

Structural Health Assessment Guide

PURPOSE OF DOCUMENT:

This document outlines the process for obtaining a Structural Health Assessment. It includes details on technologies, requirements, uploading source code, and other critical aspects of having a structural health assessment performed on your application.

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1 About this Guide

We are delighted that you are interested in a Structural Health Assessment. This guide is designed to help you understand how the CAST Structural Health Assessment process works. It provides an in depth survey of what information is required, which technologies are supported, how to send us your source code, and what you should expect from us.

As you read this guide, if you have any additional questions, please feel free to contact your account manager or reach out to marketing@castsoftware.com.

2 Overview of the CAST Structural Health Assessment

The CAST Structural Health Assessment is a service that allows you to gain quick insight into the structural health of your application. CAST evaluates not just individual software components, but the overall structural health, i.e. how the components work together as a system. This is critical as the vast majority of software defects that cause outages are caused by structural defects.

The structural health assessment provides two key insights: 1) Identification of the structural defects that exist within the application, and 2) Key application risk factors such as security, efficiency and robustness giving an indication of the expected performance and risks in production

The assessment is available for any application that has up to a total of 1 million lines of code and can comprise of any two of the technologies listed at '[Supported by CAST AIP out of the box](#)' (conditions apply and are detailed in **section 4.1 Application Selection Criteria Conditions**).

3 Getting Assessed

CAST has made it easy to get a Structural Health Assessment with the following four steps. In the event of any questions or queries, CAST will always be available to guide you through the process.

Step 1: Gather and Upload Source Code

1. CAST will provide details for you to upload your source code to a server exclusively dedicated to your application hosted securely on Amazon Web Services ('AWS').
2. Gather your source code and database structure, excluding any data, following the source code requirements detailed here [Technology Delivery Instructions](#). You should ensure your source code can compile and build successfully error free. The database structure can be extracted from any suitable stable database environment such as development, QA, UAT, Production, etc.
3. The source code and database extract should be packaged up locally and securely uploaded to your server using the CAST Delivery Manager Tool (DMT) as outlined in **section 4.2 How To Package and Upload Your Code**.

Step 2: Sign off the Source Code Discovery Report

1. CAST will produce a Source Code Discovery Report for the uploaded application source code and database structure detailing the inventory, technology names and version numbers.
2. An example report is given in **section 4.3 Source Code Discovery Report Example**.
3. You will need to sign off the report as being accurate before the CAST team will commence with the application assessment.

Step 3: Prepare Structural Health Assessment Report

1. CAST will conduct the health assessment of the application source code and database.
2. CAST will compile a report of the health assessment findings.
3. An example Structural Health Assessment Report is available to download from here [Structural Health Assessment Report](#).

Step 4: Presentation of Structural Health Assessment Report

1. CAST will conduct a 1 hour workshop to present and discuss the findings in the report. This is an important step as the data generated by a CAST assessment is comprehensive and we can help you determine the most relevant aspects of the report in assessing your unique application, and give you insight into what certain metrics mean and how they can impact your business.

4 Appendix

4.1 Application Selection Criteria Conditions

The application can be up to 1 million lines of code in total, comprising of any two of the technologies listed below excluding Web Technologies which will automatically be incorporated as part of the assessment, provided it is an integral part of the application which is based on ASP, J2EE or .NET. The maximum number of lines of code per technology is also given here.

Note: CAST does support Business Objects and DB2 (Linux, Unix, Window) technologies however they are excluded from this Structural Health Assessment Service since they both require an active connection to the respective environments when conducting an assessment. DB2 z/OS is available in this assessment.

Technology	Maximum Lines of Code
SAP ABAP	400 K
.NET	200 K
C and C++	154 K
Mainframe	1000 K
Oracle Forms/Reports	300 K Covering a maximum of 200 Oracle Forms or Reports
PowerBuilder	300 K
J2EE technologies	200 K
Web technologies	n/a
Visual Basic	80 K
IBM DB2 (z/OS)	200 K
Microsoft SQL Server	200 K
Oracle Server	200 K
Sybase ASE	200 K

4.2 How To Package and Upload Your Code

Using a secure HTTPS link (SSL enabled) provide by CAST the CAST Delivery Manger Tool (DMT) is downloaded, used to package up the source code including the database extract, and then uploaded to your server as explained below. The CAST team will guide you through the process.

Note: CAST Delivery Manager Tool requires Java JRE 32 bit 1.7uX where $X \geq 06$ or 1.8ux to be installed.

4.2.1 Packaging the Database extracts

The database extractor will require the database connection details and the name of the database (Microsoft SQL Server, Sybase) or schema (Oracle) to extract from as shown in the examples below. The extract will contain the database structure and associated code (PL/SQL or T-SQL) in a CAST readable format - no database data will be extracted. Details of the database user requirements are explained here [Suitable Database User](#).

Sybase

The screenshot shows the 'CAST extractor for Sybase' configuration window. It includes fields for 'Host name' (localhost), 'Port' (12500), and 'Credentials' (User name, Password, and a 'Remember password' dropdown set to 'Not stored'). A section titled 'Databases to extract' contains a list of database names and a 'Database name' field at the bottom.

