



emulators
International

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CockpitMgr for OpenVMS

Managing Mission-Critical VMScclusters

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When you are running an OpenVMS centric environment, you most probably want to manage it using OpenVMS.

CockpitMgr is the OpenVMS based system management environment fit for this task. The product is developed and maintained by Hewlett Packard, who have assigned the task of distribution and maintenance to Emulators International.

This presentation will summarize the most important features and benefits of the product, but does not pretend to be complete, CockpitMgr for OpenVMS offer too many functions for that.

We invite you to contact us when you want to know more.



The Company

- **Hardware Virtualization Software**
 - Alpha
 - VAX
- **OpenVMS System Management**
- **VMS-related utilities**
- **Special products**

- **Worldwide operations**
- **HQ in The Netherlands**

- **Royal Netherlands Navy**
- **Philips Electronics**
- **Nikon**
- **Deutsche Lotto**
- **Deutsche Börse**
- **Deutsche Telecom**
- **DOW Chemical**
- **AKZO Nobel**
- **Cordares SFB**
- **Thomson/Thales**
- **CSOB / eBanka**
- **USA Health & Medical Org.**
- **Hitachi**
- **.....**

Emulators International develops and delivers software solutions to replace aged OpenVMS related computer systems which saves the owners of it a large amount of money, time and effort by not having to migrate their software. Our product portfolio extends to other software products that are related to the hardware our main stream products addresses.

The main line of our business is Hardware Virtualization Software that allows the users of VAX and Alpha equipment to replace their legacy systems by more current, industry standard computer systems, without changing the software that runs on these legacy systems.

Alpha and VAX Hardware Virtualization (a.k.a. Emulation) is a solution that has been implemented by many customers worldwide, saving them from large investments and migration effort by simply replacing the existing VAX/Alpha by our solution. Our product creates the environment of the old computer system inside the new host computer, such that the old software recognizes the new system as the old one and can continue running without changes. Replacing the old hardware is now a matter of days instead of months/years.

Another important part of our activities is around delivering a solution for OpenVMS system management. CockpitMgr for OpenVMS helps OpenVMS owners to improve the availability and overall performance of their VMS installed base protecting them from (often huge) losses due to system failures.

Emulators International operates worldwide and has its headquarters in The Netherlands. We serve (often large) OpenVMS based companies to improve their IT-performance.



CockpitMgr: managing the entire VMS environment

- Systems
- Consoles
- Storage
- Network
- Performance
- Security
- Applications
- Print & batch queues

CockpitMgr is the system management solution for OpenVMS, running on OpenVMS. The product holds 15 years of experience of the product developers and the customers that use the product. It is by far the most complete system management toolset for OpenVMS environments.

CockpitMgr manages not only the OpenVMS based computers, but also all attached network and storage equipment, applications or processes that run on these systems. It includes an excellent Console Manager allowing you to access all the systems that are under control of CockpitMgr.

It monitors system performance and security, allowing you to manage developing issues before they become a problem.

CockpitMgr for OpenVMS provides Console Management, it monitors and manages systems, storage and network components in your OpenVMS based environment and keeps an eye on specific areas of interest like security or performance.

The goal is to keep your OpenVMS environment up and running at all times, by monitoring everything that can threaten this goal allowing you to respond in a timely matter, before small things get worse.



CockpitMgr for OpenVMS

- The cockpit is a dedicated VMS system that:
 - Monitors the entire VMS production environment.
 - Centralizes all events, and takes care of notification.
 - Is the platform on which many system management tasks are performed.
 - Manages Alpha / Integrity / VAX, on Alpha / Integrity
- Cockpit goals:
 - Increase system performance and availability
 - Pro-active management: 'Beat the phone call !'
 - Improve system management results, reduce costs

CockpitMgr for OpenVMS runs on Alpha and Integrity system, but can manage Alpha, Integrity and VAX systems. It allows you to manage your whole environment from wherever you are, as long as you have access to the CockpitMgr system.

