vizioncore

vFoglight™

formerly vCharter Pro™

Cartridge for VMware User Guide

DELL

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Buffalo Grove, IL 60089
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Trademarks

Third Party Contributions

For a list of third-party components and licenses, see Appendix: License Credits.

Disclaimer

Cartridge for VMware User Guide
September 2008
Cartridge Version 5.2.1

Table of Contents

Introduction to this Guide

This chapter provides information about what is contained in the *Cartridge for VMware User Guide*. It also provides information about the vFoglight documentation suite and Vizioncore Software.

This chapter contains the following sections:

About vFoglight

vFoglight is an application management solution that reduces or eliminates service disruptions to unify IT and the business. Unlike other solutions, it provides a correlated, 360 degree view of your applications from end user to database and from service levels to infrastructure—to source the root cause of every incident impacting your business and fix them quickly. vFoglight correlates data from multiple perspectives into a single version of the truth to provide deep insight into the service relationships that exist between end users, the business and infrastructure components. Its unique adaptive technology rapidly adjusts to change for improved application performance and service levels, reduced operational cost and risk, and enhanced visibility for all stakeholders.

About this Guide

This is a user guide. It can be read straight through in an effort to acquire an overall understanding of the workings and capabilities of vFoglight for VMware, or it can be used as a reference to be consulted whenever you require specific information about the cartridge.

This *Cartridge for VMware User Guide* is organized as follows:

Chapter 1, Introduction to the VMware Virtual Infrastructure — Introduces you to the VMware virtual infrastructure and provides you with essential foundational information.

Chapter 2, Navigation Basics — Describes the basic vFoglight navigation techniques that you require in order to use the vFoglight Cartridge for VMware.

Chapter 3, Interacting with vFoglight Cartridge for VMware — Takes you through the various dashboards and associated views that make up the vFoglight Cartridge for VMware.

vFoglight Documentation Suite

The vFoglight documentation suite is made up of the core documentation set plus documents set for advanced configurations. Documentation is provided in a combination of online help and PDF.

- **Online Help:** You can open online help by selecting the Help tab in the action panel.
- **PDF:** The *Getting Started Guide*, *What's New Guide, System Requirements and Platform Support Guide, Installation and Setup Guide* set, *Administration and Configuration Guide*, *vFoglight User Guide*, *Command-Line Reference Guide*, *Web Component Guide*, and *Web Component Tutorial*, are provided as PDF files. The PDF guides are included in the zip file downloaded from Vizioncore. Adobe® Reader® is required.

Core Documentation Set

The core documentation set consists of the following:

- *Release Notes* (PDF)
- *Getting Started Guide* (PDF)
- *What's New Guide* (PDF)
- *System Requirements and Platform Support Guide* (PDF)
- *Installation and Setup Guide* set (all in PDF format):
  - Installation and Setup Guide — *Installing on Windows with an Embedded MySQL Database*
  - Installation and Setup Guide — *Installing on Windows with an External MySQL Database*
  - Installation and Setup Guide — *Installing on Windows with an External Oracle Database*
- *Administration and Configuration Guide* (PDF and online help)
- *vFoglight User Guide* (PDF and online help)
- Advanced Configuration Guide set (all in PDF format):
  - *Command-Line Reference Guide* (PDF and online help)
  - *Web Component Guide* (PDF and online help)

- *Web Component Tutorial* (PDF and online help)
- *Web Component Reference* (online help)

Cartridge Documentation Sets

When you deploy a cartridge, the documentation set for the cartridge is installed. The online help for the cartridge is integrated automatically with the core vFoglight help. When you open the help, the name of the cartridge is displayed in a top level entry within the table of contents.

Some cartridges include additional PDF guides, which may be one or more of the following: a *Getting Started Guide*, a *Reference Guide*, an *Installation Guide*, or the online help as a *User Guide*.

Feedback on the Documentation

We are interested in receiving feedback from you about our documentation. For example, did you notice any errors in the documentation? Were any features undocumented? Do you have any suggestions on how we can improve the documentation? All comments are welcome. Please submit your feedback to the following email address:

info@vizioncore.com

Please do not submit Technical Support related issues to this email address.

Text Conventions

This section outlines an approach for using this guide, reviews the text conventions that are used, and summarizes the rest of the documentation set.

The following table summarizes how text styles are used in this guide:

Convention	Description
`Code`	Monospace text represents code, code objects, and command-line input. This includes: • Java language source code and examples of file contents • Classes, objects, methods, properties, constants, and events • HTML documents, tags, and attributes
`Variables`	Monospace-plus-italic text represents variable code or command-line objects that are replaced by an actual value or parameter.
Interface	Bold text is used for interface options that you select (such as menu items) as well as keyboard commands.
Files, components, and documents	Italic text is used to highlight the following items: • Pathnames, file names, and programs • Figure captions • The names of other documents referenced in this guide

About Vizioncore Inc.

Vizioncore was formed in July 2002 as a consulting and software-development company with the mission to create easy-to-use software solutions that performed reliable and repeatable automation of datacenter functions specifically for the Citrix platform. A main corporate goal was to enable business partners to offer solutions that targeted real-world IT issues and provided the best possible installation and automation for their clients' systems.

Vizioncore's solutions have proved successful in organizations from small to mid-sized businesses to large enterprises, in a wide variety of vertical industries, including Financial Services, Government, Healthcare, Manufacturing, and High Tech. Vizioncore, Inc. can be found in offices around the globe and at www.vizioncore.com.

Contacting Dell

Note: If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Visit http://support.dell.com.
2. Verify your country or region in the Choose A Country/Region drop-down menu at the bottom of the page.
3. Click Contact Us on the left side of the page.Note: Toll-free numbers are for use within the country for which they are listed.
4. Select the appropriate service or support link based on your need.
5. Choose the method of contacting Dell that is convenient for you.

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Antigua and Barbuda	Web Address E-Mail Address Technical Support., Customer Service, Sales	www.Dell.com.ag la-techsupport@dell.com 1-800-805-5924
Aomen	Technical Support Dell™ Dimension™, Dell Inspirion™, Dell Optiplex™, Dell Lattitude™, and Dell Precision™Servers and Storage	0800-105 0800-105
Argentina (Buenos Aires) International Access Code: 00 Country Code: 54 City Code: 11	Web Address E-Mail Address for Desktop/ Portable Computers E-Mail Address for Servers and EMC® Storage Products Customer Service Technical Support Technical Support Services Sales	www.dell.com.ar la-techsupport@dell.com la_enterprise@dell.com toll-free: 0-800-444-0730 toll-free: 0-800-444-0733 toll-free: 0-800-444-0724 0-800-444-3355
Aruba	Web Address E-Mail Address Technical Support., Customer Service, Sales	www.Dell.com/aw la-techsupport@dell.com toll-free: 800-1578
Australia (Sydney) International Access Code: 0011 Country Code: 61 City Code: 2	Web Address Contact Dell Web Address Technical Support., Customer Service, Sales	support.ap.dell.com support.ap.dell.com/contactus 13DELL-133355

Austria (Vienna) International Access Code: 900 Country Code: 43 City Code: 1	Web Address	Support.euro.dell.com
	E-Mail Address	Tech_support_central_europe@dell.com
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	Home/Small Business Fax	0820 240 530 49
	Home/Small Business Customer Service	0820 240 530 14
	Home/Small Business Support	0820 240 530 17
	Preferred Accounts/Corporate Customer	0820 240 530 16
	Service Preferred Accounts/Corporate Customer	0820 240 530 17
	Switchboard	0820 240 530 00
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Barbados	Web Address	www.dell.com/bb
	E-Mail Address	la-techsupport@dell.com
	Technical Support., Customer Service, Sales	1-800-534-3142
Belgium (Brussels)	Web Address	Support.euro.dell.com
	General Support	02 481 92 88
	General Support Fax	02 481 92 95
	Customer Service	02 713 15 65
	Corporate Sales	02 481 91 00
	Fax	02 481 91 99
	Switchboard	02 481 91 00
Bolivia	Web Address	www.dell.com/bo
	E-Mail Address	la_techsupport@dell.com
	Technical Support., Customer Service, Sales	toll-free: 800-10-0238
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	E-Mail Address	BR_TechSupport@dell.com
	Customer Service and Tech Support	0800 970 3355
	Technical Support Fax	51 2104 5470
	Customer Service Fax	51 2104 5480
	Sales	0800 722 3498
British Virgin Islands	Technical Support, Customer Service, Sales	toll-free: 1-866-278-6820
Brunei Country Code: 673	Technical Support (Penang, Malaysia)	604 633 4966
	Customer Service (Penang, Malaysia)	604 633 4888
	Transaction Sales (Penang, Malaysia)	604 633 4955
Canada (North York, Ontario) International Access Code: 011	Online Order Status Web Address	www.dell.ca/ostatus
	AutoTech (automated Hardware and Warranty Support)	support.ca.dell.com
	Customer Service	toll-free:1-800-247-9362
	Home/Home Office	toll-free:1-800-847-4096
	Small Business	toll-free:1-800-906-3355
	Medium/Large Business, Government, Education	toll-free:1-800-387-5757
	Hardware Warranty Phone Support	
	Computers for Home/Home Office	toll-free:1-800-847-4096
	Computers for Small/Medium/Large Business Government	toll-free:1-800-387-5757
	Printers, Projectors, Televisions, Handheld, Digital	1-877-335-5767
	Jukebox, and Wireless Sales	toll-free:1-800-999-3355
	Home and Home Office Sales	toll-free:1-800-387-5752
	Small Business	toll-free:1-800-387-5755
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	Spare Parts and Extended Service	
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	Technical Support, Customer Service, Sales	1-877-262-5415

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Denmark (Copenhagen) International Access Code: 00 Country Code: 45	Web Address Technical Support Customer Service – Relational Home/Small Business Customer Service Switchboard – Relational Switchboard Fax – Relational Switchboard – Home/Small Business Switchboard Fax – Home/Small Business	Support.euro.dell.com 7023 0182 7023 0184 3287 5505 3287 1200 3287 1201 3287 5000 3287 5001
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	E-Mail Address	la-techsupport@dell.com
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	Technical Support, Customer Service, Sales (Calling from Guayaquil)	toll-free: 1800-999-119-877-655-3355
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	Customer Service	0207 533 538
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	Switchboard	0825 004 700
	Switchboard (calls from outside of France)	04 99 75 40 00
	Sales	0825 004 700
	Fax	0825 004 701
	Fax (calls from outside of France)	04 99 75 40 01
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	Home computers	1850 543 543
	At Home Support	1850 200 889
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	Home	1850 333 200
	Small Business	1850 664 656
	Medium Business	1850 200 646
	Large Business	1850 200 646
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	U.K. Customer Service (dealing with U.K.only)	0870 906 0010
	Corporate Customer Service (dial within U.K. only)	0870 907 4499
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	Customer Service	02 696 821 14
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	Switchboard	02 696 821 12
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	Customer Service	02 577 825 55
	Fax	02 575 035 30
	Switchboard	02 577 821
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	Technical Support - Dell PowerApp™, Dell PowerEdge™, Dell PowerConnect™, and Dell PowerVault™,	toll-free: 0120-198-498
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	Technical Support outside of Japan - Projectors, PDAs, Printers, Routers	81-44-556-3468
	Faxbox Service	044-556-3490
	24-Hour Automated Order Status Service	044-556-3801
	Customer Service	044-556-4240
	Business Sales Division - up to 400 employees	044-556-1465
	Preferred Accounts Division Sales - over 400 employees	044-556-3433
	Public Sales - government agencies, educational institutions, and medical institutions	044-556-5963
	Global Segment Japan	044-556-3469
	Individual User	044-556-1657
	Individual User Online Sales	044-556-2203
	Individual User Real Site Sales	044-556-4649
	Switchboard	044-556-4300
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	Technical Support - Dimension, PDA, Electronics, and Accessories	toll-free: 080-200-3801
	Sales	toll-free: 080-200-3600
	Fax	2194-6202
	Switchboard	2194-6000
Latin America	Customer Technical Support (Austin, Texas, U.S.A.)	512 728-4093
	Customer Service (Austin, Texas, U.S.A.)	512 728-3619
	Fax (Technical Support and Customer Service) (Austin, Texas, U.S.A.)	512 728-3883
	Sales (Austin, Texas, U.S.A.)	512 728-4397
	SalesFax (Austin, Texas, U.S.A.)	512 728-4600 or 512 728-3772
Luxemborg International Access Code: 00 Country Code: 352	Web Address	Support.euro.dell.com
	Support	3420808075
	Home/Small Business Sales	+32 (0)2 713 15 96
	Corporate Sales	26 25 77 81
	Customer Service	+32 (0)2 481 91 19
	Fax	26 25 77 82
Macao Country Code: 83	Technical Support	toll-free: 0800 105
	Customer Service (Xiamen, China)	34 160 910
	Transaction Sales (Xiamen, China)	29 693 115

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	Technical Support - Dimension, Inspiron, and Electronics and Accessories	toll-free: 1800 881 306
	Technical Support - PowerApp, PowerEdge, PowerConnect, and PowerVault	toll-free: 1800 881 386
	Customer Service	toll-free: 1800 881 306 (option 6)
	Transaction Sales	toll-free: 1800 888 202
	Corporate Sales	toll-free: 1800 888 213
Mexico International Access Code: 00 Country Code: 52	Web Address	www.dell.com/mx
	E-mail Address	la-techsupport@dell.com
	Customer Technical Support	001-877-384-8979 or 001-877-269-3383
	Sales	50-81-8800 or 01-800-888-3355
	Customer Service	001-877-384-8979 or 001-877-269-3383
	Main	50-81-8800 or 01-800-888-3355
Montserrat	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	Toll-free: 1-866-278-6822
Netherlands Antilles Netherlands (Amsterdam) International Access Code: 00 Country Code: 31 City Code: 20	E-mail Address	la-techsupport@dell.com
	Web Address	support.euro.dell.com
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	Technical Support Fax	020 674 47 66
	Home/Small Business Customer Service	020 674 42 00
	Relational Customer Service	020 674 43 25
	Home/Small Business Sales	020 674 55 00
	Relational Sales	020 674 50 00
	Home/Small Business Sales Fax	020 674 47 75
	Relational Sales Fax	020 674 47 50
	Switchboard	020 674 50 00
	Switchboard Fax	020 674 47 50
New Zealand International Access Code: 00 Country Code: 64	Web Address	Support.ap.dell.com
	E-mail Address	Support.ap.dell.com/contactus
	Technical Support, Customer Service, Sales	0800 441 567
Nicaragua	Web Address	www.dell.com/ni
	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	001-800-220-1377
Norway (Lysaker) International Access Code: 00 Country Code: 47	Web Address	Support.euro.dell.com
	Technical Support	671 16882
	Relational Customer Service	671 17575
	Home/Small Business Customer Service	231 62298
	Switchboard	671 16800
	Fax Switchboard	671 16865
Panama	Web Address	www.dell.com/pa
	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	011-800-507-1264
Peru	Web Address	www.dell.com/pe
	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	0800-50-669

