

Health Checking

MIHÁLY ÁRVAI

Introduction

- ▶ Mihály Árvai
- ▶ Senior Sitecore Developer - Mirum
- ▶ ~ 10 years experience in Sitecore
- ▶ Hackathon winner 2019
- ▶ Twitter
 - ▶ @Mitya_1988
- ▶ Slack
 - ▶ Mitya88
- ▶ Medium
 - ▶ @mitya_1988
- ▶ GitHub
 - ▶ Mitya88

Agenda

- ▶ Health checking
 - ▶ Why? How?
- ▶ Advanced Sitecore Health check module
 - ▶ How is it working?
 - ▶ Features
- ▶ Writing your own custom health check
- ▶ Further improvements



Health checking your Sitecore solution

What is a health check?

- ▶ An external application or a built-in endpoint/service
- ▶ Checks if an application or component is working
- ▶ Can determine an actual or upcoming issue
- ▶ Can notify the IT or Devs about the issue
- ▶ Helps in the investigation
- ▶ Tests your application

Component states



Healthy



Warning



Error

Importance of health checking

- ▶ avoid or minimize service/application downtimes
 - ▶ Renew certificate/licence in time
- ▶ Faster resolution for an issue
 - ▶ Losing time with log files investigation
- ▶ Catch random or periodic issues
 - ▶ Something happens around the regular application recycle time
- ▶ Test the latest deployment

Advanced Sitecore Healthcheck module

<https://github.com/Mitya88/SitecoreHealthcheck>

Contributors

- Andrei Ardel – Sitecore Developer – Mirum
- Attila Horváth – Lead Sitecore Developer - Mirum

Advanced Sitecore Healthcheck

[Refresh](#) [Re run](#) [Export state](#)

State Filter

All

☒ Normal

☐ Table

Current State



Xdb

XConnect Marketing Automation **1**



Jun 24, 2020, 4:00:01 AM

[Download logs](#)
[Issues](#)

XConnect Processing Engine **1**



Jun 24, 2020, 4:00:01 AM

[Download logs](#)
[Issues](#)

XConnect Search Indexer **2**



Jun 24, 2020, 4:00:01 AM

[Download logs](#)
[Issues](#)

XConnectAPI Check **1**



Jun 24, 2020, 4:00:01 AM

[Download logs](#)
[Issues](#)

Databases

empty **1**



Jun 24, 2020, 4:00:01 AM

[Download logs](#)
[Issues](#)

experienceforms **0**



Jun 24, 2020, 4:00:01 AM

Database Connection is OK

[Download logs](#)
[Issues](#)

Jun 24, 2020, 4:00:01 AM

Database Connection is OK

[Download logs](#)
[Issues](#)

Jun 24, 2020, 4:00:01 AM

Database Connection is OK

[Download logs](#)
[Issues](#)

Most recent issues

[Download All](#)

Service sc92Test.xconnect.local-IndexWorker was not found on computer '!'.

Jun 24, 2020, 6:00:01 AM

Service sc92Test.xconnect.local-IndexWorker was not found on computer '!'.

Jun 24, 2020, 5:59:49 AM

XConnect Search Indexer

2



Jun 24, 2020, 4:00:01 AM

[Download logs](#)

Issues

Most recent issues

[Download All](#)

Service sc92Test.xconnect.local-IndexWorker was not found on computer 'l'.

Jun 24, 2020, 6:00:01 AM

Service sc92Test.xconnect.local-IndexWorker was not found on computer 'l'.

