



IBM Customer ***IBM DB2 HealthCheck for z/OS
Service Description***

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1. Description of Services

Information Management Analytics & Optimization (IMAO) Software Services is pleased to submit this Service Description to IBM Customer (“<IBM Cust>”). <IBM Cust> has requested the following services from IBM:

- IBM DB2 HealthCheck for z/OS (DB2 HealthCheck) Package

The HealthCheck Package provides systematic data gathering, in-depth analysis, and recommendations for system health optimization. IBM recommends follow-on regular tune-ups to revitalize<IBM Cust>'s DB2 system(s) as <IBM Cust> modifies their system profile (e.g. adding users, increasing volumes, changing storage architectures).

The scope of this Package is limited to one DB2 Sub-System.

The DB2 HealthCheck Package will:

- Review one DB2 Sub-System Configuration
- The DB2 Specialist will review the following based upon one sub-system:
 - Local buffer pool performance
 - I/O subsystem utilization
 - IBM DB2 system parameters (DSNZPARM)
 - EDM Pool / RID Pool / SORT Pool utilization Dynamic
 - SQL cache performance
 - DBM1 virtual storage management
- Review the top 10 worst performing DB2 application programs with the subject matter experts
- Review the backup & recovery procedures
- Deliver & Review a Recommendations & Findings Report

While the DB2 HealthCheck Package provides a comprehensive set of recommendations and findings, it is <IBM Cust>'s responsibility to determine the feasibility of implementing and to implement IBM's recommendations.

This Package includes a set of tasks that <IBM Cust> must complete to facilitate a successful DB2 HealthCheck Recommendation. The actual duration of each task may vary from customer to customer, based upon their knowledge of the products and the complexity of the production environment.

The resources required for this project will include both the IBM and <IBM Cust> personnel.

Any change in the scope of work defined in this Service Description requested by <IBM Cust> may result in additional costs and must be documented in a Project Change Request (“PCR”).

2. Resources

The <IBM Cust> Project Team will consist of the resources from the <IBM Cust> technical staff and applications experts. Examples of Project Team members are listed below.

2.1 IBM Team Resources

The IBM Project Lead coordinates the appropriate IMAO Software Services resources as required. The IBM Team typically includes the following members:

- Solution Implementation Manager (“SIM”) – Project Lead
- Senior DB2 Specialist (“DB2 Specialist”)
- Software Sales Representative (“SSR”)
- Sales IT Specialist (“ITS”)

2.2 <IBM Cust> Team Resources

<IBM Cust> will need to identify internal personnel to fill the roles of the <IBM Cust> Project Team. <IBM Cust> is responsible for selecting a Project Lead to share lead responsibilities with the IBM Project Lead.

Depending upon the project, the <IBM Cust> Project Team may include any of the following roles:

- Project Lead
- z/OS System Programmer
- Database & Storage Administrator
- Applications Subject Matter Experts

3. Role Definitions

<IBM Cust> will need to identify internal personnel to fill the roles as listed in Section 3, Resources. The following outlines the general roles for each of these individuals. Please note that additional resources may be required at various phases of the HealthCheck Project. Likewise, not all of the individuals may necessarily be involved in this HealthCheck service.

Project Lead - This individual will represent <IBM Cust> resources and provide project coordination in conjunction with the IBM Project Lead.

z/OS System Programmer – This individual is in charge of the z/OS Operating system administration.

Database & Storage Administrator - This individual(s) provide on-going DB2 administration assistance and will provide proper access to the SMF Accounting data as necessary for the delivery of this package service.

Applications Subject Matter Experts – Those individuals will participate in our interview process, providing insight into the selected functions as part of the analysis of this package service.

4. Responsibilities

4.1 <IBM Cust> Responsibilities

In order to facilitate a successful delivery, <IBM Cust> has the responsibility to provide the following:

- a.) <IBM Cust> will meet the following prior to initiation of this HealthCheck Project:
 - A current, supported version of DB2 z/OS installed and operational.
 - Ensure IBM personnel have VPN or other suitable remote and local network access when remote IBM consultants are engaged.
 - Provide a stable system environment during the service-monitoring period.
 - Run the monitoring tools during peak and off-peaks prior the start of this engagement.

