Road Ahead - ArcGIS 10.1 for Server

Ismael Chivite, Anne Reuland, and Mohammed Hoque cover the upcoming enhancements and capabilities for ArcGIS 10.1 for Server.

http://video.esri.com/watch/676/road-ahead-_dash_-arcgis-101-for-server

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Video Transcription

00:01 My name is Ismael Chivite. I'm the ArcGIS Server product manager.

00:04 Maybe I'm the product manager for ArcGIS for Server, because we change the names from time to time.

00:10 And with me is Anne Reuland who is a product engineer for ArcGIS for Server, lead engineer…

00:16 …and Mohammed Hoque who also works on the Server team.

00:19 And Mohammed is going to help us with very cool demos.

00:24 Here is kind of an agenda.

00:25 We'll start with talking about the vision, why…what do we think about building GIS server technology…

00:32 …and why we do what we do.

00:34 And then we'll talk about the new architecture in 10.1 which you'll see that is different.

00:40 We'll go a little bit into the details of installing and configuring ArcGIS Server so you can see some changes…

00:47 …then describe how you publish GIS servers, GIS services into the server.

00:53 And then we'll cover functional enhancements, kind of a miscellaneous collection of demos…

00:58 …showing some interesting new features in 10.1

01:01 And then a little bit about the cloud and hopefully a lot of time for Q&A at the end.

01:07 The vision for ArcGIS Server, we in the team think about ArcGIS Server as a central component of the ArcGIS system.

01:15 It's a component that sits in the middle of things.

01:17 It interconnects the different components of the ArcGIS system.

01:21 Essentially we think of it as a web services machine, kind of a black box where you put things in and you get web services out.

01:29 And web services are interesting because any client that understands HTTP can access these web services.

01:37 A web browser, a mobile device, even workstations with ArcGIS Desktop understand web services.

01:42 And that's great because that's how we can deliver GIS capabilities into any one at any time.

01:51 Really this black box is a GIS server, a server.

01:56 So the things you put into it are GIS resources like maps, data, images, geoprocessing, models…

02:04 …and the web services you get out are map services, geoprocessing services, image services, and so on.

02:10 These services use different protocols so people can communicate with us over HTTP, REST, SOAP, and also OGC specifications.

02:19 That's kind of the idea.

02:20 All what we do in Redlands to…to build this GIS server technologies…

02:26 …to focus on, what can we do to make these web services machine better?

02:30 What can we do so these web services are faster? So they are easier to publish. So they are more resilient…

02:36 …so you can administer and configure this black box much easier.

02:40 And that's what 10.1 is about.

02:43 We have improved many aspects of these machine to make web services better.

02:49 In this session, we are going to talk just about the web services machine.

02:54 We are not going to talk about the clients, like what is new, what's coming in the JavaScript API, or that we will not cover.

03:00 There are other sessions who cover that.

03:02 We will not talk about databases, like what's new in the geodatabase and so on.

03:07 There are other sessions that cover that.

03:09 So this is really about the GIS server itself, right? The web services machine.

03:19 One area where we are putting a lot of energy in this development cycle is performance.

03:25 We want to make these web services faster, and there are two aspects that are making this possible.

03:30 One is that the server in 10.1 runs as a native 64-bit application, which gives us kind of performance improvements across everything.

03:41 Just, you know, we get a little bit better because we kind of use more memory in the machine and so on.

03:47 But the difference is not radical, okay?

03:49 The radical changes performance-wise come through different code optimizations.

03:54 What are the most popular GIS operations that you use?

03:56 I create a render map services.

04:00 I geocode. I do service areas. I query the data. I identify features.

04:05 Those are different GIS operations that we are optimizing to get better performance.

04:10 And you saw yesterday, I think, how many of you were in the plenary yesterday?

04:14 You saw a demonstration with drive times and queries, dramatic performance improvements.

04:20 Is everything so fast like in the demonstration?

04:22 No, but that's our aim to kind of improve everything there.

04:29 It's quite difficult to get things to run so fast.

04:34 So I just want you to know that we are working very hard.

04:36 And actually I personally think that, if you install 10.1 and there are things that are slower than in 10…

04:42 …you can freely call tech support and say you have a bug in the system.

04:46 That's the way I look on these things, okay?

04:52 We are delivering a new architecture in 10.1.

04:57 The idea with this architecture was to simplify the GIS server.

05:01 Let me explain what I mean by that.

05:03 Today, when you install ArcGIS Server, you need to be aware of the many components that this GIS server is made of…

05:11 …the web tier, the server object manager, the server object container, the SOM account, the SOC account, the web services account.

05:20 You know, there are many components that made a GIS server, and they still exist in 10.1.

05:25 We call them…we actually don't call them anything.

05:28 We are hiding them from you. That's our big change.

05:33 In ArcGIS Server 10.1, we still have these workers, these server object containers…

05:37 …and we have pieces that kind of load balance across the different servers, but they are

hidden to you.

05:42 You won't see them in the setup.

05:45 In 10.1, when you install ArcGIS Server, you install a fully functional component…

05:50 …that has the load balancing components and the workers and even the web server in it.

05:56 It's a self-contained server.

05:59 You can put together different machines that have GIS servers to create kind of a cluster or a farm of GIS servers…

06:05 …but there are no roles in this architecture.

06:08 It's a peer to peer architecture.

06:10 With every machine that is working with these…within these, we call it ArcGIS site, is equal.

06:16 They all have the same services, access the same data, play the same roles.

06:20 If one of the machines goes down, well, so what?

06:24 There are others around, other peers that can keep doing the work.

06:31 So it's simpler because we hide the internals of how it works.

06:35 It's also simpler because it becomes a pure web services server.

06:42 You know that today in 10, in 9.3.1, you can access your server via DCOM or via…and also via web services.

06:49 In 10.1, DCOM is gone, and for those of you who don't know what DCOM is, don't worry, because it's gone.

07:00 But for those of you who know what DCOM is and maybe you went through some nightmares with the configuration of security…

07:06 …with DCOM _____[Unintelligible], you know that this is a good thing, isn't it?

07:14 You might be wondering how do I administer my server in 10.1 if I cannot access it through DCOM…

07:20 …because this is how we administer in the past.

07:22 Well as I said, it's a pure web services server.

07:25 If you access a map, you access a map through a web service to, let's say, get an image back.

07:31 If you access a geoprocessing service, you access it through that web service end point.

07:35 Administering, the same.

07:36 You want to access the logs, HTTP.

07:39 You want to add a new machine to your cluster, HTTP code.

07:43 Do you want to create a new service? You create a new service by calling a web service that creates a map service.

