

ITA\_System Configuration / Environment Construction Guide

Basic

－Version 1.7－

Copyright © NEC Corpo**r**ation 2020. All rights reserved.

Disclaimer

All the contents of this document are protected by copyright owned by NEC Corporation

Unauthorized reproduction or copying of all or part of the contents of this document is prohibited

The contents of this document are subject to change without prior notice in the future.

NEC Corporation is not responsible for any technical or editorial errors or omissions in this document.

NEC Corporation do not guarantee accuracy, usability, certainty of the content in this document.

Trademark

* Linux is registered trademark or trademark of Linux Torvalds, registered in the U.S. and other countries.
* Red Hat is registered trademark or trademark of Red Hat, Inc., registered in the U.S. and other countries.
* Apache、Apache Tomcat and Tomcat are registered trademarks or trademarks of the Apache Software Foundation.
* Oracle and MySQL are registered trademarks of Oracle Corporation and its subsidiaries and affiliates in the U.S. and other countries.
* MariaDB is a registered trademark or trademark of the MariaDB Foundation.

The names of other systems, company name and products mentioned in this document are registered trademarks or trademarks of their respective companies.

The® mark and TM mark are not specified in this document.

※「Exastro IT Automation 」 is written as「ITA」in this document.

Table of contents

[Introduction 3](#_Toc49249495)

[1. System requirements 4](#_Toc49249496)

[1.1 Server requirements 4](#_Toc49249501)

[1.2 Client requirements 6](#_Toc49249502)

[2. System configuration 7](#_Toc49249503)

[2.1 System configuration pattern 7](#_Toc49249504)

[2.2 System communication requirements 9](#_Toc49249505)

[2.3 Server scalability affecting points 10](#_Toc49249506)

# Introduction

This document explains the system configuration and environment construction for ITA system

operation.

# System requirements



## Server requirements

The system operates on a Linux server and is accessed from a client PC via browser.

When installing the system, please prepare a server that meets the following requirements.

■1.1.1　Server configuration

Table 1.1.1 Server configuration list

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Required/ Select** | **Product name** | **Version** |
| OS | Either of | RHEL ※1 | 7.0 or higher |
| CentOS | 7.0 or higher |
| Web server | Required | Apache | 2.4 series |
| DataBase | Required | MariaDB | 10.3 or higher |
| language | Required | PHP | 7.2 |
| PHP library | Required | PhpSpreadsheet | 1.10.1 or higher |
| php-yaml | 2.1.0 or higher |
| Pear library | Required | HTML\_AJAX | 0.5.7 or higher |

※1 Red Hat Enterprise Linux

■1.1.2　 Server minimum specifications

Table 1.1.2 List of minimum server specifications

|  |  |  |
| --- | --- | --- |
| **Category** | **Minimum specification value** | **Remarks** |
| CPU | 2Core |  |
| Memory | 4GB |  |
| Disk space | 1GB ※1 | ※1 Capacity of ITA system. Excluding OS and log storage capacity. |

■1.1.3　 Sizing

The following is the recommended spec for server.

1. Number of items in 1 menu

The number of items (columns) inside a single menu which is created in menu creation function.

Table 1.1.3-1 Number of items in 1 menu and server spec

|  |  |  |
| --- | --- | --- |
| Number of menu items | CPU | Memory |
| ～ 10,000 | 2Core | 4GB |
| 1,000 ～ 20,000 | 4Core | 8GB |

1. Number of parallel execution of Ansible operations

Maximum number of parallel execution can be set in “Ansible Common” > “Interfac e information” > “Number of parallel executions”.

Table 1.1.3-2 Number of parallel execution of Ansible operations and server spec

|  |  |  |
| --- | --- | --- |
| Number of parallel executions | CPU | Memory |
| ～ 50 | 2Core | 4GB |
| 50 ～ 100 | 4Core | 8GB |

1. Number of simultaneous login and operation

The number of the users that logged in to the system at the same time, and perform operations such as screen moving, filter searching or registration in login stat.

Table 1.1.3-3 Number of simultaneous login and operation and server spec

|  |  |  |
| --- | --- | --- |
| Number of simultaneous  login and operation | CPU | Memory |
| ～ 200 | 2Core | 4GB |
| 200 ～ 300 | 4Core | 8GB |

The setting of ITA after installation is set to the minimum spec (CPU: 2 core / Memory: 4GB) for ITA to operate on ITA system server.

