Appendix C-1 Evaluation Sheet

<Evaluation: Column H: Server-less Deliverables>

- ○ The same amount of work compared to the on-premises version
- △ Reduced workload compared to on-premises systems
- - Something that will not need to be created.

<Verification Result: Amount of Document Creation>

on-premise installation	**38 doc**
Serverless construction	
The same amount of work compared to the on-premises version	**38 (56% of the total deliverables)**
Reduced workload compared to on-premises systems	**0 (26% of total deliverables)**
Something that will not need to be created	**12 (18% of total deliverables)**

					Document Creation		Organizing the Pros & Cons for serverless systems		
No	engineering		deliverables	Supplemental Outputs	on-premises	server-less	Overview of Benefits	Disadvantages (new challenges that arise)	Tested on a device Yes/No
1	Requirement Definition	Functional Requirement	Screen Layout	-	○	○	In the case of a new build, no particular savings can be made. In the case of a knowledgeable company with experience in multiple projects, the same configuration can be deployed in a short period of time (some changes can be made to the system by entering parameters at run time and then deploying it). So you can show your customers a working app right away.	None	No (desk verification)
2			Form Layout	-	○	○		None	No (desk verification)
3			Screen Mockup	Create a screen mockup at the customer's request.	○	○		None	No (desk verification)
4			Screen Transition Diagram	Diagramming the transition relationship between each screen of the system.	○	○	None.	None	No (desk verification)
5			Screen Item Description	A definition of the items to be displayed on the screen.	○	○	None	None	No (desk verification)
6			Form-item Description	A definition of the items to be displayed on the form.	○	○	None	None	No (desk verification)
7			Work Flow Diagram	A graphical representation of the work flow.	○	○	None	None	No (desk verification)
8			List of Business Requirements	A summary of the business requirements (equivalent to a product backlog)	○	○	None	None	No (desk verification)
9			List of Business Functions	A summary of each function	○	○	None	None	No (desk verification)
10			External Interface List	A collection of external interfaces that work together	○	○	None	None	No (desk verification)
11			Conceptual Data Model (ER Diagram)	ER diagrams may be performed during the design phase (automatic generation by the tool is ideal)	○	○	None	None	No (desk verification)
12		Non-Functional Requirement	Facilities and Equipment	Data Center Define the location of the data center, securing power supply, etc.	○	-	The scope of consideration is limited due to the scope of AWS responsibility.	None	No (substituted by requirements specification)
13			Network	Consideration of requirements for network construction	○	△		Managing the overall configuration of services that use serverless is difficult.	No (substituted by requirements specification)
14			System Configuration	Overall system configuration	○	△		None	No (substituted by requirements specification)
15			Data Management	Backups Primary bkups, secondary bkups, generation management Restore Methodology, Summary of Restoration Tasks Required	○	△	There is no need to be aware of the HW and logical settings (transfer method and method (compression difference)) required to obtain a backup. The user only needs to decide on the target data, backup method, and period.	None.	No (substituted by requirements specification)
16			Operation Management	Service provision time, system uptime, maintenance time, batch processing time, etc.	○	○	None.	None	No (substituted by requirements specification)
17			Availability	Elimination of SPOFs for each component of the system and introduction of high availability configuration when necessary	○	△	AWS Responsibility Scope. Just select and configure the features provided.	None.	No (substituted by requirements specification)
18			Performance Control Scheme Definition	A description of the requirements for each performance control (response time, server processing time, etc.).	○	△	No need to be aware of sizing as a whole (physical, per-middle logical, app), just set performance requirements for a single process.	None.	No (substituted by requirements specification)
19			Failure Countermeasure Definition	A description of the requirements for continuity in the event of failure (RPO, RTO).	○	△	You can use the features provided by AWS for disaster recovery.	None.	No (substituted by requirements specification)
20			Security Method Definition	A description of the requirements for each security measure (e.g., authentication, access control, etc.).	○	○	None, as per the AWS responsibility sharing concept, the physical is AWS/logic is the user, so you don't have to be aware of the physical.	The scope of settings is limited to each individual service. It becomes difficult to grasp the security settings from an overall perspective.	No (substituted by requirements specification)