Poland (Warsaw) International Access Code: 011 Country Code: 48 City Code: 22	Web Address E-mail Address Customer Service Phone Customer Service Sales Customer Service Fax Reception Desk Fax Switchboard	support.euro.dell.com pl_support_tech@dell.com 57 95 700 57 95 999 57 95 999 57 95 806 57 95 998 57 95 999
Portugal International Access Code: 00 Country Code: 351	Web Address Technical Support Customer Service Sales Fax	Support.euro.dell.com 707200149 800 300 413 800-300-410 or 800-300 -411 or 800-300-412 or 21-422-07-10 21-424-01-12
Puerto Rico	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/pr la-techsupport@dell.com 1-877-537-3355
St. Kitts and Nevis	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/kn la-techsupport@dell.com toll-free: 1-866-540-3355
St. Lucia	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/lc la-techsupport@dell.com toll-free: 1-866-464-4352
St. Vincent and the Grenadines	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/vc la-techsupport@dell.com toll-free: 1-866-464-4353
Singapore International Access Code: 005 Country Code: 65	NOTE: The phone numbers in this section should be called from within Singapore or Malaysia only. Web Address Technical Support - Dimension, Inspiron, and Electronics and Accessories Technical Support - OptiPlex, Latitude, and Dell Precision Technical Support - PowerApp, PowerEdge, PowerConnect, and PowerVault Customer Service Transaction Sales Corporate Sales	 support.ap.dell.com toll-free: 1 800 394 7430 toll-free: 1 800 394 7488 toll-free: 1 800 394 7478 toll-free: 1 800 394 7430 (option 6) toll-free: 1 800 394 7412 toll-free: 1 800 394 7419
Slovakia (Prague) International Access Code: 00 Country Code: 421	Web Address E-mail Address Technical Support Customer Service Fax Tech Fax Switchboard (Sales)	support.euro.dell.com czech_dell@dell.com 02 5441 5727 420 22537 2707 02 5441 8328 02 5441 8328 02 5441 8328 02 5441 7585
South Africa (Johannesburg) International Access Code: 09/091 Country Code: 27 City Code: 11	Web Address E-mail Address Gold Queue Technical Support Customer Service Sales	support.euro.dell.com dell_za_suppor@dell.com 011 709 7713 011 709 7710 011 709 7707 011 709 7700

Spain (Madrid) International Access Code: 00 Country Code: 34 City Code: 91	Web Address	Support.euro.com
	Home and Small Business	
	Technical Support	902 100 130
	Customer Service	902 118 540
	Sales	902 118 541
	Switchboard	902 118 541
	Fax	902 118 539
	Corporate	
	Technical Support	902 100 130
	Customer Service	902 115 236
	Switchboard	91 722 92 00
	Fax	91 722 95 83
Sweden (Upplands Vasby) International Access Code: 00 Country Code: 46 City Code: 8	Web Address	support.euro.dell.com
	Technical Support	08 590 05 199
	Relational Customer Service	08 590 05 642
	Home/Small Business Customer Service	08 587 70 527
	Employee Purchase Program (EPP) Support	020 140 14 44
	Technical Support Fax	08 590 05 594
Switzerland (Geneva) International Access Code: 00 Country Code: 41 City Code: 22	Web Address	Support.euro.dell.com
	E-mail Address	Tech_support_central_Europe@dell.com
	Technical Support – Home and Small Business	0844 811 411
	Technical Support – Corporate	0844 822 844
	Customer Service – Home and Small Business	0848 802 202
	Customer Service – Corporate	0848 821 721
	Fax	022 799 01 90
	Switchboard	022 799 01 01
Taiwan International Access Code: 002 Country Code: 886	Web Address	support.ap.dell.com
	E-mail Address	support.dell.com.cn/email
	Technical Support - OptiPlex, Latitude, Inspiron, Dimension, and Electronics and Accessories	toll-free: 0080 186 1011
	Technical Support - Servers and Storage	toll-free: 0080 160 1256
	Customer Service	toll-free: 0080 160 1250 (option 5)
	Transaction Sales	toll-free: 0080 165 1228
	Corporate Sales	toll-free: 0080 165 1227
Thailand International Access Code: 001 Country Code: 66	Web Address	Support.ap.dell.com
	Technical Support (OptiPlex, Latitude, and Dell Precision)	toll-free: 1800 0060 07
	Technical Support (PowerApp, PowerEdge, PowerConnect, and PowerVault)	toll-free: 1800 0600 09
	Customer Service	toll-free: 1800 006 007 (option 7)
	Corporate Sales	toll-free: 1800 006 009
	Transaction Sales	toll-free: 1800 006 006
Trinidad/Tobago	Web Address	www.dell.com/tt
	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	toll-free: 1-888-799-5908
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	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	toll-free: 1-877-441-4735

U.K.(Bracknell) International Access Code: 00 Country Code: 44 City Code: 1344	Web Address	upport.euro.dell.com
	E-mail Address	dell_direct_support@dell.com
	Customer Service Website	support.euro.dell.com/uk/en/ECare/form/home.asp
	Sales	
	Home and Small Business Sales	0870 907 4000
	Corporate/Public Sector Sales	01344 860 456
	Customer Service	
	Home and Small Business	0870 906 0010
	Corporate	01344 373 185
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	Global Accounts	01344 373 186
	Central Government	01344 373 196
	Local Government & Education	01344 373 199
	Health	01344 373 194
	Technical Support	
	Corporate/Preferred Accounts/PCA (1000+ employees)	0870 908 0500
	Other Dell Products	0870 353 0800
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Uruguay	Web Address	www.dell.com/uy
	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	toll-free: 000-413-598-2521
U.S.A. (Austin, Texas) International Access Code: 011 Country Code: 1	Automated Order-Status Service	toll-free: 1-800-433-9014
	AutoTech (portable and desktop computers)	toll-free: 1-800-247-9362
	Hardware and Warranty Support (Dell TV, Printers, and Projectors) for Relationship customers	toll-free: 1-877-459-7298
	Consumer (Home and Home Office) Support for Dell products	toll-free: 1-800-624-9896
	Customer Service	toll-free: 1-800-624-9897
	Employee Purchase Program (EPP) Customers	toll-free: 1-800-695-8133
	Financial Services Web Address	www.dellfinancialservices.com
	Financial Services (lease/loans)	toll-free: 1-877-577-3355
	Financial Services (Dell Preferred Accounts [DPA])	toll-free: 1-800-283-2210
	Business	
	Customer Service	toll-free: 1-800-624-9897
	Employee Purchase Program (EPP)	toll-free: 1-800-695-8133
	Customer s Support for printers, projectors, PDAs, and MP3 players	toll-free: 1-877-459-7298
	Public (government, education, and healthcare)	
	Customer Service and Support	toll-free: 1-800-456-3355
	Employee Purchase Program (EPP) Customers	toll-free: 1-800-695-8133
	Dell Sales	toll-free: 1-800-289-3355 or toll-free: 1-800-879-3355
	Dell Outlet Store (Dell refurbished computers)	toll-free: 1-888-798-7561
	Software and Peripherals Sales	toll-free: 1-800-671-3355
	Spare Parts Sales	toll-free: 1-800-357-3355
	Extended Service and Warranty Sales	toll-free: 1-800-247-4618
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	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	toll-free: 1-877-702-4360
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	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	0800-100-4752

1

Introduction to the VMware Virtual Infrastructure

This chapter introduces you to the VMware virtual infrastructure and provides you with essential foundational information.

The chapter contains the following sections:

For more detailed information about VMware virtualization products and solutions, please consult the appropriate VMware documentation.

VMware Virtual Infrastructure Overview

VMware Virtual Infrastructure 3 (VI3) provides an innovative mechanism for organizing and viewing any virtual infrastructure built on its platform. Using a unique combination of physical and logical components, this mechanism effectively and efficiently fulfills VMware's vision of the modern virtual infrastructure.

vFoglight Cartridge for VMware accommodates customers of all sizes that leverage VMware's VI3 virtualization platform by examining and enhancing VMware's eminently knowledgeable view of the virtual world.

Figure 1 highlights the components or objects that make up a typical VI3 implementation. This figure makes a clear distinction between objects that exist in the physical world and those that are considered to be virtual.

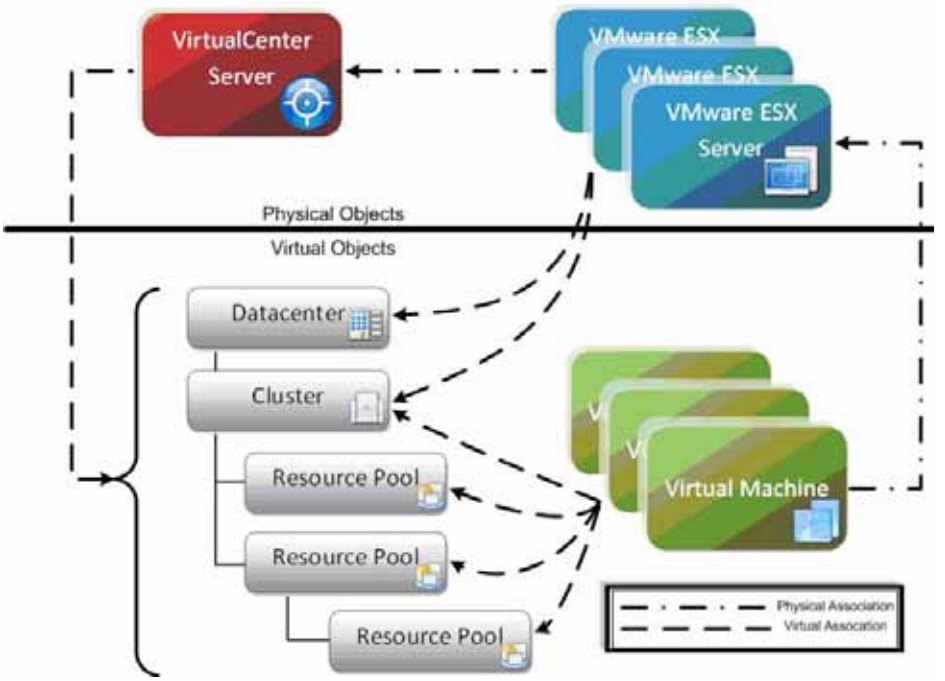

Figure 1 Typical VI3 Implementation

The VMware VirtualCenter Server 2 allows for the configuration of a hierarchical organizational structure that resides primarily within the virtual domain. This enables an organization to easily configure physical VMware ESX Servers and virtual machines to reside in logical groups that dictate the various aspects of the virtual infrastructure (like physical object location, resource allocations and limitations for virtual machines, and high availability settings for physical and virtual components).

Object Roles

Before we get too far into discussing the layout and capabilities of vFoglight Cartridge for VMware, we must understand the different roles the various physical and virtual objects play within the overall virtual infrastructure.

The VirtualCenter Server and VMware ESX Servers provide the physical foundation for the VI3 infrastructure.

Virtual machines on the other hand are classified as virtual components for the purpose of management and monitoring, even though they have many of the same characteristics (like direct network and storage access) as physical systems. At any given time, a virtual machine must be contained within a single VMware ESX Server. The particular ESX Server in which a given virtual machine is contained may change of course over the lifetime of the virtual machine through the use of unique VMware technologies such as VMware VMotion or VMware High Availability (VMware HA).

Physical Objects

The physical objects within the VMware virtual infrastructure are those with which you can physically interact. The virtual components or objects that make up the virtual environment cannot exist without the presence of underlying physical components.

A VMware ESX Server is an example of a physical component.

For vFoglight Cartridge for VMware to be used to monitor a virtual infrastructure, the virtual infrastructure must consist of at least one VirtualCenter Server that is used to manage the virtual infrastructure and at least one ESX Server that is used to run virtual machines.

Note Each ESX Server that is used to run virtual machines must have its own managing VirtualCenter Agent installed on it.

ESX Server Hosts

An ESX Server Host is the single physical component required to begin building a virtual infrastructure. An ESX Server provides a hypervisor based architecture for controlling and managing resources for the virtual machines that run on it. The virtual machines running on the host share the resources it provides. Should resources become over-committed, the ESX Server hypervisor determines which virtual machines have priority access to the shared resources (based on manual virtual machine configurations) and distributes the available resources accordingly.

Each ESX Server is managed by a single VirtualCenter Server instance, and can be configured to exist logically within either a Datacenter or Cluster virtual object within the overall virtual infrastructure.

VirtualCenter Server

Although a VirtualCenter Server can technically exist as a virtual machine, it is considered a physical component within the VMware virtual infrastructure.

VMware's VirtualCenter is the software tool used to manage virtual environments that are built on the VMware virtualization platform. VirtualCenter creates a hierarchical structure of virtual objects that enables a system administrator to logically lay out his virtual infrastructure configuration. VirtualCenter also introduces other advanced VMware functionality such as Distributed Resource Scheduling (DRS), VMotion, and High Availability (HA) that can be used to enhance the benefits of a virtual infrastructure.

VirtualCenter provides a robust WSDL that the vFoglight Cartridge for VMware leverages to capture and manipulate key characteristics and performance metrics of the various object types and objects found within the virtual infrastructure configuration. Each VirtualCenter instance that is to be monitored using the vFoglight Cartridge for VMware must have a Cartridge for VMware Collector configured for it that points to the web service interface. As mentioned in the *vFoglight Cartridge for VMware Installation Guide*, this agent can be installed on the VirtualCenter Server itself because all of the required components for the proper operation of the agent come pre-configured.

A single VirtualCenter Server can monitor approximately 100 VMware ESX Servers and 1500 virtual machines before performance and scalability challenges demand the introduction of a second VirtualCenter Server. Multiple VirtualCenter instances can be disbursed geographically to localize the management of large, distributed VI3 implementations.

Virtual Objects

Virtual objects can exist only within the confines of the virtual infrastructure. With the exception of virtual machines, virtual objects are logical and are used for organizing VMware ESX Servers and virtual machines, either geographically or by function. In addition, virtual objects allow for the advanced configuration of resource management and of high availability settings.

