



ArcGIS Performance: Tuning, Testing, and Monitoring

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SEE
WHAT
OTHERS
CAN'T

Breaks

- **Breaks**
- **8:30 Start**
- **10:00-10:15 Break**
- **12:13:30 Lunch**
- **15:15:15 Break**
- **16:30-17:00 Questions**

Agenda

- **Fundamentals**
- **Capacity Planning**
- **Performance tuning**
- **Performance testing**
- **Monitoring**
- **QA**

Introduction

- **Roles**
- **Workshop expectations**

Fundamentals

Prerequisite knowledge

- **Enterprise architecture**
- **Enterprise administration**
- **Performance tuning**
- **Capacity**
- **Statistics**

Performance

- Speed, e.g. response time (seconds)



Scalability

- The ability to increase output and maintain acceptable performance



Capacity

- The maximum level of output the system can produce, e.g.
- X cars/sec
- X maps/sec



At capacity



Over capacity

Bottleneck

- Resource(s) limiting the performance or capacity



Not bottleneck



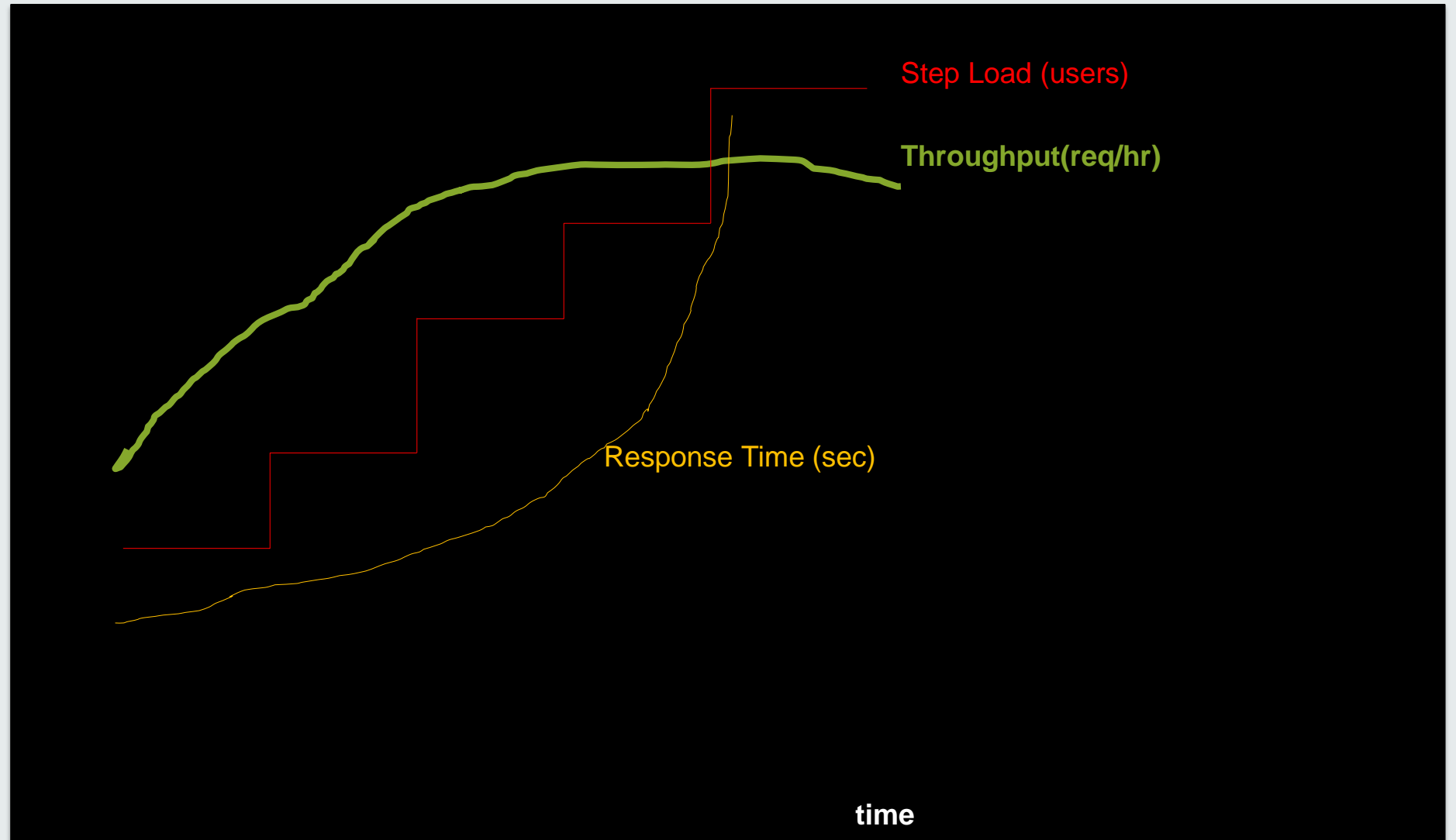
bottleneck

Think of :
Lanes -as CPU processor
Toll -as ArcGIS Server instances
Cars -as map requests

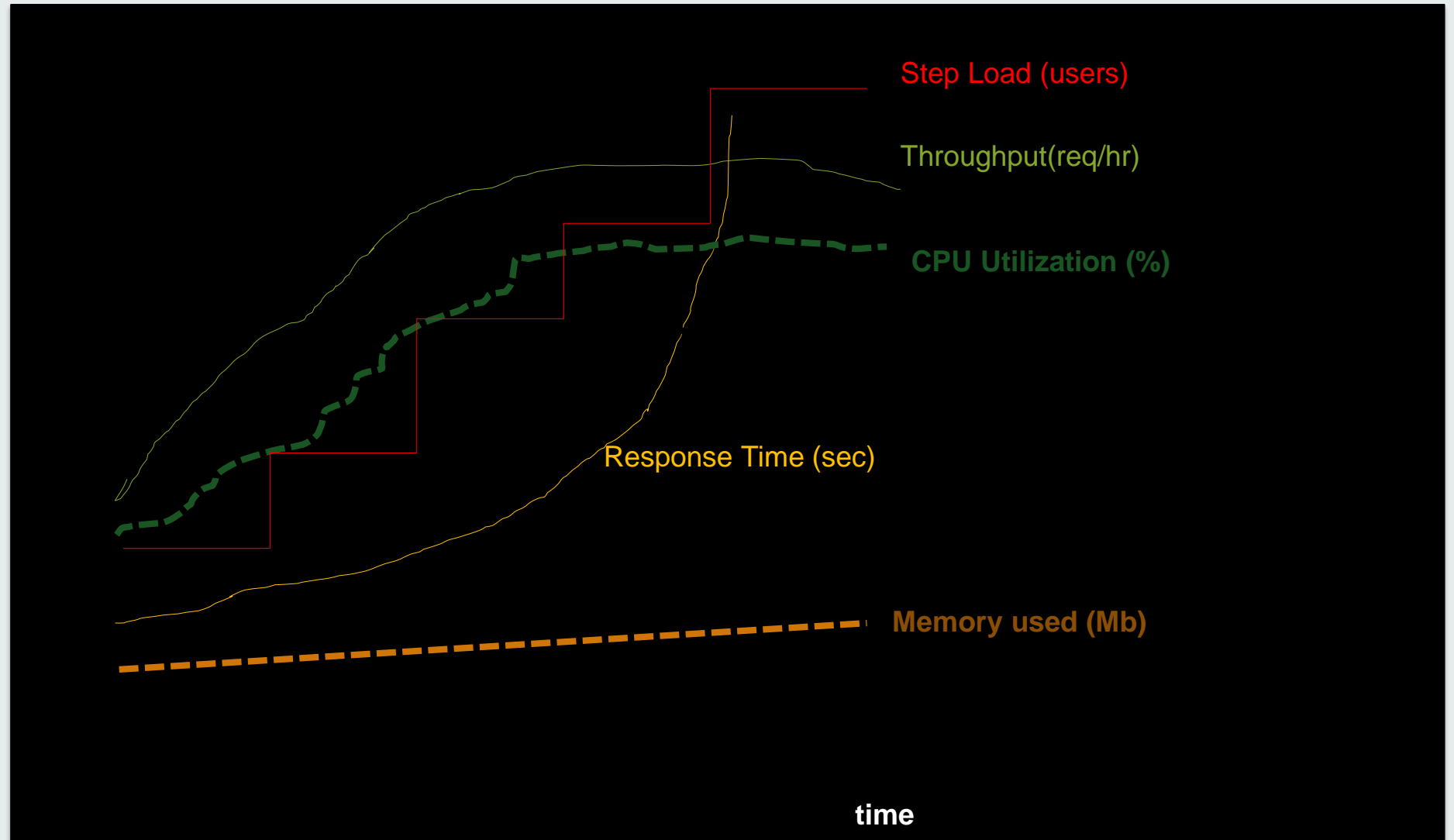
Step Load and Response Time



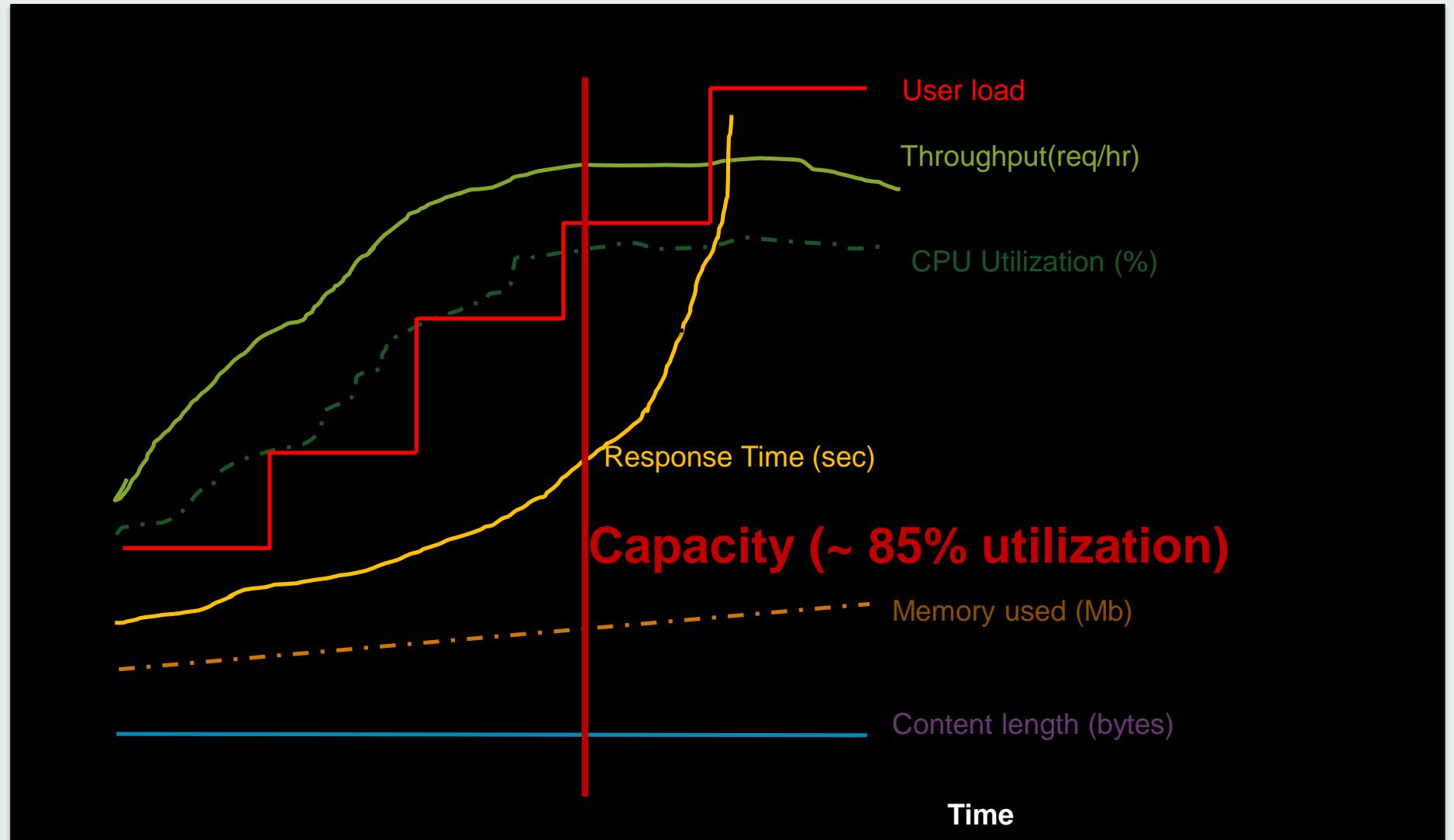
Throughput (request/hr)



Resource utilization: CPU, Memory, Network

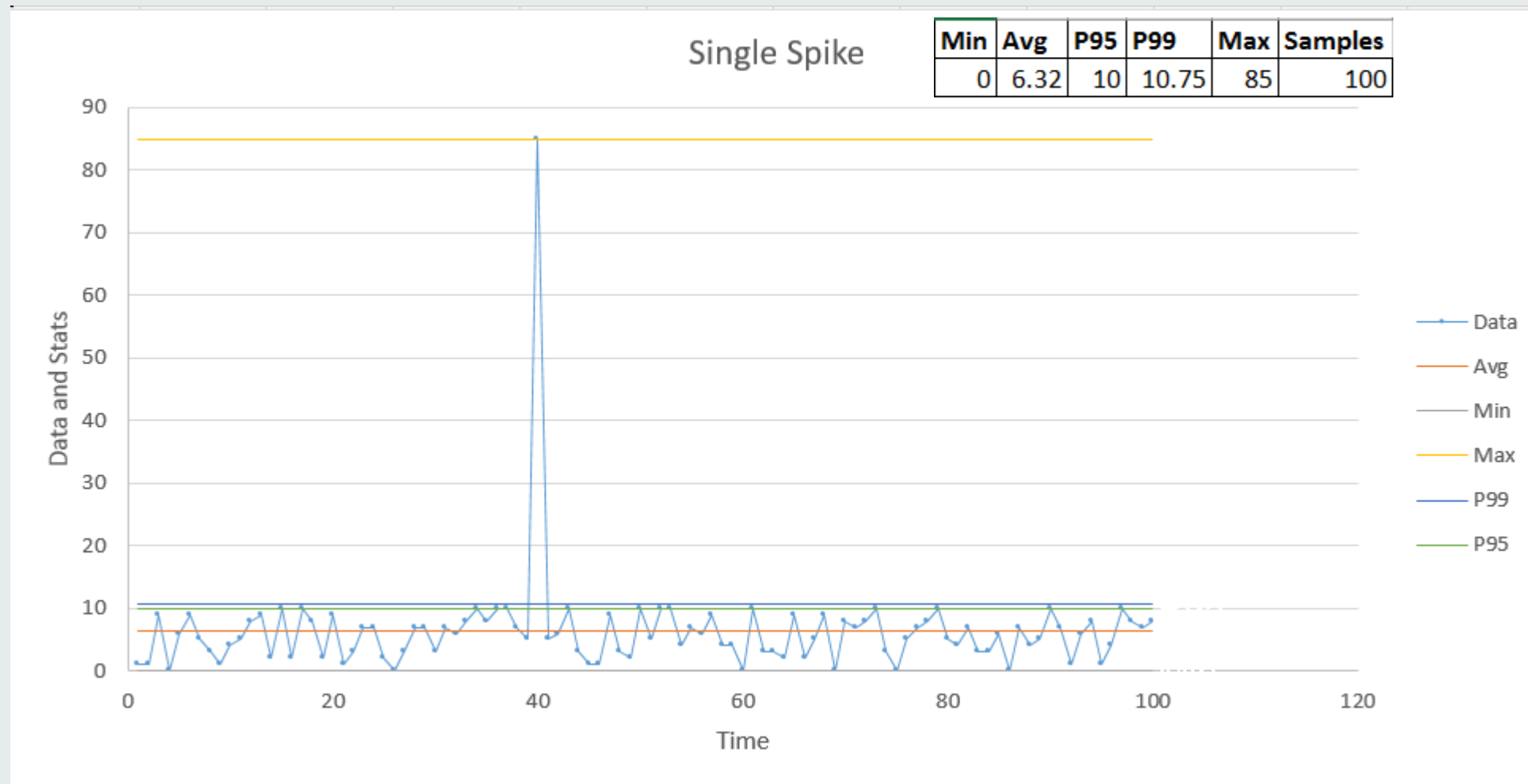


Capacity



Single Spike

Max very high while other stats low



Capacity Planning

Scaling Direction

- **Scaling up**
 - Adding resources to your existing machine
 - Usually RAM
 - Commonly, due to lots of service instances
- **Scaling out**
 - Add more machines
 - Usually to get more compute power, sometimes for high availability
 - Commonly, due to increased user demand



Provide sufficient hardware resources

Most systems are CPU bound

GIS Systems are bound by:

- 1. CPU - typically**
- 2. Memory – when large number of services**
- 3. Disk – Image Service, Synchronization**
- 4. Network – low bandwidth deployment**
- 5. Poorly configured virtualization can result in 30% or higher performance degradation**

Infrastructure

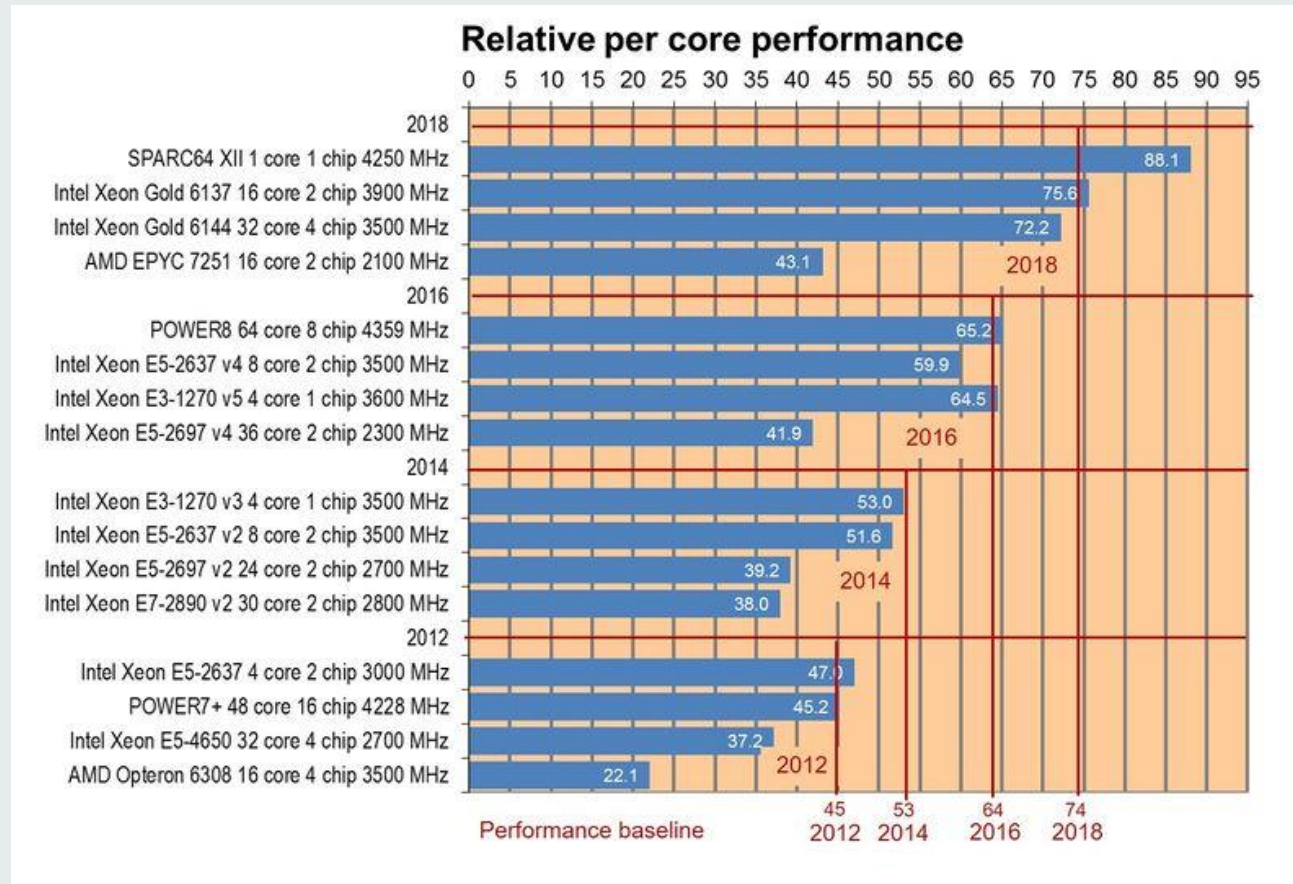
Memory requirements

Item	Low	High
ArcSOC Map	50 MB	500 MB
ArcSOC Image	20 MB	1,024 MB
ArcSOC GP	100 MB	2,000 MB
XenApp Session	500 MB	1.2 GB
Database Session	10 MB	75 MB
Database Cache	200 MB	200 GB

Wide ranges of memory consumptions

Server CPU Spec

- Performance is impacted by SPEC Rate Per Core
- Scalability is impacted by number of cores and SPEC Rate Per Core



Network Planning

Establish and Configure DNS Appropriately!

```
C:\Users\ >tracert

Tracing route to
over a maximum of 30 hops:

  1    55 ms    55 ms    55 ms
  2    55 ms    55 ms    55 ms
  3   115 ms    58 ms    62 ms
  4   111 ms   111 ms   112 ms
  5   110 ms   109 ms   110 ms
  6   110 ms   113 ms   110 ms
  7   109 ms   109 ms   109 ms
```

Trace Route: LA Workstation → Phoenix DNS
LA Database Server ←



VM – watch out for overallocations

Getting Started Summary Virtual Machines Hosts DRS Resource	
General	
vSphere DRS:	On
vSphere HA:	On
VMware EVC Mode:	Intel® "Sandy Bridge" Generation
Total CPU Resources:	227 GHz
Total Memory:	1.87 TB
Total Storage:	103.92 TB
Number of Hosts:	4
Total Processors:	88
Number of Datastore Clusters:	0
Total Datastores:	42
Virtual Machines and Templates:	314
Total Migrations using vMotion:	3928

$88/314=0.28$ cpu/vm

Getting Started Summary Virtual Machines Hosts DRS Resource	
General	
vSphere DRS:	On
vSphere HA:	On
VMware EVC Mode:	Intel® "Westmere" Generation
Total CPU Resources:	184 GHz
Total Memory:	2.16 TB
Total Storage:	61.06 TB
Number of Hosts:	5
Total Processors:	92
Number of Datastore Clusters:	0
Total Datastores:	37
Virtual Machines and Templates:	176
Total Migrations using vMotion:	2747

$92/176=0.52$ cpu/vm

Cluster1	
Getting Started Summary Monitor Configure Permissions	
Cluster1	
Total Processors:	196
Total vMotion Migrations:	119722

119722 vMotion Migrations

Test Results as Input into Capacity Planning

Service time and Mb/tr models as input into capacity planning

$$ST = \frac{\#CPU \times 3600 \times \%CPU}{TH \times 100}$$

$$TH = \frac{Users}{ResponseTime + ThinkTime}$$

ST - CPU service time (sec)

#CPU – number of physical CPU cores

%CPU - percent CPU

TH – throughput (tr/sec)

CPU capacity

1. User load: Concurrent users or throughput
2. Operation CPU service time (model)—performance
3. CPU SpecRate

$$\# CPU_t = \frac{ST_b \times TH_t \times 100}{3600 \times \%CPU_t} \times \frac{SpecRatePerCPU_b}{SpecRatePerCPU_t}$$

subscript t = target

subscript b = benchmark

ST = CPU service time

TH = throughput

%CPU = percent CPU

Network capacity

Network transport time

- Required bandwidth
 - Response size
 - Number of transactions

$$Mbps = \frac{TH \times Mbits / req}{3600}$$

- Network transport time
 - Response size
 - Effective bandwidth

$$Transport(sec) = \frac{Mbits / req}{Mbps - Mbps_{used}}$$

- All Built into System Designer

Performance Factors

Network transport time

- **Impact of service and return type on network transport time**
 - **Compression**
 - **Content, e.g., Vector vs. Raster**
 - **Return type, e.g., JPEG vs. PNG**

					Network Traffic Transport Time (sec)					
					56 kbps	1.54 Mbps	10 Mbps	45 Mbps	100 Mbps	1 Gbps
Application Type	Service/Op	Content	Return Type	Mb/Tr	0.056	1.540	10.000	45.000	100.000	1000.000
ArcGIS Desktop	Map	Vector		10	178.571	6.494	1.000	0.222	0.100	0.010
Citrix/ArcGIS	Map	Vector+Image	ICA Comp	1	17.857	0.649	0.100	0.022	0.010	0.001
Citrix/ArcGIS	Map	Vector	ICA Comp	0.3	5.357	0.195	0.030	0.007	0.003	0.000
ArcGIS Server	Map	Vector	PNG	1.5	26.786	0.974	0.150	0.033	0.015	0.002
ArcGIS Server	Image		JPG	0.3	5.357	0.195	0.030	0.007	0.003	0.000
ArcGIS Server	Map Cache	Vector	PNG	0.1	1.786	0.065	0.010	0.002	0.001	0.000
ArcGIS Server	Map Cache	Vector+Image	JPG	0.3	5.357	0.195	0.030	0.007	0.003	0.000

Operation Capacity Calculator

- [OperationCapacityCalculator.xlsx](#)

Benchmark input:		
Response Time (sec)	1.00	sec
%CPU of Rt (enter 100 when CPU is used during the entire RT time)	90%	
CPU Service Time (sec) _b	0.90	sec
Mb/ArcSOC process	0.00	
Mbits/tr _b	1.50	Mbits/tr
SpecRate _b PerCPU	40	
Target solution input:		
Users	10.00	users
Think Time (sec) _b	0.00	sec
SpecRate _t PerCPU	40	
%CPU	90	%
TH _t	36,000	tr/hr
Output:		
#CPU _t	10.00	CPU cores
Mbps	15.00	Mbps
user required input		

$$\#CPU_t = \frac{ST_b \times TH_t \times 100}{3600 \times \%CPU_t} \times \frac{SpecRatePerCPU_b}{SpecRatePerCPU_t}$$

$$TH_t = \frac{Users_t \times 3600}{RT_t + Think_t}$$

$$Mbps_t = \frac{TH_t \times Mbitsptr_b}{3600}$$

ST—Service time

RT - Response time

Q - Queue time

#CPU - Number of CPU cores

%CPU - Percentage of CPU utilization (Typically a target threshold is set between 85% and 95%.)

TH - Maximum throughput

Think - Assumed think time (sec.) between transactions

Users - User load

b (subscripted)—Benchmarked inputs

t (subscripted)—Target outputs

SpecRate—SpecRate CINT 2006 benchmarked system (See <http://www.spec.org/cpu2006/results/cint2006.html>.)

