

# **PATROL<sup>®</sup> for Symantec Backup Exec<sup>™</sup> by OTL Software**



## **User Guide**

**Version 1.5  
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# Customer Support

You can obtain technical support by using the Support page on the OTL Software web site or by contacting Customer Support by telephone or e-mail. To expedite your inquiry, please see “Before Contacting OTL Software,” below.

## Support Web Site

You can obtain technical support from OTL Software 24 hours a day, seven days a week by accessing the technical support web site at <http://www.otl.co.nz/support>. From this site, you can:

- read overview about support services and programs that OTL Software offers
- log a support call online
- check OTL Software contact information, including e-mail addresses, fax numbers, and telephone numbers

Click [here](#) to ensure you have the latest version of the OTL Software KMs.

## Support via Telephone or E-mail

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## Before Contacting OTL Software

Before you contact OTL Software, please have the following information available so that a technical support analyst can begin working on your problem immediately:

- KM product information:
  - product name
  - product version
  - license serial number
- monitored application information:
  - Symantec Backup Exec version
- operating system information:
  - machine type
  - operating system type, version, and service pack or patch details
  - system hardware configuration
- PATROL information:
  - PATROL Agent version
  - PATROL Console version and platform details
  - BMC ProactiveNet Performance Management Portal version and platform details
- sequence of events leading to the problem
- commands and options needed to reproduce the problem
- messages received:
  - product error messages
  - messages from monitored application
  - messages in PATROL Console system output window (SOW)



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# About this Guide

PATROL for Backup Exec (BEX KM) User Guide contains detailed information about the applications, commands, and parameters that the BEX KM provides. The guide also contains instructions for loading and configuring the Knowledge Module (KM). For more detailed information, refer to the BEX KM online help.

This guide should be used with the appropriate PATROL user guide for your Console, which describes how to use PATROL to perform typical tasks.

This chapter discusses the following topics:

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# Who Should Read This Guide

This guide is intended for backup administrators, system administrators, and anyone who monitors backup systems. This guide assumes that you are familiar with your host operating system and Backup Exec. You should know how to perform a basic set of actions in a window environment, including

- choosing menu commands
- moving and resizing windows
- opening icon windows
- dragging and dropping icons
- using mouse controls for your system

# How This Guide Is Organised

This manual is organized as follows:

<b>Chapter</b>	<b>Title</b>	<b>Purpose</b>
1	“Introduction”	provides an overview of the features and components of the KM.
2	“Getting Started”	provides information on setting up and accessing the KM and provides basic information about the KM.
3	“Menu Summary”	discusses the menus that the KM offers.
4	“Parameter Summary”	discusses the parameters that the KM offers.
5	“Monitoring Backup Exec”	provides tasks that you perform using the KM.
Index	“Index”	lists index entries.

## Related Publications

PATROL product documentation consists of both hardcopy and online publications. PATROL hardcopy documentation is divided into the following categories based on function:

<b>Category</b>	<b>Document</b>	<b>Purpose</b>
PATROL Base Documents	PATROL for UNIX Getting Started	provides procedures and examples to introduce PATROL Console for Unix.
	PATROL for Agent Reference Manual	describes the PATROL Agent and explains how it interacts with other PATROL components. It also describes configuration utilities and Management Information Base (MIB) tables used with the Agent.
	PATROL for Unix User Guide	contains task-oriented information on how to fill out appropriate dialog boxes to manage the computers, applications, and parameters that PATROL is capable of managing using the PATROL Console for UNIX.
	PATROL for Windows User Guide (Volume 1)	introduces you to PATROL components, object hierarchy, and the GUI using the PATROL Console for Windows. It also contains task-oriented information about how to start PATROL components, load KMs, and discover applications.
	PATROL for Windows User Guide (Volume 2)	contains the task-oriented information about how to monitor and manage computers, applications, and parameters using the PATROL Console for Windows.
	PATROL for Windows User Guide (Volume 3)	describes how to customise your PATROL monitoring environment using the PATROL Console for Windows.
	PATROL Command Line Interfaces Reference Manual	describes the PATROL command line interfaces for the PATROL Agent and the PATROL Console.
	PATROL Console Charting Server for Unix Reference Manual	describes how you can collect and plot system and application data in a real-time chart or graph.
PATROL Installation Documents	PATROL Installation Guides	describe how to run the installation program to load the platform-specific PATROL Agents, PATROL Consoles, and PATROL KMs.

<b>Category</b>	<b>Document</b>	<b>Purpose</b>
PATROL Integration Documents	PATROLVIEW user guides	describe the PATROLVIEW products. PATROLVIEW allows you to fully integrate PATROL with leading enterprise management products.
	PATROLINK for CA-Unicenter Reference Manual	provides information about installing and configuring the PATROLINK product for your particular site. PATROLINK allows you to connect to PATROL from the CA-Unicenter console.
PATROL Event Manager (PEM) Documents	PATROL Event Manager Console for Unix User Guide	describes the stand-alone Event Manager Console for Unix provided with the PATROL product. The PEM Console is a graphical user interface that allows you to manage the events generated by PATROL as it monitors your applications.
	PATROLWATCH for Web Browsers User Guide	provides the ability to view PATROL monitored hosts and applications using the Internet and platform-specific browsing technology.
	PATROLWATCH for Windows User Guide	describes the standalone event manager for Windows.
PATROL Knowledge Module (KM) Documents	Specific PATROL Knowledge Module user guides	contain task-oriented information for loading and modifying individual PATROL KMs used in monitoring and managing operating systems, databases, Knowledge Modules, and applications.



Category	Document	Purpose
PATROL Software Development Kit (SDK) Documents	PATROL Script Language Reference Manual	describes the PATROL Script Language (PSL) data types, syntax, operators, statements, and built-in functions.
	PATROL Script Language Debugger for Unix Reference Manual	discusses the PSL debugger available through the PATROL Developer Console for Unix. The PSL debugger provides an interactive GUI environment for debugging PSL processes and scripts in the PATROL Agent.
	PATROL Online Help Developers Guide	provides guidelines and procedures for implementing a BMC Software Help File. The PATROL <i>Online Help Developers Guide</i> includes elements of style, design, and presentation.
	PATROL Knowledge Module Developers Style Guide	presents the objectives, methods and requirements of PATROL Knowledge Module development and includes these topics: <ul style="list-style-type: none"> <li>• KM Style</li> <li>• setup application</li> <li>• packaging and structure</li> <li>• efficiency and usage</li> </ul>
	PATROL API Reference Manual	describes the PATROL API, a series of functions defined in a C header file that allow a user-written non-PATROL program to connect to PATROL or read a PATROL event log circular file.
Utility Document	PATROL KM Migrator User Guide	describes how you can incorporate your KM customisations into the current version.
Supplemental Documents	Release Notes and Technical Bulletins	explain the latest updates to PATROL products.

These hardcopy publications can be requested from BMC Software, Inc., or can be viewed on BMC Software's Internet World Wide Web site (<http://www.bmc.com/>) when you have registered for Customer Support. Each PATROL Console and each KM come with an extensive online help facility that is available through the PATROL Console **Help** menu option. The online documentation contains reference information about PATROL Console features and options and about KM parameters.

# Documentation Sequence

The following tables provide the suggested sequence for using PATROL documentation. An asterisk denotes additional documentation that may be applicable to your job function.

# When Used with the PATROL Console for Unix

If you work as a...	then read these documents in the order shown:											
	PATROL Installation Guide - Specific	PATROL for Unix Getting Started	PATROL Agent Reference Manual	PATROL for Unix User Guide	PATROL Command Line Reference Manual	PATROL Charting Server Reference Manual	PATROL KM User Guide(s) - Specific	PATROL API Reference Manual	PATROL PSL Reference Manual	PATROL KM Developer's Style Guide	PATROLVIEW™ Guide(s) - Specific	PATROLWATCH™ Guides
<b>Project Engineer</b> - responsible for implementing PATROL and rollout	1	2	3	4							5	6
<b>Systems Administrator/Network Manager</b> - responsible for administering Unix or other operating systems and networks	1	2	3	4	5	6	7				8	9
<b>Database Administrator</b> - responsible for monitoring and administering databases		1		2			3				4	5
<b>Operator</b> - responsible for monitoring environments	1	2	3	4			5				6	7
<b>Help Desk Personnel</b> - responsible for troubleshooting user problems		1		2			3				4	5
<b>Applications Programmer/Developer</b> - responsible for developing KMs		1		2	3	4	5	6	7	8	9	10

# When Used with the PATROL Console for Windows

If you work as a...	then read these documents in the order shown:											
	PATROL Installation Guide - Specific	PATROL for Unix Getting Started	PATROL Agent Reference Manual	PATROL for Unix User Guide	PATROL Command Line Reference Manual	PATROL Charting Server Reference Manual	PATROL KM User Guide(s) - Specific	PATROL API Reference Manual	PATROL PSL Reference Manual	PATROL KM Developer's Style Guide	PATROLVIEW™ Guide(s) - Specific	PATROLWATCH™ Guides
<b>Project Engineer</b> - responsible for implementing PATROL and rollout	1	2	3	4							5	6
<b>Systems Administrator/Network Manager</b> - responsible for administering Unix or other operating systems and networks	1	2	3	4	5	6	7				8	9
<b>Database Administrator</b> - responsible for monitoring and administering databases		1		2			3				4	5
<b>Operator</b> - responsible for monitoring environments	1	2	3	4			5				6	7
<b>Help Desk Personnel</b> - responsible for troubleshooting user problems		1		2			3				4	5
<b>Applications Programmer/Developer</b> - responsible for developing KMs		1		2	3	4	5	6	7	8	9	10

# Where to Look for Information

The following table summarizes where to look for more information on using PATROL, Knowledge Modules, and PATROL integration products to perform typical tasks.

<b>If you want information about...</b>	<b>See the...</b>
adding computers to Patrol	<i>PATROL for Unix Getting Started or the PATROL for Windows User Guide (Volume 1)</i>
changing the behavior of the PATROL console or the PATROL Agent by using a script or operating system command line	<i>PATROL Command Line Interfaces Reference Manual</i>
changing the PATROL Agent configuration	<i>PATROL Agent Reference Manual</i>
changing various parameters in a real-time environment	<i>PATROL Console Charting Server Reference Manual or the PATROL for Windows User Guide (Volume 2)</i>
connecting to PATROL from a network manager	<i>PATROLVIEW user guides and the PATROLINK for CA-Unicenter Reference Manual</i>
defining your monitoring environment	<i>PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 1)</i>
KMs in general	<i>PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 1)</i>
KM versioning and customizations	<i>PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 3)</i>
managing monitored objects	<i>PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 2)</i>
specific applications	<i>appropriate Knowledge Module's user guide and online help</i>
specific menu commands	<i>appropriate Knowledge Module's user guide and online help</i>
specific parameters	<i>appropriate Knowledge Module's user guide and online help</i>
starting and stopping the PATROL Console	<i>PATROL installation guides, PATROL for Unix Getting Started, and the PATROL Windows User Guide (Volume 1)</i>
starting and stopping the PATROL Agent	<i>PATROL installation guides, PATROL for Unix Getting Started, and the PATROL Windows User Guide (Volume 1)</i>

<b>If you want information about...</b>	<b>See the...</b>
managing events	<i>PATROL for Unix User Guide, the PATROL Event Manager Console for Unix User Guide, or the PATROL for Windows User Guide (Volume 2)</i>
the PATROL interface	<i>PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 1)</i>
the PATROL Script Language (PSL)	<i>PATROL Script Language Reference Manual</i>
working with menu commands	<i>PATROL for Unix Getting Started or the PATROL for Windows User Guide (Volume 2)</i>
working with parameters	<i>PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 2)</i>
working with tasks	<i>PATROL for Unix Getting Started or the PATROL for Windows User Guide (Volume 2)</i>
unloading the KM	<i>PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 1)</i>
customizing commands (PATROL Developer Console required)	<i>PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 3)</i>
customizing a computer class (PATROL Developer Console required)	<i>PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 3)</i>
customizing an InfoBox (PATROL Developer Console required)	<i>PATROL for Unix Getting Started or the PATROL for Windows User Guide (Volume 3)</i>
defining an application (PATROL Developer Console required)	<i>PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 3)</i>
defining a parameter (PATROL Developer Console required)	<i>PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 3)</i>
PSL commands and writing PSL scripts (PATROL Developer Console required)	<i>PATROL Script Language Reference Manual</i>
debugging your PSL scripts (PATROL Developer Console required)	<i>PATROL Script Language Debugger for Unix Reference Manual or the PATROL for Windows User Guide (Volume 2)</i>

# Conventions

This guide contains detailed procedures about using the PATROL for Backup Exec with the PATROL Console for Unix and the PATROL Console for Windows. When instructions for the two Consoles differ, you'll see a heading such as “**With the PATROL Console for Unix**” or “**With the PATROL Console for Windows**”.

The following special elements have been used in this guide to make it easier for you to use:

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## Note

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Notes provide additional information about the current subject.

---

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## Warning

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Warnings alert you to situations that can cause problems, such as the loss of data, if you do not follow the instructions carefully.

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All syntax, operating system terms, and literal examples are presented in this font.

*Italics in a command string* signify variables.

Text enclosed in angle brackets (< >) denotes variable information. Replace the variable information with the information it represents.

The word *choose* is used in instruction text in the context of carrying out a series of menu choices to invoke some function. For example, “Choose **File => Save.**”

In hardcopy documents, the symbol **>>** denotes one-step instructions.

# Mouse Controls

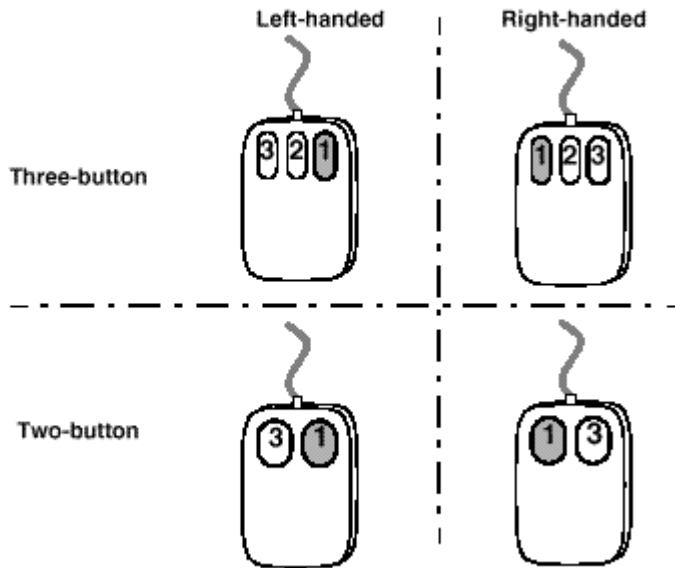
Please note the function of the mouse buttons in all PATROL windows using:

Unix		Windows		Function
Button	Action	Button	Action	
MB1	Click ... Double-Click ...	Left mouse button	Click ... Double-click ...	Selects an icon, menu command, or button; opens an icon's container.
MB2	Using MB2, click ...	-	-	Displays an icon's InfoBox.
MB3	Using MB3, click ...	Right mouse button	Right-click the ...	Displays an icon's pop-up menu.

## With the PATROL Console for Unix

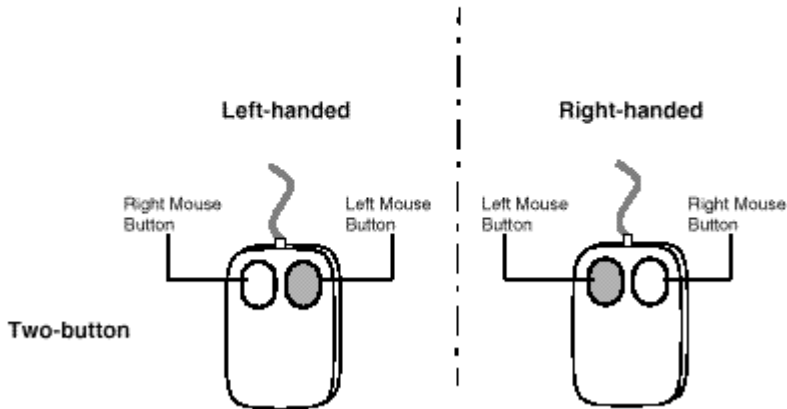
The following figure shows the names and positions of the buttons on right- and left-handed three- and two-button mouse devices when used with the PATROL Console for Unix. MB2 is simulated on a two-button mouse by simultaneously pressing the two buttons (MB1 and MB3).