21			Transition Method Definition	Describes requirements for migration.	○	○	None (for new builds).	None.	No (substituted by requirements specification)
22			System Operation System Specification	Describes requirements for operations (e.g., system support, system monitoring, etc.).	○	○	None	Monitoring of the operational status of serverless services and checking the logs is required for each individual service.	No (substituted by requirements specification)
23			Operation Test Plan	Describe the plan for operational testing to be performed	○	○	None	None.	No (substituted by requirements specification)
24			System Test Plan	Describe the plan for system testing to be performed	○	△	No infrastructure and middleware related testing perspective is needed.	None	No (substituted by requirements specification)
25		Development Plan	Schedule	Summarize the master schedule and development costs for the entire development.	○	○	None.	None	No (desk verification)
26			Development Method	Agile, waterfall and prototyping.	○	○	None	None	No (desk verification)
27	External Design／Internal Design	Basic Design	DB Physical Design	A description of the application structure	○	○	None	There are multiple similar services, so it is necessary to understand the characteristics of these services and combine them to find the best fit.	No (substituted by requirements specification)
28			Application Framework Design	Designing a common app specification	○	△	The cloud service provider provides APIs, which limits the scope of consideration.	Dependent on APIs provided by cloud service providers, so there is no customization factor.	No (desk verification)
29			List of Tables and Views	A description of the views and tables used in the system.	○	○	None.	None	Yes (parameter sheet)
30			Tables and view definitions	A description of the definitions of views and table items.	○	○	None	None	Yes (parameter sheet)
31			file physical structure diagram	A file that illustrates the physical structure of the files used in the system.	○	○	None	None	No (desk verification)
32			Batch processing design document	Describes the processing details of the batch processes used in the system.	○	○	None	None	No (desk verification)
33		Non_Functional	System Configuration	Logical structure of the hardware, virtual server and virtual IO (disk and network).	○	-	The scope of consideration is limited due to the AWS scope of responsibility.	None	No (substituted by requirements specification)
34			Operational Design	Service provision time, system uptime, maintenance time, batch processing time, etc.	○	△	The scope of consideration is limited due to the AWS scope of responsibility.	None	No (substituted by requirements specification)
35			Log Design	Log output, backup, generation management, long-term storage	○	△	Select the backup operational mechanism of the service offering to be used for the AWS scope of responsibility.	If you use a less expensive service, immediate restoration is not possible. You must check the requirements before using the service.	Yes (parameter sheet)
36			Fault Design	HW, each SW, load distribution, web allocation control, DBMS, high availability clustering	○	△	Each failure feature is provided.	None	Yes (parameter sheet)
37			Monitoring Design	Business processing, process monitoring, HW monitoring (OS error logs, SNMP traps, etc.), FS usage	○	△	Physical is limited in scope of consideration due to AWS scope of responsibility.	Serverless service operation status monitoring and log checks are required for each individual service. It is complicated because error messages, etc. are different for each service.	No (substituted by requirements specification)
38			Backup and Restoration Design	Backup method, generation management and retention period	○	△	Select the backup and lifecycle operation mechanisms for your service provision.	The feasibility of recovery operation needs to be confirmed through training using actual machines.	Yes (parameter sheet)
39			OS design	OS Parameters, Users, Groups, PV, LV, FS	○	-	The scope of consideration is limited due to the AWS scope of responsibility.	None.	Yes (parameter sheet)
40			Middleware Design	Logic configuration and architecture design	○	△	The scope of consideration is limited due to the AWS scope of responsibility.	None	Yes (parameter sheet)
41			Operation Infrastructure Design	Design for the introduction of internal standard operations (automatic password change, library management, etc.)	○	△	Select to use the features provided and decide on the configuration values only. No configuration design required.	None	Yes (parameter sheet)

