So far we have been using Pharo's 'Seaside One-Click Experience' to learn Seaside and Smalltalk. Pharo is just one of several dialects of Smalltalk supporting Seaside, each with a unique focus. One dialect of Smalltalk, GemStone/S, has been available from GemStone Systems, Inc. since 1985 and provides a distinctive emphasis on server-side scaling and persistence. That is, while other Smalltalk dialects provide a system in which a single virtual machine interacts with an object space that fits in RAM (generally up to a few hundred megabytes on modern hardware), GemStone provides a system in which thousands of virtual machines on multiple machines can interact—using database semantics—with an object space that can be terabytes in size.

For its first couple of decades, GemStone's traditional customers have been large enterprises that do internal development of mission-critical applications using Smalltalk. Typically, they use Cincom's VisualWorks (formerly from ParcPlace) or Instantiation's VA Smalltalk (formerly VisualAge Smalltalk from IBM) to build applications that run on employee workstations (the client) and connect to a GemStone/S database (the server). By using Smalltalk on the client they are able to rapidly develop complex applications using pure objects and the powerful libraries provided by their dialect's vendors. By using Smalltalk on the server, they are able to eliminate the complexity and impedance mismatch of object-relational mapping. In addition, selected back-end processing can be transferred from the client to the server reducing network overhead and allowing more powerful servers to be used.

As the Internet became increasingly popular, libraries and frameworks supporting web application were added to various Smalltalk dialects (including VisualWorks and VisualAge). None of these, however, achieved the traction that Seaside realized and maintainers of other dialects have generally abandoned their proprietary approaches and are focused on supporting Seaside. Seaside originated in Squeak (<u>http://www.squeak.org/</u>) and is now being maintained primarily in Pharo (<u>http://www.pharo-project.org/</u>). At this point there are ports of Seaside to Cincom Smalltalk from Cincom (<u>http://www.cincomsmalltalk.com/</u>), VA Smalltalk from Instantiations (<u>http://instantiations.com/VAST/index.html</u>), Dolphin Smalltalk from Object Arts (<u>http://www.object-arts.com/</u>), GNU Smalltalk (<u>http://smalltalk.gnu.org/</u>), and, of course, GemStone Smalltalk from VMware (<u>http://seaside.gemstone.com/</u>).

While each dialect brings unique strengths (and weaknesses) to Seaside, we will be focusing on GemStone/S in this (and subsequent) chapters. Because of GemStone's background as a server Smalltalk, it is uniquely positioned to provide scalability (in both objects and number of users) to a Seaside application. The trade-off is that a GemStone installation tends to be larger (thus more complex to use and manage) does not have a native suite of GUI tools (so relies on other Smalltalk dialects for development tools such as browsers), and the Seaside-enabled version only runs on 64-bit \*nix operating systems (including AIX, HPUX, Linux, Macintosh, and Solaris, but not Microsoft's Windows).

GemStone has a reputation in the Smalltalk community of being very desirable (who would want to use SQL when they could use Smalltalk?) but also very expensive. Fortunately, the cost issue has been addressed in part with a no-cost ('free as in beer') license of the product for Linux with the primary limitation of 2 CPUs and a 2 gigabyte shared page cache (see <a href="http://seaside.gemstone.com/docs/GLASS-Announcement.htm">http://seaside.gemstone.com/docs/GLASS-Announcement.htm</a> for details). A version is also available for Macintosh.

While getting started with GemStone is not quite as easy as using Pharo's 'Seaside One-Click Experience,' it is not nearly as difficult as, say, an Oracle install. There are two options for installing GemStone/S 64 Bit: (1) native, and (2) VMware. In this chapter we focus on the VMware approach.

VMware Virtual Appliance. This is the approach most likely to get everything working quickly, but requires 64-bit hardware with virtualization support and an installed copy of VMware Server (free for Linux and Windows) or VMware Fusion (for Macintosh) along with a license key. The Virtual Appliance has a full install of 64-bit Linux, Apache, GemStone/S 64 Bit, and other components (such as FastCGI).