07:49 You get the idea?

07:50 Very powerful, because now that means that, hey, if I can do everything through HTTP…

07:55 …I can script many things I couldn't script in the past to administer my server…

08:01 …to reallocate map service instances across the different times of the day, and so on.

08:06 Very powerful.

08:10 You'll see that this new architecture is going to make the installation of ArcGIS Server much, much simpler.

08:17 So Anne is going to go through this process so you can see what it feels like installing 10.1. Anne.

08:29 Okay. Thank you, Ismael.

08:31 I have some screen captures showing the ArcGIS Server 10.1 setup on a Windows machine.

08:36 And I want to walk you through that and highlight some of the things that have changed.

08:40 We get a lot of feedback about the install.

08:43 Whether we hear about it through our formal tech support channels or talking to you here at the conference…

08:48 …or listening on the forums, we know that this is an area of the software that you'd like to see us make faster and make easier.

08:55 And many of the changes that went into 10.1 allowed us to do that.

09:00 So let me walk you through this.

09:01 Here's the familiar initial welcome screen for ArcGIS Server.

09:05 Once you progress through that and through the acceptance of the license agreement…

09:10 …the first panel that you're interacting with is the Select Features panel.

09:14 So this goes back and shows you something that Ismael just highlighted.

09:18 There's one feature. It's the GIS server and you're getting everything in that one feature.

09:23 You're getting the GIS server, you're getting a built-in web server, you're getting support for SOAP and REST…

09:29 …you're getting the manager that you're going to use to administer services and the server…

09:34 …and the services directory which you can use to discover URLs when you're developing

applications.

09:39 So prior to this, there were different features, and you had to choose them, and you had to decide which machine to put them on.

09:45 And we've eliminated all that and said, there's one feature, it's the GIS server, you're going to get it…

09:50 …and this server's going to be running when you install it.

09:53 The only subfeature of the install that you're going to see is this one that you see here in my picture, this .NET extension support.

10:01 This is specifically an optional feature for .NET developers who are developing and deploying server object extensions.

10:09 So if the machine has .NET framework 3.5 on it, this feature will be enabled and…

10:15 …really, it's only applicable in that case that I just mentioned for .NET developers.

10:19 You'll also use this screen to confirm the installation of ArcGIS Server.

10:24 From there, you're confirming the installation of Python, and at 10.1, this is a 64-bit version of Python.

10:31 Next step is to set up the account that ArcGIS Server is going to run as.

10:36 So on the Windows machine when you go into the Windows services panel, and you see the ArcGIS Server there…

10:42 …this is the account that that service is going to run as.

10:45 This becomes important when you're setting up data or you're setting up multiple machines.

10:49 You need to know what account that service is running as.

10:53 This can be a local account or it can be a domain account.

10:56 If it's a local account, it can be an existing local account or it can be a new account and the install will create it for you.

11:03 The important note about this account is that it does not need to be an administrator on the machine.

11:09 So the setup isn't going to put it into the administrator's group…

11:12 …and you're not going to be asked later to put into the administrator's group.

11:15 It's not a requirement at 10.1.

11:18 So by default, this local account called ArcGIS is created.

11:22 And once I put in a password, I can go on to the next panel.

11:26 Optionally, I can choose to export that account information into a config file…

11:31 …and hold onto that config file if I want to use it for subsequent installs and whatnot.

11:36 After that, you've done everything that you need to do to begin the installation of ArcGIS Server…

11:42 …and we can now launch the install.

11:45 So a few more points that I want to make about the install that can't come clear in those screen captures…

11:50 …are that there's no install dependencies.

11:53 So prior to this of running the server setup, you would have to check for, say, IIS dependencies, things of that nature.

12:00 All those things have been eliminated, making it much easier to get going.

12:04 The other thing that you can't see from my screen captures is that the setup time has been cut in half.

12:10 The setup time really wasn't delayed in previous releases by just the laying down of the files…

12:15 …it was the editing of the Windows registry that was taking so much time during the install.

12:21 Well, we don't change and modify the Windows registry at 10.1, and once all of that was eliminated from the install…

12:28 …across all of our test machines, we saw the setup time get cut in half.

12:32 So on my machine, it was taking about 8 to 10 minutes before that happened, and now I see it completed in about 4 minutes.

12:38 So there's been a big change in terms of the speed of getting the setup done.

12:43 Final point is, and we've been making this and you've heard us say this, ArcGIS Server 10.1 runs on a 64-bit operating system.

12:51 So if you attempt to run the 10.1 setup on a non-64-bit operating system…

12:56 …you're not even going to see that Welcome panel that I showed in my first slide.

13:00 Instead, you're going to get a message notifying you of the requirement for the 64-bit operating system…

13:05 …and once you've confirmed that message, the setup is going to exit.

13:09 So there's no fuzziness there. It's only 64-bit.

13:13 Okay. Now after the setup completes, the next step is to launch immediately into the software authorization wizard…

13:19 …to authorize Server and then to go into Manager to do the final step, which is to configure

the site.

13:26 So the software install completes, it launches the authorization file where you would pick up your provisioning file…

13:33 …to authorize the software, and then once the software is authorized, the next step is to go into ArcGIS Server Manager…

13:42 …and configure the site.

13:44 So let me go ahead and go over to ArcGIS Server Manager, which this is a new manager, and I'll be showing more of this soon.

13:51 And I'm at the point on this machine where the software's been installed and authorized.

13:56 And I'm at the completion step for the server setup.

14:00 Either I can either at this point create a new site or join an existing site.

14:05 So create a new site is what I want to do on a new install on a new machine.

14:10 The join an existing site is a scenario that you would follow through with…

14:13 …if you already have a machine where you've installed ArcGIS Server…

14:17 …and you're taking another machine where it's been installed and joining it to that site.

14:22 So that's not our scenario. Our scenario is that we've just installed the software.

14:25 So I want to take you through what you're going to do when you install it and go ahead and create the new site.

14:31 The first thing I need to do is specify a user name and password that's going to be considered the ArcGIS Server administrator account.

14:39 I'm going to use this to log in to Manager. I'm going to use this to do anything administrative level against the server.

14:45 The next step is to configure the ArcGIS Server directories.

14:49 This is a familiar step from previous releases.

14:52 The directories are where we store the cache, if you generate a cache, or if you're running GP jobs, the GP results, images…

15:00 …that's all stored in ArcGIS Server directories, and you can choose this default location on your C drive or change it right here.

15:07 The configuration store is new at 10.1.

15:10 This is the location where we're storing files that are important to the configuration and running of ArcGIS Server.

15:17 And same thing goes. You can accept this default, or you can change it here on this panel.