Jun 24, 2020, 5:59:49 AM

Advanced Sitecore Healthcheck

Refresh

Re run

Export state

State Filter

All

Normal

Table

Current State

Group	Component Name	#	Error Count	Message	#
Xdb	XConnect Marketing Automation	❌	1	Service sc920Test.xconnect.local-MarketingAutomationService was not found on computer '.	Download logs
Xdb	XConnect Processing Engine	❌	1	Service sc920Test.xconnect.local-MarketingAutomationService was not found on computer '.	Download logs
Xdb	XConnect Search Indexer	❌	2	Service sc92Test.xconnect.local-IndexWorker was not found on computer '.	Download logs
Xdb	XConnectAPI Check	❌	1	XConnect API returned with status code: 403 - Forbidden	Download logs
Databases	empty	⚠️	1	Cannot find the connectionstring in the config	Download logs
Databases	experienceforms	✅	0	Database Connection is OK	Download logs
Databases	master	✅	0	Database Connection is OK	Download logs
Databases	web	✅	0	Database Connection is OK	Download logs
API	KeepAlive Check	✅	0	The https://scsugcon2020.local/sitecore/service/keepalive.aspx url is working	Download logs
API	Sample - google.com	✅	0	API endpoint looks OK	Download logs
Queues	Master Event Queue	⚠️	1	EventQueue table in master database has 813 record	Download logs
Queues	Master History	✅	0	History table in master database has 0 record	Download logs
Queues	Master Publish Queue	⚠️	1	PublishQueue table in master database has 5361 record	Download logs
Application Insights	Sample	⚠️	1	Application Insight Check is not configured correctly	Download logs

- The Sitecore structure of the module

- └─ Tasks
 - └─ Commands
 - Content Testing
 - Email Campaign
 - Forms
 - Healthcheck
 - Healthcheck Update Command
 - Schedules
 - __Task Schedule
 - Content Testing
 - Forms
 - Healthcheck
 - Healthcheck Update Task

- └─ Modules
 - Healthcheck Module
 - API Methods
 - Certificate Lookups
 - Cleanup Lookups
 - Components
 - Xdb
 - Databases
 - API
 - Queues
 - Master Event Queue
 - Master History
 - Master Publish Queue
 - Application Insights
 - Certificates
 - Items
 - License
 - License Check
 - Logfiles
 - Search Indexes
 - Levels
 - Settings

Days - Defines the number of days after the error messages will be deleted:

Mail Settings

Sender Name:














Sender Email:

Recipient Emails:

Subject:

Body:

Error Level - Defines the error level when automatic email should be send:

- ▲  Tasks
 - ▲  Commands
 - ▶  Content Testing
 - ▶  Email Campaign
 - ▶  Forms
 - ▲  Healthcheck
 - ▶  Healthcheck Update Command
- ▲  Schedules
 - ▶  __Task Schedule
 - ▶  Content Testing
 - ▶  Forms
- ▲  Healthcheck
 - ▶  Healthcheck Update Task

This is a summary of components after Healtcheck:

Component name	Last check	Status	Message
Databases			
core	5/22/2020 7:12:57 AM	Healthy	Database Connection is OK
experienceforms	5/22/2020 7:12:57 AM	Healthy	Database Connection is OK
master	5/22/2020 7:12:57 AM	Healthy	Database Connection is OK
security	5/22/2020 7:12:57 AM	Healthy	Database Connection is OK
web	5/22/2020 7:12:57 AM	Healthy	Database Connection is OK
API			
KeepAlive Check	5/22/2020 7:12:57 AM	Error	The remote server returned an error: (403) Forbidden.
Sitecore Identity Server	5/22/2020 7:12:57 AM	Error	API returned with status code: 502 - Bad Gateway

Component Templates

Data

- Name
- Status
- Last Check Time
- Error Messages
- Healthy Message

Configuration

- Different fields based on the component

Supported types of component checks

- ▶ MSSQL Databases
 - ▶ Not for only Sitecore related databases, for external databases
 - ▶ MongoDB is added as a Custom Check
- ▶ APIs
 - ▶ GET/POST
 - ▶ Request Body
 - ▶ Response Code and Body Verification
 - ▶ Supports Authentication (JWT, Basic, Certificate)

Supported types of component checks

- ▶ Windows Services
 - ▶ Check state of the windows service (Solr or XDB related services)
- ▶ WebJobs
 - ▶ Check state of the WebJob (XDB related or custom webjobs)

Supported types of component checks

- ▶ Application Insights
 - ▶ Checks and reads errors/warnings from the configured ApplicationInsight in a given time period
- ▶ Log Files
 - ▶ Checks and reads errors/warnings from the Sitecore log files in a given period

