NetIQ® Aegis® 3.2

Administrator Guide

April 2014

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About this Book and the Library

The *Administrator Guide* provides conceptual information about the NetIQ Aegis product (Aegis). This book defines terminology and various related concepts. It also provides step-by-step guidance for many configuration tasks.

Intended Audience

This book provides information for individuals responsible for any of the following tasks:

- Understanding Aegis concepts
- Installing Aegis
- Configuring Aegis

Other Information in the Library

The library provides the following information resources:

Process Authoring Guide

Provides conceptual information related to the Workflow Designer console and step-by-step guidance for many Process Author tasks.

User Guide

Provides conceptual information related to the Operations Console and step-by-step guidance for many Process Operator tasks.

NetIQ Reporting Center Reporting Guide

Provides conceptual information about the NetIQ Reporting Center product (Reporting Center). Intended for individuals responsible for understanding and using Aegis reports.

Help for Configuration Console

Provides context-sensitive information and step-by-step guidance for common tasks, as well as definitions for each field on each window.

Help for Operations Console

Provides conceptual information and step-by-step guidance for common tasks.

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1 Introduction

IT operations managers are under increasing pressure to control costs while delivering services at a faster pace than ever before. In the quest to get "more for less," many IT professionals are exploring ways to automate time-consuming, labor-intensive tasks that increasingly occupy valuable and expensive IT staff resources.

Many enterprises seek to automate routine workflow practices at the level of specific tasks and procedures, sometimes referred to as **run books**. While run books represent proven manual processes, they are subject to human error and can be very expensive by wasting expert staff time on repetitive, menial tasks. Run books can also be abstract, representing "tribal knowledge" that resides with individuals. Tribal knowledge may not be accurately recorded and can be easily lost when individuals leave an organization.

At the same time, IT operations deal with an increasingly diverse and complex IT environment due to highly distributed operations and business acquisitions. Often, these operational environments contain many diverse tools. The lack of integration for these tools can hinder the ability to efficiently respond to events and conduct routine operational activities.

NetIQ designed Aegis from the ground up as an IT workflow automation platform, to enable the automation of IT run books and processes.

1.1 What is Aegis?

Aegis is an IT process automation platform that allows you to model, automate, measure, and continuously improve run books and processes. Aegis allows you to:

- Define automated IT processes, using your documented IT processes and run books as the foundation for automation
- Automatically execute process steps on behalf of personnel
- Coordinate work between different IT functions

Integrating with other NetIQ enterprise products, Aegis retrieves normalized information from your operations management systems to provide a cohesive "big picture" view of your IT operation processes.

By aggregating this information into a central console, Aegis lets IT operations personnel more easily accomplish the following objectives:

- Automatically initiate standard IT processes to address incidents
- Document all response activities
- Report on adherence to accepted IT policies
- Provide a complete audit history of incident management

By allowing users to quickly identify and automatically group and suppress related events, Aegis reduces the number of false positives users must address and manage.

1.2 How Aegis Works

Aegis funnels information from data sources into a central repository, evaluating incoming data against processes that your team defines to match your IT policies. A process runs automatically when event information matches its trigger criteria. If user input is required, the user logs on to the Operations Console to tell the process what to do. For example, if temporary file growth causes disk space to fall below threshold, Aegis can command NetIQ AppManager to perform disk cleanup.
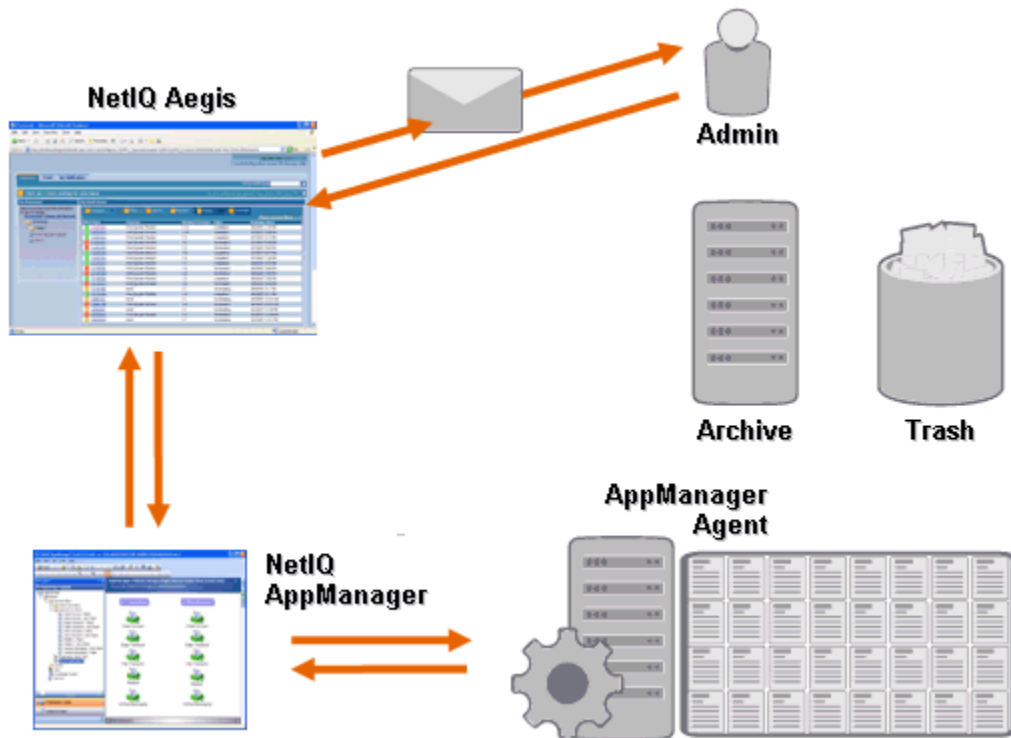
In this example, AppManager detects that available disk space has fallen below threshold and generates an event, which triggers a process in Aegis and creates a **work item** (an instance of a running process). Aegis requests a disk usage analysis from AppManager, identifying the top N culprits by folder, file type, and age, with extra attention paid to known temporary file storage areas. Aegis sends an email with the results of the analysis to the appropriate user, requesting approval to perform disk cleanup. The email includes a link to the Operations Console. The user logs on to the Operations Console and approves partial cleanup. Aegis commands AppManager to delete the approved files and analyze new disk space status. Aegis waits for confirmation of success, which it then sends to the user. Aegis closes the work item.

Aegis processes are flexible. A typical process may automatically complete the following types of steps:

- Check for auxiliary information about the event
- Determine the priority and urgency of the problem
- Allow users to drill down for details about the event stream

2 Installing Aegis

These topics guide you through the Aegis installation process.

2.1 Implementation Checklist

The following checklist outlines the complete planning and installation process for Aegis.

	Checklist Items
❑	1. Review product architecture information to learn about Aegis components. For more information, see Section 2.2.3, "Understanding Aegis Components," on page 15.
❑	2. Ensure the computers on which you are installing Aegis meet the specified requirements. For more information, see the following: ◆ Section 2.2.10, "Planning to Install the Databases," on page 22 ◆ Section 2.2.12, "Planning to Install Aegis Server Components," on page 24 ◆ Section 2.2.13, "Planning to Install Web Server Components," on page 25 ◆ Section 2.2.14, "Planning to Install the Reporting Center Console," on page 28 ◆ Section 2.2.15, "Planning to Install the Configuration Console," on page 28 ◆ Section 2.2.16, "Planning to Install the Aegis Event Generator," on page 29
❑	3. Install Aegis. For more information, see Section 2.4, "Installing Aegis Components in a Non-Cluster Environment," on page 31 or Section 2.5, "Installing Aegis Components in a Cluster Environment," on page 36.

2.2 Planning Your Aegis Environment

This section provides requirements, details of supported configurations, and other information necessary for planning your Aegis installation environment.

2.2.1 Determining Installation Type

The Aegis setup program does not require a license key for installation. By default, the setup program installs a fully functional installation with a trial license that allows you to evaluate Aegis for 30 days. After 30 days, Aegis provides a 30-day grace period, during which you see a notification of the grace period each time you log on to Aegis. The environment in which you install Aegis determines the installation type.

Trial Environment

You can evaluate Aegis in a "full trial" environment that meets production environment prerequisites or in a "proof of concept" environment that does not meet production standards. For more information about configuring a full trial environment, see Section 2.2.6, "Supported Configurations," on page 19.

Production Environment

When you deploy Aegis in your production environment, you can install the production license key in the Configuration Console immediately after installation or at any time during the 30-day trial period. For more information about obtaining license keys, contact your NetIQ sales representative.

Ensure you plan ahead for your production environment. Aegis supports taking a full trial environment to a production license key. However, Aegis does not support automated migration from a proof of concept environment to a production environment. If you wish to migrate from a proof of concept environment to a production environment, NetIQ recommends you install a new Aegis configuration in your production environment and use the export and import features in Aegis to manually migrate activity libraries and process customizations. For more information about configuring your production environment, see Section 2.2.6, "Supported Configurations," on page 19.

2.2.2 Licensing

Aegis requires a license key that allows you to use the product. The Aegis setup program automatically installs a trial license key that expires 30 days after installation, with an additional 30-day grace period.

After installation, you can add a production license key at any time during the 30-day trial. For more information about taking a trial licensed environment to a production license key, see Section 2.2.1, "Determining Installation Type," on page 14.

Use the **Licenses** list in the Configuration Console to manage the licenses in your Aegis environment.

Aegis supports the following types of production licenses:

Full License

Aegis allows you to create and run any number of processes in your production environment.

Per Process License

Aegis allows you to create any number of processes, but allows you to run only a specific number of processes in your production environment. The processes can be associated with multiple Aegis adapters.

Signed Process License

Aegis allows you to run signed processes from NetIQ in your production environment. Signed processes address specific needs, and do not affect the number of processes you can run with the Per Process license. You cannot modify signed processes.

For more information about obtaining license keys, contact your NetIQ sales representative.

2.2.3 Understanding Aegis Components

Aegis includes a number of software components that you should plan to install strategically over a number of computers. The following diagram displays a three-tier configuration in a non-cluster environment. For more information about supported configurations, see Section 2.2.6, "Supported Configurations," on page 19.
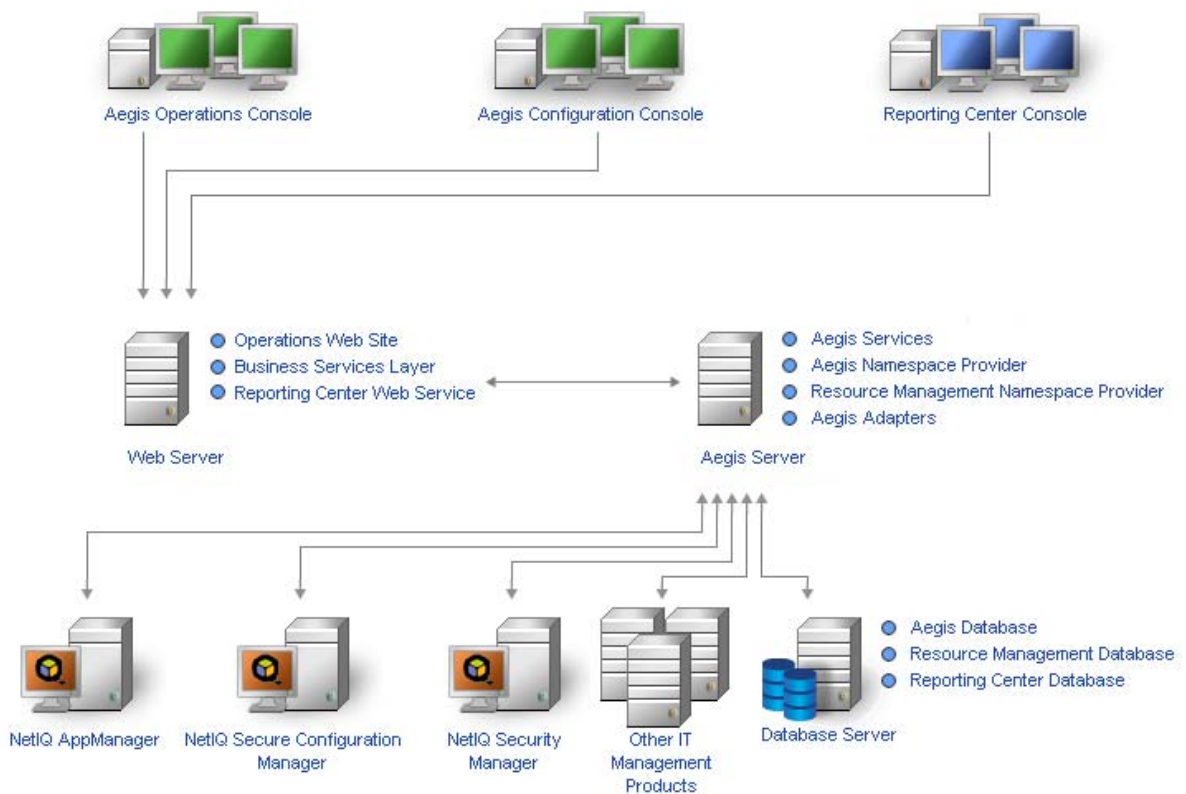
Aegis includes the following major components:

Operations Console

A Web-based user interface that accesses the Operations Web site on the Web Server computer. The Operations Console allows Process Operators to:

- Monitor active work items and view their details
- Investigate information from data sources and appended events
- Provide remediation input

For more information about Process Operators and their responsibilities, see Section 4.1, "Managing Users and Groups," on page 57.

Configuration Console

A Windows-based user interface delivered to a user's desktop using Microsoft ClickOnce publishing and deployment technology. The Configuration Console allows users to:

- Configure Aegis
- Create processes
- Define assets
- Specify user and group permissions
- Provide email content for notifications

The Configuration Console also includes a built-in Workflow Designer, which Process Authors use to define the steps in a process. For more information about Process Authors and their responsibilities, see Section 4.1, "Managing Users and Groups," on page 57.

Reporting Center Console

A Windows-based reporting tool for Aegis installed locally for each user that runs reports. For more information, see the *Reporting Guide for NetIQ Reporting Center*.

NetIQ Aegis Business Services Layer (BSL)

A Web service that allows the Operations Console and the Configuration Console to communicate with the Aegis Server computer.

Reporting Center Web Service

A Web service that allows the Reporting Center Console to communicate with the Reporting Center database and retrieve report data from the Aegis and Resource Management databases.

Aegis Services

A set of services on the Aegis Server computer that manage the workflows in production.