15:22 Clicking Next through that, I'll click Finish, and now the Create Site is beginning.

15:28 So what the Create Site is doing, it is creating that admin user name and password that I specified in the first panel here…

15:35 …it's creating those server directories, and it's creating the ArcGIS Server configuration store and populating the configuration store.

15:45 At the end of this, the server's going to be ready to be used.

15:49 So now that you've seen the install and the software authorization and this step in Manager to create site…

15:57 …you'll notice that there's no postinstalls.

16:00 So earlier when I mentioned that there's so much feedback that we get about the install, it's really about the postinstall…

16:06 …folks being uncertain about when to run it or they know when to run it but it doesn't complete successfully.

16:13 So at 10.1, we've been able to eliminate the postinstall entirely, and we've been able to do that because of the changes that are in 10.1.

16:22 Either the things that were needed to be done in the postinstall are no longer required…

16:25 …such as DCOM, which we already mentioned, or, we've moved the options.

16:30 The install is now where you set the account, there's one account, and then the Create Site is where you set up the directories…

16:37 …another step that was in the postinstall.

16:39 So no postinstall at 10.1.

16:42 Alright. So the Create Site is complete, and it's now asking me to log in with that administrator account.

16:48 And I'm in, and this ArcGIS Server is ready to be used.

16:53 And the next step I want to do is actually start publishing some services and using the service…

16:58 …but we're going to pause briefly here and just show you some diagrams of the architecture…

17:03 …what we set up, and Ismael is going to reiterate a few points there.

17:07 Okay. Thank you, Anne.

17:12 I just want to reiterate a few points.

17:15 What you saw is that the server is not made up of many pieces.

17:20 It's just one, self-contained box, the GIS server.

17:25 The GIS server has its own web server associated to it.

17:30 You probably don't know that, but by default, we use port 6080 for it.

17:35 The web server is part of the GIS server installation.

17:39 You also noticed that there are some components that before were installed in the…in a third-party web server…

17:49 …in this case, like Manager.

17:50 The ArcGIS Server Manager application which is the web browser-based administration tool for server…

17:55 …is also included with your GIS server installation.

17:58 You don't need IIS or Apache 2 to host it.

18:02 You also noticed that Anne was configuring server with two very key directories.

18:07 One was the, we call it…

18:10 Configuration store.

18:12 The configuration store, there you go.

18:13 The configuration store, which is where the server goes…

18:17 …and looks for all the different services that need to be started in the GIS server. Okay.

18:25 And there is another key directory which is the ArcGIS Server…ArcGIS…let's call it ArcGIS Server directory, right?

18:34 Is that how we call it?

18:36 Directory.

18:37 And this is a directory where we store things like the map cache, where we put the output of the geoprocessing jobs, et cetera.

18:44 This is key to understand what these directories are because you know that instead of having three Windows accounts…

18:51 …we have just one to run the server.

18:55 It's the ArcGIS Server account.

18:58 This is the account that ArcGIS Server uses to access the configuration store and the ArcGIS Server directory.

19:06 And other than that, the only account that we need is the ArcGIS Server Manager account…

19:12 …which is the account that people use to access the administration tool.

19:16 Is this making sense? Yes. Okay.

19:20 In the next slide, I have a diagram that represents how you would normally configure a farm of GIS servers in 10.1.

19:30 It's the same concept.

19:31 You install, like Anne did, ArcGIS Server in separate machines…

19:35 …and you put them together under, what we call is an ArcGIS site.

19:40 These machines, these GIS servers, are going to communicate, as you can see here, over TCP/IP to load balance…

19:46 …and to do the load balancing across the GIS server tier.

19:52 You can see that here I have actually integrated my ArcGIS Server with an external web server…

19:58 …and you may want to do that for many different reasons.

20:00 One of them is, hey, I want people to access my web services through port 80. Right?

20:05 So you have IIS. You install this little component called the Web Adaptor.

20:10 And it's kind of like a proxy service through which all requests come port 80 and they get reelected into port 68.

20:18 Is that clear? Yes.

20:23 People in the GeoLounge are saying, are saying yes.

20:31 Let's talk about the publishing experience.

20:33 Okay. I have my server running. How do I publish services?

20:37 This has changed a lot since 9, I mean since 10.

20:41 Here's the idea.

20:42 You have a GIS analyst who's working with ArcGIS Desktop…

20:45 …and this person normally has access to the data that ArcGIS Desktop is using, right…

20:50 …the data in your maps, the data in your geoprocessing models.

20:53 The challenge is to move this data and GIS resources into your GIS server so you can create web services.

21:01 It's a challenge because often the server lives in a separate network.

21:05 Maybe there is a firewall in between the server and the GIS analyst.

21:10 Sometimes the server is even running in the cloud.

21:13 So how do I get things across?

21:14 Well, I ask the IT department for permission to pinch a hole in the firewall.

21:18 I move the data, I remote desktop to the machine so I choose all the paths and I fix everything and then I publish.

21:25 Well it's possible, and many of you are doing that.

21:27 But, you would agree with me that it's not that easy, is it?

21:32 So the idea with publishing in 10.1 is to simplify this process as much as possible.

21:37 You still can follow this procedure.

21:40 But there is a new technique for publishing where you can use ArcGIS Desktop to create a package.

21:49 And this package can contain the data that the GIS resources use.

21:54 So the idea is that you create this service definition, which is a big file…

21:59 …and the service definition is sent across to the server via port 80 or port 6080, the HTTP.

22:08 So you are telling the server, publish this map. I am sending the data along with it.

22:14 We lay down the data in the server and we launch the service.

22:21 So, these service definitions are a completely new concept, and these service definitions are filed…

22:26 …and you can actually uncompress and they may include the data or not.

22:30 It's your call.

22:34 Let's have a look at how these really work. Let's look at a demo of publishing. Okay.

22:41 Thank you, Ismael. I'm going to leave Manager for a moment and go to Desktop.

22:45 And here I have a map open that I'd like to publish to the server.

22:50 So we've been talking quite a bit about the publishing experience, and I'm just going to walk through that and show a bit more detail.

22:56 The publishing experience in 10.1 in Desktop begins from the Share As dialog…

23:02 …and I'm going to choose to Share As a service, and I want to publish a service.

23:08 First thing I need to do is make a connection to my ArcGIS Server.

23:13 There's three types of connections to a GIS server.

23:16 You're either using it…using the services, publishing, or administrating.

23:20 I will be publishing.

23:22 Now I need to specify the URL to my server. I'll specify that here.

23:30 And publishing requires that I put in the admin user name and password.

