. I think we started with 6.1. And there's other stuff out there you can download as well on developerWorks. All right. I think that is all the questions that we had. Any last comments, Soloman, that you want to add?

Soloman Barghouthi: No. I just want to again stress the fact that hopefully you saw how easy things are in terms of getting things going. For those of you who came and saw us talk live about this in the actual website, I mean, the Developer Day events, by the way, these are still going on. And we will have more time actually during these events than we do over the webcast. You know, keep an eye for an event near you, where you will see us drive the demo live in front of you. And of course you get to ask questions as I'm doing this work so that you're not having to wait for it until the end to ask me questions on it. And typically the demos I do is literally driven by questions from you. So it'd be anything goes. It's not basically I'm staged. So, you know, again, Michele, maybe you have couple of words on where they can find the information about the other…

Michele Choate: Yeah. You will get a follow-up email from after this webcast with the link to the live Developer Days events. And just so you know, we have them planned for San Francisco July 30, Chicago August 20, Cleveland September 12, Philly September 17, and Nashville September 24. So if you are in one of those areas, I'd encourage you to attend that. And because I think you always pick up more when you're onsite and able to see this, all of this stuff again. This will also be available on demand. We've been recording today's presentation and we recorded last week's as well. And all of that is available for 12 months. So if you want to hear it again or if you want to suggest it to a peer, you can forward them the registration information and they can listen in.

So I just wanted to thank everybody one last time for joining our webcast today. I hope you found Soloman's presentation and demo of value. And I hope you can join us again next week, next Wednesday at this same time for Steve's next presentation where he will go into developing mobile applications. So we've been talking about how important standards are. That's what we talked about last time. And this is we'll be talking about standards based mobile development and hybrid and native development for mobile devices as well. So thanks, everyone. This concludes our webcast for today.

[END PRESENTATION]