Please change the setting value to improve the performance for the system to work above minimum spec.

Please refer to the “[Reference] Configuration settings during installation” manual for details of setting value.

※1 ITA system server … A basic ITA configuration that server of associated driver such as Ansible server is constructed in individual server .

## Client requirements

While using the functions of this system, the following requirements are recommended

for client PC.

Table 1.2.1 Requirements of client PC

|  |  |  |
| --- | --- | --- |
| **Category** | **Product name** | **Version** |
| Software | Excel（※） | MS Office 2010 or higher |
| Browser | Google Chrome | 72 or higher |
| FireFox | 41 or higher |
| Edge | 20 or higher |

※Required when downloading Excel files (because the format of download file is Excel).

# System configuration

## System configuration pattern

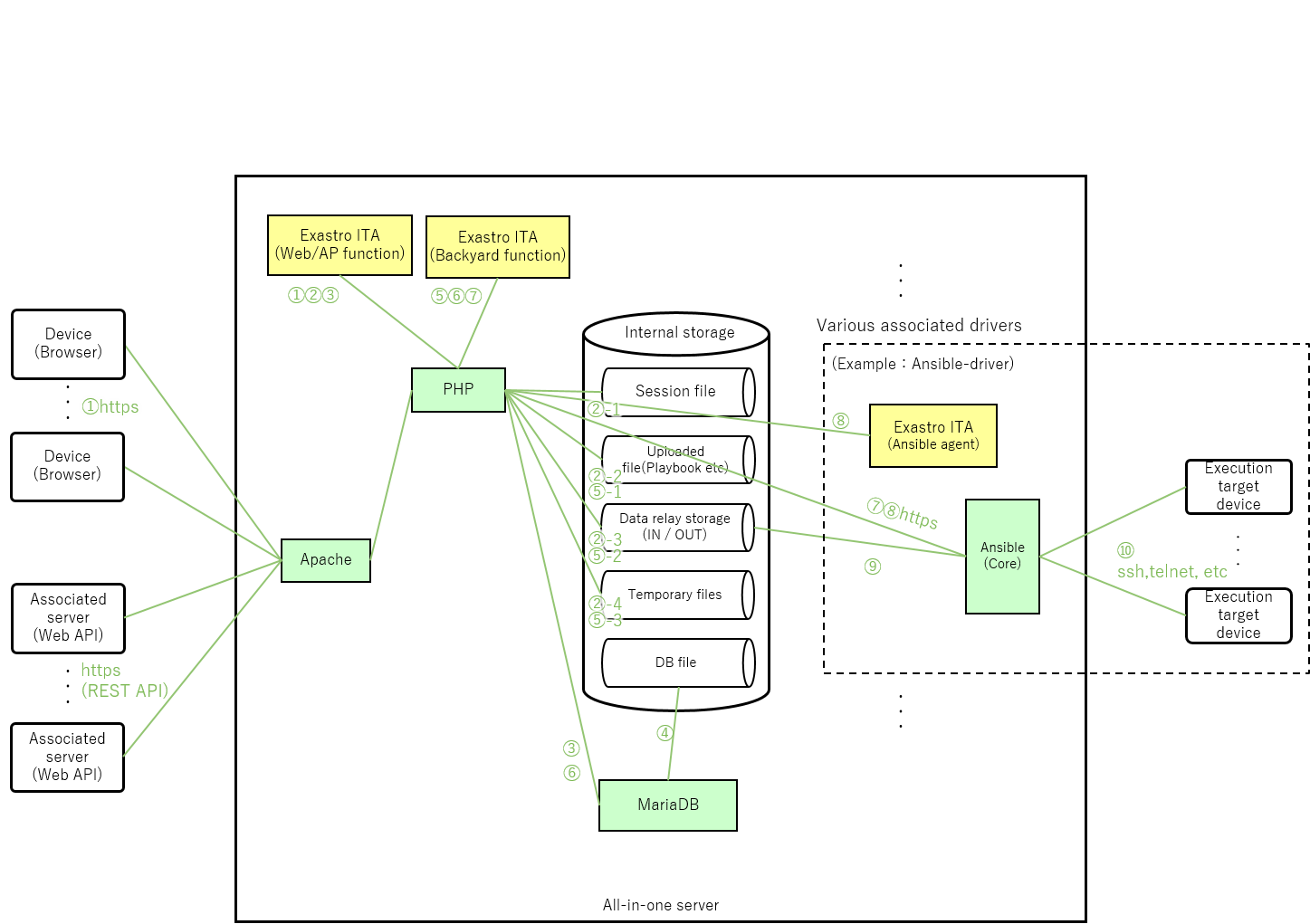
The Web / AP function, BackYard function, database and data storage of this software can be operated with following server configurations.