23:36 Now here is the option that we have been talking about, checking the copy data to the server when publishing option…

23:43 …means that, when I publish this service, I want the data to be picked up, packaged up, and included with the service.

23:52 So that, yes, with the service definition.

23:55 So, let me go ahead and confirm that now.

24:00 For those of you who've used Server, and likely this is a scenario that you'll be using once you get 10.1.

24:05 Okay, so I've made the connection, and I'm going to accept the defaults for the service name and also the default for the folder.

24:12 At this point, I'm in the service editor, and many of these options here along the vertical panel should look familiar…

24:19 …because these are the options that we've had in previous releases.

24:22 I'm going to point out a few things that have changed.

24:25 In the Pooling tab, we don't support nonpooled services any more…

24:29 …so the Pooling tab has changed just to allow you to set up your mid and _____[Unintelligible]…

24:34 ….and your timeouts for your pooled services.

24:36 The other thing that's changed is that, now upfront during the publishing process, you can define the caching tiling scheme.

24:44 Previously, you had to publish and then come back to define the caching tiling scheme.

24:48 You can now do that up front during publishing.

24:51 And then finally, the item description is a new tab.

24:55 You can see that I have some of the required information for the summary and the tags already populated here.

25:01 That's because that information has been authored into the map document properties.

25:06 Because it's there, it's flowing through here into the item description.

25:09 If it weren't here, I'd have to type it in manually.

25:12 But a best practice is to persist it and include it in with the map document properties.

25:17 Alright. So now that the service properties have been set, let's go ahead and analyze this map document…

25:25 …and ensure that it's ready for use on the server.

25:27 So I'll click Analyze, and everything looks okay here.

25:32 I am getting one warning, a medium-level warning, but I've looked at this warning…

25:36 …and determined that it's okay for my particular map document for the server.

25:40 Alright. So now I am ready to publish.

25:44 So what's happening here…yes, you can see somewhat through the status dialogs is that the data is getting picked up…

25:51 …it's getting packaged up, and it's getting included in the service definition…

25:56 …and when this publish completes, I will not have done any of the work to get the data to the server.

26:03 I'm having the publishing process do that for me, all because I checked on that option while I was making the connection.

26:11 Now while we're here and I talked about the analyze, let me talk about a few things with that.

26:15 We have had analyzers for map documents from previous releases, so that is not new.

26:21 One thing that is new is that there are now analyzers for all the different GIS resources.

26:27 So whether you're publishing a feature service or geoprocessing service or an image service, there's analyzers.

26:32 All those analyzers for any of those services and the map services are all there…

26:36 …to help you ensure that you have a successful map service…you have a successful service once it's published.

26:42 They're troubleshooting it afterwards.

26:45 Okay. The publish is done.

26:48 So let me go back to Manager.

26:50 I published it to the root, so I'm just going to click to refresh the root.

26:54 The service is now there, and let me just go right into the properties for it and just draw it up so you can see what it looks like.

27:03 I'll put it just on top of the ArcGIS.com basemap.

27:07 Alright. So that's my service. It's all ready and it's done.

27:11 Now, I want to go back to Desktop, and I'll just open up a different map document here.

27:24 I want to go back to the file Share As option, talk just a bit about this second option, Save a Service definition.

27:31 So I just walked you through this first option to publish a service.

27:35 The idea behind the Save a Service definition is that…

27:39 …you want to do all the work to get your map document or your GIS resource ready to be published…

27:46 …but you don't want to publish it right away.

27:48 So you want to go through and set the editor, go through the editor and set the properties, analyze it, make sure it's ready to go…

27:56 …and then save all of that work so that you can publish it later.

28:00 Maybe you're going to publish it later; maybe you're going to hand it off to somebody else…

28:04 …and they're actually going to publish it to the server.

28:06 That scenario is Save a Service definition. That's what this second option does.

28:12 Takes you through the same wizards that you just saw me go through that resulted in that service getting published…

28:18 …but instead, it saves a service definition or a .sd file to your disk where you chose to put it…

28:25 …and you can pick it up later and publish it in Desktop or in Manager.

28:30 So, I'm going to do that.

28:32 I'm going to pick up…I'm going to go through the publish experience now in Manager…

28:36 …and I'm going to pick up a service definition for that map that I created, stored here on my drive…

28:43 …and you'll see that as I go through here in Manager to publish it, I'm getting some basic properties about it…

28:48 …the name and the location.

28:50 This is all being populated by what was saved in the service definition, as well the capabilities…

28:57 …and now, I'm publishing that service starting with the service definition.

29:03 This service definition, I did the same thing as you saw me do with the publish.

29:07 I chose to include the data with the service definition.

29:11 So I didn't take any of the extra manual steps to put the data in for the correct location on the server.

29:17 And let's go through into the same thing here and open up that service and have a look at it.

29:25 I'm in just a bit too far for ArcGIS.com, so there it go.

29:29 It's in the Cayman Islands, and my service is now published.

29:32 So that was the scenario starting from a service definition.

29:36 Okay. Now that I've shown you publishing in Desktop and publishing in Manager…

29:43 …this manager, of course, is new, you're seeing this.

29:45 And so I just want to walk you briefly through some of the changes that are here in Manager.

29:50 Manager is not just for managing services. It's also for administering your ArcGIS Server site.

29:57 So here from the Site tab, you can see that I have options to change the server directories…

30:02 …so I set this up front during the create site, but I can also come in here later and edit any of these.

30:08 Same thing goes. I can edit the location of this configuration store, these files that are important for Server.

30:15 I have an ArcGIS Server site with a single machine set up.

30:19 You saw me create that site and it's this one machine.

30:22 But, you can add more machines to your site, and you would do that here in this dialog.

30:27 You can add them and you can also administer them here.

30:31 If…if you have a server object extension developed and you want to deploy it, this is the dialog to deploy your server object extension.

30:39 It will list any deployed server object extensions and will allow you to deploy another.

30:45 The Software Authorization tab allows you to review anything that was done during the software authorization wizard at the beginning.

30:53 Then, of course, you can also configure security for ArcGIS Server and Manager.

30:58 The 10.1 security model follows the same model as at 10.0.

31:03 The only difference is that we've changed the wizard and we changed the dialog to step you through the different options.

31:11 So we saw that we got a lot of feedback saying, okay, well you have those options, but I'm not sure what goes with what…

31:17 …which properties go with what.

31:18 We now have a wizard where you choose that up front and walk through that, and we'll be showing that in some other sessions here.

31:25 And then finally, ArcGIS Server Manager is also for looking into the log files, both for setting them and for viewing them.

31:32 So by default, the ArcGIS Server log level is set to warning.