The first step is to see if your hardware supports 64-bit virtualization. If you are running a recent MacBook, then you are fine. If you are running Windows or Linux, then you need to check your machine. Open a web browser on the following link:

http://www.vmware.com/download/server/drivers tools.html



Click the link 'Processor Check for 64-Bit Compatibility' in the Drivers & Tools tab.

😏 🍚 🔻 🏧 http:	://downloads.vmware.com/d/details/proces 🔻 🖄 🍫 🗙 🚼 Google
File Edit View Fa	avorites Tools Help
🚖 Favorites 🛛 🚖 🧧	Home 🔊 Work
VMware Server	🚵 💌 🗟 👻 🖃 🖶 💌 Page 💌 Safety 💌 Tools 🔞 💌
Cloud Computin	g Virtualize Solutions Products Services Support & Downloads Partners company
Home > Downloads > VI Processor 4 Back to VMware Server	Aware Server v2.0 > Processor Check for 64-Bit Compatibility Check for 64-Bit Compatibility All Downloads All Downloads Search Search
Download	Processor Check for 64-Bit Compatibility
Description	This is a standalone processor check utility which you can use without VMware Server or VMware Workstation to perform the same check and determine whether your CPU is supported for virtual machines with 84-bit guest operating systems. View the Processor Check Guide.
Notes	This utility is provided without support from VMware.
Version	5.5
Build Number	18463
Release Date	2005/11/29
Туре	Drivers & Tools
Language Support	English
Components	This download coefficiently for windows Download File type: .exe

This will take you to a download page where you can select the download for either Windows or Linux.

After downloading the guest check application run it to see if your hardware supports virtualization. If the answer is 'no,' then you need to pursue another approach (run GemStone/S native if you are on a 64-bit Linux OS or get access to another computer).

VMware 64-bit Compatibility Check Failed			
8	This host is NOT capable of running a 64-bit guest operating system under this VMware product. For more detailed information, see http://www.vmware.com/info?id=152		
	<u>ОК</u>		

If your processor supports 64-bit virtualization, then you need to see if it is enabled in your computer's BIOS. Reboot your PC and press <F2> during the boot process to get into the BIOS setup. Look for a setting named something like 'Enable VT,' see that it is true/yes, save the settings, and then reboot the machine. Unfortunately, we are unable to give more detailed instructions because the BIOS settings differ depending on your machine. See

<u>http://kb.vmware.com/selfservice/viewContent.do?externalId=1003944&sliceId=1</u> for some instructions from VMware.

If things work properly, then you should see the following dialog.

VMware 64-bit Compatibility Check Passed			
٩	This host is capable of running a 64-bit guest operating system under this VMware product.		
	OK		

Next, download VMware Server 2.0 from the previous web site by selecting the 'Product Downloads' tab (instead of the 'Drivers U Tools' tab).

	,//downloads.viiiw	are.com/ u/mro				_	
Edit View F	avorites Lools	Help				_	
Favorites   🥦 🌔	Home 🍘 Wor	c r					
VMware Server					) - 🖃 🖶 -	Page - Safety -	Tools 🔻 🚷 🔻
					United State	a fabra Carach	0
					United star	es [chang] Search	~
VIIIWale			Community	Technical Res	ource Center   Virtua	al Appliances Store	My Account
Cloud Computir	g Virtualize	Solutions	Products	Services	Support & Downlo	ads Partners	Company
Downloa	d VMware	Server				Search (Mware Do All Down oads	wnloads
Download VI	Iware Server					Search	
VMware Server is a fr to server virtualization	ee, easy-to-use Window for businesses to optir	s and Linux application of the	tion that provides a air technology asse	a superior introdu ets.	ctory experience	Related Resources	]
Get Your Server Li	cense Key					Product Info Documentation	
For VMware Server 2.	)x, trial serial numbers	are provided as part	of the download a	and registration pr	OCESS.	Knowledge Bas	
Other versions of VI	ware Server: 1.0					Self-Help Suppo	
						Support & Lega	
						VMware Server Support Policies	ort
Product Downloads	Drivers & Tools	Open Source		VER 8ION	RELEA 8E	Need Help D	hloading?

During this download process you will be required to register and a registration key will be sent to an email address you provide.



Once you complete the registration process (including a license page) you will be presented with a download page. Download the version of VMware Server 2 appropriate for your operating system. We will demonstrate the process of installing on 32-bit Windows XP.

