Software Product Description

PRODUCT NAME: HP Integrity Essentials Global Workload Manager Agent V4.1
SPD 82.39.01

DESCRIPTION

HP Integrity Essentials Global Workload Manager (gWLM) for OpenVMS is a multi-system, multi-OS workload manager with an intelligent policy engine. It is an integral component of the HP Virtual Server Environment (VSE). It integrates with resource management (whole processor and sub-CPU allocation mechanisms within a single operating system) and partitioning (nPartitions and HP Integrity Virtual Machines) techniques to dynamically reallocate resources to applications based on application performance or business policy. This improves server utilization while maintaining and monitoring service levels across many servers.

gWLM enables customers to set policies that automatically optimize usage of CPUs within a multi-CPU system, or a group of OpenVMS Integrity systems. This results in:

- Better use of existing server capacity.

- Automatic CPU resource allocation to satisfy Service Level Agreements of multiple Business Units, based on Information Systems management defined policies.

Improving and optimizing CPU usage typically results in:

- A lower cost solution than purchasing additional CPUs to satisfy increasing work load demands.

- As workloads grow, gWLM restricts the escalation of hardware maintenance, service, operating system, floor space, electricity and air conditioning costs.

- Reduced 3rd Party software costs as CPU count is kept to a minimum.

OpenVMS Global Workload Manager has been designed for data center environments where a central IT organization is acting as a service provider to internal customers or a Service Provider is allocating compute resources to multiple, independent organizations bound by stringent SLAs.

gWLM will allow standard resource allocation policies or policies specific to individual customer requirements to be quickly and easily deployed across a consolidated, virtualized data center.

Please note that gWLM does not move workloads across nodes to a system that is underutilized. It allocates CPUs to where the demand is within each specific system.

gWLM makes use of the iCAP software to manage CPU resources across nPartitions within an HP cell-based system. gWLM controls CPU resource allocation to nPartitions by using the iCAP software to satisfy usage right restrictions and/or to use Temporary Instant Capacity (TiCAP). The CPU resources are activated or deactivated in nPartitions based on priority and need.

OpenVMS gWLM Concepts

Compartment   An nPartition, a virtual machine provided by HP Integrity Virtual Machines (HPVM), a Processor Set, or a Fair Share Scheduler (FSS) group (a.k.a Class Scheduler group) with its resource allocation being managed by gWLM.

Workload   The collection of processes executing within a single compartment.

Shared Resource Domain	A collection of Compartments among which CPUs can be shared.
Policy	Tells gWLM when to reallocate CPUs and how much to give each workload.

The Administrator applies a specific policy to each workload and gWLM monitors each workload, estimates CPU demand and reallocates CPUs accordingly. After configuration, the managed nodes operate autonomously with performance data stored on each node, that is sent to CMS periodically. Real-time reporting from any node may also be specified.

HP gWLM Central Management Server

To use gWLM with an OpenVMS managed node, the gWLM agent has to be installed and running on the managed node. Each gWLM Agent instance is managed from the gWLM Central Management Server (CMS), which is part of the HP ID-VSE (Insight Dynamics Virtual Server Environment) suite of products. ID-VSE integrates with HP Systems Insight Manager (SIM). HP SIM is free of charge. HP ID-VSE is a licensed product. OpenVMS managed nodes running the gWLM agent are supported for management with HP SIM 6.0 and ID-VSE 6.0 hosted on a Windows Central Management Server (CMS).

For details on the Windows CMS configuration, see the HP Insight Software 6.0 Support Matrix at:

http://bizsupport2.austin.hp.com/bc/docs/support /SupportManual/c02048580/c02048580.pdf

HP SIM and HP ID-VSE are part of HP Insight Software 6.0 DVD Media, which can be obtained from:

https://h20293.www2.hp.com/portal /swdepot/try.do?productNumber=ISDVD

CMS provides a Web accessible Graphical User Interface (GUI) for managing, monitoring and configuring, from which the system manager or administrator manages gWLM Agents running on multiple OpenVMS Integrity systems across the network. The CMS also provides multiple reporting and graphical displays of CPU usage on any selected system or systems as required.

User Roles and Authorizations

HP SIM allows defining user roles with different toolbox authorizations. Users can be authorized in HP SIM to run the ID-VSE for Integrity tools. Following are the toolboxes associated with gWLM.

VSE All Tools

This toolbox can be authorized on managed systems to allow users to view and manage those systems using gWLM.

VSE Monitor

ID-VSE for Integrity users should have this authorization on the CMS and All Managed Systems.
This toolbox allows a view-only use of gWLM on managed systems.

For more information on ID-VSE user roles and authorizations, see the *HP Insight Dynamics VSE 6.0: Integrity CMS Installation and Configuration Guide* at:

http://h20000.www2.hp.com/bc/docs/support /SupportManual/c02046075/c02046075.pdf

Discovery

gWLM will discover entities that are capable of being a resource domain by discovering the entity type, hostname, IP address and whether the gWLM Agent is installed. If gWLM discovers a system with the gWLM Agent installed and running, it will fully discover the system including all containers in the resource domain, flexing capabilities.