31:36 That's a typical level that you'd be running the server at.

31:39 But if you're troubleshooting a problem or you're wanting to, say, look into more details about a particular layer…

31:44 …you can increase the log level to its highest level, which is fine, and save that setting.

31:50 And now what I have to do is go and…let's use the server a bit here so that I can generate some logs.

31:58 So let me go into this service and I'll bring it up again, and now that the log level is set to fine…

32:04 …let me go in and zoom in on this service a bit and pan and zoom to generate some information into my logs.

32:11 Now I'll go back to Manager.

32:13 I want to query the logs at that fine level for anything that's happened recently, say, in the last hour, and update my view of the logs.

32:22 And now I have some more information that I can start looking into.

32:26 I can control and manage these columns here.

32:29 Through the Manage Columns button, I can remove certain columns or, in my case, right…

32:34 …I'm looking for some more information about a particular layer drawing.

32:37 I can add in, say, the Time Elapsed property.

32:41 It gets added onto the end here, but I can pick it up and move it where I need it, and then start doing some more work with these logs.

32:49 And, of course, if I wanted to take these logs and pull them forward either to print them out or to share them…

32:55 …or to put them into another application, I can do that by using this printer-friendly view to go ahead and get that logs output.

33:04 So that was a look at both installing and configuring ArcGIS Server, publishing in Desktop, the publishing experience in Manager…

33:13 …and administering the ArcGIS Server site with a new look at this new ArcGIS Server Manager.

33:19 And, now I'm going to hand it back to Ismael because we want to talk more about the different enhancements…

33:22 ...that have gone into the different GIS services.

33:25 Okay, just...just to wrap up...just some comments.

33:28 She didn't have to refresh the REST directory any more. It happens automatically. Right.

33:36 Second, she was not able to publish an MXD directly. She had to create a service definition.

33:43 You can no longer go to a locator and say publish to server and publish it without creating a service definition.

33:49 That happens with all resources.

33:52 The other one is that she was using managers to look at the logs and so on.

33:57 You could also use, programmatically, everything you can do from Manager...

34:01 ...you can do programmatically through these new REST API for administration of ArcGIS Server...

34:06 ...which we are not going to look into _____[Unintelligible], you know, from an administrative point of view is very important.

34:13 Now, let's talk about some functional enhancements, and I will do this with demonstrations basically.

34:21 Map services...a lot of work went into map services.

34:25 Let me explain what these dynamic layers are about, because I think this is a very, very powerful in different scenarios.

34:32 One of them is when you have large collections of datasets that you want to publish on the web...

34:38 ...today, you integrate a map service, and that map service can hold maybe a few hundred layers at best.

34:45 With these dynamic layers, you can serve thousands of layers.

34:51 The other scenario is when people want to change the symbology of data.

34:55 You probably saw this demo, but I want to go a little bit more into the details here.

35:00 You know this application is pointing to a map service in 10.1...

35:03 ...and lets me change different renderer information from the web application.

35:09 I'm using this little window here.

35:11 This is Firebug, which basically tells me what is going on in between my web browser and the server, so we can inspect the requests.

35:20 So let's have a closer look at this. It's called an export map on the service...

35:25 ...and in the parameters, you can see that we have the bounding box as usual, but also we have this dynamic layers text.

35:33 Now let's go into the services directory where you can look at the same map service in the services directory.

35:40 If I scroll down, you'll see that we have this new option, Dynamic Layer.

35:44 That's new in 10.1.

35:47 If I go to Export Map, you'll see that by default it's going to export the map in the default extent with a different symbology.

35:54 You'll notice that the symbology of this map is yellow but in reality in the web app, you are looking at real thematic maps.

36:00 Let's scroll down, and you'll see that here we have the information for dynamic layers.

36:05 Let's play with that a little bit.

36:07 I'm going to reset the bounding box to something that is not default...

36:13 ...so I will change that parameter and call Export Map Image again, and then the map is centered.

36:20 Now let's go back to Fire...Firebug and let's copy the Dynamic Layers parameter that was sent to the server.

36:30 Scroll down and say copy and get the image again.

36:36 Now you see that it answers with a thematic map. Okay?

36:41 If you look carefully at the information here, you'll see that dynamic layers contains the drawing info.

36:50 And the drawing info is all about, well, what is the renderer I want to use, class breaks.

36:56 What is the minimum value of the first class? What is the maximum value of the first class?

37:01 What is the label and what is the symbol?

37:04 So you can see that we are defining the symbology for the outline and, as well, for the polygon itself, the field.

37:13 And here are even the RGB values for the first class.

37:17 So let's change that to red. This is R, G for green, and blue zero, and this is a transparency.

37:28 Change those values, call Get Again, and these will return the map with one of the classes in red.

37:36 Why is this powerful?

37:37 Because not only you can control the symbology of the layers, you can control which layers

are drawn.

37:44 So, if my map service is configured with 1,000 layers, I can pick any layer and pick and choose in whatever order I want…

37:51 …and display the information.

37:55 So back to the application that said you want to highlight a class.

38:01 You can see that I can highlight a specific class.

38:03 This is also used in dynamic layers.

38:05 I'm telling the server, draw class 1 or class 2 in yellow.

38:10 Give me back the image, and then the application will display it.

38:18 Okay, so let's look at how this is actually configured.

38:23 I go to my server. Here is the map service, and I will look at the services…service properties.

38:31 In the Parameters tab, there is a new option…Dynamic Layers.

38:34 And you can see that optionally you can let people overwrite the symbology of your map service.

38:40 When you check this option, people can change the renderer, but they cannot change…

38:45 …they cannot add more layers to your map service.

38:48 So say you add 10 layers, people can play with these 10 layers and change the symbology.

38:53 The second concept is this manage.

38:56 What this allows you to do is to say, my map service is configured to have access to a number of workspaces.

39:04 And these work…these workspaces could be databases or folders containing file geodatabases, shapefiles, et cetera.

39:12 If I have a folder where I have 1,000 shapefiles, my map service will have access to them.

39:19 So the web application developer can pick from any of the shapefiles, add it to the map service, and change the symbology.

39:25 The great thing is that you can add additional datasets to these folders while the map service is running.

39:34 So say you want someone to upload a shapefile to the server, you put that shapefile into a particular folder…

39:41 …and now from the web application, you can say added, select, you know, filter…

39:48 …you can do queries on that shapefile and so on, which is very powerful, very flexible.

39:54 Let's look at a demonstration now where we're going to see these in action.

39:59 Here we have a web application that has a few layers loaded.

40:03 So _____ [Unintelligible] is going to basically add a new layer…

40:07 …and this layer is coming from one of these workspaces that was defined.