🖉 Downloa	ad VMware Server for Free Virtua	I Server Software - Windows Internet Explorer			×
$\odot$	https://www.vmware.co	m/tryvmware/p/ac 🔻 🔒 🖄 😽 🗙 😽 Google			<mark>ب</mark> م
File Edit	View Favorites Tools	Help			
🔶 Favorit	ees 🛛 🚕 🔊 Home 🔊 Work oad VMware Server for Free Virtu	Jal Server S 👌 🔻 🖻 🗮 🖶	) ▼ Page ▼ Sat	fety 🔻 Tools 🔻 🕡	• »
Bir	naries				*
V 11 (,	Mware Server 0/26/09   2.0.2   507 MB   Binary exe)	Start Download Manager Manually Download			
		VMware Server 2 for Windows operating Systems. A master installer file containing all rindows components of VMware Server.			
_		MD5SUM(*) a6430bcc16ff7b3a29bb8da1704fc38a SHA1SUM(*) 39683e7333732cf879ff0b34f66e693dde0e340b			E
V 10 (-	IX API 1.6 for Windows 0/26/09   2.0.2   37 MB   Binary exe)	Start Download Manager (2) > Manually Download			
		MD5SUM(*) 827e85e70803ec85ade82dd27a74407a 944407a - 14281bo055271a19be3c88028e92304bc3f0e22			
V S 10	Mware Server 2 for Linux Operating ystems 0/26/09   2.0.2   481 MB   Binary	Start Download Manager (2) Manually Download			
-	(pm)	MD5SUM(*) 551a391b29500295 5149616e69a024d SHA1SUM(*) de790195 450385a512b5703860068528ebfef81			
V S	Mware Server 2 for Linux Operating ystems 0/26/09   2.0.2   482 MB   Binary	Start Download Manager 💿			
	gz)	MD5SUM(*) 8eb844d1ab4aed8128438e5f587d10bb SHA1SUM(*) 2917o8d4e521cb9af188be8fcaf2043b1a518a8c			
V S 1(	Mware Server 2 for Linux Operating ystems 84-bit version. 0/28/09   2.0.2   451 MB   Binary	Start Download Manager ⑦ ▶ Manually Download			
(.	rpm)	MD5SUM(*) 35c3b176001133749e4055e0034f8be8 SHA1SUM(*) e8dc842d89899df5cd3e1138af76f19ca5ccbece			
v	Mware Server 2 for Linux Operating	Start Download Manager			-
		🌍 Internet   Protected Mode: Or	ı	🖓 🔻 🍳 75%	•

Once you download the installer, launch it.

🔀 VMware Server	X
<b>.</b>	Welcome to the Installation Wizard for VMware Server
	The installation wizard will install VMware Server on your computer. To continue, click Next.
VMware Server	WARNING: This program is protected by copyright law and international treaties.
	< Back Next > Cancel

After reading the license (you do that don't you?), click 'yes' (if you agree) and then 'Next.'

🙀 VMware Server	×
License Agreement Please read the following license agreement carefully.	20
NOTICE: BY DOWNLOADING AND INSTALLING, COPYING OR OTHERWISE USING THE SOFTWARE, YOU AGREE TO BE BOUND BY THE TERMS OF THIS VMWARE MASTER END USER LICENSE AGREEMENT ("EULA"). IF YOU DO NOT AGREE TO THE TERMS OF THIS EULA, YOU MAY NOT DOWNLOAD, INSTALL, COPY OR USE THE SOFTWARE, AND YOU MAY RETURN THE UNUSED SOFTWARE TO THE VENDOR FROM WHICH YOU ACQUIRED IT WITHIN THIRTY (30) DAYS AND REQUEST A REFUND OF THE LICENSE FEE, IF ANY, ALREADY PAID UPON SHOWING PROOF OF PAYMENT. "YOU" MEANS THE NATURAL PERSON OR THE	
<ul> <li>Yes, I accept the terms in the license agreement</li> <li>No, I do not accept the terms in the license agreement</li> </ul>	
< <u>B</u> ack <u>N</u> ext > Cancel	

Select a location in which to install the software. By default it will go in Program Files.

