

INFORMATION TECHNOLOGY

Application Operation Management

Service Description

Version: 2.0

Date: 28/10/2008

Table of Contents

1.	Introduction	3
1.1.	Executive Summary	3
2.	Service Offerings.....	5
2.1.	Service Package Overview	5
2.2.	Service Packages	6
2.3.	Market and Customer Segments	6
2.4.	Service Delivery Parameters	6
2.5.	Charging Principles and Material Numbers	7
3.	Base Service	8
3.1.	Application Event Handling	8
3.2.	Incident Management	8
3.3.	Operational maintenance.....	9
3.4.	Application Configuration and Change Management (including CAB).....	9
3.5.	AOM Service Runtime Management	10
3.6.	Security Management.....	11
3.7.	Batch Administration	11
3.8.	Basic Application Database Administration	12
3.9.	Common Operational Standards	12
4.	Service Runtime Options	13
4.1.	AOM Technical Support Hours extension	13
4.2.	Proactive Application Database Administration	13
4.3.	Standard Service Reporting.....	13
4.4.	Follow-up and Control	14
4.5.	Problem management.....	14
4.6.	Capacity Reporting.....	14
4.7.	Capacity Planning	15
4.8.	Operation Evaluation Review and Advanced Reporting	15
4.9.	Additional Scheduling Tools.....	16
5.	Additional Services (one-time)	17
5.1.	Architecture Design.....	17
5.2.	Architecture Review.....	17
5.3.	Production Handover Review	17
5.4.	Application Deployment	18
5.5.	Knowledge Transfer from Project to Runtime	18
5.6.	Initial Setup - Business KPI	18
5.7.	Setup and Initial Verification of Backup and Restore.....	19
5.8.	Application Health Control & Tuning Report.....	19
5.9.	Participate in Customer Reviews and Audits.....	19
5.10.	Extra Support for a Specific Period.....	19
5.11.	Creation of Application Continuity Plan.....	19
5.12.	Database Administration – Project support.....	20
6.	Measurements and Reporting	21

1. Introduction

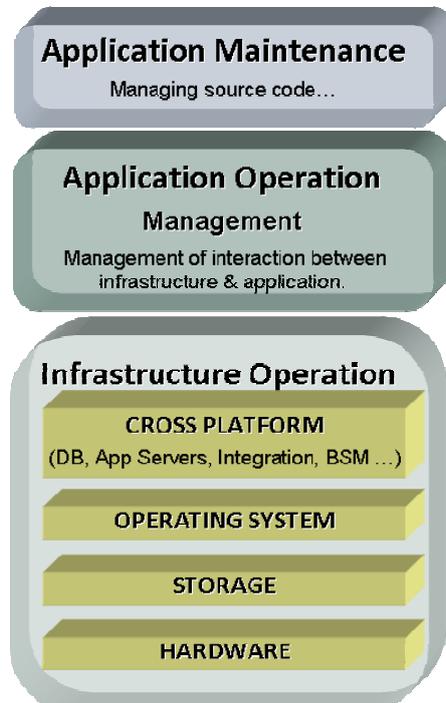
This document describes the Application Operation Management (AOM) service as provided by Volvo Information Technology. Target groups for this document are Customers, Volvo IT Account Managers, Account Executives, and Global Account Managers.

1.1. Executive Summary

The Application Operation Management service works in conjunction with the Infrastructure Operation services to provide a robust runtime environment and handling for a business solution running on any of the five supported processing platforms. In addition, the separate Maintenance & Support service provides the means for managing any functional or source code-related issues.

1.1.1. General Description of Service

While the Infrastructure Operation service provides the hardware, facilities, and manpower to operate all necessary components, the Application Operation Management service covers the manpower and intelligence to understand the runtime architecture requirements of the application, and to manage the application in this environment. These tasks can range from helping to define the runtime requirements in an early stage, to acting on alerts and events when the application works in the environment. Application Operation Management is the "glue" that holds the operation of IT components together, by understanding the business requirements of the application.