40:12 And there might be thousands of datasets in there, so let's add the parcels, and now the layer is added at the top.

40:22 Let's put that layer down in the table of contents so, again, we build this dynamic layer string…

40:31 …we send it to the server and say, hey, the parcel layer is not on top, it's at the bottom.

40:35 Now let's say, change the symbology of the parcel layer, and then you can pick and choose the symbology…

40:43 …and ask the server again to render.

40:48 And this goes even farther.

40:49 You can say, I want to look at a particular version of this database.

40:55 So you look in the middle, you'll see a section that now has pipes…

40:59 …and if we go back to the previous version, you'll see that they will go away.

41:07 This is something you should think about because it has…it's very useful for many scenarios.

41:13 Combining the server-side capabilities with feature layers and client-side graphics…

41:19 …you can really create very powerful applications.

41:34 Okay, the second…excuse me…the second enhancement is this export web map.

41:40 The export web map is a new out-of-the-box service that shapes with 10.1…

41:46 …and it's useful when you want to let users create high-quality maps that you can take to the printer.

41:57 You also see…so…if you were in the Plenary, you probably saw this demonstration, but we'll go into more detail here.

42:04 I have couple of services, one for the basemap which is coming from ArcGIS Online.

42:10 As you can see, I'm drawing a graphic, and here I have a geoprocessing tool that lets me create a viewshed.

42:18 So I will execute these tools and use this little widget.

42:23 This widget lets me create a PDF file that I can put in later.

42:33 The map styles are preconfigured at map layout documents.

42:37 You'll see in a minute how you can configure these layouts.

42:40 Now the beauty of these is that I can use that map to offer very beautiful layouts with a title, the logo, the scale bar, and so on…

42:48 …and then populate these layouts with the content coming from these web applications.

42:53 I can even force the scale to whatever I want, in this case, 1:36,000…

43:00 …and then I click Print and sends the request to the server to generate this PDF…this PDF file.

43:19 Let me run it again.

43:28 Okay. You see that?

43:29 So here we have dynamic text which I manipulated from the widget.

43:34 We have a typical grid created in ArcMap, a legend, the scale.

43:40 This is also dynamic text.

43:45 If I go to Manager in my server, if I remember the password here. There you go.

43:55 There is a folder called Utilities.

43:57 Whenever you install Server, this folder will be there, and it contains the export web map service.

44:03 This is the one we were invoking.

44:05 This is actually a geoprocessing service, and the geoprocessing service is located in the Install directory of ArcGIS Server.

44:16 This is the service, or actually the tool that is behind that service.

44:21 And this tool has a parameter which is pointing to a folder.

44:26 In this folder is where I put the different _____[Unintelligible] map layouts that I want to use for users to pick from.

44:34 You can see that I have two MXDs.

44:36 I can add as many layers as I want here, and they will show up in the list for users to pick from.

44:44 And really a layout is nothing but map…let's switch to the Layout mode here.

44:54 You don't even need to have any data, although I have it here.

44:57 You see, that's…that's pretty much all you need to do.

45:06 Sorry. Thank you.

45:14 Okay. That's all it takes.

45:18 Does this make any sense?

45:21 You can create layouts to print 8 by 11 inch or 33 by 44 inch. Obviously, the larger the layout, the more time it's going to take.

45:32 But let me warn you about something.

45:36 What this service is doing is…is sending to the server a big string that indicates which web services are to be rendered…

45:44 …which graphics there are in that map, which selections, and so on.

45:48 And then, in the server, we go to these web services, we pull the images all together, we put them into an ArcMap document…

45:55 …we call Export to PDF.

45:57 With this service really, you can print at max 11 by 17 inch pieces of paper.

46:03 Otherwise, you are going to see pixilation in the maps.

46:07 If you really want to create very high-quality maps in wallpaper kind of sizes, then we have another solution…

46:16 …which is based on ArcPy mapping.

46:18 ArcPy mapping is a module we added in ArcGIS 10 which allows you to do map automation, and you can write…

46:24 …it's not out of the box. It's for Python developers.

46:27 And you can put together your scripts. In 10.1, we are adding utilities so you can handle this communication…

46:34 …between the web application and the ArcPy mapping much better.

46:37 In a sense, you can, with one single line of code, you can get all the contents of a web mapping application and…

46:44 …put them into a map document so you can later manipulate things so they print on very high resolution.

46:53 There was one question over here.

46:55 [Audience question] Is the legend dynamic visible within the display?

46:58 Excellent question. Is this legend dynamic?

47:01 Well, it depends. In the case that you are using the out-of-the-box export web map service, it will not be dynamic…

47:09 …because ArcMap will be using services to render the information within the layout…

47:14 …but with ArcPy mapping, what normally people will do is, they will get the information that

is displayed in the web mapping…

47:21 …application and change the paths.

47:23 So rather than pointing to web services, you will be pointing to local data sources…

47:28 …and at that point, that legend will be dynamic.

47:33 [Inaudible author question]

47:36 Right. The intent of dynamic layers is to display in the legend only the information that is contained within the extent.

47:44 So there are no hydrants within the current extent. There will be no hydrants in the legend.

47:50 Right? Very good question.

48:00 Feature services. In feature services, there is one interesting capability…

48:05 …that was added, which has to do with how you control access to features.

48:11 It's called ownership-based data access.

48:14 Let me illustrate that with a demonstration.

48:18 Here I have an application where I can edit features.

48:22 I can click on a feature, and I can move it, or I can click on that feature and I can delete it.

48:33 Maybe it timed out or something.

48:35 Let me reload the application so we can do it.

48:38 Also, since I am launching again, you'll see that actually when I start the application, I need to log in to it.

48:46 I need to tell the application who I am, because based on who I am, I'll be able to do more things or fewer things.

48:55 So, again, I'll come here, select a feature and say delete.

49:00 I was able to delete the feature because that feature belonged to me.

49:05 I created it in the first place.

49:07 So say I go to the feature template and I add a new feature.

49:10 Automatically, it knows that the creator is Ismael.

49:14 And the service, the feature service is configured so only creators of the features can actually delete them.

49:21 If I were to edit this…this feature here which Gary created, I wouldn't be able to edit.

49:27 You can see that all the options are grayed out because it doesn't belong to me.

49:33 It's important to highlight that this is not feature level security.

49:40 This is just security based on creation.

49:45 You understand the difference?

49:47 They're still very useful because in the past, anyone could create, anyone could delete.

49:52 Now you can control that.

49:54 And this is extremely easy to set up.