Virtual Machines

The creation and subsequent use of virtual machines is the primary purpose for building and maintaining a virtual infrastructure. Virtual machines share many of the characteristics of physical systems (like storage and network interaction), but they do not have direct access to the hardware that is used to process their information *and* they are considered virtual components within the virtual infrastructure.

A virtual machine encompasses more than just a guest operating system like Microsoft Windows. A virtual machine also contains specific configurations that help to define it, such as the number of processors and the amount of memory it can leverage.

All of the resource utilization for a particular virtual machine on a VMware ESX Server is scheduled through that Server's hypervisor. The efficient tracking and analysis of this scheduling of resources at both the virtual machine and the ESX Server Host level is a key function provided by the vFoglight Cartridge for VMware.

At any given time a virtual machine must reside on a single VMware ESX Server, but it can be moved across physical ESX Servers, typically without downtime, through the use of key VirtualCenter functionality called VMotion. VMotion provides a method for proactively moving a virtual machine from one ESX Server to another while avoiding the downtime that can arise from having to perform actions like patching a physical host server. VMotion also provides a manual method a system administrator can use to better balance virtual machine workloads based on resource utilization trends.

A VMware Cartridge feature called Migration Modeler provides a method for analyzing the impact of using VMotion to move a virtual machine between two VMware ESX Servers in a Cluster. Migration Modeler provides this functionality without you actually having to move the virtual machine.

vFoglight Cartridge for VMware also provides a mechanism that tracks the lifecycle of the virtual machines within the virtual infrastructure. This enables you to quickly and easily view a history of a virtual machine's performance metrics and a history of its logical location within the virtual infrastructure.

VMware VirtualCenter offers some additional valuable features that customers may wish to use including the VMware Distributed Resource Scheduling (DRS) feature for automating the process of balancing VMware ESX Server utilization and the VMware High Availability (HA) feature for recovering from Host failure within a Cluster.

Datacenters

A Datacenter is the topmost virtual object within a VirtualCenter Server implementation and is required before any VMware ESX Server Hosts can be added to a VirtualCenter. A Datacenter is most commonly used to identify the physical boundaries within which an ESX Server Host can exist. In most implementations these boundaries constitute a single physical location that contains a large number of ESX Server Hosts. There is no hard and fast rule stating that a Datacenter must exist entirely at just one physical location, but other Datacenter implementations are atypical of most virtual infrastructures.

Within the boundaries of a Datacenter, objects of the same type cannot have the same name. For example, it is not possible to configure two ESX Server Hosts with the same name to reside within the same Datacenter. The same goes for virtual machines, Clusters, Resource Pools and any other objects that can be created and configured to reside within a Datacenter. Objects of the same type can have identical names as long as they are located in different Datacenters.

Datastores

The management of Datastores is carried out at the both the Datacenter and the ESX Server levels.

Each Datastore is contained within a Datacenter and must be uniquely named within its containing Datacenter.

A Datastore represents a storage location for virtual machine files. The storage location can be a local file system path, a Virtual Machine File System Storage (VMFS) volume, or a Network Attached Storage directory.

ESX Server Hosts can be configured to mount a set of network drives (or Datastores). For each storage location within a Datacenter there is only one Datastore, so multiple Hosts may be configured to point to the same Datastore. Whenever an ESX Server Host accesses a virtual machine or file within a Datacenter it must use the appropriate Datastore path.

Each Datastore object keeps a record of ESX Server Hosts that have mounted it, and a Datastore object can be removed only if no Hosts are currently mounting that Datastore.

Datastores are host-independent *and* platform-independent. Therefore, they do not change in any way when the virtual machines contained within them are moved from one ESX Server to another.

Clusters

A Cluster object is a group of VMware ESX Servers that share common storage resources and network configurations. A Cluster represents a pool of the combined resources of all of the ESX Server Hosts assigned to the Cluster. For example, if four ESX Servers are added to a Cluster and each ESX Server has 2x2 GHz processors with 4 GB of memory, the Cluster represents a pool of 16 GHz of CPU processing power and 16 GB of memory that is available for use by virtual machines.

A Cluster also serves as the boundary for virtual machine migration activity through the VMware VMotion or VMware HA features. When using either of these technologies for virtual machine migration it is critical that the participating ESX Server Hosts have identical storage resource and network configurations, and this is guaranteed within a Cluster by the very definition of a Cluster.

Resource Pools

Resource Pools enable an administrator to fine tune resource allocations within a Cluster. A Resource Pool can be configured to leverage a portion of the overall available resources within a Cluster and then virtual machines can be assigned to that Resource Pool. This enables an administrator to prioritize virtual machines—to either limit or guarantee certain resources to a particular virtual machine or group of virtual machines.

Resource Pools can be configured in many ways, from simple to complex. For a simple example, two Resource Pools are configured within a Cluster; one is named Production Virtual Machines and the other is named Development Virtual machines. The Production Resource Pool is configured with a "High" share priority and the Development Resource Pool is configured with the default "Normal" share priority. In this case any virtual machine residing in the Production Resource Pool is automatically given twice the priority, in terms of access to system resources during periods of contention, of any virtual machine residing in the Development Resource Pool.

To better demonstrates the true potential of using Resource Pools, the following is an advanced example. Four ESX Servers are added to a Cluster and each ESX Server has 2x2 GHz processors with 4 GB of memory. The Cluster therefore represents a pool of 16 GHz of CPU processing power and 16 GB of memory that is available for use by virtual machines. Figure 2 below illustrates that the Production Cluster resource that resides in the Chicago Datacenter has 16 GHz of processing power and 16 GB of memory. A Resource Pool is created for a CRM Application that has access to 8 GHz of

the Cluster's total CPU resources and 6 GB of the Cluster's total memory. By drilling down further from there you see that within the CRM Application Resource Pool there are two more Resource Pools (Database and Web). The existence of the Database Resource Pool ensures that key database virtual machines have access to the resources necessary to perform their highly transactional operations. The web servers have access to a smaller portion of the overall resources—just enough to provide the necessary end-user responsiveness from a web transaction perspective without impacting the key backend database infrastructure.

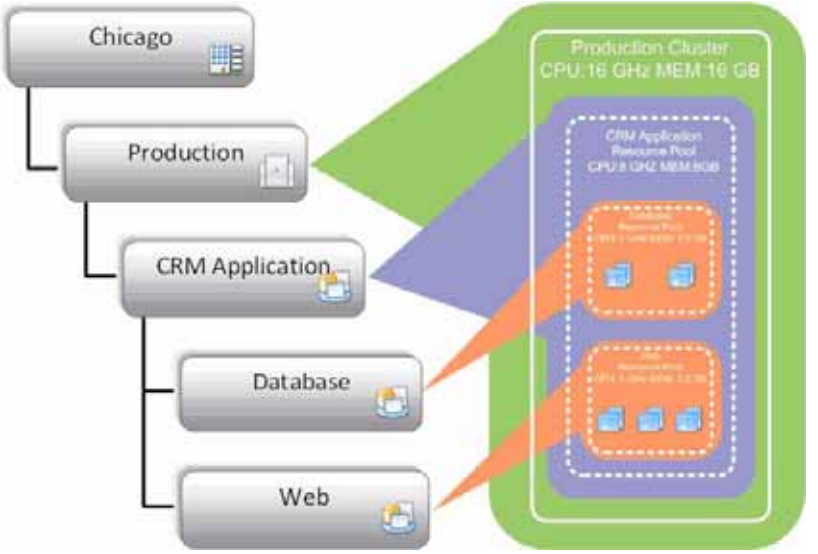

Figure 2 Advanced Resource Pools

To assist with the understanding of these nested relationships of virtualized objects, vFoglight Cartridge for VMware provides both a Topological and a Hierarchical View of the entire virtual infrastructure as well as Resource Pool mapping functionality for maximum flexibility in tracking advanced virtual infrastructure configurations.

Folders

Folders are hierarchical components that exist within a VirtualCenter and they enable an administrator to more easily organize the virtual environment for manageability. There are three different types of folders that can exist within the various layers of the virtual infrastructure hierarchy.

The following table lists the available types of folders, and explains the levels at which they can exist and the objects they can contain.

Folder Types

Folder Type	Level at Which It Can Exist	Objects It Can Contain
Datacenter	VirtualCenter Root	Datacenters
Virtual Machine	Datacenter	Virtual Machines and Templates
Compute Resources	Datacenter	Hosts and Clusters

Folders may contain nested folders of the same type, but not of other types. It is not possible, for example, to create a Virtual Machine folder within a Datacenter folder.

Folders are provided strictly for organizational and management purposes. They offer a way for an administrator to classify objects that is not tied to (and therefore bound by) the virtual/physical relationship framework. For example, two Datacenter folders are created at a VirtualCenter root; one folder is labelled Primary Datacenters and the other is labelled Disaster Recovery Datacenters. An administrator can configure multiple Primary Datacenters containing production ESX Servers, place those Datacenters in the Primary Datacenters folder, and then assign the necessary permissions to that folder to allow standard users to perform management tasks for the entire primary virtual infrastructure. The administrator can then configure multiple Disaster Recovery Datacenters containing disaster recovery ESX Servers, place those Datacenters in the Disaster Recovery Datacenters folder, and assign a different set of permissions to that folder. This prevents standard users from building virtual machines that may take over resources that are necessarily dedicated to HA-configured disaster failover virtual infrastructure components.

Using vFoglight Cartridge for VMware, you can observe either a Topology View that does not use folders and presents a logical breakdown of the virtual infrastructure by component or a Hierarchy View that uses folders and presents the familiar interface that is found within the VirtualCenter management server.

2

Navigation Basics

This chapter describes the basic vFoglight navigation techniques that you require in order to use vFoglight Cartridge for VMware.

The chapter contains the following sections:

For more detailed information about vFoglight Cartridge for VMware navigation, refer to “Interacting with the vFoglight Cartridge for VMware” on page 41.

For more detailed information about vFoglight navigation in general, refer to the *vFoglight User Guide* and the *vFoglight Administration and Configuration Guide*.

vFoglight GUI Panels

Depending on who you log in as when you log in to vFoglight, you may see either the contents of the first bookmark (the Welcome page is the default) listed under Bookmarks, or a home page. For further details, refer to the *vFoglight User Guide*.

Typically, the GUI is divided into three panels: The navigation panel at the left, the larger display panel in the middle, and the actions panel at the right.

Figure 1 shows a typical vFoglight GUI.

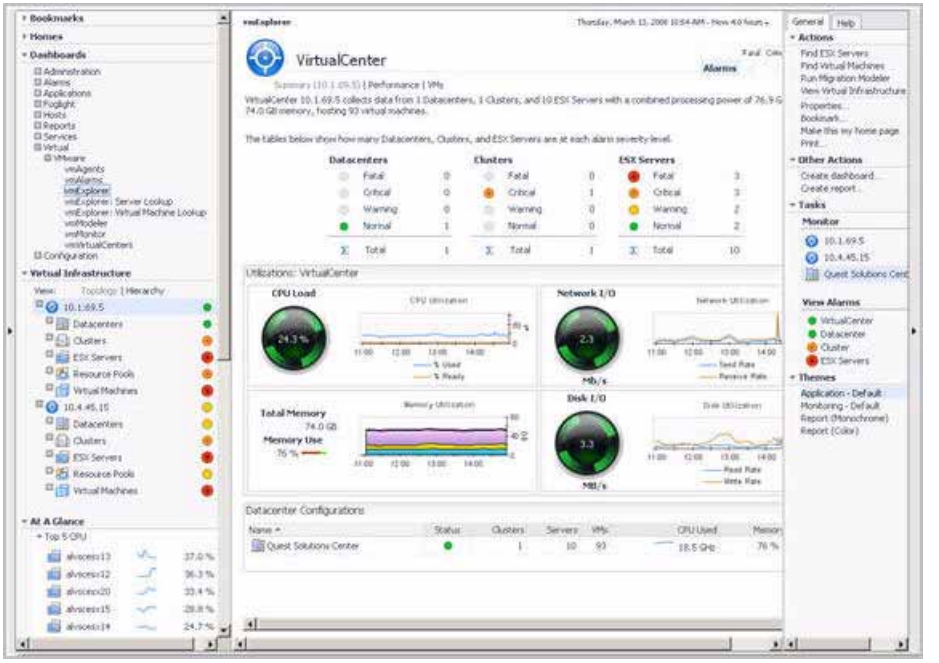

Figure 1 vFoglight GUI

Navigation Panel

The navigation panel operates like a drawer. Its default state is open. To close the navigation panel, click the arrow at the far left of the vFoglight GUI. Click that arrow again to open the navigation panel.

The navigation panel lists all of the dashboards that are available to the current user for viewing. You can use the navigation panel to select a dashboard to view in the display panel. To access a specific dashboard, open the appropriate module (the Virtual module, for example).

The navigation panel also provides access to the vFoglight Administration and Configuration areas, and may provide access to some other navigational views (for example, the Virtual Infrastructure View for the vFoglight Cartridge for VMware vmExplorer Dashboard).

If you do not see any dashboards in the navigation panel, the user you signed in as may not have been assigned to a group. For details, refer to the *vFoglight User Guide*.

Display Panel

The display panel is used to view current dashboards and reports, as well as to create new dashboards and reports. You can increase the size of this area by re-sizing the navigation panel or, if the actions panel is open, by closing the actions panel.

Actions Panel

The actions panel operates like a drawer. Its default state is closed. To open the actions panel, click the arrow at the far right of the vFoglight GUI. Click that arrow again to close the actions panel.

The actions panel contains the various actions and tasks you can perform with the current dashboard. It also contains views and data that you can add to a dashboard or report you are creating and provides access to the online help files.

Breadcrumbs

As you drill down into the various levels within a vFoglight Cartridge for VMware dashboard, a trail of breadcrumbs are left just above the dashboard. This trail provides you with context. It provides you with the name of the level you are currently viewing and with a simple mechanism for returning to any of its related parent levels.

Figure 2 displays a typical breadcrumb trail. This trail was created while drilling down within the vFoglight Cartridge for VMware vmMonitor Dashboard. Each item within this breadcrumb trail is a hyperlink to a previously viewed parent level.

Figure 2 Breadcrumbs

For more specific information about the vmMonitor Dashboard, refer to Chapter 3, “Interacting with the vFoglight Cartridge for VMware”.

Time Range

The default behavior of vFoglight Cartridge for VMware is to display metrics, alerts, and messages that have occurred within the last four hours. This time range, however, is configurable.

To configure the Time Range use the Time Range menu located in the upper right corner of the vFoglight GUI, as show in Figure 3.