Picture 1.1: Application Runtime Stack.

1.1.2. Packaging

Application Operation Management (AOM) is provided in three different service packages, with additional service options:

- Basic - For applications with moderate requirements for which failure does not stop the business.
- Premium - For business important applications that require proactive attention.
- Premium + - For business critical applications that need constant attention.

Charging depends on how Volvo IT best can build competence in the AOM team that supports the Customer application portfolio. All applications are different, and Volvo IT acknowledges that by creating a custom-built team that handles the customer's portfolio. For this reason, there is no preset charge per application. Volvo IT will provide a quote based on the specific service levels, and on the basis of supporting metrics about the applications. These metrics capture the size and complexity of the application, and thus helps Volvo IT to define the dimension and competence requirements for the AOM team.

Some additional services that are not constantly used are provided as one-time services. These are not included in the runtime charge, but are rather charged on a per-use basis.

2. Service Offerings

2.1. Service Package Overview

The table below outlines the service components included in the delivery of each package.

Service components	Basic	Premium	Premium+
Service Delivery Parameters			
AOM Technical Support Hours (Incident Management)	9*5	9*5	24*7
Supervision Hours	9*5	9*5	24*7
Response Time (Production environment only)	70% < 4h	80% < 2h	95% < 1h
Base Service			
Application Event Handling	●	●	●
Incident Management	●	●	●
Operational maintenance	●	●	●
Application Configuration and Change Management, including CAB	●	●	●
AOM Service Runtime Management	●	●	●
Security Management	●	●	●
Batch Administration	●	●	●
Basic Application Database Administration	●	●	●
Common Operational Standards	●	●	●
Service Runtime Options			
AOM Technical Support Hours extension	-	○	-
Proactive Application Database Administration	-	●	●
Standard Service Reporting	-	●	●
Follow-up and Controls	-	●	●
Problem Management	○	●	●
Capacity Reporting	-	●	●
Capacity Planning	-	○	●
Operation Evaluation Review and Advanced Reporting	-	○	●
Additional Scheduling Tools	○	○	○
Additional Services (One-time)			
Architecture Design	○	○	○
Architecture Review	○	○	○
Production Handover Review	○	○	○
Application Deployment	○	○	○
Knowledge Transfer for Runtime Operation	○	○	○
Initial Setup – Business KPIs	○	○	○
Setup and Verification of Backup and Restore	○	○	○
Application Health Control & Tuning Report	○	○	○
Participate in Customer Reviews and Audits	○	○	○
Extra Support for a Specific Period	○	○	○
Creation of Application Continuity Plan	-	○	○
Database Administration – Project Support	○	○	○

● = Included ○ = Optional - = Not Available

Table 2.1: Service Package Overview table.

2.2. Service Packages

2.2.1. Basic

The Basic Service is packaged to meet the requirements of non critical business applications with modest needs. As the packaging is optimised for low cost, only a few additional options are available.

2.2.2. Premium

The Premium Service is the "volume" packaging that can be seen as the standard choice for business important applications with normal needs including proactive measures.

2.2.3. Premium +

The Premium+ Service is packaged to meet the needs of a business critical application that needs constant attention.

2.3. Market and Customer Segments

The AOM service covered by this Service Description is available for Volvo Group and non-Volvo customers worldwide.

2.4. Service Delivery Parameters

2.4.1. AOM Technical Support Hours

The AOM technical support hours refer to the time when the team specialised in supporting the application in the runtime environment is available.

Limitations:

- Incident resolution that requires a source code change in the business application is not included (covered by Application Maintenance Services).
- Technical support for Infrastructure Operations for the processing platform (as outlined in the stack above) is described in a separate service description.

2.4.2. Supervision Hours

Supervision Hours refer to the part of the day when the service is monitored by the operators. Operators perform basic incident resolution, and when this does not resolve the issue, they escalate the incident to the appropriate technical support team.