Supported types of component checks

- ▶ XConnectAPI Check
 - ▶ Calls XConnect APIs with client certificate
- ▶ Keep Alive Check
 - ▶ Calls the keepalive.aspx
 - ▶ Uses WebUtil.GetFullUrl

Supported types of component checks

- ▶ EventQueue, PublishQueue, History table record count check
 - ▶ Checks the number of records in these tables in every database
- ▶ Item Check
 - ▶ Check if the given item exists in the configured db/language

Supported types of component checks

- ▶ Licence Check
 - ▶ Checks when the licence will expire
- ▶ Certificate Check
 - ▶ Checks when the configured certificate will expire

Supported types of component checks

- ▶ Search Check
 - ▶ Checks if index contains the configured number of documents
 - ▶ Query can be defined
- ▶ Custom Check
 - ▶ Implement your own check
 - ▶ Samples included

Implementing custom check

- ▶ Reference the Healthcheck.Service.Customization binary
 - ▶ (It will be published on nuget.org soon)
- ▶ Create a class, derive it from **CustomHealthcheckRun**
- ▶ Override **DoHealthcheck** method
- ▶ Create **Custom Healthcheck** item in Sitecore and configure the fields

Implementing custom check

```
0 references | 0 changes | 0 authors, 0 changes
public class MongoSample : CustomHealthcheckRun
{
    2 references | 0 changes | 0 authors, 0 changes
    public override CustomHealthcheckResult DoHealthcheck(NameValueCollection parameters)
    {
        throw new NotImplementedException();
    }
}
```


Implementing custom check

```
6 references | Árvai Mihály, 43 days ago | 1 author, 1 change
public class CustomHealthcheckResult
{
    5 references | Árvai Mihály, 43 days ago | 1 author, 1 change
    public HealthcheckStatus Status { get; set; }
    4 references | Árvai Mihály, 43 days ago | 1 author, 1 change
    public string ErrorMessage { get; set; }
    2 references | Árvai Mihály, 43 days ago | 1 author, 1 change
    public string HealthyMessage { get; set; }
    2 references | Árvai Mihály, 43 days ago | 1 author, 1 change
    public Exception Exception { get; set; }
}
```

```
public override CustomHealthcheckResult DoHealthcheck(NameValueCollection parameters)
{
    var connectionString = parameters["ConnectionString"];
    var result = new CustomHealthcheckResult
    {
        HealthyMessage = "Connection is ok",
        Status = HealthcheckStatus.Healthy
    };

    try
    {
        if (string.IsNullOrEmpty(connectionString))
        {
            result.Status = HealthcheckStatus.Warning;
            result.ErrorMessage = "ConnectionString is not provided in 'ConnectionString' param";
            return result;
        }

        var client = new MongoClient(connectionString);

        if (client.Cluster.Description.State != MongoDB.Driver.Core.Clusters.ClusterState.Connected)
        {
            result.Status = HealthcheckStatus.Error;
            result.ErrorMessage = "State is disconnected";
        }
    }
    catch (Exception ex)
    {
        result.Status = HealthcheckStatus.Error;
        result.Exception = ex;
        result.ErrorMessage = ex.Message;
    }

    return result;
}
```

Modules

♥ Healthcheck Module

▶ API Methods

▶ Certificate Lookups

▶ Cleanup Lookups

▶ Components

▶ Xdb

▶ Databases

Custom Healthcheck

☒ empty

☒ experienceforms

☒ master

☒ web

▶ API

▶ Queues

▶ Application Insights

▶ Certificates

▶ Items

▶ License

▶ Logfiles

Configuration

Type:

Healthcheck.Service.Samples.MongoDbComponentHealth, Healthcheck.Service.Samples

Parameters:

ConnectionString

mongodb://localhost:27017/myproject

Data

Name:

MongoDB Check

Status:

Warning

DEMO

- ▶ Azure PaaS XP Step by Step setup:
https://www.youtube.com/watch?v=J_qk7jT_Y-U

Further improvements

- ▶ Disk space check
- ▶ More support on XConnect and on on-premise installation.
- ▶ Check Reporting Processing
- ▶ Page Speed Tests