Figure 3 Time Range menu

Using the Time Range menu, you can select from the listed pre-defined time ranges or you can specify a custom range using either a sliding time bar or precision controls to specify dates and times. When you modify the time range for a dashboard or view, it adjusts the range for all of the views contained within and drill-downs accessed from that dashboard or view. It does not adjust the time range for any parent views.

For more detailed information about modifying the time range, please refer to the *vFoglight User Guide*.

Sortable Lists

In certain vFoglight Cartridge for VMware dashboards, some levels of views contain sortable lists. An example of this is the vmExplorer Dashboard Related Objects View displayed in Figure 4.

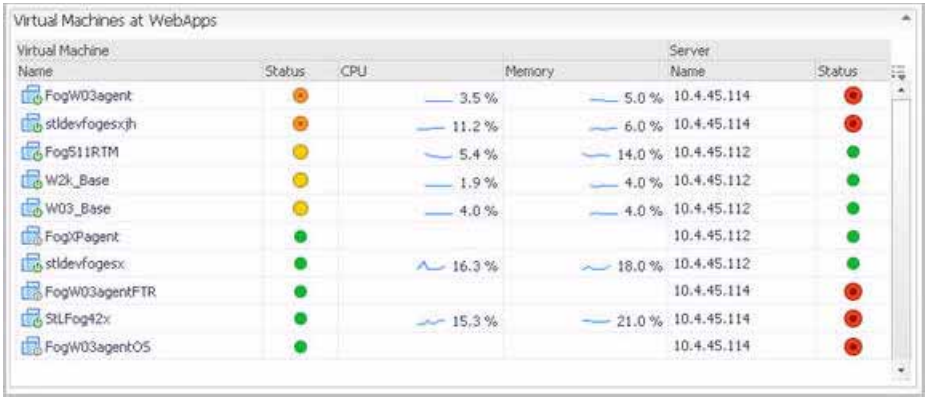

Figure 4 Related Objects View

It is possible to sort this list by column using any of the column headings. Click a column heading once to sort the list in ascending order. The list is redrawn according to your specification. Click the column heading again to re-sort the list in descending order.

This is handy when you want to have an organized view of virtual machines or ESX Server objects sorted by name, parent container, status, etc.

Alarms and their Status Indicators

vFoglight Cartridge for VMware uses status indicators to show that specific alarms have been raised within the virtual infrastructure. Four status indicators, similar to those displayed in Figure 5, are used throughout all of the vFoglight Cartridge for VMware dashboards. The status indicators may be displayed as round and colored with the number off to the side (as in Figure 5) or they may be displayed as rectangular and colored with the number in the center of the indicator.

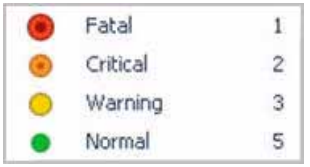

Figure 5 Status Indicators

The vFoglight alarm types respond to thresholds that are defined within the vFoglight Cartridge for VMware rules. As metrics change and move through thresholds, alarms are raised. As a metric moves through thresholds the severity of an alarm changes, which causes the associated status indicator to change.

For detailed information about vFoglight Cartridge for VMware rules and metrics, refer to the *vFoglight Cartridge for VMware Reference Guide*.

It is important to note that with vFoglight Cartridge for VMware an event that triggers an alarm for an object does *not* trigger an alarm for any of the object's parents. For example, a single Virtual Machine running at a high CPU utilization does not trigger an alarm for its parent ESX Server. An alarm would only be triggered for the parent ESX Server if the server itself was running at a high CPU utilization.

Mouse-over Actions

Many items within the vFoglight Cartridge for VMware dashboards display additional information when you hover the cursor over them. For example, when you hover the cursor over a graph you are likely to see a specific value or values that correspond(s) to the position of the cursor. When you hover the cursor over an individual metric, you are likely to see a small descriptive popup.

3

Interacting with the vFoglight Cartridge for VMware

This chapter takes you through the various dashboards and associated views that make up vFoglight Cartridge for VMware.

The chapter contains the following sections:

vmAgents Dashboard

The vmAgents Dashboard has just one view that displays information on the various agent systems that are collecting and sending details to vFoglight Cartridge for VMware. This dashboard can be used to verify that agents are properly reporting information at regular intervals to vFoglight Cartridge for VMware.

The vmAgents Dashboard contains an alarm summary that shows you the number of alarms of each severity that are presently outstanding for agents. If you click an alarm count, you get a popup that lists the active alarms for the agent(s).

Figure 1 shows an example of a typical vmAgents Dashboard, with two agents running.

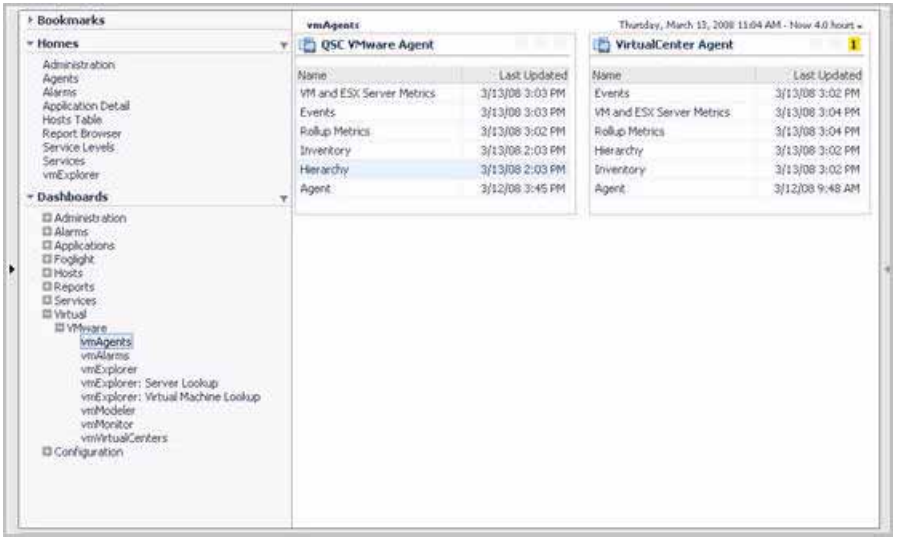

Figure 1 vmAgents Dashboard

vmAlarms Dashboard

The vmAlarms Dashboard is a simple dashboard that shows all of the alarms that have been triggered but not cleared within vFoglight. It can be used to isolate alarms specific to the virtualized environment.

Figure 2 shows an example of a typical vmAlarms Dashboard.

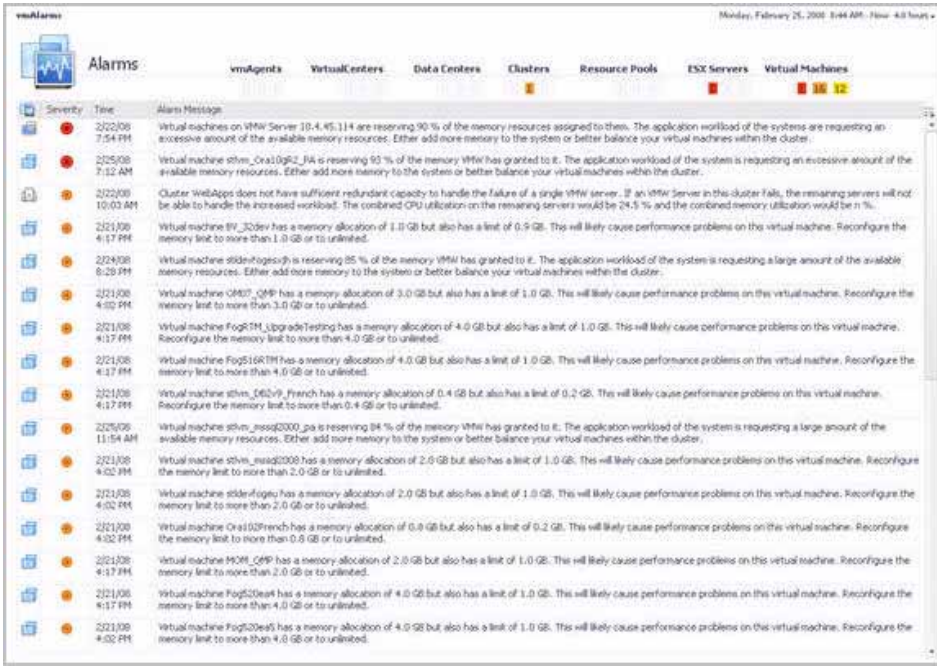

Figure 2 vmAlarms Dashboard

The vmAlarms Dashboard is made up of the following views:

- Alarms Overview
- Alarms List View

Alarms Overview

The Alarms Overview is located at the top of the vmAlarms Dashboard.

Purpose

The Alarms Overview provides a quick and easy way for you to view vFoglight alarms grouped by object and severity level. You can use this Overview to monitor alarms and to identify the sources of problems within the virtual infrastructure. If you click any of the alarm counts for a particular object, a popup displaying just the alarms for that object appears.

Alarms List View

The Alarms List View takes up the majority of the vmAlarms Dashboard.

Purpose

Each alarm row in the Alarms List contains an object icon that identifies the source of the alarm, an alarm icon that indicates the severity of the alarm, the time that the alarm occurred, and the text of the alarm. The columns are sortable so that alarms can be listed in order by source, severity, time or message. Simply click a column heading to sort the table by that column.

If you click an alarm’s severity icon, a popup for acknowledging or clearing that alarm is displayed. If you click the message or any other column in the row, a vmMonitor Dashboard displaying information pertaining to the corresponding object appears.

vmExplorer Dashboard

The vmExplorer Dashboard has a hierarchical interface that you can use to view various performance metrics and alarms within the virtual infrastructure. It provides several informative views through which you can quickly and easily access detailed information about any of the available components (physical or virtual) within the infrastructure.

Figure 3 shows an example of a typical vmExplorer Dashboard.

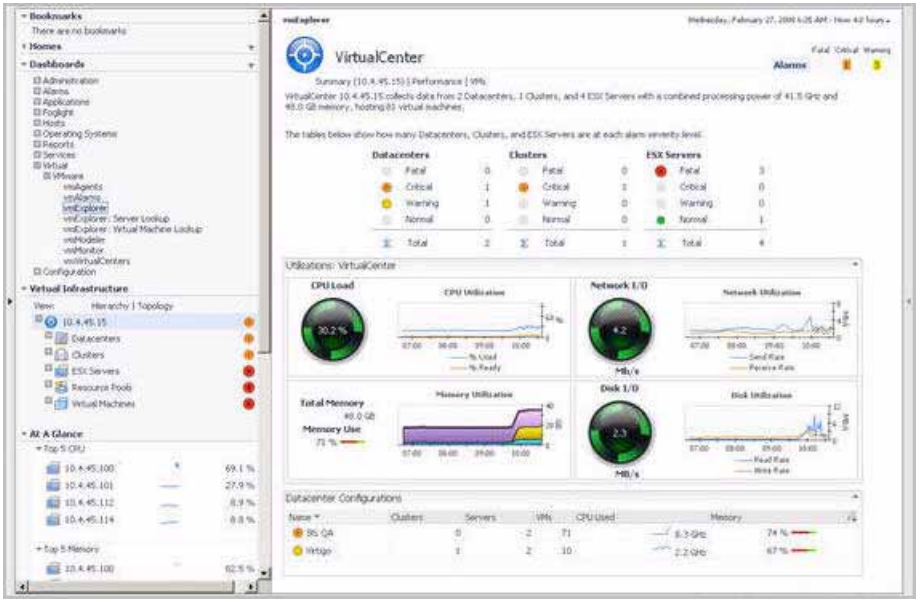

Figure 3 vmExplorer Dashboard

The vmExplorer Dashboard contains the following embedded views:

- Virtual Infrastructure View
- At A Glance View
- vmExplorer Primary View

These views are described in the upcoming sections.

Virtual Infrastructure View

The vmExplorer Dashboard provides a Virtual Infrastructure View. It is located in the navigation panel of vFoglight (at the left), under the dashboards list.

Purpose

The Virtual Infrastructure View provides an organized view of the various virtual infrastructure objects that are monitored by vFoglight Cartridge for VMware.

Figure 4 shows an example of a typical Virtual Infrastructure View.

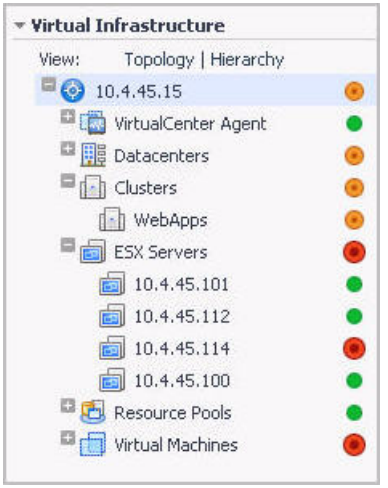

Figure 4 Virtual Infrastructure View: Topology

If you click an object in the Virtual Infrastructure View, all of the views in the vmExplorer Dashboard are updated with information pertaining to that object.

Description of Embedded Views

The Virtual Infrastructure View is made up of the following embedded views:

- Topology View
- Hierarchy View
- Mouse-over Status Popups

Topology View

The Topology View is organized into a tree using object type (or topology type) containers for branches.

The top-level objects in the Topology View are always the VirtualCenters.

Each VirtualCenter in the Topology View contains several object type containers, and each object type container contains every object of that particular type that is managed by the parent VirtualCenter.

Each object type container, as well as each object, has a representative icon that is displayed to the left, as shown in the following table.

Virtual Infrastructure View Object Icons

Icon	Object
	VirtualCenter
	Datacenter
	Cluster
	ESX Server
	Resource Pool
	Virtual Machine
	Datastore

At the right, the Topology View displays status indicators. For an individual object, the status indicator represents the alarm of highest severity that is outstanding for that object. For an object type container, the status indicator represents the alarm of highest severity that is outstanding for all of the objects of that type. For example, there are twenty-five Virtual Machines configured for a VirtualCenter. Twenty of the Virtual Machines have a Normal status, three have a Warning status, and two have a Critical status. In the Topology View, the Virtual Machines container for that VirtualCenter displays a Critical status indicator to show that at least one of the Virtual Machines associated with the VirtualCenter has an outstanding Critical alarm.

Note A single Virtual Machine running at a high CPU utilization does not trigger an alarm for its parent ESX Server. An alarm would only be triggered for the parent ESX Server if the server itself was running at a high CPU utilization

Hierarchy View

The Hierarchy View represents the logical layout of VirtualCenter management servers, so it is not organized into groups of common objects.