Table 2.1 System configuration patterns

|  |  |  |  |
| --- | --- | --- | --- |
| No | Configuration | Description | Remarks |
| 1 | All-in-one configuration | A configuration pattern that assembles the system on a single server. | Association driver that is possible to be configured in All-in-one configuration with ITA-BASE function.  ・Ansibler-driver  ・Cobbler-driver |
| 2 | HA configuration | A configuration pattern in which all systems are separated into individual servers to create a redundant configuration, and data files and DataBase files are stored in external storage. | Web/AP server (Act/Act configuration)  DBMS server (Act/Sby configuration)  Backyard server (Act/Sby configuration) |

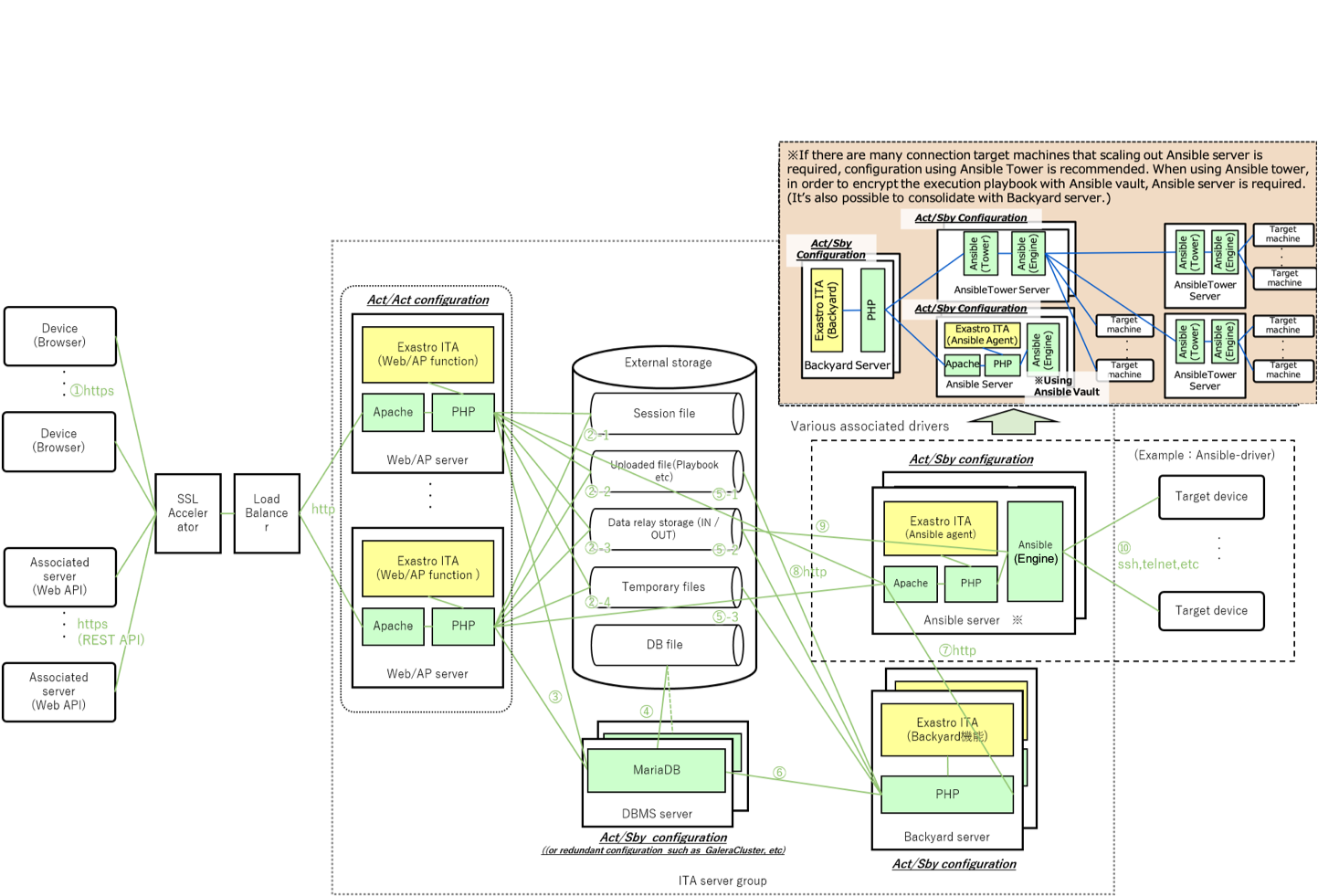
The following is a representative example image of a system using the Ansible driver

■ All-in-one configuration



(Engine)

■　HA configuration



## System communication requirements

In this system configuration, the communication requirements between each service are as follows.

