

Checklist for high-availability setup

Hardware

Server	CPU	RAM	Disc	File system	OS, specify which...	Prepared (yes/no)?
Master	8	32	750			☐
Agent	8	32	150			☐
Analytics	4	16	150			☐
MS SQL	4	16	500			☐
RPA	8	16	150			☐

- ☐ Are disk volumes on all servers mounted separately from the root volume of the operating system?
- ☐ Have you allowed Javascript scripts to run on the Analytics server?
- ☐ Have you enabled the support of TLS 1.2 in your browser?
- ☐ Have you set the Timezone on your Agent servers to UTC?

System updates

- ☐ Have you verified that your Linux OS has the latest system updates? For that, run `yum check-update`.

Shared file system

Server	OS	Type of file system	Shared disk size	Prepared?
Master	<install_dir>/vds-data		250 GB	☐

Users

On Linux servers

☐ Is same application user created on all Linux servers?

Do you use a local Linux user or an LDAP user? Specify, which:

Does the user belong to a user group? Name the group:

☐ Is the user group the same on all Linux servers?

Enter the application user name:

Enter the application user password:

On Windows servers

BI installation user

☐ Is the same BI installation user created on all Analytics (BI) servers (if several)?

Enter the BI user name:

Enter the BI user password:

RPA installation user

☐ Is the same RPA installation user created on all RPA servers (if applicable)?

Enter the RPA user name:

Enter the RPA user password:

☐ Is WinRM (over HTTPS with CredSSP authentication) available from the Master server to all Windows servers for respective Windows users?

☐ Do you have Administrator permissions for at least 60 minutes?

☐ Is time synchronized on all servers?

DNS names

Prepare the domain names according to the planned installation mode:

Component	Example domain name	Real domain name	Prepared (yes/no)
Vault load balancer	vault-lb.example.com		☐
Minio s3 load balancer	minio-lb.example.com		☐
Nexus load balancer	nexus-lb.example.com		☐
RabbitMQ load balancer	rabbitmq-lb.example.com		☐
Mesos load balancer	mesos-lb.example.com		☐
Marathon load balancer	marathon-lb.example.com		☐
Workspace load balancer	workspace-lb.example.com		☐
Control tower load balancer	workfusion-lb.example.com		☐
Bot-manager load balancer	bot-manager-lb.example.-com		☐
Kibana load balancer	kibana-lb.example.com		☐
OCR load balancer	ocr-lb.example.com		☐
Tableau load balancer VIP	bi-lb.example.com		☐
Keycloak load balancer	keycloak-lb.workfusion.com		☐
SQL Server	mssql.example.com		☐
Master	master.example.com		☐
Agent	agent.example.com		☐
Analytics	bi.example.com		☐
RPA	rpa.example.com		☐

Certificates

- ☐ Are you going to use self-signed certificates? **If yes, ignore the other questions.**
- ☐ Have you prepared the Root certification authority (**ca.crt**) certificate in the .pem format?
- ☐ Does your **ca.crt** include any intermediate certificates?
- ☐ Have you prepared the **server.crt** certificate in the .pem format?
- ☐ Have you signed **server.crt** with **ca.crt**?
- ☐ Does your **server.crt** include the end certificate plus all intermediate certs, if exist?
- ☐ Is your server.crt being the SAN certificate?
- ☐ Do certificate's CommonName or Subject Alternative Names (SANs) match all DNS names of all servers and all DNS names assigned to a load balancer?
- ☐ Have you prepared the private **server.key** file in the PKCS#8 format for **server.crt**?
- ☐ Have you checked that your **server.key** is NOT protected with password?

Ports

Source server	Destination server	Destination port	Service name	Prepared
All servers	Master	80, 443/tcp	HAProxy (proxy for Control Tower, Workspace, bot-manager, AutoQC, Nexus, Minio, Tinymce, Kibana)	☐
		2181/tcp	zookeeper	☐
		4567-4571/tcp, 15072/tcp	logstash	☐
		5672/tcp	RabbitMQ queue	☐
		8202/tcp	HAProxy (proxy for Vault)	☐
Agent	Master	8480/tcp	nginx (proxy for marathon)	☐
		5050/tcp	mesos-master	☐
		111/tcp+udp	NFS	☐
		2049/tcp+udp	NFS	☐
		20048/tcp+udp	NFS	☐
RPA, Agent	Master	9073/tcp	nginx (mTLS for AutoML gateway-service)	☐
		9702/tcp	hazelcast server communication port	☐
Master, Agent	Agent	5051/tcp	mesos-slave	☐
Master	RPA	8443/tcp	nginx (proxy for RPA hub)	☐
		5986/tcp	WinRM	☐
		3389/tcp	RDP	☐
All servers	BI	80, 443/tcp	Apache (proxy for Tableau Web Interface)	☐
Master	BI	5986/tcp	WinRM	☐
All servers	MSSQL	1433	MS SQL	☐

Additional ports for Marathon

Source server(s)	Destination server(s)	Destination port	Service name	Open (yes/no)
Operators workstations	Master server(s)	8480	mesos-master	☐

Additional ports for external NFS server

Open the following ports on the Master servers, if you use an external NFS.

Port to open	Source server	Service name	Open (yes/no)
111/tcp+udp	all	NFS	☐
2049/cp+udp	all	NFS	☐

Database

- ☐ Have you installed MS SQL Server 2016 SP2 v. 13.0.5698.0?
- ☐ Have you activated your MS SQL Server software?
- ☐ Have you enabled the mixed authentication mode on your MS SQL Server software?
- ☐ Have you ensured that only local users are used?
- ☐ Does your SQL server listens to connections on a statically-assigned TCP port?
- ☐ Does your database reside in a separate network segment?
- ☐ Does your MS SQL server features DB Engine?
- ☐ Have you set the SQL_Latin1_General_CP1_CI_AS server-level collation?
- ☐ Have you set the database-level collation?
- ☐ Have you created the following MS SQL logins in your database:
 - ☐ mssql_dba_user: "wf_dba"
 - ☐ mssql_ct_user: "workfusion"
 - ☐ mssql_ws_user: "workspace"
 - ☐ mssql_sqc_user: "sqc"
 - ☐ mssql_ds_user: "ds"
 - ☐ mssql_rpa_user: "rpa"
 - ☐ mssql_pm_user: "pm"
 - ☐ mssql_ocr_user: "ocr"
 - ☐ mssql_dm_user: "dm"
 - ☐ mssql_rapi_user: "rapi"
 - ☐ mssql_automl_mms_user: "automl_mms"
 - ☐ mssql_keycloak_user: 'keycloak'
- ☐ Have you provided **mssql_dba_user** with the **db_owner** permissions?
- ☐ Have you enabled snapshot isolation?
- ☐ Have you configured Windows clustering to setup the SQL clustering in the Always-on mode?

RPA server

- ☐ Have you installed the required business applications that you want to be automated on the RPA server(s)? Specify, which ones.

- ☐ Have you already purchased the Microsoft RDS license?
- ☐ Have you created Windows user **Bot Master** on all RPA servers?
- ☐ Is the **Bot Master** user included in the **Administrators** and **Remote Desktop Users** groups on all RPA servers?
- ☐ Does your **Bot Master** user belong to Active Directory?
- ☐ Have you created Windows user **Bot Unit** on all RPA servers?
- ☐ Is the **Bot Unit** user included in the **Remote Desktop Users** group on all RPA servers?
- ☐ Does the Bot Unit user have the write permissions for the installation directory on all RPA servers?
- ☐ Does your **Bot Unit** user belong to Active Directory?