In the Hierarchy View each VirtualCenter object is organized into a tree that has the same hierarchical structure as the corresponding VirtualCenter, displaying the objects (Datacenters, Clusters, Resource Pools, Virtual Machines, Folders, etc.) within the VirtualCenter as branches.

Each object in the Hierarchy View has a representative icon that is displayed at the left of the object's name. These icons are shown in the Virtual Infrastructure View Object Icons table in "Topology View" on page 47.

At the right, the Hierarchy View displays status indicators. Each status indicator represents the alarm of highest severity that is outstanding for the corresponding object.

The lowest level object in a virtual infrastructure that may be selected from within the Hierarchy View is an ESX Server host object.

Mouse-over Status Popups

When you hover the cursor over an object in the Virtual Infrastructure View, you see a popup that provides a summary of the present state of that object.

One of the most useful Mouse-over Status Popups to take note of when working with the Virtual Infrastructure View is the one you see when you hover the cursor over the Virtual Machines container in the Topology View. This popup displays information (including utilization details and stacked area graphs) on the top 10 CPU-consuming Virtual Machines for the associated VirtualCenter. An example of this popup is displayed in Figure 5.

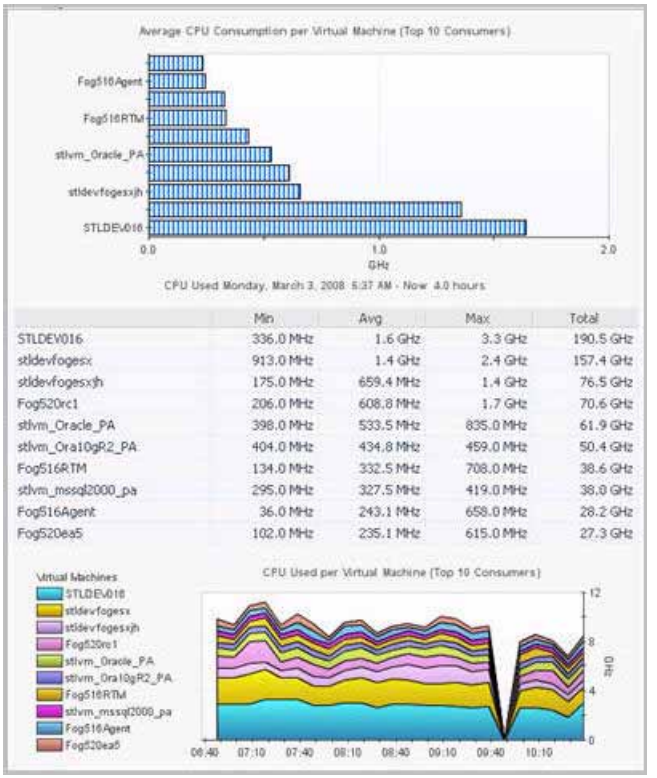

Figure 5 Mouse-over Popup for the Virtual Machines Container in the Topology View

At A Glance View

The vmExplorer Dashboard provides an At A Glance View. It is located in the navigation panel of vFoglight, below the Virtual Infrastructure View.

Purpose

The At A Glance View provides key statistical information for the object that is selected in the Virtual Infrastructure View. The information shown depends on the object that is selected. For example, if you select an ESX Server from the Virtual Infrastructure View, the At A Glance View shows the status of the CPU utilization, server information, the top five consumers of CPU, memory, disk, and network resources, and the top five Virtual Machines in terms of percent-ready CPU utilization for the selected Server. If you select a Virtual Machine from the Virtual Infrastructure View, the At A Glance View shows a Status View for each of the parent objects (Datacenter, Cluster, and ESX Server) of the selected Virtual Machine.

When the At A Glance View displays information about Servers or Virtual Machines, it can be used to navigate to those Servers or Virtual Machines.

Figure 6 shows an example of a typical At A Glance View for a Virtual Machine.

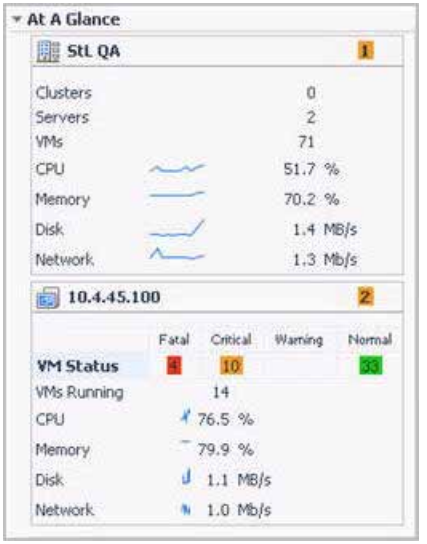

Figure 6 At a Glance View for an Virtual Machine

Description of Embedded Views

The At A Glance View may or may not contain the following embedded views:

- Top 5 CPU View
- Top 5 Memory View
- Top 5 Disks View
- Top 5 NIC View
- Top 5 Ready View
- Status View

Top 5 CPU View

This view shows the top five CPU-consuming Virtual Machines for the selected object.

Top 5 Memory View

This view shows the top five memory-consuming Virtual Machines for the selected object.

Top 5 Disk View

This view shows the top five Virtual Machines in terms of disk activity for the selected object.

Top 5 NIC View

This view shows the top five Virtual Machines in terms of NIC activity for the selected object.

Top 5 Ready View

This view shows the top five Virtual Machines in terms of percent-readiness for CPU cycles for the selected object.

Status View

This view provides a brief summary of the present status of a parent object for a selected Virtual Machine.

vmExplorer Primary View

The vmExplorer has a Primary View which takes up the entire display panel of the vFoglight GUI.

Purpose

The vmExplorer Primary View provides a great deal of value to administrators who leverage vFoglight Cartridge for VMware to monitor their virtual infrastructure.

The vmExplorer Primary View heading, located at the top of the vmExplorer Primary View, consists of three main components: an icon and text that specify the type of selected object or object container (from this point on these two are referred to simply as object, unless otherwise specified), an alarm summary for the selected object, and navigational links.

The alarm summary at the right of the Primary View heading shows you the number of alarms at each severity level that are outstanding for the selected object. When you click an alarm count, you get a popup that lists the active alarms for the object.

The navigational links are located immediately below the selected object's name. These navigational links vary from object to object, but generally contain a link to an object summary (typically the default view), a link to an object performance overview, and one or more links to other relevant information.

Due to the ability to change the information displayed in the Primary View through the use of the navigational links and to the fact that the Primary View consists of several embedded views, the Primary View can change quite a lot in appearance. For example, typically if you select an object type container from the Topology View the Summary link in the Primary View displays a consumption graph and a table that are representative of the group of objects within that container. However, if you select a Resource Pools container from the Topology View, the Summary link in the Primary View displays a Resource Pools Relationship Tree that contains every Resource Pool that belongs to the Clusters within the associated VirtualCenter.

If you select an individual Resource Pool from the Virtual Infrastructure View, the Summary link in the Primary View displays summary and utilization information for that Resource Pool. This is typically the type of information you see for the Summary link when you select any individual object from the Virtual Infrastructure View.

The metrics and the amount of detail displayed in the Primary View vary depending on the type of object you select.

Description of Embedded Views

The Primary View may or may not contain the following embedded views:

- Summary View
- Utilizations View
- Resource Pools Relationship Tree View
- Related Objects Views

Summary View

If you select the Summary navigational link from the Primary View heading, the Summary View is displayed just below the heading. Typically, the Summary View provides a brief description of the selected object, an overview of its available compute resources, and a count (if applicable) of the objects that are contained within it.

Sometimes the Summary View includes a graph. For example, if you select a collection of ESX Servers (that is, the ESX Servers container for a particular VirtualCenter) from the Topology View, the Summary View displays a graph that illustrates the combined CPU consumption for all of the ESX Servers in the collection.

Within a collection of objects Summary View, you can hover the cursor over any graph to see an exact unit measurement that corresponds to the placement of the cursor, and you can click any metric or chart to see a popup with a detailed chart.

Utilizations View

The Utilizations View is typically located in the center of the Primary View.

The Utilizations View provides numerical and graphical representations of utilization metrics associated with the single object (Datacenter, Cluster, Server, Resource Pool, Virtual Machine, or Datastore) or collection of objects of a particular type (Datacenters, Clusters, Servers, Resource Pools, Virtual Machines, or Datastores) that is selected.

The Utilizations View differs and may not appear at all depending on the object or collection of objects selected from the Virtual Infrastructure View and on the navigational link selected from the Primary View heading. For example, if you select a single Resource Pool from the Virtual Infrastructure View and you select the Performance link from the Primary View heading, the Utilizations View displays four graphs showing CPU, memory, disk, and network resource utilizations for the selected Resource Pool. If you select the VMs link for that same Resource Pool, the Utilizations View displays one graph illustrating the percent-used and percent-ready CPU utilization for the Virtual Machines of the Resource Pool. If, however, you select a collection of

ESX Servers from the Virtual Infrastructure View and you select the Summary link from the Primary View heading, an extended Summary View with an informative graph is displayed in place of a Utilizations View.

For descriptions of the various metrics available in the Utilizations View and elsewhere in vFoglight Cartridge for VMware, refer to the *vFoglight Cartridge for VMware Reference Guide*.

The Utilizations View may contain details about related objects as well. Those details can be used to navigate to the associated objects.

Single Object Utilizations Views

When you select a single object (Datacenter, Cluster, Server, Resource Pool, Virtual Machine, or Datastore) from the Virtual Infrastructure View, summary information and a Utilizations View is displayed under the Summary link in the Primary View. The metrics and the amount of detail displayed vary depending on the type of object you select.

Under the Summary link, a typical Utilizations View for an individual object provides detailed information on the four core ESX infrastructure resources: CPU, memory, disk usage, and network usage. Under other navigational links, the Utilizations View for an individual object provides different information. For example, under the VMs link for an ESX Server, the Utilizations View displays a graph illustrating the percent-used and percent-ready CPU utilization for the Virtual Machines of that ESX Server. Under still other navigational links, like the Datastores link for an ESX Server, the Utilizations View is replaced with other pertinent information.

Within a single object Utilizations View, you can hover the cursor over any metric to see a description of that metric, and you can click any metric or chart to see a popup with a detailed chart.

In a Utilizations View that contains alarm severity level details, you can click an alarm status indicator to see the Fatal, Critical, and Warning alarms for the associated object.

Figure 7 shows a Utilizations View for a Cluster object. As explained above, you can hover the cursor over any metric in a Utilizations View to see a description of the metric, and you can click any metric or chart to see a popup with a detailed chart. For example, if you click the CPU Load gauge for a Cluster object, a graph of CPU utilization over the time range specified for the vmExplorer dashboard is displayed. If you click the Memory Utilization graph, a larger view of the graph with descriptive text about each memory metric is displayed.

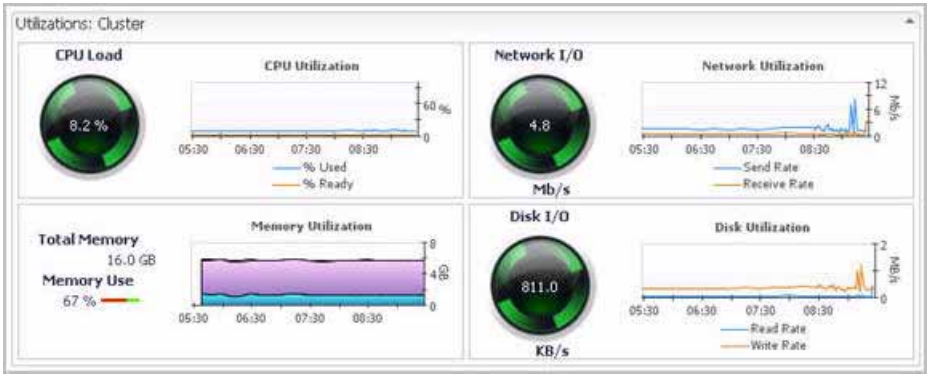

Figure 7 Cluster Object Utilizations View

Object Collection Utilizations Views

When a collection of objects of a particular type (Datacenters, Clusters, Servers, Resource Pools, Virtual Machines, or Datastores) is selected from the Virtual Infrastructure View, summary text and a chart—or other compositional information for the collection—are displayed under the Summary link in the Primary View. No Utilizations View is displayed.

Under some of the other navigational links (the Performance and VMs links, for examples) in the Primary View, the Utilizations View does appear for collections of objects. Under the Performance link, the Utilizations View typically displays four graphs showing CPU, memory, disk, and network resource utilizations for the objects in the selected collection. Under the VMs link, the Utilizations View typically displays a graph illustrating the percent-used and percent-ready CPU utilization for the Virtual Machines of the selected collection.

Within a collection of objects Utilizations View, you can hover the cursor over any graph to see an exact unit measurement that corresponds to the placement of the cursor, and you can click any metric or chart to see a popup with a detailed chart.

Figure 8 shows a Utilizations View for a collection of ESX Server objects.

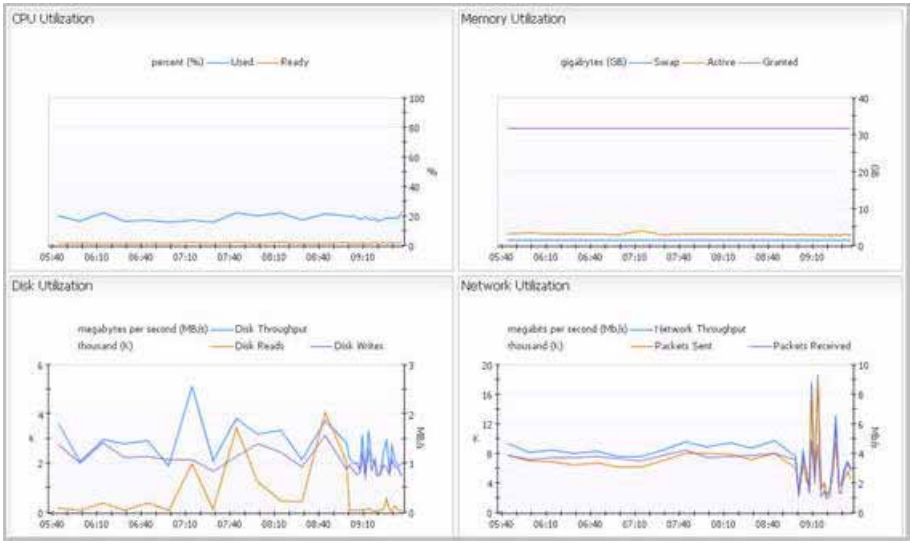

Figure 8 Utilizations View for a Collection of ESX Servers

Resource Pools Relationship Tree View

If you select a Resource Pools container from the Topology View, the Summary link of the Primary View displays a Resource Pools Relationship Tree that contains every Resource Pool that belongs to the Clusters within the associated VirtualCenter. This is useful if you want to see how those Resource Pools are laid out or if you want to take a look at the utilization statistics for each configured Resource Pool on the VirtualCenter.