Fundamental Laws

http://www.cs.washington.edu/homes/lazowska/qsp/Images/Chap_03.pdf

Utility Network example

- [WorkflowCapacityCalculator.xlsx](#)

	users	100									
	client rendering (% of RT)	0%									
	AGS ST CPU (% of RT)	85% DO NOT EDIT									
	DB ST CPU (% of RT)	15%			DO NOT EDIT						
ID	Operation Name	RT(sec)	Occurance	Think(sec)	(rt+think)*occ	TH tr/hr	AGS ST(sec)	DB ST(sec)	AGS cores	DB cores	Total cores
1	New Version Window	0.60	1	6	6.60	178	0.51	0.09	0.03	0.00	0.03
2	Create New Version	23.50	1	6	29.50	178	19.98	3.53	0.99	0.17	1.16
3	Navigational Bookmark	11.92	1	10	21.92	178	10.13	1.79	0.50	0.09	0.59
4	Pan & Zoom	2.11	20	6	162.13	3555	1.79	0.32	1.77	0.31	2.08
5	Select By Attribute	3.40	2	30	66.80	355	2.89	0.51	0.29	0.05	0.34
5	Trace	20.00	2	10	60.00	355	17.00	3.00	1.68	0.30	1.97
5	Pan & Zoom (cache)	0.00	5	6	30.00	889	0.00	0.00	0.00	0.00	0.00
6	Edit 1: Create PriResidentialUG / Transformer / Meter	3.85	10	30	338.47	1777	3.27	0.58	1.61	0.28	1.90
7	Pan & Zoom	2.11	5	6	40.53	889	1.79	0.32	0.44	0.08	0.52
8	Pan & Zoom (cache)	0.00	15	6	90.00	2666	0.00	0.00	0.00	0.00	0.00
9	Edit 2: Create PriResidentialUG / Transformer / Meter	3.85	10	30	338.47	1777	3.27	0.58	1.61	0.28	1.90
10	Pan & Zoom	2.11	5	6	40.53	889	1.79	0.32	0.44	0.08	0.52
11	Pan & Zoom (cache)	0.00	15	6	90.00	2666	0.00	0.00	0.00	0.00	0.00
12	Edit 3: Create PriResidentialUG / Transformer / Meter	3.85	10	30	338.47	1777	3.27	0.58	1.61	0.28	1.90
13	Validate	8.31	2	15	46.61	355	7.06	1.25	0.70	0.12	0.82
14	Save	0.42	3	6	19.27	533	0.36	0.06	0.05	0.01	0.06
15	Close Pro	0.12	1	6	6.12	178	0.10	0.02	0.01	0.00	0.01
	workflow pacing (sec)		1	300	300.00	19196			11.73	2.07	13.80
	workflow duration (min)				28.76			avg ST	2.20	0.39	
	workflow duration+pacing (min)				33.76	DO NOT					
	TH workflow/hour				177.74						

1. Calculate Workflow throughput based on the number of active users and the frequency at which they perform work:

$$TH_{workflow} = \frac{ActiveUsers_i}{WorkflowDuration_i + WorkflowPacing_i}$$

- **ActiveUsers_t**—the number of users in the Peak Planning Period that are engaged in the Workflow at the rate described by the Workflow Pacing.
- **WorkflowDuration_t**—the length of time it takes to complete a Workflow. See the formula below.
- **WorkflowPacing_t**—the interval between Workflows. In some environments, the interval between workflows may be zero. That would mean that workflows are executed continuously, one after another. In other cases, even in the Peak Planning Period, there is a delay between workflow iterations to file paperwork, confer with colleagues, or for other reasons.

$$WorkflowDuration_i = \sum ((OperationRT_c + OperationThinkTime_i) \times Occurrence_i)$$

This formula establishes the Workflow duration used in the calculation of the Throughput demand.

operation (e.g. "ExportMap") to complete. This is calculated by System Designer based on the Service Infrastructure (or the "Stated Delay" that is stipulated).

een Operations. For example, with many Desktop workflows it is commonly assumed that users

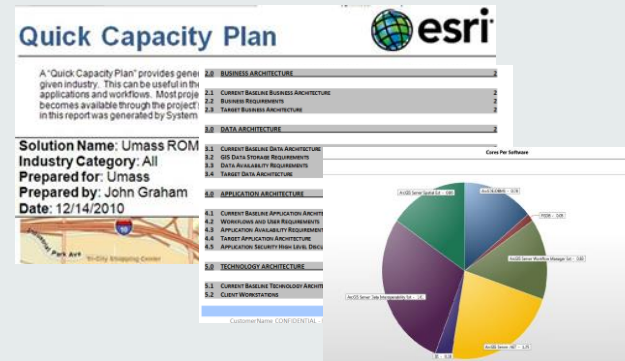
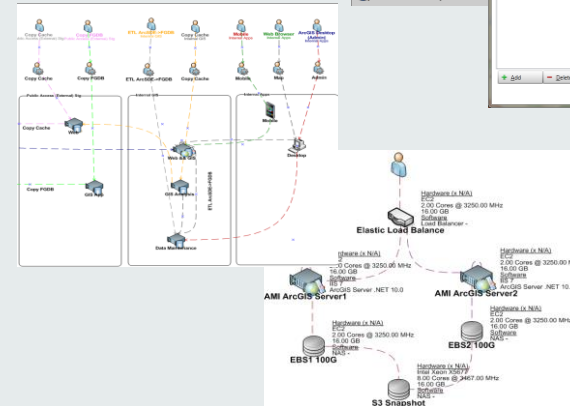
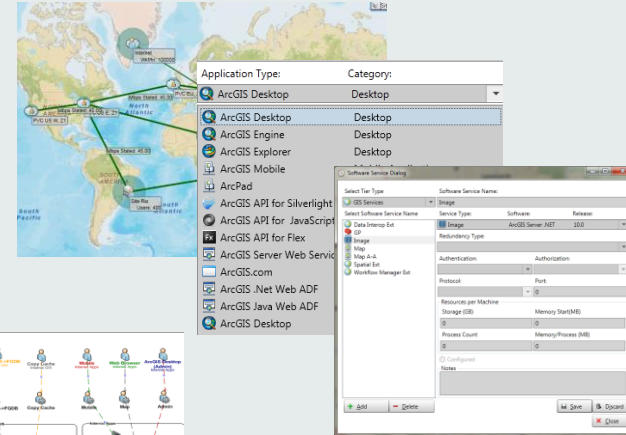
the workflow, that a given Operation happens. For example, a Workflow might typically cause a machine to perform a specific Operation.

$$TH_i = TH_{workflow} \times Occurrence_i$$

System Designer - what is it?

A tool for Solution Architecture design

- Gathering requirements
- Designing
- Capacity: CPU, Network, Memory
- Reporting



System Designer output

System Designer - UC2015 - (AVWORLD\andr3665) Solution: << Default Solution >>

Home Administration

Open New Project Solutions

Templates Map Dashboard Visio Reports

Applications Network Software Hardware Sites Workflows

Configure Models Tools Calculate Charts Excel Models Hardware

Capacity Reference

Navigation Project: UC2015

Solutions

- CapacityTestSampleWorldCity
 - Applications
 - Desktop
 - Mobile
 - Web
 - Sites
 - Data Center
 - Users

Templates Map Dashboard Visio Reports

Capacity Model Workflows Operations Hardware Network Software License and Cost

Valid Config Model Workflow Operation Error Service Type Wkt/hr Active Users Pacing(sec) Load Factor % Op/hr Calc Occ RtMax(sec) RtMax Calc(sec) Thi

Users

Model	Function	Tier	Modified	Service Time(sec)	CPU Queue (sec)	CPU Cores Calc	Modified	Mb/Op	Mbps Calc	Network Queue(sec)	Server	Hardware
✓	Web Browser	Client		0.120	0.000	0.00		0.000	0.00	0.00	Users-Deskt	
✓	Map Service	GIS Services		0.120	0.013	2.50			0.00	0.00	Data Center	

Model Review Model Assigned

Selected Model

Service Type: None Model Name: None

System Designer - UC2015 - (AVWORLD\andr3665) Solution: << Default Solution >>

Home Administration

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Templates Map Dashboard Visio Reports

Applications Network Software Hardware Sites Workflows

Configure Models Tools Calculate Charts Excel Models Hardware

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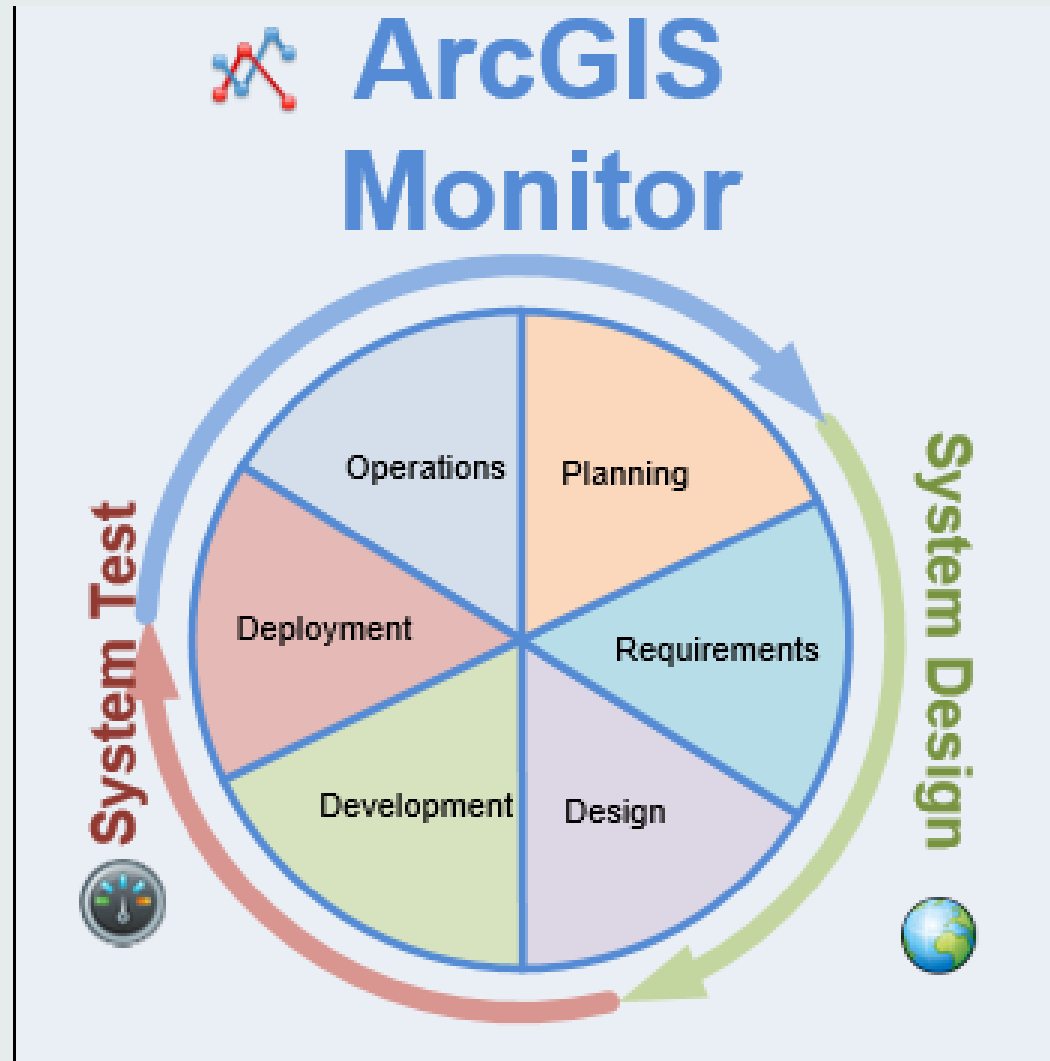
Capacity Model Workflows Operations Hardware Network Software License and Cost

Capacity	Role	Vendor	Model	OS	Virtual	Calculate	CPU Cores	Util %	Max Util %	SpecRate/Core	CPU Cores Calc	C
Data Center												
✓	Desktop	Esri	Generic System	Vendor OS			0	00.00	80.00	30.00	0.00	
✓	Server	Dell Inc.	PowerEdge T110 II (Intel Xeon E3-1230, 3.20 GHz)	Windows Server 2008 R2 64-bit		✓	4	62.50	80.00	37.00	2.50	
Users												
✓	Desktop	Esri	Generic System	Vendor OS			0	00.00	80.00	30.00	0.00	
✓	Server	Dell Inc.	PowerEdge R210 II (Intel Xeon E3-1280V2, 3.60 GHz)	Windows Server 2008 R2 64-bit		✓	4	00.00	80.00	48.00	0.00	

Process, Tools, Value

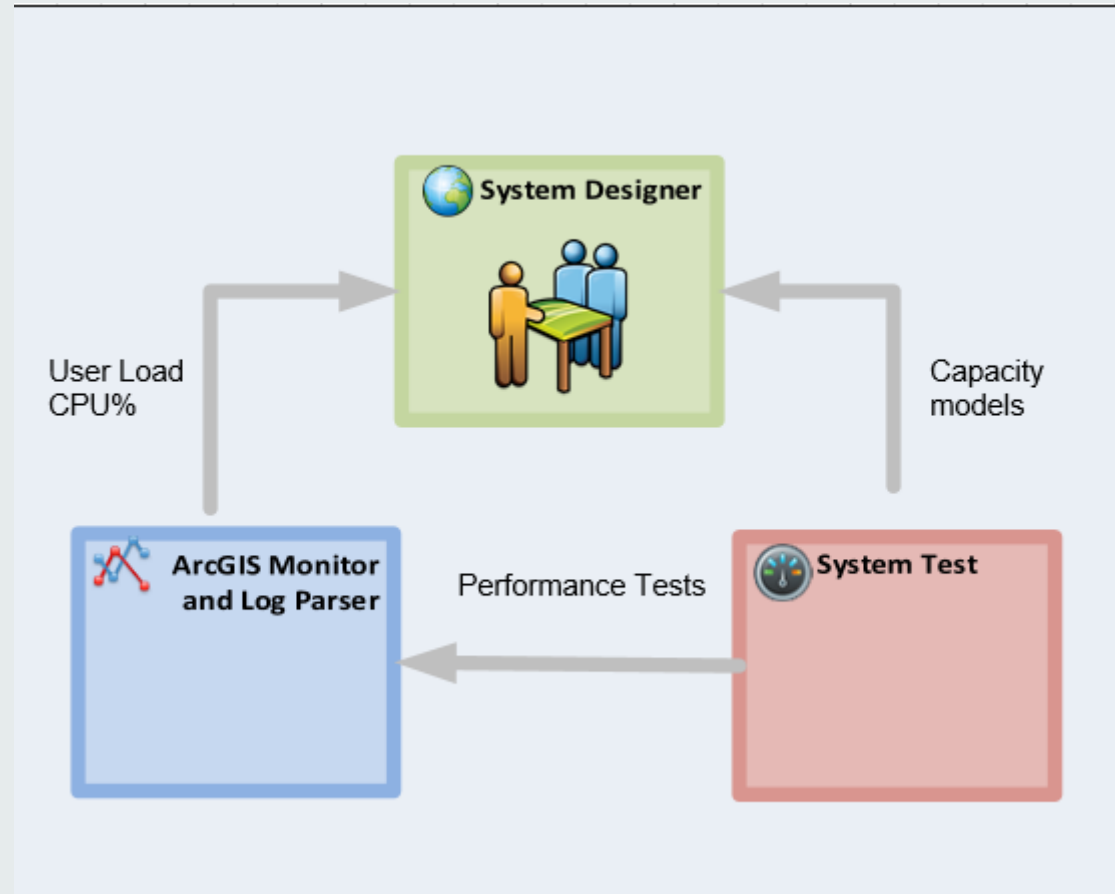
Process and tools

Esri tools



Process and tools

Esri tools



Tools download location

- **ArcGIS Monitor**

- <https://my.esri.com/>

- **Others**

- <http://www.arcgis.com>

- **owner:EnterpriseImp**

- **Show ArcGIS Desktop Content**

The screenshot shows the ArcGIS website's search results page. At the top, the navigation bar includes 'ArcGIS', 'FEATURES', 'PLANS', 'GALLERY', 'MAP', and 'HELP'. On the right, there are 'SIGN IN' and 'owner:EnterpriseImp' buttons, with the latter circled in yellow. Below the navigation bar is a 'Search Results' section. On the left side of this section, there is a sidebar with a 'Show' dropdown set to 'All Results'. Under 'All Results', there are links for 'Maps', 'Layers', 'Apps', 'Tools', and 'Files'. The 'Tools' link is circled in yellow, and below it, the checkbox 'Show ArcGIS Desktop Content' is checked. Below the sidebar, there is a 'Related Searches' section with the text 'Find groups owned by "EnterpriseImp"'. The main content area displays '6 results' in a table. The table has columns for 'Relevance', 'Title', 'Owner', 'Rating', 'Views', and 'Date'. The results listed are: 'System Designer', 'System Monitor (1.1.3)', 'System Test', and 'mxdperfstat'. Each result includes a thumbnail image, a title, a description, and a rating. The 'System Designer' result is highlighted with a yellow border.

Relevance	Title	Owner	Rating	Views	Date
	System Designer	EnterpriseImp	5 ratings, 10 comments, 2,601 downloads		June 18, 2014
	System Monitor (1.1.3)	EnterpriseImp	6 ratings, 18 comments, 2,619 downloads		June 30, 2014
	System Test	EnterpriseImp	2 ratings, 8 comments, 1,848 downloads		July 4, 2014
	mxdperfstat	EnterpriseImp	3 ratings, 0 comments, 1,290 downloads		December 20, 2013

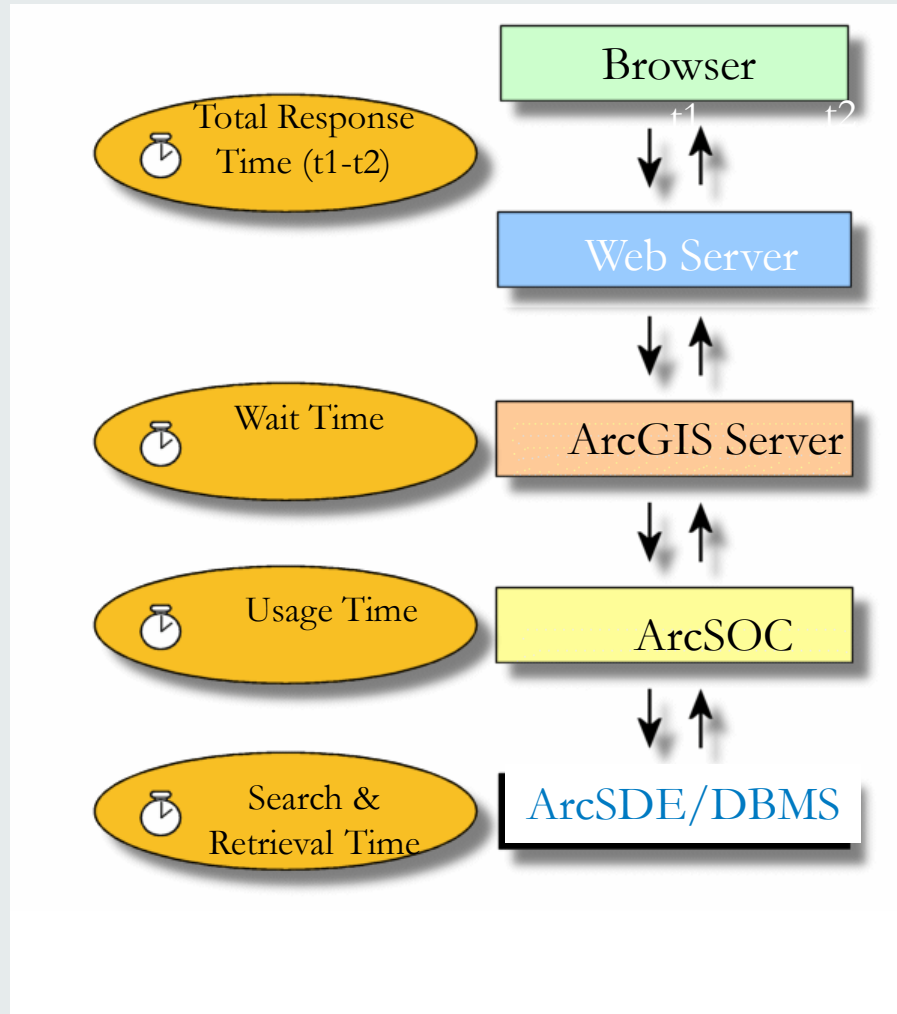
Enterprise Implementation Maturity Model

Level	Architectural Design and Capacity Planning	Performance and Scalability Testing	Monitoring	Trend Analysis and Quantification
0	No	No	No	No
1	Yes	No	No	No
2	Yes	Yes	No	No
3	Yes	Yes	Yes	No
4	Yes	Yes	Yes	Yes

Tuning

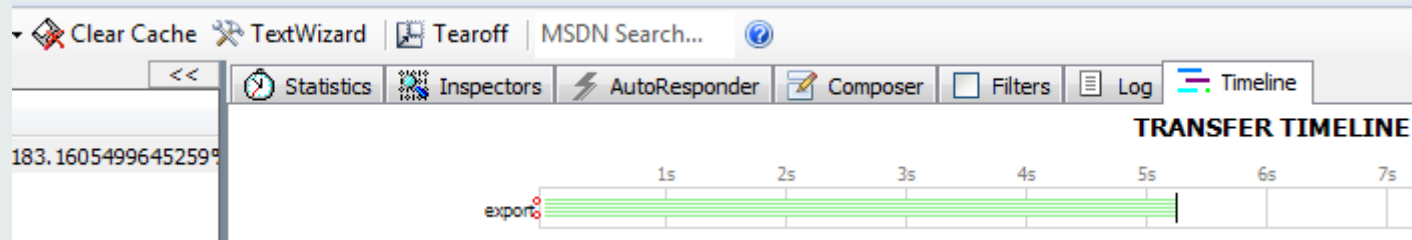
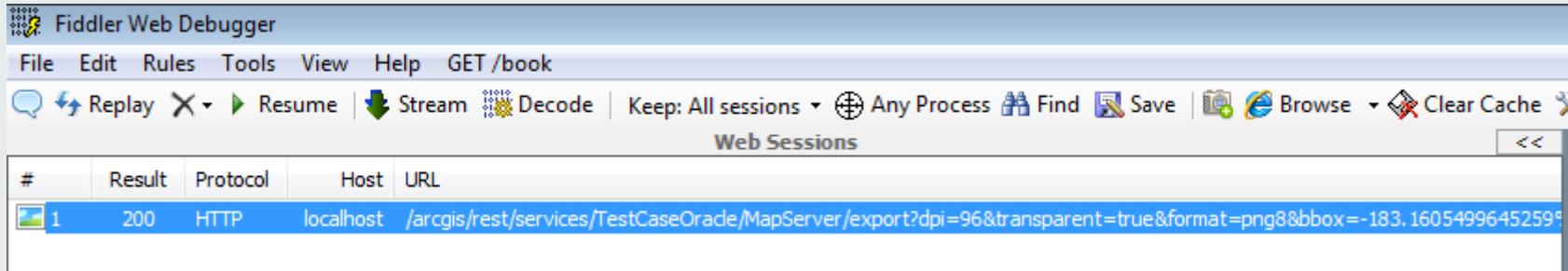
Tuning methodology

Profile each tier starting from the top



Fiddler

Fiddler measurement approximately 5.2 seconds



Mxdperfstat

<http://www.arcgis.com/home/item.html?id=a269d03aa1c840638680e2902dadecac>

Item	At Scale	Layer Name	Refresh Time (sec)	Recommendations	Features	Vertices	Labeling	Geography Phase (sec)	Graphics Phase (sec)	Cursor Phase (sec)	DBMS CPU	DBMS LIO
1	167,935,665	SDE.GridPoint	4.75	run DBMS trace: oraCPU=4.74; run DBMS trace, check oracle execution plan: oraLIO=130936; check if index exist for query def attributes;	1,998		False	4.74	.00	4.56	4.74	130,936

DBMS LIO	DBMS PIO	Source	LayerType	Layer Spatial Reference	LayerQueryDef
130,936		esriDBMS_Oracle,asakowicz,sde:oracle\$asakowicz:1521/gis2,sde	esriGeometryPoint	GCS_WGS_1984	ID<1000

Oracle Trace

Compare elapsed time

```
SQL ID: 6p20xrg10fw4n Plan Hash: 569628948
```

```
SELECT U__45.st_SHAPE$, U__45.OID, U__45.st_points,U__45.st_numpts,  
       U__45.st_entity,U__45.st_minx,U__45.st_miny,U__45.st_maxx,U__45.st_maxy,  
       U__45.st_minz,U__45.st_maxz,U__45.st_minm,U__45.st_maxm,U__45.st_area$,  
       U__45.st_len$,U__45.st_rowid  
FROM  
(SELECT b.OID,b.GX,b.GY,b.ID,1 st_SHAPE$,b.SHAPE.points as st_points,  
       b.SHAPE.numpts as st_numpts,b.SHAPE.entity as st_entity,b.SHAPE.minx as  
       st_minx,b.SHAPE.miny as st_miny,b.SHAPE.maxx as st_maxx,b.SHAPE.maxy as  
       st_maxy,b.SHAPE.minz as st_minz,b.SHAPE.maxz as st_maxz,b.SHAPE.minm as  
       st_minm,b.SHAPE.maxm as st_maxm,b.SHAPE.area as st_area$,b.SHAPE.len as  
       st_len$,b.rowid as st_rowid FROM SDE.GridPoint b WHERE  
       SDE.ST_EnvIntersects(b.SHAPE,:1,:2,:3,:4) = 1 AND b.OID NOT IN (SELECT /*+  
       HASH_AJ */ SDE.DELETES_ROW_ID FROM SDE.D45 WHERE DELETED_AT IN (SELECT  
       l.lineage_id FROM SDE.state_lineages l WHERE l.lineage_name =  
       :lineage_name1 AND l.lineage_id <= :state_id1) AND SDE.STATE_ID = 0) UNION  
       ALL SELECT a.OID,a.GX,a.GY,a.ID,2 st_SHAPE$,a.SHAPE.points as st_points,  
       a.SHAPE.numpts as st_numpts,a.SHAPE.entity as st_entity,a.SHAPE.minx as  
       st_minx,a.SHAPE.miny as st_miny,a.SHAPE.maxx as st_maxx,a.SHAPE.maxy as  
       st_maxy,a.SHAPE.minz as st_minz,a.SHAPE.maxz as st_maxz,a.SHAPE.minm as  
       st_minm,a.SHAPE.maxm as st_maxm,a.SHAPE.area as st_area$,a.SHAPE.len as  
       st_len$,a.rowid as st_rowid FROM SDE.A45 a,SDE.state_lineages SL WHERE  
       SDE.ST_EnvIntersects(a.SHAPE,:5,:6,:7,:8) = 1 AND (a.OID, a.SDE.STATE_ID)  
       NOT IN (SELECT /*+ HASH_AJ */ SDE.DELETES_ROW_ID, SDE.STATE_ID FROM SDE.D45  
       WHERE DELETED_AT IN (SELECT l.lineage_id FROM SDE.state_lineages l WHERE  
       l.lineage_name = :lineage_name2 AND l.lineage_id <= :state_id2) AND  
       SDE.STATE_ID > 0) AND a.SDE.STATE_ID = SL.lineage_id AND SL.lineage_name =  
       :lineage_name3 AND SL.lineage_id <= :state_id3) U__45 WHERE (ID<1000)
```

call	count	cpu	elapsed	disk	query	current	rows
Parse	0	0.00	0.00	0	0	0	0
Execute	1	0.03	0.02	0	0	0	0
Fetch	20	9.67	9.64	0	129581	0	1998
total	21	9.70	9.66	0	129581	0	1998

Elapsed time slightly changed due to different test runs

Oracle Execution plan

Inefficient spatial index

```
Misses in library cache during parse: 1
Misses in library cache during execute: 1
Optimizer mode: ALL_ROWS
Parsing user id: 84
Number of plan statistics captured: 1
```