The purpose is to know what is going on and act before your managed environment is affected by it.



CockpitMgr Event Notification System (ENS)

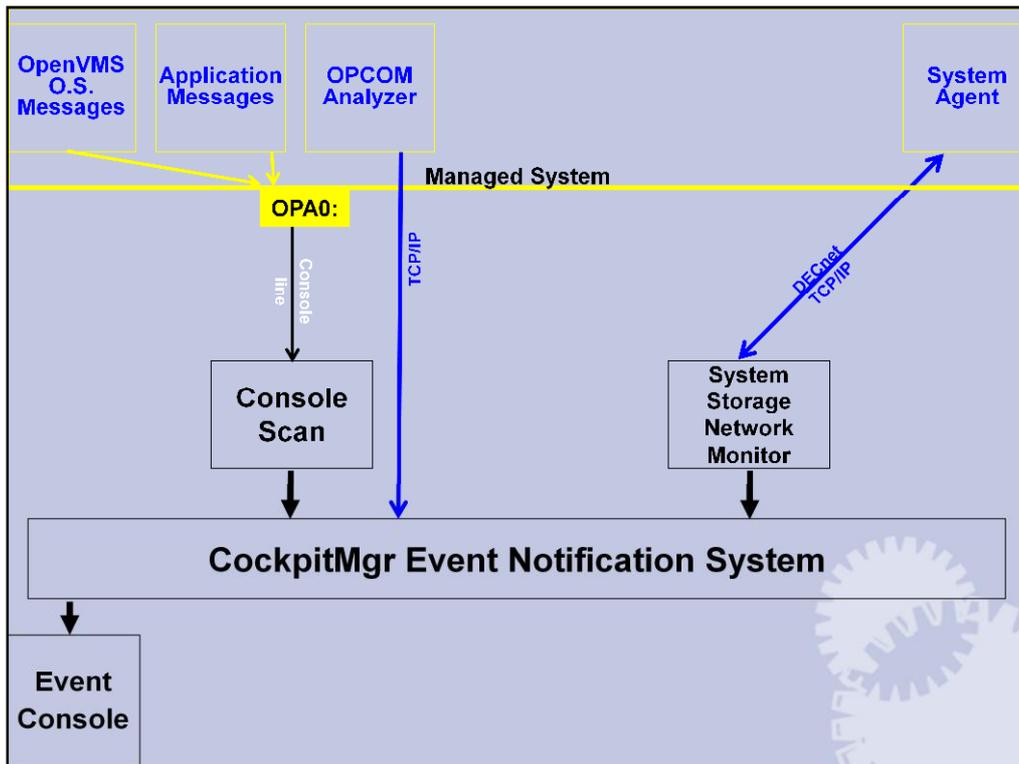
- The cockpit kernel: monitoring modules feed event messages into the ENS.
- ENS processes the event messages: correlation, translation, notification, forwarding...
- Rule based, easy to customize.
- Easy to integrate new monitoring modules:
 - DCL command to feed-in messages
 - API
- Integration modules for other products available

The core of CockpitMgr is the Event Notification Systems (ENS). All events from the managed environment are collected by ENS, logged, analyzed, correlated with other events and reported to the system manager(s).

All CockpitMgr modules feed events into ENS. All data in ENS can be accessed by a simple, rule based mechanism. The initial set of rules can be easily maintained and expanded by the system managers, creating exactly the management environment they need.

At installation the system environment is analyzed and a customized management advice is generated. This can be adapted by the system managers to their needs and enhanced later on.

Existing system management procedures can be integrated in ENS.



During the presentation we will build up a diagram that shows you which functions are integrated in CockpitMgr for OpenVMS. Some of these capabilities will be explained in more detail in separate slides.

The Event notification system is the heart of the OpenVMS management environment. It collects data from all available resources.