- The **NetIQ Aegis Engine** (Aegis Engine) receives events from adapters and sends them to the Correlation Engine for evaluation. After the evaluation, the Aegis Engine initiates work items from process workflows and executes workflow activities. This service depends on the NetIQ Aegis Namespace Provider (current or pre-2.2) and the NetIQ Resource Management Namespace Provider.
- The **NetIQ Aegis Correlation Engine** (Correlation Engine) receives events from the Aegis Engine and determines whether the events match any triggers.
- The **NetIQ Aegis Activity Broker** (Activity Broker) allows the Aegis Engine to execute workflow activities. This service depends on the NetIQ Aegis Namespace Provider (current or pre-2.2).

Providers

A set of components on the Aegis Server computer that facilitate communication with the databases for both the BSL and the Aegis services.

- The **NetIQ Aegis Namespace Provider** communicates with the Aegis database and runs adapters. Core adapters implement base Aegis functionality, such as scheduled events and monitoring email accounts. Product adapters extend Aegis functionality by allowing Aegis to communicate with data sources, such as BMC Remedy and NetIQ AppManager. This version of the Aegis Namespace Provider is present in both cluster and non-cluster environments.

- The **NetIQ Aegis Namespace Provider (pre-2.2)** communicates with the Aegis database and runs older versions of product adapters released prior to Aegis 2.2. This version of the Aegis Namespace Provider is not present in a cluster environment.
- The **NetIQ Resource Management Namespace Provider** communicates with the Resource Management database to provide centralized access to the resource, user, and security data in Aegis.

Adapters

A set of components on the Aegis Server computer that facilitate communication between the Aegis Namespace Provider and data sources. For a complete list of Aegis adapters, see the Aegis support site available at http://support.netiq.com/aegis.

Aegis Database

Microsoft SQL Server database that stores all Aegis information, such as processes, work items, workflows, and supporting analysis.

Resource Management Database

Microsoft SQL Server database (display name: IQRM) that stores information needed to display resource data such as business services, users, and computers. It is typically installed on the Database Server computer with the Aegis and Reporting Center databases. You can install it on a separate Resource Management server computer if your environment has multiple NetIQ products that use the same Resource Management database.

Reporting Center Database

Microsoft SQL Server database that stores information the Reporting Center Console needs to display reports. It is typically installed on the Database Server computer with the Aegis and Resource Management databases. You can install it on a separate Reporting server computer if:

- Your environment has multiple NetIQ products that use the same Reporting Center database.
- You plan to use Aegis in a cluster environment. The Reporting Center database does not support clusters.

2.2.4 Restarting Aegis Services

The Aegis services need to start in a certain order. If you need to restart one or more Aegis services, use the following list to determine the order:

1. NetIQ Resource Management Namespace Provider
2. NetIQ Aegis Namespace Provider
3. NetIQ Aegis Namespace Provider (pre-2.2)
4. NetIQ Aegis Engine
5. NetIQ Aegis Activity Broker
6. NetIQ Aegis Correlation Engine
7. NetIQ Aegis Business Services

2.2.5 Understanding Aegis Application Credentials

During the installation process, the Aegis Administrator specifies the default user account and password for the Aegis application credentials.

NOTE: The user account must be a member of the local Administrators group on the Aegis Server computer.

The Aegis application credentials allow Aegis to operate the following accounts:

Aegis Service Account

The account with which Aegis executes the following services on the Aegis Server computer:

- ◆ Aegis Engine
- ◆ Activity Broker
- ◆ Aegis Namespace Provider

For best results, ensure the service account is a domain account. For more information about service account privileges, see "Trusted Domains" on page 21 and Section 4.1.2, "Understanding User and Group Synchronization," on page 58.

Aegis Database Runtime Account

The account with which Aegis connects to the Aegis database at run time. This account can be one of the following:

- ◆ A SQL-only account you specify during the installation process
- ◆ The Aegis service account

During the installation process, the Aegis setup program associates the specified account with the db_owner role on the Aegis database.

Resource Management Account

The account with which Aegis adapters communicate with the Resource Management Namespace Provider.

Resource Management Database Runtime Account

The account with which Aegis connects to the Resource Management database at run time. This account can be one of the following:

- ◆ A SQL-only account you specify during the installation process
- ◆ The Resource Management account

During the installation process, the Aegis setup program associates the specified account with the db_owner role on the Resource Management database.

Default Aegis Administrator Account

The account the Aegis Administrator uses for the first Aegis logon. Aegis associates the account with the following Aegis groups:

- ◆ Aegis Administrators
- ◆ Aegis Users

For more information about the default Aegis groups, see Section 4.1.1, "Default Groups," on page 57.

After installation, you can modify the user account associated with the Aegis application credentials at any time. For more information about modifying the Aegis application credentials, see Section 3.7, "Modifying Aegis Application Credentials," on page 54.

2.2.6 Supported Configurations

NetIQ recommends you install Aegis strategically over multiple computers in one of the following configurations.

NOTE

- Installing all required components on one computer is not recommended.
- Installing Aegis components on domain controllers is not recommended.

Two-Tier Configuration

In a two-tier configuration, you distribute Aegis components across two server computers.

Database Server Computer

Install the Aegis, Resource Management, and Reporting Center databases on one computer.

Combined Aegis Server/Web Server Computer

Install the Aegis services, the Aegis Namespace Provider, the Resource Management Namespace Provider, any Aegis adapters, the Operations Web site, the BSL, and the Reporting Center Web service on one computer.

Three-Tier Configuration

In a three-tier configuration, you distribute Aegis components across three server computers.

Database Server Computer

Install the Aegis, Resource Management, and Reporting Center databases on one computer.

Aegis Server Computer

Install the Aegis services, the Aegis Namespace Provider, the Resource Management Namespace Provider, and any Aegis adapters on one computer.

Web Server Computer

Install the Operations Web site, the BSL, and the Reporting Center Web service on one computer.

Four-Tier Configuration

In a four-tier configuration, you distribute Aegis and Resource Management components across four server computers. If you want to install Aegis in a cluster environment, you must install the Reporting Center database on a separate computer.

Database Server Computer

Install the Aegis and Reporting Center databases on one computer.

Resource Management Server Computer

Install the Resource Management database on one computer.

Aegis Server Computer

Install the Aegis services, the Aegis Namespace Provider, the Resource Management Namespace Provider, and any Aegis adapters on one computer.

Web Server Computer

Install the Operations Web site, the BSL, and the Reporting Center Web service on one computer.

The following diagram displays a four-tier configuration in a cluster environment.
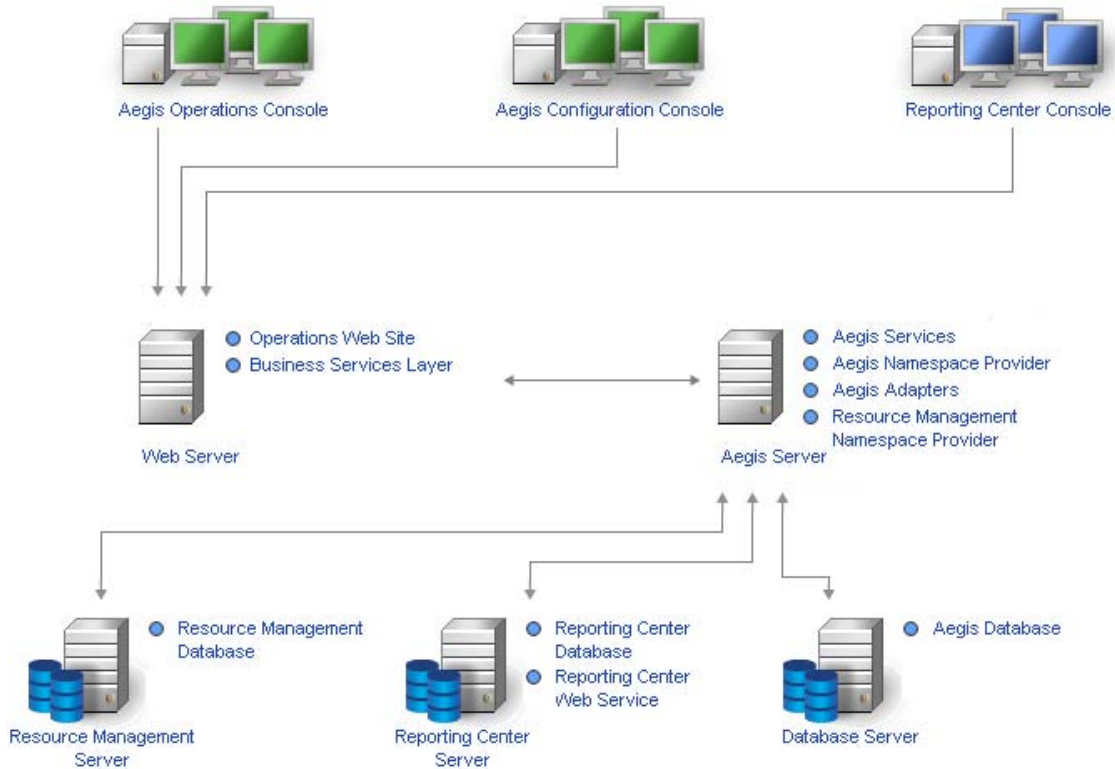
After you determine the configuration you want to use in your environment and install the appropriate components on the server computers, install the Reporting Center Console on each computer where users will run reports.

For more information about installing Aegis components, see Section 2.4, "Installing Aegis Components in a Non-Cluster Environment," on page 31 or Section 2.5, "Installing Aegis Components in a Cluster Environment," on page 36.

Firewall

If your environment requires a firewall between the BSL and the consoles, you must open an additional port in the firewall. If you want the BSL to use port 80 (443) to communicate with the consoles through a firewall, install the BSL on a separate computer from the Web Server computer. For more information about configuring the BSL to communicate through a firewall, contact NetIQ Technical Support.

Trusted Domains

You can configure a Windows domain to trust one or more domains. A trust passes account authentication from one domain to another, allowing easier access to computers, resources, and data across domains. Trusts directly influence domain security, because if even one domain in a trust contains a vulnerability, all domains in that trust are open to attack.

Aegis supports one-way and two-way trusts. To ensure Aegis can synchronize and display trusted domain account information in a one-way trust, the Aegis service account must be:

- A member of the Administrators group on the Aegis Server computer
- Able to perform Active Directory domain queries across all domains from which users can log on to Aegis

Specify the appropriate Aegis service account during the installation process for the Aegis Server components. For more information about the Aegis service account, see Section 2.2.5, "Understanding Aegis Application Credentials," on page 18. For more information about installing the Aegis Server components, see Section 2.2.12, "Planning to Install Aegis Server Components," on page 24. For more information about synchronization, see Section 4.1.2, "Understanding User and Group Synchronization," on page 58.

2.2.7 Planning to Install Aegis in a Cluster Environment

You can install all Aegis components except Reporting Center in a Microsoft Clustering Services cluster environment. If you want to install Aegis in a cluster environment, you must:

- Create an Aegis-specific resource group for each cluster. A cluster resource group is not the same as a resource group in Aegis. For more information about resource groups in Aegis, see Section 5.1.1, "Understanding Resource Groups," on page 65.
- Install the Reporting Center database on a separate computer.

For more information about the requirements for creating the Aegis resource group and installing Aegis components in a cluster environment, see the following sections:

- Section 2.2.10, "Planning to Install the Databases," on page 22
- Section 2.2.12, "Planning to Install Aegis Server Components," on page 24
- Section 2.2.13, "Planning to Install Web Server Components," on page 25
- Section 2.2.11, "Planning to Install Reporting Center in a Cluster," on page 24

For more information about setting up a Microsoft Clustering Services cluster environment, see the appropriate Microsoft documentation

2.2.8 Default Ports

Open the ports listed in the following table for proper communication between Aegis components.

Port Number	Component Computer	Port Use
2219	Aegis Server computer	Used by the NetIQ Aegis Namespace Provider to run adapters. For more information about how the NetIQ Aegis Namespace Provider interacts with adapters, see Section 2.2.3, "Understanding Aegis Components," on page 15.

Port Number	Component Computer	Port Use
2220	Aegis Server computer	Used by the NetIQ Aegis Namespace Provider (pre-2.2) to run adapters that were released prior to Aegis 2.2. For more information about how the NetIQ Aegis Namespace Provider (pre-2.2) interacts with adapters, see Section 2.2.3, "Understanding Aegis Components," on page 15.
9900	Aegis Server computer	Used by the Correlation Engine to communicate with the Aegis Engine and NetIQ Aegis Namespace Provider.
10117	Aegis Server computer	Used by the NetIQ Resource Management Namespace Provider. For more information about the NetIQ Resource Management Namespace Provider, see Section 2.2.3, "Understanding Aegis Components," on page 15.
1433	Database Server computer	Used by the Aegis and Resource Management databases to communicate with the NetIQ Aegis Namespace Provider and NetIQ Resource Management Namespace Provider. **NOTE:** If your environment uses separate computers for the Aegis and Resource Management databases, ensure port 1433 is available on both computers.
8091 (TCP) 8092 (HTTP)	Web Server computer	Used by the BSL to communicate with the Operations Console and the Configuration Console.
80 (HTTP) 443 (HTTPS)	Web Server computer	Used by the Web Server computer to allow remote users to log on to the Operations Console. The Web Server computer uses port 80 by default.

2.2.9   Supported Languages and Locales

Aegis supports English language versions of the Microsoft Windows operating system in the following locales:

- English
- Spanish
- German
- Japanese

2.2.10   Planning to Install the Databases

This section provides requirements, recommendations, and configuration information for the Database Server computer. For the most recent information about third-party software requirements, see the Aegis support site available at http://support.netiq.com/aegis.

Typically, the Database Server computer hosts the following databases:

- Aegis database
- Resource Management database
- Reporting Center Configuration database

If you plan to install in a cluster environment, you must install the Reporting Center Configuration database on a separate reporting server. For more information about installing Reporting Center on a separate server, see Section 2.2.11, "Planning to Install Reporting Center in a Cluster," on page 24.

The following table lists the requirements and recommendations for the Database Server computer:

NOTE

- ◆ If you plan to install the Resource Management database on a separate Resource Management server computer, use the following requirements for both the Database Server computer and the Resource Management server computer.
- ◆ In a cluster environment, these requirements apply to each node in the cluster.