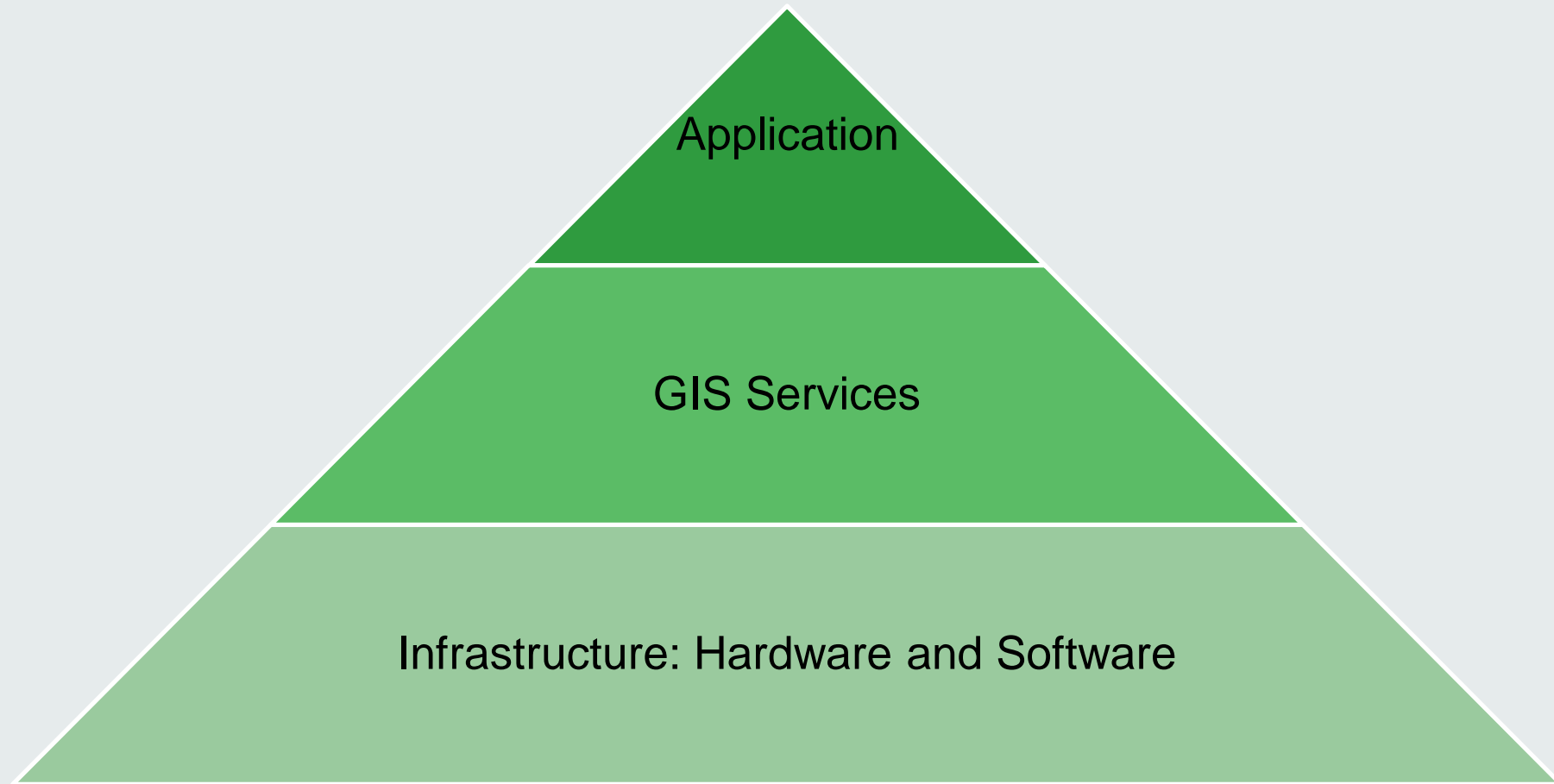
Rows <1st>	Rows <avg>	Rows <max>	Row Source Operation
1998	1998	1998	VIEW <cr=131605 pr=0 pw=0 time=512477 us cost=8 size=45906 card=21>
1998	1998	1998	UNION-ALL <cr=131605 pr=0 pw=0 time=511602 us>
1998	1998	1998	FILTER <cr=131451 pr=0 pw=0 time=508349 us>
1998	1998	1998	TABLE ACCESS BY INDEX ROWID GRIDPOINT <cr=131451 pr=0 pw=0 time=4456 us cost=0 size=44 card=1>
129600	129600	129600	DOMAIN INDEX <Sel: Default - Undefined> A29_IX1 <cr=2017 pr=0 pw=0 time=0 us cost=0 size=44 card=1>
0	0	0	NESTED LOOPS <cr=0 pr=0 pw=0 time=4456 us cost=0 size=44 card=1>
0	0	0	INDEX RANGE SCAN D45_PK <cr=0 pr=0 pw=0 time=2101 us cost=0 size=44 card=1>
0	0	0	INDEX UNIQUE SCAN LINEAGES_PK <cr=0 pr=0 pw=0 time=0 us cost=0 size=44 card=1>
0	0	0	NESTED LOOPS ANTI <cr=154 pr=0 pw=0 time=2247 us cost=5 size=2367 card=1>
0	0	0	NESTED LOOPS <cr=154 pr=0 pw=0 time=2243 us cost=5 size=2367 card=1>
0	0	0	TABLE ACCESS BY INDEX ROWID A45 <cr=154 pr=0 pw=0 time=2242 us cost=5 size=2367 card=1>
0	0	0	BITMAP CONVERSION TO ROWIDS <cr=154 pr=0 pw=0 time=2236 us>
0	0	0	BITMAP AND <cr=154 pr=0 pw=0 time=2232 us>
0	0	0	BITMAP CONVERSION FROM ROWIDS <cr=147 pr=0 pw=0 time=455 us>
0	0	0	SORT ORDER BY <cr=147 pr=0 pw=0 time=454 us>
0	0	0	INDEX RANGE SCAN A45_STATEID_IX1 <cr=147 pr=0 pw=0 time=439 us cost=0 size=44 card=1>
0	0	0	BITMAP CONVERSION FROM ROWIDS <cr=7 pr=0 pw=0 time=1768 us>
0	0	0	SORT ORDER BY <cr=7 pr=0 pw=0 time=1768 us>
0	0	0	DOMAIN INDEX <Sel: Default - Undefined> A29_IX1_A <cr=7 pr=0 pw=0 time=0 us cost=0 size=44 card=1>
0	0	0	INDEX UNIQUE SCAN LINEAGES_PK <cr=0 pr=0 pw=0 time=0 us cost=0 size=44 card=1>
0	0	0	VIEW PUSHED PREDICATE UW_NSO_1 <cr=0 pr=0 pw=0 time=0 us cost=0 size=44 card=1>
0	0	0	FILTER <cr=0 pr=0 pw=0 time=0 us>
0	0	0	NESTED LOOPS <cr=0 pr=0 pw=0 time=0 us cost=0 size=44 card=1>
0	0	0	INDEX RANGE SCAN D45_PK <cr=0 pr=0 pw=0 time=0 us cost=0 size=44 card=1>
0	0	0	INDEX UNIQUE SCAN LINEAGES_PK <cr=0 pr=0 pw=0 time=0 us cost=0 size=44 card=1>

Testing

Testing Objectives

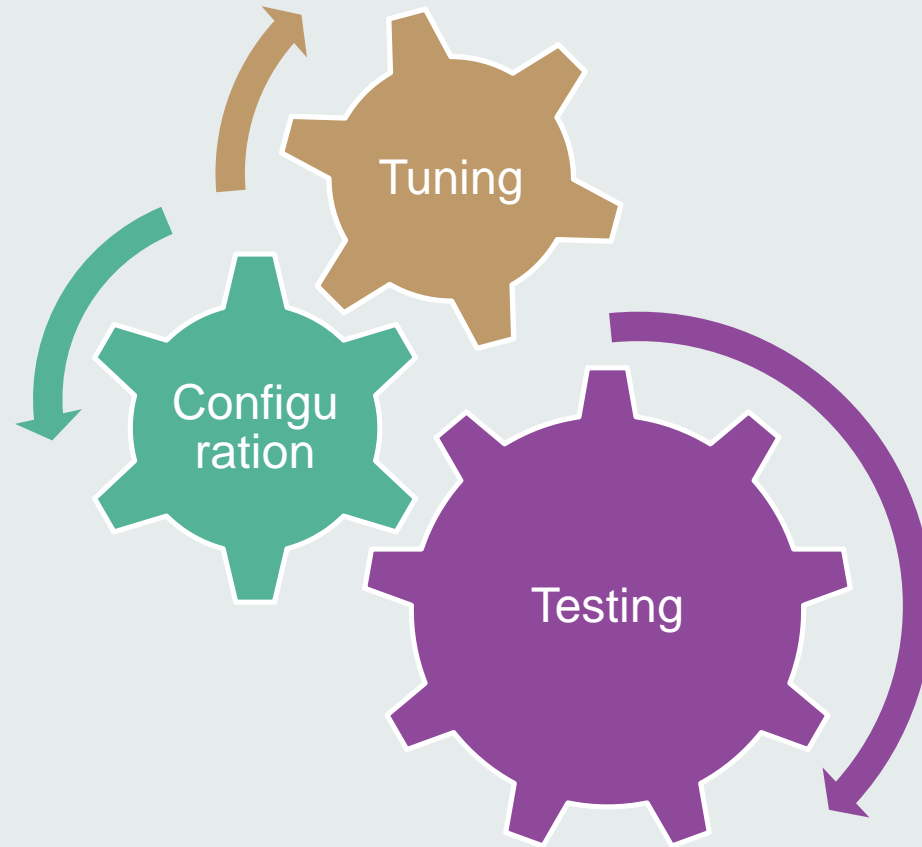
- **Meet Service-Level Agreement (SLA)**
- **Bottlenecks analysis**
- **Capacity planning**
- **Benchmarking different alternatives**

Testing process



Required skill set

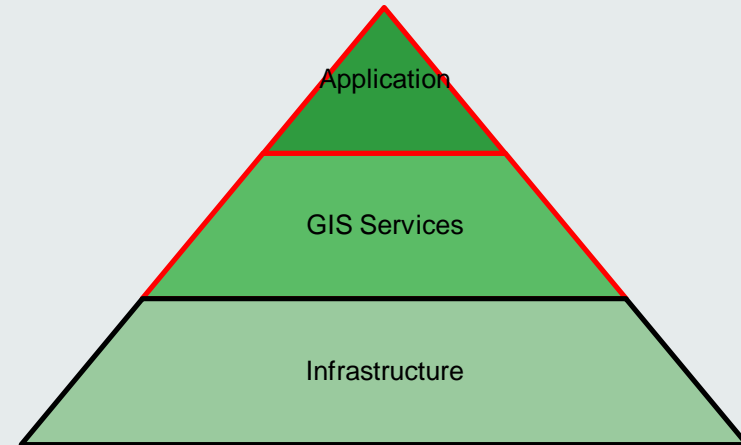
Configuration, Tuning, Testing



System Test for Web

GIS Test Automation

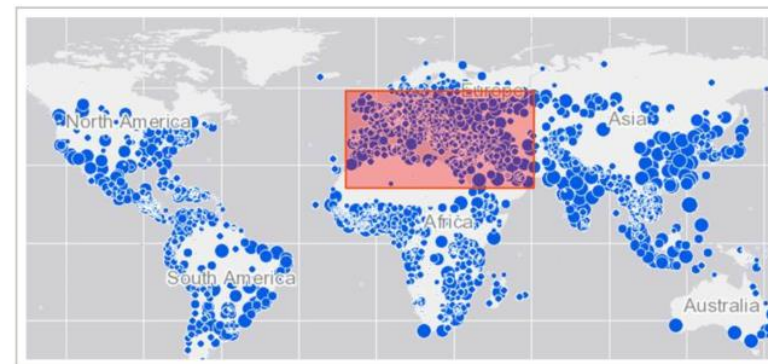
- **ArcGIS Services**
 - Mapping
 - Feature Service
 - OGC
 - Geocoding
 - Image Service
 - Network Analyst
 - Geoprocessing
 - Tile Cache
- **Application Testing**
- **Discipline relevant report**



Web test tools feature comparison

Tool	Cost	Learning Curve	OS Metrics	GIS Data Generation	GIS Test Automation
Load Runner	High	High	Windows/Linux	No	No
Visual Studio	Medium	High	Windows	No	No
JMeter	Free	High	Requires additional plugin	No	No
System Test	Free	Low	Windows/Linux	Yes	Yes

Demo: Dynamic Map Service



Dynamic Map Services Benchmark: Performance

A load test is defined by a given map service and during this type of test:

1. Learn how to add ArcGIS Server services and a data to test.
2. Create a web test and a load test.
3. Run test and validate results.

In this tutorial, you locate a map service that is sourced to the SampleWorldCities dataset that comes included with ArcGIS Server. You identify the service and then you are able to run the load test.

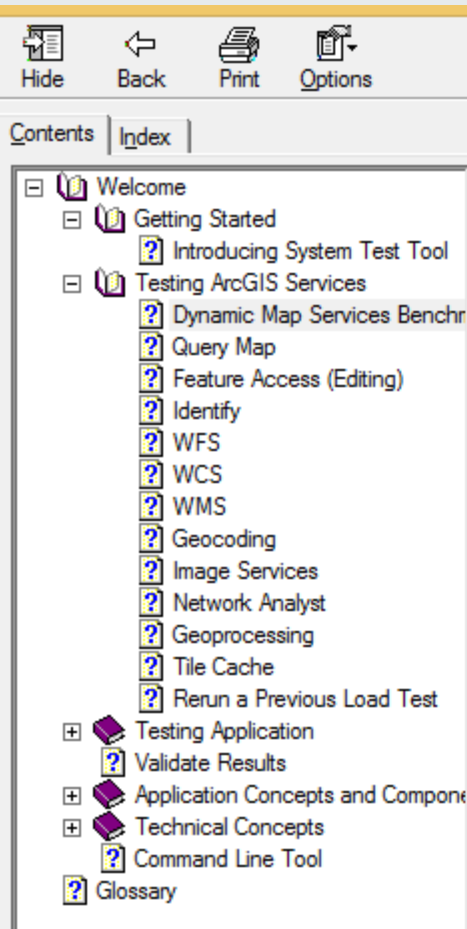
Important: ArcGIS Server 10.1 or higher is required. Make sure the SampleWorldCities default map service that comes with ArcGIS Server is installed.

Scenario

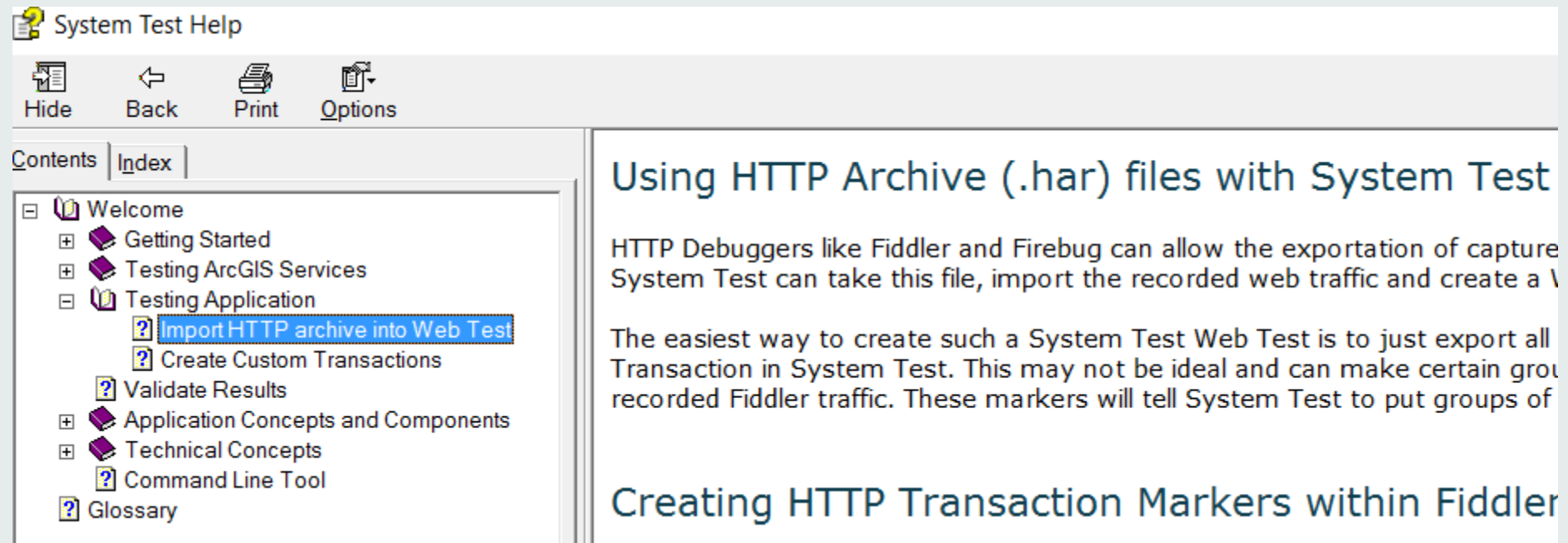
Your supervisor is planning to publish a world map that allows users to view cities. They would like to know what performance metrics to expect.

High Level Steps:

1. Create a project.
2. Add ArcGIS Server services.
3. Create test data.
4. Create web test.
5. Start load test.
6. Validate results.



Demo - HAR



The screenshot shows the 'System Test Help' application window. The title bar reads 'System Test Help'. Below the title bar is a toolbar with icons for 'Hide', 'Back', 'Print', and 'Options'. The main area is divided into two panes. The left pane has tabs for 'Contents' and 'Index'. Under the 'Contents' tab, a tree view shows the following structure:

- [-] Welcome
 - [+] Getting Started
 - [+] Testing ArcGIS Services
 - [-] Testing Application
 - [?] Import HTTP archive into Web Test
 - [?] Create Custom Transactions
 - [?] Validate Results
 - [+] Application Concepts and Components
 - [+] Technical Concepts
 - [?] Command Line Tool
 - [?] Glossary

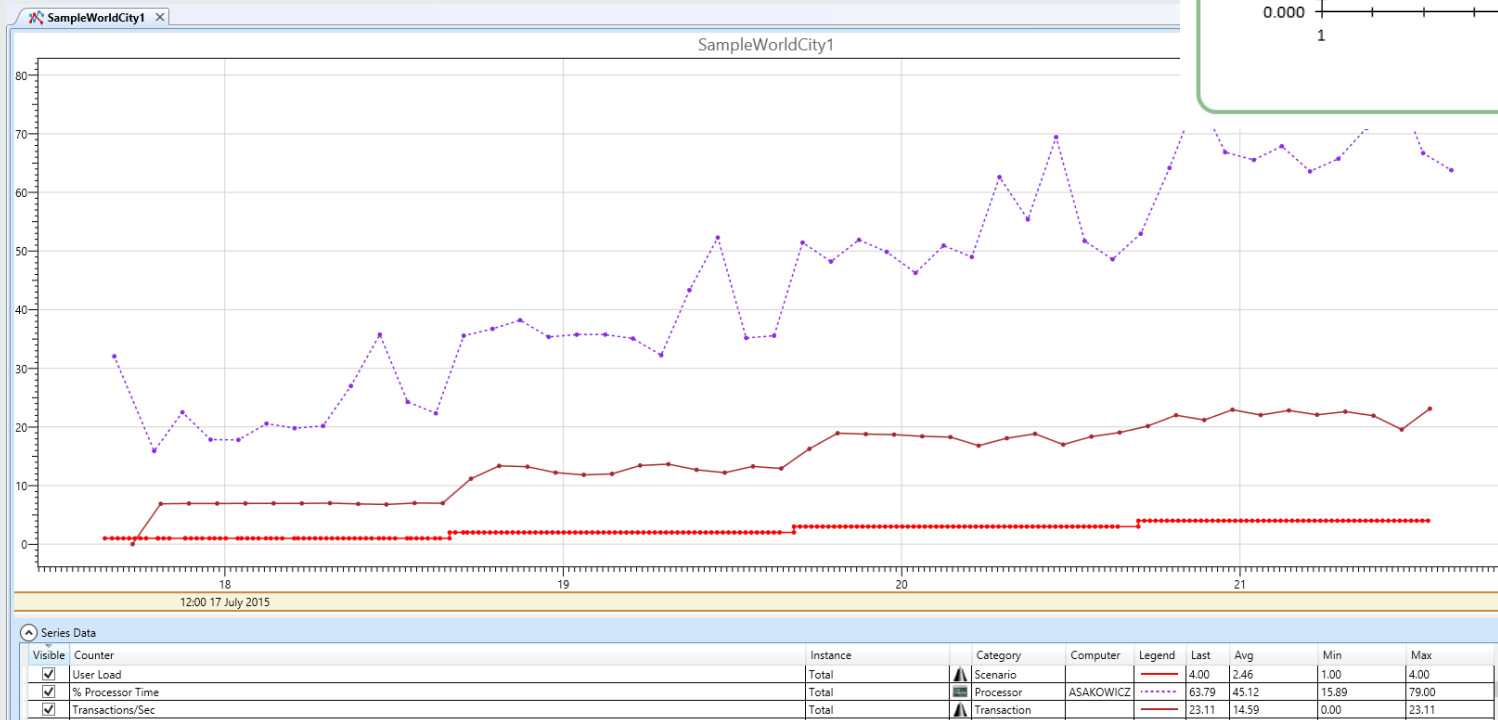
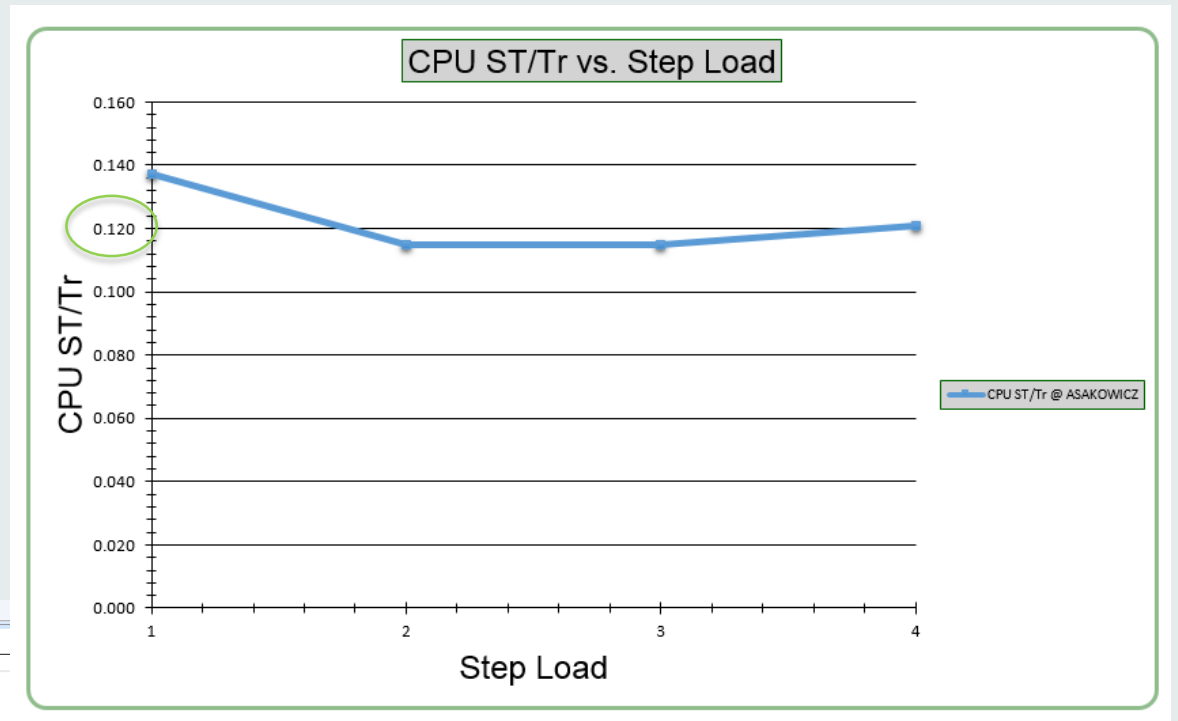
The right pane displays the content for the selected topic, 'Import HTTP archive into Web Test'. The title of the page is 'Using HTTP Archive (.har) files with System Test'. The text reads:

HTTP Debuggers like Fiddler and Firebug can allow the exportation of capture. System Test can take this file, import the recorded web traffic and create a Web Test.

The easiest way to create such a System Test Web Test is to just export all transactions in System Test. This may not be ideal and can make certain groups of recorded Fiddler traffic. These markers will tell System Test to put groups of transactions into a single transaction.

Creating HTTP Transaction Markers within Fiddler

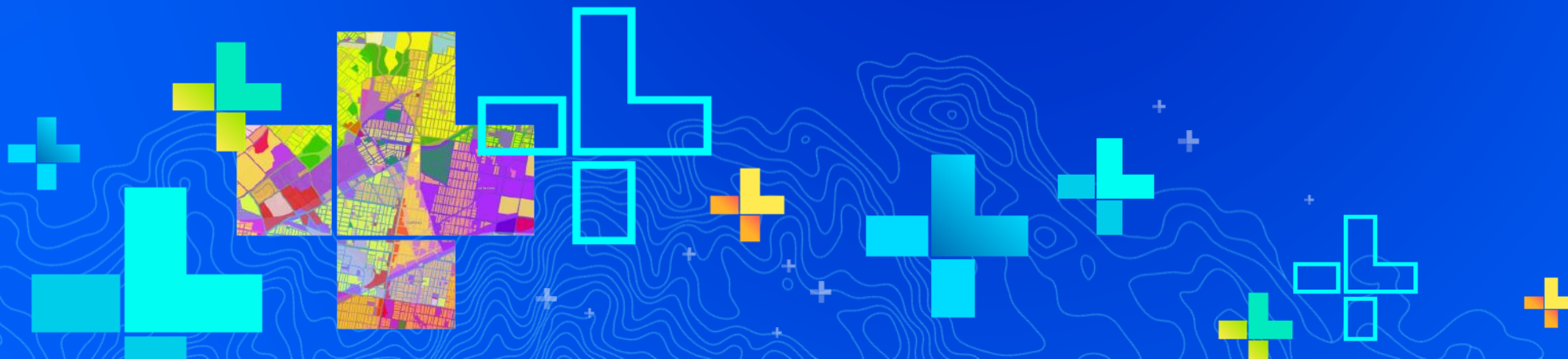
System Test output





Monitoring

Presenter Names



SEE
WHAT
OTHERS
CAN'T

Agenda

- **Motivation and audience**
- **Use cases**
- **Installation and Configuration**
- **Availability**
- **Alerts**
- **Usage**
- **Performance**
- **Root Cause Analysis (RCA)**



ArcGIS Monitor: Why?

Optimize Your Enterprise GIS Deployments

- **Need end to end monitoring for effective diagnostics**
- **Standard monitoring tools:**
 - Focus on infrastructure only
 - IT controlled
 - No ArcGIS components
 - Low success of ArcGIS troubleshooting
 - Integrating “ArcGIS” has challenges and high LOE

Average cost of IT downtime is \$5,600 per minute. Source: Gartner



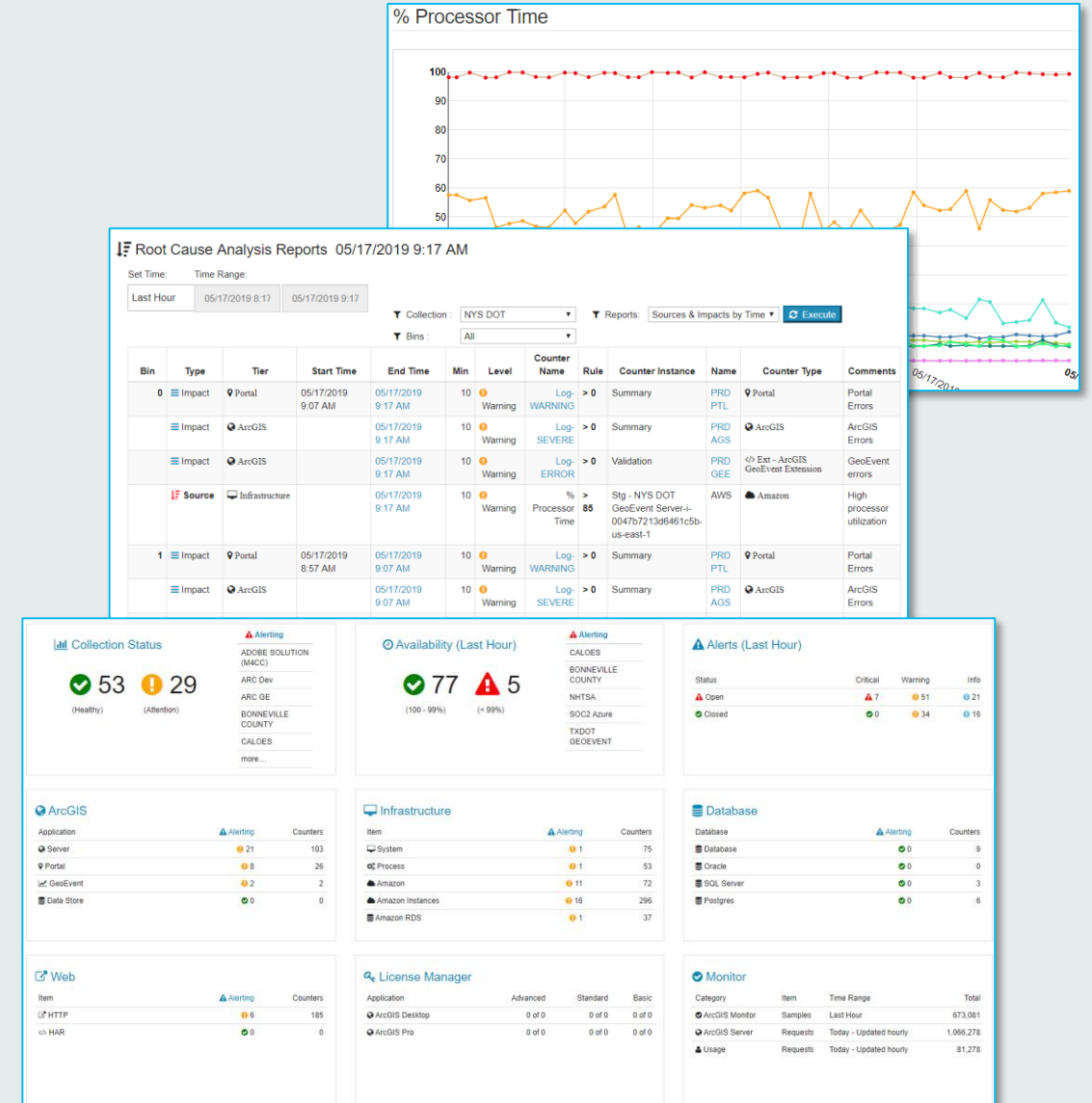
ArcGIS Monitor: Why?