The first one is naturally the OpenVMS console (OPA0). Ideally all consoles of the systems in the managed environment are linked to CockpitMgr. This allows you to manage all systems from one position. No matter where you are; when you have access tot the CockpitMgr system, you have access to all systems.

It is also possible to let your applications feed messages into ENS for logging and follow up. OPCOM messages are analyzed and reported to system management in an effective way. Remote systems can be equipped with agents that report their findings on a regular basis.

All events are logged, analyzed, correlated with related events (problem / solution), if necessary enhanced with additional data and reported to system management.

The default reporting method is via the (motif-based) CockpitMgr console that provides information about the event. Time, system, event description, severity indication, problem owner and a solution when applied. The CockpitMgr console is a powerful management tool that gives you complete control over your installed base.

Multiple System Managers can use the CockpitMgr console, if needed customized to their specific task or responsibility (e.g. Security manager, Storage Manager, etc.)

Certain CockpitMgr versions include a Graphical Status Display, giving you blink-of-an-eye insight in your system status and allows you to dig down to the detailed problem.

Additional reporting and event handling options are also available, these will be addressed later on in the presentation.



System monitoring

- Processes
- Batch jobs
- Disk space
- Hardware errors
- Queue status
- Shadow sets
- Cluster support
- Redundancy status
- Time dependencies
- Scan profiles for easy customization

An important part of the management task is keeping track of what is happening on the systems under your control. CockpitMgr monitors process, procedures, applications, but also equipment related issues.

Storage devices or capacity are monitored and findings are reported when they exceed predefined thresholds. Hardware errors are detected, no matter how minor they are and reported so system management can take action to prevent that these minor issues escalate into problems.

CockpitMgr can monitor system specific, cluster wide or a mixture of this. Monitoring and reporting can also be time related, allowing you to monitor hardware or software during certain periods of the day, week or month.

All or parts of the installed base can be checked for events, it is up to system management to determine which events and from which resources they want to be notified of.

All monitoring is defined by easy to adapt scan profiles, that allows you to customize system management to your exact needs.

Every CockpitMgr installation is very different from the others, but it is always based on the same means and methods.