**With the PATROL Console for Windows**

The following figure shows the names and positions of the buttons on right- and left-handed two-button mouse devices when used with the PATROL Console for Windows.



### **With any PATROL Console**

One-button mouse devices such as those used by Apple Macintosh assign MB1 (or left mouse button) to the single mouse button and use a user-selectable combination of option and arrow keys to simulate MB2 and MB3 (or right mouse button). Refer to the documentation for the Macintosh X Window emulation software for details.

---

# Introduction

This chapter provides you with a brief overview of the PATROL<sup>®</sup> for Symantec Backup Exec<sup>™</sup> by OTL Software (also referred to as the BEX KM). The following topics are discussed:

PATROL for Symantec Backup Exec . . . . .	1-2
Features . . . . .	1-2
Installation Requirements . . . . .	1-3
Security Requirements . . . . .	1-4
Disk and Memory Usage . . . . .	1-4
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# PATROL for Symantec Backup Exec

A Knowledge Module is a set of files that contain knowledge in the form of command descriptions, application, parameters, and recovery actions that PATROL can use to monitor Symantec Backup Exec.

The PATROL for Symantec Backup Exec (also referred to as the BEX KM) allows you to analyze Backup Exec status and performance information quickly and easily. You can clearly identify peaks, troughs, and trends in the performance of backup, archive, recovery and restore processes.

By enabling you to detect problems, optimize systems, analyze trends, plan capacity, and manage multiple hosts simultaneously, the BEX KM helps you ensure that your Backup Exec installation runs efficiently 24 hours a day.

## Features

Key features of the BEX KM include:

- Monitoring the availability and connectivity of the Backup Exec server
- Monitoring server database size
- Detecting alert requests issued by the server
- Monitoring backup, archive, recovery and restore job status
- Monitoring the size, rate, duration and other detailed information of backup, archive, recovery and restore jobs
- Monitoring the performance and integrity of configured tape library and drives
- Monitoring the capacity, usage and integrity of media sets and tape volumes

# Installation Requirements

The PATROL for Symantec Backup Exec can be run on all Microsoft Windows operating systems supported by Symantec Backup Exec and PATROL Agent.

Symantec Backup Exec installation is identified by looking for these Windows registry paths and their sub-keys:

*HKEY\_LOCAL\_MACHINE\SOFTWARE\VERITAS\Backup Exec\*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Symantec\Backup Exec for Windows\*

Therefore the PATROL Agent user should have read access to these registry paths.

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### Note

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64-bit installation of Symantec Backup Exec may not be detected through the 32-bit PATROL<sup>®</sup> Agent, unless the above registry path is copied under:

*HKEY\_LOCAL\_MACHINE\SOFTWARE\WOW6432NODE\.*

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#### **Symantec Backup Exec:**

- versions 10 and above running on any Microsoft Windows platform.

#### **PATROL Agent:**

- version 3.4.20 and above running on any Microsoft Windows platform.

#### **PATROL Console:**

- version 3.4 and above running on Microsoft Windows or Unix platforms.

#### **BMC ProactiveNet Performance Management Portal:**

- version 2.5 and above.

## Security Requirements

The Backup Exec KM has no additional security requirements over those for the BMC PATROL Agent. The Backup Exec KM runs commands as the user defined by the PATROL Agent (usually the “patrol” user).

## Disk and Memory Usage

When monitoring a standard installation of Backup Exec using the BEX KM the PATROL Agent will consume approximately 900K of additional system memory. A Backup Exec server configured with additional clients, jobs and tape devices will consume additional memory resources as per other KMs used by the PATROL Agent.

When monitoring a standard installation of Backup Exec using the BEX KM the PATROL Agent will generate approximately 300K of history data per day. A Backup Exec server configured with additional clients, jobs and tape devices will generate more history data as per other KMs used by the PATROL Agent.

## Components

The BEX KM consists of the application classes described in Table 1-1:

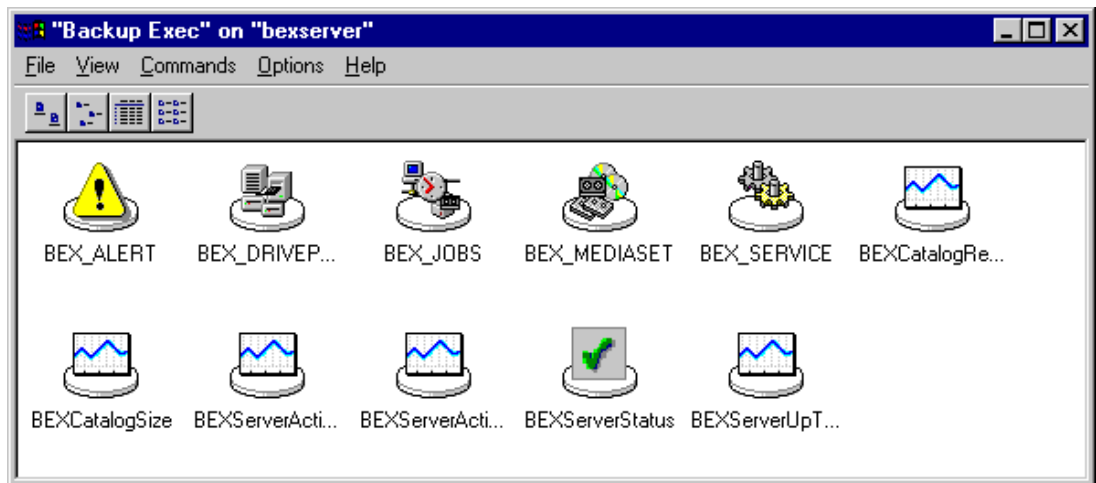
**Table 1-1 PATROL for Symantec Backup Exec Components**

<b>Application Class</b>	<b>Description</b>	<b>Parent/Child Relationship</b>
BEX_SERVER	displays and configures Backup Exec server information	None (Top level)
BEX_ALERT	displays alert requests issued by the Backup Exec server	Child to BEX_SERVER
BEX_DRIVEPOOL	displays drive pools	Child to BEX_SERVER
BEX_DRIVE	displays physical tape drives in use by the Backup Exec server	Child to BEX_DRIVEPOOL

**Table 1-1 PATROL for Symantec Backup Exec Components**

<b>Application Class</b>	<b>Description</b>	<b>Parent/Child Relationship</b>
BEX_JOB_CONTAINER	container icon for all defined Backup Exec jobs	Child to BEX_SERVER
BEX_JOB	displays all defined Backup Exec jobs	Child to BEX_JOB_CONTAINER
BEX_JOB_DETAIL	displays jobs that have been run by the Backup Exec server	Child to BEX_JOB
BEX_MEDIASET	displays Backup Exec media sets	Child to BEX_SERVER
BEX_SERVICE	displays Backup Exec services	Child to BEX_SERVER

Figure 1-1 displays the icons for each successfully configured BEX KM application class.








**Figure 1-1 PATROL for Symantec Backup Exec Application Icons**

## Applications and Icons





Table 1-2 contains information on each application in the PATROL KM. For information on parameter icons, refer to the *PATROL for Unix User Guide* or the *PATROL for Windows User Guide (Volume 2)*.

**Table 1-2 BEX KM Icons, Names, Application Classes, and Descriptions**

Icon and Name	Application Class	Description
 Symantec Backup Exec	BEX_SERVER	Represents the Backup Exec server
 BEX_ALERT	BEX_ALERT	Represents alerts issued by the Backup Exec server
 BEX_DRIVEPOOL	BEX_DRIVEPOOL	Represents drive pools configured in the Backup Exec server
 BEX_DRIVE	BEX_DRIVE	Represents physical tape drives configured in the Backup Exec server
 BEX_JOB_CONTAINER	BEX_JOB_CONTAINER	A container icon for all Backup Exec job information



**Table 1-2 BEX KM Icons, Names, Application Classes, and Descriptions**

Icon and Name	Application Class	Description
 BEX_JOB	BEX_JOB	Represents defined Backup Exec jobs
 BEX_JOB_DETAIL	BEX_JOB_DETAIL	Represents a “run” of a defined Backup Exec job
 BEX_MEDIASET	BEX_MEDIASET	Represents a Backup Exec media set
 BEX_SERVICE	BEX_SERVICE	Represents Backup Exec Windows services

## Hierarchical Structure

The PATROL KM is organized as groups of application classes. Figure 1-2 shows each icon from Table 1-2 in a graphical representation of the PATROL KM’s hierarchical structure.

By double-clicking an application class icon, you will find the parameters that monitor your Backup Exec system. Instead of parameters, some application classes may contain additional application classes, application instances, or both. For example, within the BEX\_JOB\_CONTAINER application class, you will find one icon for

each defined Backup Exec job. Within each of these discovered jobs will be an icon for each time Backup Exec has executed the job. Each of these are application classes has parameters. For example, the icon for each tape drive is represented by an instance of the BEX\_DRIVE application class. From each tape drive instance icon, you can find parameters.

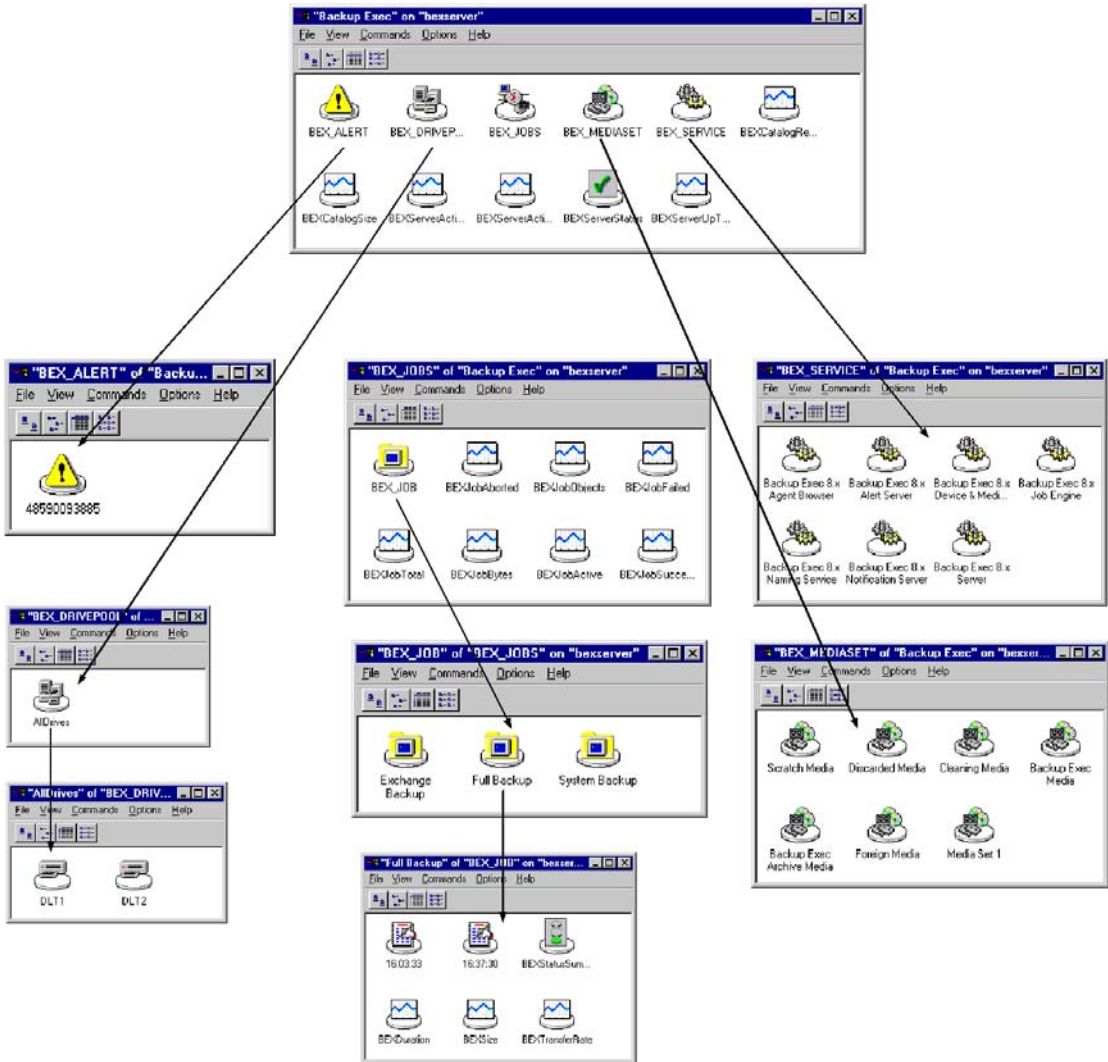


Figure 1-2 BEX KM Object Hierarchy

## Instance Naming

Each application in the KM uses a naming convention to differentiate the particular instance.

### **BEX\_SERVER Application Instance Naming**

There is only one instance of the BEX\_SERVER application class and this is labeled **Symantec Backup Exec**.

### **BEX\_ALERT Application Instance Naming**

Instances of the BEX\_ALERT application class are labeled with the time they were generated in Backup Exec, in the format “YYYY/MM/DD HH:MM:SS” (e.g. “2009/07/18 21:30:00”).

### **BEX\_DRIVEPOOL Application Instance Naming**

Instances of the BEX\_DRIVEPOOL application class are named as per the Backup Exec drive pool (e.g. ‘All Drives’).

### **BEX\_DRIVE Application Instance Naming**

Instances of the BEX\_DRIVE application class are named as per the physical Backup Exec drive (e.g. ‘HP 1’).

### **BEX\_JOB\_CONTAINER Application Instance Naming**

There is only one instance of the BEX\_JOB\_CONTAINER application class and this is labeled **BEX\_JOBS**.

### **BEX\_JOB Application Instance Naming**

Instances of the BEX\_JOB application class are named as per the defined Backup Exec job (e.g. ‘Exchange Servers - Full’).

## **BEX\_JOB\_DETAIL Application Instance Naming**

Instances of the BEX\_JOB\_DETAIL application class are labeled with the date and time the Backup Exec job started in the form 'YYYY/MM/DD HH:MM:SS' (e.g. '2001/11/07 14:56:06'). A 24-hour clock is used for the time information.

In some extreme circumstances, when the date information cannot be obtained from the required log file, the instance name will be of the form '- HH:MM:SS' (e.g. '- 14:56:06').

## **BEX\_MEDIASET Application Instance Naming**

Instances of the BEX\_MEDIASET application class are named as per the defined Backup Exec media set (e.g. 'Exchange Servers - Monday').

## **BEX\_SERVICE Application Instance Naming**

Instances of the BEX\_SERVICE application class are named as per the Backup Exec service (e.g. 'Backup Exec Server v8.0').

## **InfoBoxes**

This section describes the BEX KM application info boxes for the following application classes:

- BEX\_SERVER
- BEX\_JOB\_DETAIL
- BEX\_MEDIASET
- BEX\_SERVICE

---

### **Note**

The BEX\_ALERT, BEX\_DRIVEPOOL, BEX\_DRIVE, BEX\_JOB\_CONTAINER and BEX\_JOB application classes do not have Info Boxes.