Optimize Your Enterprise GIS Deployments

- **Customers require:**
 - **Faster resolution time**
 - **Better performance**
 - **Lower cost of administration**
 - **End-user satisfaction**

ArcGIS Monitor Summary

- Introduced January 2018
- Ubiquitous system monitoring for ArcGIS
- Timely metrics and analysis
- Proactive insights, alerting, and reports
- Optimize the GIS environment



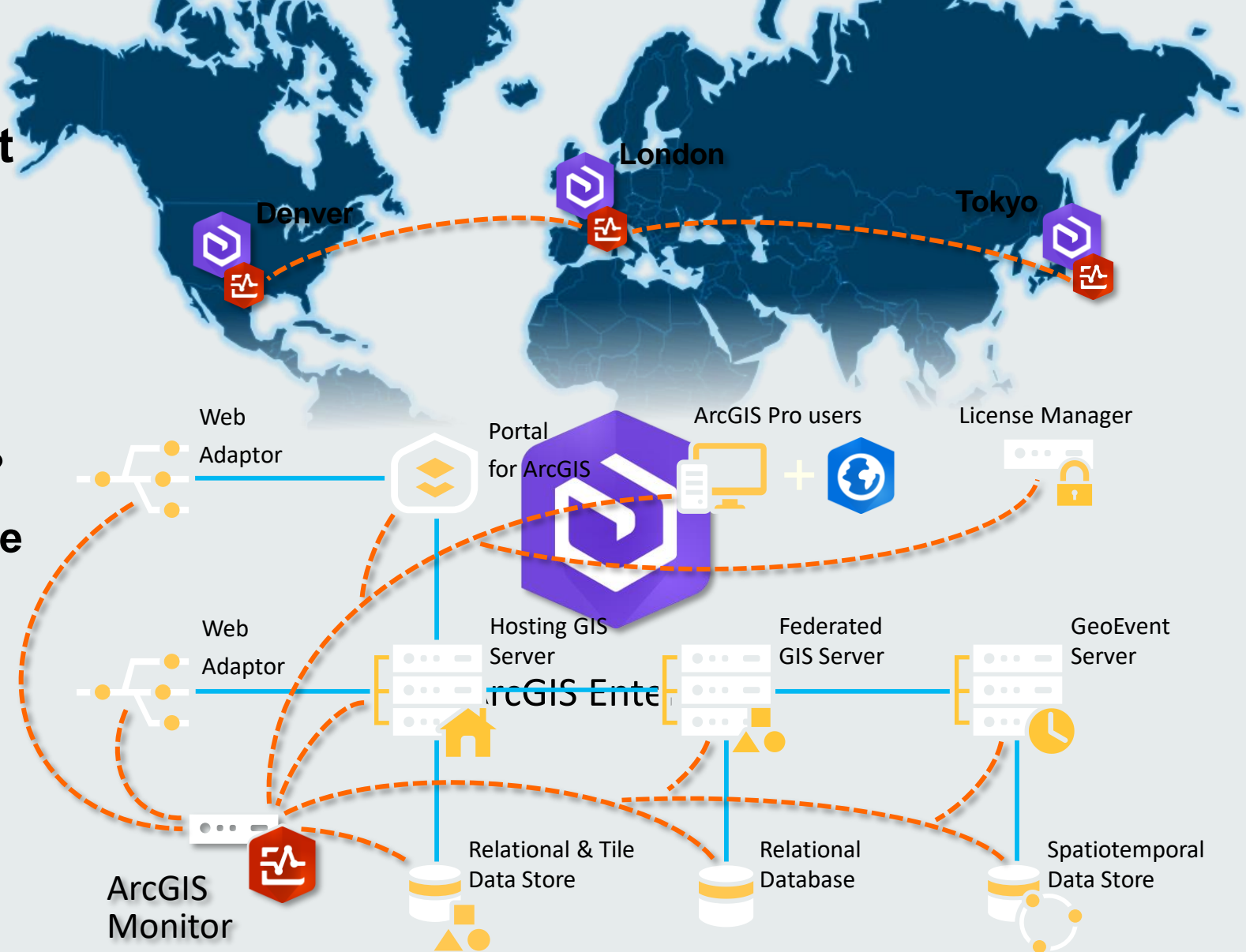
The Monitored Environment

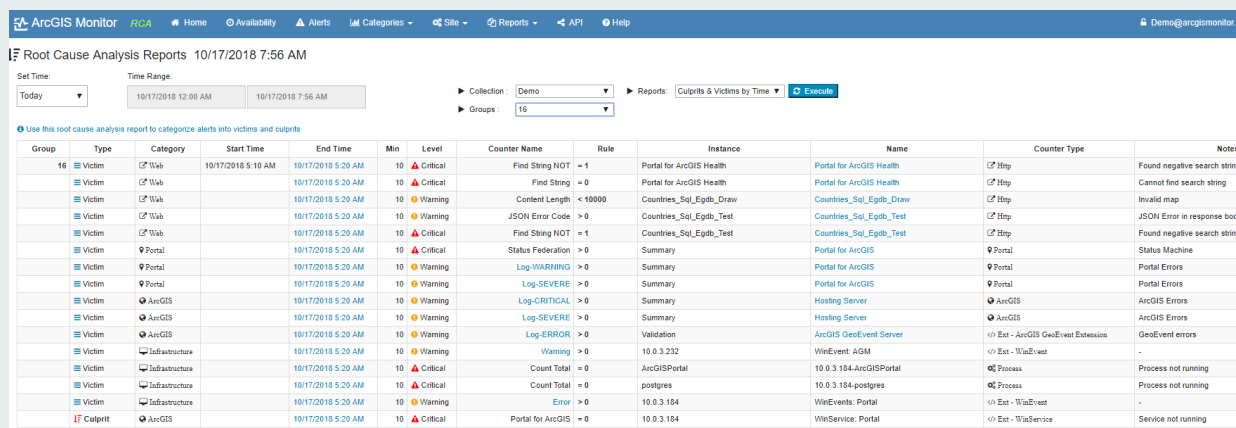
Growing in complexity

- Dozens of components
- Hundreds of discrete metrics
- Which metrics are important?
- Filter the signal from the noise

- **ArcGIS Monitor**

- Tailored for ArcGIS
- Non-invasive sampling
- Minimal resource footprint
- Conforms to the environment
 - Single or multi-datacenter





Analyze

Request - IP Location

IP Location Legend:

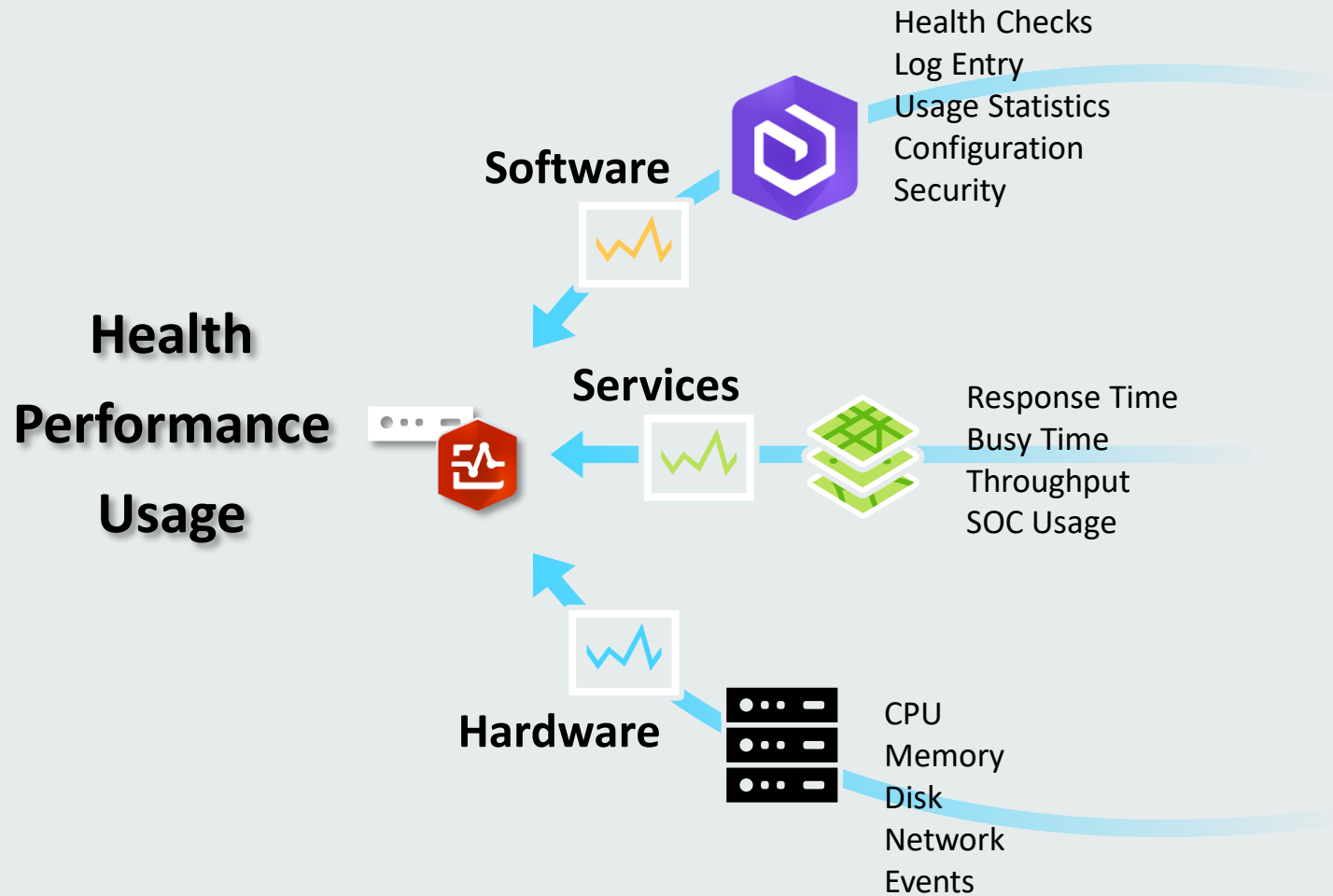
- 0-50
- 51-100
- 101-200
- 201-500
- 501-1k
- 1k-2k
- 2k-3k
- 3k-5k
- Default

IPs - Unique IPs: 3 (table only shows top 3) Totals: 406

Rank	%	IP	Country	Region	Requests
1	99.51%	198.102.62.250	United States	CA	404
2	0.25%	128.1.84.138	United States	CA	1
3	0.25%	52.232.107.160	Netherlands	07	1

Report

What is monitored?



The screenshot displays the ArcGIS Monitor Catalog interface. On the left, a tree view lists monitored components under the 'Catalog' header. The components include:

- Amsterdam
- Campusviewer
- China
- India
- Italy
- Mexico
- Germany
- Poland
- United Kingdom
- United States
- SQLSRV2 (1)
- SQLSRV2 (90)
- Collector (4)
- in-dot-X (4)
- AV (4)
- SQLSRV7 (7)
- SQLSRV7 (1)
- Collection Time (new)
- File out (3)
- MapInfo (3)
- Performance (3)
- Inputs (3)
- Outputs (3)
- Up-to-date (3)
- Licence Manager Demo (116)
- Python (3)
- UP-Map (3)
- Windows (3)
- ADP (3)
- Systems (15)
- Tools (7)

On the right, a graph titled 'IIS7.5 SRV7 Collection Time (se)' is displayed. The graph shows a line chart with a shaded area representing a range. The x-axis represents time, with labels for 6/30/17 2:39 AM and 6/30/17 3:00. The y-axis represents a value ranging from 0.00 to 0.10. Below the graph, a table provides statistics for the collection time.

Statistics: both chart and table reflect true statistics for Counter

IIS7.5 SRV7 Collection Time (se) IIS7.5 SRV7

Why Monitor: GIS Administrators and Managers

- **Seek to optimize system utilization and performance**



ArcSOC Optimizer analyzes for efficient configuration

- **Must quickly detect, diagnose, and resolve issues as they arise**



Proactively detects issues via Alerts and Root Cause Analysis

- **Enable users to implement ArcGIS, plan for the future**



Continuously monitors the entire system

Who is it for and what is the value?

Optimize your Enterprise GIS

Administrators



- Detect, diagnose, and resolve issues with availability, configuration, performance and usage
- Gather actionable, quantifiable operational metrics and usage trends over time

Managers



- Increase communication among GIS and IT staff and senior management
- Reduce administration costs

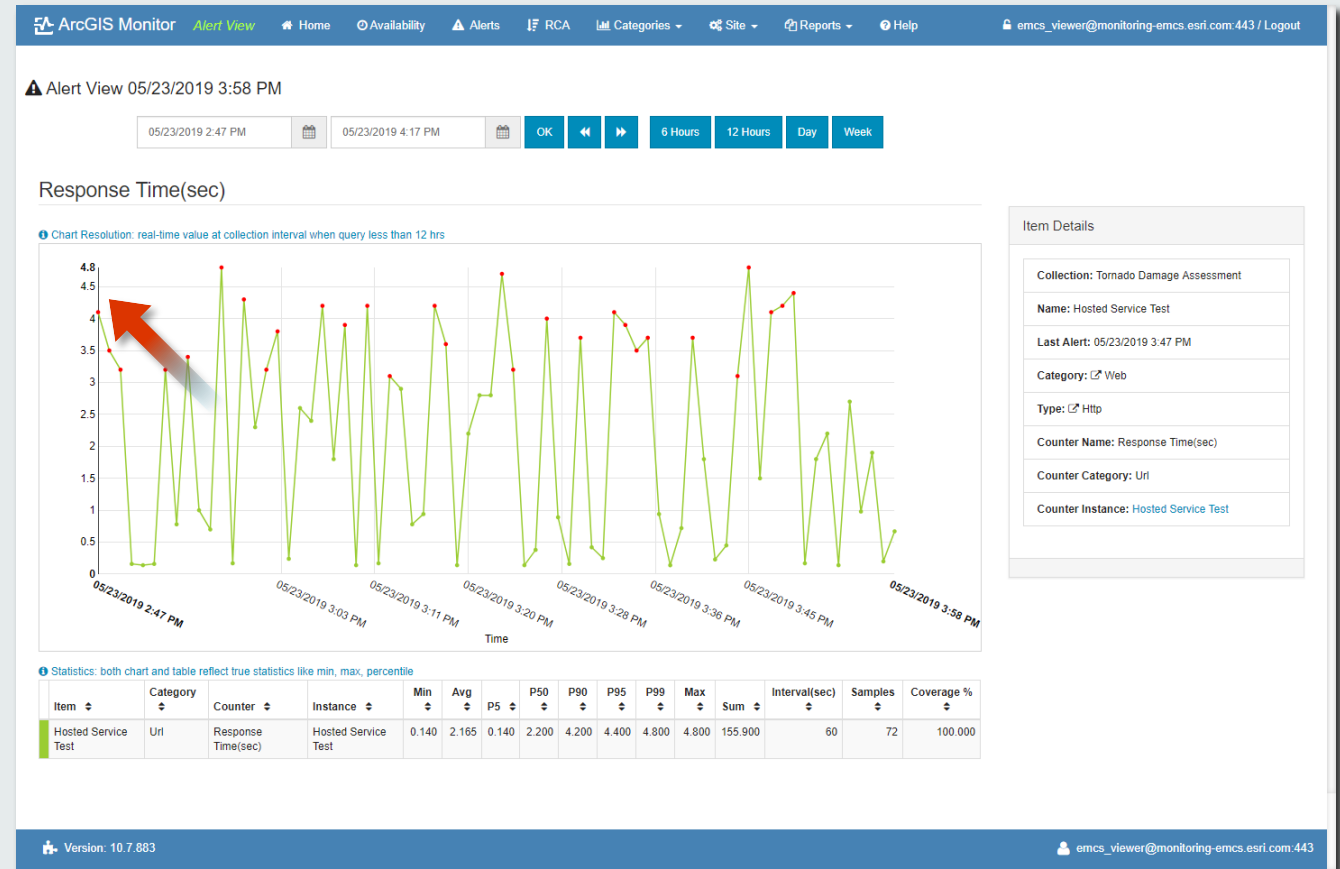
Users



- Improve end-user satisfaction

Use case: degraded feature service performance

- **Dashboard – preemptive warnings**
- **Root Cause Analysis – high CPU**
- **Raw metrics confirm analysis**
- **Options for resolution**



Simple use case

Section Subhead

Problems: Points “disappeared” from a map

First noticed around 7 am

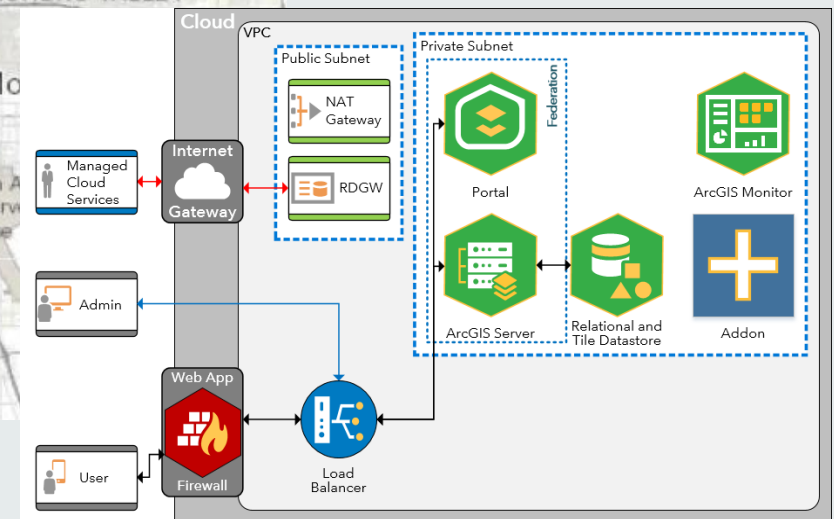
Home ▾ California_Test_Hosted_Service

Details Add Basemap Analysis Save Share Print Measure Bo

Contents

- ☐ California Test Hosted Service - Geocoding Result
- ☐ California Test Hosted Service - Places
- ☒ California Test Hosted Service - GolfCourses
- ☐ California Test Hosted Service - Cities
- ☐ California Test Hosted Service - Airports
- ☐ California Test Hosted Service - Volcanos
- ☐ California Test Hosted Service

Golf Courses points “disappeared”



Select RCA for this time range

Analyze Sources and click on Log error messages

Root Cause Analysis Reports 10/17/2018 10:29 AM

Set Time: Today Time Range: 10/17/2018 12:00 AM 10/17/2018 10:29 AM

Collection: Demo Reports: Culprits & Victims by Time Execute

Groups: 19

Use this root cause analysis report to categorize alerts into victims and culprits

Group	Type	Category	Start Time	End Time	Min	Level	Counter Name	Rule	Instance	Name	Counter Type	Notes
19	Victim	Web	10/17/2018 7:10 AM	10/17/2018 7:20 AM	10	Warning	Find String	= 0	California_Test_Hosted	California_Test_Hosted	Http	Cannot find search string
	Victim	Web		10/17/2018 7:20 AM	10	Warning	Find String NOT	= 1	California_Test_Hosted	California_Test_Hosted	Http	Found negative search string
	Victim	Web		10/17/2018 7:20 AM	10	Warning	JSON Error Code	> 0	California_Test_Hosted	California_Test_Hosted	Http	JSON Error in response body
	Victim	Portal		10/17/2018 7:20 AM	10	Critical	Status Federation	> 0	Summary	Portal for ArcGIS	Portal	Status Machine
	Victim	Portal		10/17/2018 7:20 AM	10	Warning	Log-WARNING	> 0	Summary	Portal for ArcGIS	Portal	Portal Errors
	Victim	ArcGIS		10/17/2018 7:20 AM	10	Warning	Log-WARNING	> 0	Summary	Hosting Server	ArcGIS	ArcGIS Errors
	Victim	ArcGIS		10/17/2018 7:20 AM	10	Warning	Log-SEVERE	> 0	Summary	Hosting Server	ArcGIS	ArcGIS Errors
	Victim	ArcGIS		10/17/2018 7:20 AM	10	Warning	Log-ERROR	> 0	Validation	ArcGIS GeoEvent Server	Ext - ArcGIS GeoEvent Extension	GeoEvent errors
	Victim	ArcGIS		10/17/2018 7:20 AM	10	Warning	Log-WARNING	> 0	Summary	Hosting Server	ArcGIS	ArcGIS Errors
	Victim	ArcGIS		10/17/2018 7:20 AM	10	Warning	Log-ERROR	> 0	Validation	ArcGIS GeoEvent Server	Ext - ArcGIS GeoEvent Extension	GeoEvent errors
	Victim	Infrastructure		10/17/2018 7:20 AM	10	Critical	Count Total	= 0	ArcGISDataStore	10.0.3.202-ArcGISDataStore	Process	Process not running
	Victim	Infrastructure		10/17/2018 7:20 AM	10	Critical	Count Total	= 0	postgres	10.0.3.202-postgres	Process	Process not running
	Victim	Infrastructure		10/17/2018 7:20 AM	10	Warning	Error	> 0	10.0.3.202	WinEvent: DataStore	Ext - WinEvent	-
	Culprit	ArcGIS		10/17/2018 7:20 AM	10	Critical	ArcGIS Data Store	= 0	10.0.3.202	WinService: DataStore	Ext - WinService	Service not running

Analyze error message

ArcGIS Monitor Alert View Home Availability Alerts Categories Site Reports Help									
Log View End: 10/17/2018 7:27 AM Start: 10/17/2018 3:20 AM Number of Records: 65									
Collection: Demo Name: Hosting Server Counter Name: Log-SEVERE Counter Instance: Summary									
ID	QTime	Time	Code	Type	Count/Interval	User	Machine	Method Name	Message
1	10/17/2018 7:20 AM	10/17/2018 7:15 AM	9000	SEVERE	1		10.0.3.27		Connection to 10.0.3.202:9876 refused. Check that the hostname and port are correct and that the postmaster is accepting TCP/IP connections.
2	10/17/2018 7:20 AM	10/17/2018 7:15 AM	-1	SEVERE	1		EC2AMAZ-NI76OEE	ValidateServerDataStore.Execute	The connection property set was missing a required property or the property value was unrecognized. Instance not available on server.
3	10/17/2018 7:15 AM	10/17/2018 7:14 AM	9000	SEVERE	1		10.0.3.27		Connection to 10.0.3.202:9876 refused. Check that the hostname and port are correct and that the postmaster is accepting TCP/IP connections.
4	10/17/2018 7:15 AM	10/17/2018 7:13 AM	9000	SEVERE	1		10.0.3.27		Connection to 10.0.3.202:9876 refused. Check that the hostname and port are correct and that the postmaster is accepting TCP/IP connections.
5	10/17/2018 7:15 AM	10/17/2018 7:12 AM	9000	SEVERE	1		10.0.3.27		Connection to 10.0.3.202:9876 refused. Check that the hostname and port are correct and that the postmaster is accepting TCP/IP connections.
6	10/17/2018 7:15 AM	10/17/2018 7:12 AM	9000	SEVERE	1		10.0.3.27		Connection to 10.0.3.202:9876 refused. Check that the hostname and port are correct and that the postmaster is accepting TCP/IP connections.
7	10/17/2018 7:15 AM	10/17/2018 7:11 AM	9000	SEVERE	1		10.0.3.27		Connection to 10.0.3.202:9876 refused. Check that the hostname and port are correct and that the postmaster is accepting TCP/IP connections.
8	10/17/2018 7:15 AM	10/17/2018 7:10 AM	9000	SEVERE	1		10.0.3.27		Connection to 10.0.3.202:9876 refused. Check that the hostname and port are correct and that the postmaster is accepting TCP/IP connections.
9	10/17/2018 7:15 AM	10/17/2018 7:10 AM	-1	SEVERE	1		EC2AMAZ-NI76OEE	ValidateServerDataStore.Execute	The connection property set was missing a required property or the property value was unrecognized. Instance not available on server.
10	10/17/2018 7:10 AM	10/17/2018 7:09 AM	9000	SEVERE	1		10.0.3.27		Connection to 10.0.3.202:9876 refused. Check that the hostname and port are correct and that the postmaster is accepting TCP/IP connections.

Investigate “Source” machine

The screenshot shows the ArcGIS Data Store Services console. The left sidebar displays the 'Local Data Source' tree with 'ArcGIS Datastore' selected. The main window shows the 'Services (Local)' tab with a list of services. The 'ArcGIS Data Store' service is highlighted, and its status is 'Not Running'. A green callout box points to the service status, stating: 'Problem: ArcGIS Data Store service not running. Restarting service throws logging error.' A large red 'X' is overlaid on the service status area, and a red circle highlights the 'Automatic (Delayed Start)' start type.

Navigation

Local Data Source

Name

Local Data Source

AWS

EMCS Monitor Demo

agmdemo-RDGW

ArcGIS Datastore

ArcGIS Monitor

ArcGIS Server

Hosting Server

Portal for ArcGIS Ser...

EPM

Dashboard Welcome ArcGIS Datastore Portal for ArcGIS Server ArcGIS Monitor

Services

File Action View Help

Services (Local)

ArcGIS Data Store

Start the service

Description: Enables the hosting of ArcGIS Data Store

Name	Description	Status	Start Type	Path
ActiveX Installer (AxInstS)		Running	Automatic	...
AllJoyn Router Service		Running	Automatic	...
Amazon SSM Agent		Running	Automatic	...
App Readiness		Running	Automatic	...
Application Host Helper		Running	Automatic	...
Application Identity		Running	Automatic	...
Application Information		Running	Automatic	...
Application Layer Gateway ...	Provides su...	Running	Manual	...
Application Management	Processes in...	Running	Manual	...
AppX Deployment Service (...)	Provides in...	Running	Manual	...
ArcGIS Data Store	Enables the ...	Not Running	Automatic (D...	...
ArcGIS GeoEvent Gateway	ArcGIS Geo...	Running	Automatic	...
ArcGIS GeoEvent Server	ArcGIS Geo...	Running	Manual	...
ArcGIS Server	Enables the ...	Running	Manual	...
ASP.NET State Service	Provides su...	Running	Manual	...
Auto Time Zone Updater	Automatica...	Running	Disabled	...
AWS Lite Guest Agent	AWS Lite Gu...	Running	Automatic	...
Background Intelligent Tran...	Transfers fil...	Running	Manual	...
Background Tasks Infrastru...	Windows in...	Running	Automatic	...
Rare Filtering Engine	The Rare Fil...	Running	Automatic	...

Resolve: correct password and start ArcGIS Data Store service

The screenshot displays the ArcGIS Data Store interface. On the left, the 'Navigation' pane shows a tree structure under 'Local Data Source' with 'ArcGIS Datastore' highlighted. The main window, titled 'Services', shows a list of services. The 'ArcGIS Data Store' service is highlighted in blue, and a yellow checkmark is placed next to its 'Automatic (D...)' startup type. The service status is 'Running'.

Services (Local)

Name	Description	Status	Startup Type	Lo
ActiveX Installer (AxInstSV)	Provides Us...		Manual	Lo
AllJoyn Router Service	Routes AllJo...		Manual (Trig...	Lo
Amazon SSM Agent	Amazon SS...	Running	Automatic	Lo
App Readiness	Gets apps re...		Manual	Lo
Application Host Helper Ser...	Provides ad...	Running	Automatic	Lo
Application Identity	Determines ...		Manual (Trig...	Lo
Application Information	Facilitates t...	Running	Manual (Trig...	Lo
Application Layer Gateway ...	Provides su...		Manual	Lo
Application Management	Processes in...		Manual	Lo
AppX Deployment Service (...)	Provides inf...		Manual	Lo
ArcGIS Data Store	Enables the ...	Running	Automatic (D...	Lo
ArcGIS GeoEvent Gateway	ArcGIS Geo...		Automatic	Lo
ArcGIS GeoEvent Server	ArcGIS Geo...		Manual	Lo
ArcGIS Server	Enables the ...		Manual	Lo
ASP.NET State Service	Provides su...		Manual	Ne
Auto Time Zone Updater	Automatica...		Disabled	Lo
AWS Lite Guest Agent	AWS Lite Gu...	Running	Automatic	Lo
Background Intelligent Tran...	Transfers fil...		Manual	Lo
Background Tasks Infrastru...	Windows in...	Running	Automatic	Lo
Rare Filtering Engine	The Rare Fil...	Running	Automatic	Lo

Verify resolution

Home ▾ California_Test_Hosted_Service

Details Add Basemap Analysis Save Share Print Measure Book

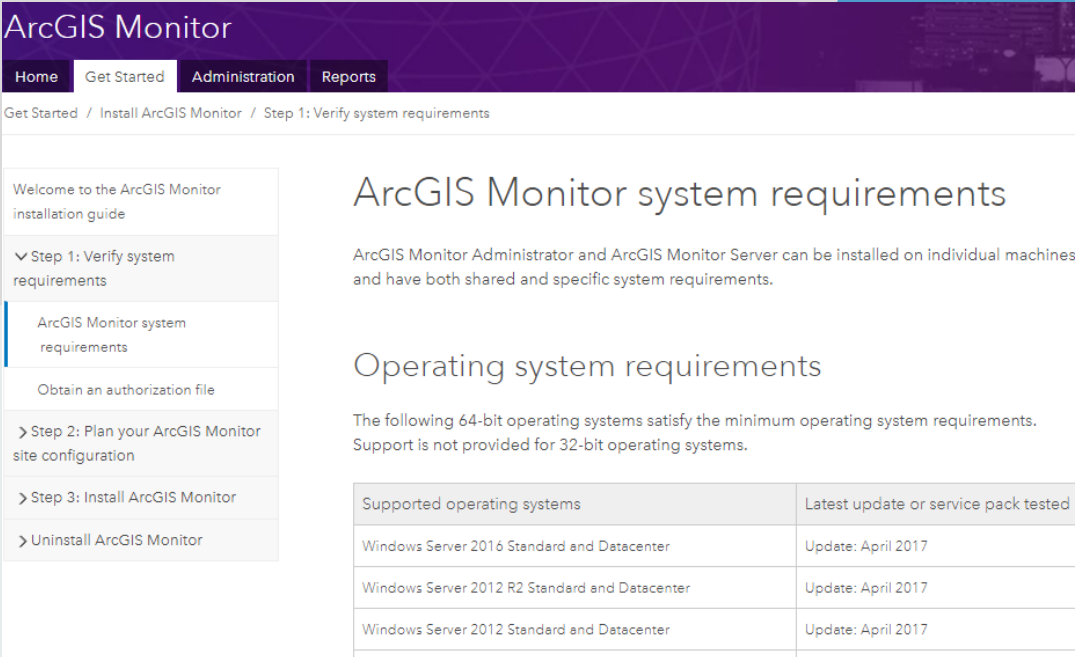
Contents

- ☐ California Test Hosted Service - Geocoding Result
- ☐ California Test Hosted Service - Places
- ☒ California Test Hosted Service - GolfCourses
- ☐ California Test Hosted Service - Cities
- ☐ California Test Hosted Service - Airports

Map showing Riverside area with points visible. A green callout box states: Points are visible. A yellow checkmark is also present on the map.