Supervision Hours are detailed in the Agreement.

2.4.3. Response Time

This is the time period between when an incident is identified by the supervision and the AOM technical support starts working on its resolution.

2.5. Charging Principles and Material Numbers

This chapter describes the standard approach to charging for the Application Operation Management service.

Base service cost for a Business Solution is calculated on the basis of the Application Runtime Points (ARP) and a Service Level adjustment according to the following formula:

$$\text{ARP Score} = (\text{Complexity} + \text{Stability}) \times \text{Volume} \times \text{Service Level Adjustment}$$

The assessment evaluates the technical structure (complexity, stability, and volume) associated to the chosen service level and identifies its level of criticality.

2.5.1. Application Runtime Points

This assessment is performed according to the following rating model:

- **Complexity** is rated from 1 to 10 based on the number of technologies and servers involved in the solution.
- **Stability** is rated from 1 to 5 based on the number of incidents and changes requested on this Business Solution.
- **Volume** is rated from 1 to 10 based on technical information, such as number of jobs executed, transactions per day, hits per day, or connected clients.

An ARP Guideline with help for assigning points for an application is available on request.

2.5.2. Application Runtime Points Service Level Adjustment

The final ARP Score is calculated according to following model on the basis of the chosen Service Level:

- **Basic** ARP Score = ARP Score x 100%
- **Premium** ARP Score = ARP Score x 150%
- **Premium+** ARP Score = ARP Score x 200%

Note: A Business Solution with a final ARP score above 60 ARPs cannot be delivered at the Basic Service Level.

3. Base Service

3.1. Application Event Handling

An application has multiple dependencies on runtime components, for example, processing platforms (Mainframe, Unix, Windows, iSeries, or VMS), databases, middleware, and storage. The AOM service monitors the Application and its related runtime components. An application event can be defined as a detected situation that requires operator action.

Application Event Handling is performed during Supervision Hours.

Activities included in Application Event Handling are:

- Manage definition, change, or removal of the monitors.
- Define tasks that are to be taken at given Application Monitoring thresholds.
- Check for monitoring thresholds in runtime environment.
- React to Application thresholds when they are reached, and perform required tasks for the specific situation.
- Dispatch threshold events to other parties when required according to pre-defined procedures.

Limitations: Monitoring related to infrastructure components takes place in the Processing Operation Service.

Deliverables

- | |
|--|
| <ul style="list-style-type: none">• Monitored definition and thresholds• Predefined tasks for thresholds• Escalated events to appropriate support team |
|--|

3.2. Incident Management

In case of a failure in the operation of an application, incident management is responsible for resolving these failures in a fast and pre-arranged manner to minimise downtime. Application Operation Incident Management is integrated with the Processing Operation Service Incident Management (if provided by Volvo IT).

The AOM team for the application (portfolio) resolves incidents for the Application runtime environment. The team has worked out escalation routes, to specify persons to contact in case of failure.

If an Incident is considered as major, the Major Incident Routine is used. It mainly consists of launching the following:

- a major incident team to strengthen the incident resolution,
- a communication cell to manage communication towards customer representatives on incident resolution status.

Limitations: Functional or Source code related incidents handling are not included. (They are part of the Maintenance & Support service).

Deliverables

- Incidents escalation to other Support Teams
- Application Incident Escalation Chart (which team to contact for which type of incident)
- Major Incident Reports
- Incident Work description
- Emergency or unplanned changes in the production environment to resolve incidents

3.3. Operational maintenance

Day-to-day activities

The AOM team for an application (portfolio) performs the following activities:

- Application start or stop
- Run job/scripts
- Handle output and printer scheduling
- Secure control and distribution of electronic and physical output and media

Documentation

The information needed for the operation of the application is documented. The documentation is produced in cooperation with application maintenance teams.

Activities included in documentation are maintenance of existing documentation, updating documentation after changes and maintenance of existing reviews and related documents.

Limitations: Functional or Source-code related problem management is not included. (They are part of Maintenance & Support service).