Table 2.2 List of communication requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Communication number ※1 | FROM | TO | Protocol [port number ※2] | Main Applications |
| ① | Terminal | Web/AP server | http(s)  [80(443)/tcp] | Access to Exastro ITA Web content |
| ②-1 | Web/AP  server | Storage device (session file) | File access (tcp or storage I / O) | Store / view web session files |
| ②-2 | Storage device (uploaded file) | Store / view uploaded files (Playbook,etc) |
| ②-3 | Storage device (data relay storage) | Store execution information (Playbook, host\_vars, etc.) in Symphony execution. |
| ②-4 | Storage device (temporary file) | Store/ view temporary files (upload files, etc.) |
| ③ | DBMS server | tcp (DB access) [3306 / tcp] | Access to DB server (Data processing according to view/ registration / update /discard / restore on ITA screen) |
| ④ | DBMS server | Storage device (DB file) | File access (tcp or storage I / O) | Write DB file |
| ⑤-1 | Backyard  server | Storage device (uploaded file) | File access (tcp or storage I / O) | Refer to uploaded file (Playbook, etc.) |
| ⑤-2 | Storage device (data relay storage) | Store information and logs during Symphony execution |
| ⑤-3 | Storage device (temporary file) | Store / view temporary files (upload files, etc.) |
| ⑥ | DBMSserver | tcp (DB access) [3306 / tcp] | Access to DB server (View/update/discard) |
| ⑦ | Ansible server | http(s)  [80(443)/tcp] | Submitting REST API requests to Ansible (process execution,etc) |
| ⑧ | Web/AP  server | Ansible server | http(s)  [80(443)/tcp] | Submitting REST API requests to Ansible (Emergency stop) |
| ⑨ | Ansible  server | Storage device | File access (tcp or storage I / O) | Refer to the execution information (Playbook, host\_vars, etc.) when executing Ansible command |
| ⑩ | Target device | Any (※3 ssh [22/tcp] telnet [23/tcp] , etc.) | Execute command to target device from Ansible. |
| 11 ※4 | Web/AP server | Terraform Enterprise | http(s) [80(443)/tcp] | Registers ITA's Organization/Workspace to the Terraform Enterprise side  Gathers information from ITA's Organization/Workspace/Policy/PolicySet |
| 12 ※4 | Backyard server | Terraform Enterprise | http(s)  [80(443)/tcp] | Executes and gather results from Plan/PolicyCheck/Apply to Terraform Enterprise when running. |

※1 Describe the communication number associated with the above number in the configuration image of "2.1 System Configuration Pattern".

※2 The port number is the standard port number

※3 Typical examples are described .Usage protocol differs depending on Ansible module.

※4 No description linked with the configuration figure in "2.1 System Configuration Patterns".

## Server scalability affecting points

In this system configuration, the points that affect server scalability and the configuration are as

follows.

Table 2.3 Affecting points of server scalability

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| －  HA configuration  Pattern | Web/AP server | DBMS server | Backyard server | Ansible server | Stoarge device |
| Affecting point | ACT/ACT | ACT / ACT (3 units or more) by ACT / SBY or GaleraCluster etc. | ACT/SBY | ACT/SBY | Redundancy inside the device. |
| 1. Increase in the number of web accesses (combining various requirements) | Scale out | Scale up or  Scale out | No effect | No effect | No effect |
| 1. Increasing number of Symphony to be executed simultaneously | No effect | Scale up or  Scale out | Scale up | Scale up or introduce Tower | No effect  ※Disk expansion as required |
| 1. Increase in work pattern (Movement, Playbook, parameter sheet, etc.) | No effect | Scale up or  Scale out | Scale up | No effect | No effect ※Disk expansion as required |
| 1. Increase in the number of target devices. | No effect | No effect | No effect | Scale up or introduce Tower | No effect  ※Disk expansion as required |