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42			DB Logical Design	Define the logical structure of the database	○	△	Select to use the features provided and decide on the configuration values only. No configuration design required.	None	Yes (parameter sheet)
43			DB Physical Design	Defining the physical structure of the database, the	○	-	Limited consideration due to the scope of AWS responsibility.	None	Yes (construction)
44		DetailDesign (UML)	Additive Diagram	-	○	○	None.	None	No (desk verification)
45			Use case diagrams and specifications	-	○	○			No (desk verification)
46			Sequence Diagram	-	○	○			No (desk verification)
47			Communication Diagram	-	○	○			No (desk verification)
48	Construction	Coding	Application Source Code	-	○	○	No direct effect on new development. By turning each process into a service, you can improve the visibility of the code and reduce the cost of modification in the maintenance phase.	More freedom to choose an appropriate language, but less maintenance.	Yes (construction)
49		Server Construction※	Development Environment Construction Procedures Virtualization Server Construction	Virtualization software installation and configuration. Allocation of resources (CPU, memory, NW, disk) and devices associated with the server.	○	-	The scope of consideration is limited due to the scope of AWS responsibility.	None.	Yes (construction)
50			Development Environment Construction Procedures Document Logical Server Establishment (OS level)	OS installation and configuration (user groups, PV, LV, FS, network, etc.)	○	-			Yes (construction)
51			Development Environment Construction Procedures Server Operation	Set up daily, weekly or other automated system operation processes. Configure automatic startup and shutdown processes when the server starts and stops.	○	-			Yes (construction)
52			Development Environment Construction Procedures Load Balancer Construction	Install software and build a load balancing function.	○	-	A parameter sheet with procedures has been prepared in the design process.	None	Yes (construction)
53			Development Environment Construction Procedures WEB and Application Server Construction	Software installation and WEB Server, Application Server construction, Runtime installation	○	-	A parameter sheet with procedures has been prepared in the design process.	None	Yes (construction)
54			Development Environment Construction Procedures DB Server Construction	Software installation and DB server construction (Database, clustering function, backup function, etc.)	○	-	A parameter sheet with procedures has been prepared in the design process.	None	Yes (construction)
55			Development Environment Construction Procedures Operational System Function Construction	Build necessary functions such as log management, monitoring, backup, audit trail, and library management.	○	-	A parameter sheet with procedures has been prepared in the design process.	None	Yes (construction)
56			Development Environment Construction Procedures Linking Function Construction	Build inter-server and inter-system integration capabilities.	○	-	A parameter sheet with procedures has been prepared in the design process.	None	Yes (construction)
57			Staging Environment Construction Procedure	Build the development environment configuration image as a template.	○	△	Templating (e.g. CloudFormation, Beantalks, OpsWorks, SAM, etc.) can reduce reconfiguration costs if it is created during the development environment build out.	None	No (desk verification)
58			Production Environment Construction Procedure	Build a development environment configuration image as a template.	○	△		None	No (desk verification)
59	Unit Test / Integration Test	Unit Test	Unit Test Plan	Describe the environment, prerequisites, schedule, etc. for unit tests.	○	○	None	None	No (desk verification)
60			Unit Test Specification and Implementation Record	Describes the test cases for unit tests.	○	○	None	None	No (desk verification)
61		Integration Test	Integration Test Plan	Describes the environment, prerequisites, schedule, etc. for combined tests.	○	○	None	None	No (desk verification)
62			Integration Test Specification and Implementation Note	Describes the environment, prerequisites, schedule, etc. for combined tests.	○	○	None	None	No (desk verification)
63	System Test/ Oparation Test	System Test	System Test Plan	Describes the environment, prerequisites, schedule, etc. for system tests.	○	○	None	None	No (desk verification)
64			System Test Specification and Implementation Record	Describes the test cases for system tests.	○	○	None	None	No (desk verification)
65		Oparation Test (UAT)	Operation Test plan	Describes the environment, prerequisites, schedule, etc. for operational tests.	○	○	None	None	No (desk verification)
66			Operation Test Specification and Implementation Record	Describes the test cases for operational tests.	○	○	None	None	No (desk verification)
67	Migration (release)	Migration ・System Migration ・Data Migration	Migration and Release Plan	Describe the overall migration plan (environment, prerequisites, schedule, work content, fallback plan, etc.).	○	○	None	None	No (desk verification)
68			Migration and Release Procedures	Describe procedures related to migration (system migration, data migration, fallback, etc.).	○	○	None	None	No (desk verification)

※ Documentation in the construction process refers to the construction procedure.