Oracle

choose the type of database you want to target in the drop down list. Depending

The screenshot shows the 'CAST extractor for Oracle' configuration window. It includes fields for 'Host name' (localhost), 'Port' (1521), and 'Instance identification' (Service or SID). The 'Service' radio button is selected. Below this are fields for 'Service', 'User name', 'Password', and a 'Remember password' dropdown set to 'Not stored'. A section titled 'Schemas to extract' contains a list of schema names and a 'Schema name' field at the bottom.

MS SQL Server

The screenshot shows the 'Database targeted' dropdown set to 'CAST extractor for MS'. Below it, the 'Host name' is 'localhost'. A section titled 'Set a port or instance name' has 'Instance identification' selected, with 'Port' and 'Instance name' radio buttons. Below this is a 'Port' input field. A section titled 'Do not configure credentials if single sign on is enabled' has 'Credentials' checked. Below this are 'User name' and 'Password' input fields, a 'Save password in package settings' checkbox, and a 'Remember password' dropdown. At the bottom, a section titled 'In order to limit the scope of extracted databases, you must specify the set of dat' has 'Databases to extract' checked, with a list of database names below it.

4.2.2 Packaging the source code

Source code can be packaged either by gathering code into a local folder or be extracted directly from TFS or SVN as shown in the examples below.

TFS

The screenshot shows the 'SCM or File system targeted' dropdown set to 'Team Foundation Server using webservice API'. Below it, the 'File extraction for Visual Studio Team Foundation Server' section has 'Include the collection but not the repository' checked. The 'Server' is 'http://tfsserver:8080/tfs/collection', the 'Repository path starts with' is '\$/', the 'Repository path' is '\$/MyProject/trunk', and the 'Version' is 'T'. A section titled 'Do not configure credentials if single sign on is enabled' has 'Credentials' checked. Below this are 'User name' and 'Password' input fields, a 'Save password in package settings' checkbox, and a 'Remember password' dropdown set to 'Not stored'.

SVN

The screenshot shows the 'SCM or File system targeted' dropdown set to 'Subversion using svnkit'. Below it, the 'File extraction for Subversion' section has 'URL format is either https://... or svn://...' checked. The 'Repository URL' is 'https://...', the 'Revision' is 'HEAD', and the 'Set a revision number or HEAD as the most recent revision' checkbox is checked. A section titled 'Do not configure credentials if single sign on is enabled' has 'Credentials' checked. Below this are 'User name' and 'Password' input fields, a 'Save password in package settings' checkbox, and a 'Remember password' dropdown set to 'Not stored'.

4.2.3 Additional Notes For Packaging:

- **SAP:** CAST's SAP extractor can be downloaded by clicking [here](#) and should be installed on the SAP instance. Running the SAP extraction will require connection details and other details as shown in the example below. The CAST team will guide you through the process which is documented here [SAP Extractor](#).

The screenshot displays the CAST configuration interface for SAP extraction. It is divided into three main sections:

- Repository targeted:**
 - Manage SAP connection:** Includes fields for SAP host name, System number (00), Client number (000), SAP registered connexion (TCP/IP) name (SAPJ2EE), and Credentials (User name and Password).
- ABAP programs extraction:**
 - Packages:** Includes Package From, Package To, Packages to exclude, check existence of package (checkbox), and Extract dependent includes (checkbox).
- SAP Tables extraction:**
 - Packages:** Includes Package From, Package To, and Packages to exclude.
 - Extraction folders:** Includes SAP server extraction directory mapping and SAP server extraction relative directory.

- **Oracle Forms /Reports:** CAST's Oracle Forms extractor requires Oracle Forms 32-bit to be installed and configured. The CAST team will guide you through this process which is documented here [Oracle Forms and Reports Extractor](#).
- **DB2 z/OS:** CAST JCL based DB2 z/OS extractor should be downloaded from [here](#), installed and run on the z/OS instance. The CAST team will guide you through the process which is documented here [DB2 zOS Extractor Guide](#).

4.2.4 Uploading the Packages

Once the packaging process is complete the packages should then be uploaded to your server by pressing the "Deliver" button in the CAST Delivery Manager Tool. This will compress the packages and securely transfer them to the CAST server.

4.3 Source Code Discovery Report Example

CAST will review the delivered application code base with its corresponding database structure and provide a Source Code Discovery Report – an example is shown below.

Technology Name	Technology Version	Parent technology	File Counts	Lines of Code
Hibernate	3.5	J2EE	9	73
Spring	3.2	J2EE	17	132
Java	1.7	J2EE	214	84239
JavaScript	1.5	Web	54	238
xHTML	1.1	Web	22	87
C#	4.5.1	.Net	128	29872
VB	4.5.1	.Net	138	43928
Oracle Database	11g	Oracle Schema: HR	N/A	5873
MS SQL Server	2012	SQL Server Database: AdventureWorks	N/A	65231