The default Resource Pools Relationship Tree simply displays the names of the various Resource Pools and their parent/child relationships.

Figure 9 shows how the Resource Pools Relationship Tree appears after you click the Normal Zoom Level option on the mini map at the top right of the Relationship Tree.

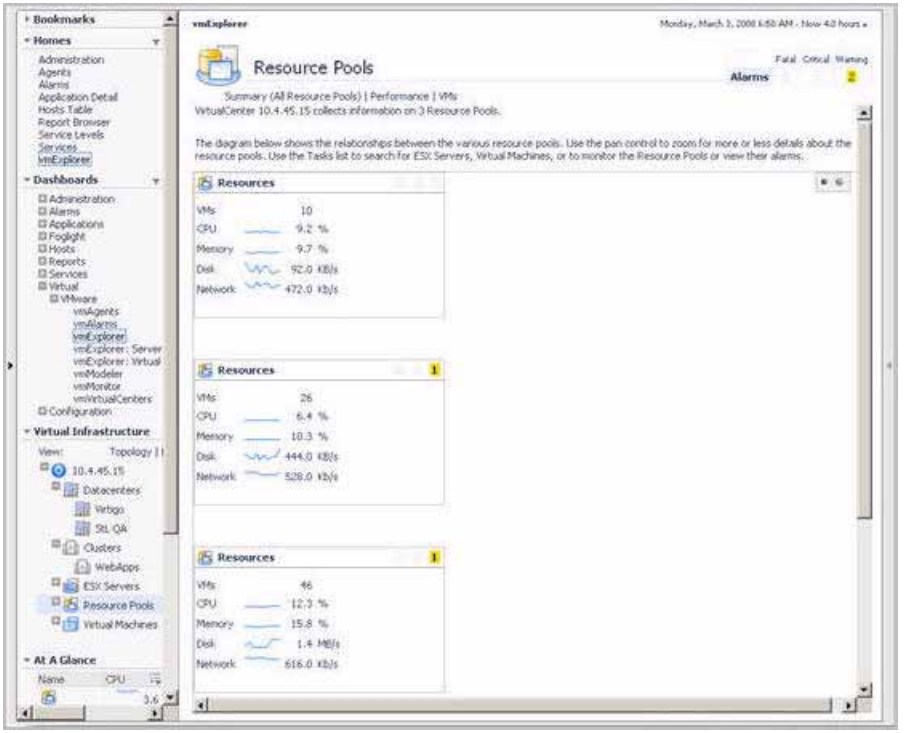

Figure 9 Resource Pools Relationship Tree at the Normal Zoom Level

In Figure 9, there are just three Resource Pools in the tree. Therefore, there must be three in the associated Resource Pools Topology View container.

To zoom out again, you simply click the Minimized Zoom Level option on the mini map.

You can browse through large Relationship Trees by clicking and dragging the rectangular shadow provided on the mini map.

If you select an individual Resource Pool from the Virtual Infrastructure View, the Primary View displays summary and utilization information for that Resource Pool.

Related Objects Views

More than one Related Objects View may appear at a time on the vmExplorer Dashboard. Related Objects Views are typically located at the bottom of the Primary View.

Related Objects Views differ from each other and may not appear at all depending on the object or collection of objects selected from the Virtual Infrastructure View and on the navigational link selected from the Primary View heading. For example, if you select a Virtual Machine from the Virtual Infrastructure View and you select the Summary link from the Primary View heading, a Related Objects View displays a table that tracks changes in the statuses of the parent Server and Resource Pool. However, if you select the Clusters container for a specific VirtualCenter from the Topology View and you select the Summary link from the Primary View heading, a Related Objects View displays a table that lists all of the Clusters in that container and provides pertinent details about each one.

For an individual object being viewed in the vmExplorer Dashboard, you will typically see more than one Related Objects View. These views take the form of tables and list either the parent or child objects or both (whichever are applicable) of the object being viewed and provide pertinent details about each one.

For a collection of objects being viewed in the vmExplorer Dashboard, you will typically see one Related Objects View. This view is a table that lists the objects within the collection being viewed and provides pertinent details about each one.

You can sort Related Objects View tables by a particular column by clicking the column heading.

If you select an object from a Related Objects View table by clicking one of the table rows, all of the views in the vmExplorer Dashboard get updated with information about the selected object.

Figure 10 shows a Related Objects View for a single Cluster object.

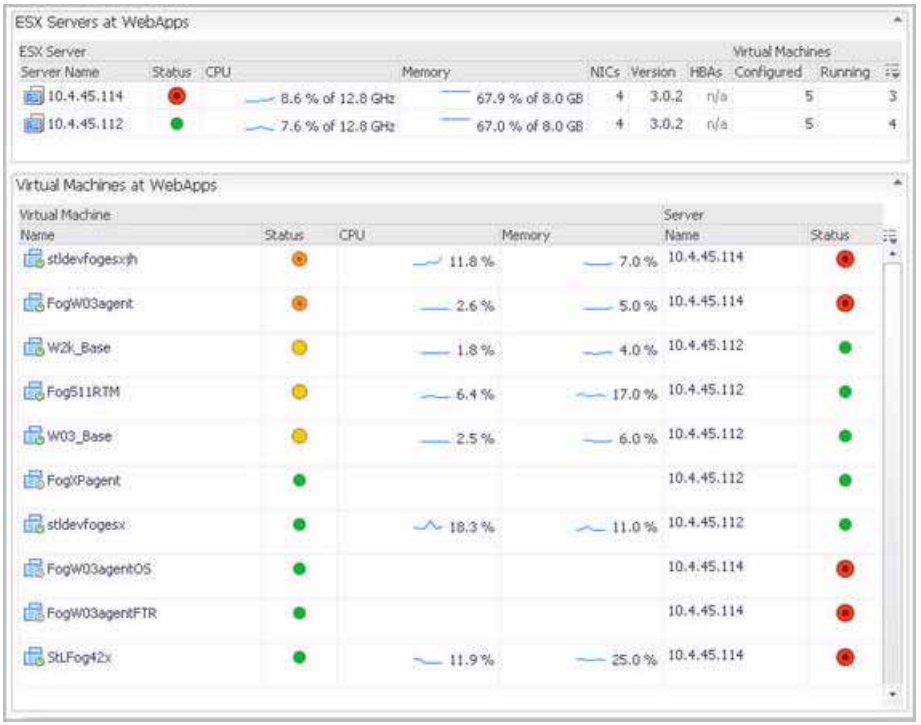

Figure 10 Related Objects View for a single Cluster Object

Actions Panel

The actions panel operates like a drawer. Its default position is closed. To open the actions panel, click the arrow at the far right of the vFoglight GUI.

The actions panel provides you with easy access to a number of useful actions and tasks. However, it only provides additional vFoglight Cartridge for VMware related actions and tasks when you are viewing the vmExplorer Dashboard.

Figure 11 shows an example of a typical vmExplorer Dashboard actions panel.

Figure 11 vmExplorer Dashboard Actions Panel

The vFoglight Cartridge for VMware actions and tasks available in the actions panel vary depending on the object displayed in the vmExplorer Dashboard, and are located under the Actions, Other Actions, and Tasks headings.

The following vFoglight Cartridge for VMware actions and tasks are available from the vmExplorer Dashboard actions panel:

- Find ESX Servers
- Find Virtual Machines
- Run Migration Modeler
- View Virtual Infrastructure Alarms
- Object Monitor
- View Alarms
- Top CPU Consumers
- Top Memory Consumers

Find ESX Servers

Under the Actions heading, the Find ESX Servers link takes you to the vmExplorer: Server Lookup Dashboard which enables you to perform a case-sensitive search for any ESX Server that exists within the VirtualCenter associated with the object or collection of objects displayed in the Primary View of the vmExplorer Dashboard. For more information, see “vmExplorer: Server Lookup Dashboard” on page 63.

Find Virtual Machines

Under the Actions heading, the Find Virtual Machines link takes you to the vmExplorer: Virtual Machine Lookup Dashboard which enables you to perform a case-sensitive search for any Virtual Machine that exists within the VirtualCenter associated with the object or collection of objects displayed in the Primary View of the vmExplorer Dashboard. For more information, see “vmExplorer: Virtual Machine Lookup Dashboard” on page 64.

Run Migration Modeler

Under the Actions heading, the Run Migration Modeler link takes you to the vmModeler Dashboard which provides you with a mechanism for viewing the impact that using VMotion to migrate a Virtual Machine will have on a target ESX Server.

For more information on the Migration Modeler, including specific instructions on how to run the Migration Modeler, refer to “vmModeler Dashboard” on page 65.

View Virtual Infrastructure Alarms

Under the Actions heading, the View Virtual Infrastructure Alarms link takes you to the vmAlarms Dashboard. For specific information on the vmAlarms Dashboard, see “vmAlarms Dashboard” on page 43.

Object Monitor

Under the Tasks heading, the links listed under the Monitor heading take you to the vmMonitor Dashboards for the parent and/or child objects (whichever are applicable) of the object or collection of objects displayed in the Primary View of the vmExplorer Dashboard. If you click any of these links, you are taken to the vmMonitor Dashboard for the corresponding object. For more information, see “vmMonitor Dashboard” on page 68.

View Alarms

Under the Tasks heading, the View Alarms section displays a list of objects that includes the object selected (if applicable) and its child objects. To the right of each object in the list is an alarm status indicator. Each status indicator represents the alarm of highest severity that is outstanding for that object. If you click any of the objects in the list, the corresponding alarm is displayed in a popup.

Top CPU Consumers

When a Datacenter, Cluster, ESX Server, or Resource Pool object is displayed in the Primary View of the vmExplorer Dashboard, the Top CPU Consumers link is displayed under Tasks in the actions panel. If you click this link, a popup containing information on the top CPU-consuming Virtual Machines of the selected object is displayed.

Top Memory Consumers

When a Datacenter, Cluster, ESX Server, or Resource Pool object is displayed in the Primary View of the vmExplorer Dashboard, the Top Memory Consumers link is displayed under Tasks in the actions panel. If you click this link, a popup containing information on the top memory-consuming Virtual Machines of the selected object is displayed.

vmExplorer: Server Lookup Dashboard

The vmExplorer: Server Lookup Dashboard takes up the entire display panel of the vFoglight GUI. It can be accessed in two different ways:

- If you are in the vmExplorer Dashboard, you can access the Server Lookup Dashboard by using the Find ESX Servers link under the Actions heading on the actions panel to the right of the vFoglight GUI. For more information about the actions panel with respect to vFoglight Cartridge for VMware tasks and actions, refer to “Actions Panel” on page 60.
- From within any dashboard, you can access the Server Lookup Dashboard by clicking the vmExplorer: Server Lookup link under **Dashboards**->**Virtual**->**VMware** in the navigation panel at the left of the vFoglight GUI.

The vmExplorer: Server Lookup Dashboard enables you to perform a case-sensitive search for any ESX Server that exists within the VirtualCenter associated with the object or collection of objects displayed in the Primary View of the vmExplorer Dashboard.

vmExplorer: Virtual Machine Lookup Dashboard

The vmExplorer: Virtual Machine Lookup Dashboard takes up the entire display panel of the vFoglight GUI. It can be accessed in two different ways:

- If you are in the vmExplorer Dashboard, you can access the Virtual Machine Lookup Dashboard by using the Find Virtual Machines link under the Actions heading on the actions panel to the right of the vFoglight GUI. For more information about the actions panel with respect to vFoglight Cartridge for VMware tasks and actions, refer to “Actions Panel” on page 60.
- From within any dashboard, you can access the Virtual Machine Lookup Dashboard by clicking the vmExplorer: Virtual Machine Lookup link under **Dashboards**->**Virtual**->**VMware** in the navigation panel at the left of the vFoglight GUI.

The vmExplorer: Virtual Machine Lookup Dashboard enables you to perform a case-sensitive search for any Virtual Machine that exists within the VirtualCenter associated with the object or collection of objects displayed in the Primary View of the vmExplorer Dashboard.

vmModeler Dashboard

The vmModeler Dashboard takes up the entire display panel of the vFoglight GUI. It can be accessed in two different ways:

- If you are in the vmExplorer Dashboard, you can access the vmModeler Dashboard by using the Run Migration Modeler link under the Actions heading on the actions panel to the right of the vFoglight GUI. For more information about the actions panel with respect to vFoglight Cartridge for VMware tasks and actions, refer to “Actions Panel” on page 60.
- From within any dashboard, you can access the vmModeler Dashboard by clicking the vmModeler link under **Dashboards**->**Virtual**->**VMware** in the navigation panel at the left of the vFoglight GUI.

The vmModeler Dashboard provides a mechanism you can use to view the impact that using VMotion to migrate a Virtual Machine will have on a target ESX Server.

Figure 12 shows an example of a typical vmModeler Dashboard.

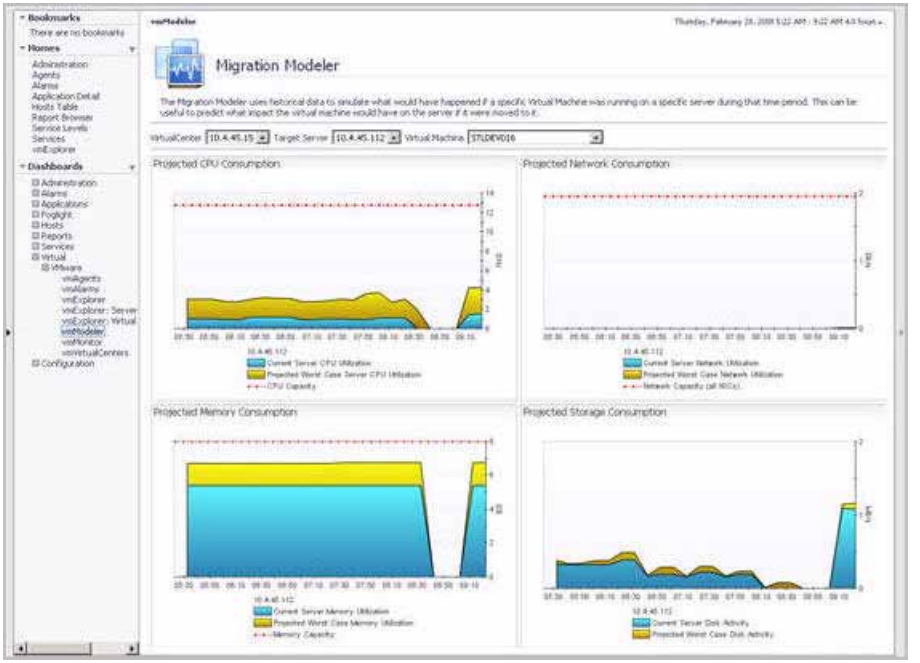

Figure 12vmModeler Dashboard

The vmModeler Dashboard provides four graphs that show current and projected numbers for CPU and memory utilization and network and disk activity on the target ESX Server over the time range specified in the vmExplorer Dashboard.