49:58 If I go to ArcMap and I have a look at my…my map, you'll see that it points to an ArcSDE database which is this one…

50:10 …and it…it's adding these three feature classes.

50:14 When I right-click on them and I go to Properties, you'll see that there is a new tab.

50:19 It's called Editor Tracking.

50:21 In this tab, you can say, Enable Editor Tracking.

50:25 Every time a person creates a feature, I want to store the name of that person in this field, and I also want to store the time…

50:33 …and you could even go farther and say, I also want to keep track of edits to see when a feature was updated the last time.

50:43 This editor tracking capability is enabled as you can see at the geodatabase level.

50:48 So it also works, as you saw yesterday in the Plenary, from Desktop.

50:54 With this information in place, mostly the creator, we can go to the feature service and define who has access to what.

51:13 Service properties, feature access. This is checked Enable Ownership-Based Access Control on Features…checked.

51:26 And also you can say what people can do on those features.

51:30 So in this case, you can see that I don't let people who have not created that feature either update or delete.

51:36 But I could say, even though you didn't create the feature, I let you change an attribute, so I would check that.

51:43 Make sense?

51:48 So that's one aspect of feature services in 10.1.

51:52 The other one is that, if you remember in 10, when you publish a feature service, you define the version you want people to edit.

52:01 All web users will edit the same version.

52:04 Let me take the question at the end, please.

52:07 In 10.1, you can tell the feature service in which version you want to store the change.

52:13 You kind of saw this with the demo that _____ [Unintelligible] did where he was changing the version of the map service.

52:19 That also works with feature services.

52:21 So in this map, you are looking at the default version, but I can click on this guy and I change to version John version Ismael.

52:29 You see that? We are switching the versions. No big deal. This is done with map services.

52:34 You already knew this. It's done through dynamic layers.

52:36 But now I can also click on a particular feature and say, well, now I want to move this feature.

52:44 Well, this feature is moved in the version called John, not in version called default.

52:53 Right? You also saw how I was able to move a customer connection and the pipe would move along…

53:00 …because that's geodatabase behavior that happens in the server tier.

53:07 You can create versions. You can delete versions as well through geoprocessing.

53:11 So normally in these workflows, you combine the feature service, the map service, and geoprocessing services.

53:18 When I say, create a new version, really what I'm doing is invoking that geoprocessing service that creates a new version.

53:30 Right? And now I can start editing.

53:32 Is this making sense?

53:34 Yes. Do you…do you think this is useful? Yes. Okay. Right? Whew.

53:48 Oh, yes. One last thing. Roll-back on failure.

53:53 This is very simple. Sometimes you want edit operations to happen in _____ [Unintelligible], and either they all succeed or not succeed.

54:02 Like let's say you want to split a polygon into two.

54:04 That's actually several operations.

54:06 You need to change the geometry of the polygon you are splitting.

54:09 You need to create a new feature to fill it up.

54:12 Well if these two operations succeed, go ahead.

54:17 If any of them fails, just don't do anything.

54:20 And that's possible now in 10.1. Is that right?

54:28 Other feature enhancements, very quickly.

54:31 Some of you might be familiar with the schematics, but maybe you are not familiar with it.

54:35 A schematics is an extension that allows you to represent information not geographically but in the form of a schema.

54:43 Very useful when you are working with networks, but, this is actually not only useful for networks.

54:49 In this case I have a pump station in this water network, and the pump station within is actually a network in itself.

54:58 So it's represented as a point here that I could actually open a view of this pump station in schema view.

55:09 And the nice thing about schematics is that you can represent these diagrams…

55:14 …and change the way these diagrams look by picking between different algorithms.

55:22 So here we have geolinear dispatch algorithm, here we have a radial tree algorithm…

55:31 …and here we have orthogonal algorithm.

55:37 And this is still a map, so I can navigate, I can query, I can highlight features in the schema.

55:44 This extension used to be optional in Standard and Advanced.

55:49 Now is…or now in 10.1, we are changing the licensing so it's free with a Standard.

55:55 That's one of the things we are changing, the licensing.

55:57 The other one is that actually when you create these schemas, there will be, if I can navigate to my server here…

56:06 …you'll see that there is a new option to enable a schematics capabilities in your map services and it is out of the box.

56:15 In the past, people who were doing these type of things were writing a lot of ArcObjects code.

56:21 And now is just check a schematics, and you have the capability to create the schemas.

56:27 I think this is a not very wide known feature but that actually has many applications in different fields…

56:34 …not just for utilities.

56:38 Another interesting new functionality is geometric network tracing.

56:44 So say that I want to know how many valves I need to close in order to isolate a particular

portion of the network.

56:57 In other words, there is a leak in the network here, tell me which valves I need to close and how many customers are affected.

57:06 This is now possible through geoprocessing.

57:08 There are geoprocessing tools to do these type of operations, and they apply to utility but also to river networks…

57:15 …so I can ask, if I click on this point in the river network, trace upstream or trace downstream.

57:23 So there are many different scenarios where these tools are useful.

57:27 And again, it's just geoprocessing. It's no longer ArcObjects needed.

57:35 Other feature enhancements, OGC support and WMTS.

57:39 In a sense, every time you create a cache map service, it has a WMTS end point ready.

57:44 WPS is web processing service for geoprocessing services.

57:49 You can cache image services, create an image service, go to the caching tool, Caching tab, cache it.

57:56 Do an exist in the past.

57:58 The geometry service has additional operations to do geodesic buffers and also handles datum transformations…

58:04 …which we couldn't handle today.

58:07 And this we didn't talk about this, but in the feature service you can apply changes that affect many layers…

58:14 …not just one layer.

58:16 Today in 10, you can edit any layer, but all edits need to be grouped on a per-layer, layer-by-layer basis.

58:23 Now you can say, change this layer here, this layer there, and send the request as one.

58:35 I'll be brief. I want to talk a little bit about the spatial data server.

58:41 This is a new technology component that is included with the DVD in ArcGIS Server.

58:47 It's not a new product. It's kind of a new setup.

58:50 What is this spatial data server for?

58:52 It's a very lightweight web service that you can install in Java servers or in Internet information server.

59:01 It has two flavors, the flavor for IIS and the flavor for Java servers.

59:07 And this web service sits on top of a database and allows you to create feature services.

59:15 A feature service is basically a service that allows you to query a database over the Internet.

59:20 And it also allows you to edit the database over the Internet.

59:24 It only works with single features. Okay. No annotations. No geodatabase relationships. No versions.

59:32 But it's very useful because it's very lightweight, very easy to install.

59:37 So there are some folks that are interested on using SQL Server 2008 with the spatial types and no more…no SDE.