Category	Requirement
Processor	1.8 GHz Intel Pentium 4 server class with dual processor
Disk Space	Two drive configuration: ◆ System drive: 60 GB free disk space ◆ Data drive: 200 GB free disk space
Memory	4 GB
Operating System	One of the following: ◆ Windows Server 2012 ◆ Windows Server 2008 R2 ◆ Windows Server 2008 Service Pack 2 or later (32- or 64-bit) ◆ Windows Server 2012 R2 **NOTE:** If you install the databases remotely, the Aegis setup program does not validate the operating system on the remote computer.
Additional Software	◆ One of the following: ◆ Microsoft SQL Server 2012 (32- or 64-bit) ◆ Microsoft SQL Server 2008 R2 (32- or 64-bit) ◆ Microsoft SQL Server 2008 (32- or 64-bit) ◆ Microsoft SQL Server 2005 Service Pack 2 or later (32- or 64-bit) ◆ Microsoft SQL Server Native Client for the installed version of Microsoft SQL Server ◆ Microsoft SQL Server Reporting Services for the installed version of Microsoft SQL Server (non-cluster environment only) ◆ Windows PowerShell 2.0 (required only for a cluster environment) **NOTE** ◆ Non-U.S. language versions of Microsoft SQL Server are not supported. ◆ If you install the databases remotely, the Aegis setup program does not validate the version of Microsoft SQL Server on the remote computer.

Category	Requirement
Port	1433: Used by the Aegis Server computer and the Web Server computer to connect to the SQL Server databases. For more information about the ports, see Section 2.2.8, "Default Ports," on page 21.
Resource Group Configuration	*If you plan to install in a cluster environment*, you must create an Aegis-specific resource group.

2.2.11 Planning to Install Reporting Center in a Cluster

Reporting Center does not support clusters. If you want to install Aegis in a cluster environment, you must install the Reporting Center database on a separate Reporting server computer.

In a cluster environment, the Reporting server computer hosts the following components:

* Reporting Center Web service
* Reporting Center Configuration database

For more information about the requirements for the Reporting server computer, see the *Reporting Guide for NetIQ Reporting Center*. For the most recent information about third-party software requirements, see the Aegis support site available at http://support.netiq.com/aegis.

2.2.12 Planning to Install Aegis Server Components

This section provides requirements, recommendations, and configuration information for the Aegis Server computer. For the most recent information about third-party software requirements, see the Aegis support site available at http://support.netiq.com/aegis.

Typically, the Aegis Server computer hosts the following components:

* NetIQ Aegis Activity Broker service
* NetIQ Aegis Correlation Engine service
* NetIQ Aegis Engine service
* NetIQ Aegis Namespace Provider
* NetIQ Resource Management Namespace Provider
* Aegis adapters

The following table lists the requirements and recommendations for the Aegis Server computer.

NOTE

* If you are installing Aegis in a two-tier configuration, ensure the computer where you want to install the combined Aegis Server and Web Server components meets the requirements for both. For more information about Web Server computer requirements, see Section 2.2.13, "Planning to Install Web Server Components," on page 25.
* In a cluster environment, these requirements apply to each node in the cluster.

Category	Requirement
Processor	1.8 GHz Intel Pentium 4 server class with dual processor

Category	Requirement
Disk Space	Two drive configuration: ◆ System drive: 60 GB free disk space ◆ Data drive: 80 GB free disk space
Memory	4 GB
Operating System	One of the following: ◆ Windows Server 2012 ◆ Windows Server 2008 R2 ◆ Windows Server 2008 Service Pack 2 or later (32- or 64-bit) ◆ Windows Server 2012 R2
Additional Software	◆ Microsoft Message Queuing 3.0, 4.0, 5.0, 6.0, or 6.3 ◆ Microsoft .NET Framework 2.0 (required for pre-3.2 activities) ◆ Microsoft .NET Framework 4.0 * ◆ Microsoft SQL Server Native Client for the version of Microsoft SQL Server installed on the Database Server computer ◆ Windows PowerShell 2.0 ** * The Aegis Server components do not use Microsoft .NET Framework 3.x, but .NET Framework 3.x and 4.x can coexist on the Aegis Server computer. ** The Aegis Server components do not use Windows PowerShell 3.0, but PowerShell 2.0 and 3.0 can coexist on the Aegis Server computer.
Ports	2219: Used by the NetIQ Aegis Namespace Provider to communicate with the Aegis database and run Aegis adapters. 2220: Used by the NetIQ Aegis Namespace Provider (pre-2.2) to run older versions of Aegis adapters that do not support clusters. 10117: Used by the NetIQ Resource Management Namespace Provider. For more information about the ports, see Section 2.2.8, "Default Ports," on page 21.
Resource Group Configuration	*If you plan to install in a cluster environment*, you must create an Aegis-specific resource group by clustering Microsoft Message Queuing 3.0, 4.0, 5.0, or 6.0. For more information about clustering Microsoft Message Queuing, see Section 2.5.3, "Clustering Microsoft Message Queuing on the Aegis Server Computer," on page 38.

2.2.13 Planning to Install Web Server Components

This section provides requirements, recommendations, and configuration information for the Web Server computer. For the most recent information about third-party software requirements, see the Aegis support site available at http://support.netiq.com/aegis.

Group Policy Settings

Before installing the Web Server components, ensure you configure the Group Policy security settings on the Web Server computer to allow anonymous access.

Web Server Computer Requirements

Typically, the Web Server computer hosts the following components:

- Operations Web site
- BSL
- Reporting Center Web service

If you plan to install in a cluster environment, you must install the Reporting Center Web service on a separate reporting server. For more information about installing Reporting Center on a separate server, see Section 2.2.11, "Planning to Install Reporting Center in a Cluster," on page 24.

The following table lists the requirements and recommendations for the Web Server computer:

NOTE

- If you are installing Aegis in a two-tier configuration, ensure the computer where you want to install the combined Aegis Server and Web Server components meets the requirements for both. For more information about Aegis Server computer requirements, see Section 2.2.12, "Planning to Install Aegis Server Components," on page 24.
- In a cluster environment, these requirements apply to each node in the cluster.
- Do not configure Network Load Balancing (NLB) on your Web Server cluster.

WARNING: When you configure Microsoft Internet Information Services (IIS) in a cluster environment, do not use the Shared Configuration option.

Category	Requirement
Processor	1.8 GHz Intel Pentium 4 server class with dual processor
Disk Space	60 GB free disk space
Memory	4 GB
Operating System	One of the following: • Windows Server 2012 • Windows Server 2008 R2 • Windows Server 2008 Service Pack 2 or later (32- or 64-bit) • Windows Server 2012 R2

Additional Software	• Microsoft Internet Information Services 6, 7, 7.5, 8, or 8.5 *
	• One of the following versions of Microsoft ASP.NET:
	  • *If you are running IIS 6 or 7.x*, ASP.NET 2.0, 3.0, or 3.5
	  • *If you are running IIS 8.x*, ASP.NET 4.0 or 4.5
	• Microsoft .NET Framework 2.0 (for Reporting Center Web service only)
	• Microsoft .NET Framework 4.0 (required for all other components)
	• Windows PowerShell 2.0 (required only for a cluster environment)
	
	* If you install IIS 7.x or 8.x, you must enable IIS 6 compatibility mode.

Category	Requirement
Ports	8091 and 8092: Used by the BSL to communicate with the Operations Console and the Configuration Console. 80 or 443: Used by the Web Server computer to allow remote users to log on to the Operations Console using HTTP or HTTPS. For more information about the ports, see Section 2.2.8, "Default Ports," on page 21.
Resource Group Configuration	*If you plan to install in a cluster environment*, you must create an Aegis-specific resource group.

Operations Console Web Browser Computer Requirements

The following table lists the requirements and recommendations for each computer where users launch a Web browser to log on to the Operations Console.

Category	Requirement
Operating System	One of the following operating systems: ◆ Windows 8.1 (32- or 64-bit) ◆ Windows 8 (32- or 64-bit) ◆ Windows 7 (32- or 64-bit) ◆ Windows Server 2008 R2 ◆ Windows Server 2008 Service Pack 2 or later (32- or 64-bit) ◆ Windows Vista (32- or 64-bit) ◆ Windows XP Service Pack 2 or later (32- or 64-bit)
Additional Software	Any of the following browsers: ◆ Microsoft Internet Explorer 8, 9, 10, or 11 ◆ Google Chrome * ◆ Apple Safari * ◆ Mozilla Firefox * ◆ Opera * * For best results, ensure you are using the latest version of this browser.

Securing Your Aegis Environment

Aegis encrypts and authenticates all communication between the consoles, the BSL, the Aegis Server computer, and the databases. However, to secure communication between the Operations Console and the Web Server computer, you must use Secure Sockets Layer (SSL) for all Web Server computers in your Aegis environment. Otherwise, any person using a sniffer on your network could access passwords and other privileged information.

NOTE: In a cluster environment, ensure you import a certificate from a `.pfx` file instead of generating a temporary self-signed certificate. If you generate a temporary self-signed certificate on the node where you install the Web Server components, the certificate is available only on that node. The certificate is not available to the other nodes in the cluster.

For information about configuring SSL in Microsoft Certificate Services and in Microsoft Internet Information Services (IIS), see the Microsoft documentation.

Aegis uses the following technologies to secure your Web Server computer:

- ASP.NET security provides application-level security for the Web Server computer. You can lock down the server using best practices for ASP.NET security.
- Security features in IIS control access to the Web Server computer virtual directory.
- The BSL authenticates connections between the Operations Console and an Aegis Server instance.

2.2.14 Planning to Install the Reporting Center Console

Install the Reporting Center Console on each computer where users will run Aegis reports. For more information about the requirements for the Reporting Center computer, see the *Reporting Guide for NetIQ Reporting Center*. For the most recent information about third-party software requirements, see the Aegis support site available at http://support.netiq.com/aegis.

2.2.15 Planning to Install the Configuration Console

This section provides requirements, recommendations, and configuration information for each Configuration Console computer. For the most recent information about third-party software requirements, see the Aegis support site available at http://support.netiq.com/aegis.

NOTE: If your environment does not support the default ClickOnce deployment, you can install the Configuration Console locally for all Aegis Administrators and Process Authors. For more information about installing the Configuration Console locally, see Section 2.8, "Installing the Configuration Console Locally," on page 43. For more information about installing the Configuration Console using ClickOnce deployment, see Section 3.10, "Starting the Configuration Console the First Time," on page 56.

The following table lists the requirements and recommendations for each Configuration Console computer.

Category	Requirement
Operating System	One of the following operating systems: ◆ Windows 8.1 (32- or 64-bit) ◆ Windows 8 (32- or 64-bit) ◆ Windows 7 (32- or 64-bit) ◆ Windows Server 2008 R2 ◆ Windows Server 2008 Service Pack 2 (32- or 64-bit) ◆ Windows Vista (32- or 64-bit) ◆ Windows XP Service Pack 2 or later (32- or 64-bit)

Category	Requirement
Additional Software	Microsoft .NET Framework 4.0, 4.5, or 4.5.1

2.2.16 Planning to Install the Aegis Event Generator

This section provides requirements for each computer where you want to install the Aegis Event Generator. By default, the Aegis setup program installs the Aegis Event Generator on the Aegis Server computer. You can also install it on a remote computer. The Aegis setup program installs the Aegis Event Generator in the `C:\Program Files\NetIQ\Aegis\IQConnect73\bin` folder.

For the most recent information about third-party software requirements, see the Aegis support site available at http://support.netiq.com/aegis.

The following table lists the requirements and recommendations for each computer where you install the Aegis Event Generator.

Category	Requirement
Operating System	One of the following operating systems: ◆ Windows Server 2012 ◆ Windows Server 2008 R2 ◆ Windows Server 2008 Service Pack 2 or later (32- or 64-bit)
Additional Software	Microsoft .NET Framework 3.0 or 3.5 **NOTE:** The Aegis Event Generator does not use Microsoft .NET Framework 4.0 or 4.5, but .NET Framework 3.x and 4.x can coexist on the same computer.

2.3 Upgrading from a Previous Version

This section provides information to help you upgrade your existing NetIQ Aegis installation to Aegis 3.2. If you currently use Aegis 2.2, 2.3, 3.0, or 3.1, you can upgrade to Aegis 3.2 using one of the following methods:

◆ In-place upgrade

◆ Migration to a new environment

2.3.1 Performing an In-Place Upgrade

An in-place upgrade allows you to:

◆ Upgrade from a non-clustered Aegis 2.2 environment to a non-clustered Aegis 3.2 environment

◆ Upgrade from a non-clustered Aegis 2.3 environment to a non-clustered Aegis 3.2 environment

◆ Upgrade from a non-clustered Aegis 3.0 environment to a non-clustered Aegis 3.2 environment

◆ Upgrade from a non-clustered Aegis 3.1 environment to a non-clustered Aegis 3.2 environment

◆ Upgrade from a clustered Aegis 2.2 environment to a clustered Aegis 3.2 environment

◆ Upgrade from a clustered Aegis 2.3 environment to a clustered Aegis 3.2 environment

- Upgrade from a clustered Aegis 3.0 environment to a clustered Aegis 3.2 environment
- Upgrade from a clustered Aegis 3.1 environment to a clustered Aegis 3.2 environment

NOTE: If you want to use Aegis 3.2 with 64-bit operating systems, and your current environment uses 32-bit operating systems, you must migrate your existing data to a new environment. For more information, see Section 2.3.2, "Migrating Your Existing Data to a New Environment," on page 30.

To perform an in-place upgrade, simply run the Aegis setup program on your existing Aegis computers. For more information about installing Aegis and the order in which to install components, see Section 2.4, "Installing Aegis Components in a Non-Cluster Environment," on page 31 or Section 2.5, "Installing Aegis Components in a Cluster Environment," on page 36.

2.3.2 Migrating Your Existing Data to a New Environment

These steps guide you through the process of migrating the data from your existing installation to a new environment in the following scenarios:

- Migrating from 32-bit environment to a 64-bit environment
- Migrating from a non-cluster environment to a cluster environment

To migrate your existing data to a new environment:

1 In your current Aegis installation, stop the following services:

- NetIQ Aegis Activity Broker service
- NetIQ Aegis Correlation Engine service
- NetIQ Aegis Engine service
- NetIQ Aegis Namespace Provider
- NetIQ Aegis Namespace Provider (pre-2.2) (if you are upgrading from Aegis 2.2 or 2.3)
- NetIQ Aegis Business Services Layer

2 On the Database Server computer for your current installation of Aegis, back up the following databases:

- Aegis
- IQRM

For more information about backing up databases, see the appropriate Microsoft documentation.

3 On the Database Server computer in your new environment, restore the databases. For more information about restoring databases, see the appropriate Microsoft documentation.

4 Run the Aegis setup program on the computers in your new environment using one of the following checklists:

- (Conditional) If you are migrating to a non-cluster environment, see Section 2.4, "Installing Aegis Components in a Non-Cluster Environment," on page 31.
- (Conditional) If you are migrating to a cluster environment, see Section 2.5, "Installing Aegis Components in a Cluster Environment," on page 36.

2.4 Installing Aegis Components in a Non-Cluster Environment

To successfully install Aegis, you must install the components in the correct order. The following checklist specifies the correct order for installing Aegis components in a non-cluster environment.