Deliverables

- Job/Print schedule
- Application Management Scripts
- Single infrastructure point of contact to or from the Maintenance service for business Application
- Application Operation Guide

3.4. Application Configuration and Change Management (including CAB)

When operating a typical application, which normally has multiple hardware and software components, it is essential that this configuration is thoroughly and accurately documented. In order to safeguard this environment, only approved changes may be performed. Before a change can be made, the potential consequences are carefully studied, and when possible, tested. An executed change is immediately documented in the Configuration description, to

make sure it always reflects the current state of the application.

The AOM team coordinates infrastructure related changes in order to maintain a stable production environment for the application. The team ensures and verifies that infrastructure product or components changes or service changes do not disturb the runtime environment for the Application. When an application drives a change implementation request, the underlying configuration may need to be changed as a result. The AOM team deals with changes going both ways, from Application to Infrastructure and back.

The AOM team ensures that the technical runtime configuration of the production environment for the Application is documented and maintained in the Configuration description. If there is an Application CAB meeting, a member of the AOM team participates in this meeting together with other stakeholders, such as application maintenance resources and the customer, to agree on the handling and planning of change requests.

Deliverables

- Documented Application Configuration in Runtime
- Documented procedure for making Change Requests in the production environment
- Take part in CAB meeting with agreed frequency

3.5. AOM Service Runtime Management

The AOM service ensures that the underlying Operation services are in line with the application runtime needs. The AOM service team takes part in activities that puts this alignment in place. Many of these responsibilities are handled in relation to other service components.

AOM Service Runtime Management ensures that customer demands are clearly understood and communicated to producing units. It also coordinates the underlying infrastructure operation services that are delivered to the AOM service.

Deliverables

- Named contact persons acting as Point-of-Contact

3.6. Security Management

The processing of business critical systems provides the customers with a framework to build their daily operation on. Security Management for AOM provides protection from threats on all levels. Data Centres as well as software and hardware components may only be accessed by authorised personnel or systems. Software and data is protected from malicious attacks.

Only the AOM team is authorised to deploy changes to the application in the production environment.

Deliverables

- List of individuals with change permission in production environment
- Change Logs for applications (they are required by government legislation)

3.7. Batch Administration

The AOM service is responsible for the creation, removal, changes, and monitoring of batch job.

Limitations: The runtime environment may impose restrictions on when and in which order batch jobs can be scheduled. Planning of Batch Scheduling is not included in the AOM service. Normally, the Application Maintenance service provides planning. .

Deliverables

- Batch jobs run as agreed in Application Maintenance service.

3.8. Basic Application Database Administration

The Application database administration is responsible for the databases related to a specific Application. The database administration is responsible for the environmental aspects of the Application's databases.

Limitations: General database administration tasks that are not specific to the individual applications are not included. Database Operation is provided from the database service.

Deliverables

- Start or stop database
- Offline backup
- Extract or export
- Increase table space
- Basic User management

3.9. Common Operational Standards

Continual service improvement is a key concept for Application Operation Management since applications and technologies are progressing constantly. To achieve high quality, the AOM teams work to define operational standards enabling the operation of applications in the most effective way.

This covers the following activities:

- Automation of manual tasks
- Reviewing of makeshift activities or procedures
- Operational Audits to ensure that operational standards are followed
- Communication (towards infrastructure and maintenance) to share the common operational standards
- Education and training of Application Operation Management staff to maintain high quality

4. Service Runtime Options

4.1. AOM Technical Support Hours extension

The AOM technical support hours extension refers to activities provided through the AOM technical support hours component outside the standard hours (see Service Packages table in chapter 2). The delivery parameters of this option are defined in the agreement.

4.2. Proactive Application Database Administration

The AOM teams can perform proactive database administration activities in order to optimise response time, throughput, resource usage, and other parameters.