🔂 VMware	e Server
<b>Destinati</b> Click Nex folder.	ion Folder xt to install to this folder, or click Change to install to a different
	Install VMware Server to: C:\Program Files\VMware\VMware Server\hange
	< <u>B</u> ack <u>Next</u> > Cancel

Unless you have a good reason, the server configuration information should be left as is.

🔀 VMware Server			
Server Configuration Informat Please enter server informat	tion		
Please select the virtual machin C:\Virtual Machines\	ne storage path	Change	
Please enter the server access The fully qualified domain na on the Internet. The FQDN	information ame (FQDN) is the complete domain name for the h includes the hostname and the domain name.	nost	
HIMALIA			
Server HTTP <u>P</u> ort: Server HTTP <u>5</u> Port:	8222	_	
Allow virtual machines to start and stop automatically with the system.			
	< <u>B</u> ack <u>N</u> ext >	Cancel	

Decide whether to allow shortcuts to be included in various places.

🔀 VMware Server	
Configure Shortcuts Creates program shortcuts	
Create shortcuts for VMware Server in the following places:	
✓ Desktop	
☑ <u>S</u> tart Menu Programs folder	
Quick Launch toolbar	
< <u>B</u> ack <u>N</u> ext >	Cancel

When the installer has all the setup information it needs, it can start.

😥 VMware Server	×
Ready to Install the Program     Image: Constallation installation.	
Click Install to begin the installation.	
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.	
< <u>B</u> ack Install Cancel	_

When you registered for the download you gave an email address. Check that mailbox for a key.

🕏 VMware Server	
Registration Information (optional) You can enter this information later.	
User Name:	
James Foster	
Company:	
GemStone Systems, Inc.	
Serial Number: (XXXXX-XXXXX-XXXXX-XXXXX)	
< <u>B</u> ack <b>Enter</b> >	

When the installation is done click 'Finish.'



Like many other applications, an installation requires a restart.



Using a web browser, navigate to GemStone's download page

(http://seaside.gemstone.com/downloads.html) and download the GLASS Virtual Appliance.



After the file downloads, unzip it and place it in 'C:\Virtual Machines' for VMware to find.

😂 Virtual Machines	
<u>File Edit View Favorites Tools H</u> elp	<b>1</b>
Search 🕞 Search 😥 Folders	
Address 🛅 C:\Virtual Machines	💙 🄁 Go
Folders ×   Desktop My Documents   My Computer My Computer   Cocal Disk (C:) Documents and Settings   DRIVERS DRIVERS   DRIVERS Swishare   Swishare Virtual Machines   Substract Virtual Machines   Shared Documents DVD-RAM Drive (D:)   Doctorrol Panel Shared Documents   My Network Places Recycle Bin	

Now launch VMware Server using one of the shortcuts provided by the installer. This will open a web browser and, depending on your security settings, will report a problem.

Alert	X
1	himalia:8333 uses an invalid security certificate. The certificate is not trusted because it is self signed. (Error code: sec_error_ca_cert_invalid)
	ОК

Click OK and the browser will show an error. Click on the 'Or you can add an exception...' link.

🕲 Page Load Error - M	ozilla Firefox		
<u>File E</u> dit <u>V</u> iew Hi <u>s</u> tory	P Bookmarks Tools Help		*** ***
CD-CX	🟠 🚺 https://himalia:8333/ui/ 🗘 ▾	G• Google	P
	Secure Connection Failed		
<u>~4</u>	himalia:8333 uses an invalid security certificate.		
	The certificate is not trusted because it is self signed.		
	(Error code: sec_error_ca_cert_invalid)		
	<ul> <li>This could be a problem with the server's configuration, or it could be som trying to impersonate the server.</li> </ul>	neone	
	<ul> <li>If you have connected to this server successfully in the past, the error ma temporary, and you can try again later.</li> </ul>	iy be	
	Or you can add an exception		
Done			

After you click the link you will be shown two buttons. Click the 'Add Exception...' button.



Firefox requires you to get the certificate before you can confirm the exception.

Add Security Exception					
You are about to override how Firefox identifies this site. Legitimate banks, stores, and other public sites will not ask you to do this.					
Server Location: https://himalia:8333/ui/ Get Certificate					
Certificate Status					
Permanently store this exception					
Confirm Security Exception					

Once you get the certificate, click the 'Confirm Security Exception' button.