---

## BEX\_SERVER Application InfoBox

Listed below are the InfoBox items available for the BEX\_SERVER application instance

**Table 1-3 BEX\_SERVER Application InfoBox Items**

<b>Info Item</b>	<b>Meaning</b>
Backup Exec Version	Version of Symantec Backup Exec server
Backup Exec Install Dir	Installation directory for the Backup Exec software
Backup Exec KM Version	Version of the BEX KM
Backup Exec KM Release Date	Release Date of the BEX KM

## BEX\_JOB\_DETAIL Application InfoBox

Listed below are the InfoBox items available for BEX\_JOB\_DETAIL application instances:

**Table 1-4 BEX\_JOB\_DETAIL Application InfoBox Items**

<b>Info Item</b>	<b>Meaning</b>
Job Name	Name of the job, as per the Backup Exec definition
Job ID	Job ID number
Job Status	Status of the job (e.g. running, completed, failed)
Start Time	Start time for the job
Job Duration	Duration of the job
Log File	Log file for the job (only know for completed jobs)

## BEX\_MEDIASET Application InfoBox

Listed below are the InfoBox items currently available for a BEX\_MEDIASET application instance:

**Table 1-5 BEX\_MEDIASET Application InfoBox Items**

<b>Info Item</b>	<b>Meaning</b>
Media Set ID	ID of the Media Set
Created	The date the media set was created
Retention Period	The retention period for data in the media set
Append Period	The append period for data in the media set
Offsite	The number of days volumes in the media set will be offsite

## BEX\_SERVICE Application InfoBox

Listed below are the InfoBox items currently available for a BEX\_STGPOOL application instance:

**Table 1-6 BEX\_SERVICE Application InfoBox Items**

<b>Info Item</b>	<b>Meaning</b>
Process Name	The name of the process associated with the Backup Exec service

## Where to Go from Here

The following table suggests topics that you should read next:

<b>If you want information on...</b>	<b>Refer to...</b>
How to use online help	<b>Help =&gt; Using Help</b> from the PATROL Console menu bar.
How to load and configure the PATROL KM	Chapter 2, "Getting Started," and the Help
What a certain menu command does	Chapter 3, "Menu Summary," and the Help
What a certain parameter does	Chapter 4, "Parameter Summary," and the Help
How to perform a task using this KM	Chapter 5, "Monitoring Backup Exec," and the Help





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# Getting Started

This chapter provides you with information that you will need to get started with the PATROL<sup>®</sup> for Symantec Backup Exec<sup>™</sup> by OTL Software. The following topics are discussed:

Preparing to Use BEX KM. . . . .	2-2
KM Requirements . . . . .	2-2
Licensing Requirements for the KM . . . . .	2-2
Software Requirements for the KM. . . . .	2-2
Installing the KM . . . . .	2-3
Installing the KM (Using BMC Installation Utility) . . . . .	2-3
Preparing to Install or Upgrade (Using All in One Exe/Zip File) . . . . .	2-4
Installing the KM on a Unix Platform . . . . .	2-5
Installing the KM on a Microsoft Windows Platform . . . . .	2-6
Installing or Upgrading the PAR file on BPPM Portal . . . . .	2-7
Loading the KM . . . . .	2-8
Preparing to Load the KM . . . . .	2-8
Loading the KM on PATROL Console . . . . .	2-8
Loading the KM on PATROL Central . . . . .	2-9
Loading the KM on BPPM Portal . . . . .	2-10
Configuring the KM . . . . .	2-11
Licensing the KM . . . . .	2-12
Verifying the Configuration . . . . .	2-12
Discovery Cycle. . . . .	2-14
Help . . . . .	2-14
Accessing Help . . . . .	2-14
Where to Go from Here . . . . .	2-15

## Preparing to Use BEX KM

After installing BEX KM, you must perform certain tasks before you can use the KM. If the KM has not been installed, refer to “Installing the KM” on page 2-3 for installation procedures.

Before proceeding, refer to the section “Installation Requirements” on page 1-3.

## KM Requirements

This section describes the software and information requirements for setting up this KM.

## Licensing Requirements for the KM

A valid license is required before you can use the KM. The BEX KM is shipped with a built-in 30 day trial key, which is deployed automatically when the product is first installed and loaded onto a PATROL Agent. The trial key will only work on a fresh installation and it will not license any subsequent installations.

For more information on licensing, see the “Licensing the KM” on page 2-12 below.

## Software Requirements for the KM

You must meet the general software requirements described under “Installation Requirements” on page 1-3.

# Installing the KM

This section describes steps required to install or upgrade the PATROL for Symantec Backup Exec.

## Installing the KM (Using BMC Installation Utility)

1. Check all prerequisites have been met.
2. Download the latest *Installation Utility* from BMC EPD site and extract the contents to create **bmc\_products** directory under a temporary directory.
3. Extract the contents of the BEX KM distribution file (**bex\_km\_v15xx.zip** on Microsoft Windows platforms or **bex\_km\_v15xx.tar** on Unix platforms) to the same temporary directory, created in Step 2.
4. Start the *Installation Utility* (**setup.exe** on Microsoft Windows platforms or **setup.sh** on Unix platforms), follow the instructions and install the required components of the KM. Table 2-1 describes the contents of the BEX KM distribution file.

Table 2-1 Contents of the Distribution File for Installation Utility

File	Description
<b>bexagt15xxw</b>	MS Windows PATROL Agent installation utility files
<b>bexcon15xxu</b>	PATROL Console for Unix installation utility files
<b>bexcon15xxw</b>	PATROL Console for MS Windows installation utility files
<b>bexcs15xxu</b>	PATROL Central Console Server for Unix installation utility files
<b>bexcs15xxw</b>	PATROL Central Console Server for MS Windows installation utility files
<b>bexws15xx</b>	PATROL Central Web Server for Unix and PATROL Central Web Server for MS Windows installation utility files
<b>otl-bex-solution-1.5.xx.par</b>	BMC ProactiveNet Performance Management Portal PAR file

## Preparing to Install or Upgrade (Using All in One Exe/Zip File)

1. Check all prerequisites have been met.
2. Extract the contents of the distribution file to a temporary folder. This distribution file can be obtained as a Microsoft Windows self-extracting file (**bex.exe**), zip file (**bex.zip**) or a compressed tar file (**bex.tar.z**). Zip files can be extracted using WinZip application or PKUNZIP command (Microsoft Windows platforms) or uncompress and tar command (Unix platforms). Table 2-2 describes the contents of the BEX KM distribution file.

**Table 2-2 Contents of the Distribution File**

<b>File</b>	<b>Description</b>
<b>bex_ug15.pdf</b>	User Guide
<b>bex_rn&lt;release_date&gt;.pdf</b>	Release Notes
<b>bexagt15.exe</b>	MS Windows PATROL Agent installation file
<b>bex_r15_console.tar</b>	PATROL Console for Unix installation file
<b>bexcon15.exe</b>	PATROL Console for MS Windows installation file
<b>bexconserver15.tar</b>	PATROL Central Console Server for Unix installation file
<b>bexcs15.exe</b>	PATROL Central Console Server for MS Windows installation file
<b>bexwebserver15.tar</b>	PATROL Central Web Server for Unix installation file
<b>bexws15.exe</b>	PATROL Central Web Server for MS Windows installation file
<b>otl-bex-solution-1.5.xx.par</b>	BMC ProactiveNet Performance Management Portal PAR file

3. Read the Release Notes, and confirm all requirement for this release have been met.
4. If you are upgrading the BEX KM, please follow the steps described under “Uninstalling the KM” on page 5-26 to uninstall the old version of the KM before attempting to install the new version.

# Installing the KM on a Unix Platform

1. Copy or ftp appropriate installation files under the paths for the relevant systems as shown in Table 2-3.

**Table 2-3 Unix Platform Installation Files and Extraction Paths**

<b>File</b>	<b>Path</b>
<b>bex_r15_console.tar</b>	<b>\$PATROL_HOME/</b> on PATROL Console for Unix  <i>Example:</i> <b>/opt/bmc/Patrol3/</b> or <b>/opt/bmc/Patrol3/Solaris29-sun4/</b>
<b>bexconserver15.tar</b>	<b>\$PATROL_ROOT/</b> on PATROL Central Console Server for Unix  <i>Example:</i> <b>/opt/bmc/Patrol7/</b>
<b>bexwebserver15.tar</b>	<b>\$BMC_ROOT/webcentral/</b> on PATROL Central Web Server for Unix  <i>Example:</i> <b>/opt/bmc/webcentral/</b>

2. Extract the contents of the installation **.tar** file as PATROL user, using:  

```
tar xvf <file name>
```
3. Remove the installation **.tar** file copied in Step 1.

## Installing the KM on a Microsoft Windows Platform

1. Copy or ftp appropriate installation files to a temporary folder (such as **C:\temp**) on the relevant system.
2. Double-click the file and extract the contents of the self-extracting files to relevant paths as shown in Table 2-4

**Table 2-4 MS Windows Platform Installation Files and Extraction Paths**

<b>File</b>	<b>Path</b>
<b>bexagt15.exe</b>	%PATROL_HOME%\ on monitored servers for Symantec Backup Exec for Microsoft Windows  <b>Example:</b> <b>C:\Program Files\BMC Software\Patrol3\</b>
<b>bexcon15.exe</b>	%PATROL_HOME%\ on PATROL Console for MS Windows  <b>Example:</b> <b>C:\Program Files\BMC Software\Patrol3\</b>
<b>bexcs15.exe</b>	%PATROL_ROOT%\ on PATROL Central Console Server for MS Windows  <b>Example:</b> <b>C:\Program Files\BMC Software\Patrol7\</b>
<b>bexws15.exe</b>	%BMC_ROOT%\WebCentral\ on PATROL Central Web Server for MS Windows  <b>Example:</b> <b>C:\Program Files\BMC Software\WebCentral\</b>

3. Remove the self-extracting installation file copied in Step 1.

## Installing or Upgrading the PAR file on BPPM Portal

The PAR file enables BMC ProactiveNet Performance Management Portal to retrieve the KM data from the PATROL Agent.

1. Log on to the BMC ProactiveNet Performance Management Portal with portal credentials, and select the **Portal** tab.
2. Under **Tasks** in the navigation pane, select **Performance Managers**.
3. Click **Upload**
4. Click **Browse** and then select the PAR file extracted under the temporary folder on the local system. (**otl-bex-solution-1.5.xx.par**) extracted under the temporary folder on the local system.
5. Click **Upload**.

---

### Note

If you are upgrading the PAR file on BMC ProactiveNet Performance Management Portal, the initial Status of the newly uploaded PAR solution on Portal is “**Unpublished**”.

To push-out the new version to effect the upgrade process, select the checkbox next to the new version PAR solution on Portal, and click **Publish**.

---

# Loading the KM

This section provides instructions to load BEX KM on Microsoft Windows and Unix platforms.

Before you load the BEX KM, you must install the KM on PATROL Console and PATROL Agent systems, following the instructions in “Installing the KM” on page 2-3.

## Preparing to Load the KM

1. Start the PATROL Console and update the connection to all PATROL Agent systems where the BEX KM is installed.
2. Check the value of the PATROL Agent tuning variable, “/AgentSetup/AgentTuning/pslInstructionMax”, and if necessary, increase it.

## Loading the KM on PATROL Console

1. From the PATROL Console menu bar, choose **File => Load KM...**
2. Select the **BEX\_LOAD.kml** file, and click **Open** or **OK**. The BEX KM will be loaded to the PATROL Console, and all connected PATROL Agents will start discovering the Symantec Backup Exec environment. If the automatic discovery successfully finds the Symantec Backup Exec server installation, **BEX\_SETUP** instance will be instantiated, as shown in Figure 2-1.



---

**Note**

---

This automatic discovery may take up to 5 minutes to instantiate the **BEX\_SETUP** instance. Look for any error messages on the PATROL Console System Output Window (SOW) during the initial discovery..

---



**Figure 2-1 BEX\_SETUP Icon**

3. Select **File => Save Configuration** to save the new list of loaded KMs as the PATROL Console user preference.
4. Repeat the above steps on each PATROL Console.

## Loading the KM on PATROL Central

1. Right click on the **PATROL Main Map**, and choose **Load Knowledge Modules...** A wizard box will display a list of all managed systems.
2. Select the managed systems where the BEX KM is to be loaded, and click **Next>**. The wizard will display a list of all available **.kml** files for the managed systems you selected.
3. Select the **BEX\_LOAD.kml** file for each managed system, click **Next>** and **Finish**.

---

**Note**

---

If you cannot find the **BEX\_LOAD.kml** file in the wizard list for any system you selected, then the KM has not been installed on that system. Check that you have followed the instructions in “Installing the KM” on page 2-3.

---

The BEX KM will be loaded to the PATROL Central Console Server, and all connected selected managed systems will start discovering the Symantec Backup Exec environment. If the automatic discovery successfully finds the Symantec Backup Exec server installation, the **BEX\_SETUP** instance will be instantiated, as shown in Figure 2-1.

---

**Note**

---

This automatic discovery may take up to 5 minutes to instantiate **BEX\_SETUP** instance.

---

4. Repeat the above steps for each PATROL Central Management Profile where BEX KM is to be unloaded.

## Loading the KM on BPPM Portal

1. Logon to BMC ProactiveNet Performance Management Portal with appropriate credentials to add infrastructure elements.
2. Click on **Configure** tab.
3. Under **Tasks**, select **Elements** to open the Elements page.
4. Click in **Add**.
5. Select **Infrastructure Element**, and click **Next**.
6. Select appropriate RSM, and click **Next**.
7. Enter the label for the element, select **PATROL Integration**, and click **Next**.
8. Select/create a group name, and click **Next**.
9. Select appropriate method to discover the PATROL Agent hosts, and click **Next**.
10. Fill the required details for discovering the PATROL Agents, and click **Commit**.

# Configuring the KM

---

**Note**

---

This version of the BEX KM cannot be configured from BMC ProactiveNet Performance Management Portal. Use PATROL Console or PATROL Central Console to access the KM configuration menus (KM commands) described below.

---

Once the BEX KM has been loaded the BEX\_SETUP icon will appear. This allows the user to enter KM license information.



**Figure 2-2 BEX KM Setup Icon**

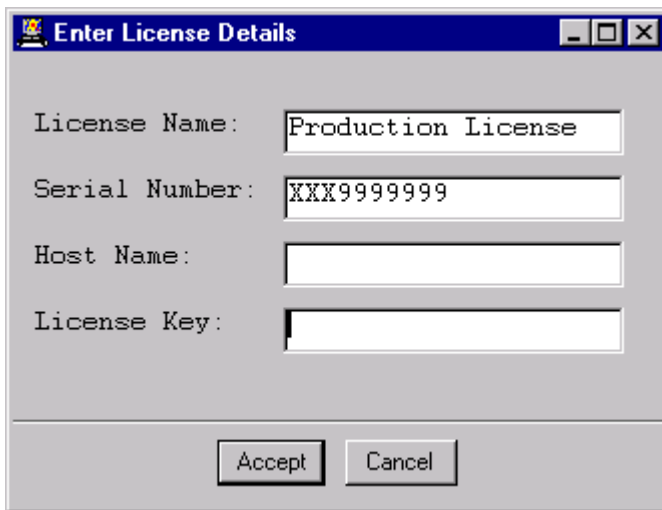
At this point the KM needs to be licensed and configured before the KM is able to start operation

PATROL for Symantec Backup Exec is shipped with a free 30 day trial license. As soon as KM is installed and loaded to the PATROL Agent on a new managed node, the trial license will be automatically activated. The trial license gives full monitoring capability for the KM, and works only once on a managed node.

If you want to purchase a permanent license key, contact your local reseller or OTL Software Limited. To generate the license key, you will need to provide your system architectre details.

## Licensing the KM

Licensing the KM is performed by selecting a menu item available from the BEX\_SETUP icon on the PATROL Console, **KM Configure => License**.



The screenshot shows a standard Windows-style dialog box titled "Enter License Details". It features a blue title bar with a small icon on the left and standard window control buttons (minimize, maximize, close) on the right. The main area of the dialog is light gray and contains four text input fields arranged vertically. The first field is labeled "License Name:" and contains the text "Production License". The second field is labeled "Serial Number:" and contains "XXX9999999". The third field is labeled "Host Name:" and is currently empty. The fourth field is labeled "License Key:" and is also empty. At the bottom of the dialog, there are two buttons: "Accept" and "Cancel", both with a light gray background and black text.