Resource Management

gWLM monitors CPU resource consumption so it can adjust an application's CPU allocation when necessary to meet certain performance criteria. It does this on a continual basis and feeds that information to the gWLM arbitration module that will automatically adjust the CPU resources allocated to the container that hosts the application.
The CPU resources are adjusted based on the resource allocation policy. This policy may be either a performance goal for an application, or a resource utilization policy indicating how much of a resource is needed. A priority is also associated with the policy to arbitrate resources among multiple applications.

OpenVMS gWLM Capabilities:

- Manage OpenVMS Integrity server instances and load balancing, Processor Sets, and Class Scheduler groups on OpenVMS.

- Discovery of resource partitions.

- CPU resources can be guaranteed.

Policies

- Central policy management.
- Dynamic, policy-based CPU allocation.
- Own/borrow policy workloads share resources but are guaranteed to get what they own when they need it.
- Fixed entitlement policy.
- Single policy can be applied to multiple resource partitions.
- Custom policy available for flexible goalbased resource management

Management

- Role-based
- Read-only access for viewing reports
- Advisory mode enables gWLM administrators to experiment with different policies without actually modifying any priorities and gWLM will report back what would have happened

Reporting

- Central monitoring and reporting
- Real-time Reporting
- Historical reports
- Resource Audit reports prove to customers that they got what they paid for and received the resources when needed
- Top Borrowers and Top Lenders reports
- Identify resource hogs
- Right-size a workloads entitlement
- Troubleshoot a poorly performing workload
- Real-time and historical utilization, demand and resource allocation
- Ability to show when workloads received more resources than the guaranteed minimum

Miscellaneous

- Standard PCSI installation
- Uninstall capability included
- On-line Help

HARDWARE REQUIREMENTS

Systems Supported

The OpenVMS gWLM agent is supported on cell-based and non-cell-based HP Integrity Systems that are supported by OpenVMS.
On cell-based Integrity systems, the Processor Set, FSS group, nPar, iCAP and TiCAP features are available.

On non-cell-based Integrity systems, the Processor Set and FSS group features are available.

Disk Space Requirements

Disk space required for gWLM Agent V4.1 installation on HP Integrity servers:
Kit size: ~100MB compressed; Installation size ~160MB

SOFTWARE REQUIREMENTS

OpenVMS Integrity Operating System V8.3-1H1 and V8.4.

The WBEM Services (WBEMCIM) must be configured and running on all gWLM managed nodes.

On cell-based systems, the latest iCAP patches must be installed.

GROWTH CONSIDERATIONS

The minimum hardware/software requirements for any future version of this product may be different from the requirements for the current version.

DISTRIBUTION MEDIA

This product is available with the HP OpenVMS Layered Products Library for Integrity distribution.

Starting with OpenVMS 8.4, gWLM is also licensed as a component of High Availability Operating Environment (HA-OE).

The online documentation for this product is available with the software kit and on the OpenVMS Integrity and Alpha Online Documentation CD-ROM distributions.
Software Media:
Base Operating Environment Media (BOE), BA322AA
or
High Availability Operating Environment (HA-OE) Media, BA324AA

ORDERING INFORMATION

For additional information on available licenses, services and media, refer to the appropriate price book.

OpenVMS Integrity:

gWLM Integrity is licensed Per Processor core on each CPU installed.
Software License:

BA447BC#201 HP gWLM VMS I64 PCL LTU

Loaner Licenses

30-day loan BA447 L3 HP gWLM VMS I64 LTU 30-day

60-day loan BA447 L6 HP gWLM VMS I64 LTU 60-day

180-day loan BA447 LS HP gWLM VMS I64 LTU 180-day

Note: Contact your HP sales representative for the loan licenses.

Note: For license details of prior versions, see the *HP Integrity Essentials Global Workload Manager V1.1 Software Product Description 82.39.00 for OpenVMS.*

Software Alpha to Integrity Trade-in Licenses:

OpenVMS gWLM qualifies for the standard Alpha to Integrity trade-in policy as customers move to the Open-VMS Integrity platform.
For customers on support there is a 100% credit and the relevant part number is BA447BCN#201.

Note: If a customer moves from a gWLM OpenVMS Alpha system with a maximum CPU count less than the target gWLM Integrity system, this credit is only valid on the number of CPUs supported on the original Alpha system.
E.g. Original AlphaServer ES47 (4 CPUs max.) gWLM license traded for an rx7620 Integrity system (8 CPUs max.). The gWLM license traded will only license four CPUs within the rx7620. Additional gWLM Integrity Per Processor Licenses must be purchased for all CPUs in excess of four installed in the rx7620.

SOFTWARE LICENSING

This software is furnished under the licensing provisions of HP Computer Limited Standard Terms and Conditions.
For more information about HP's licensing terms and policies, contact your local HP office or Partner.

License Management Facility Support

This layered product supports the OpenVMS License Management Facility.
Software Product Services:

A variety of service options are available from HP. For more information contact your local HP account representative or distributor.

Information is also available on:

http://h20219.www2.hp.com/services/us/en/business-it-services.html

SOFTWARE WARRANTY

This software is provided by HP, with a warranty in accordance with the HP OpenVMS operating system warranty that it is installed upon.