Installation

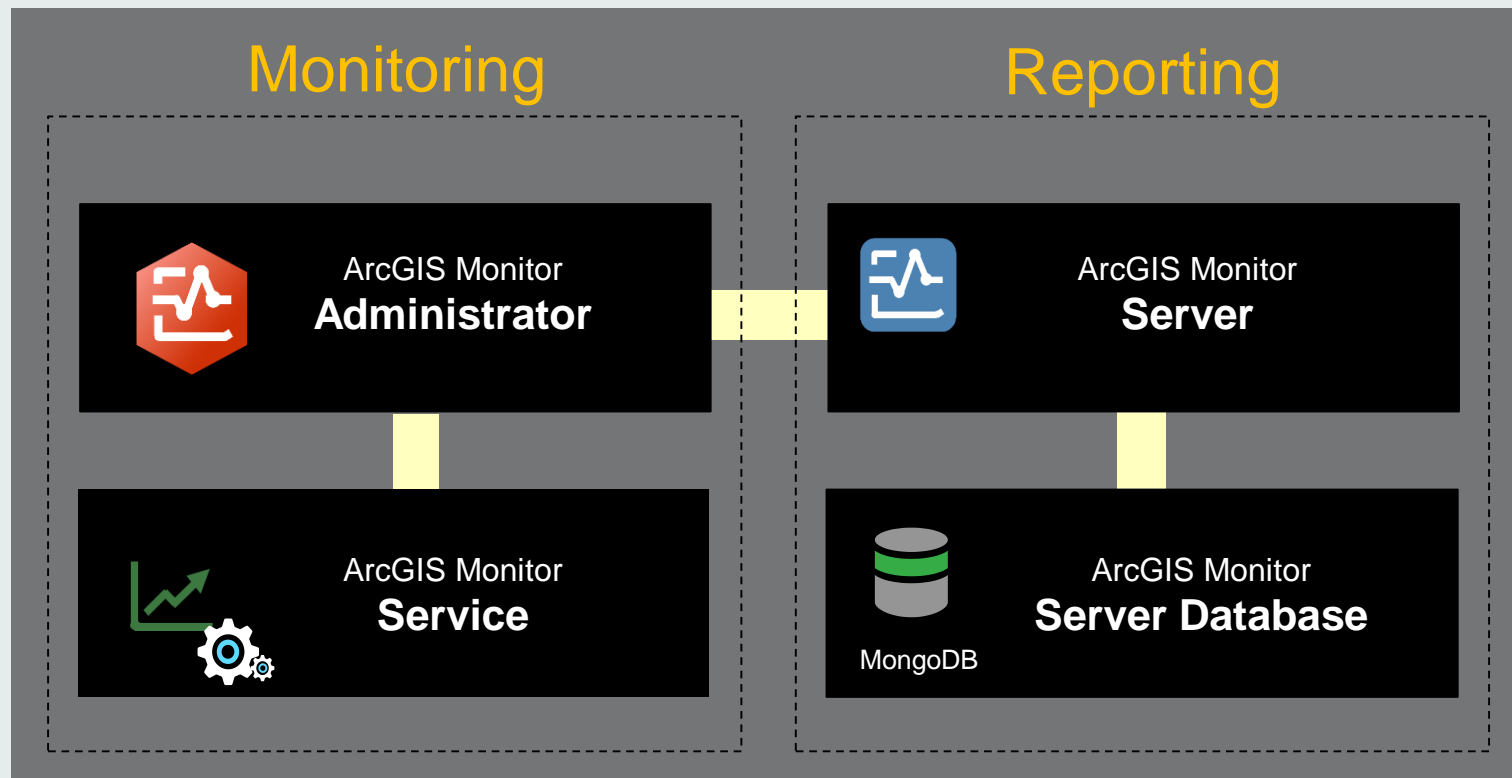
<https://enterprise.arcgis.com/en/monitor/latest/get-started/arcgis-monitor-system-requirements.htm>



The screenshot shows the ArcGIS Monitor web interface. At the top is a purple header with the 'ArcGIS Monitor' logo and navigation tabs for 'Home', 'Get Started', 'Administration', and 'Reports'. Below the header is a breadcrumb trail: 'Get Started / Install ArcGIS Monitor / Step 1: Verify system requirements'. On the left is a sidebar with a 'Welcome to the ArcGIS Monitor installation guide' section and a list of steps: 'Step 1: Verify system requirements' (selected), 'ArcGIS Monitor system requirements', 'Obtain an authorization file', 'Step 2: Plan your ArcGIS Monitor site configuration', 'Step 3: Install ArcGIS Monitor', and 'Uninstall ArcGIS Monitor'. The main content area is titled 'ArcGIS Monitor system requirements' and contains a paragraph stating that both the Administrator and Server can be installed on individual machines with shared and specific requirements. Below this is a section for 'Operating system requirements' which states that 64-bit systems are supported while 32-bit are not. A table follows, listing supported operating systems and the latest update or service pack tested.

Supported operating systems	Latest update or service pack tested
Windows Server 2016 Standard and Datacenter	Update: April 2017
Windows Server 2012 R2 Standard and Datacenter	Update: April 2017
Windows Server 2012 Standard and Datacenter	Update: April 2017

ArcGIS Monitor Components and Functions



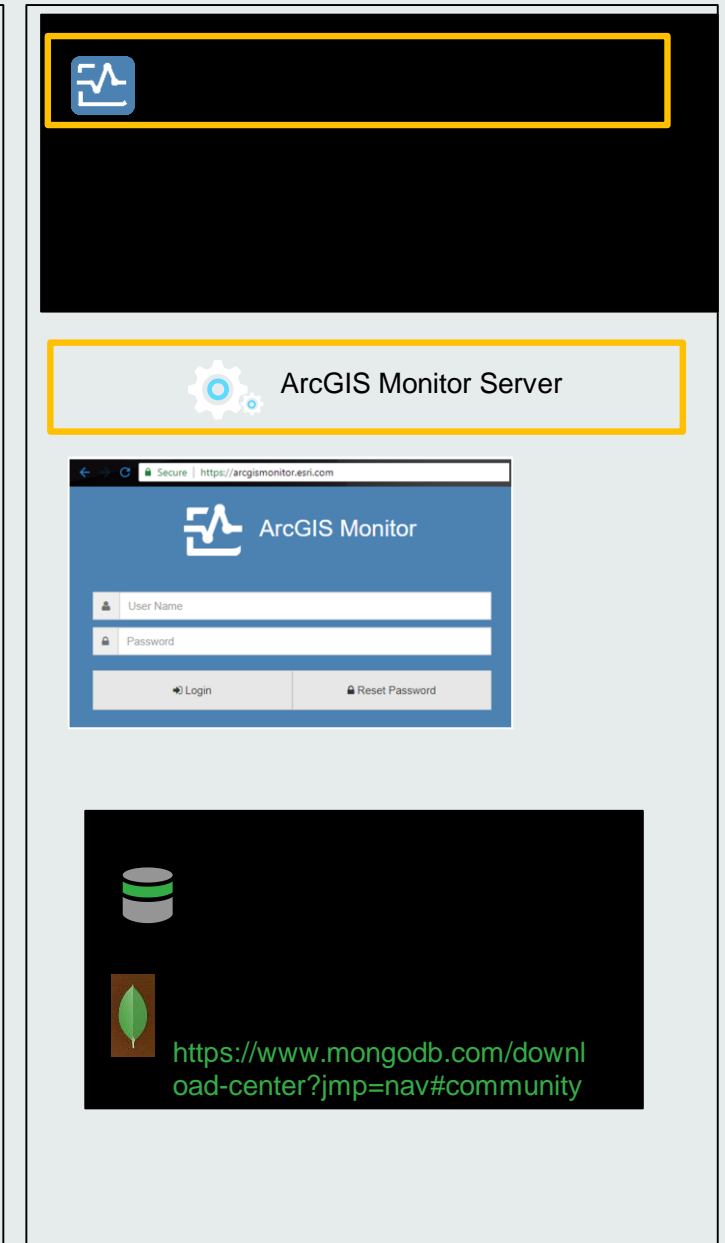
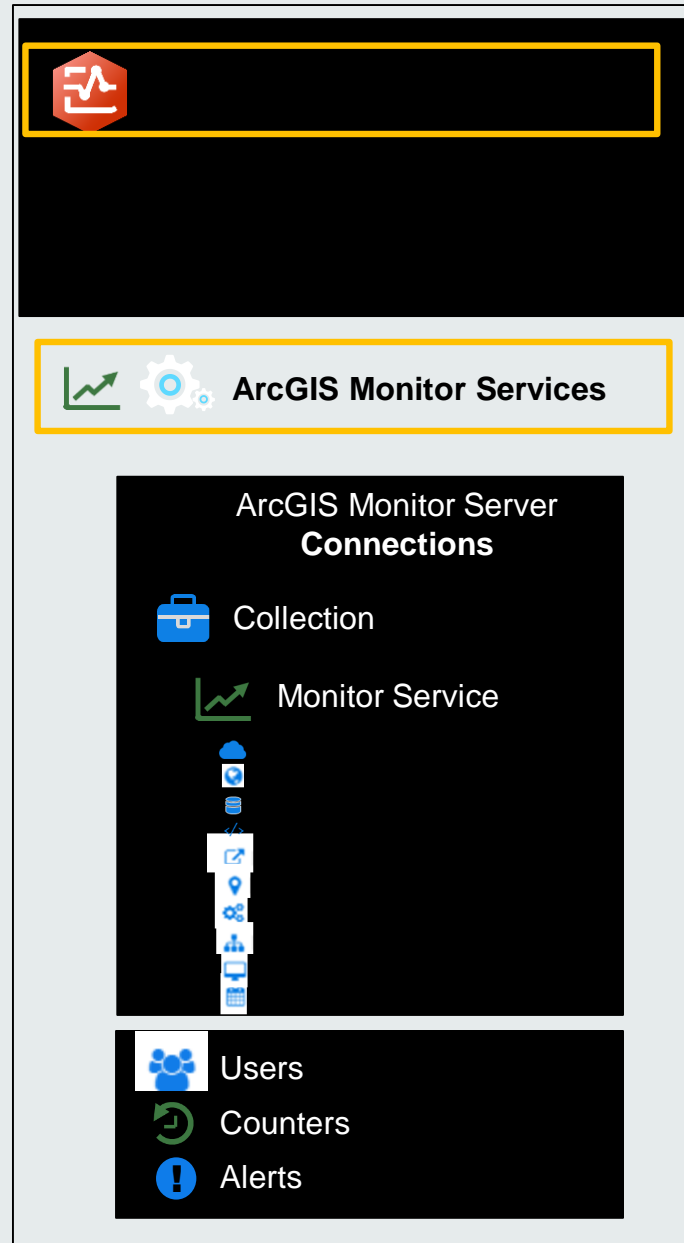
Installation and configuration

- **ArcGIS Monitor Server**

1. **Install MongoDB bin**
2. **Install server**
3. **Connect to server**

ArcGIS Monitor Administrator

1. **Open Administrator**
2. **Register Collection**
3. **Add Counters**



Single machine deployment



Administrator



Monitoring Service

(windows service, 8000 or auto assigned port)



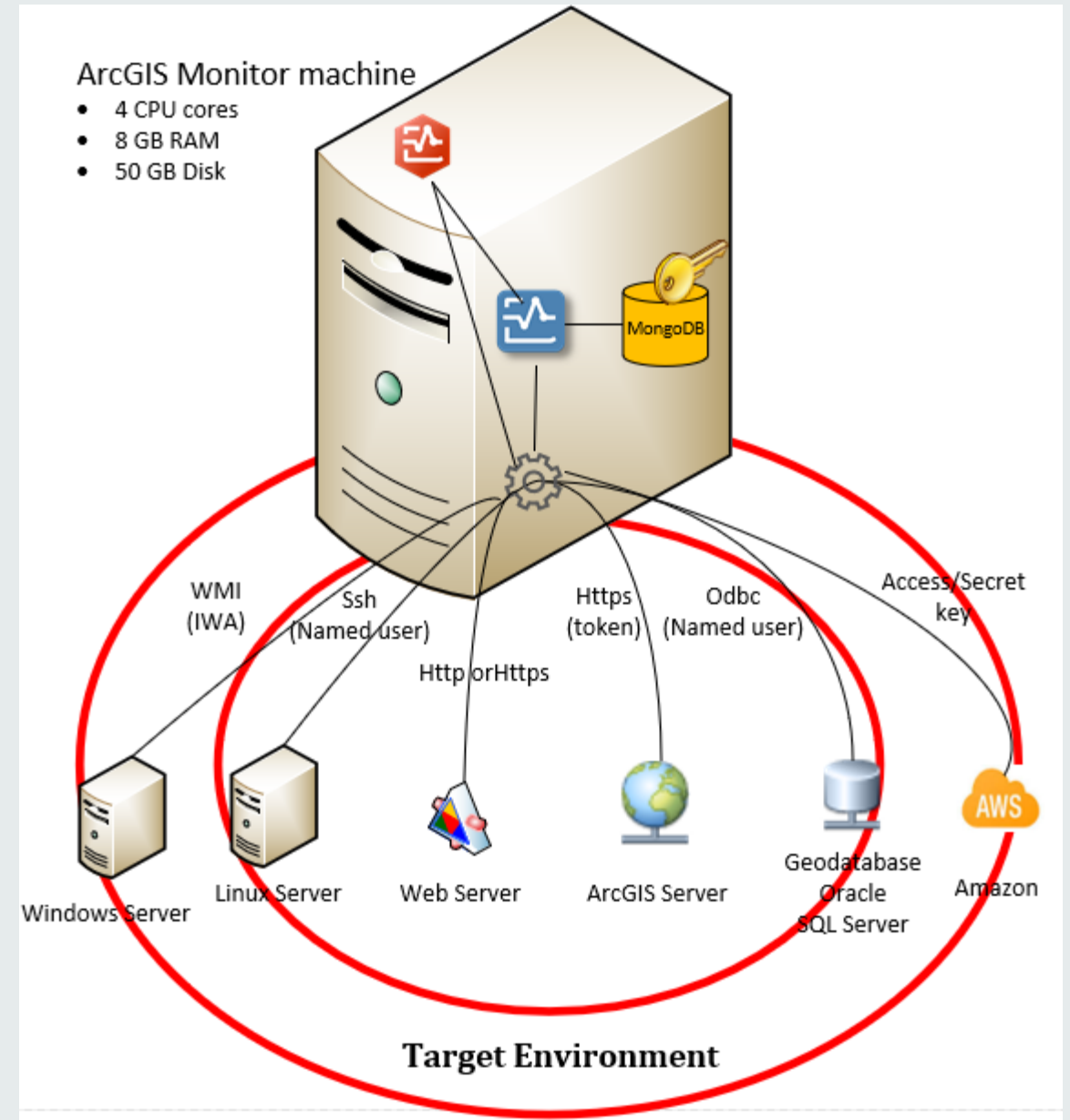
Server

<https://<hostname>:443> or configurable
Token Authentication , valid 24 hr



Repository (MongoDB)

(port 27017 or configurable)



Distributed deployment

Full stack monitoring



Administrator



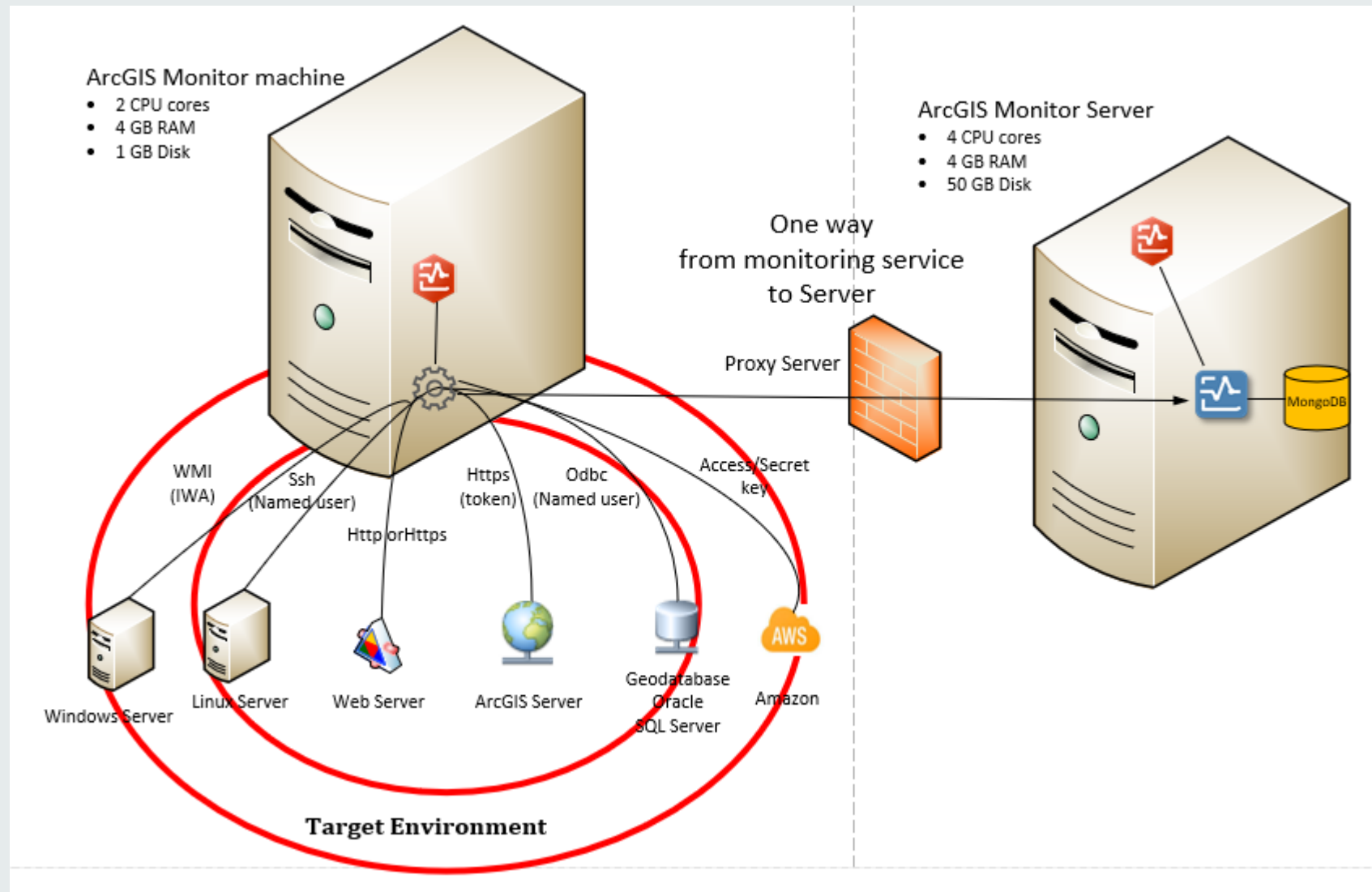
Monitoring Service
(windows service, 8000 or auto assigned port)



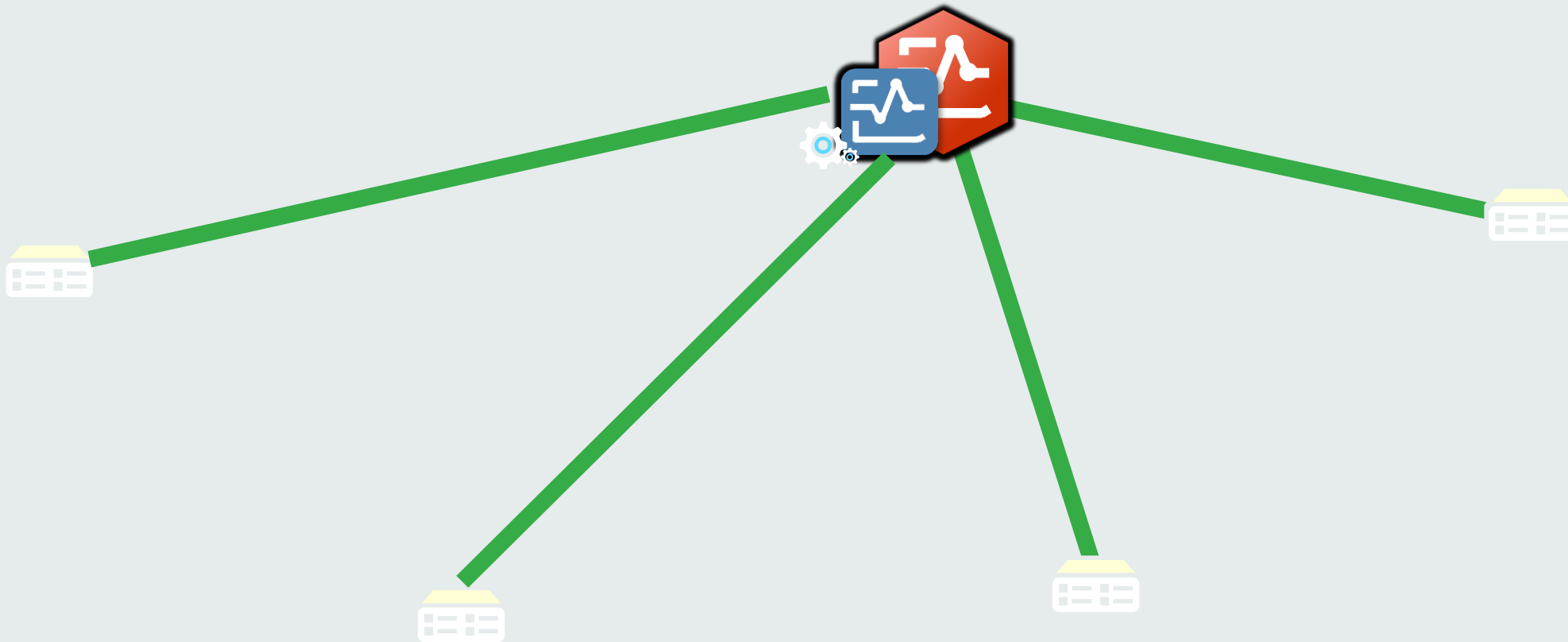
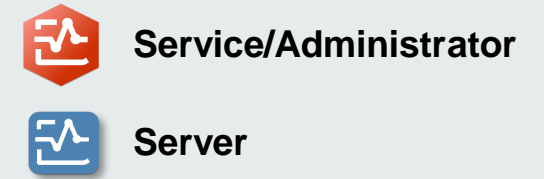
Server
<https://<hostname>:443> or configurable
Token Authentication, valid 24 hr



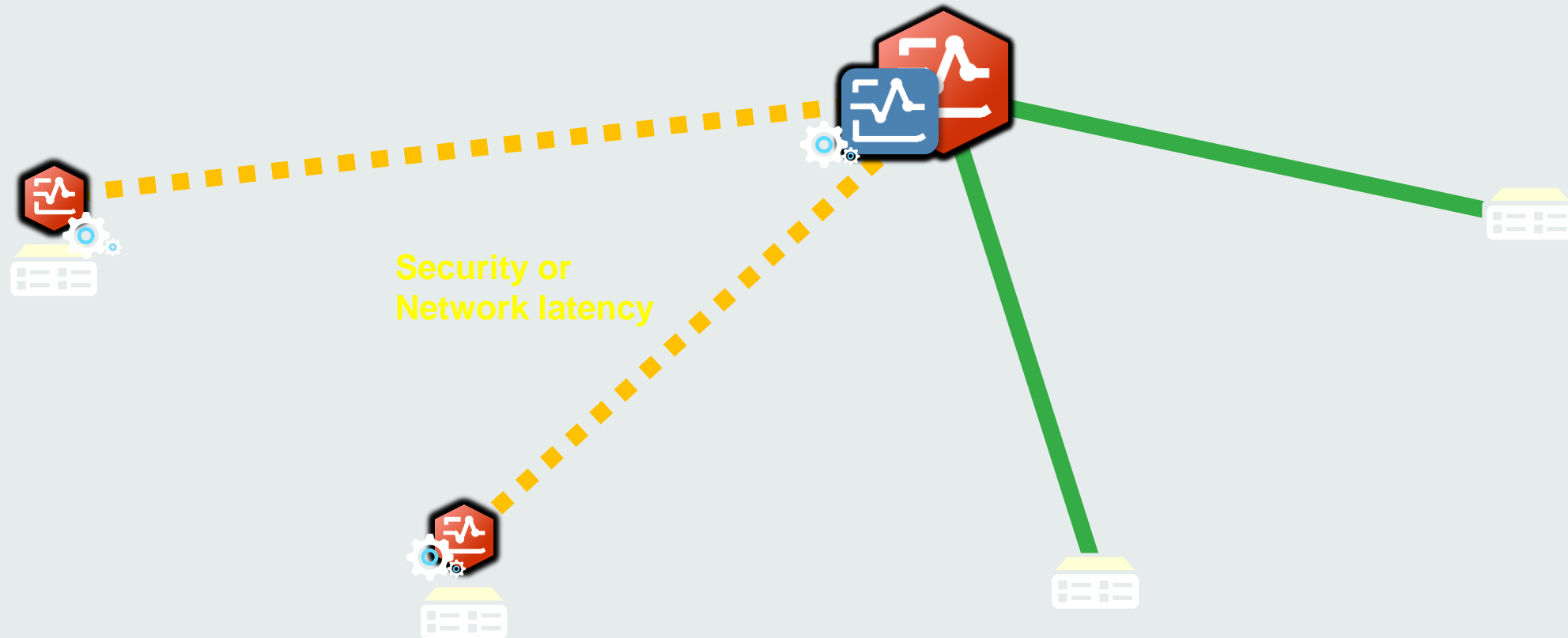
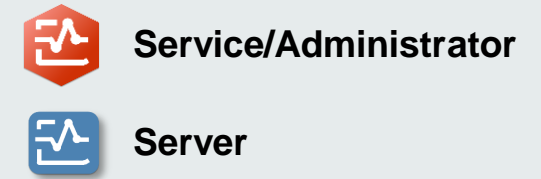
Repository (MongoDB)
(port 27017 or configurable)