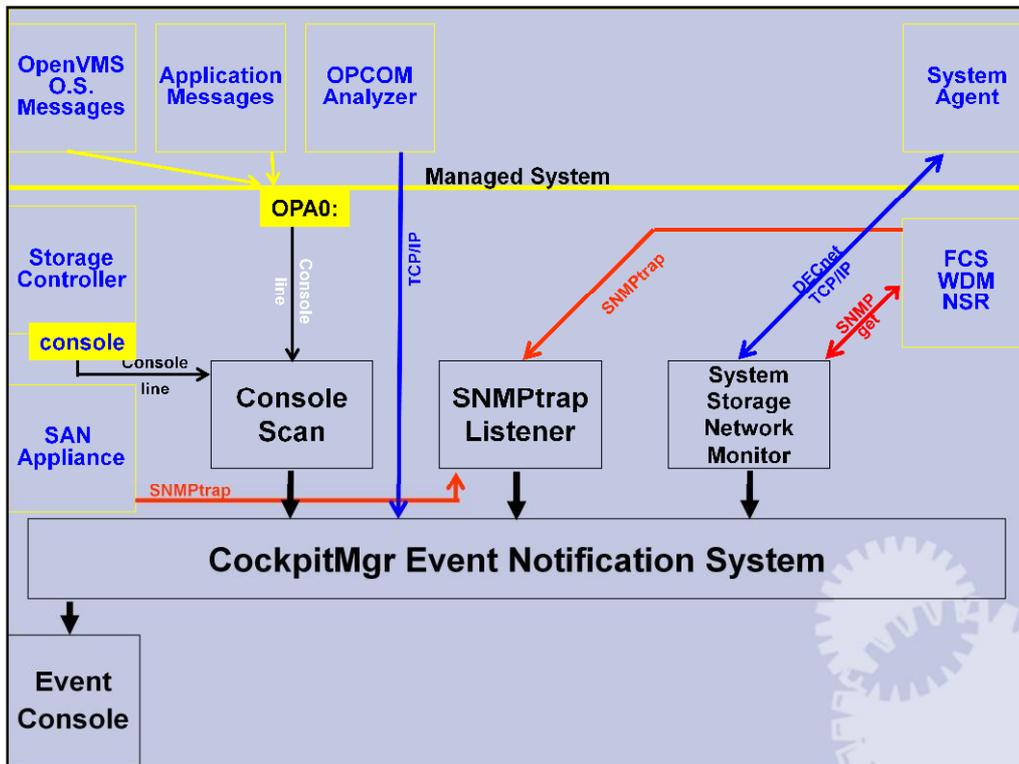
Console Manager

- Centralizes access to all nodes (local and remote)
- All OpenVMS upgrades and installations via Cockpit
- Collecting all console messages for processing
- OpCom catching
- Immediate notification regardless system location
- Centralized message logging
- Message analysis and reporting
- Secure console connections via SSH

The Console Manager is an important tool for the system manager and CockpitMgr includes an excellent Console Manager allowing you to manage all systems that are under your control.

It centralizes reporting and access to all your systems or components to the CockpitMgr system. When you have access to the Cockpit, you have access to all of your systems, no matter where you are. Supporting secure connections you could even manage your OpenVMS environment from home . . .

It is however only one of the functions of CockpitMgr for OpenVMS, which capabilities are much broader than Console Management alone.



In addition to the basic set of reporting lines all types of storage devices report into the CockpitMgr Event Notification System, including Storage Controllers, SAN's, Fibre Channel Switches, Wave Division Multiplexers, and Networked Storage Routers.

Various communication channels can be used: console lines, DECnet, TCP/IP, SNMP traps and gets.

CockpitMgr already supports a wide range of storage devices, however yet unsupported products may be included in the product with some effort. Often these products use standard reporting methods and the integration effort is only minor.

This is one of the reasons why a customer environment always needs to be examined before starting to implement the product.



Storage monitoring

- Disk space and status
- Reporting thresholds
- Auto clean-up
- Shadow sets
- StorageWorks
- Fibre Channel switches
- All HS controller series
- HP EVA series
- SAN switches (Brocade, McData, Cisco)
- Solid state disks. Wave Division Multiplexers
- Storage Routers, Tape Libraries

This summary should speak for itself, most if the equipment that one encounters in a VMS environment is included. However, it is always possible that you utilize storage equipment which is not mentioned specifically in this list,

We advise you to contact us to hear whether it is supported after all, or that support can be added to the product.