Deliverables

- Index creation
- Manual monitoring of the replication errors and correction
- Stored procedures package recompilation
- Advanced users administration (grant users)

4.3. Standard Service Reporting

Measurements and follow-up for specific application measurements and KPIs according to the agreement. The AOM service provides indicators in the following areas:

- End-user support
- Batch execution
- Change management

Deliverables

- End-user support reports:
 - Acceptance or queue time
 - Processing or handling time
 - work or resolve effort
- Batch Execution reports
 - Volumes
- Change management reports
 - Number of changes
 - Successful changes

4.4. Follow-up and Control

The AOM team executes day-to-day controls to ensure availability of the concerned Business Solution:

- Follow-up of agreement fulfilment
- Operation according to the required availability levels
- Schedule planned downtime according to business critical times when possible

4.5. Problem management

Problem management deals with avoiding disturbances. Problem management activities can also be triggered following an incident.

Application Operation Management Problem Management is seamlessly integrated with the Processing Operation Service Problem Management (if provided by Volvo IT).

The AOM team for an application (portfolio) acts as problem manager for the Application runtime environment. The team determines root cause of problems, issues requests for change to the party involved and documents permanent fixes as they become available.

Limitations: Functional and Source-code related problem management is not included. (Part of Maintenance & Support service).

Deliverables

- Documented Problem Record
- Issued Requests-for-change
- Documented Known Errors (when Root Cause is determined)

4.6. Capacity Reporting

An application uses various infrastructure resources (CPU, Memory, disk space, etc). In the capacity report, the customer can see how much resources the application uses. This is included in a unit measurement, as well as, a percentage of available or allocated resources. Which resources to include, and the frequency of the capacity reporting is agreed between the application owner and the AOM Service. The capacity report serves as decision support information for capacity planning.

Deliverables

- Capacity Report covers the following components:
 - Server(for example, CPU, RAM, Disk space etc)
 - Database (for example, CPU usage, Memory usage etc)
 - Storage (available/allocated/used)

4.7. Capacity Planning

Prerequisite: A customer 6 month plan for usage of the application.

The Application Operation Management service can include planning for future capacity, as an extension of the capacity reporting option.

As part of this service component, the AOM service proactively suggests capacity enhancements to secure performance and scalability. The normal forum for this discussion is the Application CAB (if one exists).

Deliverables

- A 6 month-plan outlining needs for operational components derived from customer usage plans (number of users, sites, application size, data or database size, etc).

4.8. Operation Evaluation Review and Advanced Reporting

The Operation Evaluation Review provides a high-level quality check on operation, and verifies that agreed Service Levels are met. A review of the application availability and performance will trigger improvement activities as needed. In that case, the next step following the Operation Evaluation Review can be to schedule an Application Health Control or an Architecture Review.

The Content of both the Operation Evaluation Review and the Advanced Reporting is specified for the business solution and it is defined in the agreement.

Examples of the content of the Operation Evaluation report are as follows:

- Operation Evaluation review agenda
- Application Availability / response time
- Request for work
- Business indicators
- Cost indicators
- Capacity measurement

Deliverables

- Operation Evaluation report

4.9. Additional Scheduling Tools

A set of standard tools to perform the Infrastructure operation are included with the Processing service (not the AO-M Service). If these tools do not meet the needs from the application, it is possible to use other tools for scheduling. This service option includes the license and license management of such tools.

Deliverables

- Availability of license for agreed scheduling tools.

5. Additional Services (one-time)

5.1. Architecture Design

Assist in creating the runtime architecture for an application (portfolio).

Deliverables

- Initial runtime Architecture

5.2. Architecture Review

Ensure alignment to decided infrastructure architecture for the Application in the production. Validate new application requirements with runtime environment in order to secure quality and economy in operations.

Deliverables

- Review of existing runtime Architecture
- Presentation of review recommendations
- Report of review and recommendations

5.3. Production Handover Review

The production handover secures that the application that is to be deployed into the production environment does not jeopardise its own or other applications' ability to run in the production environment, without unnecessary disturbance or cost.