Centralized deployment



Distributed or hybrid deployment

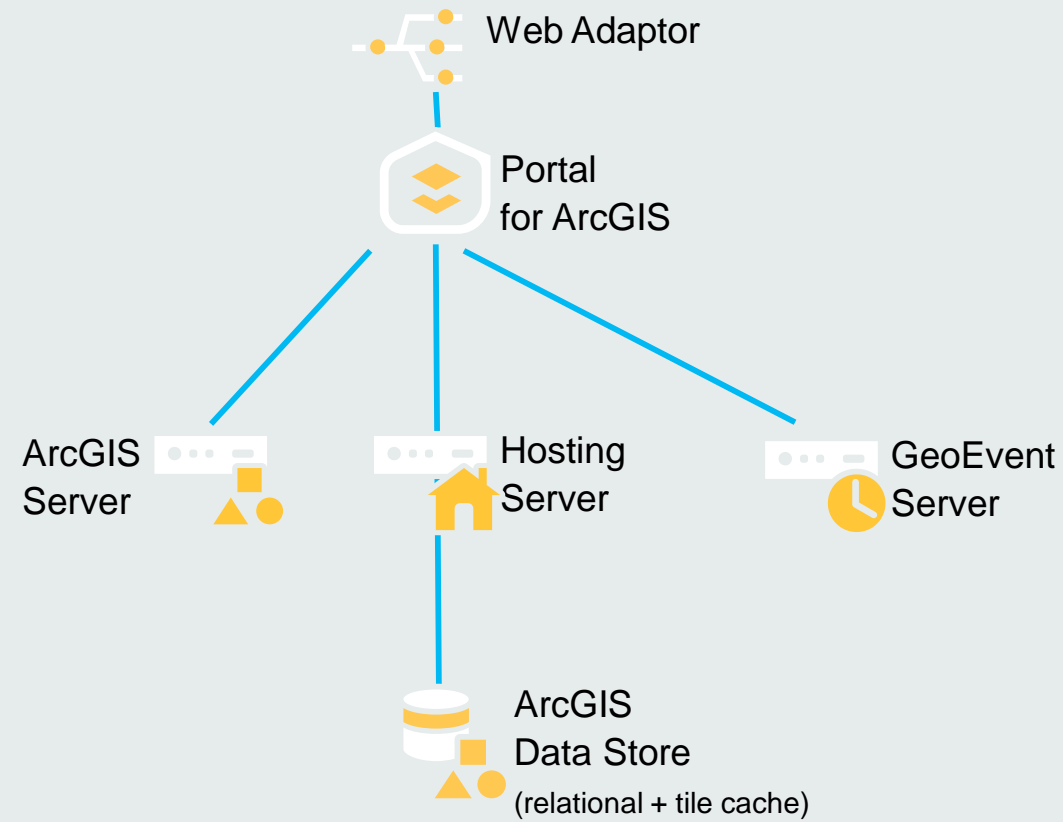


Configuration

Monitoring service

Review your solution(s) architecture

Examples



Gallery: Tutorials and Videos

ArcGIS Monitor Gallery
















OverviewContentMembers

Q Tutorial

x

TableView CountFilter

1 - 16 of 29

Title	Modified	Owner	View Count
 How to get MongoDB	 ... Feb 1, 2018	ArcGISMonitorTeam	242
 Tutorial - How to find ArcGIS Monitor documents	 ... Jan 18, 2018	ArcGISMonitorTeam	189
 Tutorial - Adding a System	 ... Feb 19, 2019	ArcGISMonitorTeam	173
 Tutorial - Adding a DB	 ... Feb 21, 2019	ArcGISMonitorTeam	142
 Tutorial - Adding ArcGIS Server	 ... Feb 7, 2018	ArcGISMonitorTeam	108
	 ... Feb 21, 2019	ArcGISMonitorTeam	97
	 ... Feb 19, 2019	ArcGISMonitorTeam	82
	 ... Jun 19, 2018	ArcGISMonitorTeam	79
	 ... Feb 21, 2019	ArcGISMonitorTeam	62
	 ... Jun 27, 2018	ArcGISMonitorTeam	41

OverviewContentMembers

TableView CountFilter



















ArcGIS Monitor Gallery

OverviewContentMembers

video

TableView CountFilter

1 - 16 of 19

Title	Modified	Owner	View Count
 How to get MongoDB	 ... Feb 1, 2018	ArcGISMonitorTeam	242
 ArcGIS Monitor Demo for Administrators	 ... Jul 2, 2018	ArcGISMonitorTeam	66
 ArcGIS Monitor Demo for Managers	 ... Jul 2, 2018	ArcGISMonitorTeam	53
 Add ArcGIS Server in 10.6.1	 ... Jun 27, 2018	ArcGISMonitorTeam	41
 Understanding Availability in ArcGIS Monitor	 ... Jul 2, 2018	ArcGISMonitorTeam	39
 Add Http in 10.6.1	 ... Jun 27, 2018	ArcGISMonitorTeam	26
 Adding ArcGIS Server in 10.6.0	 ... Jun 27, 2018	ArcGISMonitorTeam	24
 Add Portal in 10.6.1	 ... Jun 19, 2018	ArcGISMonitorTeam	23
 Add System for Windows	 ... Jan 5, 2018	ArcGISMonitorTeam	21

<https://arcgismonitor.maps.arcgis.com>

Gallery: Select required Extensions

ArcGIS Monitor Gallery					Overview	Content	Members
🔍 extensions					Table	View Count	Filter
1 - 16 of 21							
Title			Modified		Owner	View Count	
📄 Esri Third-Party OSS_FOSS Software Acknowledgements	🌐 ...		Jan 4, 2019		ArcGISMonitorTeam	63	
📄 ArcSoc Optimizer Add-on	🌐 ...		Feb 26, 2019		ArcGISMonitorTeam	56	
📄 System Log Parser for ArcGIS Task Add-on	🌐 ...		Feb 4, 2019		ArcGISMonitorTeam	52	
📄 Excel Report Task Add-on	🌐 ...		Feb 4, 2019		ArcGISMonitorTeam	32	
📄 System Log Parser for IIS Add-on	🌐 ...		Feb 4, 2019		ArcGISMonitorTeam	30	
📄 License Extension Add-on	🌐 ...		Dec 19, 2018		ArcGISMonitorTeam	27	
📄 ArcGIS GeoEvent Add-on	🌐 ...		Dec 19, 2018		ArcGISMonitorTeam	24	
📄 EgdbSQL Add-on	🌐 ...		Feb 4, 2019		ArcGISMonitorTeam	18	
📄 SSL Certificate Add-on	🌐 ...		Dec 19, 2018		ArcGISMonitorTeam	17	
📄 File Read Write Add-on	🌐 ...		Dec 19, 2018		ArcGISMonitorTeam	17	
📄 HAR Extension Add-on	🌐 ...		Dec 19, 2018		ArcGISMonitorTeam	15	

<https://arcgismonitor.maps.arcgis.com>

Geonet series

<https://community.esri.com/thread/231451-arcgis-architecture-series-tools-of-an-architect>

Architecture & Security

Geodata Engineering

Configuration & Integration

Workforce Development

Operational Support

clear selected

VIEW THE BLOG

Implementing ArcGIS

Type to filter by text

Filter by tag

Sort by latest activity: newest first

Engineering ArcGIS Series: Tools of an Engineer

The Managed Cloud Services team in Professional Services is pleased to announce a new series that will be highlighting various tools and best practices for implementing ArcGIS Enterprise using modern methodologies. &...

last modified by skarra-esristaff

2 0 0

Infrastructure as Code (IaC) with Terraform

What is Infrastructure as Code? What is Terraform? Resources Providers State Infrastructure Life-cycle Creation Decommission What is Infrastructure as Code? Taken directly from M...

created by MHatcher-esristaff

0 0 0

Options for Deploying Desktops in the Cloud

As cloud adoption evolves from Web GIS to full GIS deployments, questions continue to be raised such as, "What about the desktops?". That is, when moving desktops to the cloud, what technologies should be ...

last modified by jdeweese-esristaff

0 0 2

ArcGIS Server/Portal Security

Now more than ever, there's an increasing need to secure our IT infrastructure. Practicing good security hygiene should be top of our list as administrators. ArcGIS Server, Portal and the various applications de...

last modified by SAustin-esristaff

1 0 0

Is Your System Architecture Ready for ArcGIS 10.7.1 and...

As the Esri platform continues to evolve, it is critical that organizations maintain a capable GIS system architecture that will support new GIS/IT capabilities and scale to support growing user demand. There are furt...

last modified by jdeweese-esristaff

2 0 0

Implementing ArcGIS Track at User Conference 2019

Implementing ArcGIS Track at UC The User Conference has many presentations and events with hundreds of topics covered. To help you find your way to all the sessions and events about Implementing ArcGIS successfu...

last modified by cschroeder-esristaff

3 0 0

Find us at UC - Guiding Your Geospatial Journey

Guiding Your Geospatial Journey Area Expo Area Ground Level Exhibit Hall A, SDCC Tuesday, July 9 &...

last modified by cschroeder-esristaff

3 0 0

WFS or not DFS

I have a question about implementing a highly available ArcGIS Enterprise architecture. The documentation states that Windows DFS is NOT supported as a NAS/SAN. I understand why multiple target DFSR wouldn't be suppor...

last modified by pbatley

0 0 0

Architecture & Security - Events & Activities at UC 2019

Implementing ArcGIS Architecture & Security: Sessions & Activities The User Conference has many presentations and events with hundreds of topics covered. To help you find your way to all...

last modified by cschroeder-esristaff

0 0 0

2019 Esri International User Conference Suggested Eve...

Are you a GIS manager, leader or other executive headed to the 2019 Esri International User Conference (UC)? I know it can be a challenge creating your personal agenda for the world's largest GIS conference, so ...

last modified by acamow-esristaff

3 0 0

ArcGIS Architecture Series: Moving to the Cloud

The Architecture Practice team in Professional Services is pleased to announce this new series. The ArcGIS platform is supported on both on-premises or in a cloud environment like Microsoft Azure or Amazon W...

last modified by Ahmad_Abdallah-esristaff

6 0 2

2019 Esri International User Conference GIS Manag...

If you're headed to the 2019 Esri International User Conference and are interested in sessions for GIS Managers, here is a link to the GIS Manager Track: https://userconference2019.schedule.f...

last modified by acamow-esristaff

0 0 0

How ccan i download Prerelease License Manag...

Prerelease License Manager Download

Considerations before moving your GIS to the Cloud

ArcGIS Architecture Series: Tools of an Architect

ArcGIS Architecture Series: Tools of an Architect

Discussion created by **JBoyle-esristaff** on Apr 1, 2019
Latest reply on May 22, 2019 by JBoyle-esristaff

Like • 17

Comment • 9

The Architecture Practice team in Professional Services is pleased to announce a new series leading up to the Esri User Conference. We will be highlighting various tools and best practices for ArcGIS Enterprise implementation and tuning.

System design and architecture can some times feel daunting. As an ArcGIS Enterprise or ArcGIS Server administrator, you may occasionally be faced with decisions for how to best optimize the services within your site for performance, reduce wait-times, and eliminate service down times.

- **ArcGIS Server Tuning and Optimization with System Log Parser** - Outlines configuring ArcGIS Server for System Log Parser analysis and setting up System Log Parser.
- **System Log Parser - Statistics and Service Optimization** - Outlines what specific fields to focus on for service optimization and ways to tune services and the underlying data to optimize performance.
- **What is eGDB Health** - Egdbhealth is a tool for reporting on various characteristics of Enterprise Geodatabases (eGDBes).
- **Using Egdbhealth to Evaluate a Geodatabase** - This article discusses how to use the outputs of egdbhealth to evaluate the health of an eGDB.
- ****New** Using Egdbhealth in System Design** - The primary purpose of the tool is to evaluate the "health" of eGDBes. However, the output can also be used in a system design context. This article addresses the system design use case.

<https://community.esri.com/community/implementing-arcgis/content?filterID=contentstatus%5Bpublished%5D~category%5Barchitecture-security%5D&itemView=thumbnail>

Extensions

License Inventory

What and how many licenses do we have?

ArcGIS Monitor

Reports > License

Home

Availability

License Manager Reports 11/14/2018 5:33 PM

Set Time: TodayTime Range: 11/14/2018 12:00 AM 11/14/2018 5:34 PM

Use the License reports to list the unique users of a license

Category	Name	License Name	License
ArcGIS Desktop	Aviation Charting	Aeronautical	1,600
ArcGIS Desktop	Aviation Airports	AeronauticalB	1,600
ArcGIS Desktop	Desktop Advanced	ARC/INFO	3,200
ArcGIS Desktop	Business Analyst Basic	Business	1,600
ArcGIS Desktop	Business Analyst Standard	BusinessPrem	1,600
ArcGIS Desktop	Data Reviewer	DataReViewer	1,600
ArcGIS Desktop	Defense Mapping	Defense	1,600
ArcGIS Desktop	Desktop Standard	Editor	1,600
ArcGIS Desktop	Production Mapping	Foundation	1,600
ArcGIS Desktop	Geostatistical Analyst	GeoStats	1,600

Number of Users

How many unique users were there during this time period?

ArcGIS Monitor

Reports > License

Home

Availability

Alerts

License Manager Reports 11/14/2018 5:33 PM

Set Time: Today

Time Range:

11/14/2018 12:00 AM

11/14/2018 5:34 PM

Use the License reports to list the unique users of a license

Category	Name	License Name	License	User(s)
ArcGIS Desktop	Aviation Charting	Aeronautical	1,600	5
ArcGIS Desktop	Aviation Airports	AeronauticalB	1,600	3
ArcGIS Desktop	Desktop Advanced	ARC/INFO	3,200	324
ArcGIS Desktop	Business Analyst Basic	Business	1,600	9
ArcGIS Desktop	Business Analyst Standard	BusinessPrem	1,600	14
ArcGIS Desktop	Data Reviewer	DataReViewer	1,600	33
ArcGIS Desktop	Defense Mapping	Defense	1,600	14
ArcGIS Desktop	Desktop Standard	Editor	1,600	5
ArcGIS Desktop	Production Mapping	Foundation	1,600	25
ArcGIS Desktop	Geostatistical Analyst	GeoStats	1,600	39

User Names

Who were the specific users during this time period?

ArcGIS Monitor *Reports > License* Home Availability Alerts RCA

License Manager Reports 11/14/2018 5:33 PM

Set Time: Today Time Range: 11/14/2018 12:00 AM 11/14/2018 5:34 PM

Use the License reports to list the unique users of a license

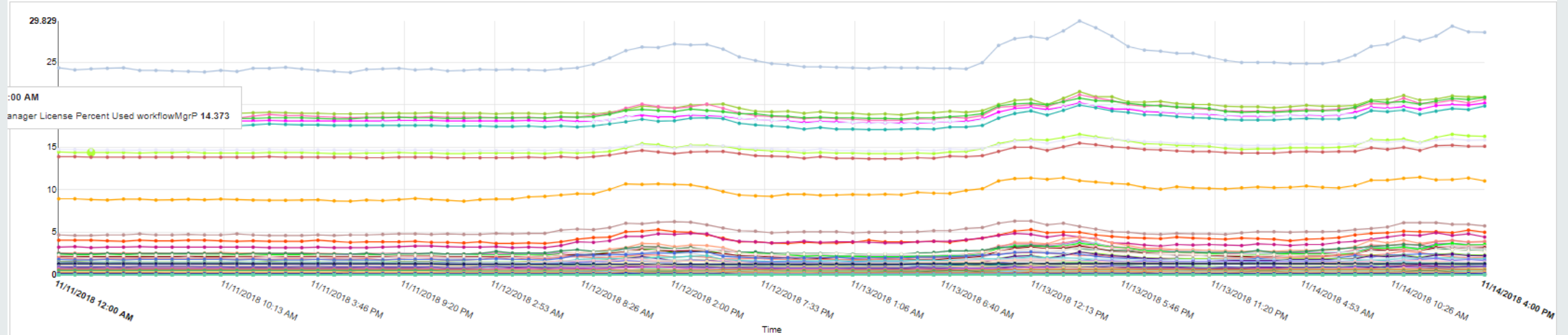
Category	Name	License Name	License	User(s)	
ArcGIS Desktop	Aviation Charting	Aeronautical	1,600	5	cha...
ArcGIS Desktop	Aviation Airports	AeronauticalB	1,600	3	dar...
ArcGIS Desktop	Desktop Advanced	ARC/INFO	3,200	324	Cha... aub... con... con... dia... jeff... kon... min... rich... sha... xi8...
ArcGIS Desktop	Business Analyst Basic	Business	1,600	9	Ch...
ArcGIS Desktop	Business Analyst Standard	BusinessPrem	1,600	14	ada...
ArcGIS Desktop	Data Reviewer	DataReViewer	1,600	33	Luc...
ArcGIS Desktop	Defense Mapping	Defense	1,600	14	bar...
ArcGIS Desktop	Desktop Standard	Editor	1,600	5	con...
ArcGIS Desktop	Production Mapping	Foundation	1,600	25	Luc...
ArcGIS Desktop	Geostatistical Analyst	GeoStats	1,600	39	Jos...

% of Licenses Used

What percentage of the licenses were used during this time period?

License Percent Used

Chart Resolution: hourly average when query greater than 12 hrs



Statistics: only table reflects true statistics like min, max, percentile

Item	Category	Counter	Instance	Min	Avg	P5	P50	P90	P95	P99	Max	Sum	Interval(sec)	Samples	Coverage %
License Manager	License	License Percent Used	desktopAdvP	23.778	25.392	23.900	24.694	27.944	28.554	29.829	29.829	2,285,240	3,600	90	100.000
License Manager	License	License Percent Used	3DAnalystP	18.796	19.553	18.917	19.161	20.620	20.925	21.533	21.533	1,759,739	3,600	90	100.000
License Manager	License	License Percent Used	spatialAnalystP	18.165	19.112	18.287	18.716	20.147	20.513	21.162	21.162	1,720,116	3,600	90	100.000
License Manager	License	License Percent Used	dataReviewerP	18.331	19.072	18.392	18.636	20.341	20.463	20.851	20.851	1,716,498	3,600	90	100.000
License Manager	License	License Percent Used	dataInteropP	17.844	18.565	17.905	18.149	19.671	19.878	20.219	20.219	1,670,839	3,600	90	100.000
License Manager	License	License Percent Used	networkAnalystP	17.633	18.427	17.694	17.999	19.549	19.793	20.073	20.073	1,658,404	3,600	90	100.000
License Manager	License	License Percent Used	geostatAnalystP	17.064	18.023	17.125	17.615	19.266	19.414	19.939	19.939	1,622,044	3,600	90	100.000
License Manager	License	License Percent Used	workflowMgrP	14.251	14.851	14.251	14.495	15.902	16.208	16.514	16.514	1,336,575	3,600	90	100.000
License Manager	License	License Percent Used	smpEuropeP	14.539	15.031	14.600	14.783	15.761	15.863	16.188	16.188	1,352,763	3,600	90	100.000

ArcSOC Optimizer

Setting min / max instances across 100 to 1000s of services in dynamic environments is challenging

System Monitor Desktop

File

Remove

Test

Config

Logs

Site@██████████444

SystemMonitor

Collector

(27)

Amazon (1)

ArcGIS (2)

DB (2)

Ext (6)

Http (6)

Portal (0)

Process (3)

RDP (0)

System (1)

Tasks (6)

ArcGISLog

ArcSOCOptimizer_es

ArcSOCOptimizerSa

IIS

mongostats

SMEExcel

Name:

ArcSOCOptimizer██████████z30

Type:

ArcSOC Optimizer

Program: ?

C:\System Monitor Desktop\resources\app\bin\ArcSOC Optimizer\ArcSOCOptimizer.exe

Config: ?

C:\System Monitor Desktop\resources\app\bin\ArcSOC Optimizer\config30days.json

SiteUrl: ?

https://██████████43/arcgis

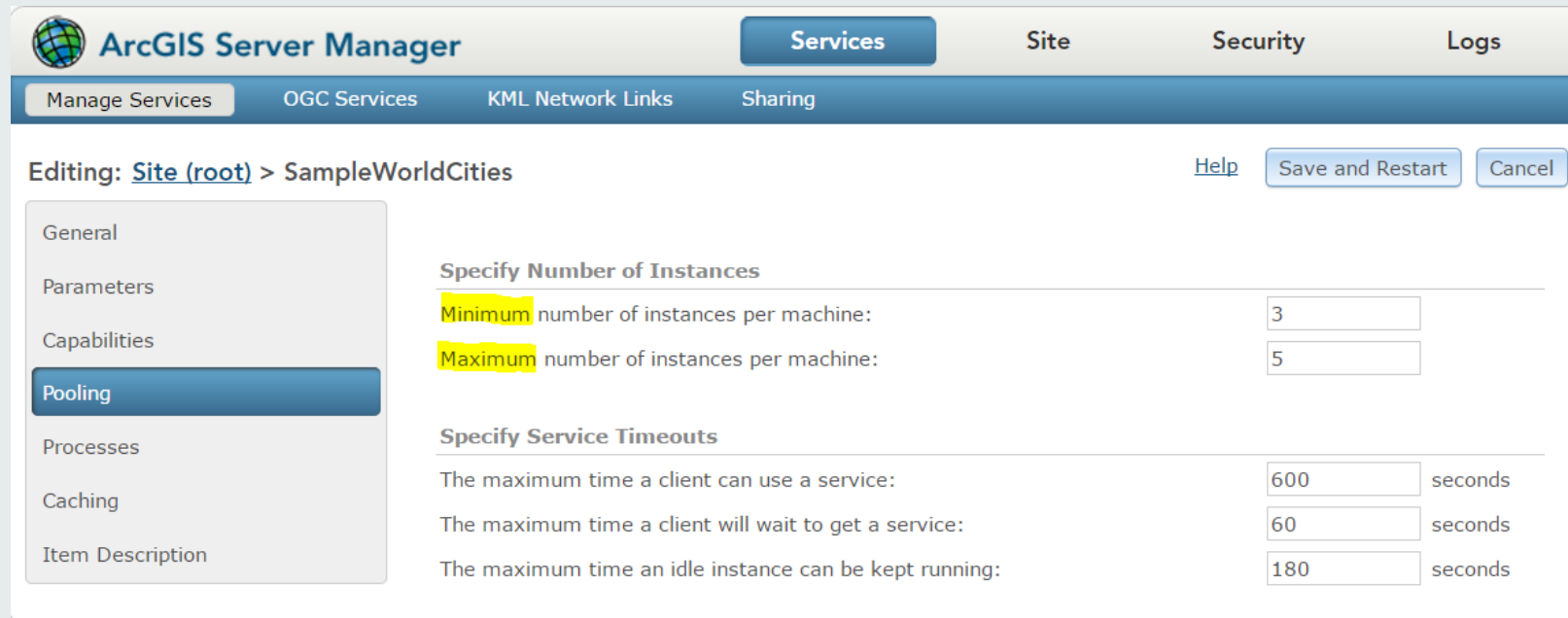
TokenUrl: ?

https://██████████43/arcgis/tokens/generateTokens

A circular inset image showing a high-angle, aerial view of a multi-lane highway. The highway is completely gridlocked with hundreds of cars, stretching far into the distance. The image is used as a metaphor for the complexity of managing a large number of services in a dynamic environment.

ArcSOC Optimizer

- Decrease or increase instances, based on:
 - 1. historical usage
 - 2. available memory and process count



The screenshot shows the ArcGIS Server Manager web interface. The top navigation bar includes 'Services' (selected), 'Site', 'Security', and 'Logs'. Below this, a secondary bar contains 'Manage Services', 'OGC Services', 'KML Network Links', and 'Sharing'. The main content area is titled 'Editing: Site (root) > SampleWorldCities'. On the left, a sidebar lists configuration categories: General, Parameters, Capabilities, Pooling (selected), Processes, Caching, and Item Description. The 'Pooling' section is active, displaying two sub-sections: 'Specify Number of Instances' and 'Specify Service Timeouts'. The first sub-section has input fields for 'Minimum number of instances per machine' (set to 3) and 'Maximum number of instances per machine' (set to 5). The second sub-section has input fields for 'The maximum time a client can use a service' (600 seconds), 'The maximum time a client will wait to get a service' (60 seconds), and 'The maximum time an idle instance can be kept running' (180 seconds). Action buttons for 'Help', 'Save and Restart', and 'Cancel' are located at the top right of the configuration area.

ArcGIS Server Manager

Services Site Security Logs

Manage Services OGC Services KML Network Links Sharing

Editing: [Site \(root\)](#) > SampleWorldCities [Help](#) [Save and Restart](#) [Cancel](#)

General
Parameters
Capabilities
Pooling
Processes
Caching
Item Description

Specify Number of Instances

Minimum number of instances per machine:

Maximum number of instances per machine:

Specify Service Timeouts

The maximum time a client can use a service: seconds

The maximum time a client will wait to get a service: seconds

The maximum time an idle instance can be kept running: seconds

Results & Benefits

- The results speak for themselves
 - Vastly improved stability of ArcGIS Server
 - Improved response times of services
 - Staff time freed for other activities
 - Happy WebGIS users!!!

ExxonMobil

System Log Parser and Egdbhealth

<https://community.esri.com/thread/231451-arcgis-architecture-series-tools-of-an-architect>

ArcGIS Architecture Series: Tools of an Architect

Discussion created by JBoyle-esristaff on Apr 1, 2019
Latest reply on May 22, 2019 by JBoyle-esristaff

Like • 17 Comment • 9

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- [System Log Parser - Statistics and Service Optimization](#) - Outlines what specific fields to focus on for service optimization and ways to tune services and the underlying data to optimize performance.
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- ****New**** [Using Egdbhealth in System Design](#) - The primary purpose of the tool is to evaluate the "health" of eGDBes. However, the output can also be used in a system design context. This article addresses the system design use case.