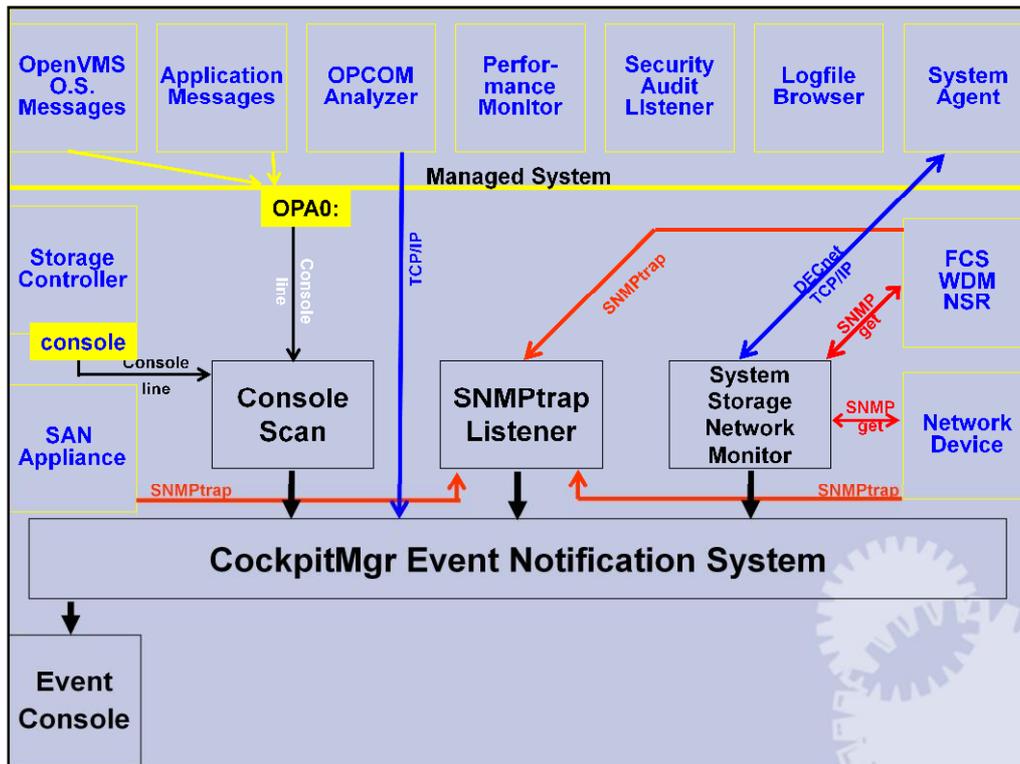


Network monitoring

- Network node management via:
 - SNMP
 - TCP/IP
 - DECnet
- Availability
- Port states
- Routers and switches
- DEC VNswitch
- GigaSwitch
- DEChub
- Cisco Catalyst
- ...

All network components that are included in the OpenVMS environment can be managed by CockpitMgr, when this equipment can provide status information. Otherwise it should be possible to monitor the availability of these components.

As with storage we recommend that you contact us when you use equipment that is not mentioned in this brief list.



In addition to the previous functions CockpitMgr can also monitor systems for performance related events. Looping processes is an obvious one, but also it can be very effective when it is detected that a certain system frequently exceed certain thresholds. This can indicate a problem, or the need to change or expand the system.

The performance monitor is meant to monitor system status and is not a performance reporting tool that usually provides hindsight in system performance. It has some graphical reporting capabilities but it is not meant to be a comprehensive performance report generator.

The Security Audit listener reports security breaches or attempts to compromise security. This allows measures against possible intruders or violators when they appear.

The Log file Browser is a powerful tool that allows you to scan (any available) log file for custom defined character strings and report findings on the CockpitMgr console. It is a very powerful addition to the standard CockpitMgr reporting mechanism.