	Checklist Items
❑	1. *If you are installing Aegis in a four-tier configuration*, install the Resource Management database on a separate computer. For more information, see Section 2.4.1, "Installing the Resource Management Database in a Four-Tier Non-Cluster Environment," on page 31.
❑	2. Install the databases on the Database Server computer. You can run the setup program locally on the Database Server computer or from a remote computer. For more information, see Section 2.4.2, "Installing Database Server Components in a Non-Cluster Environment," on page 32.
❑	3. *If you are installing Aegis in a three-tier configuration*, install the Aegis Server components. For more information, see Section 2.4.3, "Installing Aegis Server Components in a Three-Tier Non-Cluster Environment," on page 33.
❑	4. *If you are installing Aegis in a three-tier configuration*, install the Web Server components. For more information, see Section 2.4.4, "Installing Web Server Components in a Three-Tier Non-Cluster Environment," on page 34.
❑	5. *If you are installing Aegis in a two-tier configuration*, install the Aegis Server and Web Server components. For more information, see Section 2.4.5, "Installing Aegis and Web Server Components in a Two-Tier Non-Cluster Environment," on page 35.
❑	6. *If your Web Server computer is using the Windows Server 2008 operating system*, configure IIS to support the Operations Console. For more information, see Section 2.6, "Configuring the Operations Console on Windows Server 2008," on page 42.
❑	7. Install the Reporting Center Console. For more information, see Section 2.7, "Installing the Reporting Center Console Locally," on page 43.
❑	8. *(Optional)* Install the Configuration Console locally. For more information, Section 2.8, "Installing the Configuration Console Locally," on page 43.

2.4.1 Installing the Resource Management Database in a Four-Tier Non-Cluster Environment

These steps guide you through the process of installing the Resource Management database on a separate Resource Management server computer in a non-cluster environment.

If the Resource Management account is different from the Aegis service account and the default Aegis Administrator account, ensure you install the Resource Management database before you install any other Aegis components. For more information about the Resource Management account, see Section 2.2.5, "Understanding Aegis Application Credentials," on page 18.

To install the Resource Management database in a four-tier non-cluster environment:

1 Log on with an Administrator account to the computer where you want to install the Resource Management database.

NOTE: You can also install the database remotely.

2 Run the Aegis setup program from the root folder of the Aegis installation kit.

> **NOTE:** Ensure the installation kit is located on the local computer where you are running the setup program.

3 Click **Begin Setup**.

4 On the Select Components window of the NetIQ Aegis Setup wizard, select **Resource Management Database**.

> **NOTE:** If you are upgrading from a previous version, the setup program automatically selects the components to install.

5 Click **Next**.

6 Follow the instructions in the NetIQ Aegis Setup wizard until you finish installing the Resource Management database, and then click **Finish**.

2.4.2 Installing Database Server Components in a Non-Cluster Environment

These steps guide you through the process of installing the databases on the Database Server computer in a non-cluster environment. You can run the setup program locally on the Database Server computer or from a remote computer.

If the Resource Management account is different from the Aegis service account and the default Aegis Administrator account, ensure you install the Resource Management database before you install any other Aegis components. For more information about the Resource Management account, see Section 2.2.5, "Understanding Aegis Application Credentials," on page 18.

To install Database Server components in a non-cluster environment:

1 Log on with an Administrator account to the computer where you want to install the databases.

> **NOTE:** You can also install the databases remotely.

2 Run the Aegis setup program from the root folder of the Aegis installation kit.

> **NOTE:** Ensure the installation kit is located on the local computer where you are running the setup program.

3 Click **Begin Setup**.

4 *If you are installing Aegis in a four-tier configuration*, on the Select Components window of the NetIQ Aegis Setup wizard, select the following components:

> **NOTE:** If you are upgrading from a previous version, the setup program automatically selects the components to install.

- ◆ Aegis Database
- ◆ Aegis Reporting

5 *If you are installing Aegis in a three-tier configuration*, on the Select Components window of the NetIQ Aegis Setup wizard, select the following components:

> **NOTE:** If you are upgrading from a previous version, the setup program automatically selects the components to install.

- ◆ Aegis Database
- ◆ Aegis Reporting
- ◆ Resource Management Database

NOTE: If you want to install the Resource Management database on a separate computer, you can specify the details of the remote Resource Management server computer during the installation process.

6 Click **Next**.

7 On the Prerequisites window, under **Required Prerequisites**, click **NetIQ Reporting Center**, and then click **Install Prerequisite** to start the NetIQ Reporting Center Setup wizard.

8 On the Feature Selection window of the NetIQ Reporting Center Setup wizard, select the following options:

   - Configuration Database
   - Reporting Services Data Extension

For more information about Reporting Center components, see the *Reporting Guide for NetIQ Reporting Center*.

9 Click **Next**.

10 Follow the instructions in the NetIQ Reporting Center Setup wizard until you finish installing the Reporting Center components, and then click **Finish**.

11 Follow the instructions in the NetIQ Aegis Setup wizard, and then click **Finish**.

2.4.3 Installing Aegis Server Components in a Three-Tier Non-Cluster Environment

These steps guide you through the process of installing the following components on the Aegis Server computer in a non-cluster environment:

- NetIQ Aegis Activity Broker service
- NetIQ Aegis Correlation Engine service
- NetIQ Aegis Engine service
- NetIQ Aegis Namespace Provider
- NetIQ Aegis Namespace Provider (pre-2.2)
- NetIQ Resource Management Namespace Provider

To install Aegis Server components in a three-tier non-cluster environment:

1 Log on with an Administrator account to the computer where you want to install the Aegis Server components.

2 Run the Aegis setup program from the root folder of the Aegis installation kit.

NOTE: Ensure the installation kit is located on the local computer where you are running the setup program.

3 Click **Begin Setup**.

4 On the Select Components window of the NetIQ Aegis Setup wizard, select the following options:

> **NOTE:** If you are upgrading from a previous version, the setup program automatically selects the components to install.

- ◆ Aegis Services
- ◆ Resource Management Namespace Provider

5 Follow the instructions in the NetIQ Aegis Setup wizard until you finish installing the Aegis Server components, and then click **Finish**.

2.4.4 Installing Web Server Components in a Three-Tier Non-Cluster Environment

These steps guide you through the process of installing the following components on the Web Server computer in a three-tier non-cluster environment:

- ◆ Operations Web site
- ◆ BSL
- ◆ Reporting Center Web service

To install Web Server components in a three-tier non-cluster environment:

1 Disable the firewall on the Aegis Server computer.

If you do not disable the firewall, the Aegis setup program might not be able to locate the Aegis Server computer during the Web Server computer installation.

2 Log on with an Administrator account to the computer where you want to install the Web Server components.

3 Configure the Group Policy security settings on the Web Server computer to allow anonymous access.

4 Run the Aegis setup program from the root folder of the Aegis installation kit.

> **NOTE:** Ensure the installation kit is located on the local computer where you are running the setup program.

5 Click **Begin Setup**.

6 On the Select Components window of the NetIQ Aegis Setup wizard, select the following components:

> **NOTE:** If you are upgrading from a previous version, the setup program automatically selects the components to install.

- ◆ Web Server Components (complete feature)
- ◆ Aegis Reporting

> **NOTE:** In a non-cluster environment, the Aegis Reporting component installs the Reporting Center Web service.

7 Click **Next**.

8 On the Prerequisites window, under **Required Prerequisites**, click **NetIQ Reporting Center**, and then click **Install Prerequisite** to start the NetIQ Reporting Center Setup wizard.

9 On the Select Components window of the NetIQ Aegis Setup wizard, select **Web Service**, and then click **Next**.

For more information about Reporting Center components, see the *Reporting Guide for NetIQ Reporting Center*.

10 Follow the instructions in the NetIQ Reporting Center Setup wizard until you finish installing the Reporting Center Web service, and then click **Finish**.

11 Follow the instructions in the NetIQ Aegis Setup wizard until you finish installing the Web Server components, and then click **Finish**.

12 Enable the firewall on the Aegis Server computer.

2.4.5 Installing Aegis and Web Server Components in a Two-Tier Non-Cluster Environment

These steps guide you through the process of installing the following components on a combined Aegis/Web Server computer in a two-tier non-cluster environment:

- NetIQ Aegis Activity Broker service
- NetIQ Aegis Correlation Engine service
- NetIQ Aegis Engine service
- NetIQ Aegis Namespace Provider
- NetIQ Aegis Namespace Provider (pre-2.2)
- NetIQ Resource Management Namespace Provider
- Operations Web site
- BSL
- Reporting Center Web service

To install Aegis Server and Web Server components in a two-tier non-cluster environment:

1 Log on with an Administrator account to the computer where you want to install the combined Aegis Server and Web Server components.

2 Run the Aegis setup program from the root folder of the Aegis installation kit.

NOTE: Ensure the installation kit is located on the local computer where you are running the setup program.

3 Click **Begin Setup**.

4 On the Select Components window of the NetIQ Aegis Setup wizard, select the following options:

NOTE: If you are upgrading from a previous version, the setup program automatically selects the components to install.

- Aegis Services
- Web Server Components (complete feature)
- Aegis Reporting

NOTE: In a non-cluster environment, the Aegis Reporting component installs the Reporting Center Web service.

- Resource Management Namespace Provider

5 Click **Next**.

6 On the Prerequisites window, under **Required Prerequisites**, click **NetIQ Reporting Center**, and then click **Install Prerequisite** to start the NetIQ Reporting Center Setup wizard.

7 On the Feature Selection window of the NetIQ Reporting Center Setup wizard, select **Web Service**, and then click **Next**.

For more information about Reporting Center components, see the *Reporting Guide for NetIQ Reporting Center*.

8 Follow the instructions in the NetIQ Reporting Center Setup wizard until you finish installing the Reporting Center Web service, and then click **Finish**.

9 Follow the instructions in the NetIQ Aegis Setup wizard until you finish installing the combined server components and the databases, and then click **Finish**.

2.5   Installing Aegis Components in a Cluster Environment

To successfully install Aegis, you must install the components in the correct order. The following checklist specifies the correct order for installing Aegis components in a cluster environment.

	Checklist Items
❏	1. Install the Database Server computer components on the Database Server computer. You can run the setup program locally on the Database Server computer or from a remote computer. For more information, see Section 2.5.1, "Installing Database Server Components in a Cluster Environment," on page 37.
❏	2. Install the Reporting Center components on a separate Reporting server computer. For more information, see Section 2.5.2, "Installing Reporting Center in a Cluster Environment," on page 37.
❏	3. Create the Aegis-specific resource group on the Aegis Server computer by clustering Microsoft Message Queuing. For more information, see Section 2.5.3, "Clustering Microsoft Message Queuing on the Aegis Server Computer," on page 38.
❏	4. *If you are installing Aegis in a three-tier configuration*, install the Aegis Server components on the Aegis Server computer. For more information, see Section 2.5.4, "Installing Aegis Server Components in a Three-Tier Cluster Environment," on page 39.
❏	5. *If you are installing Aegis in a three-tier configuration*, install the Web Server components on the Web Server computer. For more information, see Section 2.5.5, "Installing Web Server Components in a Three-Tier Cluster Environment," on page 40.
❏	6. *If you are installing Aegis in a two-tier configuration*, install the Aegis Server and Web Server components on the combined Aegis/Web Server computer. For more information, see Section 2.5.6, "Installing Aegis and Web Server Components in a Two-Tier Cluster Environment," on page 41.
❏	7. Configure IIS on the Web Server computer. For more information, see Section 2.6, "Configuring the Operations Console on Windows Server 2008," on page 42.
❏	8. Install the Reporting Center Console on each user's local computer. For more information, see Section 2.7, "Installing the Reporting Center Console Locally," on page 43.
❏	9. *(Optional)* Install the Configuration Console locally. For more information, Section 2.8, "Installing the Configuration Console Locally," on page 43.

2.5.1 Installing Database Server Components in a Cluster Environment

These steps guide you through the process of installing the databases on the Database Server computer in a cluster environment. You can run the setup program locally on the Database Server computer or from a remote computer.

NOTE

- ⬥ You only need to run the setup program on one node in the cluster. The setup program automatically installs the components on all other nodes in the cluster.
- ⬥ If you add a new node to the cluster, repeat these steps on the new node.

To install Database Server components in a cluster environment:

1 Log on with an Administrator account to the computer where you want to install the databases.

2 Run the Aegis setup program from the root folder of the Aegis installation kit.

NOTE: Ensure the installation kit is located on the local computer where you are running the setup program.

---

3 Click **Begin Setup**.

4 On the Select Components window of the NetIQ Aegis Setup wizard, select the following components:

NOTE: If you are upgrading from a previous version, the setup program automatically selects the components to install.

- ⬥ Aegis Database
- ⬥ Resource Management Database

5 *If you want to change the location where the setup program installs Aegis*, ensure you select a drive letter that exists on all nodes in the cluster, such as C:\. The setup program does not support installing Aegis on the drive you assigned to the Aegis resource group.

6 Click **Next**.

7 Follow the instructions in the NetIQ Aegis Setup wizard until you finish installing the Aegis and Resource Management databases, and then click **Finish**.

8 To verify a successful installation, check the installation log file on each passive node in the cluster. Typically, the log file is in the c:\temp\Aegis folder.

9 *If the installation process failed on a passive node*, complete the following steps:

   9a Run the Aegis setup program on the node where the installation failed.

   9b Select **Install Aegis on a new node in the cluster (existing Aegis installation)**.

2.5.2 Installing Reporting Center in a Cluster Environment

Reporting Center does not support clusters. If you want to install Aegis in a cluster environment, you must install the following Reporting Center components on a separate Reporting server computer:

- ⬥ Reporting Center Configuration Database
- ⬥ Reporting Services Data Extension
- ⬥ Reporting Center Web service

These steps guide you through the process of installing Reporting Center components on a separate Reporting server computer. For more information about Reporting Center components, see the *Reporting Guide for NetIQ Reporting Center*.

To install Reporting Center on a separate Reporting server computer:

1 Log on with an Administrator account to the computer where you want to install Reporting Center components.

2 Run the Aegis setup program from the root folder of the Aegis installation kit.

> **NOTE:** Ensure the installation kit is located on the local computer where you are running the setup program.

3 Click **Begin Setup**.

4 On the Select Components window of the NetIQ Aegis Setup wizard, select **Aegis Reporting**.

5 Click **Next**.

6 On the Prerequisites window, under **Required Prerequisites**, click **NetIQ Reporting Center**, and then click **Install Prerequisite** to start the NetIQ Reporting Center Setup wizard.

