Whitepaper

SHARP (SharePoint Health Assessment and Recommendation Program)

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Introduction

Microsoft® SharePoint® Products and Technologies are increasingly used to store business-critical data, and are also used as a development platform for business-critical applications. A poorly functioning SharePoint environment increases the burden on your administrators and lowers the productivity of your users, thus causing significant impact on your business.

Maximize Your Microsoft Investment

The SharePoint Health Assessment and Recommendation Program (SHARP) has been developed to provide in-depth analysis of your SharePoint Products and Technologies configurations, custom code, and operational procedures, thus uncovering areas that are potential risks to server stability, or that do not align with industry best practices. This can help ensure that your environment is configured and managed properly to meet your business needs.

During the assessment, LTI assigns experienced engineers to analyze the production servers in your environment, using specially designed data collection and analysis tools. Your own key IT personnel can be involved in this process to learn from the experience and knowledge of LTI engineers, thus gaining knowledge that can be used in the future to troubleshoot and resolve issues. This will also help ensure that your servers are maintained after the engagement concludes.

Key Focus Areas

SHARP uses a data collection tools that gathers an extensive amount of information about your SharePoint topology. This tool runs in tandem with the Windows Perfmon (Microsoft Windows Server System Tool), which performs additional data collection and analysis. Data relating to the operation of your server farm is gathered from your IT staff through the Operational Excellence survey.

Features

• Extensive analysis of all areas of the SharePoint farm including Windows, SQL and Network
• Comprehensive analysis and recommendation on gaps found, and suggestions recommended to improve the environment
• In case of non-Microsoft ECM products, SHARP can be extended to Documentum, Livelink, Content Server, Extended ECM, etc.

SharePoint Products and Technologies Configuration

• Adherence to capacity planning guidelines
• Search configuration
• Configuration of webs and web applications
• Service packs and cumulative updates
• Related SQL Server/ Internet Information Services (IIS) configuration
Practical Recommendations

Solutions for each risk are identified and articulated in the Key Findings report. By covering operations, configuration, and architecture, effective remediation improves efficiency in your SharePoint environment. In addition, a report is included to help communicate the findings and the steps for remediation.

The SharePoint Health Assessment (SPHA) includes a detailed issues inventory, with reported history and resolution status related to your SharePoint environment. There is also a comprehensive dashboard with statistics from your environment and comparison against the average set of customers.

Assessment and Remediation Planning

This produces a detailed remediation plan aligned to business drivers and priorities. The planning session also includes your key business decision makers and our technical resource, to review the results and make recommendations to resolve issues and mitigate risks.

The SharePoint Health Assessment (SPHA) provides valuable information about the services that LTI can provide to assist with resolving complex risks and issues discovered during the assessment phase of your engagement.
**Tools**

**Registry Collectors**

Registry keys and values are read from all SharePoint Servers including SQL servers. They include items such as:

- **SQL Alias information from HKLM\SOFTWARE\Microsoft\MSSQLServer\Client\ConnectTo**
  - This allows to determine if the SharePoint servers are using SQL alias to connect to the SQL server that is hosting the SharePoint databases.

- **Operating System information from HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion.**
  - This determines Operation System information, such as Windows Server 2003, Windows Server 2008 or Windows Server 2012.

**SharePoint PowerShell Scripts**

Majority of the SharePoint data is gathered via running the SharePoint PowerShell scripts. For example, the information pertaining to large list views, Alternate Access mappings, SharePoint services, ULS information, SharePoint Lists information, SharePoint Search, Timer Jobs etc., are all gathered using SharePoint PowerShell scripts. These scripts are executed remotely from the Tools Machine by connecting to the Target Machine.

**Data Collection Methods**

**Event Log Collector:**

Collects event logs from all the SharePoint Servers, including SQL servers. RAP as a Service for SharePoint Server collects the last seven days of Warnings and Errors from the Application and System logs.

**SQL Queries:**

Some of the information pertaining to the SQL databases, which are hosted by the SharePoint SQL instance, is gathered via SQL scripts. For example, the information related to the SQL data and log files (for example, the size and next growth size), SQL instance properties (for example, if using Integrated Security, if the instance is clustered), Index Fragmentation, Statistics information etc., are all gathered via SQL Scripts.

**IIS Information:**

The details of the IIS web sites and App Pool configurations are gathered using .NET code and workflows.

**File Data Collector:**

Enumerates files in a folder on a remote machine, and optionally retrieves those files. For example, web.config files, IIS Log files, App Host config files, etc.

**Windows Management Instrumentation (WMI)**

- **WIN32_Volume:** Collects information on Volume Settings for each server in the SharePoint environment. The information is used, for instance, to determine the system volume and drive letter, which allows RAP as a Service for SharePoint to collect information on files located on the system drive.

- **Win32_Process:** Collect information on the processes running on each server in the SharePoint environment. The information provides insight in processes that consume a large amount of threads, memory, or have a large page file usage.
SHARP (SharePoint Health Assessment and Recommendation Program)

- **Win32_LogicalDisk**: Used to collect information on the logical disks. We use the information to determine the amount of free space on the disk, where the database or log files are located.

**Performance Monitoring**
As part of the assessment, the performance details of the environment are gathered by scheduling the Perfmon counters to run on each of the servers in the SharePoint environment.

