

2.2

: 99/09/02

checkup@asta.ir

()

(SAD)

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- 2.2
- :
- 1.
- 2.
- 3.
- 4.
- 5. (Deployment Physical)
- 6. (Process)
- 7. (Development Implementation)
- 8. ()
- 9.
- 10.
- 11.
- 12. (Monitoring)
- 13.
- 14.
- 15.
- 16.
- 17.
- 18.
- 19.
- 20. /
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-
-

1.

(scope)

() .

(Constraints, Standards, Background)

. (Background) (Business) () .

2.

3.

(Nonfunctional) (Quality Attributes)

() .

. «/ » . () (TPS) .

: () .

		/	
(Performance)	TPS	100	
		1000	
		0.5	
(Availability)	Up-Time	99.9%	
	down-time		
(Scalability)	scale-up		
	Scale-out		
	Database Scalability	Scale-up	Scale-out
(Security)	...	...	
(Testability)			
		60	
		40	
(Maintainability/Modifiability)	...		
...			

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-
- (measurements metrics) « » . (quantify) . «» TPS
- .: TPS 100 . 5 . 100 .

: «» (Problem) . «» (Solution) . () .

4.

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. () . (conceptual view) . () . () . () .

Domain Driven Design Bounded Context .

sequence diagram . high-level conceptual view «» . (sequence-diagrams) .

:
• (Element/Component)
•
•
—(...) .

5. (Deployment Physical)

. Deployment Diagram () .

() (...) .

: IP .

0	0						
VM-DB			Virtual Machine	3	2 * Corei7	32 GB	1 TB
				120	25 CPUs	320 GB	20 TB

:
• :
• :
• : Active/Passive Hot/Cold Spare .
• :
• :
• /: (CPU) (RAM)

: () .

:
• (ESXi ...) .
• Container container (Docker Kubernetes) .
• Container Orchestration Master Worker Kubernetes .

• «» :

6. (Process)

. (Executable) (thread) .

▪ : ()

■ : ...

∴ tomcat abc (agent) xyz.

: Docker Docker . Docker Docker Port Volume Dockerfile .

: (business process) (workflow) . (processes and threads).

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: . () .

	<i>I</i>	
Tomcat-server	1	application-server
Oracle-DB	2	
MySQL-DB	2	

Microservices Diagram () .

			0	
Tomcat-Server	Oracle-DB	SQL	10 TPS	:
Tomcat-Server	ABC-Server	(RMI)	10 request per day	:
ABC-Server	XYZ-Server	REST	10 request per minute	:
...	...	SOAP	10 per hour	

7. (Development Implementation)

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0 . (git) .

(Source Project) (Package) (Module) . (). :

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- ()
- : .

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<i>//</i>			
UI	front-end	HTML, JS, CSS, Angular	-
Business-Services		Java, Spring	Project-core
Project-core	Reusable	Java, Spring	-

8. ()

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9.

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10.

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11.

12. (Monitoring)

13.

(sql/nosql/...) (CQRS Cache)

14.

(Reporting)

OLAP, Data-warehousing, Report Engines, Report Generators, Report Designers, Materialized View, Denormalization, Power BI, Jasper Reports, BIRT, ...

- /
-
- (report designer)
-

15.

16.

(version)

1. ///
- 2.
3. ()

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///			(//)
Java	10		
Spring	5	IOC, AOP	
JPA	2.2	ORM	
Hibernate	5.4	ORM Implementation	
Angular	7		
CQRS	-		
Redis	5	1 4	
SLF4J	1.7	-	
Tomcat	9	1 2 4	
ActiveMQ	5.15		
Docker	18	...	
JUnit	5	-	

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17.

18.

19.

20. /

()

Iterative & incremental . . :

1. : .
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2. : « » « » . :
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3. : . :
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4. . :
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5. . :
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- www.cs.ubc.ca/~gregor/teaching/papers/4+1view-architecture.pdf
- Microservices patterns book (www.microservices.io)
- Simon Brown
 - http://www.codingthearchitecture.com/2016/05/31/agile_software_architecture_documentation.html
 - <https://leanpub.com/software-architecture-for-developers>
 - <https://c4model.com/>
 - <https://structurizr.com/>
- [https://en.wikipedia.org/wiki/Hexagonal_architecture_\(software\)](https://en.wikipedia.org/wiki/Hexagonal_architecture_(software))
- <https://github.com/unlight/solution-architecture/blob/master/README.md>
- <https://arc42.org/overview/>
- <https://wiki.sei.cmu.edu/confluence/display/SAD>

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