7 On the Feature Selection window of the NetIQ Reporting Center Setup wizard, select the following options:

- ◆ Configuration Database
- ◆ Reporting Services Data Extension
- ◆ Web Service

8 Click **Next**.

9 Follow the instructions in the NetIQ Reporting Center Setup wizard until you finish installing the Reporting Center components, and then click **Finish**.

10 Follow the instructions in the NetIQ Aegis Setup wizard, and then click **Finish**.

2.5.3 Clustering Microsoft Message Queuing on the Aegis Server Computer

These steps guide you through the process of clustering Microsoft Message Queuing on the Aegis Server computer (or the combined Aegis/Web Server computer), which creates an Aegis-specific resource group.

> **NOTE:** A cluster resource group is not the same as a resource group in the Resource Management database. For more information about resource groups in Aegis, see Section 5.1.1, "Understanding Resource Groups," on page 65.

To cluster Microsoft Message Queuing on the Aegis Server computer:

1 Log on with an Administrator account to the computer where you want to install the Aegis Server components.

2 Start Failover Cluster Manager.

3 In the left pane, right-click **Services and applications**, and then click **Configure a Service or Application**.

4 On the High Availability Wizard, click **Select Service or Application**.

5 Click **Message Queuing**, and then click **Next**.

6 Follow the instructions in the High Availability Wizard until you finish clustering Microsoft Message Queuing.

2.5.4 Installing Aegis Server Components in a Three-Tier Cluster Environment

These steps guide you through the process of installing components on the Aegis Server computer in a three-tier cluster environment.

NOTE

- You only need to run the setup program on one node in the cluster. The setup program automatically installs the components on all other nodes in the cluster.
- If you add a new node to the cluster, repeat these steps on the new node.

The setup program also creates cluster resources. The following table lists the components and their related cluster resources.

Component	Related Cluster Resource
NetIQ Aegis Activity Broker service	NetIQ Aegis Activity Broker
NetIQ Aegis Correlation Engine service	[no related cluster resource]
NetIQ Aegis Engine service	NetIQ Aegis Engine
NetIQ Aegis Namespace Provider	NetIQ Aegis Namespace Provider
NetIQ Resource Management Namespace Provider	NetIQ Resource Management Namespace Provider

To install Aegis Server components in a three-tier cluster environment:

1 Log on with an Administrator account to the computer where you want to install the Aegis Server components.

2 Run the Aegis setup program from the root folder of the Aegis installation kit.

   NOTE: Ensure the installation kit is located on the local computer where you are running the setup program.

3 Click **Begin Setup**.

4 On the Select Components window of the NetIQ Aegis Setup wizard, select the following options:

   NOTE: If you are upgrading from a previous version, the setup program automatically selects the components to install.

   - Aegis Services
   - Resource Management Namespace Provider

5 *If you want to change the location where the setup program installs Aegis*, ensure you select a drive letter that exists on all nodes in the cluster, such as `C:\`. The setup program does not support installing Aegis on the drive you assigned to the Aegis resource group.

6 Follow the instructions in the NetIQ Aegis Setup wizard until you finish installing the Aegis Server components, and then click **Finish**.

7 To verify a successful installation, check the installation log file on each passive node in the cluster. Typically, the log file is in the `c:\temp\Aegis` folder.

8 *If the installation process failed on a passive node*, complete the following steps:

    8a Run the Aegis setup program on the node where the installation failed.

    8b Select **Install Aegis on a new node in the cluster (existing Aegis installation)**.

2.5.5 Installing Web Server Components in a Three-Tier Cluster Environment

These steps guide you through the process of installing components on the Web Server computer in a three-tier cluster environment.

NOTE

- You only need to run the setup program on one node in the cluster. The setup program automatically installs the components on all other nodes in the cluster.
- If you add a new node to the cluster, repeat these steps on the new node.

The setup program also creates cluster resources. The following table lists the components and their related cluster resources.

Component	Related Cluster Resource
Operations Web site	World Wide Web Publishing Service
NetIQ Aegis Business Services service	NetIQ Aegis Business Services

To install Web Server components in a three-tier cluster environment:

1 Disable the firewall on the Aegis Server computer.

If you do not disable the firewall, the Aegis setup program cannot locate the Aegis Server computer during the Web Server computer installation.

2 Log on with an Administrator account to the computer where you want to install the Web Server components.

3 Configure the Group Policy security settings on the Web Server computer to allow anonymous access.

4 Run the Aegis setup program from the root folder of the Aegis installation kit.

NOTE: Ensure the installation kit is located on the local computer where you are running the setup program.

5 Click **Begin Setup**.

6 On the Select Components window of the NetIQ Aegis Setup wizard, select the following components:

NOTE: If you are upgrading from a previous version, the setup program automatically selects the components to install.

- Web Server Components (complete feature)
- Aegis Reporting

NOTE: In a cluster environment, the Aegis Reporting component allows you to point to the Reporting server computer. For more information about the Reporting server computer, see Section 2.5.2, "Installing Reporting Center in a Cluster Environment," on page 37.

7 *If you want to change the location where the setup program installs Aegis*, ensure you select a drive letter that exists on all nodes in the cluster, such as `C:\`. The setup program does not support installing Aegis on the drive you assigned to the Aegis resource group.

8 Click **Next**.

9 Follow the instructions in the NetIQ Aegis Setup wizard until you finish installing the Web Server components, and then click **Finish**.

10 To verify a successful installation, check the installation log file on each passive node in the cluster. Typically, the log file is in the `c:\temp\Aegis` folder.

11 *If the installation process failed on a passive node*, complete the following steps:

11a Run the Aegis setup program on the node where the installation failed.

11b Select **Install Aegis on a new node in the cluster (existing Aegis installation)**.

12 Enable the firewall on the Aegis Server computer.

2.5.6 Installing Aegis and Web Server Components in a Two-Tier Cluster Environment

These steps guide you through the process of installing components on a combined Aegis/Web Server computer in a two-tier cluster environment.

NOTE

- You only need to run the setup program on one node in the cluster. The setup program automatically installs the components on all other nodes in the cluster.

- If you add a new node to the cluster, repeat these steps on the new node.

The setup program also creates cluster resources. The following table lists the components and their related cluster resources.

Component	Related Cluster Resource
NetIQ Aegis Activity Broker service	NetIQ Aegis Activity Broker
NetIQ Aegis Correlation Engine service	[no related cluster resource]
NetIQ Aegis Engine service	NetIQ Aegis Engine
NetIQ Aegis Namespace Provider	NetIQ Aegis Namespace Provider
NetIQ Resource Management Namespace Provider	NetIQ Resource Management Namespace Provider
Operations Web site	World Wide Web Publishing Service
NetIQ Aegis Business Services service	NetIQ Aegis Business Services

To install Aegis Server and Web Server components in a two-tier cluster environment:

1 Log on with an Administrator account to the computer where you want to install the combined Aegis Server and Web Server components.

2 Run the Aegis setup program from the root folder of the Aegis installation kit.

NOTE: Ensure the installation kit is located on the local computer where you are running the setup program.

3 Click **Begin Setup**.

4 On the Select Components window of the NetIQ Aegis Setup wizard, select the following options:

> **NOTE:** If you are upgrading from a previous version, the setup program automatically selects the components to install.

- Aegis Services
- Web Server Components (complete feature)
- Aegis Reporting

> **NOTE:** In a cluster environment, the Aegis Reporting component allows you to point to the Reporting server computer. For more information about the Reporting server computer, see Section 2.5.2, "Installing Reporting Center in a Cluster Environment," on page 37.

- Resource Management Service

5 *If you want to change the location where the setup program installs Aegis*, ensure you select a drive letter that exists on all nodes in the cluster, such as `C:\`. The setup program does not support installing Aegis on the drive you assigned to the Aegis resource group.

6 Click **Next**.

7 Follow the instructions in the NetIQ Aegis Setup wizard until you finish installing the combined server components and the databases, and then click **Finish**.

8 To verify a successful installation, check the installation log file on each passive node in the cluster. Typically, the log file is in the `c:\temp\Aegis` folder.

9 *If the installation process failed on a passive node*, complete the following steps:

    9a Run the Aegis setup program on the node where the installation failed.

    9b Select **Install Aegis on a new node in the cluster (existing Aegis installation)**.

2.6 Configuring the Operations Console on Windows Server 2008

If the operating system on your Web Server computer is Windows Server 2008 SP 2 (32-bit or 64-bit) or Windows Server 2008 R2, after you install the Web Server components, you need to configure IIS to support the Operations Console.

To configure IIS on the Web Server computer:

1 Click **Start > All Programs > Administrative Tools > Server Manager**.

2 In the left pane, expand **Roles**, and then click **Web Server (IIS)**.

3 Click **Add Role Services**.

4 On the Add Role Services wizard, complete the following steps:

    4a Expand **Web Server > Common HTTP Features**, and then click **Static Content**.

    4b Expand **Web Server > Application Development**, and then click **ASP.NET**.

5 On the Add Role Services wizard, click **Next**, and then follow the instructions to complete the wizard.

6 Click **Start > All Programs > Administrative Tools > Internet Information Services (IIS) Manager**.

7 In the left pane, expand *ComputerName* > **Sites** > **Default Web Site**, where *ComputerName* is the name of your server computer, and then click **Aegis**.

8 Double-click **Handler Mappings**.

9 In the mappings list, select **StaticFile**, and then click **Edit**.

10 In the **Module** field, place the cursor in front of any existing handlers, and then type `StaticFileModule,DefaultDocumentModule,`.

11 Click **OK**.

12 In the left pane, click **Default Web Site**.

13 In the **Actions** pane, click **Restart**.

2.7   Installing the Reporting Center Console Locally

These steps guide you through the process of installing the Reporting Center Console on a user's computer. For more information about Reporting Center components, see the *Reporting Guide for NetIQ Reporting Center*.

To install the Reporting Center Console on a user's computer:

1 Log on with an Administrator account to the computer where you want to install the Aegis components.

2 Run the Aegis setup program from the root folder of the Aegis installation kit.

> **NOTE:** Ensure the installation kit is located on the local computer where you are running the setup program.

3 Click **Begin Setup**.

4 On the Select Features window, select **Aegis Reporting**, and then click **Next**.

5 On the Prerequisites window, under **Required Prerequisites**, click **NetIQ Reporting Center**, and then click **Install Prerequisite** to start the NetIQ Reporting Center Setup wizard.

6 On the Feature Selection window, select **Console**, and then click **Next**.

7 Follow the instructions in the NetIQ Reporting Center Setup wizard until you finish installing the Reporting Center Console, and then click **Finish**.

8 Follow the instructions in the NetIQ Aegis Setup wizard until you finish configuring the Reporting Center Console, and then click **Finish**.

2.8   Installing the Configuration Console Locally

These steps guide you through the optional process of installing the Configuration Console on a local computer. For more information about installing the Configuration Console using ClickOnce deployment, see .

> **NOTE:** Installing the Configuration Console locally creates a shortcut in the **NetIQ > Aegis** program group.

To install the Configuration Console locally:

1 Log on with an Administrator account to the computer where you want to install the Aegis components.

2 Run the Aegis setup program from the root folder of the Aegis installation kit.

> **NOTE:** Ensure the installation kit is located on the local computer where you are running the setup program.

3 Click **Begin Setup**.

4 On the Select Features window, select **Configuration Console (optional local install)**, and then click **Next**.

5 Follow the instructions in the NetIQ Aegis Setup wizard until you finish installing the Configuration Console, and then click **Finish**.

2.9 Installing the Aegis Event Generator

These steps guide you through the process of installing the Aegis Event Generator on a local computer.

To install the Aegis Event Generator on a local computer:

1 Log on with an Administrator account to the computer where you want to install the Aegis components.

2 Run the Aegis setup program from the root folder of the Aegis installation kit.

> **NOTE:** Ensure the installation kit is located on the local computer where you are running the setup program.

3 Click **Begin Setup**.

4 On the Select Features window, select **Aegis Event Generator (optional)**, and then click **Next**.

5 Follow the instructions in the NetIQ Aegis Setup wizard until you finish installing the Aegis Event Generator, and then click **Finish**.

2.10 Uninstalling Aegis

If necessary, you can uninstall Aegis by completing the procedures in the following sections. These procedures remove all Aegis components from your environment.

To successfully uninstall Aegis, you must remove the components in the correct order. The following checklist specifies the correct order for uninstalling Aegis components.

> **NOTE:** If the uninstallation program cannot completely remove any files or folders that are still in use, it will prompt you to restart your computer. When you restart the computer, the uninstallation program automatically removes the remaining files and folders.

	Checklist Items
❏	1. Uninstall all Aegis adapters. For more information, see Section 2.10.1, "Uninstalling Aegis Adapters," on page 45.
❏	2. Uninstall the components on the Web Server computer. For more information, see Section 2.10.2, "Uninstalling Web Server Components," on page 45.
❏	3. Uninstall the components on the Aegis Server computer. For more information, see Section 2.10.3, "Uninstalling Aegis Server Components," on page 46.

	Checklist Items
☐	4. Uninstall the Aegis database. For more information, see Section 2.10.4, "Uninstalling the Aegis Database," on page 46.

2.10.1 Uninstalling Aegis Adapters

Before you remove any other Aegis components, you must uninstall any Aegis adapters on the Aegis Server computer.

WARNING: Shared adapters communicate with multiple NetIQ products. For example, the NetIQ AppManager Integration Adapter (AppManager adapter) communicates with NetIQ Aegis and the NetIQ AppManager Operations Portal. Do not uninstall a shared adapter unless you no longer use all products with which it communicates.

To uninstall an Aegis adapter:

1 Log on to the Aegis Server computer with an administrator account.

   NOTE: If you are uninstalling from a cluster environment, log on to a passive node in the cluster.

2 *If you are uninstalling from a cluster environment*, remove the computer from the cluster.

3 Close all open applications.

4 Open Control Panel and select **Add or Remove Programs**.

5 Select **NetIQ Aegis Adapter for** *Product Name*, where *Product Name* is the name of the product to which the adapter connects.

6 Click **Remove**.

7 *If you are uninstalling from a cluster environment*, complete the following steps:

   7a Repeat Steps Step 1 through Step 6 on all passive nodes.

   7b Repeat Steps Step 1 through Step 6 on the active node.

2.10.2 Uninstalling Web Server Components

After you remove all Aegis adapters, you can uninstall the Aegis components on the Aegis Server computer.

To uninstall Aegis components on the Web Server computer:

1 Log on to the Web Server computer with an administrator account.

   NOTE: If you are uninstalling from a cluster environment, log on to a passive node in the cluster.

2 *If you are uninstalling from a cluster environment*, remove the node from the cluster. If you do not remove the node from the cluster, and a failover occurs, the failover might interfere with the uninstallation procedure.