The blue area on the graphs represents current consumption or activity on the target ESX Server. The yellow area specifies projected consumption or activity. The red dotted line specifies the target ESX Server capacity with respect to the corresponding metric.

To run the Migration Modeler:

1. From the VirtualCenter drop-down list, choose the VirtualCenter within which the migration will take place.
2. From the Target Server drop-down list, select the ESX Server that will be the target for the VMotion migration.

3 From the Virtual Machine drop-down list, select the Virtual Machine that is to be migrated.

When using the vmModeler Dashboard, you should extend the vmExplorer Dashboard time range in order to better assess the long term impact of the potential migration. For specific information about adjusting dashboard time ranges, refer to the *vFoglight User Guide*.

vmMonitor Dashboard

The vmMonitor Dashboard provides a simple drill-down interface that allows you to quickly traverse up and down the virtual infrastructure to determine where a problem exists. This dashboard also contains enhanced alarm notification and integrates with VirtualCenter Servers to display virtual infrastructure messages.

Figure 13 shows an example of a typical vmMonitor Dashboard.

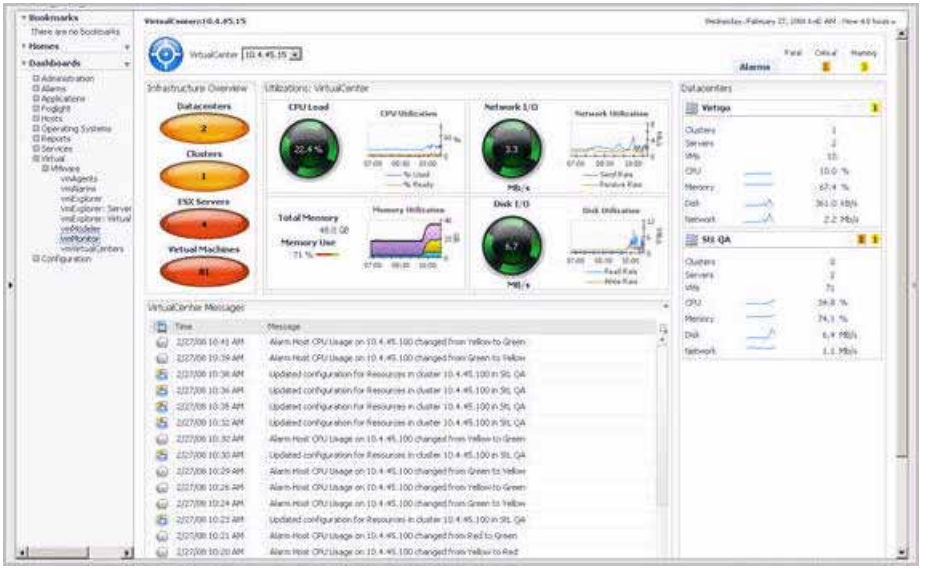

Figure 13vmMonitor Dashboard

The vmMonitor Dashboard contains the following embedded views:

- Navigation View
- Infrastructure Overview
- Utilizations View
- VirtualCenter Messages View
- Related Objects View

These views are described in the upcoming sections.

Navigation View

The Navigation View is located at the top of the vmMonitor Dashboard.

Purpose

The Navigation View displays an icon and an object type name that together indicate the type of object that is being examined.

The vmMonitor Dashboard does not provide a direct hierarchical structure in which you can change between objects. Instead, the Navigation View has a drop-down menu with which objects from the current level may be selected. For example, in Figure 14 the breadcrumbs show that the current level is the Datacenter level. The drop-down box within the Navigation View enables an administrator to choose from any of the available Datacenter objects.

Figure 14vmMonitor Navigation View

In order to traverse up or down through the infrastructure an administrator can use the breadcrumbs at the top of the vmMonitor Dashboard or select from the various objects on the Related Objects View. For more information, see “Related Objects View” on page 74.

The Navigation View also contains an alarm summary which is located at the far right of the view. The alarm summary shows you the number of alarms at each severity level that are outstanding for the selected object. When you click an alarm count, you get a popup that lists the active alarms for the object.

Infrastructure Overview

The vmMonitor Infrastructure Overview is located at the top left of the vmMonitor Dashboard and is provided at the VirtualCenter, Datacenter, and Cluster object levels.

Purpose

The Infrastructure Overview on the vmMonitor Dashboard contains information about the descendent or child objects of the object being viewed in the dashboard.

It provides a simple mechanism that you can use to see the total number of the various types of child objects that exist within the selected object and the status of the outstanding alarm with the highest severity for each type.

The number on each disk indicates the number of descendent objects of that type that exist within the selected object. The disk color indicates the status of the outstanding alarm with the highest severity that exists for an object of that type.

If you click any of the disks, a popup appears that displays a current alarm list for the corresponding object type. If you then click an alarm message, you are taken to a vmMonitor Dashboard for the object to which the message corresponds.

The Infrastructure Overview provides a simple way in which an administrator can troubleshoot problems within the virtual infrastructure.

Figure 15 shows an example of a typical vmMonitor Infrastructure Overview.

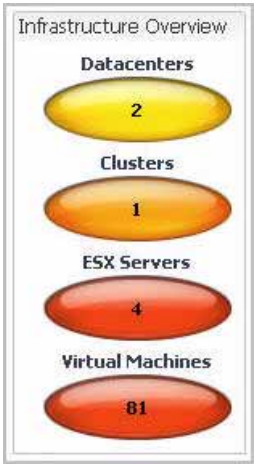

Figure 15vmMonitor Infrastructure Overview

Utilizations View

The Utilizations View is located near the center of the vmMonitor Dashboard.

Purpose

A typical Utilizations View provides detailed information about the four core resources within an ESX infrastructure: CPU, memory, disk usage, and network usage. However, the metrics and the amount of detail displayed in the Utilizations View vary depending on the type of object that is being viewed. At the Server and Virtual Machine level, the vmMonitor Utilizations View takes on a spotlight style appearance and provides some additional details that are not available for other objects.

For descriptions of the various metrics available in the Utilizations View and elsewhere in vFoglight Cartridge for VMware, refer to the *vFoglight Cartridge for VMware Reference Guide*.

Within the Utilizations View, you can hover the cursor over any metric to see a description of the metric, and you can click a metric or chart to see a popup with a detailed chart.

Figure 16 shows an example of a typical vmMonitor Utilizations View for an ESX Server.

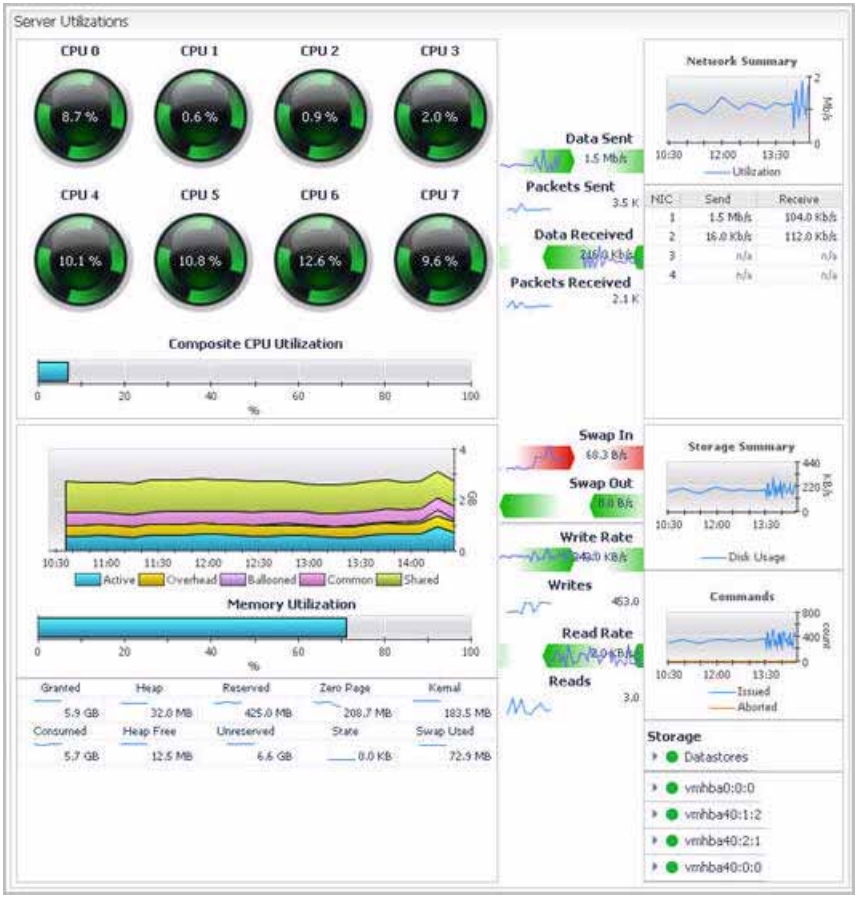

Figure 16vmMonitor Utilizations View for an ESX Server

VirtualCenter Messages View

The VirtualCenter Messages View is displayed toward the bottom of the vmMonitor Dashboard.

Purpose

vFoglight Cartridge for VMware receives VirtualCenter messages (including status changes and VirtualCenter alarms, if configured) and presents them in the vmMonitor Dashboard.

Note These messages are not generated by vFoglight Cartridge for VMware.

The VirtualCenter Messages View displays these VirtualCenter messages for the dashboard time range specified. For specific information about dashboard time ranges, refer to the *vFoglight User Guide*.

If you click a message within the VirtualCenter Messages View, you are taken to a vmMonitor Dashboard for the object to which the message corresponds. As mentioned previously, you can use the breadcrumbs at the top of the vmMonitor Dashboard to navigate back up through the virtual infrastructure.

Figure 17 shows an example of a typical vmMonitor Messages View.

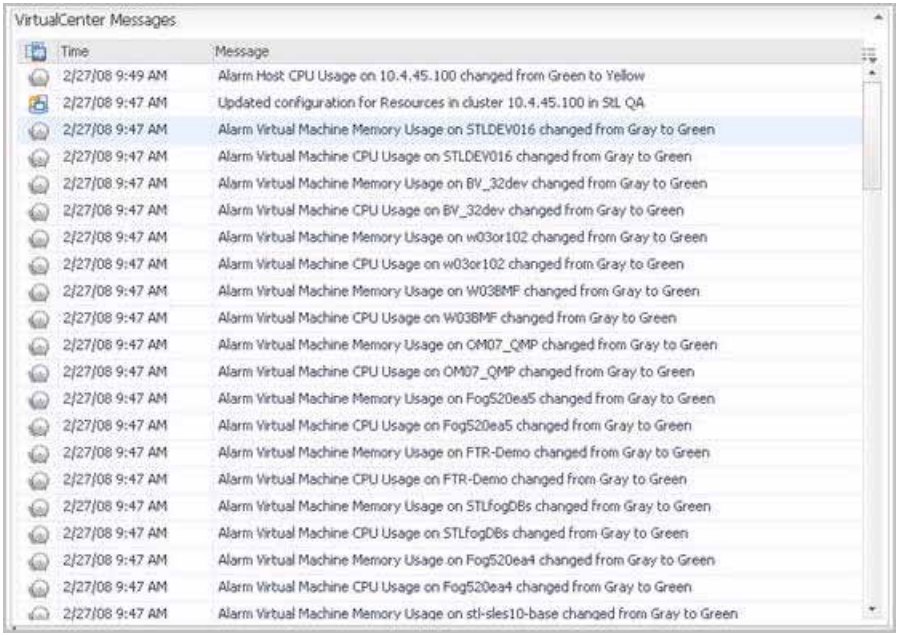

Figure 17vmMonitor Messages View

Related Objects View

Unlike on a vmExplorer Dashboard, only one Related Objects View can appear on a vmMonitor Dashboard. A Related Objects View is displayed at the right of the vmMonitor Dashboard.

Purpose

The Related Objects View for the vmMonitor Dashboard works in a different way than those of of the vmExplorer Dashboard. The Related Objects View in the vmMonitor Dashboard provides Status Views of summary details for either the parents or descendants or both (whichever are applicable) of the object being viewed in the dashboard. For a VirtualCenter object, only descendants are shown in the Related Objects View because a VirtualCenter is the top level object within a virtual infrastructure. Likewise, for a Virtual Machine, only parent objects (ESX Servers, Clusters, and Datacenters) are shown in the Related Objects View because a Virtual Machine is the bottom level object within a virtual infrastructure.

The information presented within the Status Views varies slightly depending on the object that is being viewed in the vmMonitor Dashboard. The Status Views typically show alarm and configuration information, as well as current CPU, memory, disk and network trends. If you click an alarm count within a Status View, a list of alarms for the corresponding object is displayed. If you click an object's icon, you are taken to a vmMonitor Dashboard for the object to which the icon corresponds. If you click any of the CPU, memory, disk or network sparklines or values, a popup appears that provides a more detailed chart.

Figure 18 shows an example of a typical vmMonitor Related Objects View.

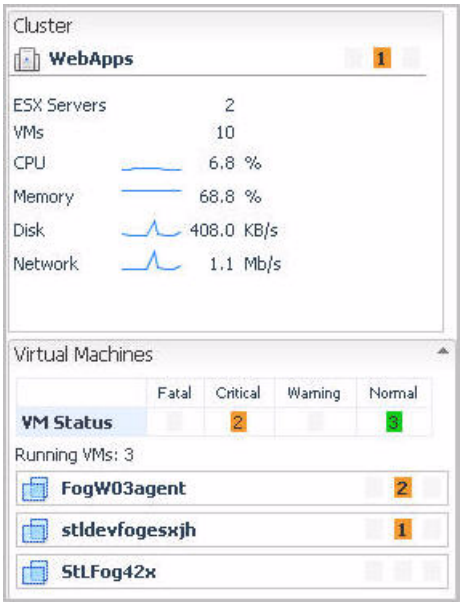

Figure 18vmMonitor Related Objects View

Together, the Related Objects View and the breadcrumbs located at the top of the vmMonitor Dashboard serve as the primary method for traversing up and down through the various virtual infrastructure object levels within the vmMonitor Dashboard. They offer an effective way in which to view all of the available metrics vFoglight Cartridge for VMware provides for a virtual infrastructure.

vmVirtualCenters Dashboard

The vmVirtualCenters Dashboard has just one view that displays a Status View for each of the VirtualCenters that exist within the virtual infrastructure. This dashboard and its embedded status views can be used to take a quick look at the status of each of the VirtualCenters within the infrastrucure.