Add Security Exception	×
You are about to override how Firefox identifies this site. Legitimate banks, stores, and other public sites will not ask you to do this.	
Server	
Location: https://himalia:8333/ui/	
Certificate Status	
This site attempts to identify itself with invalid information.	
Unknown Identity	
Permanently store this exception	
Cancel	

Once you confirm the security exception, you should get a web browser with a login screen asking for you host operating system user and password. Note that VMware requires a password. If your Windows account does not have a password you will need to add one and then give VMware your Windows password. Note that you could access this screen from another computer on the network using the same URL.

🥹 VMware Infrastructure Web Access - Mozilla Firefox	
File Edit View History Bookmarks Tools Help	*** ***
C × ☆ ( https://himalia:8333/ui/# ☆ C · C ·	Google 🔎
VMware Infrastructure Web Access Login Name: jfoster Password: Log In	
Done	himalia:8333 👹 🛒

Once you have a successful login, you should see the VMware Infrastructure Web Access. Click on the command link 'Add Virtual Machine to Inventory.'

<b>Whware Infrastructure Web Access</b>	(delete@himalia) - Moz	illa Firefox				×
Eile Edit View History Bookmarks Iools Help						
🔇 🔊 • C 🗙 🏠 📵 ht	🕜 💽 C 🗙 🏠 🛞 https://himalia:8333/ui/#{e:"Host5ystem ha-host",w:{t:true,i:0}}					
🗿 VMware Infrastructure Web Acce	ess (delete@himalia)					
Application Virtual Machine Admi	inistration 🔲 🔢 👂	9		Hel	p   Virtual Appliance Marketplace   Log C	ut
Inventory	himalia					
📕 himalia	Summary Virtual Machin	nes Tasks Events Perm	issions			
	General			-	Commands	
	Hostname	himalia			Create Virtual Machine	
	Manufacturer			C	Add Virtual Machine to Inventory	
	Model				Add Datastore	1
	Processors	Intel(R) Core(TM)2 CPU	T7200 @ 2.00GH	z	<ul> <li>Edit Host Settings</li> <li>Edit Virtual Machine Startup/Shutdows</li> </ul>	
		1 CPU x 2 Cores			Refresh Network List	
	Usage	65.00	MHz		VMware Tips	4
	Memory	2.99 GB				-
	Usage	803 M	18		Wewere Inflastructure 3	
	Detectory -					
	Name	Capacity	Free Space	Location	and the second se	
	standard	149.04 GB	134.55 GB	C:\Virtual Machin	and a subsection of the subsec	
	Networks				Move up to production-ready	
	Name 🔺	VMnet	Туре		cost-effective to get a scalable solution.	
	Bridged	vmnet0	brid	ged	Learn More.	
	HostOnly	vmnet1	host	only		
	NAT	vmnet8	nat			
Task Target	Status	Triggered At 🔻		Triggered by	Completed At	
Done					himalia:8333 🔒	

This will present a dialog. In the first column (Inventory), expand the machine, the inventory, and select the GLASS directory. In the second column (Contents) select the GLASS-Appliance. Finally, click the 'OK' button.



Once you have added the GLASS Appliance it should show up in the list of virtual machines.

😢 VMware Infrastructure Web Access (delete@himalia) - Mozilla Firefox							
Eile Edit View History Bookmarks Iools Help							
🕢 🕞 🕻 🗶 🏠 🔞 https://himalia:8333/ui/#{e:"Host5ystem ha-host",w:{t:true,i:1}} 🏠 🕇 🚺 Google 🔎							
🎒 ¥Mware Infrastructure V	₩eb Access (delete@himalia)						
Application Virtual Mach	nine Administration 🛛 🔲 📔 🕨 🇐	Help	Virtual Appliance Market	place   Log Out			
Inventory <ul> <li>himalia</li> </ul>	<b>himalia</b> Summary Virtual Machines Tasks Events P	ermissions					
🖆 GLASS Applianc	Virtual Machines	 	Commands				
	Name  GLASS Appliance 1.0beta11	CPU 0 MHz	<ul> <li>Create Virtual Machin</li> <li>Add Virtual Machine t</li> <li>Selected Virtual Mach</li> <li>Remove Virtual Ma</li> <li>Power On</li> </ul>	ne to Inventory nine achine			
Task Target	Status	Triggered At 🔻	Triggered by	Completed At			
Register Virtual M vm	Success	03/24/09 2:25:15 PM	delete	03/24/09 2:25::			
<	III.			>			
Done				himalia:8333 🔒 💷			