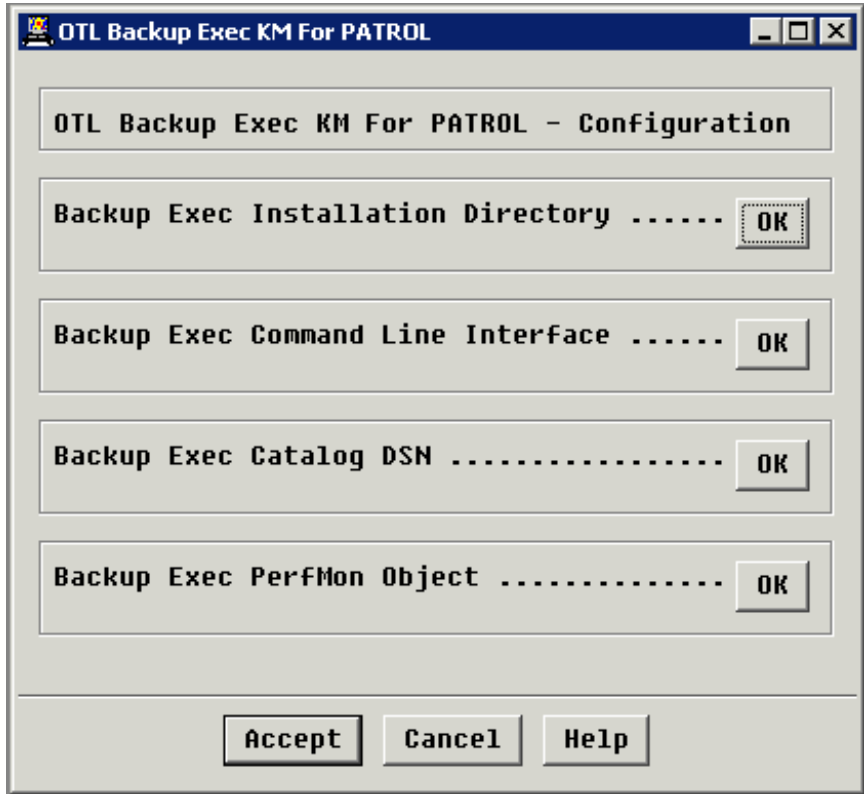
**Figure 2-3 BEX KM License Menu**

This window allows the user to license the BEX KM. The KM is licensed on a per-library and per-node basis.

Once the licensing has been successful, the main **BEX\_SETUP** icon will be replaced with **Symantec Backup Exec**.

## Verifying the Configuration

Configuring the KM is done by selecting a menu item available from the **BEX\_SETUP** or **Symantec Backup Exec** icon on the PATROL Console, **KM Configure => Interfaces**.



**Figure 2-4 BEX KM Setup Menu**

This window allows lets the user to view the following items:

- The installation directory of the Backup Exec server. This is a read-only attribute.
- The location of the Backup Exec command line interface. This program is required by the BEX KM to monitor alert and job activity. If the command line interface program is found, no further action is required. If the command line interface program is not found, it will need to be installed as per the Symantec Backup Exec Administrators Guide, Appendix B.

- The existence of the Backup Exec Performance Monitor (PerfMon) Object, called 'BE Engine'. If this object does not exist, certain server and job summary parameters will be disabled.
- The ODBC DSN of the Backup Exec catalog. This is a read only attribute.

## Discovery Cycle

It will take up to 30 minutes for the discovery cycle to automatically find all of the services, media sets, defined jobs, drives and libraries present in the system. Discovery can be forced by choosing **Utilities => Patrol => Refresh Process Cache** and **Utilities => Patrol => Force Discovery** from the PATROL\_NT icon in the PATROL Console. The **Symantec Backup Exec => Refresh Parameters** menu can also be used to refresh object discovery and parameter values.

## Help

Help describes the function of the currently displayed window or dialog box and the use of its elements. The tasks in this section describe how to access help.

## Accessing Help

*Summary:* You can access help from the PATROL Console through the List of Applications Classes window, the parameter window, and the parameter pop-up menu.

---

## To Access Help from the List of Applications Classes Window with the PATROL Console for Unix

- » Choose **Help => This Application** from the List of Applications Classes window.

## To Access Help from Context-Sensitive Parameter Help with the PATROL Console for Unix

- » Perform one of these actions:
  - Choose **Info** from any parameter pop-up menu.
  - Choose **Help** from any parameter window.

## To Access Help from Context-Sensitive Parameter Help with the PATROL Console for Windows

- » Right-click any parameter pop-up window and choose **Help On**.

## Where to Go from Here

The following table suggests topics that you should read next:

<b>If you want information on...</b>	<b>See...</b>
How to use help	<b>Help =&gt; Using Help</b> from the PATROL Console for Unix menu bar.
What a certain menu command does	Chapter 3, "Menu Summary," and the BEX KM help.
What a certain parameter does	Chapter 4, "Parameter Summary," and the BEX KM for PATROL help.
How to perform a task using this KM	Chapter 5, "Monitoring Backup Exec."





---

## Menu Summary

This chapter summarises the application menus for PATROL<sup>®</sup> for Symantec Backup Exec<sup>™</sup> by OTL Software (also referred to as the BEX KM). The application menu architecture is provided in a table for each of the application classes.

When a Knowledge Module (KM) is loaded, its associated menu commands are added to the KM area of a menu. The KM area of a menu is below the menu's horizontal line. Menu commands above the line belong to the Console.

This chapter describes KM menu commands only. The KM help system provides further details about these menu commands. For descriptions of Console menu commands, refer to the appropriate PATROL user guide for your Console.

The following topics are discussed in this chapter:

Accessing Application Menus . . . . .	3-2
Menu Summary . . . . .	3-3
BEX_SERVER Application Menu . . . . .	3-3
BEX_ALERT Application Menu. . . . .	3-4
BEX_JOB_CONTAINER Application Menu . . . . .	3-5
BEX_SERVICE Application Menu. . . . .	3-5
Where to Go from Here . . . . .	3-6

# Accessing Application Menus

To access application menu items, perform the following steps:

---

**Note**

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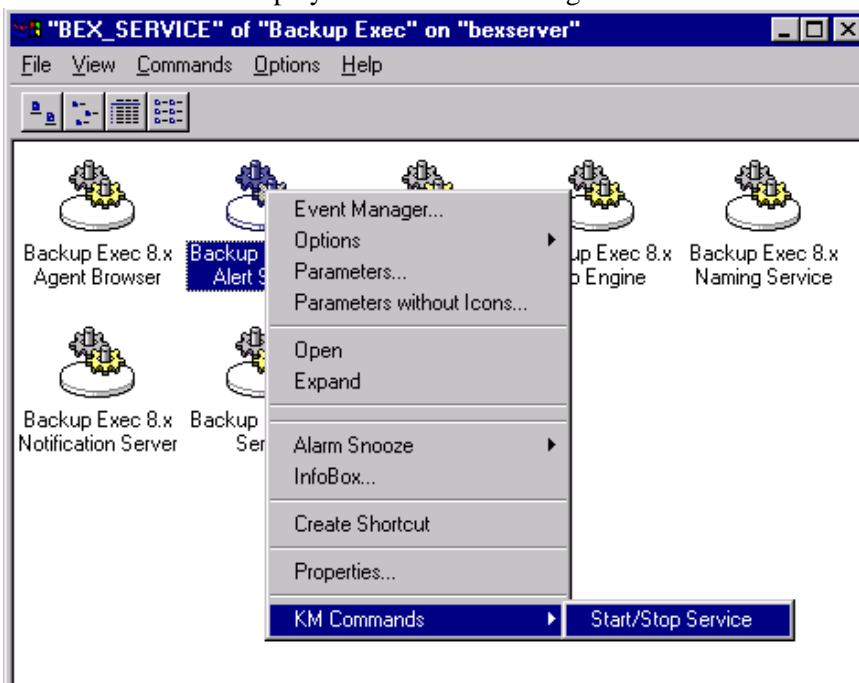
A summary of each menu item is provided later in this section.

---

**Step 1** To access the application menu, perform one of the following actions:

- **With the PATROL Console for Unix**, click and hold MB3 on a PATROL Console icon.
- **With the PATROL Console for Windows**, right-click a PATROL Console icon.

The menu is displayed as shown in the figure below.



**Figure 3-1 Application Menus**

**Step 2** Select the appropriate menu item to perform the required task.

# Menu Summary

This section describes the BEX KM application menus for the following application classes.

- BEX\_SERVER
- BEX\_ALERT
- BEX\_JOB\_DETAIL
- BEX\_SERVICE

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### Note

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The BEX\_DRIVEPOOL, BEX\_DRIVE, BEX\_JOB\_CONTAINER, BEX\_JOB and BEX\_MEDIASET application classes do not have menu items for performing specific functions.

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## BEX\_SERVER Application Menu

Items in the BEX\_SERVER application menu are available from the Backup Exec icon. The BEX\_SERVER application menu has the following menu items:

**Table 3-1 Menu Items for BEX\_SERVER Application**

Menu	Action
<b>Backup Exec Admin</b>	The sub-menu which contains certain administration functions for the Backup Exec server.
Start/Stop Server	Allows the user to starts or stop the Backup Exec server, by stopping or starting the Backup Exec services.
Reset Job Status	Displays a list of jobs that are currently in a failed or aborted state. The user can select jobs to be manually reset to an OK state.
<b>KM Configure</b>	This sub-menu allows KM licenses to be entered, the KM to be configured and diagnostic settings to be enabled.
Interfaces	Allows Backup Exec interfaces use by the KM to be verified and configured (if necessary).
Service Monitoring	Allows monitoring of Backup Exec services to be configured - alerts for selected services that are not running can be disabled.

<b>Menu</b>	<b>Action</b>
Job Instance Cleanup	Allows automated cleanup of BEX_JOB_DETAIL instances (e.g. don't retain information on successful jobs after they are 24-hours old).
Configure Job Log Lines	Allows to change the number of log lines to display from job log file in parameter "BEXJobInfo". By default this is set to 23 lines.
Alert Monitoring Period	Allows the monitoring period to be configured for each of the four type of alerts. The configured period is how long the Alert will be displayed on the Console, starting from the time the Alert was originally generated in Backup Exec. The default values are: Information 3 days; Warning 5 days; Error 7 days; Critical 7 days.
License	This option should only be run to enter the initial license information or to enter an updated license key.
Instance Limits	This allows limits to be set for the number of Alert, Drive, Job and Media Set instances that can be created.
Debug	This option turns on debugging information for several areas of reporting. It is intended to provide limited additional information output onto the system console window.
Make KM Preloaded	This option adds the Backup Exec KM to the Preloaded KMs list on the Agent. This will mean that the Backup Exec KM will still be running even if there are no Consoles attached to the Agent.
Refresh Parameters	This option will refresh PATROL parameters for the BEX_SERVER application class.
About	This option gives details about OTL Software and the KM version.

## **BEX\_ALERT Application Menu**

The BEX\_ALERT application menu has the following menu items:

**Table 3-2 Menu Items for BEX\_ALERT Application**

<b>Menu</b>	<b>Action</b>
Respond	This option allows the user to respond to the alert issued by the Backup Exec server.

## BEX\_JOB\_CONTAINER Application Menu

The BEX\_JOB\_CONTAINER application menu has the following menu items:

**Table 3-3 Menu Items for BEX\_JOB\_CONTAINER Application**

<b>Menu</b>	<b>Action</b>
Reset Job Status	Displays a list of jobs that are currently in a failed or aborted state. The user can select jobs to be manually reset to an OK state.

## BEX\_JOB\_DETAIL Application Menu

The BEX\_JOB\_DETAIL application menu has the following menu items:

**Table 3-4 Menu Items for BEX\_JOB\_DETAIL Application**

<b>Menu</b>	<b>Action</b>
Reset Job Status	Allows the user to manually reset the status of a job to an OK state.
View Log	This displays the log file for a <u>completed</u> job.

## BEX\_SERVICE Application Menu

The BEX\_SERVICE application menu has the following menu items:

**Table 3-5 Menu Items for BEX\_SERVICE Application**

<b>Menu</b>	<b>Action</b>
Start/Stop Service	This option prompts the user to confirm they wish to start or stop the particular Backup Exec service, depending on the current state of the service.

## Where to Go from Here

The following table suggests topics that you should read next:

<b>If you want information on...</b>	<b>See...</b>
How to load the OTL BEX KM KM	Chapter 2, "Getting Started."
What a certain parameter does	Chapter 4, "Parameter Summary," and the OTL BEX KM KM help.
How to perform a task using this KM	Chapter 5, "Monitoring Backup Exec."

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# Parameter Summary

This chapter provides a summary of parameters for PATROL<sup>®</sup> for Symantec Backup Exec<sup>™</sup> by OTL Software (also referred to as the BEX KM). Refer to the *PATROL for Unix User Guide* and the *PATROL for Windows User Guide (Volume 3)* for additional information about the different types of parameters and their functions. Refer to the KM help system for details about KM-specific parameters. The following topics are discussed:

Functional Parameter Summary . . . . .	4-2
Parameter Default Values . . . . .	4-8
Where to Go from Here . . . . .	4-11

# Functional Parameter Summary

The BEX KM has various parameters that provide statistical information about resources, operating status, and performance. Table 4-1 provides information that you can use when selecting or reviewing the appropriate parameters that are used in monitoring the KM.

**Table 4-1 BEX KM Parameter Summary**

Parameter	Description	See Also Page
<b>BEX_SERVER Application Class</b>		
BEXAlertColl	Collector parameter detecting alerts issued by the Backup Exec server. Consumer parameters in the BEX_ALERT application class are set by this collector.	4-9
BEXCatalogFreeSpace	This consumer parameter set by standard parameter BEXCatalogSize shows the available disk space under Backup Exec Catalog directory.	4-9
BEXCatalogResponse	This consumer parameter shows the response time for queries run on the Backup Exec Catalog (via ODBC). This parameter is set by various collector parameters and discovery processes.	4-9
BEXCatalogSize	This standard parameter shows the size of the Backup Exec Catalog.	4-9
BEXCatalogSpaceStatus	This consumer parameter set by standard parameter BEXCatalogSize shows the status of the available disk space under Backup Exec Catalog directory. The parameter is set to 0 when there is more available space than the Total Catalog size. The parameter is set to 1 when the available space is between 20 and 100% of the Total Catalog size. The parameter is set to 2 when the the available space is less than 20% of the Total Catalog size.	4-9
BEXDriveColl	Collector parameter for drive and drive pool information. Consumer parameters in the BEX_DRIVEPOOL and BEX_DRIVE application classes are set by this collector.	4-9
BEXJobColl	Collector parameter for job definition and detail information. Consumer parameters in the BEX_JOB and BEX_JOB_DETAIL application classes are set by this collector.	4-9
BEXMediaColl	Collector parameter for capacity and utilisation information about Backup Exec media sets. Consumer parameters in the BEX_MEDIASET application class is set by this collector.	4-10