3 Close all open applications.

4 Open Control Panel and select **Add or Remove Programs**.

5 Select **NetIQ Aegis**.

6 Click **Remove**.

7 *If you are uninstalling from a cluster environment*, complete the following steps:

    7a Repeat Steps Step 1 through Step 6 on all passive nodes.

    7b Repeat Steps Step 1 through Step 6 on the active node.

2.10.3 Uninstalling Aegis Server Components

After you remove all Aegis components on the Web Server computer, you can uninstall the Aegis components on the Aegis Server computer.

NOTE: If you are using Aegis in a two-tier configuration, you do not need to uninstall the Aegis Server components separately from the Web Server components. For more information about a two-tier configuration, see Section 2.2.6, "Supported Configurations," on page 19.

To uninstall Aegis components on the Aegis Server computer:

1 Log on to the Aegis Server computer with an administrator account.

NOTE: If you are uninstalling from a cluster environment, log on to a passive node in the cluster.

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2 *If you are uninstalling from a cluster environment*, remove the node from the cluster. If you do not remove the node from the cluster, and a failover occurs, the failover might interfere with the uninstallation procedure.

3 Close all open applications.

4 Open Control Panel and select **Add or Remove Programs**.

5 Select **NetIQ Aegis**.

6 Click **Remove**.

7 *If you are uninstalling from a cluster environment*, complete the following steps:

    7a Repeat Steps Step 1 through Step 6 on all passive nodes.

    7b Repeat Steps Step 1 through Step 6 on the active node.

2.10.4 Uninstalling the Aegis Database

Completely removing Aegis from your enterprise requires removing the Aegis database from the Database Server computer. After you remove all Aegis components from the Aegis Server and Web Server computers, you can uninstall the Aegis database.

The setup program does not automatically remove the database. Use the Microsoft SQL Server administrator tools to remove the Aegis database from the Database Server computer. For more information about removing databases, see the Microsoft SQL Server documentation.

WARNING: Shared databases, such as the Resource Management and Reporting Center databases, provide data to multiple NetIQ products. For example, both NetIQ Aegis and NetIQ Directory and Resource Administrator use the Reporting Center database. Do not uninstall a shared database unless you no longer use all products that access it.

NOTE: If you are uninstalling from a cluster environment, ensure you remove the computer from the cluster before you perform the uninstallation procedure.

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3 Getting Started

This chapter provides step-by-step procedures to help the Aegis Administrator get started in Aegis.

3.1 Aegis Administrator Checklist

The Aegis Administrator is responsible for installing, configuring, managing, and maintaining Aegis. The Aegis Administrator might also install Aegis adapters, manage security, and consult with discipline experts.

After installing Aegis, the Aegis Administrator needs to complete certain tasks to prepare Aegis for use. Use the following checklist to help you complete the tasks.

	Checklist Items
❏	1. Configure the NetIQ Mail provider. For more information, see Section 3.2, "Configuring the NetIQ Mail Provider," on page 47.
❏	2. Configure the NetIQ Aegis Adapter for Microsoft Exchange Server. For more information, see Section 3.3, "Configuring the Exchange Adapter," on page 49.
❏	3. Ensure the SQL Server Agent is running. For more information, see Section 3.4, "Verifying the SQL Server Agent is Running," on page 51.
❏	4. Enable or disable HTML code and links in user input forms. For more information, see Section 3.5, "Enabling or Disabling HTML in User Input Forms," on page 53.
❏	5. Register data sources. For more information, see the appropriate *Adapter Guide*.
❏	6. Set up Aegis users. For more information, see Section 4.1, "Managing Users and Groups," on page 57.
❏	7. Configure security. For more information, see Section 4.3, "Managing Permission Assignments," on page 61.
❏	8. Configure aliases and security. For more information, see Section 4.4, "Understanding Aliases and Impersonations," on page 62
❏	9. Set up resources and business services. For more information, see Chapter 5, "Managing Resources," on page 65.

3.2 Configuring the NetIQ Mail Provider

The NetIQ Mail provider allows Aegis to monitor specific email accounts for new messages. When a new email message arrives, the NetIQ Mail provider sends an email event to Aegis. If the email event meets defined trigger criteria, the trigger initiates a work item.

NOTE: The NetIQ Mail provider monitors only the inbox for the specified email account. If you have message rules that move an incoming message to another folder, the NetIQ Mail provider cannot send an event for that message.

Using the Aegis Adapter Configuration Utility, you can configure the NetIQ Mail provider to monitor email accounts on the following types of email servers:

- Post Office Protocol version 3 (POP3)
- Internet Message Access Protocol (IMAP)

NOTE

- The NetIQ Mail provider supports Secure Socket Layer (SSL) for both POP3 and IMAP.
- Ensure any application that accesses the email account, such as Microsoft Outlook, leaves a copy of incoming email messages on the server. If the application deletes email messages from the server, the NetIQ Mail provider cannot effectively monitor for new email events.
- The POP3 protocol allows only one active connection per email account. Depending on how you implement the POP3 server, additional connections might disconnect Aegis from the mail server. If you want to configure another email client to connect to the email account, see your email administrator to determine the best alternative to the POP3 protocol.

To monitor a POP3 or IMAP email account:

1 In the email account you want to monitor, ensure the account is empty or contains only emails for which you want the NetIQ Mail provider to create events.

NOTE: When you configure the NetIQ Mail provider to monitor an email account, the provider creates an event for each email in the account, and then sends them to Aegis. If a Process Author has not created a workflow to match these events, the events do not initiate work items.

2 Log on to the Aegis Server computer with an Administrator account.

3 In the NetIQ program group, click **Aegis > NetIQ Aegis Adapter Configuration Utility**.

4 In the left pane, click **Email Accounts**.

5 On the **Edit** menu, click **New Entry**.

6 In the view pane, click **Monitor an Internet email account**.

7 Provide the appropriate information, and then click **Exit**.

8 Restart the NetIQ Aegis Namespace Provider service.

NOTE

- If the Aegis Server computer is part of a cluster, restarting the NetIQ Aegis Namespace Provider service updates all nodes in the cluster.
- If you do not restart the Namespace Provider service, the Configuration Console displays an error the next time you attempt to log on.

9 Restart any open instances of the Configuration Console to see the changes.

3.3 Configuring the Exchange Adapter

The NetIQ Aegis Adapter for Microsoft Exchange Server (Exchange adapter) allows Aegis to communicate with Exchange Server to:

◆ Initiate work items as a result of an email sent to a particular mailbox

◆ Send an email from a particular mailbox during the course of a workflow

◆ Pause a workflow and wait for an email sent to a particular mailbox

◆ Extract and save attachments from an email

The Exchange adapter includes a library of workflow activities that Process Authors can use in the Workflow Designer. For more information about activities or activity libraries, see the *Process Authoring Guide for Aegis*.

The following table provides an overview of tasks to configure the Exchange adapter.

	Checklist Items
❑	1. Configure the Exchange Server computer. For more information, see Section 3.3.1, "Configuring Microsoft Exchange Server," on page 49.
❑	2. Install Outlook and configure the profile. For more information, see Section 3.3.2, "Installing and Configuring Microsoft Outlook," on page 49.
❑	3. Configure the profile to monitor additional mailboxes. For more information, see Section 3.3.3, "Monitoring Multiple Mailboxes," on page 50.
❑	4. Enable the Exchange adapter. For more information, see Section 3.3.4, "Enabling the Exchange Adapter," on page 51.

3.3.1 Configuring Microsoft Exchange Server

Before you configure the Exchange adapter on the Aegis Server computer, ensure the following:

◆ The Exchange Server computer is in the same domain as the Aegis Server computer. If the two computers are not in the same domain, the Exchange Server computer does not recognize the Exchange adapter credentials. For more information about configuring domains in your environment, see the appropriate Microsoft documentation.

◆ Your Exchange administrator creates an Exchange account for the Aegis application credentials. If an Exchange account does not exist for the Aegis application credentials, you cannot properly configure the profile in Outlook. For more information about the Aegis application credentials, see Section 2.2.5, "Understanding Aegis Application Credentials," on page 18.

3.3.2 Installing and Configuring Microsoft Outlook

Before you configure the Exchange adapter on the Aegis Server computer, you must install and configure Outlook on the Aegis Server computer. For more information about installing Outlook, see the appropriate Microsoft documentation.

NOTE: If your Aegis Server computer belongs to a cluster, install Outlook on each node in the cluster.

After you install Outlook, you must configure the default profile, typically named `Outlook`, to use the Exchange account for the Aegis application credentials. When the Exchange adapter detects a new email in the mailbox, it sends an event to Aegis.

NOTE: NetIQ recommends you use only the default `Outlook` profile with the Exchange adapter. If you need to monitor more than one account, you can associate additional mailboxes with the `Outlook` profile. For more information about monitoring multiple mailboxes, see Section 3.3.3, "Monitoring Multiple Mailboxes," on page 50.

To configure the profile in Outlook:

1 Log on to the Aegis Server computer using the Aegis application credentials.

2 Start Outlook.

3 In the configuration wizard, ensure the following values are set:

Option	Value
E-mail Accounts	Yes
Manually configure server settings or additional server types (2007 only)	On
Server Type (2003)	Microsoft Exchange Server (2003)
Choose E-mail Service (2007)	Microsoft Exchange (2007)
Microsoft Exchange Server	The name of the Exchange Server computer, such as `ExchServ01`.
Use Cached Exchange Mode	Off
User Name	The name of the mailbox your Exchange administrator set up for the Aegis application credentials. For example, `Aegis Admin`.

4 *If the Aegis Server computer belongs to a cluster*, repeat Steps Step 1 through Step 3 on each node in the cluster.

3.3.3 Monitoring Multiple Mailboxes

Using the Mail applet in Control Panel on the Aegis Server computer, you can associate additional mailboxes with the `Outlook` profile. When the Exchange adapter detects a new email in an associated mailbox, it sends an event to Aegis. For more information about adding additional mailboxes to the profile, see the appropriate Microsoft documentation.

NOTE

- If the Mail applet is not available, ensure you have installed Microsoft Outlook and configured the default profile. For more information about configuring the profile, see Section 3.3.2, "Installing and Configuring Microsoft Outlook," on page 49.
- After you use the Mail applet to make changes, restart the Namespace Provider service.
- If your Aegis Server computer belongs to a cluster, ensure you make the same changes to the Mail applet on each node in the cluster.

For each mailbox you associate with the profile, ensure your Exchange Administrator grants read and send privileges to the Exchange account for the Aegis application credentials.

WARNING

- ◆ Any user that logs on to the Aegis Server computer using the Aegis application credentials and starts Outlook can see the email for all monitored mailboxes.

- ◆ The size of the monitored mailboxes affects the response time of the Exchange adapter. NetIQ recommends deleting old emails from monitored mailboxes on a regular basis.

3.3.4 Enabling the Exchange Adapter

After you configure the Exchange Server computer and install Outlook on the Aegis Server computer, you can enable the Exchange adapter to monitor one or more mailboxes.

To enable the Exchange adapter:

1 Log on to the Aegis Server computer with an Administrator account.

2 In the NetIQ program group, click **Aegis > NetIQ Aegis Adapter Configuration Utility**.

3 In the left pane, click **Email Accounts**.

4 On the **Edit** menu, click **New Entry**.

5 In the view pane, click **Monitor Microsoft Exchange Server accounts**.

6 Provide a description, and then click **Exit**.

7 Restart the NetIQ Aegis Namespace Provider service.

NOTE

- ◆ If the Aegis Server computer is part of a cluster, restarting the NetIQ Aegis Namespace Provider service updates all nodes in the cluster.

- ◆ If you do not restart the Namespace Provider service, the Configuration Console displays an error the next time you attempt to log on.

8 *If there are any open instances of the Configuration Console*, restart them to see the changes to the NetIQ Mail provider.

3.4 Verifying the SQL Server Agent is Running

The following jobs require the SQL Server Agent to be running on the Database Server computer hosting the Aegis database.

Capture New Report Data

Uses stored procedures to populate the reporting tables in the Aegis database on an hourly basis, starting one hour after Aegis initiates the first work item. If you run reports during the hour between jobs, the reports display data from the most recent instance of the job. If you run any reports in Reporting Center during the hour after the first work item, the reports will appear empty. If you require the most recent data in your reports, you can run the job manually. For more information about running the job manually, see Section 3.4.2, "Starting a Job Manually," on page 52.

Purge Resources from Data Sources

Removes unused resources from the Resource Management database according to the specified retention times. The job optionally hides computers that are not currently sending data to Aegis. For more information about retention time for resources and hiding inactive computers, see the Help for Global Administrator Settings on the Options window in the Configuration Console.

Hourly Cleanup

Removes events, work items, and work item data from the Aegis database according to the specified retention times. The job removes unused events as well as events that are associated with work items. For more information about retention time settings for events and work items, see the Help for Global Administrator Settings on the Options window in the Configuration Console.

3.4.1 Checking the Status of the SQL Server Agent

You can check the status of the SQL Server Agent at any time and, if necessary, start it manually.

To check the status of the SQL Server Agent:

1 Log on to the Database Server computer with an Administrator account.

2 Start Microsoft SQL Server Management Studio.

3 In the left pane, verify the SQL Server Agent is running.

4 *If the SQL Server Agent is not running,* right-click **SQL Server Agent**, and then click **Start**.

5 Click **Yes**.

6 On the **File** menu, click **Exit**.

3.4.2 Starting a Job Manually

The Capture New Report Data job runs hourly. If you want to populate the reporting tables before the regularly scheduled job, you can run it manually.

To run a job manually:

1 Log on to the Database Server computer with an Administrator account.

2 Start Microsoft SQL Server Management Studio.

3 In the left pane, expand **SQL Server Agent > Jobs**.

4 Right-click the job you want to start, and then click **Start Job at Step**.

5 On the Start Jobs window, review any messages.

6 *If you receive an error message,* in the **Message** field, click the link to see the details.

7 On the Start Jobs window, click **Close**.

8 On the **File** menu, click **Exit**.

3.5 Enabling or Disabling HTML in User Input Forms

By default, the **Description** field in user input forms supports HTML, including links. If your security policy does not allow for HTML links, you can disable the option in the `Web.Config` file.

To enable or disable HTML in user input forms:

1 Log on to the Web Server computer with an Administrator account.

2 Open the `Web.Config` file, typically located in the `C:\Program Files\NetIQ\Aegis\website` folder.

3 Set the `AllowFormDescriptionLink` value to one of the following:

- **True** - Allows Process Authors to use HTML code in the **Description** field of user input forms. At run time, Process Operators can click any links.
- **False** - Blocks HTML code. If a Process Author includes any formatting or links, a Process Operator sees only raw HTML code at run time.