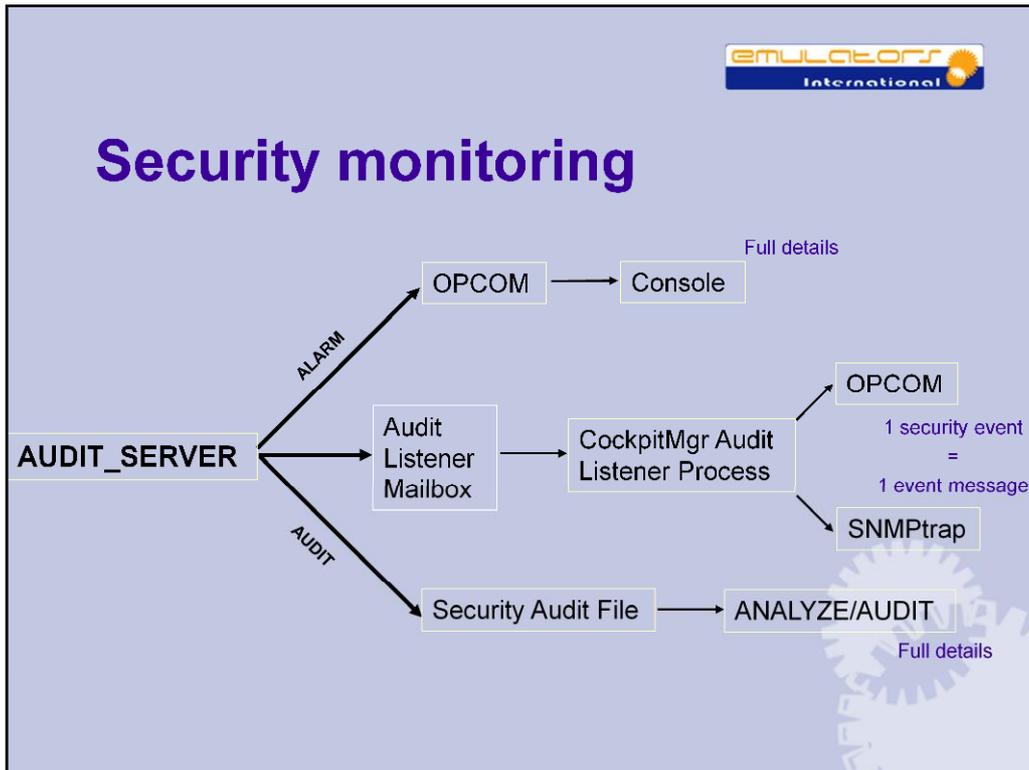
Performance Monitor

- The Performance Monitor looks for possible causes of system performance slowdowns.
 - CPU utilization (also per node)
 - Memory utilization
 - Page and swap file utilization
 - Big CPU eaters
 - Idle processes
 - Looping processes
 - Pool utilization
 - Processes in special wait state

Here is a brief list of the capabilities of the Performance Monitor.

Basic graphing capabilities based on stored measurements is available.

The main goal is to keep track of what happens in or with your systems, allowing you to detect overload problems or runaway processes that threaten the functioning of the managed environment.



The OpenVMS audit server normally reports security issues via OPCOM messages or to the security audit file. This last capability only provides information after the event (sometime very late after).

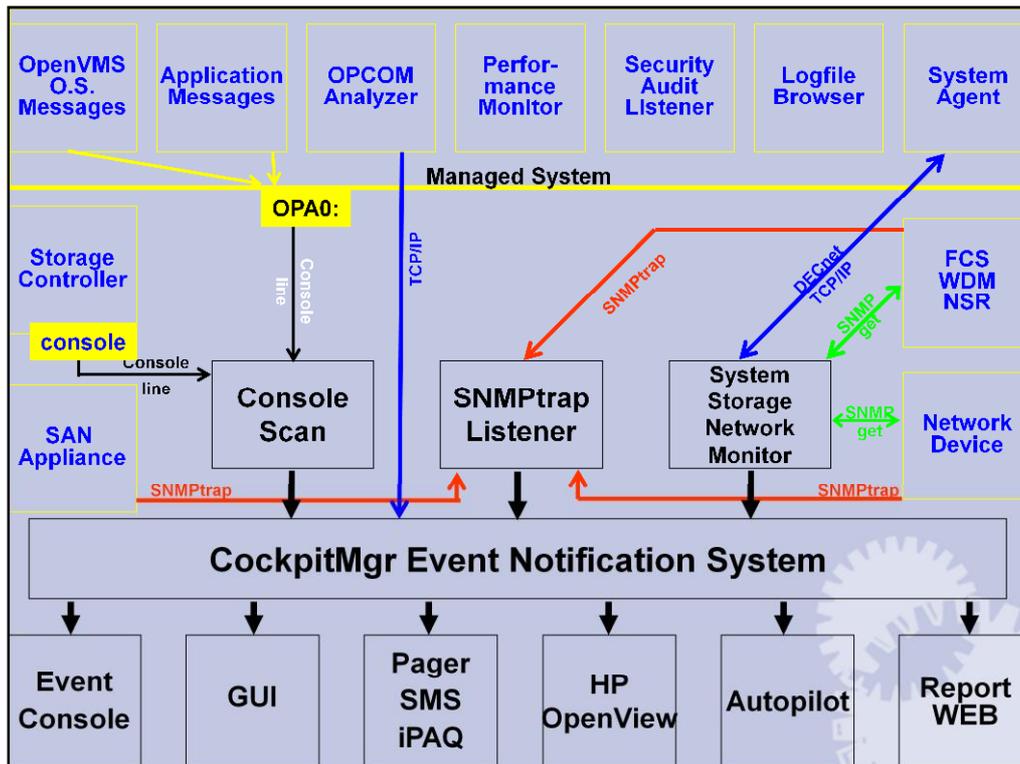
It is however possible to route security messages via the Audit Listener Mailbox to the CockpitMgr console, providing instant reporting of certain security issues.