**Methodology**
LTI will execute the engagement in three phases

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Deliverables</th>
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<tbody>
<tr>
<td>Study current SharePoint (SP) environment w.r.t.</td>
<td>As-Is-Report of the current SharePoint environment</td>
</tr>
</tbody>
</table>
- SharePoint Architecture, Configuration, Connectivity Model, Application functionality  
- Current Operations Procedures  
- Performance and configuration issues  
- Existing storage, database and security capabilities  
- Existing Portal/Site configuration and capabilities WAF/Authentication, Mobility settings, Farm searching  
Desired future state of SharePoint environment and projects in pipeline  

| Study As-Is Phase | 8 Days | Analyze Phase | 12 Days | Recommend Phase | 10 Days |

<table>
<thead>
<tr>
<th>Study current SharePoint (SP) environment w.r.t.</th>
<th>Analyze data gather in Study As-Is which includes:</th>
<th>Provide Report and Recommendation for:</th>
</tr>
</thead>
</table>
- SharePoint Architecture, Configuration, Connectivity Model, Application functionality  
- Current Operations Procedures  
- Performance and configuration issues  
- Existing storage, database and security capabilities  
- Existing Portal/Site configuration and capabilities WAF/Authentication, Mobility settings, Farm searching  
Desired future state of SharePoint environment and projects in pipeline  

- Issues/Gaps in existing SharePoint Environment  
- Existing SharePoint environment capability to scale and support future planned needs  
- Compliance to Industry Best practices  

| As-Is-Report of the current SharePoint environment | Gap-Analysis report  
- Application-Requirement Mapping Report  
- Proposed Architecture Diagram  
Recommendation Report (technical findings, remediation action plan, best practices)  

- Address gaps in existing environment for current and planned needs  
- Best practices for SharePoint environment (WAF, authentication, mobility, farm searching etc.)  
- Additional infrastructure, if required for scalability  
- Action plan to remediate the gaps identified in SharePoint Environment to align to best practices
SHARP (SharePoint Health Assessment and Recommendation Program)

a. Preparation
- SOW Signing
- Requirements understanding
- Pre Engagement questionnaire

b. Study

**Operational Interview**

The RAP engagement consists of an operational interview to identify risks that cannot be captured and evaluated programmatically. The engineer will conduct the interview with the IT staff. The interview will focus on the following areas:
- Operational processes (Release management, change management, service level agreements, monitoring and so on.)
- Disaster recovery and backup processes
- Configuration related questions that cannot be determined programmatically.

It is important to have the key stakeholders available to answer the interview questions.

The interview results will be incorporated into the data collected onsite and presented in the formal report.

c. Gap Analysis

**Data Analysis and Workshop**

Once the initial data collection is completed, the engineer will review it and begin the knowledge transfer aspect of the engagement. The workshop is arguably the most critical part of the engagement and can provide a wealth of information to your IT staff. During the workshop participants will be introduced to diagnostic tools, troubleshooting techniques, and operational discussions specific to your environment.

d. Recommendation

Recommendation report is based on Gap Analysed as part of Gap Analysis and in this phase we provide recommendation to resolve the identified gaps. The Report is starting step for resolution of issues. The Issues may be usual support issue or may be separate project to attain resolution.
Deliverables

Study Phase
- Current State Report
- Requirement Gathering report

Analyse Phase
- Gap Analysis Report
- Application Requirement Mapping Report
- Proposed Architecture Diagram

Recommend Phase
- Overview of current use and projected growth rate of SharePoint
- Overview of the analysis performed and the data gathered
- Existing deficiencies and recommendations for their remediation
- Estimation of current system capacity
- Recommendations for system expansion to support projected future need
- Executive Summary Report
- Technical Findings Report
- Remediation Plan Report
- Action Planning Worksheet
- Technical Reference Document

Supported Products
- Office SharePoint Server 2007
- SharePoint Server 2010
- SharePoint Server 2013
- SharePoint 2016
- SharePoint Online (Office 365)
- Content Server (legacy Livelink)
- Documentum

Possible requirements

a. Greenfield Setup
b. Cloud Journey
- Assessment
- Roadmap
- Office 365 Adoption
- Azure and AWS Migration for application
c. New Projects
- Migration of Data
- New Feature configuration
- Additional user base
- Downsizing of Application
d. Existing Issues
- Slowness for Users
- Excessive stress on Physical resources
e. Routine Health Check-up
Type of resources

SharePoint Infrastructure Architect (SIA):

- Proficient in end to end implementation for SharePoint
- Experience in Topology design and Migration
- Work on Cost-effective content Management Solution
- Awareness to Information Right Management and SharePoint Governance Model
- SME for SharePoint Administration and Migration
- Proficient in infrastructure design, implementation and configuration of SharePoint Farm
- Infrastructure Assessment and Capacity Planning Experience
About the Author

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Harsh is a Service Delivery Manager, working with IMS BU at LTI. He is a SharePoint Architect with 11 Years of experience in ECM Products, and leads Enterprise Content Management Solution for Infrastructure Services. He is proficient with large Farm Architect Designs and implementations, and in native ECM products like Content Server, Lotus Notes, Joomla, etc.