**Table 4-1 BEX KM Parameter Summary**

<b>Parameter</b>	<b>Description</b>	<b>See Also Page</b>
BEXServerActivePct	This consumer parameter, set by the BEXSummaryColl collector, shows the percentage of time the Backup Exec server has been active in the last polling period.	4-10
BEXServerActiveTime	This consumer parameter, set by the BEXSummaryColl collector, shows the amount of time the Backup Exec server has been active in the last polling period.	4-10
BEXServerStatus	This standard parameter shows the status of the Backup Exec server (i.e. up or down).	4-10
BEXServerUpTime	This consumer parameter, set by the BEXSummaryColl collector, shows the total amount of time the Backup Exec server has been up (since the last the server was started).	4-11
BEXServiceColl	Collector parameter for Backup Exec services. Consumer parameters in the BEX_SERVICE application class are set by this collector.	4-11
BEXSummaryColl	Collector parameter for job and server summary information. Consumer parameters in the BEX_SERVER and BEX_JOB_CONTAINER application classes are set by this collector.	4-11
<b>BEX_ALERT Application Class</b>		
BEXAlertStatus	This consumer parameter, set by the BEXAlertColl collector, shows the status of an alert issued by the Backup Exec server. The following values are used: 0 = Information 1 = Warning 2 = Error 3 = Critical	4-9
BEXAlertText	This consumer parameter, set by the BEXAlertColl collector, shows the details of an alert issued by the Backup Exec server.	4-9
<b>BEX_DRIVE Application Class</b>		
BEXDriveClean	This consumer parameter, set by the BEXDriveColl collector, indicates if cleaning is required for a Backup Exec tape drive. A value of 1 indicates cleaning is required, otherwise the value is 0 (zero).	4-9

**Table 4-1 BEX KM Parameter Summary**

<b>Parameter</b>	<b>Description</b>	<b>See Also Page</b>
BEXDriveErrors	This consumer parameter, set by the BEXDriveColl collector, indicates if read, write or seek errors have been detected on the tape. A value of 2 means hard errors have been detected, 1 means soft errors have been detected, otherwise the value is 0 (zero). The parameter is annotated with additional information showing the number and type of errors detected.	4-9
BEXDriveInUse	This consumer parameter, set by the BEXDriveColl collector, shows the number of hours a Backup Exec tape drive has been in use.	4-9
BEXDriveMounts	This consumer parameter, set by the BEXDriveColl collector, shows the number of tape mounts a Backup Exec tape drive has performed.	4-9
BEXDriveReadRate	This consumer parameter, set by the BEXDriveColl collector, shows the rate data is read from a Backup Exec tape drive.	4-9
BEXDriveWriteRate	This consumer parameter, set by the BEXDriveColl collector, shows the rate data is written to a Backup Exec tape drive.	4-9
<b>BEX_JOB Application Class</b>		
BEXDuration	This consumer parameter, set by the BEXJobColl collector, shows the duration of all jobs of this type.	4-9
BEXSize	This consumer parameter, set by the BEXJobColl collector, shows the size of all jobs of this type.	4-11
BEXStatusSummary	This consumer parameter, set by the BEXJobColl collector, shows the status of all jobs of this type.	4-11
BEXTransferRate	This consumer parameter, set by the BEXJobColl collector, shows the data transfer rate (combined disk, network and tape device) of all jobs of this type.	4-11
<b>BEX_JOB_CONTAINER Application Class</b>		
BEXJobAborted	This consumer parameter, set by the BEXSummaryColl collector, shows the total number of jobs that aborted in the last polling period.	4-9
BEXJobActive	This consumer parameter, set by the BEXSummaryColl collector, shows the total number of active jobs at the end of the last polling period.	4-9

**Table 4-1 BEX KM Parameter Summary**

<b>Parameter</b>	<b>Description</b>	<b>See Also Page</b>
BEXJobBytes	This consumer parameter, set by the BEXSummaryColl collector, shows the total bytes processed by all jobs in the last polling period.	4-9
BEXJobDisabledMessage	This consumer parameter, set by the BEXSummaryColl collector, displays a messages if the 'BE Engine' PerfMon Object does not exist. If the 'BE Engine' PerfMon Object does exist, this parameter is disabled.	4-9
BEXJobFailed	This consumer parameter, set by the BEXSummaryColl collector, shows the total number of jobs that failed in the last polling period.	4-10
BEXJobObjects	This consumer parameter, set by the BEXSummaryColl collector, shows the total number of objects process by all jobs in the last polling period.	4-10
BEXJobSuccessful	This consumer parameter, set by the BEXSummaryColl collector, shows the total number of jobs successfully completed jobs in the last polling period.	4-10
BEXJobTotal	This consumer parameter, set by the BEXSummaryColl collector, shows the total number of jobs running during the last polling period.	4-10
<b>BEX_JOB_DETAIL Application Class</b>		
BEXJobDirs	This consumer parameter, set by the BEXJobColl collector, shows the total number of directories processing by the job.	4-9
BEXJobDuration	This consumer parameter, set by the BEXJobColl collector, shows the duration of the job.	4-9
BEXJobEstimated	This consumer parameter, set by the BEXJobColl collector, shows the estimated total size of the job.	4-9
BEXJobFiles	This consumer parameter, set by the BEXJobColl collector, shows the total number of files processing by the job.	4-10
BEXJobInfo	This consumer parameter, set by the BEXJobColl collector, shows the detailed information about the job (e.g start time, job ID, job type, etc.).	4-10
BEXJobInUse	This consumer parameter, set by the BEXJobColl collector, shows the total number of files that were in use in the job (i.e. these files may not have been processed correctly - check the job log file).	4-10

**Table 4-1 BEX KM Parameter Summary**

<b>Parameter</b>	<b>Description</b>	<b>See Also Page</b>
BEXJobPctComplete	This consumer parameter, set by the BEXJobColl collector, shows the estimated percent of the job already completed. This parameter may not be set in some cases where this estimate cannot be calculated.	4-10
BEXJobRate	This consumer parameter, set by the BEXJobColl collector, shows transfer rate of the job (across all relevant network, disk and tape devices).	4-10
BEXJobSize	This consumer parameter, set by the BEXJobColl collector, shows the total size of the job.	4-10
BEXJobSkipped	This consumer parameter, set by the BEXJobColl collector, shows the total number of files skipped (i.e. not processed) by the job.	4-10
BEXJobStatus	This consumer parameter, set by the BEXJobColl collector, shows the status of the job. The following values are used: 0 = Scheduled 1 = Running 2 = Completed Successfully 3 = Completed With Errors/Failed 4 = Aborted	4-10
BEXJobVolumes	This consumer parameter, set by the BEXJobColl collector, shows the total number of volumes (i.e. file systems) processed by the job.	4-10
<b>BEX_MEDIASET Application Class</b>		
BEXMediaCapacity	This consumer parameter, set by the BEXMediaColl collector, shows the current used capacity of the media set (in Gb).	4-10
BEXMediaCount	This consumer parameter, set by the BEXMediaColl collector, shows the total number of tape volumes in the media set.	4-10
BEXMediaEmptyCount	This consumer parameter, set by the BEXMediaColl collector, shows the number of empty tape volumes in the media set.	4-10
BEXMediaFullCount	This consumer parameter, set by the BEXMediaColl collector, shows the number of full tape volumes in the media set.	4-10
BEXMediaMountAvg	This consumer parameter, set by the BEXMediaColl collector, shows the average number of times all tape volumes in the media set have been mounted in a tape drive.	4-10

**Table 4-1 BEX KM Parameter Summary**

<b>Parameter</b>	<b>Description</b>	<b>See Also Page</b>
BEXMediaMountMax	This consumer parameter, set by the BEXMediaColl collector, shows the highest number of times a tape volumes in the media set has been mounted in a tape drive.	4-10
BEXMediaTimeAvg	This consumer parameter, set by the BEXMediaColl collector, shows the average time all tape volumes in the media set have been in use.	4-10
BEXMediaTimeMax	This consumer parameter, set by the BEXMediaColl collector, shows the highest amount of time a tape volumes in the media set has been in use.	4-10
<b>BEX_SERVICE Application Class</b>		
BEXSvcCPUDuration	This consumer parameter, set by the BEXServiceColl collector, shows the number of CPU seconds the service is consuming.	4-11
BEXSvcStatus	This consumer parameter, set by the BEXServiceColl collector, shows the status of the service. A value of 1 indicates the service is running, otherwise the service is not running (and the value is 0).	4-11
BEXSvcThreadCount	This consumer parameter, set by the BEXServiceColl collector, shows the number of threads the service is using.	4-11
BEXSvcVirtualBytes	This consumer parameter, set by the BEXServiceColl collector, shows the amount of virtual memory the service is consuming.	4-11
BEXSvcWorkingSet	This consumer parameter, set by the BEXServiceColl collector, shows the working set (memory) the service has allocated.	4-11

## Parameter Default Values

Table 4-2 lists default values for parameters. Interpret the column headings as follows. Depending on the type of parameter, some information is not applicable, denoted by N/A in the table.

<b>Parameter</b>	Specifies the parameter name.
<b>Active?</b>	Specifies whether the parameter is active or inactive when discovered.
<b>Type</b>	Specifies whether the parameter is a Standard (Std.), Consumer (Con.), or Collector (Coll.) parameter.
<b>Alarm 1</b>	Specifies the thresholds for the first alarm. This information is not applicable to Collectors.
<b>Alarm 2</b>	Specifies the thresholds for the second alarm. This information is not applicable to Collectors.
<b>Scheduling</b>	Specifies the time interval in the poll cycle. This information is not applicable to Consumers.
<b>Icon</b>	Specifies whether the icon is a graph, gauge, or text box.
<b>Units</b>	Specifies the type of unit in which the parameter output is expressed, such as a percentage, a number, or bytes.
<b>History Level</b>	Specifies the history retentions period. This information is not applicable to Collectors.
<b>See Also Page</b>	Specifies other pages in this chapter where you can find more functional information about the parameter.

**Table 4-2 BEX KM Parameter Default Values**

	Active?	Type	Alarm 1	Alarm 2	Scheduling	Icon	Units	History Level	See Also Page
BEXAlertColl	Y	Coll	N/A	N/A	2 min.	N/A	N/A	Inherited	4-2
BEXAlertStatus	Y	Con	1-2	3	2 min.	Bool	N/A	Inherited	4-3
BEXAlertText	Y	Con	N/A	N/A	2 min.	Text	N/A	Inherited	4-3
BEXCatalogFreeSpace	Y	Con	N/A	N/A	30 min.	Graph	Mb	Inherited	4-2
BEXCatalogResponse	Y	Con	N/A	N/A	N/A	Graph	Seconds	Inherited	4-2
BEXCatalogSize	Y	Std	N/A	N/A	30 min.	Graph	Mb	Inherited	4-2
BEXCatalogSpaceStatus	Y	Con	1	2	30 min.	StopL	Sufficient, Limited, Critical	Inherited	4-2
BEXDriveClean	Y	Con	N/A	1	15 min.	Bool	Yes/No	Inherited	4-3
BEXDriveColl	Y	Coll	N/A	N/A	15 min.	Graph	Mb	Inherited	4-2
BEXDriveErrors	Y	Con	1	2	15 min.	StopL	Err Type	Inherited	4-4
BEXDriveInUse	Y	Con	N/A	N/A	15 min.	Graph	Hours	Inherited	4-4
BEXDriveMounts	Y	Con	N/A	N/A	15 min.	Graph	Number	Inherited	4-4
BEXDriveReadRate	Y	Con	N/A	N/A	15 min.	Graph	Kb/s	Inherited	4-4
BEXDriveWriteRate	Y	Con	N/A	N/A	15 min.	Graph	Kb/s	Inherited	4-4
BEXDuration	Y	Con	N/A	N/A	10 min.	Graph	Hours	Inherited	4-4
BEXJobAborted	Y	Con	N/A	N/A	15 min.	Graph	Number	Inherited	4-4
BEXJobActive	Y	Con	N/A	N/A	15 min.	Graph	Number	Inherited	4-4
BEXJobBytes	Y	Con	N/A	N/A	15 min.	Graph	Mb	Inherited	4-5
BEXJobColl	Y	Coll	N/A	N/A	10 min.	N/A	N/A	Inherited	4-2
BEXJobDirs	Y	Con	N/A	N/A	10 min.	Graph	Number	Inherited	4-5
BEXJobDisabledMessage	N	Con	N/A	N/A	Various	Text	N/A	Inherited	4-5
BEXJobDuration	Y	Con	N/A	N/A	10 min.	Graph	Hours	Inherited	4-5
BEXJobEstimated	Y	Con	N/A	N/A	10 min.	Graph	Mb	Inherited	4-5

**Table 4-2 BEX KM Parameter Default Values**

	Active?	Type	Alarm 1	Alarm 2	Scheduling	Icon	Units	History Level	See Also Page
BEXJobFailed	Y	Con	N/A	N/A	15 min.	Graph	Number	Inherited	4-5
BEXJobFiles	Y	Con	N/A	N/A	10 min.	Graph	Number	Inherited	4-5
BEXJobInfo	Y	Con	N/A	N/A	10 min.	Text	N/A	Inherited	4-5
BEXJobInUse	Y	Con	N/A	N/A	10 min.	Graph	Number	Inherited	4-5
BEXJobObjects	Y	Con	N/A	N/A	10 min.	Graph	Number	Inherited	4-5
BEXJobPctComplete	Y	Con	N/A	N/A	10 min.	Graph	%	Inherited	4-6
BEXJobRate	Y	Con	N/A	N/A	10 min.	Graph	Mb/s	Inherited	4-6
BEXJobSize	Y	Con	N/A	N/A	10 min.	Graph	Mb	Inherited	4-6
BEXJobSkipped	Y	Con	N/A	N/A	10 min.	Graph	Number	Inherited	4-6
BEXJobStatus	Y	Con	3	4	10 min.	StopL	N/A	Inherited	4-6
BEXJobSuccessful	Y	Con	N/A	N/A	15 min.	Graph	Number	Inherited	4-5
BEXJobTotal	Y	Con	N/A	N/A	15 min.	Graph	Number	Inherited	4-5
BEXJobVolumes	Y	Con	N/A	N/A	10 min.	Graph	Number	Inherited	4-6
BEXMediaCapacity	Y	Con	N/A	N/A	15 min	Graph	Gb	Inherited	4-6
BEXMediaColl	Y	Coll	N/A	N/A	15 min.	N/A	N/A	Inherited	4-2
BEXMediaCount	Y	Con	N/A	N/A	15 min	Graph	Number	Inherited	4-6
BEXMediaEmptyCount	Y	Con	N/A	N/A	15 min	Graph	Number	Inherited	4-6
BEXMediaFullCount	Y	Con	N/A	N/A	15 min	Graph	Number	Inherited	4-6
BEXMediaMountAvg	Y	Con	N/A	N/A	15 min.	Graph	Number	Inherited	4-6
BEXMediaMountMax	Y	Con	N/A	N/A	15 min.	Graph	Number	Inherited	4-7
BEXMediaTimeAvg	Y	Con	N/A	N/A	15 min	Graph	Hours	Inherited	4-7
BEXMediaTimeMax	Y	Con	N/A	N/A	15 min	Graph	Hours	Inherited	4-7
BEXServerActivePct	Y	Con	N/A	N/A	15 min.	Graph	%	Inherited	4-3
BEXServerActiveTime	Y	Con	N/A	N/A	15 min.	Graph	Hours	Inherited	4-3
BEXServerStatus	Y	Std	0	N/A	3 min.	Bool	Up/Down	Inherited	4-3



**Table 4-2 BEX KM Parameter Default Values**

	<b>Active?</b>	<b>Type</b>	<b>Alarm 1</b>	<b>Alarm 2</b>	<b>Scheduling</b>	<b>Icon</b>	<b>Units</b>	<b>History Level</b>	<b>See Also Page</b>
BEXServerUpTime	Y	Con	N/A	N/A	15 min.	Graph	Hours	Inherited	4-3
BEXServiceColl	Y	Coll	N/A	N/A	1 min.	N/A	N/A	Inherited	4-3
BEXSize	Y	Con	N/A	N/A	10min.	Graph	Mb	Inherited	4-4
BEXStatusSummary	Y	Con	N/A	N/A	10min.	Graph	N/A	Inherited	4-4
BEXSummaryColl	Y	Coll	N/A	N/A	15 min.	N/A	N/A	Inherited	4-3
BEXSvcCPUDuration	Y	Con	N/A	N/A	1min.	Graph	%	Inherited	4-7
BEXSvcStatus	Y	Con	0	N/A	1min.	Bool	Up/Down	Inherited	4-7
BEXSvcThreadCount	Y	Con	N/A	N/A	1min.	Graph	Number	Inherited	4-7
BEXSvcVirtualBytes	Y	Con	N/A	N/A	1min.	Graph	Mb	Inherited	4-7
BEXSvcWorkingSet	Y	Con	N/A	N/A	1min.	Graph	Mb	Inherited	4-7
BEXTransferRate	Y	Con	N/A	N/A	10 min.	Graph	Mb/s	Inherited	4-4

## Where to Go from Here

The following table suggests topics that you should read next.