59:46 And I don't want to install a full-blown GIS server because all I need to do is to display a few customers on a SharePoint site.

59:53 So in that case, this spatial data server technology is fantastic.

59:58 Now you need to be careful because some people think, oh, that's fantastic.

1:00:01 The spatial data server I can do mapping very easily.

1:00:05 Well, it's very simple mapping because it's really querying the database, bringing the geometries to the client…

1:00:11 …and once the geometries are in the client is using graphics to render that.

1:00:15 So you have to be careful. You cannot add a lot of graphics to the web browser.

1:00:20 But again, if you use it with care, it's pretty, pretty useful.

1:00:29 Normally, people who use a spatial data server will use this technology in combination with ArcGIS Online basemaps.

1:00:36 I have a street map that comes from ArcGIS Online or the Bing maps, that's my basemap, and I display my incidents…

1:00:44 …or I display my customer points, or I display a thematic map on top from my database. Right.

1:00:53 This spatial data server technology is included with Basic.

1:00:57 So in 10.1, if you have ArcGIS Server Basic edition, you can put information on the web.

1:01:03 Today in 10, ArcGIS Server Basic is pretty much about managing databases, it's about SDE.

1:01:10 Now you have the spatial data server and actually feature services as well.

1:01:14 If you install the GIS server in Basic in 10.1, you can have a map and create a feature service out of it.

1:01:20 And at that point, iPhone, iPad, web browsers, and desktops can access these web services.

1:01:31 Cloud. This new architecture that we described before is just perfect for deployments in the cloud…

1:01:42 …where you are adding and removing many machines to achieve elasticity.

1:01:47 This architecture works well in the Amazon cloud.

1:01:50 It actually works better than 10, supporting things like asynchronous geoprocessing…

1:01:55 …caching enlarged clusters, and so on.

1:01:58 I think one of the big enhancements for Amazon in 10.1 is the fact that we have Linux AMIs.

1:02:04 The Linux AMIs are significantly cheaper than Windows AMIs, and they start significantly faster.

1:02:12 Because you have this model of publishing to the cloud by creating service definitions that include the data…

1:02:19 …now it starts to make sense to use, you know, ArcGIS Server in Amazon.

1:02:23 I have Desktop in my machine. I launch ArcGIS Server in Amazon. I push this button, creates a layer…

1:02:30 …a service definition with data, uploads the service definition to the cloud, and in the cloud, data is laid down…

1:02:36 …and the service is created.

1:02:38 Whether the server is on Linux or on Windows. I just don't care.

1:02:42 Because I interrupt with the server using HTTP.

1:02:46 Now at some point, you'll need to get to the server and do some tweaks and do some things, so…

1:02:52 …you may want to consider Windows or Linux. But, this is just an idea for you.

1:02:57 The other thing is that, now we are going to switch to Anne.

1:03:00 There is a new wizard that lets you launch AMIs very quickly.

1:03:05 This is ArcGIS Server cloud builder that we're including in 10.1.

1:03:09 So at 10.0 now, you can get access to the ArcGIS Server AMIs and use ArcGIS Server in Amazon.

1:03:16 But what we've done at 10.1 is provide this utility that combines the key aspects of our create site in manager…

1:03:25 …and the Amazon management console's options for spinning up an easy-to instance and put it into this utility.

1:03:32 So, you could see here that any site that I've created is listed, and I already have one created called this emergency response site.

1:03:40 I have some basic information here, even at this level.

1:03:43 This is where I could administer this site.

1:03:45 And I can also hit the manager for this site.

1:03:49 So this is a manager of a site that's running in the Amazon cloud.

1:03:53 Now before I continue on and use that, let me just show you how to create site using this utility.

1:03:59 First thing you need to do is specify a name, and I'll just give something unique here, and a description.

1:04:09 I can choose if it's Windows or Linux, the _____ [Unintelligible] flavor, I'll leave it at Windows.

1:04:14 Now I need to specify the admin, user name, and password for logging in to the ArcGIS Server site.

1:04:21 I also need to specify a license file, and I'll pick that up and browse for that.

1:04:26 Next what I'm doing is setting some basic properties about this Amazon instance, such as the region and availability of zone…

1:04:33 …the size, larger it goes up from there, the minimum and maximum number of instances that are going to get started up…

1:04:41 …and the rules that are going to be used to judge what the activity is on this site…

1:04:47 …and maybe add more instances or remove some instances based on those rules.

1:04:52 This is for an ArcGIS Server site, so you could see that I also have an option to include the enterprise geodatabase…

1:04:58 …and set the type of instance for that as well.

1:05:01 After that, I get a summary of all my choices.

1:05:04 If everything here is confirmed and looks good, I click Create Site…

1:05:08 …and that begins the process of creating this ArcGIS Server site in the Amazon cloud.

1:05:13 Now that's going to run for awhile, so I'm going to let that go and go back to this site that I already created…

1:05:19 …and as Ismael just mentioned, the scenario of taking a service definition where we included the data…

1:05:26 …this is a great scenario to use it in the cloud.

1:05:28 So I'm going to go back to that Cayman Islands service definition that I authored…

1:05:32 …that you saw me publish earlier to just an on-premises server, and in this case…

1:05:37 …I'm going to publish it to this site that's running in the Amazon cloud.

1:05:42 I'm going to walk through the same wizard that you saw before, giving the basic properties and confirming the capabilities.

1:05:48 But the difference this time is that the data's getting packaged up and the service definition is getting put together…

1:05:55 …and it's getting pushed up to the Amazon cloud. Right.

1:05:59 So this is a great time to use that copy data to the server when you're publishing option.

1:06:03 There's lots of ways to get data to the Amazon cloud, but here's a case where, hey…

1:06:08 …I should definitely use that convenience and let this publishing process push it up there for me.

1:06:14 So now it's created and started, same thing, go into the properties.

1:06:19 You could see the URLs reflecting the fact that we're running in the Amazon cloud, and I can go ahead and draw that up.

1:06:26 Same service that you saw earlier because it's the same service definition, just running on the Amazon cloud.

1:06:33 And that's…that's in Virginia?

1:06:35 I used the Virginia region, yes.

1:06:39 Okay, and then Azure…we are closely working with Microsoft to offer you the ability to run ArcGIS Server in the Azure cloud.

1:06:49 And that will be ready by the time we go final with 10.1.

1:06:53 For private clouds, again, this architecture is great for deployments in private clouds.

1:06:58 We will maintain this certification on VMwarevSphere 4…

1:07:03 …and there are actually some partners downstairs who have very specific private cloud solutions where you can run ArcGIS Server.

1:07:13 And that's pretty much…pretty much it.