Logging and browsing

- Scan log for:
 - Error messages
 - Error codes
 - Character strings
- Continuous process
- Reporting via Event Notification System

Any piece of information you are looking for in log messages can be retrieved with this function and reported to the console. It is a continuous process that requires no additional effort from system management. As soon as a message that deserves your attention is logged, you are notified.



The managed systems (yellow) report events to the CockpitMgr Event Notification System, that uses different channels to collect that data.

Standard reporting is via the CockpitMgr console or with the help of the Graphical Status Display that gives you instant insight in the managed installation. Very useful with larger environments, that hold many systems and other components.

However, CockpitMgr for OpenVMS provides several other reporting facilities (depending on the product version you choose).

Instant alarming via SMS messages or pagers is a possibility, addressing certain people or groups for follow up. It is also possible to inquire the ENS with the help of an iPAQ, useful for the mobile system managers, who needs to be informed at all times.

Event reporting with the help of a web-interface is also possible, reporting only, no management capabilities.



Automated response

- Instant first aid
- Preprogrammed problem handling
- Fast handling routine tasks
- Lights out computing
- Remote management
- Teach as you go

And last but certainly not unimportant, the auto-pilot. The auto-pilot can perform predefined instructions when certain events happen. This allows you to prepare a response to these events, from applying first aid to important problems up to automating standard tasks. Problems can be solved when you are not instantly available or you can free up your agenda by assigning repetitive tasks to the auto-pilot.

This function can be fully customized by you and you can add functionality when you discover the need for it.



CockpitMgr for OpenVMS

- A product and service offering that helps you to enhance the performance and availability levels of your systems by creating an optimal management environment.
- Provides VMS system managers a fully integrated, VMS-based event management tool.
- History of 15 years.
- Entirely developed on customer needs.
- Bundles the experience of many VMS system managers into one product.

System Management for OpenVMS, on OpenVMS. New functions are added continuously, based on customer input.

It comprises the knowledge of many OpenVMS system managers all over the world:

Developed by OpenVMS System Managers for OpenVMS System Managers



CockpitMgr versions

- Minicenter
 - Includes 10 console connections
 - Monitors up to 10 OpenVMS systems
 - Monitors network and storage devices
- Datacenter
 - Includes 25 console connections
 - Monitors up to 25 OpenVMS systems
 - Monitors network and storage devices
 - Provides additionally paging functionality and GUI
- Maxicenter
 - Unlimited monitoring capabilities
 - Provides additionally standby cockpit functionality
 - Provides additionally iPAQ interface and PC event console.

The product is available in three different versions, providing a solution for smaller but still mission critical installations up to large environments, managing multiple sites.

Functionality grows with each product version, related to the requirements of such an installation.

Our smallest installation manages 4 systems, our largest around 1.000

The product is available as licensed software for perpetual use (no annual license fee, no complex pricing that is based on systems and functions). Three versions only.

We do provide an annual software upgrade and support service allowing you to run the newest versions of CockpitMgr and giving you access to our support resources with questions and/or problems.



For more information:

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When this information brief has sparked your interest in the product, we invite you to contact us.