<b>If you want information on...</b>	<b>See...</b>
How to load the BEX KM	Chapter 2, "Getting Started."
What a certain menu command does	Chapter 3, "Menu Summary" and the BEX KM help.
How to perform a task using this KM	Chapter 5, "Monitoring Backup Exec."



# Monitoring Backup Exec

This chapter introduces you to basic tasks that can be performed with PATROL<sup>®</sup> for Symantec Backup Exec<sup>™</sup> by OTL Software (also called the BEX KM). The following topics are discussed:

Overview . . . . .	5-2
Objectives of the KM . . . . .	5-2
Monitoring Server Availability . . . . .	5-2
Monitoring Backup Exec Catalog . . . . .	5-3
Monitoring Alerts. . . . .	5-3
Monitoring Jobs . . . . .	5-3
Monitoring Media Sets . . . . .	5-6
Monitoring Services. . . . .	5-7
Monitoring Drives and Drive Pools. . . . .	5-7
Administering Backup Exec. . . . .	5-8
Starting & Stopping Backup Exec . . . . .	5-8
Responding to Backup Exec Alerts . . . . .	5-11
Resetting Job Status Alerts . . . . .	5-12
Viewing Job Log Files . . . . .	5-13
Configuring the Backup Exec KM. . . . .	5-15
Setup Backup Exec Service Monitoring . . . . .	5-15
Configuring Automated Job Instance Cleanup . . . . .	5-17
Configuring Instance Discovery Limits. . . . .	5-19
Debugging the KM . . . . .	5-20
Refreshing Parameters . . . . .	5-21
Unloading the KM . . . . .	5-23
Uninstalling the KM. . . . .	5-26
Where to Go from Here . . . . .	5-31

## Overview

After loading the BEX KM, you can use default parameter settings to monitor the Backup Exec server, or you can customize parameter settings to meet the demands of your environment. If the KM has not been loaded, refer to the Chapter 2, “Getting Started,” for procedures on loading the KM.

Objectives of the BEX KM are discussed in “Objectives of the KM” on page 5-2. This information will assist you in achieving maximum availability, performance, and integrity of your Backup Exec server.

## Objectives of the KM

The primary objective of the BEX KM is to ensure the availability, maximum performance, and integrity of your Backup Exec server. This section describes how to use the BEX KM to achieve these goals. A PATROL Developer or Operator Console can be used, as required, to change any of the default behaviors listed below.

## Monitoring Server Availability

The BEX KM monitors the Backup Exec server to ensure availability by checking connectivity to the server. This information is displayed by the BEXServerStatus parameter, located in the main Backup Exec object window. In the event that the Backup Exec server cannot be contacted, the parameter will go into an alarm state.

Individual Backup Exec services are also monitored by the Backup Exec KM. The BEX\_SERVICE class has an instance for all Backup Exec services and monitors the status of the service (up or down) and the CPU, memory and thread utilisation.

## Monitoring Backup Exec Catalog

The BEX KM monitors the Backup Exec Catalog capacity via the BEXCatalogSize parameter. If either the size of the Catalog is approaching the capacity of the file system, additional file system space may need to be allocated. If the Catalog is unusable the entire server is unavailable.

## Monitoring Alerts

The BEX KM detects Alerts generated by the Backup Exec server through the BEX\_ALERT application class. When an Alert is generated by the server a new instance is created under the BEX\_ALERT application class. Use the BEXAlertText parameter for the BEX\_ALERT instance to view the details of the alert and determine what action is required.

## Monitoring Jobs

Monitoring the status, size, duration and performance of Backup Exec backup, archive, recovery and restore jobs is a key area of functionality provided by the Backup Exec KM.

Parameters in the BEX\_JOB\_CONTAINER, BEX\_JOB and BEX\_JOB\_DETAIL classes provide summary and detailed statistics on Backup Exec jobs.

Note that:

- Backup Exec “utility” jobs (e.g. jobs for formatting tape volumes) are not monitored in the current release of the KM.
- On the initial start-up of the KM, only jobs that have started after “midnight today” will be discovered by the KM.

## Overall Job Summary Information

Parameters in the BEX\_JOB\_CONTAINER application class (represented by the BEX\_JOBS icon under the main Backup Exec icon) provide overall summary information for all jobs executed by the Backup Exec server, including:

- The total number of jobs executed
- The number of aborted jobs
- The number of failed jobs
- The number of successful jobs
- The number of currently active jobs
- The number of objects processed by all jobs
- The number of bytes processed by all jobs

All of the above metrics show values for the last polling cycle only (default is 15 minutes).

## Job Definition Information

Parameters in the BEX\_JOB application class provide summary statistics for jobs of a particular type, as defined in Backup Exec (e.g. file system, exchange server). This information includes size, duration, transfer rate and status for all jobs of a particular type.

## Individual Job Run Information

Parameters in the BEX\_JOB\_DETAIL application class provide detailed statistics for individual job runs of a particular type. This information includes:

- The status of the job can be determined from the BEXJobStatus parameter. The value of this parameter is determined as per the table below.

**Table 5-1 Mapping from Backup Exec Job Status to the BEXJobStatus**

<b>KM Job Status</b>	<b>Backup Exec Job Status</b>
0 - Scheduled	Scheduled (1) Scheduled on hold (2) Pending (3)
1 - Running	Running (4) Idle Interactive Postjob Processing Prejob Processing Loading Media Paused
2 - Completed Successfully	Successful without errors (5)
3 - Completed with Errors (WARNING)	Completed, files were skipped (7) Completed, see log file
4 - Aborted (ALARM)	Failed (6) Aborted (8) Dead

See *Understanding Job Status Messages* in Appendix C of the *Backup Exec for Windows Administrator's Manual* for further details on job status information.

The **Job Status** InfoBox for the job detail instance will show the Backup Exec Job Status message.

Detailed information about the job can be obtained from parameter annotations (for failed or aborted jobs only), the BEXJobInfo parameter or the job log file (viewed from the **View Log** menu on the job instance).

- The number of files and directories processed by the job can be obtained from the BEXJobFiles and BEXJobDirs parameters respectively. Additionally, the number of files that were in use or skipped during the backup is shown in the BEXJobInUse and BEXJobSkipped parameters.

- The duration of the job (in hours) is shown by the BEXJobDuration parameter. Alert thresholds can be set on this parameter to define the maximum time a job can run. See the *PATROL for Windows User Guide Volume 3* (section 6) or the *PATROL for UNIX User Guide* (section 10) for information on customising KM parameters.
- The estimated and actual size of jobs, in megabytes, is shown by the BEXJobEstimated and BEXJobSize parameters. Note that the estimated size of a job can only be determined once a job has been run at least once.
- The transfer rate of a job is shown by the BEXJobRate parameter (this is actual size divided by duration). This is the overall transfer rate of the entire job and includes server, client, network, disk and tape device transfers.
- For running jobs, the percentage of the job that has completed is shown by the BEXJobComplete parameter. Note that the percentage complete of a job can only be determined once a job has been run at least once.

## Monitoring Media Sets

The BEX KM monitors the capacity of media sets and the utilisation of tape volumes within the media set. The following information is collected:

- The total capacity of the media set is shown in the BEXMediaCapacity (size in Gb) and BEXMediaCapacityPct (percentage used of total size) parameters. Alert thresholds can be set on one or both of these parameters to define the maximum capacity of a media set before new tape volumes should be added. See the *PATROL for Windows User Guide Volume 3* (section 6) or the *PATROL for UNIX User Guide* (section 10) for information on customising KM parameters.



- The total number of tape volumes in a media set is shown by the BEXMediaCount parameter. The number of empty and full volumes in a media set is shown by the BEXMediaEmptyCount and BEXMediafullCount parameters respectively.
- The average number of mounts for all tape volumes in the media set is shown by the BEXMediaMountAvg parameter. The BEXMediaMountMax parameter shows the number of mounts for the tape volume with the maximum number of mounts for all volumes in the media set.
- The average amount of time used for all tape volumes in the media set is shown by the BEXMediaTimeAvg parameter. The BEXMediaTimeMax parameter shows the time used for the tape volume that has been used the most.

## Monitoring Services

The BEX KM monitors Backup Exec services. The status of the each service, along with CPU duration, memory and thread utilisation is shown in each BEX\_SERVICE instance.

## Monitoring Drives and Drive Pools

The BEX KM monitors drive pools and individual tape drives using the BEX\_DRIVEPOOL and BEX\_DRIVE application classes. Metrics for tape drives are described below:

- The transfer rate for read and write operations on the tape drive are shown by the BEXDriveReadRate and BEXDriveWriteRate.
- The number of errors detected in the tape drive is shown by the BEXDriveErrors parameter. If errors are detected, the parameter will be annotated with a dialog box showing the type of error detected (a hard/soft error for a read/write/seek operation).
- If the tape drive needs cleaning the BEXDriveClean will go into a WARNING state.

- The number of hours the tape drive has been in use is shown by the BEXDriveInUse parameter.
- The number of mount operations the tape drive has performed is shown by the BEXDriveMounts parameter.

## Administering Backup Exec

This section describes how to perform certain tasks that will help you manage the Backup Exec server.

## Starting & Stopping Backup Exec

*Summary:* This task explains how to start and stop the Backup Exec server.

---

### Before You Begin

Verify that the application icon for the loaded application instance is displayed. If the icon does not appear, there may be a problem with your PATROL installation. Refer to the *PATROL Installation Guide* for help.

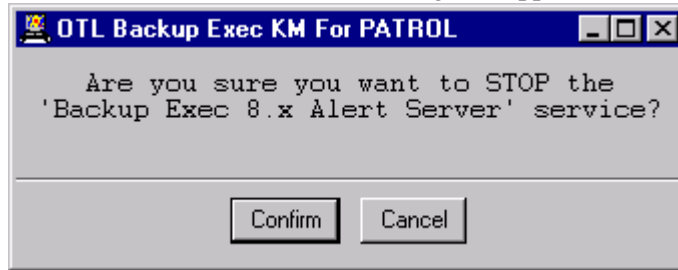
### Starting and Stopping Individual Backup Exec Services

Use the menu available on each Backup Exec Service instance in the BEX\_SERVICE application class container icon to stop and start individual Backup Exec services.

- Step 1** Right-click and hold the mouse pointer on the required Backup Exec service application instance icon.

The application menu appears.

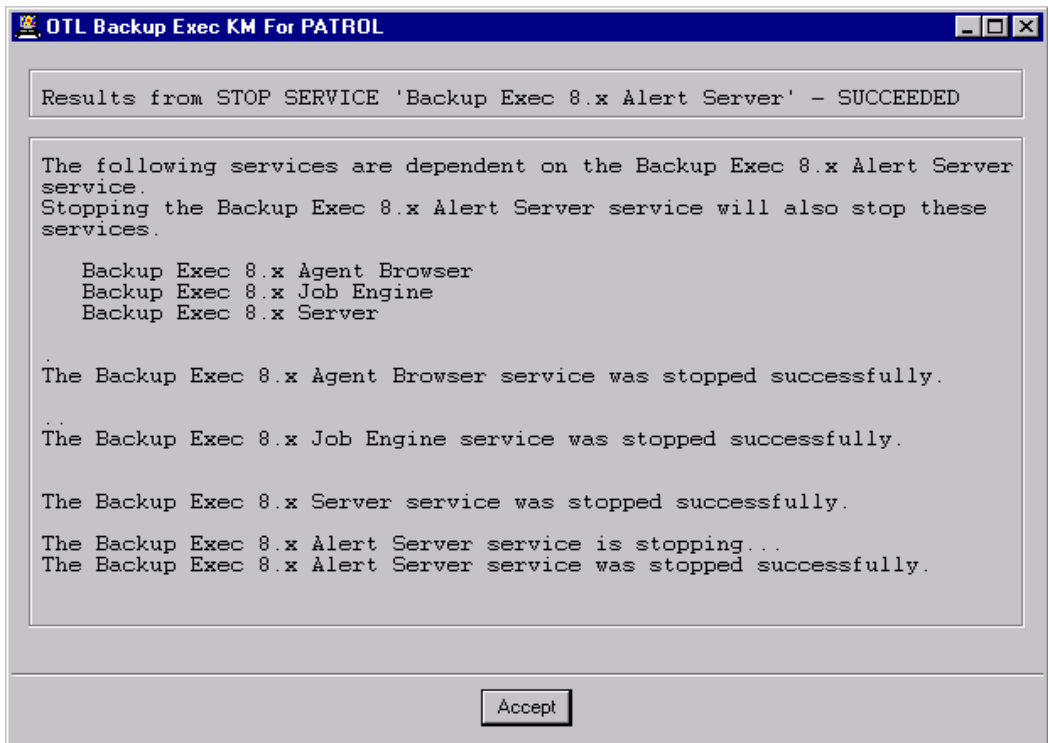
**Step 2** Choose **Start/Stop Service**. A dialog box appears.



**Figure 5-1** Stop Service Dialog Box

**Step 3** If you do not want to continue starting/stopping the service, click **Cancel**, otherwise click **Confirm**.

A new dialog box will be displayed showing the results of starting/stopping the service.



**Figure 5-2** Dialog Box Showing Results of Stopping a Service

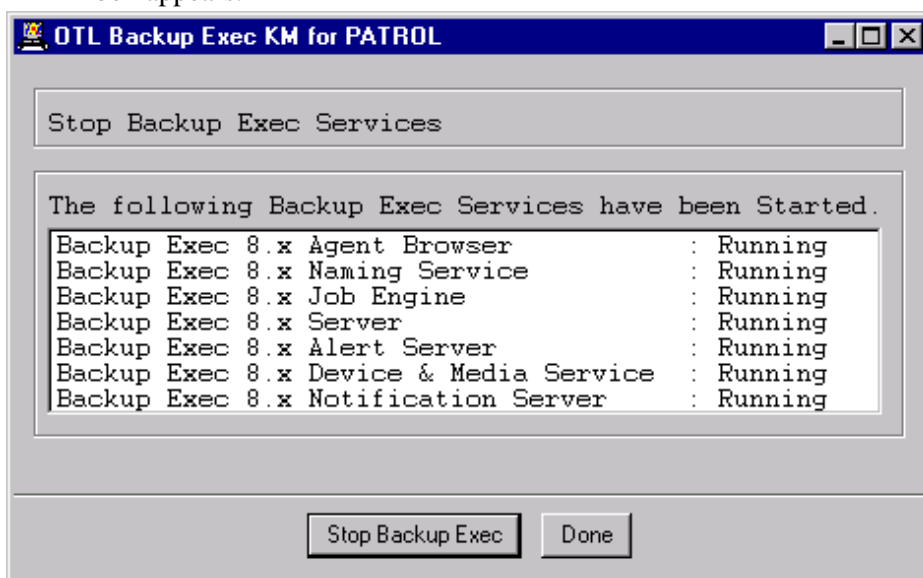
## Starting and Stopping The Backup Exec Server

Use the menu available on the Backup Exec icon to start or stop all Backup Exec server processes.

**Step 4** Right-click and hold the mouse pointer on the Backup Exec server icon.

The application menu appears.

**Step 5** Choose **Backup Exec Admin => Start/Stop Backup Exec**. A dialog box appears.



**Figure 5-3** Stop Backup Exec Server Dialog Box

**Step 6** If you do not want to start or stop the Backup Exec server, click **Done** and the process is finished. Otherwise click **Stop Backup Exec** or **Start Backup Exec**, depending on the current state of the Backup Exec Server.

The dialog box will continue to be displayed until the **Done** button is selected.