Click on 'GLASS Appliance' in the Inventory list (the first column). This will change the area to the right showing a summary and other tabs about the appliance. Click the green start button and then switch to the 'Console' tab. This will inform you that the VMware Remote Console Plug-in is not installed. Click on the 'Install plug-in' link.



The plug-in installation might prompt you to allow the installation. Click the 'Allow' button.

🥹 VMware Infrastructure Web Access (delete⊘himalia) - Mozilla Firefox	
Eile Edit View History Bookmarks Tools Help	
C X 🕼 https://himalia:8333/ui/#{e:"VirtualMachine 32",w:{t:true,i:1}}	Cr Google
😰 VMware Infrastructure Web Linearing 👘 Using the Virtual Machine Workspace 🛛	•
Firefox prevented this site (himalia) from asking you to install software on your computer.	Allow
🗐 YMware Inn was a web Access (delete@himalia)	
Application Virtual Machine Administration 🔲 🔢 🕨 🧐	Help   Virtual Appliance Marketplace   Log Out
Inventory 🔂 GLASS Appliance 1.0beta11	
T 🗍 himalia Summary Console Tasks Events Permissions	
🖆 GLASS Applianc	

You might be prompted to confirm the installation.

Software	Installation	×				
1	Only install add-ons from authors whom you trust. Malicious software can damage your computer or violate your privacy.					
You hav	re asked to install the following item:					
	You have asked to install the rollowing item:         YMware Remote Console Plug-in (Author not verified)         https://himalia:8333/ui/plugin/vmware-vmrc-win32-x86.xpi					
	Install Now Cancel	)				

You might need to restart your browser.

😻 Add-ons					
Get Add-ons	Extensions	No. Themes	<b>Plugins</b>	Installation	
🕕 Restart Firel	<sup>;</sup> ox to complete	your chang	jes.		Restart Firefox
<b>VMwa</b> Restar	<b>ire Remote C</b> t to complete t	onsole Plu he installati	<b>ıg-in</b> 2.5 on.	.0.122581	

If the browser does not reopen to the same place, restart the VMware Infrastructure Web Access, select the GLASS Appliance in the Inventory list, select the Console tab, and click anywhere in the black area to open the virtual machine.



This will open a new window with a splash screen while the console is connecting to the virtual machine.



Once the console connects to the virtual machine, you should have a window showing what you would see if the GLASS Virtual Appliance were running on a real machine. In this case we have Linux with a GUI and a Firefox browser launched looking at <u>http://localhost/</u>. This is host is not your Windows machine, but a 'new' ('virtual') machine running in VMware that has its own operating system (Ubuntu Linux), its own web server (Apache), and a GemStone Smalltalk system already configured to start when the operating system starts. This machine has its own IP address (in my case it is 192.168.79.128, but it might be different for you). Note the series of green 'OK's for the seven GemStone processes.



Copy the IP address out of the GLASS Appliance and past it into a web browser outside the virtual machine. Note that the web server in the virtual machine now is serving a page to you outside the virtual machine. You can start to think of the virtual machine as a host running in your company's server room that you access over the web using TCP/IP.

🕲 GLASS Appliance   Status - Mozilla Firefox				
Eile Edit View History Bookmarks Iools Help				
C × ☆ (♥ http://192.168.79.128/	☆ • Google	P		
📵 VMware Infrastructure Web Access (de🗵 🛛 💞 GLASS Appliance   Status		•		
GEMSTONE <sup>®</sup> GLASS Virtual Appliance Version 1.0β11 - 09-Oct-08				
<mark>≮Seaside</mark> Status <u>User Guide Support Downloads About</u>				
Virtual Appliance Status	GLASS Appliance Status	_		
All the GemStone Processes listed in the right sidebar should have a green OK status. If not, use the "GLASS Appliance" menu in the toolbar of your GLASS Virtual Appliance to	GemStone Processes Stone: OK cache: OK	≣		

Returning to the virtual machine console, you can minimize Firefox and see the Linux desktop with menus. Select 'Run Pharo' from the 'GLASS Appliance' menu to start the GemTools application.