Monitoring service

ArcGIS Monitor Administrator

File Remove Test Config

Site@localhost:444

- Dev2019
 - test 4
 - Amazon 0
 - ArcGIS 0
 - DB 0
 - Ext 1
 - Http 1
 - Dev2019Agenda**
 - Portal 0
 - Process 0
 - RDP 0
 - System 1
 - Tasks 1

Config Alerts (6) Help

Counter: ⓘ If alert selections are empty, click the Test button

Alert Type:

Validation Value:

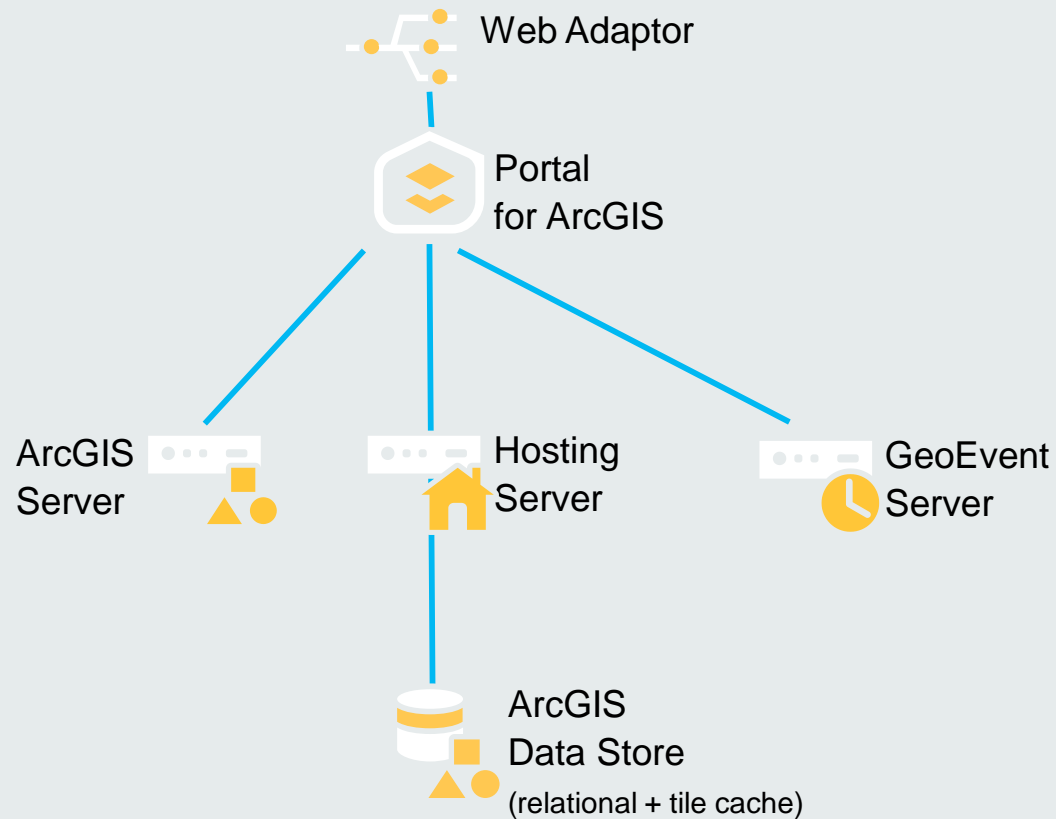
Configured Alerts

Name	Category	Instance	Alert Category	Alert Type	Value
Response Code	Url	default-alert	Warning	Greater Than	399
JSON Error Code	Url	default-alert	Warning	Greater Than	0
Response Time(sec)	Url	default-alert	Warning	Greater Than	3
Response Time(sec)	Url	default-alert	Warning	Greater Than	30
Find String	Url	default-alert	Warning	Equal To	0
Find String NOT	Url	default-alert	Warning	Equal To	1

Delete All Alerts Set Default Alerts

Mapping counters to architecture components

Infrastructure: Administrator view



ArcGIS Monitor Administrator

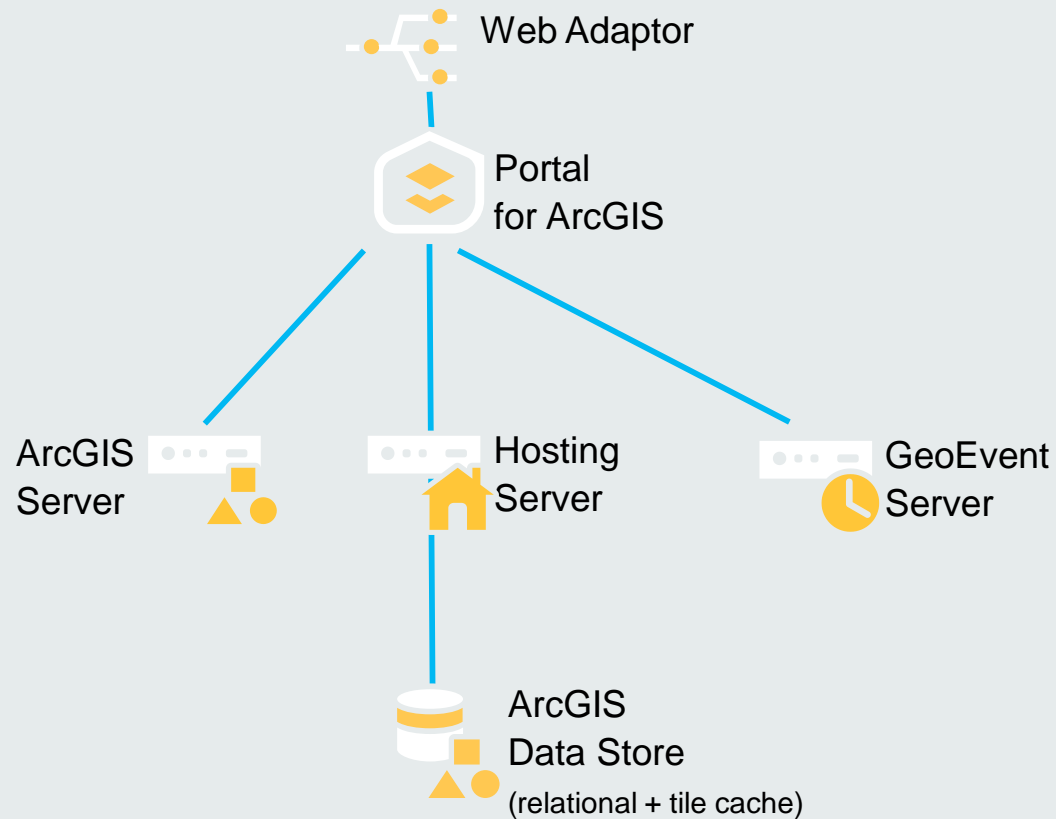
File Remove Test Config

Demo 34

- Amazon 1
 - AWS
- ArcGIS 2
 - DB 0
- Ext 9
 - ArcGIS GeoEvent Server
 - AWS ALB
 - WinEvent: AGM
 - WinEvent: AGS
 - WinEvent: DataStore
 - WinEvents: Portal
 - WinService: AGS
 - WinService: DataStore
 - WinService: Portal
- Http 6
- Portal 1
- Process 6
 - 10.0.3.202-ArcGISDataStore
 - 10.0.3.184-ArcGISPortal
 - 10.0.3.154-ArcSOC
 - 10.0.3.232-mongod
 - 10.0.3.184-postgres
 - 10.0.3.202-postgres
- RDP 0
- System 5
 - 10.0.3.154
 - 10.0.3.184
 - 10.0.3.202
 - 10.0.3.232
 - 10.0.3.27

Mapping counters to architecture components

Infrastructure: Server view

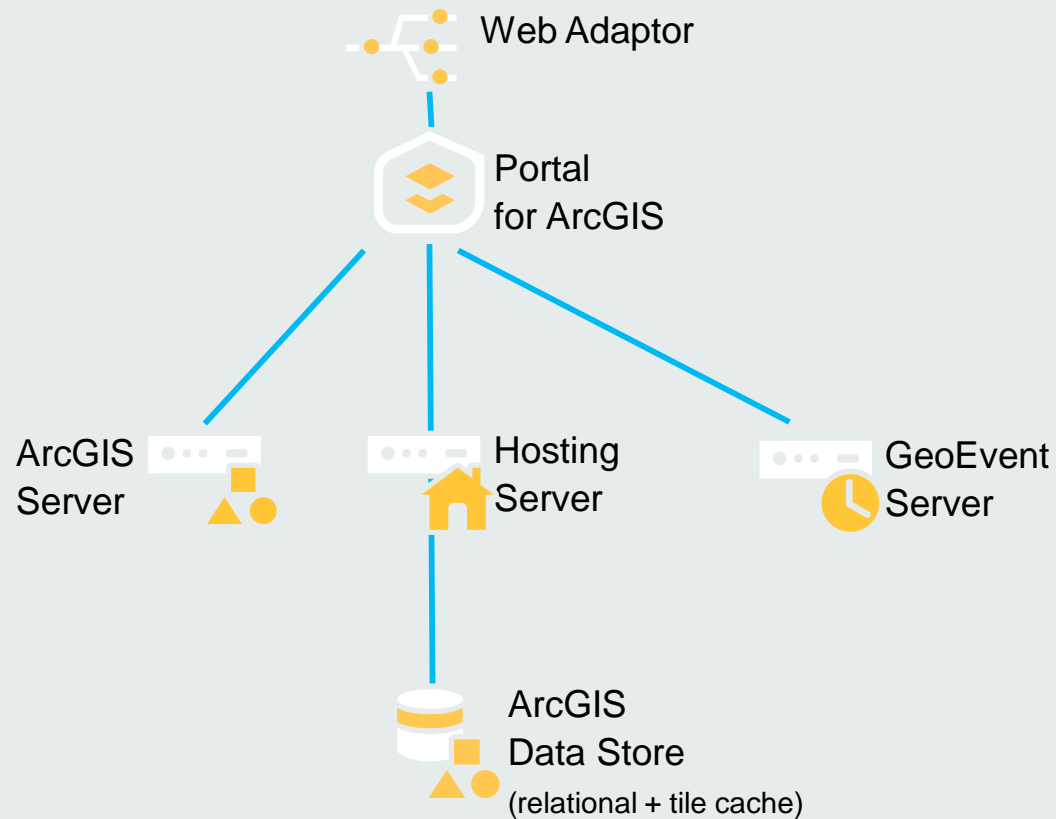


Demo

- Amazon**
- Process**
 - % Processor Time
 - Collection Time(sec)
 - Count Active
 - Count Idle
 - Count Total
 - Private GB
 - Virtual GB
- SSL Certificate**
- System**
 - % Processor Time
 - % Utilization Memory
 - % Utilization Virtual
 - Available Disk GB
 - Available Memory GB
 - Collection Time(sec)
 - Committed Memory GB
 - Disk % Idle
 - Disk % Used
 - Network Received mbps
 - Network Sent mbps
 - Paging File % Usage
 - Paging File Free GB
 - Paging File Usage GB
 - Virtual Memory Free GB
 - Virtual Memory Usage GB
- Windows Events**
 - WinEvent: AGM**
 - Code
 - Collection Time(sec)
 - Critical
 - Error
 - Information
 - Warning
 - WinEvent: AGS**
 - WinEvent: DataStore**
 - WinEvents: Portal**
- Windows Services**
 - WinService: AGS**
 - ArcGIS Server
 - Code
 - Collection Time(sec)

Mapping counters to architecture components

ArcGIS: Administrator view



ArcGIS Monitor Administrator

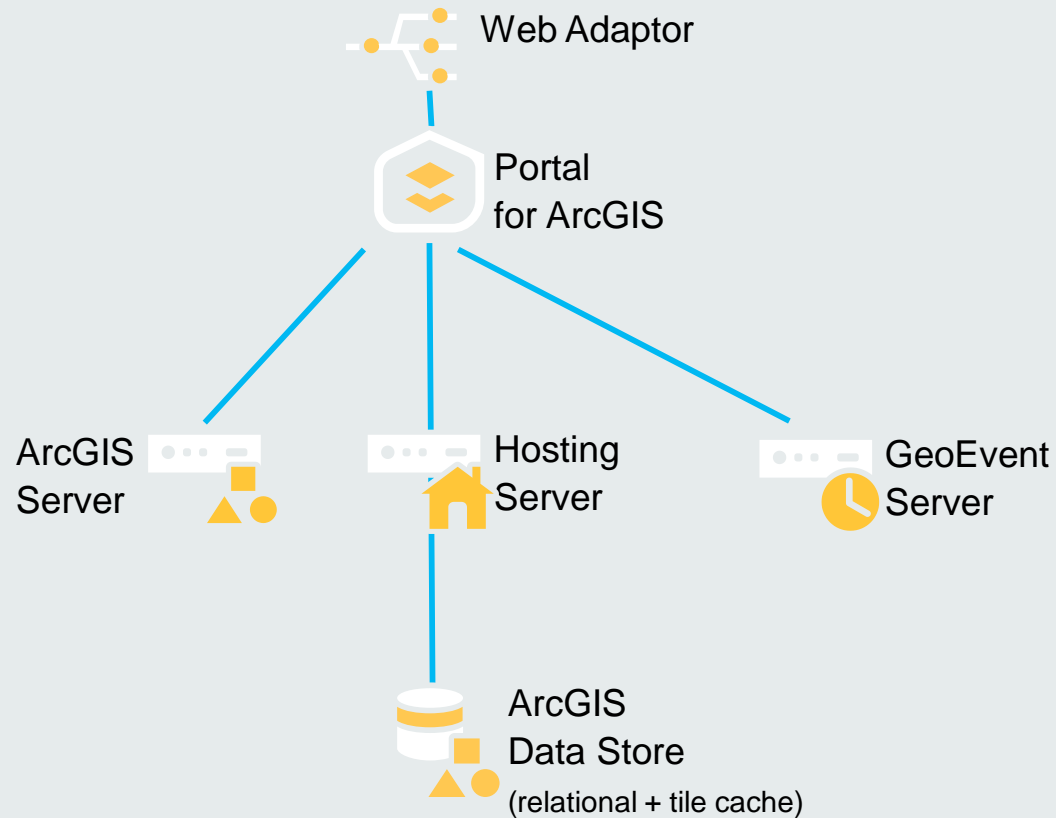
File Remove Test C

Site@localhost

- Demo
 - Demo 34
 - Amazon 1
 - ArcGIS 2
 - ArcGIS Server
 - Hosting Server
 - DB 0
 - Ext 9
 - ArcGIS GeoEvent Server**
 - AWS ALB
 - WinEvent: AGM
 - WinEvent: AGS
 - WinEvent: DataStore
 - WinEvents: Portal
 - WinService: AGS
 - WinService: DataStore
 - WinService: Portal
 - Http 6
 - Portal 1
 - Portal for ArcGIS
 - Process 6
 - RDP 0
 - System 5
 - Tasks 4
 - ArcSOC_30d_3AM
 - ArcSOC_Increase_1d_5AM
 - Portal Index
 - SSL Certificate

Mapping counters to architecture components

ArcGIS: Server view

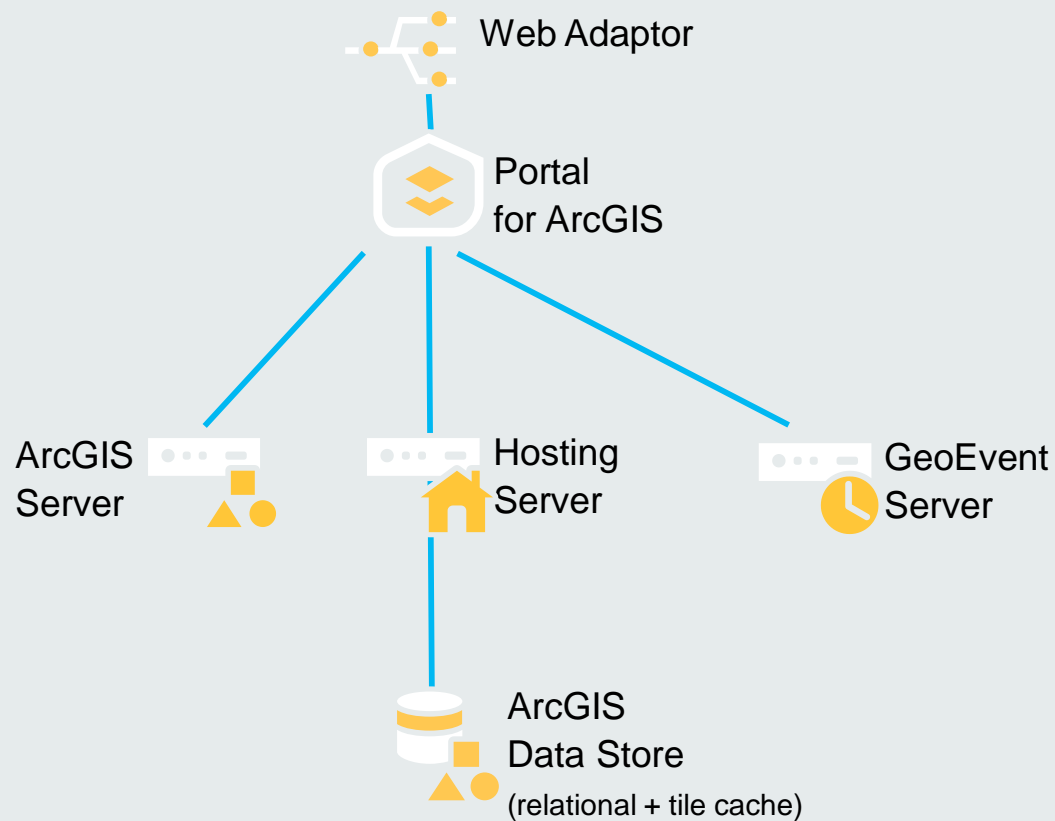


Demo

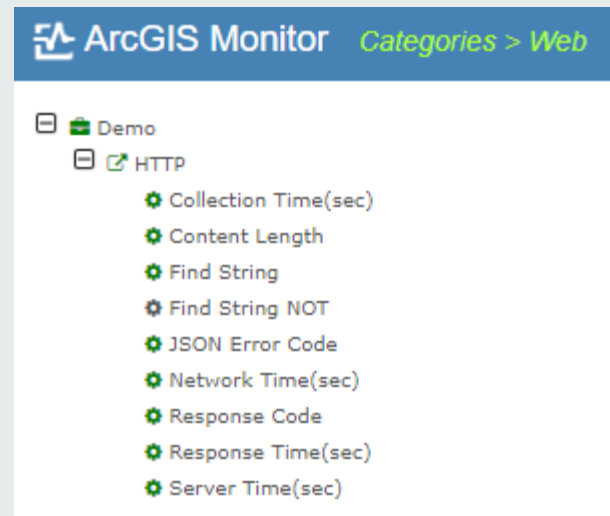
- ArcGIS**
 - ArcGIS Server**
 - Busy
 - Busy Time per Tr(sec)
 - Collection Time(sec)
 - Free
 - Health Check
 - License Expires(Days)
 - License-Extension Expires(Days)
 - Log-SEVERE
 - Log-WARNING
 - Max
 - Min
 - Throughput (Tr/sec)
 - Total Busy Time
 - Tr
 - Transactions
 - Hosting Server
 - ArcSOC Optimizer
 - GeoEvent
 - ArcGIS GeoEvent Server
 - Collection Time(sec)
 - Log-ERROR
 - Log-WARN
 - Service-ERROR
 - Throughput (Tr/sec)
 - Tr
 - Transactions
- Portal**
 - Portal for ArcGIS
 - Collection Time(sec)
 - Health Check
 - License Expires(Days)
 - Log-SEVERE
 - Log-WARNING
 - Login/Interval
 - Status Federation
 - Status Machine
 - Storage Available
- Portal Index**
 - Portal Index
 - Collection Time(sec)
 - Status Code
 - Status Index Groups

Mapping counters to architecture components

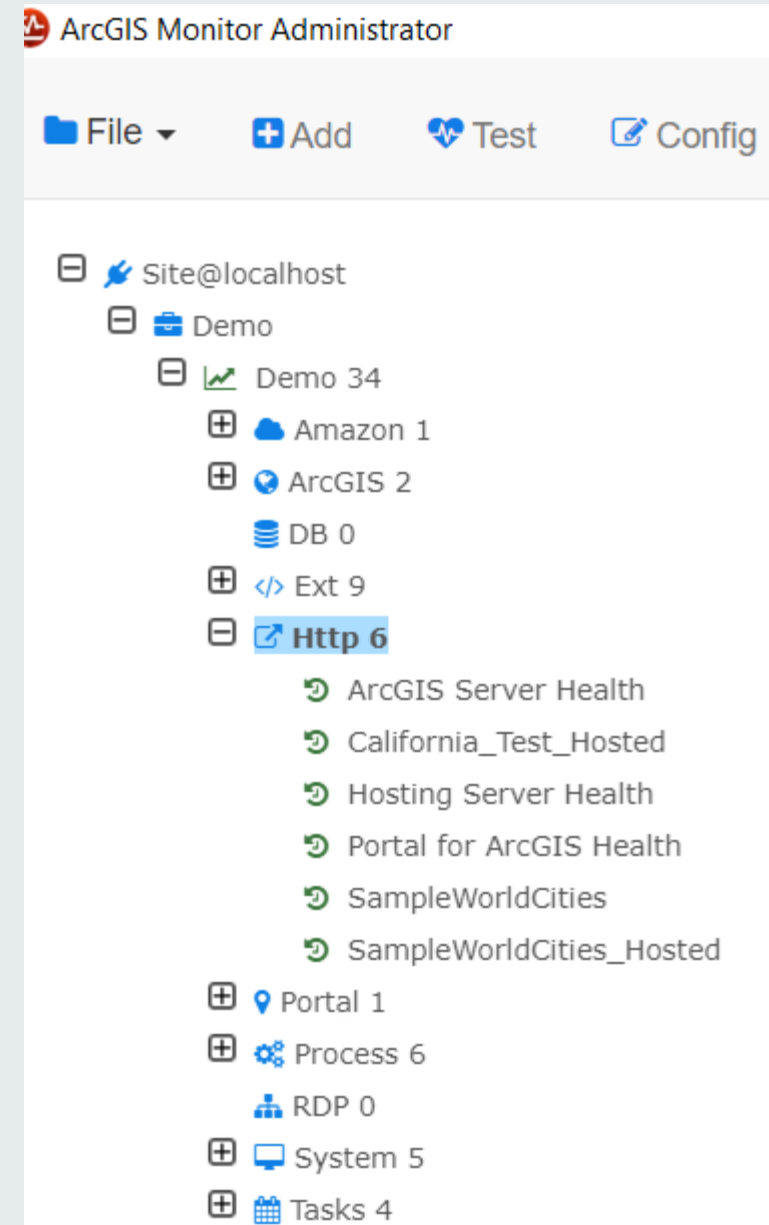
Web



Server view



Administrator view





Availability

Availability

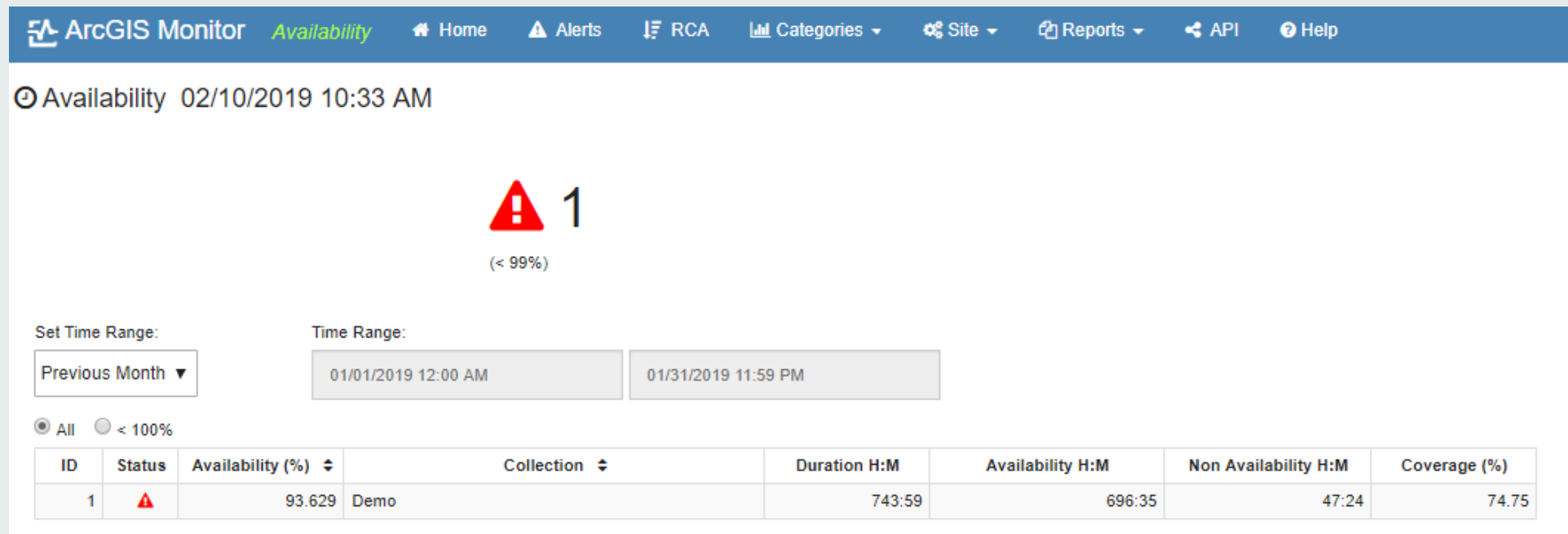
- **Availability is usually expressed as a percentage of uptime in a given time span (typically 1 month) and calculated as follows:**

$$\text{Availability (\%)} = (\text{Total time} - \text{Downtime}) / \text{Total Time} * 100\%$$

- **ArcGIS Monitor defines downtime based on a critical alert duration.**

Availability

- In the case below, in January 2019:
 - Total Time= 31*24 = 744 hours (44640 minutes) , see Duration H:M; the total downtime
 - Downtime = 47 hours and 24 minutes (2844 minutes), see Non Availability H:M).
 - Availability (%) = (44640-2844)/44640*100=93.629%



Alerts

Alerts

Starting point for troubleshooting

Alerts 10/17/2018 7:48 AM

Set Time: Today Time Range: 10/17/2018 12:00 AM 10/17/2018 7:48 AM

Collection: (All Collections) Counter Name: (All Counter Names)
Category: (All Categories) Names: (All Names) Set Default Filters

Level: Critical: 12 Warning: 54 Info: 6
Status: Open: 8 Closed: 64

Monitor Service: Data not collected: 26 License Expires: 0
Logs: Logs Severe: 3 Logs Warning: 2

ID	Category	Last Alert	Collection	Level	Status	H:M	Count	Groups	Counter Name	Rule	Counter Instance	Name	Desc	Counter Type	Int(min)
1	ArcGIS	10/17/2018 7:45 AM	Demo	Critical	Open	7:47	92	1	Status Federation	> 0	Summary	Portal for ArcGIS		Portal	5
2	Usage	10/17/2018 7:40 AM	Demo	Warning	Closed	0:9	2	2	HTTP500	>= 5	HTTP Code (%)	AWS ALB		Ext - System Log Parser for ELB	5
3	ArcGIS	10/17/2018 7:25 AM	Demo	Warning	Closed	0:15	3	1	Log-WARNING	> 0	Summary	Hosting Server		ArcGIS	5
4	ArcGIS	10/17/2018 7:20 AM	Demo	Info	Closed	0:34	7	7	Tr	= 0	USGS-RSS-Earthquakes	ArcGIS GeoEvent Server		Ext - ArcGIS GeoEvent Extension	5
5	Infrastructure	10/17/2018 7:16 AM	Demo	Critical	Closed	0:16	16	1	Count Total	= 0	postgres	10.0.3.202-postgres	ArcGIS DataStore	Process	1
6	Web	10/17/2018 7:16 AM	Demo	Warning	Closed	0:16	16	1	JSON Error Code	> 0	California_Test_Hosted	California_Test_Hosted		Http	1
7	Infrastructure	10/17/2018 7:15 AM	Demo	Critical	Closed	0:15	15	1	Count Total	= 0	ArcGISDataStore	10.0.3.202-ArcGISDataStore	ArcGIS DataStore	Process	1
8	ArcGIS	10/17/2018 7:15 AM	Demo	Warning	Closed	1:05	13	5	Log-ERROR	> 0	Validation	ArcGIS GeoEvent Server		Ext - ArcGIS GeoEvent Extension	5
9	Infrastructure	10/17/2018 7:15 AM	Demo	Warning	Closed	0:15	3	2	Error	> 0	10.0.3.202	WinEvent: DataStore		Ext - WinEvent	5
10	Infrastructure	10/17/2018 7:15 AM	Demo	Critical	Closed	0:15	3	1	ArcGIS Data Store	= 0	10.0.3.202	WinService: DataStore		Ext - WinService	5
11	Infrastructure	10/17/2018 7:05 AM	Demo	Info	Closed	1:13	15	7	Information	> 0	10.0.3.232	WinEvent: AGM		Ext - WinEvent	5
12	Web	10/17/2018 7:00 AM	Demo	Warning	Closed	0:31	31	2	Find String NOT	= 1	California_Test_Hosted	California_Test_Hosted		Http	1
13	Web	10/17/2018 7:00 AM	Demo	Warning	Closed	0:31	31	2	Find String	= 0	California_Test_Hosted	California_Test_Hosted		Http	1
14	Infrastructure	10/17/2018 6:16 AM	Demo	Warning	Closed	0:15	3	3	Error	> 0	10.0.3.27	WinEvent: AGS	10.0.3.27 -Hosting,10.0.3.154-AGS	Ext - WinEvent	5
15	Infrastructure	10/17/2018 6:16 AM	Demo	Critical	Closed	0:15	3	1	ArcGIS Server	= 0	10.0.3.27	WinService: AGS	Windows service status: ArcGIS Server	Ext - WinService	5

Charts and Stats

Details and Logs

Source Urls

Admin Url

Root Cause Analysis (RCA)

Root Cause Analysis (RCA) Source and Impact by time

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Demo@arcgismonitor.e

Root Cause Analysis Reports 01/29/2019 7:04 AM

Set Time: Yesterday

Time Range:01/28/2019 12:00 AM01/28/2019 11:59 PM

Collection : Demo

Reports: Sources & Impacts by Time

Execute

Bins : 82 - 01/28/2019 10:10 AM

Use this root cause analysis report to categorize alerts into impacts and sources

Bin	Type	Tier	Start Time	End Time	Min	Level	Counter Name	Rule	Counter Instance	Name	Counter Type	Comments
82	Impact	ArcGIS	01/28/2019 10:10 AM	01/28/2019 10:20 AM	10	Warning	Free	= 0	Root<~>SampleWorldCities	ArcGIS Server	ArcGIS	Increase min/max to reduce wait time
	Impact	Infrastructure		01/28/2019 10:20 AM	10	Warning	Error	> 0	10.0.3.154	WinEvent: AGS	</> Ext - WinEvent	Check windows event logs
	Impact	Infrastructure		01/28/2019 10:20 AM	10	Warning	% Processor Time	> 85	_Total	10.0.3.154	System	Check for: 1. usage spikes; 2. degraded performance; 3. unexp consuming CPU
	Impact	Infrastructure		01/28/2019 10:20 AM	10	Warning	% Processor Time	> 85	agmdemo-PRD-AGS02-i-0ce4a9bff1788a034-us-east-1	AWS	Amazon	Check for: 1. usage spikes; 2. degraded performance; 3. unexp consuming CPU
	Impact	na		01/28/2019 10:20 AM	10	Warning	seconds	> 0.1	EC2AMAZ-NI76OEE	CPUBenchmark_EC2AMAZ-NI76OEE	</> Ext - CPUBenchmark	Investigate potential CPU wait time
	Source	ArcGIS		01/28/2019 10:20 AM	10	Warning	Throughput (Tr/sec)	>= 5	Root<~>SampleWorldCities	ArcGIS Server	ArcGIS	Usage spike. Check resource utilization and settings.
	Source	ArcGIS		01/28/2019 10:20 AM	10	Warning	Throughput (Tr/sec)	>= 10	Summary	ArcGIS Server	ArcGIS	Usage spike. Check resource utilization and settings.