3.6 Modifying Aegis Repository Configuration

During installation, you specify the SQL Server computer that hosts the Aegis and Resource Management databases and the authentication method the providers use to communicate with them. After installation is complete, if you move the database to another host or modify the logon credentials, the providers cannot communicate with the databases. You must manually update the host information or logon credentials in the Aegis Adapter Configuration Utility.

To update the location or logon credentials for a database:

1 Log on to the Aegis Server computer with an Administrator account.

2 Stop the following services:

- NetIQ Aegis Activity Broker
- NetIQ Aegis Correlation Engine
- NetIQ Aegis Engine
- NetIQ Aegis Namespace Provider

3 *If the Aegis Server and Web Server are on the same computer in your environment,* stop the NetIQ Aegis Business Services service.

4 *If you are moving a database to another server computer*, complete the following steps:

4a Log on to the Database Server computer with an Administrator account.

4b Stop the database you want to move.

4c Perform a full backup of the database.

4d Log on to the new server computer with an Administrator account.

4e Restore the backup on the new server computer.

5 To install the SQL Server Agent jobs on the new Database Server computer, perform the following steps:

5a On the Aegis Server computer, open a command prompt for each of the following locations:

- `C:\Program Files\NetIQ\Aegis\DB\PGE`
- `C:\Program Files\NetIQ\Aegis\DB\RPT`
- `C:\Program Files\NetIQ\Aegis\iqrmdb\IQRM`

5b For each location, type the following command:

```
sqlcmd -b -S Server -U "SqlUser" -P "SqlPwd" -i InstallJobs.sql
```

Where:

- *Server* is the name of the new Database Server computer, including the instance, such as `HOUAE001\Instance1`.
- *SqlUser* and *SqlPwd* are the user name and password for SQL authentication. If you use Windows authentication, do not include these options in the command.

6 On the Aegis Server computer, in the NetIQ program group, click **Aegis > NetIQ Aegis Adapter Configuration Utility**.

7 In the left pane, expand **Aegis Repositories**, and then click the database you want to update.

8 In the view pane, provide the new server location or logon credentials, and then click **Test Database Connection**.

9 *If the test connection is successful,* click **Exit**.

10 Restart the following services:

- NetIQ Aegis Activity Broker
- NetIQ Aegis Correlation Engine
- NetIQ Aegis Engine
- NetIQ Aegis Namespace Provider

11 *If the Aegis Server and Web Server are on the same computer in your environment,* restart the NetIQ Aegis Business Services service.

12 *If you moved a database to another server computer,* make a backup copy of the old database before you delete it.

3.7 Modifying Aegis Application Credentials

During the installation process, the Aegis Administrator specifies the default user account Aegis uses to operate the following Aegis accounts:

- Service account
- Resource Management account
- Default Aegis Administrator account

After installation is complete, if the user account changes in any way, such as a new password, the services cannot authenticate their communication with each other and the adapters cannot communicate with the Resource Management provider. You must manually update the account information for the service account and the Resource Management account.

For more information about Aegis application credentials, see Section 2.2.5, "Understanding Aegis Application Credentials," on page 18.

3.7.1 Updating the Service Account

If the user account associated with the service account changes in any way, such as a new password, you must manually update the user account associated with the services.

NOTE: You can associate a different account with the services without affecting the Resource Management account or the default Aegis Administrator account. The services must all use the same account.

To update the service account:

1 Log on to the Aegis Server computer with an Administrator account.

2 On the Start menu, click **Control Panel > Administrative Tools > Services**.

3 Update the appropriate account information for each of the following services:

   - Aegis Engine
   - Activity Broker
   - Namespace Provider

4 Restart the Namespace Provider service. The Namespace Provider service automatically restarts the Aegis Engine and the Activity Broker services.

3.7.2 Updating the Resource Management Account

If the user account associated with the Resource Management account changes in any way, such as a new password, you must manually update the account in the Adapter Configuration Utility.

NOTE: You can associate a different account with the Resource Management account without affecting the service account or the default Aegis Administrator account.

To update the Resource Management account:

1 Log on to the appropriate computer with an Administrator account.

2 In the NetIQ program group, click **Aegis > NetIQ Aegis Adapter Configuration Utility**.

3 In the left pane, expand **Resource Management**, and then click the name of the Aegis Server.

4 In the view pane, modify the appropriate information, and then click **Exit**.

5 Restart the Namespace Provider service. The Namespace Provider service automatically restarts the Aegis Engine and Activity Broker services.

3.8 Running the Configuration Console in a Different Domain

By default, the BSL and the Configuration Console must be running on computers in the same domain or in domains that trust each other. If you have users that need to run the Configuration Console on a computer that is not in a trusted domain, you can configure the BSL to use SOAP 1.1 to communicate securely with the Configuration Console. For more information about configuring the BSL to use SOAP 1.1, contact Support.

3.9 Understanding Database Recovery

Many of the operations in the Configuration Console and the Workflow Designer communicate with one of the databases connected to Aegis. If you perform a step that cannot connect to the appropriate database, Aegis attempts to immediately reconnect. If the attempt is unsuccessful, Aegis tries again in 90 seconds.

WARNING: If you receive a database connection error when you attempt to commit a change to a database, such as a new workflow, do not shut down or cancel, or you may lose the data. Wait 90 seconds and try again to save your changes.

3.10 Starting the Configuration Console the First Time

The Configuration Console is a Windows-based application delivered to your desktop using Microsoft ClickOnce publishing and deployment technology. To start the console the first time, launch it from the Operations Console. The initial ClickOnce deployment creates a shortcut in the NetIQ program group.

NOTE: If your environment does not allow ClickOnce installation, you can install the Configuration Console locally on any computer. For more information about installing the Configuration Console locally, see Section 2.8, "Installing the Configuration Console Locally," on page 43.

To launch the Configuration Console from the Operations Console:

1 *If you are logged on to the Web Server computer*, on the Start menu, click
All Programs > NetIQ > Aegis, and then click **NetIQ Aegis Operations Console**.

2 *If you are logging on to the Operations Console remotely*, complete the following steps:

   2a Start Internet Explorer.

   2b Specify the following URL, where *hostcomputer* is the name of the Web Server computer:

   `http://hostcomputer/Aegis`

3 On the Operations Console Login window, log on as a member of the Aegis Administrators group.

4 *If you are logging on for the first time after installation,* log on with the user account specified during installation.

5 To ensure the local computer has the prerequisites for installing the Configuration Console, complete the following steps:

   5a Click **Configuration Console Prerequisites**.

   5b *If you need to install the prerequisites,* click **Install Prerequisites**.

   5c Close the NetIQ Aegis Configuration Console Prerequisites window.

6 Click **Launch Configuration Console**.

7 On the Configuration Console Login window, log on as a member of the Aegis Administrators group.

3.11 Switching Users

If you select the **Sign me in automatically** check box on the Configuration Console logon screen, Aegis bypasses the logon screen the next time you start it. If you want to log on as a different user, you can do either of the following:

 ◆ In the Configuration Console, click **Exit and Sign Off**. The next time you start the Configuration Console, Aegis displays the logon screen.

 ◆ Before you start Aegis, press and hold Ctrl+Shift. Aegis displays the logon screen instead of opening the Configuration Console.

4 Configuring Aegis Security

Aegis collects information across your enterprise, allowing people in a number of different roles to use and benefit from using that information. Security settings control who can access the Aegis interfaces and which activities each user can perform.

4.1 Managing Users and Groups

Aegis supports imported user and group accounts from both Active Directory (AD) and the local Security Account Manager (SAM) database on the Aegis Server computer, as well as internal Aegis users and groups. You cannot modify the imported user and group accounts in Aegis, but you can configure Aegis to automatically synchronize the accounts with any changes made in AD and the SAM database. For more information about account synchronization, see Section 4.1.2, "Understanding User and Group Synchronization," on page 58.

4.1.1 Default Groups

Aegis provides the following default groups, each of which is associated with a default permission set at the global level to determine product access. For more information about default permission sets, see Section 4.2.1, "Default Permission Sets," on page 60.

Administrators

Aegis imports the local Administrators group during the installation procedure and associates the group with the Aegis Administration permission set.

Aegis Administrators

User and group accounts associated with the Aegis Administrators group have the permissions to perform all Aegis functions.

Aegis Administrators typically install Aegis and Aegis adapters. Aegis Administrators interact with the Configuration Console and the Adapter Configuration Utility to configure, manage, and maintain Aegis, including security and user setup. They might also be responsible for consulting with discipline experts.

Aegis Managers

User and group accounts associated with the Aegis Managers group have all the permissions associated with the Aegis Management permission set.

Aegis Users

User and group accounts associated with the Aegis Users group have all the permissions associated with the Resource Viewing permission set. Aegis adds all imported users to the Aegis Users group.

Process Authors

User and group accounts associated with the Process Authors group have all the permissions associated with the Process Authoring, Process Operation, and Process Viewing permission sets.

Process Authors interact mainly with the Workflow Designer to create and maintain triggers, triggering event definitions, and process workflows.

Process Operators

User and group accounts associated with the Process Operators group have all the permissions associated with the Process Operation and Process Viewing permission sets.

Process Operators interact mainly with the Operations Console to:

- ◆ View processes and associated work items, including activity details, related events, and supporting analysis.
- ◆ Manually trigger work items. For example, an HR manager can trigger a workflow to create a new account for a new employee.
- ◆ Monitor and supply input to active work items.
- ◆ Terminate work items.

Process Operators can also use the Configuration Console to view processes and workflow revisions.

Process Viewers

User and group accounts associated with the Process Viewers group have all the permissions associated with the Process Viewing permission set.

4.1.2 Understanding User and Group Synchronization

By default, Aegis periodically checks AD and the SAM database for changes to imported user and group accounts. If Aegis detects changes to the attributes it supports, it automatically synchronizes imported accounts with the updated attributes. Aegis also retrieves the groups to which the imported user and group accounts belong in AD and the SAM database, which allows Aegis to correctly handle permission assignments to parent groups.

To synchronize domain accounts, ensure the Aegis Namespace Provider service account has at least read privileges for the specified domain. If the service account does not have proper rights in the domain, Aegis cannot synchronize attributes and parent groups for domain accounts, which prevents Aegis from displaying the associated parent groups in the Configuration Console. For more information about the service account, see Section 2.2.5, "Understanding Aegis Application Credentials," on page 18. For more information about synchronizing user and group accounts in a one-way trust, see "Trusted Domains" on page 21.

NOTE

- ◆ If a user account's group memberships change while the user is logged on to the Configuration Console, the user must log off and log back on to see the changes.
- ◆ If a group account's group memberships change while a member of the group is logged on to the Configuration Console, the user must log off and log back on to see the changes.

If you disable automatic synchronization, you must manually synchronize user and group accounts to import any changes.

To manually synchronize imported user and group accounts:

1 In the **Navigation** pane, click **Security**.

2 In the left pane, click one of the following:
  - ◆ **Users**
  - ◆ **Groups**

3 In the view pane, select the account you want to synchronize.

4 In the **User Tasks** or **Group Tasks** list, click **Synchronize Now**.

4.1.3 Importing Local Users

You can import local SAM user accounts from the SAM database on the computer where the Resource Management provider is running, typically the Aegis Server computer.

To import local SAM user accounts:

1 In the **Navigation** pane, click **Security**.

2 In the left pane, click **Users**.

3 In the **User Tasks** list, click **Import Local Users**.

4 On the Import Local Users window, select the local users you want to import into Aegis, and then click **Import**.

4.1.4 Importing Local Groups

You can import local SAM accounts from the SAM database on the computer where the Resource Management provider is running, typically the Aegis Server computer.

To import local SAM groups:

1 In the **Navigation** pane, click **Security**.

2 In the left pane, click **Groups**.

3 In the **Group Tasks** list, click **Import Local Groups.**

4 On the Import Local Groups window, select the local groups you want to import into Aegis, and then click **Import**.

4.1.5 Creating an Aegis Group

You can create internal Aegis groups if there are no AD or SAM groups that suit your needs. Aegis groups allow you to group users and groups without having to modify any AD or SAM settings.

To create an Aegis group:

1 In the **Navigation** pane, click **Security**.

2 In the left pane, click **Groups**.

3 In the **Group Tasks** list, click **Create Aegis Group.**

4 On the **General** tab of the Create Aegis Group window, provide the appropriate information, and then click **OK**.

4.2   Managing Permission Sets

Permission sets control access to specific Aegis features. You can use permission sets to allow or deny users the ability to perform particular actions at the global level, such as creating process workflows, or at the object level, such as modifying a specific process or providing input to a specific input form. Users and groups are not members of a particular permission set. Instead, you associate users and groups with permission sets at the global level, the object level, or both, by creating **permission assignments**. For more information about permission assignments, see Section 4.3, "Managing Permission Assignments," on page 61.

NOTE: When you update a permission set, the change filters down to all users and groups associated with it through permission assignments.

4.2.1   Default Permission Sets

Aegis provides the following default permission sets, each of which is associated with a default Aegis group at the global level to determine product access. For more information about default groups, see Section 4.1.1, "Default Groups," on page 57.

Aegis Administration

> User and group accounts associated with the Aegis Administration permission set can use the Configuration Console, the Workflow Designer, and the Operations Console. Aegis Administrators install, configure, manage, and maintain Aegis. Aegis Administrators may also be responsible for tasks not affected by permission sets, such as installing adapters for data sources and consulting with discipline experts.

Aegis Management

> User and group accounts associated with the Management permission set can enable developer functionality in the Workflow Designer and create, modify, and delete activity libraries.

All Denied

> User and group accounts associated with the All Denied permission set at the global level cannot log on to Aegis. User and group accounts associated with the All Denied permission set at the object level cannot view or modify a particular object, such as a process or a trigger.

Resource Viewing

> User and group accounts associated with this permission set have minimal permissions so they can retrieve configuration information for Aegis services.

Process Authoring

> User and group accounts associated with the Process Authoring permission set can use the Configuration Console, the Workflow Designer, and the Operations Console. Process Authors create and maintain triggers and process workflows. They can also enable developer functionality in the Workflow Designer.

Process Operation

> User and group accounts associated with the Process Operation permission set can use the Operations Console to manually trigger work items, monitor and supply input to active work items, and terminate work items. They can use the Configuration Console to view processes and workflow revisions.

Process Viewing

> User and group accounts associated with the Process Viewing permission set can use the Operations Console to view processes and associated work items, including activity details, related events, and supporting analysis.