The GemTools application that ships with GLASS-Appliance-1.0beta11 is a Pharo application that fills the screen. Click the 'Login' button



When prompted, type your initials (this is used by the Monticello code management tools to identify authors of methods). After typing your initials (by convention, in lowercase), click the 'Accept(s)' button.

Please type your initials:	
jgf]	
Accept(s) Cancel(1)	

After you login, you should see a 'Transcript' window. We will do most of our interaction with the system using GemTools running outside the appliance, so go ahead and click the 'Logout' button on the Transcript.



The tools have been substantially updated since the version included with the appliance. To get the latest tools, navigate to the GemStone downloads page where you got the appliance and scroll down to the bottom. Click the 'GemTools 2.3.0 Preview for all platforms' link to download a zip file containing the tools package. (This version matches the server executables in the virtual appliance.)



When you unzip this package it will consist of a folder (or directory) containing various pieces. On the Macintosh, the entire folder will appear as an executable package. Double-click the icon to launch the tools. Otherwise, open the folder and launch 'GemTools.exe' on Window or 'GemTools.sh' on Linux.

Chapter 15: Using GemStone/S 64 Bit in a VMware Appliance



Before we can connect to GemStone on the virtual machine, we need to edit a few files that are used by the local machine to handle networking. First, we need to add the virtual machine to the hosts file so we can refer to it by name. On Linux or Macintosh you should find 'hosts' in /etc/ and you can edit it from a terminal using the command 'sudo vi /etc/hosts'. We will give more detailed instructions to our friends on Windows. On Windows, open a Windows Explorer to C:\WINDOWS\system32\drivers\etc and double-click on the 'hosts' icon.



When asked what application to use to open the file, select 'Notepad' and click OK.

Chapter 15: Using GemStone/S 64 Bit in a VMware Appliance



Add a line at the end with the IP address of the virtual machine (shown in the web browser in the virtual machine's console) and the word 'glass.' In my case the IP address is 192.168.79.128 but in your case it might be different. Save the file and close.



Open the 'services' file in the same manner and add 'gs64ldi 50377/tcp #GemStone/S' to the end. Save the file and close Notepad.

📮 services - Not	epad		
<u>File E</u> dit F <u>o</u> rmat	⊻iew <u>H</u> elp		
monitor ldaps doom kerberos-adm kerberos-adm kerberos-iv kpop ms-sql-s ms-sql-s ms-sql-s ms-sql-m wins vins ingreslock l2tp pptp radius radacct nfsd knetd man	561/udp 636/tcp 666/udp 749/tcp 749/udp 750/udp 1109/tcp 1433/tcp 1433/tcp 1433/udp 1434/tcp 1512/tcp 1512/udp 1524/tcp 1701/udp 1723/tcp 1812/udp 1813/udp 2049/udp 2053/tcp 9535/tcp	sldap ingres nfs	<pre>#LDAP over TLS/SSL #Doom Id Software #Doom Id Software #Kerberos administration #Kerberos administration #Kerberos version IV #Kerberos POP #Conference calling #Microsoft-SQL-Server #Microsoft-SQL-Server #Microsoft-SQL-Monitor #Microsoft-SQL-Monitor #Microsoft windows Interne #Microsoft windows Interne #Kerberos de-multiplexor #Remote Man Server</pre>
gs64ldi	50377/tcp	#GemStone/S 64 Bit	
<			

Now return to the GemTools application and launch it. This will launch Pharo with an image that contains three windows: (1) a GemTools Launcher; (2) a Shout Workspace; and (3) a Transcript. Instead of the earlier approach of using the Pharo 'Seaside One-Click Experience' to create and serve web pages, we are now using Pharo to run a set of tools that give us access to a GemStone system.