**Step 7** After processing has completed, the same dialog box as shown in Figure 5-3 will be displayed showing the results of starting/stopping the Backup Exec server. Go to Step 6.

# Responding to Backup Exec Alerts

**Summary:** This task explains how to respond to Backup Exec Alerts.

---

## Before You Begin

Verify that the application icon for the loaded application instance is displayed. If the icon does not appear, there may be a problem with your PATROL installation. Refer to the *PATROL Installation Guide* for help.

## To Respond to a Backup Exec Alert

**Step 1** Right-click and hold the mouse pointer on the required Alert application instance icon.

The application menu appears.

**Step 2** Choose **Respond**. A dialog box appears.

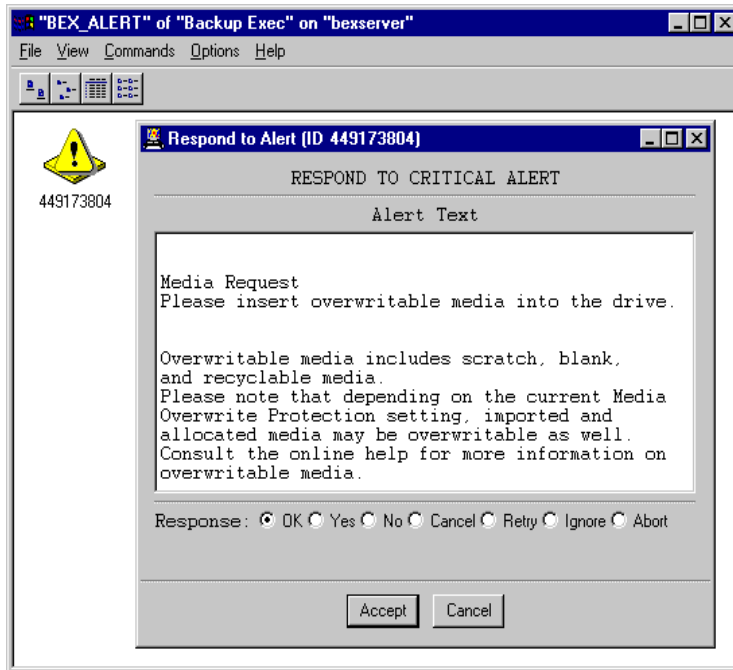


Figure 5-4 Dialog Box for Responding to Backup Exec Alerts

**Step 3** Select the required response type to send to the Backup Exec server.

**Step 4** Click **Accept**.

A new dialog box will appear showing the status of your response to the alert (i.e. accepted or rejected by the server).

## Resetting Job Status Alerts

*Summary:* This task explains how to manually reset the status of failed or aborted Backup Exec jobs.

---

### Before You Begin

Verify that the application icon for the loaded application instance is displayed. If the icon does not appear, there may be a problem with your PATROL installation. Refer to the *PATROL Installation Guide* for help.

### To Reset The Status of One or More Jobs

**Step 1** This process can be initiated from two different locations.

- To reset the status of a single job, go to the required job detail instance under the BEX\_JOB container.
- To reset the status of multiple jobs, go to the main Backup Exec icon. The required menu item is under the **Backup Exec Admin** menu.

Right-click and hold the mouse pointer on the process application instance icon. The application menu appears.

## Step 2 Choose **Reset Job Status**.

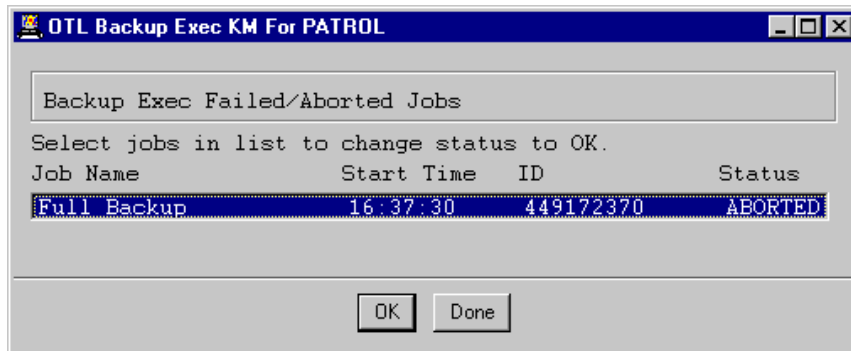


Figure 5-5 Reset Job Status Dialog Box

## Step 3 Select the jobs you want to reset the status for.

Click **OK** to reset the status of selected jobs, otherwise select **Done** to finish. The dialog box will continue to be displayed until the **Done** button is selected.

The BEXJobStatus parameter for selected jobs will be annotated with details of the manual status reset.

## Viewing Job Log Files

**Summary:** This task explains how to view the log file associated with a completed Backup Exec job.

---

### Before You Begin

Verify that the application icon for the loaded application instance is displayed. If the icon does not appear, there may be a problem with your PATROL installation. Refer to the *PATROL Installation Guide* for help.

## To View a Job Log File

- Step 1** Right-click and hold the mouse pointer on the job detail application instance icon.

The application menu appears.

- Step 2** Choose **View Log**. A dialog box appears showing the content of the job log file.

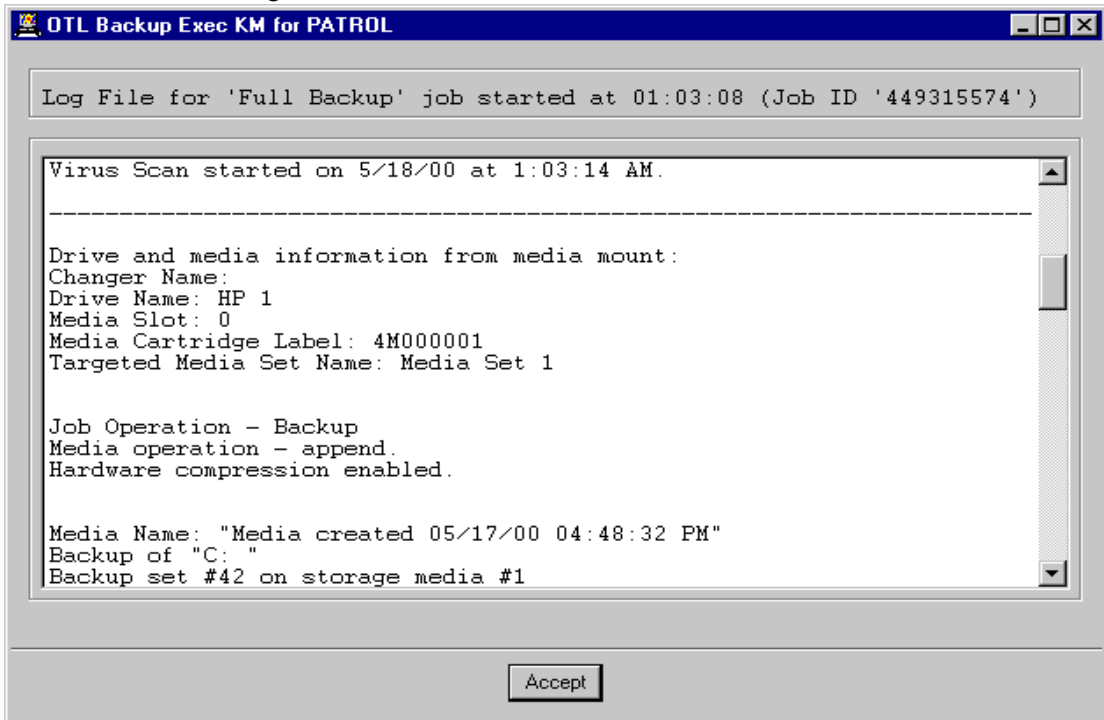


Figure 5-6 View Job Log File Dialog

- Step 3** Click **OK** to close the dialog box.



# Configuring the Backup Exec KM

This section describes how to configure the behavior of certain aspects of the BEX KM.

## Before You Begin

Verify that the application icon for the loaded application instance is displayed. If the icon does not appear, there may be a problem with your PATROL installation. Refer to the *PATROL Installation Guide* for help.

## Setup Backup Exec Service Monitoring

**Summary:** This task explains how to modify the way the KM monitors Symantec Backup Exec services.

---

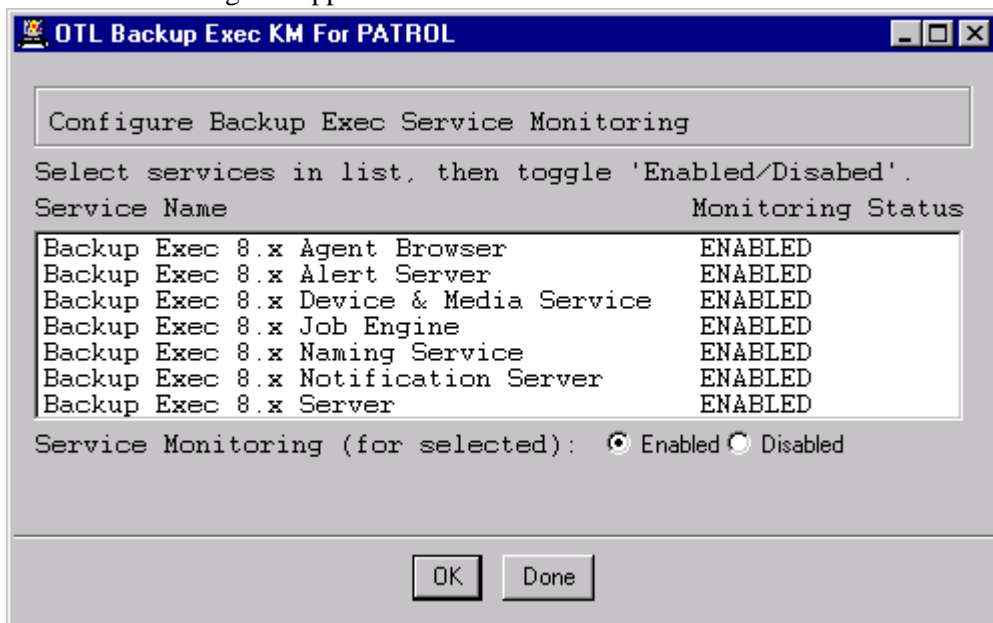
### To Setup Backup Exec Service Monitoring

**Step 1** Right-click and hold the mouse pointer on the **Symantec Backup Exec** application instance icon.

The application menu appears.

**Step 2** Choose **KM Configure => Service Monitoring**.

A dialog box appears.



**Figure 5-7 Backup Exec Service Monitoring Setup**

- Step 3** Select the Backup Exec services to enable/disable monitoring from the list. Select **Enable** or **Disable**.
- Step 4** Click **OK** to save the changes or **Done** to close the dialog window.

The dialog box will continue to be displayed until the **Done** button is selected.

# Configuring Automated Job Instance Cleanup

**Summary:** This task explains how to configure the KM to automatically cleanup BEX\_JOB\_DETAIL instances, according to certain rules.

---

## To Configure Job Instance Cleanup

It is possible to configure the KM to automatically remove BEX\_JOB\_DETAIL job instances that meet set criteria. The options available are:

- Keep all job instances. No job instances will be removed from the KM display on the PATROL Console.
- Remove successful job instances after a certain time (i.e. only keep information on jobs that have failed).

This is the usual setting (and the default, using 24 hours). Backup Exec administrators would normally only want to keep information on jobs if they have failed - detailed information on successfully completed jobs does not need to be retained by the KM for longer than a one or two days.

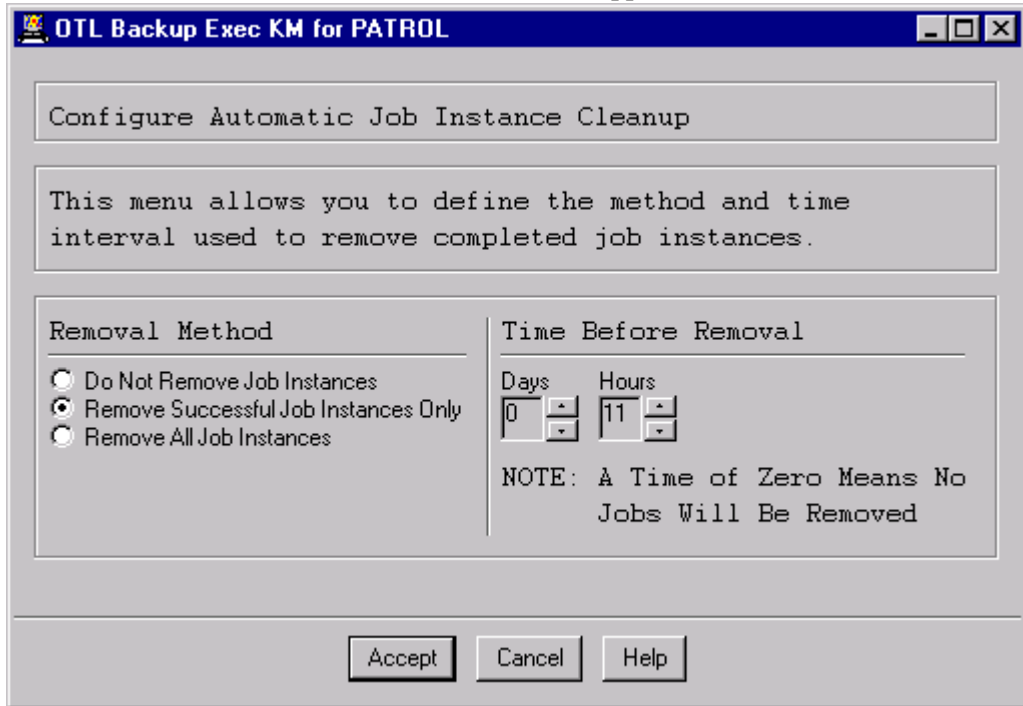
- Remove all job instance after a certain time.

**Step 1** Right-click and hold the mouse pointer on the **Symantec Backup Exec** application instance icon.

The application menu appears.

**Step 2** Choose **KM Setup => Job Instance Cleanup**.

The **Job Instance Cleanup** window appears



**Figure 5-8 Job Instance Cleanup Configuration Window**

- Step 3** Select the desired removal method.
- Step 4** Select the desired removal time (if applicable). A time of zero (zero days, zero hours) will automatically select the “Do Not Remove Job Instances” method.
- Step 5** Click **Accept**.

The settings are saved to the PATROL Agent configuration database.

## Configuring Instance Discovery Limits

**Summary:** This task explains how to configure limits on instance discovery.

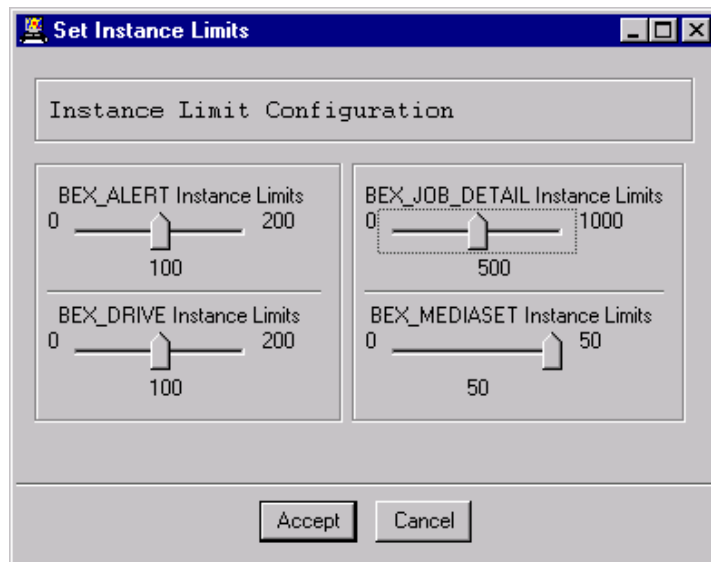
---

### To Configure Instance Limits

**Step 1** Right-click and hold the mouse pointer on the **BEX** application instance icon. The application menu appears.