- Hardware and/or software additions or modifications to <IBM Cust>'s IBM DB2 z/OS system must be completed prior to (preferably) or after delivery of this engagement.
- b.) A Project Lead with sufficient authority to:
 - Represent <IBM Cust>'s interests
 - Serve as the focal point for all decisions and communications
 - Coordinate activities assigned to <IBM Cust> resources
 - Sign project-related documents
- c.) Provide a completed *HealthCheck Requirements Checklist* before the start of the on-site engagement.
- d.) Provide access to the required hardware and software at the start of this engagement.
- e.) Provide access to SMF Accounting Data in a compressed format at the start of this engagement.
- f.) Remote VPN access to the IBM DB2 system for IBM personnel.
- g.) Implementation of any or all of IBM's recommendations.
- h.) Adequate facilities for the DB2 Specialist including:
 - cubicle, desk, telephone, and Internet access,
 - remote access (e.g., VPN access),
 - direct access to the keyboard.
- i.) When performing remote work, <IBM Cust> will provide VPN access into <IBM Cust>'s network and remote access to a workstation in the network that:
 - can connect to all required servers and
 - is preloaded with all required connectivity tools appropriate to <IBM Cust>'s environment.
- j.) Maintenance Agreement in place through IBM.
- k.) <IBM Cust> will make available all <IBM Cust> personnel required for this project based on the agreed-upon project schedule. Any significant delays caused by <IBM Cust> personnel not being available or project prerequisites not being met may result in schedule delays, which can impact the project sufficiently to require a chargeable PCR addressing additional or extended IBM personnel requirements and additional costs.

4.2 IBM Responsibilities

- a.) Review *HealthCheck Requirements Checklist*
- b.) Review DB2 z/OS Sub-System environment parameters
- c.) Review top ten worst performing DB2 application program
- d.) Deliver & Review Recommendations & Findings Report
- e.) Deliver Completed IBM DB2 HealthCheck for z/OS Completion Checklist

5. Assumptions & Limitations

5.1 Assumptions

- a.) Detail analysis and review of the datasharing components if requested can be delivered via a chargeable PCR.
- b.) The results of this engagement may indicate that an application code review may be needed. However, no application code review is included in this engagement.

- c.) The result of this engagement may indicate that a WLM configuration review may be needed. However, no detailed WLM configuration review is included in this engagement.
- d.) The cost to implement any recommendations made as a result of this HealthCheck Package described herein is not included in the package. Any implementation of recommendations made herein should be completed by <IBM Cust> themselves or by engaging an IBM Consultant as applicable.¹
- e.) Work under this service package will be performed at your facility in <IBM Cust>, except for any project-related activity which IBM determines would be best performed on IBM premises in order to complete its obligations and responsibilities under this Service Package.
- f.) IBM will provide the Services under this Service Package during normal business hours, {8:30 AM to 5:15 PM, local time, Monday through Friday}, except holidays. If necessary, you will provide after-hours access to your facilities to IBM personnel. Out-of-town personnel may work hours other than those defined as normal business hours to accommodate their travel schedules.

5.2 Service Limitations

The DB2 HealthCheck Package does not include repairs, corrections or troubleshooting of data corruption, errors and faults that are discovered during the process due to hardware failures, or non-qualified hardware or operating systems. Repairs, corrections or troubleshooting of such errors and faults will be <IBM Cust>'s responsibility; any IBM involvement will be charged on a Time-and-Materials (T&M) basis.

5.2.1 Travel & Living Expenses

This Package does **not** include domestic travel and living expenses incurred by IMAO resources traveling to <IBM Cust>'s site in order to fulfill IBM's tasks and responsibilities pertinent to delivering this service.

The DB2 specialist may travel to <IBM Cust>'s site up to **two (2) roundtrip** visits for tasks associated with delivering this service. <IBM Cust> will be billed actual travel and living costs.

IBM will invoice <IBM Cust> for travel and living expenses and other reasonable expenses incurred in connection with the Package delivery. Amounts are due upon receipt of invoice and payable within 30 days. <IBM Cust> agrees to pay accordingly, including any late payment fee. <IBM Cust> does not have to pay any amount disputed in good faith while it is being investigated, but <IBM Cust> remains obligated to pay any amount not in dispute.

Additional onsite assistance requested by <IBM Cust> beyond the number of visits indicated above will be billable subject to the execution of a PCR. IBM also reserves the right to bill <IBM Cust> for any additional trips that are the direct result of <IBM Cust>'s failure to meet or perform its obligations outlined herein.