In the Shout Workspace we have the Smalltalk expression that was evaluated in this Pharo system to open the GemTools Launcher shown above the Workspace. Otherwise the Workspace has some instructions and a reference to Dale's 'Terse Guide to the New Glass Tools' (which will give more detail than we will give here). Once you have copied the link, you probably should close the Workspace to avoid confusion (since you should not need to evaluate expressions in Pharo.

The Transcript will show notes about various operations that are happening.

The GemTools Launcher has a pre-defined session that connects to a host named 'glass' using a port named 'gs64ldi' and asks for a connection to a stone named 'seaside.' The reason we added 'glass' to the hosts file and 'gs64ldi' to the services file is so that these identifiers are properly defined. With 'Glass' selected in the list at the top of the GemTools Launcher, click the 'Login' button.

## Chapter 15: Using GemStone/S 64 Bit in a VMware Appliance

🖑 Squeak! (C:\Docu	nents and Settings\delete\Desktop\GemTools-2.4.app\Contents\Resources\Ge	nTools.	image)	X
Class Class	GernTools Launcher [GernStone-dkh.441]	0		
Now that you have in the GemTools Lau the client and serve [1] http://gemstones: [2] http://gemstones: " OCLauncher open.	Shout Workspace downloaded the GemTools One-Click Experience edit the 'Glass' session description hother using the instructions at [1]. Test your login and logout and then update software following the instructions at [2]. nup.wordpress.com/2009/03/16/terse-guide-to-the-new-glass-tools/#sessiontemplates up.wordpress.com/2009/03/16/terse-guide-to-the-new-glass-tools/#updatesteps	0		
OO QUITan Array	Transcript (20 March 2009 2:46:26 pm) GemTools.image priorSource: 5986	0		
Shout Workspace	GemTools Launcher [GemStone Transcript			

When prompted, enter your initials so that Monticello can track any edits to code.

Once you are logged in to the GLASS system, the GemTools Launcher will change to show options available when logged in to the system. If you click the 'Update' button you will get a menu of options.

000	GemTools Launcher [GemStone-dkh.441]	0
Glass GS[1]		
Glass GS[1] - GLASS.23	30-dkh.177 - <b>workspace:</b> 'GLASS' - <b>auto:</b> [commit migrate]	
Logout Tran	saction View Find Tools Admin Update Debug	
	Update Update Client GLASS Client recent changes GLASS Server change log GLASS Client change log Update GLASS GLASS Server recent change	8

Select first command, 'Update Client' to update the GemTools code in Pharo. If the client is up-to-date then you will get a dialog offering you the option of selection from non-released version. Click 'No' to stay with the current code.



Repeat the update process and select the option to 'Update GLASS.' This should provide a list of released versions available. Select the most recent.

C.	noose	versi	on.	
All vers	ions			
GLASS.2	0-dkl	h.209.1	ncz	[beta]
GLASS.2	BO-dk	h.183.1	ncz	[beta]
GLASS.2	30-dk)	h.182.1	ncz	[beta]

Once the update process completes, you should be informed of that fact.



At this point you can logout and quit the GemTools Pharo application.

If you have are running Macintosh OS X 10.6 or a 64-bit version of Linux you have the option of installing GemStone as a native application on your machine. This approach is a bit more complex to get right, but allows you to run GemStone without the virtual machine overhead. The following script shows how to do the install (see <a href="http://seaside.gemstone.com/downloads.html">http://seaside.gemstone.com/downloads.html</a> for details):

```
mkdir /opt/gemstone /opt/gemstone/locks /opt/gemstone/log
cd /opt/gemstone
curl http://seaside.gemstone.com/scripts/installGemstone.sh > \
    installGemstone.sh
./installGemstone.sh
```

This script will prompt you for your password so it can update kernel memory settings (feel free to study the script if you have any concerns). After the script completes, continue with the following to install Seaside 3.0:

source /opt/gemstone/product/seaside/defSeaside
startnet
startGemstone

## Now to login using a GUI.

```
curl http://seaside.gemstone.com/squeak/GemTools-1.0-beta.8-244x.app.zip > \
    GemTools.zip
unzip GemTools.zip
open GemTools-1.0-beta.8-244x.app/
```

and the server is started, use 'startSeaside\_Hyper 8000' to start a web server. In a web browser go to http://localhost:8000/seaside.