4.2.2 Granting Process Authoring Permissions

If you create a new permission set for Process Authors, include the following minimum permissions:

- ◆ Can Create/Delete Process
- ◆ Can Modify Process
- ◆ Can Modify Workflow Revision
- ◆ Can View Process
- ◆ Can View Workflow Revision

4.2.3 Granting Access to the User Input Form

If you create a new permission set users that need access to the User Input Form, include the following minimum permissions:

- ◆ Can View Process
- ◆ Can View Workflow Revision
- ◆ Can View Process Folder
- ◆ Can Supply Input to Work Items
- ◆ Can View Work Items
- ◆ Can Log On to Aegis Web Console

4.3 Managing Permission Assignments

A permission assignment is the combination of a user or group and a permission set. For more information about permission sets, see Section 4.2, "Managing Permission Sets," on page 60. You may create permission assignments for users and groups at the global level, the object level, or both. For example, a group may have a global permission assignment that associates it with the Process Author permission set, granting all users in the group permission to create and modify processes. However, if a user in the group is associated with a custom Read-Only permission set for a specific process (the object level), that user is not allowed to modify that process.

NOTE: When a user or group has multiple permission assignments that conflict, the more restrictive permission assignment always takes precedence.

4.3.1 Configuring Global Permission Assignments

Global security settings determine user and group access to Aegis and all of its functionality. For example, users that create processes need to be associated with the Process Author permission set at the global level.

To configure global security:

1 In the **Global Tasks** list, click **Configure Global Security**.

2 On the Global Security window, click **Add**.

3 Under **New Permission Assignment**, select the appropriate combination of permission set and user or group, and then click **Add**.

4 To complete the permission assignment, click **OK**.

4.3.2 Configuring Object Permission Assignments

Object security settings determine user and group access to specific objects in Aegis, such as processes, triggers, and resource groups. For example, a Process Author can be denied access to a particular process by configuring the object-level security settings for that process.

Creating object-level permission assignments restricts the object to accepting only those permission assignments. For example, when you create a permission assignment on Process X that grants Process Authoring permissions to User A, User A becomes the only user with those permissions, except for Aegis Administrators. Aegis denies access to all other users unless you create a new permission assignment for them or remove all other permission assignments from Process X.

NOTE: Object security settings override global settings as long as they are more restrictive. For example, you cannot grant users permission to edit a process in the Configuration Console if they have been denied Process Author permissions at the global level.

To configure object-level security:

1 On the **Security** tab of the appropriate window, click **Add**.

2 Under **New Permission Assignment**, select the appropriate combination of permission set and user or group, and then click **Add**.

3 To complete the permission assignment, click **OK**.

4.4 Understanding Aliases and Impersonations

Aliases and impersonations provide support for Aegis adapters that do not support Integrated Windows Authentication. If your Aegis environment uses Integrated Windows Authentication, you must create an alias and use an impersonation to link the alias to an adapter.

Aliases

When you create an alias, you specify the credentials for the user account you want to use in an impersonation. After you create an alias, you can assign it to one or more impersonations. At design time, Process Authors can then use adapters that do not support Integrated Windows Authentication.

NOTE: Aegis does not synchronize alias credentials with Windows or other authentication sources. If the credentials for an adapter change, you must update the alias.

Impersonations

Impersonations allow you to link the credentials in an alias to an adapter that does not support Integrated Windows Authentication. If your Aegis environment uses Integrated Windows Authentication, you must create an impersonation for each adapter in your environment that does not support Integrated Windows Authentication.

When you create an impersonation, you assign an alias to an adapter. When a user attempts to use the adapter in the Operator Console, the Configuration Console, or the Workflow Designer, Aegis checks whether an impersonation exists that links an alias with the correct credentials to the adapter.

5 Managing Resources

The NetIQ Resource Management database is a common resource repository for all NetIQ and third-party products that connect to Aegis as data sources. Aegis can connect to multiple product adapters, each of which supports multiple data sources. For example, the AppManager adapter supports multiple repositories for both AppManager and Control Center.

These topics provide guidance for using the Aegis Configuration Console to manage your resources in the Resource Management database.

5.1 Understanding Resources

A **resource** is anything that can be managed, such as a computer or a cluster. For example, when you connect an adapter to Aegis, the Resource Management database creates a resource record for each of the computers used by the connected data sources, such as AppManager. In some cases, multiple data sources might register a single resource. For example, a computer might be a resource in both an AppManager repository and a NetIQ Secure Configuration Manager repository, with each repository identifying the computer by a different name. The Resource Management database provides a way to identify both instances of the computer with a common identifier, creating **associated resources** that automatically correlate resource information from multiple data sources. Aegis attempts to associate resources automatically if there is matching information, such as identical IP addresses. However, if Aegis is unable to find matching information, you must associate them manually.

NOTE: Removing a computer from a data source repository does not delete the record in the Resource Management database. If a computer resource receives no updates from the data source repository for 30 days, the Resource Management database hides the resource record.

You can create a resource in the database, and then add it to any number of resource groups, or you can create a resource directly in an existing resource group. For more information about resource groups, see .

5.1.1 Understanding Resource Groups

A **resource group** contains resources with similarities, such as all computers that perform a particular function. When you connect an adapter to Aegis, the Resource Management database creates resource groups for each data source. For example, if AppManager is a data source, the Resource Management database creates a resource group for each of the following:

- Server Group
- Standard View
- Snapshot View
- Dynamic View

For more information about resources, see Section 5.1, "Understanding Resources," on page 65. For more information about AppManager repositories, see the *Administrator Guide for NetIQ AppManager*.

NOTE

- You can use a resource group in a business service. For more information about business services, see Section 5.2, "Understanding Business Services," on page 67.

- If the Resource Management database finds multiple resource groups with the same name from different data sources, Aegis combines them into one resource group.

- Resource groups can contain other resource groups with unlimited nesting levels.

Resource groups allow Aegis processes to respond to events at the resource group level instead of on the resource level. For example, when creating a named event that evaluates incoming events from Exchange servers, you can specify the Exchange Servers resource group in the named event instead of having to specify each individual computer. If you add a new Exchange server, you only need to update the resource group. The named event remains unchanged. For more information about named events, see the *Process Authoring Guide for NetIQ Aegis*.

5.1.2 Associating Resources

Associated resources represent a single resource that has been registered multiple times. For example, a computer can be registered as both an AppManager resource and a Security Manager resource. Associating them ties them together as the same resource.

Aegis will attempt to automatically associate resources if there is matching information. However, if Aegis is unable to find matching information, you must associate them manually.

To manually associate resources:

1 In the **Navigation** pane, click **Resources**.

2 *If you know which resource group contains the resource you want to associate,* complete the following steps:

    2a In the left pane, select the appropriate resource group.

    2b In the view pane, click the resource you want to associate.

    2c Under **Resource Details**, click the Associated Resources tab.

3 *If you do not know which resource group contains the resource you want,* complete the following steps:

    3a In the left pane, click **All Computers**.

    3b In the view pane, click the resource you want to associate.

    3c Under **Computer Details**, click the **Associated Resources** tab.

4 In the **Associated Resource Tasks** list, click **Add Associations**.

5 On the Add Associations window, enter your search criteria, and then click **Search**.

6 In the **Search Results** list, click the resource you want to associate, and then click **Add**.

5.2 Understanding Business Services

A business service is a collection of systems that fulfills a business need, such as a messaging service. A business service contains one or more **resource roles**, each of which contains one or more computers and/or resource groups that perform a particular role in the business service.
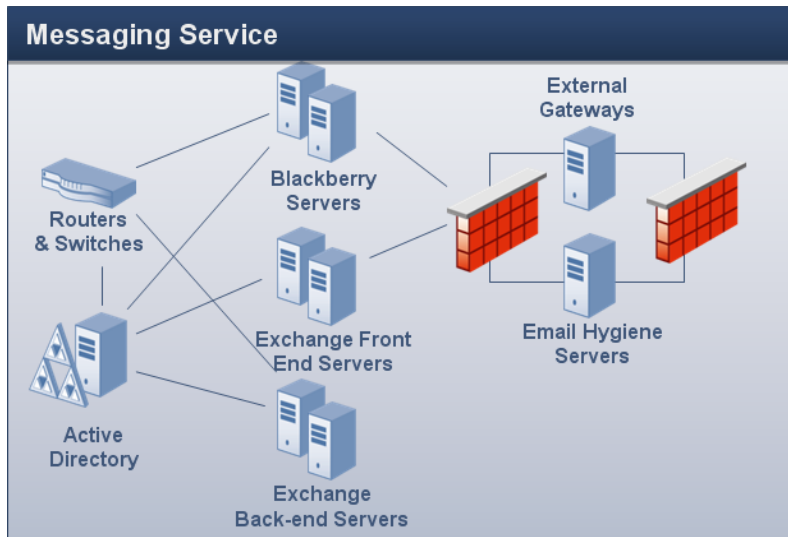
For example, in the previous graphic, Messaging Service includes the following resource roles:

- Exchange Front End Servers
- Exchange Back-end Servers
- Blackberry Servers
- Virus Scanning Servers
- Spam Filtering Servers

Business services allow Aegis processes to respond to events at the business service level instead of the resource level. For example, when creating a named event that evaluates incoming events for messaging-related problems, you can specify the Messaging Service business service instead of having to specify each individual computer. If you add a new Exchange server to your environment, you only need to update the appropriate resource role. The named event remains unchanged. For more information about named events, see the *Process Authoring Guide for NetIQ Aegis*.

You may also assign **user roles** to the business service, such as Admin, Owner, or Stakeholder. The users or user groups associated with the user roles have a level of responsibility to the business service.

NOTE

- Resource roles are not unique in the database. If multiple business services have resource roles with the same name, they are not the same resource role.
- User roles *are* unique in the database. If multiple business services have user roles with the same name, they are the same user role.

Upon installation, the Resource Management database creates business services according to settings in the data source, such as the AppManager Control Center Console.

5.2.1 Creating a Business Service

You can create a business service in the database, and then add it to any number of resource folders, or you can create a business service directly in an existing resource folder. For more information about resource folders, see Section 5.3, "Understanding Resource Folders," on page 68.

NOTE: You can add the same business service to multiple resource folders.

5.2.2 Associating a Resource or Resource Group with a Resource Role

After you create a resource role for a business service, you can associate resources or resource groups with it.

To associate resources or resource groups with a resource role:

1 In the **Navigation** pane, click **Resources**.

2 In the left pane, select the business service with the resource role to which you want associate a resource or resource group.

3 Under **Business Service Roles**, click the **Resource Roles** tab.

4 Click the role to which you want associate a resource or resource group.

5 In the **Resource Role Tasks** list, click **Associate Resources with Role**.

6 On the Search for Resources window, enter your search criteria, and then click **Search**.

7 In the **Search Results** list, click one or more resources or resource groups, and then click **Add**.

8 To see the resources associated with the role, click the **+** next to the role name.

5.2.3 Associating a User or User Group with a User Role

After you create a user role for a business service, you can associate users or user groups with it.

To associate users or user groups with a user role:

1 In the **Navigation** pane, click **Resources**.

2 In the left pane, select the business service with the user role to which you want associate a user or user group.

3 Under **Business Service Roles**, click the **User/Group Roles** tab.

4 Click the role to which you want associate a use or user group.

5 In the **User/Group Role Tasks** list, click **Associate Users/Groups with Role**.

6 On the Available Users/Groups window, click one or more users or user groups, and then click **OK**.

7 To see the users or user groups associated with the role, click the **+** next to the role name.

5.3 Understanding Resource Folders

Resource folders allow you to organize your resource groups and business services in the way that best suits your needs. For more information about resource groups and business services, see Section 5.1.1, "Understanding Resource Groups," on page 65 and Section 5.2, "Understanding Business Services," on page 67.

5.3.1 Creating a Resource Folder

You can create new resource folders to organize your resource groups and business services. Resource folders can contain other resource folders.

To create a new resource folder:

1. In the **Navigation** pane, click **Resources**.
2. *If you want to create the new folder in an existing folder,* click the appropriate folder in the left pane.
3. On the **Action** menu, click **Create New Resource Folder**.
4. On the **General** tab of the Create New Resource Folder window, provide the appropriate information, and then click **OK**.

5.3.2 Moving a Resource Folder

You can move a resource folder into another resource folder.

To move a resource folder into another resource folder:

1. In the **Navigation** pane, click **Resources**.
2. In the left pane, select the resource folder that you want to move.
3. Use drag and drop to move the resource folder to another resource folder.

A Using the Filter Builder

In the Configuration Console, you can filter the data in the various lists. This appendix provides step-by-step guidance for using the Filter Builder window.

A.1 Understanding Filter Builder Operators

The Filter Builder uses the following operators to tie descendant rules together and govern how they are related using Boolean logic:

- AND returns records that match a combination of the following conditions
- OR returns records that match any or all of the following conditions
- NOT AND returns records that do not match a combination of the following conditions
- NOT OR returns records that do not match any of the following conditions

A.2 Creating a Filter with the Filter Builder

Using the Filter Builder window, you may create a filter on any grid in the Configuration Console.

To create a filter using the Filter Builder window:

1 On any grid in the Configuration Console, click **Edit Filter**. By default, the Filter Builder displays the And operator with one condition.

2 *If you want to change the operator,* click **And** (red), and then select a new one from the list.

3 To set up a condition, complete the following steps:

3a To change the condition column, click **[ColumnName]** (blue), and then select a new one from the list.

3b To change the condition operator, click **Begins with** (green), and then select a new one from the list.

3c To change the condition value, click **<enter a value>** (gray) and type a new one.

4 To add another condition, click the **+** icon next to the operator.

5 *If you want to delete a condition*, click the **x** icon next to it.

6 To add a nested condition group, click the operator, and then click **Add Group**.

7 *If you want to delete a nested condition group*, click the group's operator, and then click **Remove Group**.

8 To clear all conditions, click the first operator, and then click **Clear All**.

9 *If you want to see the filter's results without closing the Filter Builder*, click **Apply**.

10 Click **OK**.

A.3 Editing a Filter with the Filter Builder

Using the Filter Builder window, you may edit a filter on any grid in the Configuration Console.

To edit an existing filter using the Filter Builder window:

1 On any grid in the Configuration Console that has an applied filter, click **Edit Filter**.

2 To change the operator (red), click it, and then select a new one from the list.

3 To edit a condition, complete the following steps:

   3a To change the condition column (blue), click it, and then select a new one from the list.

   3b To change the condition operator (green), click it, and then select a new one from the list.

   3c To change the condition value (black), click it, and then type a new one.

4 To add another condition, click the **+** icon next to the operator.

5 *If you want to delete a condition*, click the **x** icon next to it.

6 To add a nested condition group, click the operator, and then click **Add Group**.

7 *If you want to delete a nested condition group*, click the group's operator, and then click **Remove Group**.

8 To clear all conditions, click the first operator, and then click **Clear All**.

9 *If you want to see the filter's results without closing the Filter Builder*, click **Apply**.

10 Click **OK**.