Each VirtualCenter Status View provides an alarm summary for the objects contained within the VirtualCenter. If you click any of the alarm indicators in the alarm summary, you are taken to a vmMonitor Dashboard for the object associated with the alarm indicated.

Figure 19 shows an example of a typical vmVirtualCenters Dashboard.

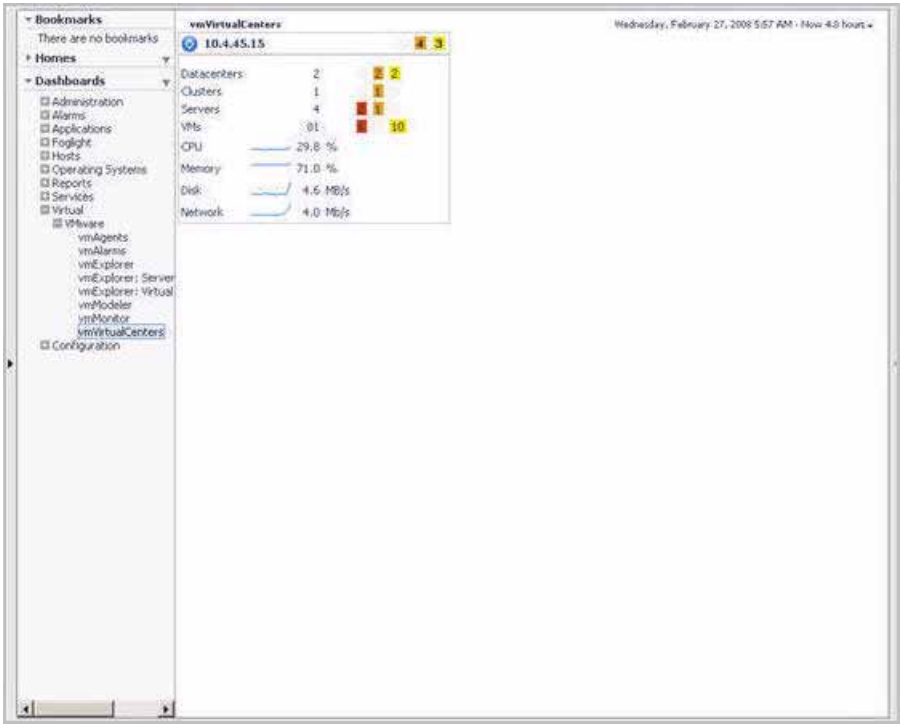

Figure 19vmVirtualCenters Dashboard

Report Browser Dashboard

The Report Browser Dashboard provides an interface with which you can schedule regularly occurring reports for vFoglight Cartridge for VMware. Several different reports are available, and together they provide a detailed analysis of the performance of a virtual infrastructure over time.

Figure 20 shows an example of a typical Report Browser Dashboard.

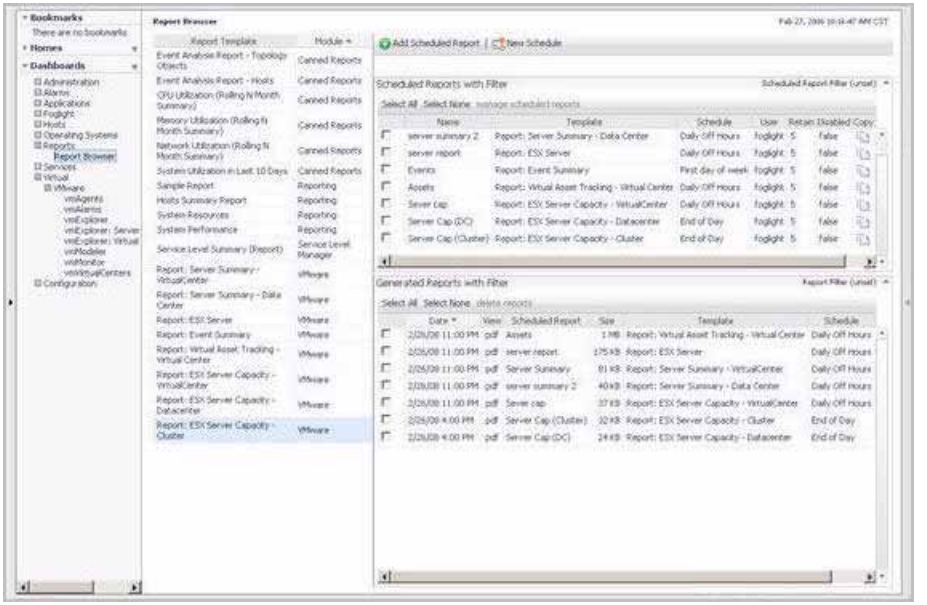

Figure 20 Report Browser Dashboard

The Report Browser Dashboard contains the following embedded views:

- Report Templates View
- Scheduled Reports View
- Generated Reports View

These views are described in the upcoming sections.

Report Templates View

The Report Templates View is located at the left of the Report Browser Dashboard.

Purpose

The Report Templates View provides a list of templates that can be used to create reports that are scheduled to run against a particular object. The Module column in the Report Templates View provides some information about the purpose of the report template. For example, reports that report against VMware objects are listed as VMware in the Module column.

For an example of how to use a report template to create a report, refer to the Scheduled Reports View section below.

Scheduled Reports View

The Scheduled Reports View is located at the top right of the Report Browser Dashboard.

Purpose

The Scheduled Reports View lists the reports that have been configured by an administrator to run at regular intervals. It also provides you with an interface you can use to create and schedule a report to run.

Scheduling Reports

The following is an example of how to schedule a report using the Report Browser Dashboard. For more specific information on how to use the Report Browser Dashboard to schedule and view reports, refer to the *vFoglight User Guide*.

To schedule a report:

1. Click the name of a report template (the Report: ESX Server template, for example) in the Report Templates View to highlight it.
2. Click the **Add Scheduled Report** button (shown in Figure 21) at the top of the Scheduled Reports View.

Figure 21Add Scheduled Report button

The Scheduled Report Editor dialog appears as shown in Figure 22, prompting the you to specify the settings for the report.

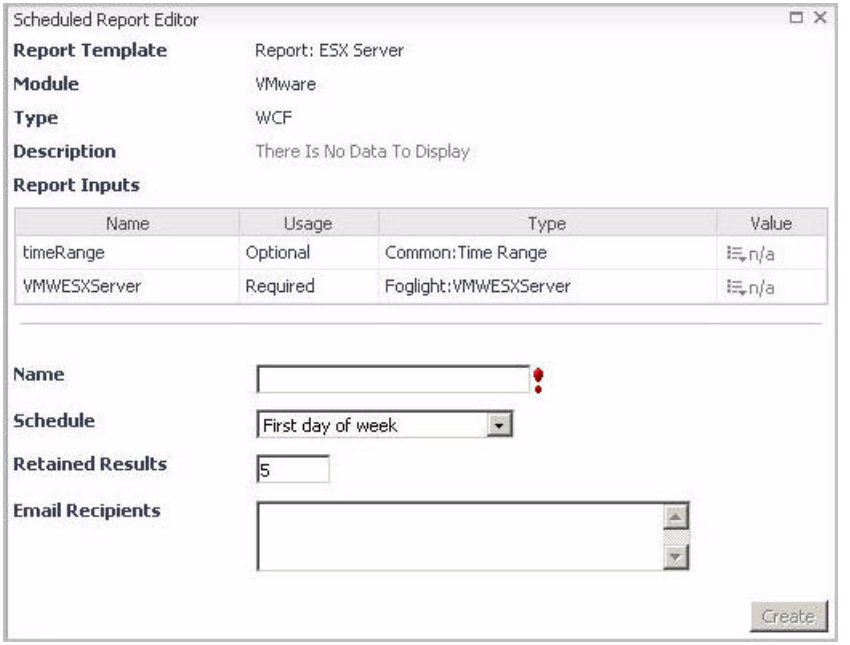

Figure 22Scheduled Report Editor dialog

A list of optional and required parameters is displayed on the dialog.

3 Fill in the necessary fields.

A time range is an optional configuration component that you can leverage to provide context to the actual report.

For this example, you can specify the time range to be the entire previous month.

4 To specify a value for the Time Range setting, click the appropriate drop-down icon in the Value column. The Edit - timeRange dialog appears as shown in Figure 23.

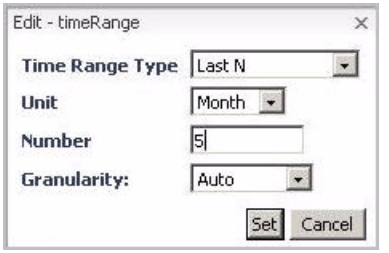

Figure 23Edit - timeRange dialog

5 Adjust the time range settings. See Figure 23.

6 Click the **Set** button on the Edit - timeRange dialog.

7 Specify the object you wish to report against.

As you can see in Figure 22, the required object for the ESX Server report is a VMWESX Server. In order to select this object, click the drop-down icon in the Value column that corresponds to the VMWESX Server parameter.

8 Select Data.

The Edit - VMWESX Server dialog appears.

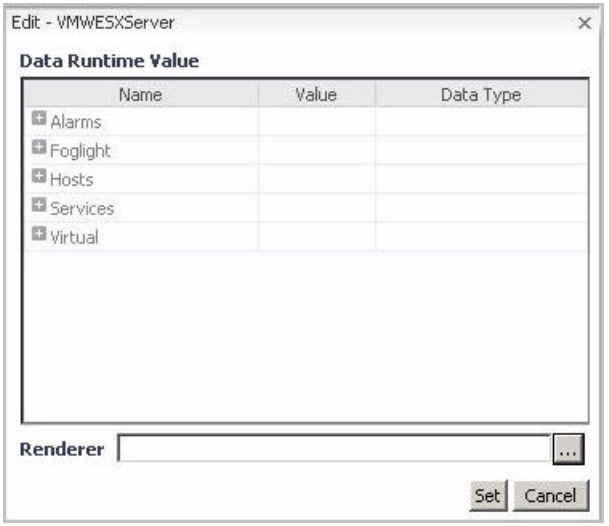

Figure 24Edit - ESXServer dialog

9 To find the correct object, you will have to drill down several levels in the list.

For a specific ESX Server object, drill down through the following path: **vFoglight->AllData->VMWModel->VMwareModel->virtualCenters-><virtualCenterInstance>->esxServerCollection->esxServers-><esx Server object>.**

10 Click the **Set** button.

11 Provide a report name in the Name field. This name is referenced in both the Scheduled Reports and Generated Reports Views.

You should use a descriptive name for the report. For this example, you can use "<Hostname> Monthly Report".

12 Select an appropriate value for the Schedule field.

The value you select for the Schedule field determines how frequently the report is run. In this example, to generate a report for one month of data, select the Monthly Off Hours schedule.

Larger reports are typically run during off hours because a lot of resources may be required to generate the requested report properly.

13 Specify the retention policy for the report in the Retained Results field.

For this example, leave the default value of 5 so that vFoglight Cartridge for VMware will retain the five most recent copies of the report. This will provide five months of historical data on the selected ESX Server Host.

14 Click the **Create** button.

<Hostname> Monthly Report is created and ready to run. The report should now appear in the Scheduled Reports View.

Generated Reports View

The Generated Reports View is located at the bottom right of the Report Browser Dashboard.

Purpose

The Generated Reports View lists reports that have run and are available for viewing in PDF format.

Viewing Generated Reports

Once a report is generated it is displayed in the Generated Reports View. Simply click **pdf** in the View column of a generated report to view that report. To view a pdf file, Adobe Acrobat Reader must be installed on the system that is accessing the Report Browser Dashboard.

vFoglight Cartridge for VMware comes preconfigured with several useful reports that provide information on the virtual infrastructure. The reports are described in the table below.

vFoglight Cartridge for VMware Reports

Report Name	Object Type	Description
Report: Server Summary - VirtualCenter	VirtualCenter	This template can be used to generate a report that contains the summary details for every ESX Server managed by the selected VirtualCenter.
Report: Server Summary - Datacenter	Datacenter	This template can be used to generate a report that contains the summary details for every ESX Server that is contained within the selected Datacenter.

Report Name	Object Type	Description
Report: ESX Server	ESX Server	This template can be used to generate a report that contains the details for the selected ESX Server.
Report: Event Summary	VirtualCenter	This template can be used to generate a report that contains the event history for the selected VirtualCenter object.
Report: Virtual Asset Tracking - VirtualCenter	Virtual Machine	This template can be used to generate a history report of Power and VMotion operations for the selected Virtual Machine.
Report: ESX Server Capacity - VirtualCenter	VirtualCenter	This template can be used to generate a report that contains the capacity details for the ESX Servers contained within the selected VirtualCenter.
Report: ESX Server Capacity - Datacenter	Datacenter	This template can be used to generate a report that contains the capacity details for the ESX Servers contained within the selected Datacenter.
Report: ESX Server Capacity - Cluster	Cluster	This template can be used to generate a report that contains the capacity details for the ESX Servers contained within the selected Cluster.
Report: Virtual Machine Storage	Virtual Machine	This template can be used to generate a report that shows the capacity and usage of logical and physical disks on the selected virtual machines.
Report: Datastore Capacity	Datastore	This template can be used to generate a report that shows the capacity of the selected datastores and lists the ESX Servers and virtual machines that are connected to them. Information about the logical and physical disks on the virtual machines is also displayed in this report.

Report Name	Object Type	Description
Report: Virtual Machine Creation and Usage	ESX Server	This template can be used to generate a report that displays the number of virtual machines configured and running on each ESX Server in the virtual infrastructure. A chart illustrates the creation and removal of virtual machines. If you specify a particular set of ESX Servers, only data for those servers is displayed.
Report: Virtual Machine CPU Usage and Percent Ready	ESX Server	This template can be used to generate a report that shows, for a given set of ESX Servers or for all ESX Servers if none are specified, the CPU usage for virtual machines and the percentage of time those virtual machines were waiting on CPU cycles.

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