6. Project Tasks & Deliverables

The DB2 HealthCheck for z/OS Service includes the analysis of one DB2 z/OS sub-system of <IBM Cust>'s DB2 System. IBM will gather information about the DB2 z/OS sub-system such as DB2 system parameters, DB2 PM Accounting and Statistics reports and DB2 application program. After a detailed in-depth analysis of the information, IBM will review the top ten worst performing application programs with <IBM Cust>. IBM will then

¹ IBM recommends that <IBM Cust> have a local IBM Consultant assist in implementing any recommendations. Should <IBM Cust> elect to have a Consultant implement the recommendations, these services will be delivered separately on a Time-and-Materials (T&M) basis plus expenses. IBM will work with <IBM Cust> customer team to contact and engage the local IBM Client Manager to arrange for delivery of these services.

provide a recommendations and findings report of the results of this analysis with a formal executive review with <IBM Cust>.

The Project Team will perform the following tasks. Deliverables for each task are detailed within the task descriptions.

6.1 Task 1: Kickoff Conference Call

The purpose of this conference call is to prepare both the <IBM Cust> project team and the DB2 Specialist for the DB2 z/OS HealthCheck Project. Topics of discussion will include <IBM Cust>'s requirements, expectations, prerequisites, and schedules.

6.1.1 Project Services Description Review

The SIM or DB2 Specialist will review the Services Description, the deliverables, and the project tasks with <IBM Cust>'s PM.

The starting date to begin the HealthCheck Project for <IBM Cust> will be scheduled and confirmed by IBM and the assigned <IBM Cust> Project Manager.

IBM anticipates scheduling these services within fifteen business days from date of initiation.

6.1.2 DB2 HealthCheck Requirements Checklist Review

During the Kickoff Conference call the DB2 Specialist will review the *HealthCheck Requirements Checklist* with the <IBM Cust>.

The <IBM Cust> will gather the information requested in the *HealthCheck Requirements Checklist* before the start of the on-site engagement.

6.1.3 Project Status

The SIM will track all issues and document their resolution in an Issues Log. Any issue whose resolution requires a change will be documented in a PCR.

6.2 Task 2: Perform Environment Review & Analysis of the DB2 z/OS sub-system

6.2.1 Detailed Analysis of subsystem data

The DB2 Specialist will review & analyze the collected data and monitor <IBM Cust>'s DB2 system.

- The analysis of the sub-system will include:
 - Local buffer pool performance
 - I/O subsystem utilization
 - IBM DB2 system parameters (DSNZPARM)
 - EDM Pool / RID Pool / SORT Pool utilization
 - Dynamic SQL cache performance
 - DBM1 virtual storage management

6.2.2 Identify the 10 Worst Performing DB2 Application Programs

The DB2 Specialist will identify the top ten worst performing DB2 application programs and analyze the application data collected. He will then interview the subject matter experts to get a better understanding of the applications and validate his findings.

6.3 Task 3: Review Back-up & Recovery Procedures

In this activity, IBM will review the DB2 backup and recovery strategy based upon overview provided by <IBM Cust>.

This Package does not provide for the DB2 Specialist to review or develop <IBM Cust>'s backup goals.

6.4 Task 4: Presentation to Customer Executive team

IBM will provide a high level overview about their recommendations and findings to the <IBM Cust> executive team and answer any questions or concerns.

6.5 Task 5: Recommendations & Findings Report

The Recommendations and Findings Report will address the following:

- Executive Summary of Recommendations
- Critical System Resource Analysis
- DB2 System Parameters Analysis
- Buffer Pool Analysis
- Memory Structures Analysis
- I/O Performance Analysis
- Locking Activities
- Dynamic Statement Cache Analysis
- 10 Worst Performing DB2 Application Programs
- Back-up & Recovery Procedures

6.6 Task 6: Project Completion

Upon completion of the Recommendations & Findings Report Review, the Senior DB2 z/OS will deliver to <IBM Cust> a completed DB2 z/OS HealthCheck Checklist which constitutes completion of this project. Please refer to *DB2 z/OS HealthCheck Checklist*.

If issues arise after delivery of the Project Completion Checklist, <IBM Cust> should contact IBM Customer Support by using the IBM toll free Customer Service telephone number (1-800-429-7378).