Deliverables

- Get solution configuration documentation completed
- Prepare knowledge transfer
- Educate the Operations, Maintenance and Support teams (Operate & Support teams)
- Sign-off the Handover to Operate & Support

5.4. Application Deployment

Prerequisites: Application to be deployed must be provided to the AOM team using the standard platform packages.

Perform deployment of all planned Application and service changes in the Production (and/or Test/QA) environment (Server side and Client side) and preparation of the initial application workload.

A Production Handover Review is performed to verify that the new release is ready for production.

Limitations: "Deployment" of unplanned changes is covered by incident management service component.

Deliverables

- New releases deployed.

5.5. Knowledge Transfer from Project to Runtime

This component includes initial training and handover for AO staff to handle the AOM runtime activities. It can also apply to major releases if needed.

Deliverables

- Staff trained to be able to manage application-specific issues of service.

5.6. Initial Setup - Business KPI

In collaboration with Account Managers and maintenance organisation, the AOM team takes an active part in KPIs set-up providing technical measurements and tools.

Deliverables

- Technical measurement and tools

5.7. Setup and Initial Verification of Backup and Restore

An application needs to have a proven mechanism to restore the application runtime environment if required. This verification ensures that the restore procedure from storage backups works as planned.

Limitations: This service component does not cover scenarios declared as a "disaster". Disaster Recovery is covered in the Service Continuity component. The actual physical backups are performed as part of the Storage Service, which may be provided by Volvo IT or a third party supplier.

Deliverables

- Proof of backup/restore test
- Restore Plan validated by Maintenance organisation

5.8. Application Health Control & Tuning Report

The Application Health Control is a thorough review of the application and its environment. It results in suggestions on how to optimise the logical part of the Application from a performance perspective.

Limitations: Changes or optimisations of infrastructure underlying the application are not covered by this component, but by Architecture review component. Tuning of the application source code is not covered.

Deliverables

- A report used for tuning of the application and/or infrastructure.

5.9. Participate in Customer Reviews and Audits

On request, the AOM team assists and supports Customer's reviews and audits.

5.10. Extra Support for a Specific Period

The Extra support for a specific period refers to activities provided through the AOM technical support hours component outside the standard office hours during a specific period (cf. 2.4.1). The delivery parameters of this option are defined in the agreement or an amendment.

5.11. Creation of Application Continuity Plan

Prerequisite: A Business-Critical-Function classification performed by the customer, as related to the application and its parts.

While the normal operation is set up to be fault-tolerant in a general, it is also important to

have a way to deal with situations, when the "worst" happens, for example in the case of a fire, an explosion, or when the staff cannot access the premises. For these extraordinary situations, Volvo IT has a Continuity plan ensuring a very basic operation to be performed within a certain time.

This service component coordinates Continuity from the application's point-of-view. Matching services from additional services, such as desktop, processing, database, network, and storage need to manage the actual backbone for the operation. The AOM service keeps an updated plan that illustrates how all the pieces can work together.

Deliverables

- Application Service Continuity Plan outlines how certain capacity is available within a certain number of days, in case of an incident declared as a "Disaster" by Volvo IT. The Plan illustrates how required software or hardware components can be supplied in the event of a disaster. The plan focuses on how to restore Business-Critical-Functions only. Non-business critical functions are outside the scope of the plan.

5.12. Database Administration – Project support

A one time-service to support new development and enhancement of applications is available.

Deliverables

- New or Revised Database Design
- Database creation activities and changes as required by the application
- Index creation
- Export or Import
- Basic User management

6. Measurements and Reporting

Volvo IT reports on the agreed Key Performance Indicators (KPIs) monthly. As Application Operation KPIs depend on the assignment in question, valid KPIs are defined in the Agreement.

For standard KPIs, see section 4.3 Standard Service Reporting and section 4.8 Operation Evaluation Review and Advanced Reporting of this document:

- §4.3 -
- §4.8 -