**Step 2** Choose **KM Setup => Set Instance Limits**.

The **Set Instance Limits** window appears



**Figure 5-9** Instance Limits Configuration Window

**Step 3** Change the maximum number of instance that can be discovered for an application class by moving the sliding scale to the desired level.

**Step 4** Click **Accept**.

If instance limits are decreased from what has currently been discovered, the new limits will take effect after the PATROL Agent has been restarted.

# Debugging the KM

**Summary:** This task explains how to set debugging information for the BEX KM.

---

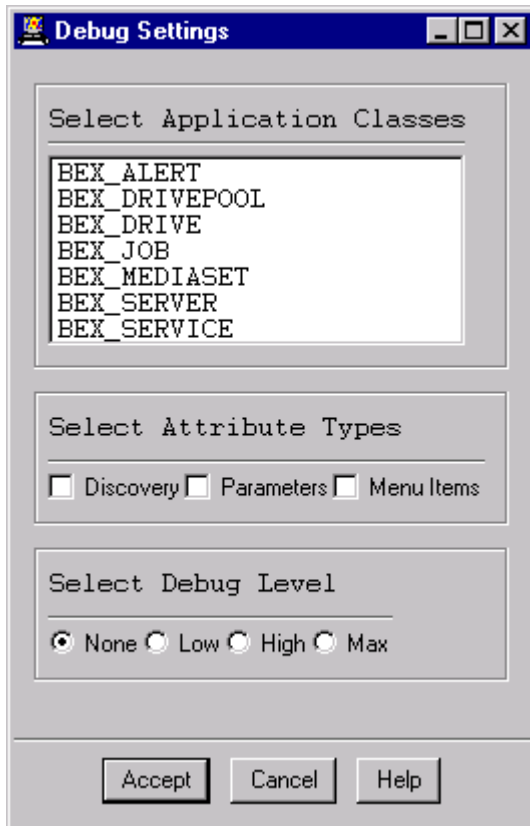
## To Enable or Disable Debugging Mode

**Step 1** Right-click and hold the mouse pointer on the **Symantec Backup Exec** or **BEX\_SETUP** application instance icon.

The application menu appears.

**Step 2** Choose **KM Configure => Debug**.

The Debug Settings dialog box appears



**Figure 5-10** Debug Settings Window

- Step 3** Click on the application classes for which debugging information is required (note that the BEX\_JOB\_CONTAINER, BEX\_JOB and BEX\_JOB\_DETAIL classes are covered by the BEX\_JOB debug setting).
- Step 4** Click on the attributes within the selected application classes that debugging information is required.
- Step 5** Select the level of detail required for debugging messages.
- Step 6** Click **OK**.

Debugging information will appear on the system output window for the computer.

## Refreshing Parameters

*Summary:* This task explains how to refresh all parameters for an application instance.

---

### To Refresh All Parameters

- Step 1** Right-click and hold the mouse pointer on the **Backup Exec** instance icon.
- The application menu appears.
- Step 2** Choose **Refresh Parameters**.
- All the parameters are updated for all application classes.

## Displaying a Parameter Graph, Gauge, or Text Output Window

Each computer icon in the PATROL main window represents an instance of a host system that PATROL is monitoring. When you add a computer to the main window, PATROL establishes a default series of application and parameter icons for monitoring. For information on displaying a parameter graph, gauge, or text output window, see the *PATROL for Unix User Guide* or the *PATROL for Windows User Guide (Volume 2)*.

## Customizing Parameters

Most parameters defined in a KM are activated by default. They continuously monitor key resources and warn you of potential problems. All parameters in KMs are global parameters; that is, they automatically run on all KM instances discovered. They are the common parameters used for all applications and computers. You can customize these parameters at the local level for a specific application or computer. You can customize parameters at the local level by performing some of the tasks listed below. For information on these tasks, see the *PATROL for Unix User Guide* or the *PATROL for Windows User Guide (Volume 3)*.

- Activating Help
- Adding Parameters
- Clearing Parameter History
- Deleting Parameters
- Entering the Parameter Command
- Entering the Parameter Environment
- Scheduling When the Parameter Runs
- Selecting the Parameter Computer Class
- Selecting the Parameter Command Type
- Selecting the Parameter Type
- Setting Alarm Ranges
- Setting Parameter Security
- Setting the Parameter History Retention Level
- Setting the Parameter Output
- Setting the State
- Suspending Parameters



## Unloading the KM

This section describes the procedures for unloading (not uninstalling) the BEX KM from the PATROL Agent, PATROL Console or PATROL Central Console. The intention is that this section is only used if you no longer want to use *some parts* of the KM, though there may be circumstances where you may wish to fully unload the KM without uninstalling the files.

---

### Note

---

If you want to completely uninstall the KM, please follow the instructions under “Uninstalling the KM” on page 5-26.

---

When the BEX KM is unloaded from a PATROL Agent, PATROL stops monitoring the Symantec Backup Exec application on that system when there is no connection to a PATROL Console with BEX KM loaded.

When the BEX KM is unloaded from PATROL Console, the PATROL Console stops displaying and monitoring the Symantec Backup Exec application on *any* PATROL Console connected system.

## Unloading the KM from PATROL Agent

1. Remove the BEX KM from the list of preloaded KMs, using the utility `wconfig` (on MS Windows) or `xconfig` (on Unix), remove **BEX\_LOAD.kml** from the PATROL Agent configuration variable “/AgentSetup/preloadedKMs”.
2. Restart the PATROL Agent.
3. Repeat these steps on every PATROL Agent system (managed node) where the BEX KM is to be unloaded.

---

### Note

---

The BEX KM cannot be *partially* unloaded from the PATROL Agent using the above steps. If you need to unload some parts of the KM from the PATROL Agent, refer to the *PATROL Agent Reference Manual*.

---

## Unloading the KM from PATROL Console

Application classes are unloaded individually. This allows for a partial unloading of the KM to enable it to run as a reduced installation. Follow the steps below to unload the BEX KM completely or partially.

1. Remove the unwanted BEX KM application classes from the list of loaded application classes, as required. All BEX KM application classes start with “**BEX\_**”.

### With the PATROL Console for Unix:

- A. From the PATROL Console main window choose **Attributes => Application Classes...**
- B. Select a BEX KM application class to be removed and choose **Edit => Delete**.
- C. Repeat for all classes to be removed.

### With the PATROL Console for MS Windows:

- A. From the PATROL Console tree view choose the **KM** tab and expand the folder **Application Classes**.
  - B. Right-click on a BEX KM application class to be removed and choose **Delete**.
  - C. Repeat for all classes to be removed.
2. Select **File => Save Configuration** to save the modified list of loaded application classes as the PATROL Console user preference.
  3. Repeat these steps on every PATROL Console system where the BEX KM is to be unloaded.

## Unloading the KM from PATROL Central Console

A KM can be unloaded for particular managed systems or for all systems across the monitored environment. Application classes may be unloaded individually, or by selecting all classes at once. This allows for a partial unloading of the KM to enable it to run as a reduced installation on some or all of the managed systems. Follow the steps below to completely or partially unload the BEX KM from some or all of the managed systems.

1. Right click on the **PATROL Main Map**, and choose **Unload Knowledge Modules...**
2. Select the managed systems where the BEX KM is to be unloaded, and click **Next>**.

A list is displayed showing all the loaded application classes on each of the selected managed systems. All BEX KM application classes start with “**BEX\_**”.

3. Select the BEX KM application classes to be removed for the appropriate managed systems, click **Next>** and **Finish**.
4. Repeat the above steps for each PATROL Central Management Profile where the BEX KM is to be unloaded.

## Uninstalling the KM

This section describes steps for uninstalling the PATROL for Symantec Backup Exec. The KM is uninstalled when upgrading the BEX KM from an older version, or if the BEX KM is no longer required for monitoring the Symantec Backup Exec application. The steps required for uninstalling depend on the type of installation:

- For PATROL Agent and PATROL Console, “uninstallation” involves unloading the KM and then removing the files.
- For PATROL Central Console, the KM is uninstalled by unloading.
- For PATROL Central Console Server or PATROL Central Web Server, the KM is uninstalled by removing the files.

---

### Note

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If the BEX KM was installed using the *Installation Utility*, use the same to remove the KM files after unloading.

---

## Uninstalling the KM from PATROL Agent

1. Unload the BEX KM by removing it from the list of preloaded KMs. Use the utility `wconfig` (on MS Windows) or `xpconfig` (on Unix) to remove **BEX\_LOAD.kml** from the PATROL Agent configuration variable “/AgentSetup/preloadedKMs”.
2. Restart the PATROL Agent.
3. Remove all BEX KM files listed in Table 5-2 under the paths for PATROL Home (**PATROL\_HOME**) and PATROL Cache (**PATROL\_CACHE**).

---

### Note

---

There may be more than one PATROL Cache directory depending on how PATROL has been set up in your installation. Users can set up a local Cache directory to override the global setting.

---

- Repeat the above steps on every PATROL Agent system where the BEX KM is installed.

**Table 5-2 Uninstallation from the PATROL Agent**

File Types to Delete	Path relative to PATROL_HOME
	Microsoft Windows
PSL Library Files	lib\ps\BEX_*.*
KM & Catalog Files	lib\knowledge\BEX_*.*
Archive Files	lib\archive\BEX_*.*
Other Files & Folders	BEX\*.* BEX BEX_*. * lib\BEX\*.* lib\BEX lib\BEX_*. *

## Uninstalling the KM from PATROL Console

- Unload the BEX KM by removing all the application classes from the list of loaded application classes. All BEX KM application classes start with “**BEX\_**”.

### On PATROL Console for Unix:

- From the PATROL Console main window choose **Attributes => Application Classes...**
- Select a BEX KM application class and choose **Edit => Delete**.
- Repeat for all classes.
- Select **File => Save Configuration** to save the modified list of loaded KMs as the PATROL Console user preference.

### On PATROL Console for Microsoft Windows:

- From the PATROL Console tree view choose the **KM** tab and expand the folder Application Classes.
- Right-click on a BEX KM application class and choose **Delete**.
- Repeat for all classes.

- D. Select **File => Save Configuration** to save the modified list of loaded KMs as the PATROL Console user preference.
2. Remove all BEX KM files listed in Table 5-3 under the paths for PATROL Home (**PATROL\_HOME**) and PATROL Cache (**PATROL\_CACHE**).

---

**Note**

---

There may be more than one PATROL Cache directory depending on how PATROL has been setup in your installation. Users can set up a local Cache directory to override the global setting.

---

**Table 5-3 Uninstallation from PATROL Console**

File Types to Delete	Path relative to PATROL_HOME	
	Unix	Microsoft Windows
PSL Library Files	lib/psl/BEX_*.*	lib\psl\BEX_*.*
KM & Catalog Files	lib/knowledge/BEX_*.*	lib\knowledge\BEX_*.*
Archive Files	lib/archive/BEX_*.*	lib\archive\BEX_*.*
Icon & Image Files	lib/images/BEX_*.*	lib\images\bex_*.*
Online Help Files & Folders	lib/help/bex_*.*	lib\help\bex_*.*
	lib/help/bex_km/*.*	lib\help\bex_km/*.*
	lib/help/bex_km	lib\help\bex_km
	lib/help/km_help_bex_km	lib\help\km_help_bex_km

3. Repeat above steps on every PATROL Console system where the BEX KM is installed.

## Uninstalling the KM from PATROL Central Console

1. Unload the BEX KM by removing all the application classes from the list of loaded application classes. All BEX KM application classes start with “**BEX\_**”.
  - A. Right-click on the **PATROL Main Map** and choose **Unload Knowledge Modules...**
  - B. Select the managed systems where the BEX KM is to be unloaded, and click **Next>**.
  - C. Select all BEX KM application classes, click **Next>** and **Finish**.
2. Repeat the above steps on every PATROL Central Console where the BEX KM is installed.

## Uninstalling the KM from PATROL Central Console Server

1. Remove all BEX KM files listed in Table 5-4 under the PATROL Central Console Server installation path (**PATROL\_ROOT**).

**Table 5-4** Uninstallation from the PATROL Central Console Server

File Types to Delete	Path for PATROL Central Console Server	
	Unix	Microsoft Windows
Online Help Files	lib/knowledge/bex_*/lib/help/EN_USA/bex_km.chm	lib\knowledge\bex_*\lib\help\EN_USA\bex_km.chm
Icon & Image Files & Folders	lib/knowledge/bex_*/*. * lib/knowledge/bex_*	lib\knowledge\bex_*\*. * lib\knowledge\bex_*

2. Repeat above steps on every PATROL Central Console Server system where the BEX KM is installed.

## Uninstalling the KM from PATROL Central Web Server

1. Remove all BEX KM files listed in Table 5-5 under the PATROL Central Web Server installation path (**\$BMC\_ROOT/webcentral** on Unix and **%BMC\_ROOT%\WebCentral** on Microsoft Windows).

**Table 5-5 Uninstallation from the PATROL Central Web Server**

File Types to Delete	Path for PATROL Central Web Server	
	Unix	Microsoft Windows
Online Help Files	help_services/bex_*.jar km_services/html/default/lib/help/EN_USA/bex_*.jar	help_services\bex_*.jar km_services\html\default\lib\help\EN_USA\bex_*.jar

2. Repeat above steps on every PATROL Central Web Server system where the BEX KM is installed.

## Uninstalling the PAR File from BPPM Portal

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### Note

If you are upgrading the PAR file on BMC Portal, skip the uninstallation procedures outlined below and follow the upgrade steps in “Installing or Upgrading the PAR file on BPPM Portal” on page 2-7.

---

1. Remove all elements using the BEX KM PAR file from the BMC ProactiveNet Performance Management Portal Infrastructure.
2. Log on to the BMC ProactiveNet Performance Management Portal with portal credentials, and select the **Portal** tab.
3. Under **Tasks** in the navigation pane, select **Performance Managers**.
4. Check the check-box next to the BEX KM solution from the list.
5. Click **Delete**.



## Deleting PATROL Agent Configuration Variables

1. Remove all PATROL Agent configuration variables created by the BEX KM. These variables are stored under configuration paths **BEX** and **BEX\_License**. They can be removed using `wpconfig` (on MS Windows) or `xpconfig` (on Unix). Alternatively, you can use the following single line PSL command through the PATROL Console OS> prompt to remove BEX KM configuration variables. The BEX KM should be uninstalled on the PATROL Console before attempting the following PSL command:

```
%PSL foreach var(grep("^/BEX[/_]",pconfig("LIST")))
    { pconfig("DELETE", var); }
```

2. Repeat the above step on every PATROL Agent system where the BEX KM has been loaded.

## Where to Go from Here

The following table summarizes where to look for more information on using PATROL and the BEX KM. The shaded rows indicate tasks that you can accomplish only from a PATROL Developer Console.

<b>If you want information on...</b>	<b>See...</b>
BEX KM parameters	Chapter 4, "Parameter Summary," and the BEX KM help.
BEX KM applications	BEX KM help.
BEX KM menu commands	Chapter 3, "Menu Summary," and the BEX KM help.
BEX KM Info Boxes	Chapter 1, "Introduction," and the BEX KM help.
KMs in general	the PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 1)
KM versioning and customizations	the PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 3).

<b>If you want information on...</b>	<b>See...</b>
the PATROL interface	the PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 1).
managing events	the PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 2) and the PATROL Event Manager Console for Unix User Guide.
the PATROL Script Language (PSL)	the PATROL Script Language Reference Manual.
defining your monitoring environment	the PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 1).
adding computers to PATROL	the PATROL for Unix Getting Started or the PATROL for Windows User Guide (Volume 1).
working with parameters	the PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 2).
working with menu commands	the PATROL for Unix Getting Started or the PATROL for Windows User Guide (Volume 2).
working with tasks	the PATROL for Unix Getting Started or the PATROL for Windows User Guide (Volume 2).
managing monitored objects	the PATROL User Guide or the PATROL for Windows User Guide (Volume 2).
unloading the KM	the PATROL for Unix User Guide or the PATROL for Windows User Guide (Volume 2).

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