RCA Source list

Root Cause Analysis Reports 01/28/2019 6:29 PM

Set Time: Today Time Range: 01/28/2019 12:00 AM 01/28/2019 6:29 PM

Collection: Demo Reports: Source List Execute

Use this root cause analysis report to list sources

Type	Tier	Last Alert	Level	Status	Counter Name	Rule	Counter Instance	Name	Counter Type	Comments
Source	Infrastructure	01/28/2019 12:10 AM	Warning	Closed	% Processor Time	> 85	_Total	10.0.3.27	System	Check for: 1. usage spikes; 2. degraded performance; 3. unexpected process consuming CPU
Source	Database	01/28/2019 1:20 AM	Critical	Closed	Code	> 0	Validation	eGDB Activity	</> Ext - EgdbSQL	Check if database is running
Source	ArcGIS	01/28/2019 5:20 AM	Critical	Closed	Portal for ArcGIS	= 0	10.0.3.184	WinService: Portal	</> Ext - WinService	Check ArcGIS Enterprise and OS logs.
Source	ArcGIS	01/28/2019 6:20 AM	Critical	Closed	ArcGIS Server	= 0	10.0.3.27	WinService: AGS	</> Ext - WinService	Check ArcGIS Enterprise and OS logs.
Source	ArcGIS	01/28/2019 7:20 AM	Critical	Closed	ArcGIS Data Store	= 0	10.0.3.202	WinService: DataStore	</> Ext - WinService	Check ArcGIS Enterprise and OS logs.
Source	Infrastructure	01/28/2019 7:30 AM	Warning	Closed	Error	> 0	10.0.3.202	WinEvent: DataStore	</> Ext - WinEvent	Check windows event logs
Source	Infrastructure	01/28/2019 8:00 AM	Warning	Closed	Error	> 0	10.0.3.27	WinEvent: AGS	</> Ext - WinEvent	Check windows event logs
Source	Infrastructure	01/28/2019 8:00 AM	Warning	Closed	Error	> 0	10.0.3.184	WinEvents: Portal	</> Ext - WinEvent	Check windows event logs
Source	Infrastructure	01/28/2019 8:00 AM	Warning	Closed	Count Total	= 0	ArcGISGeoEvent	10.0.3.154-ArcGISGeoEvent	Process	Check ArcGIS Enterprise and OS logs.
Source	ArcGIS	01/28/2019 8:40 AM	Critical	Closed	ArcGISGeoEvent	= 0	10.0.3.154	WinService: GeoEvent	</> Ext - WinService	Check ArcGIS Enterprise and OS logs.
Source	Infrastructure	01/28/2019 10:00 AM	Warning	Closed	% Processor Time	> 85	_Total	10.0.3.154	System	Check for: 1. usage spikes; 2. degraded performance; 3. unexpected process consuming CPU
Source	ArcGIS	01/28/2019 10:50 AM	Warning	Closed	Throughput (Tr/sec)	>= 5	Root<~>SampleWorldCities	ArcGIS Server	ArcGIS	Usage spike. Check resource utilization and settings.
Source	ArcGIS	01/28/2019 10:50 AM	Warning	Closed	Throughput (Tr/sec)	>= 10	Summary	ArcGIS Server	ArcGIS	Usage spike. Check resource utilization and settings.
Source	Infrastructure	01/28/2019 11:10 AM	Critical	Closed	Reboot	> 0	_Total	10.0.3.154	System	If reboot not planned, check OS event logs for details
Source	Infrastructure	01/28/2019 3:00 PM	Warning	Closed	% Processor Time	> 85	postgres	10.0.3.202-postgres	Process	Check for: 1. usage spikes; 2. degraded performance
Source	Infrastructure	01/28/2019 3:50 PM	Warning	Closed	% Processor Time	> 85	postgres	10.0.3.184-postgres	Process	Check for: 1. usage spikes; 2. degraded performance
Source	Infrastructure	01/28/2019 5:20 PM	Warning	Closed	Warning	> 0	10.0.3.27	WinEvent: AGS	</> Ext - WinEvent	Check windows event logs
Source	Infrastructure	01/28/2019 6:29 PM	Warning	Open	Error	> 0	10.0.3.154	WinEvent: AGS	</> Ext - WinEvent	Check windows event logs

RCA Impact list

Today 01/28/2019 12:00 AM 01/28/2019 6:29 PM

Collection : Demo Reports: Impact List Execute

Use this root cause analysis report to list the impacts

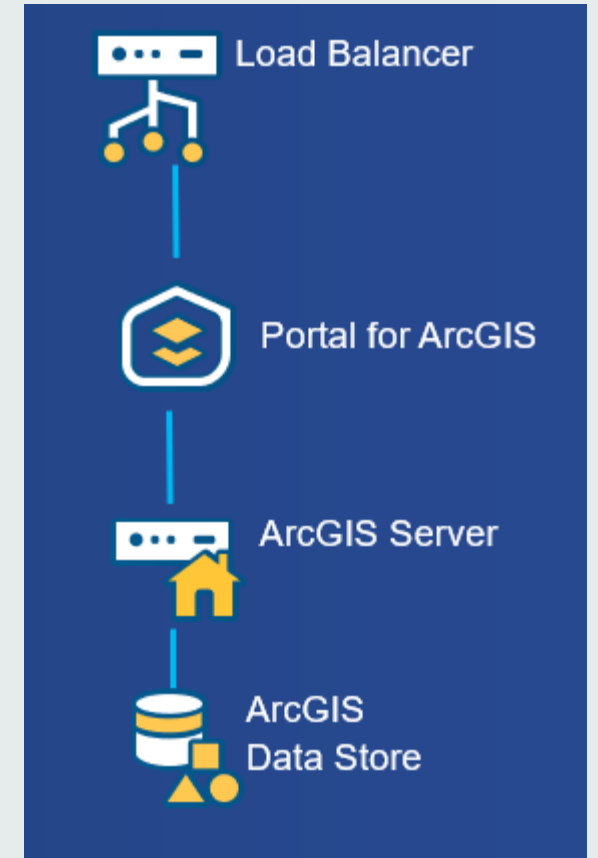
Type	Tier	Last Alert	Level	Status	Counter Name	Rule	Counter Instance	Name	Counter Type	Comments
Impact	Web	01/28/2019 5:20 AM	Warning	Closed	Find String	= 0	Portal for ArcGIS Health	Portal for ArcGIS Health	Http	1. Reproduce with web debugger; 2. check app and other logs
Impact	Web	01/28/2019 5:20 AM	Warning	Closed	Find String NOT	= 1	Portal for ArcGIS Health	Portal for ArcGIS Health	Http	1. Reproduce with web debugger; 2. check app and other logs
Impact	Web	01/28/2019 5:20 AM	Warning	Closed	JSON Error Code	> 0	Countries_Sql_Egdb_Draw	Countries_Sql_Egdb_Draw	Http	1. Reproduce with web debugger; 2. check app and other logs
Impact	Web	01/28/2019 5:20 AM	Warning	Closed	JSON Error Code	> 0	Countries_Sql_Egdb_Test	Countries_Sql_Egdb_Test	Http	1. Reproduce with web debugger; 2. check app and other logs
Impact	Web	01/28/2019 5:20 AM	Warning	Closed	Find String NOT	= 1	Countries_Sql_Egdb_Test	Countries_Sql_Egdb_Test	Http	1. Reproduce with web debugger; 2. check app and other logs
Impact	Infrastructure	01/28/2019 5:20 AM	Warning	Closed	Count Total	= 0	ArcGISPortal	10.0.3.184-ArcGISPortal	Process	Check ArcGIS Enterprise and OS logs.
Impact	Infrastructure	01/28/2019 5:20 AM	Warning	Closed	Count Total	= 0	postgres	10.0.3.184-postgres	Process	Check ArcGIS Enterprise and OS logs.
Impact	Infrastructure	01/28/2019 5:20 AM	Warning	Closed	Warning	> 0	10.0.3.232	WinEvent: AGM	Ext - WinEvent	Check windows event logs
Impact	Web	01/28/2019 5:30 AM	Warning	Closed	RequestAverage	> 1	Response Time (Sec)	AWS ALB	Ext - System Log Parser for ELB	Check resource utilization and settings.
Impact	Infrastructure	01/28/2019 6:10 AM	Warning	Closed	% Processor Time	> 85	postgres	10.0.3.184-postgres	Process	Check for: 1. usage spikes; 2. degraded performance
Impact	Web	01/28/2019 6:20 AM	Warning	Closed	Find String NOT	= 1	SampleWorldCities_Hosted	SampleWorldCities_Hosted	Http	1. Reproduce with web debugger; 2. check app and other logs
Impact	Web	01/28/2019 6:20 AM	Warning	Closed	Find String	= 0	SampleWorldCities_Hosted	SampleWorldCities_Hosted	Http	1. Reproduce with web debugger; 2. check app and other logs
Impact	Web	01/28/2019 6:20 AM	Warning	Closed	Response Time(sec)	> 3	California_Test_Hosted	California_Test_Hosted	Http	Check: 1. CPU; 2. Which tier(s) are responsible (e.g.check ArcGIS, DB cou
Impact	Infrastructure	01/28/2019 6:20 AM	Warning	Closed	Error	> 0	10.0.3.27	WinEvent: AGS	Ext - WinEvent	Check windows event logs
Impact	Web	01/28/2019 7:20 AM	Warning	Closed	JSON Error Code	> 0	California_Test_Hosted	California_Test_Hosted	Http	1. Reproduce with web debugger; 2. check app and other logs
Impact	Web	01/28/2019 7:20 AM	Warning	Closed	Find String	= 0	California_Test_Hosted	California_Test_Hosted	Http	1. Reproduce with web debugger; 2. check app and other logs
Impact	Web	01/28/2019 7:20 AM	Warning	Closed	Find String NOT	= 1	California_Test_Hosted	California_Test_Hosted	Http	1. Reproduce with web debugger; 2. check app and other logs
Impact	Infrastructure	01/28/2019 7:20 AM	Warning	Closed	Count Total	= 0	postgres	10.0.3.202-postgres	Process	Check ArcGIS Enterprise and OS logs.
Impact	Infrastructure	01/28/2019 7:20 AM	Warning	Closed	Count Total	= 0	ArcGISDataStore	10.0.3.202-ArcGISDataStore	Process	Check ArcGIS Enterprise and OS logs.
Impact	Portal	01/28/2019 7:30 AM	Critical	Closed	Status Federation	> 0	Summary	Portal for ArcGIS	Portal	Check ArcGIS Enterprise logs
Impact	Infrastructure	01/28/2019 8:10 AM	Warning	Closed	Error	> 0	10.0.3.184	WinEvents: Portal	Ext - WinEvent	Check windows event logs
Impact	ArcGIS	01/28/2019 8:40 AM	Warning	Closed	Service-ERROR	> 0	Validation	ArcGIS GeoEvent Server	Ext - ArcGIS GeoEvent Extension	Check ArcGIS Enterprise logs
Impact	Infrastructure	01/28/2019 8:40 AM	Warning	Closed	Count Total	= 0	ArcGISGeoEvent	10.0.3.154-ArcGISGeoEvent	Process	Check ArcGIS Enterprise and OS logs.
Impact	Infrastructure	01/28/2019 10:30 AM	Warning	Closed	Error	> 0	10.0.3.202	WinEvent: DataStore	Ext - WinEvent	Check windows event logs
Impact	Web	01/28/2019 11:10 AM	Warning	Closed	Find String	= 0	Countries_Sql_Egdb_Draw	Countries_Sql_Egdb_Draw	Http	1. Reproduce with web debugger; 2. check app and other logs



Usage

Usage

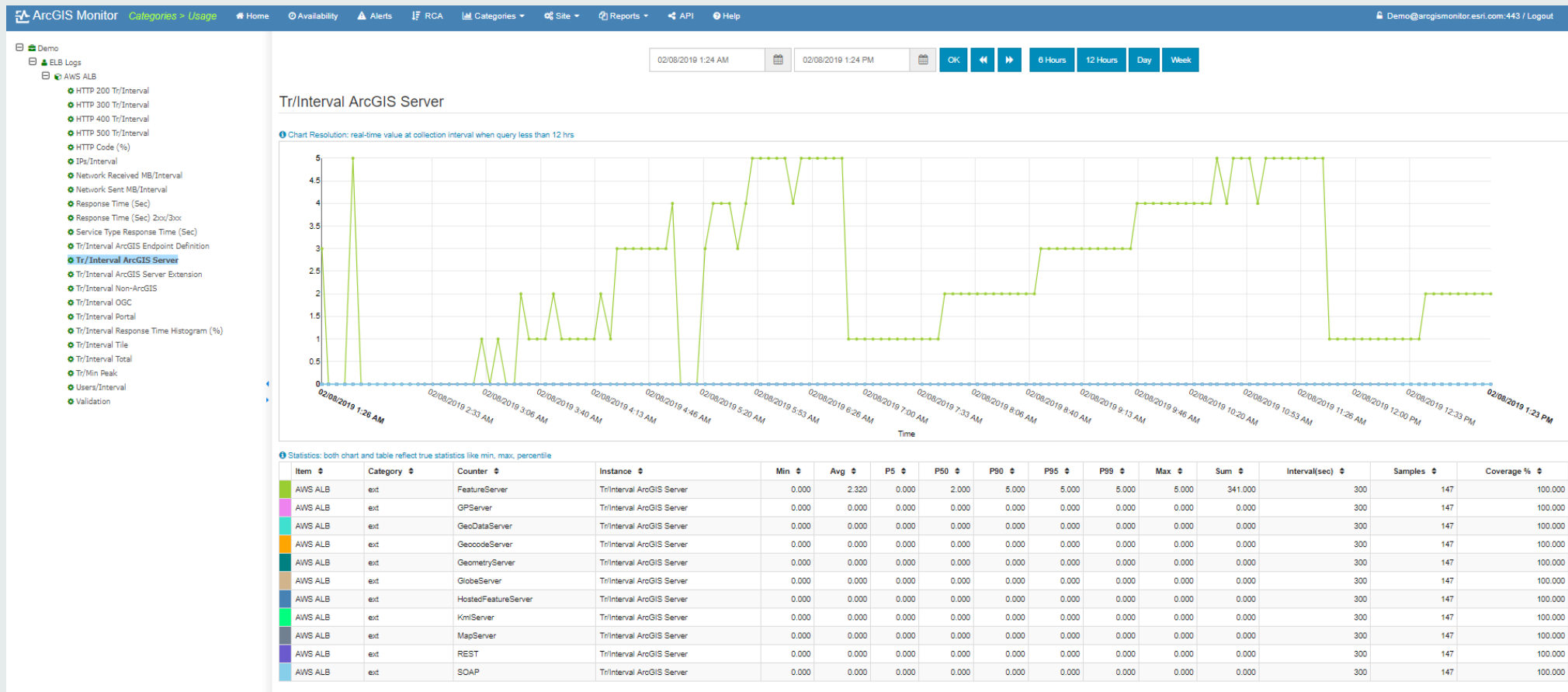
- Usage (or user load) is typically measured using:
 - Transactions or requests per time, e.g. per seconds, 5 min, day.
 - User IP per time, e.g. per seconds, 5 min, day.
 - Users per time, e.g. per seconds, 5 min, day.
- Measured at:
 - Load balancer (LB)
 - Web server
 - ArcGIS Server
 - Database
- Format:
 - Chart time series
 - Table
 - Map



Usage at LB: transactions (or requests)

Categories > Usage > Tr/Interval

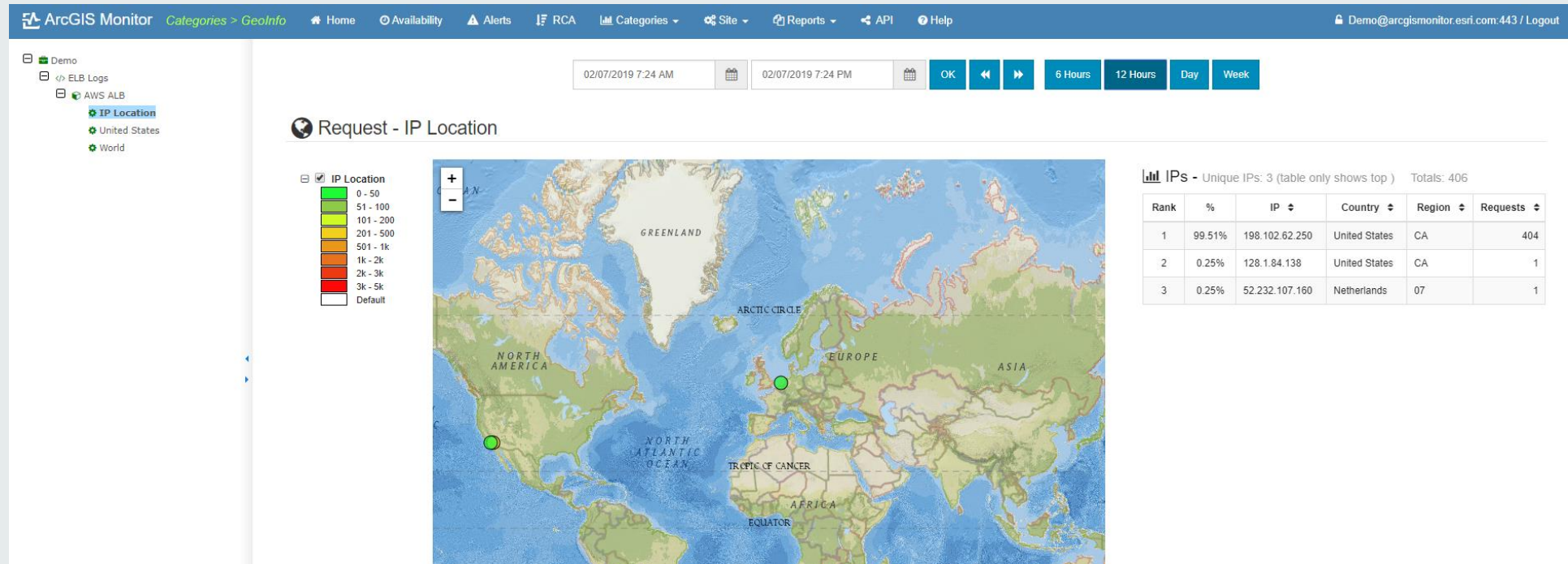
- Chart format



Usage at LB : users and transactions

Categories > GeoInfo > IP Location

- Map format



Usage at LB : users

Categories > Usage > IP / Interval

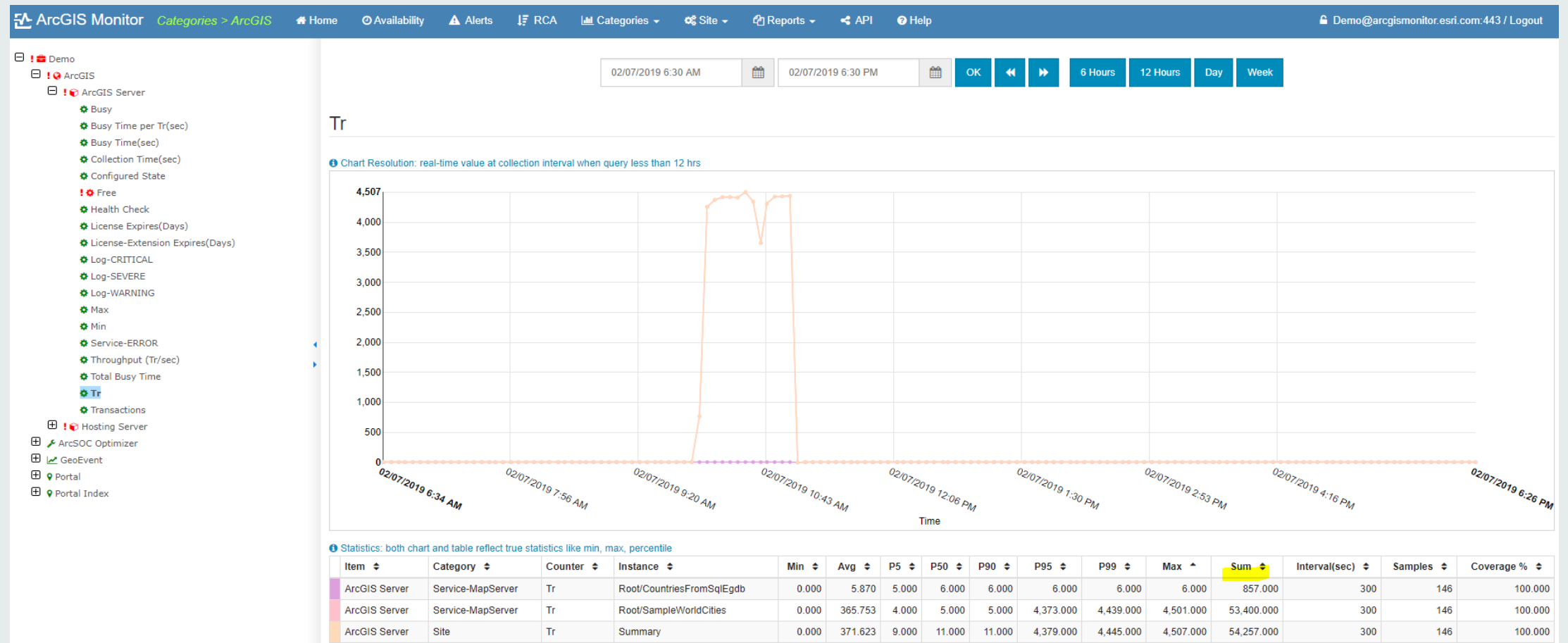
- Chart format



Usage at ArcGIS Server: transactions

Categories > ArcGIS > Tr

- Chart format



Usage at ArcGIS Server : transactions

Reports > ArcGIS > Tr

- Table format

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Reports > ArcGIS Server

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ArcGIS Server Reports

02/08/2019 1:16 PM

Set Time:

Today

Time Range:

02/08/2019 12:00 AM

02/08/2019 1:16 PM

Collection :

Demo

ArcGIS Server:

ArcGIS Server

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Tr

Execute

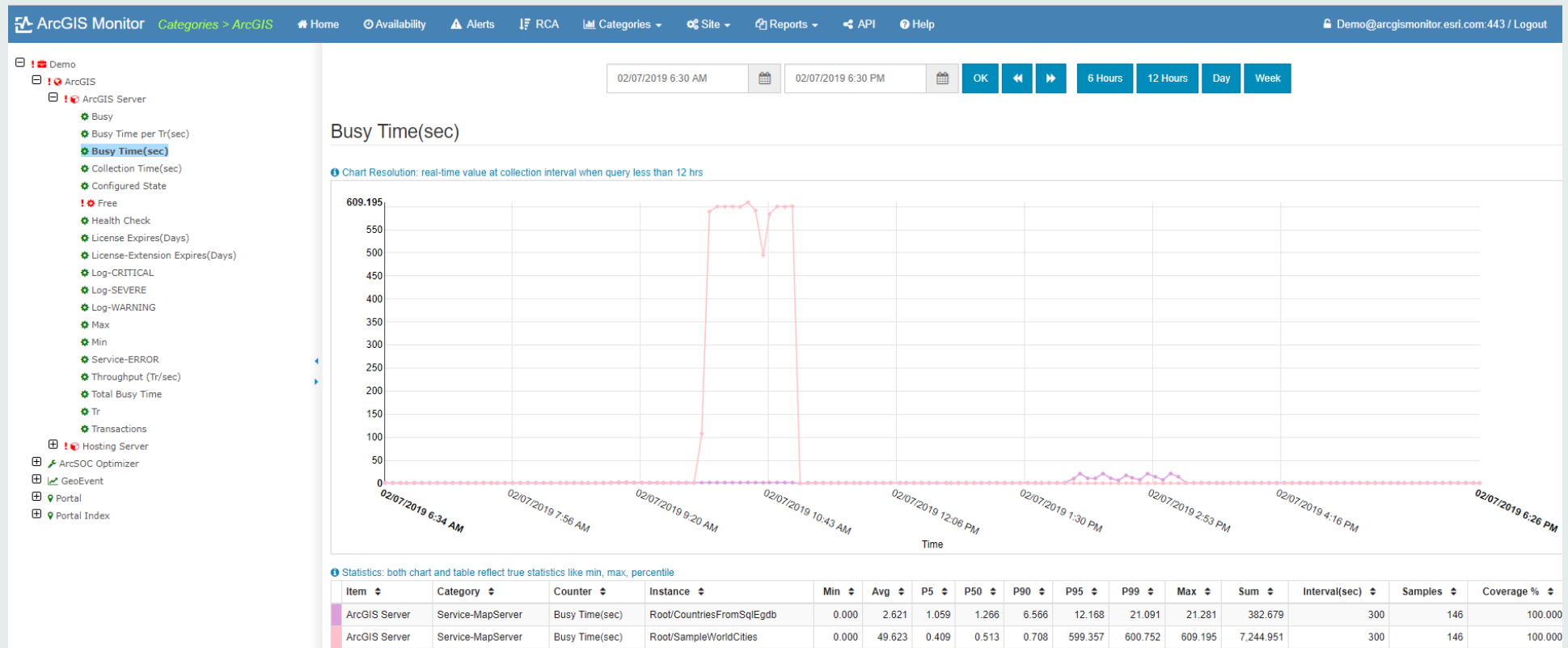
Tr

Category	Service	Requests
Site	Summary	49,946
MapServer	Root / SampleWorldCities	49,041
MapServer	Root / CountriesFromSqlEgdb	905

Usage at ArcGIS Server: CPU time

Categories > ArcGIS > Busy Time (sec)

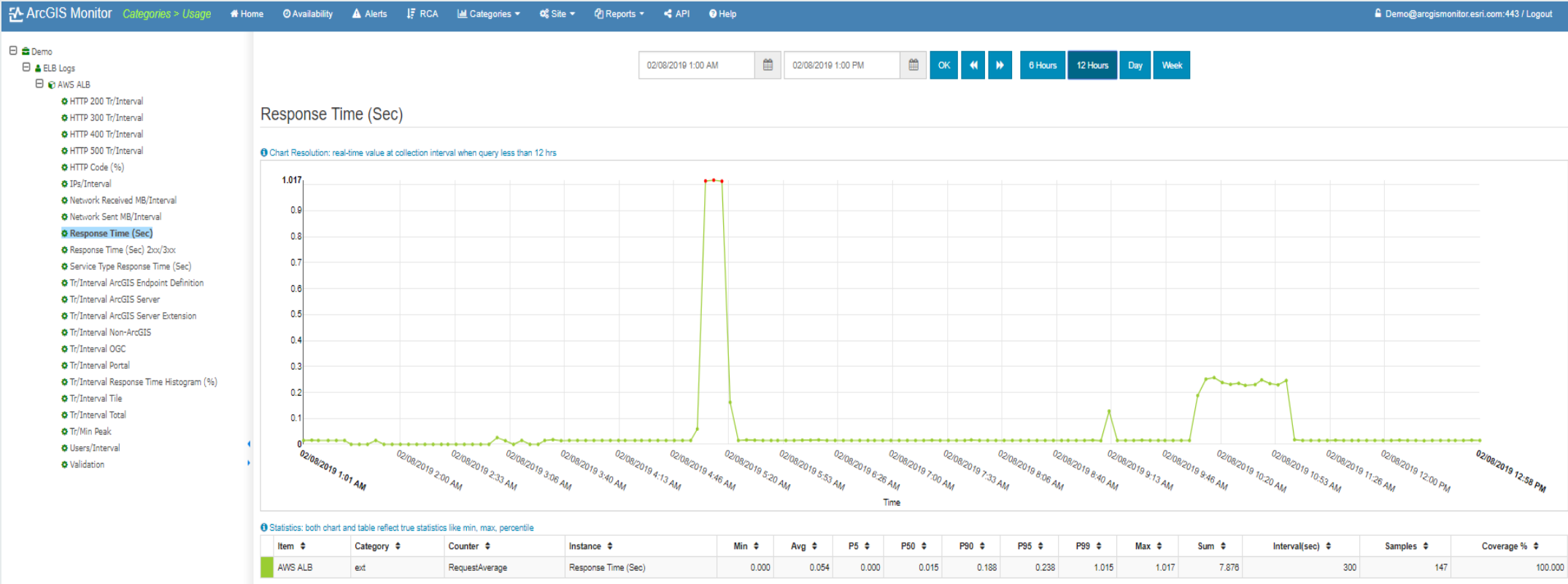
- CPU time a given service took at ArcGIS Server level.
- Use to identify top cpu consumers at ArcGIS Server.



Performance

Performance at LB

Reports > Usage > Response Time (sec)



Performance at ArcGIS Server

Categories > ArcGIS > Busy Time per Tr (sec)

- **Busy Time per Tr (sec)** is the total time (seconds) per transaction consumed by ArcGIS Server service.



Performance at ArcGIS Server

Categories > ArcGIS > Busy Time per Tr (sec)

- Table format

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ArcGIS Server Reports

02/08/2019 1:16 PM

Set Time:

Time Range:

Today

02/08/2019 12:00 AM02/08/2019 1:16 PM

Collection :

ArcGIS Server:

Reports:

Execute

Busy Time per Tr(sec)

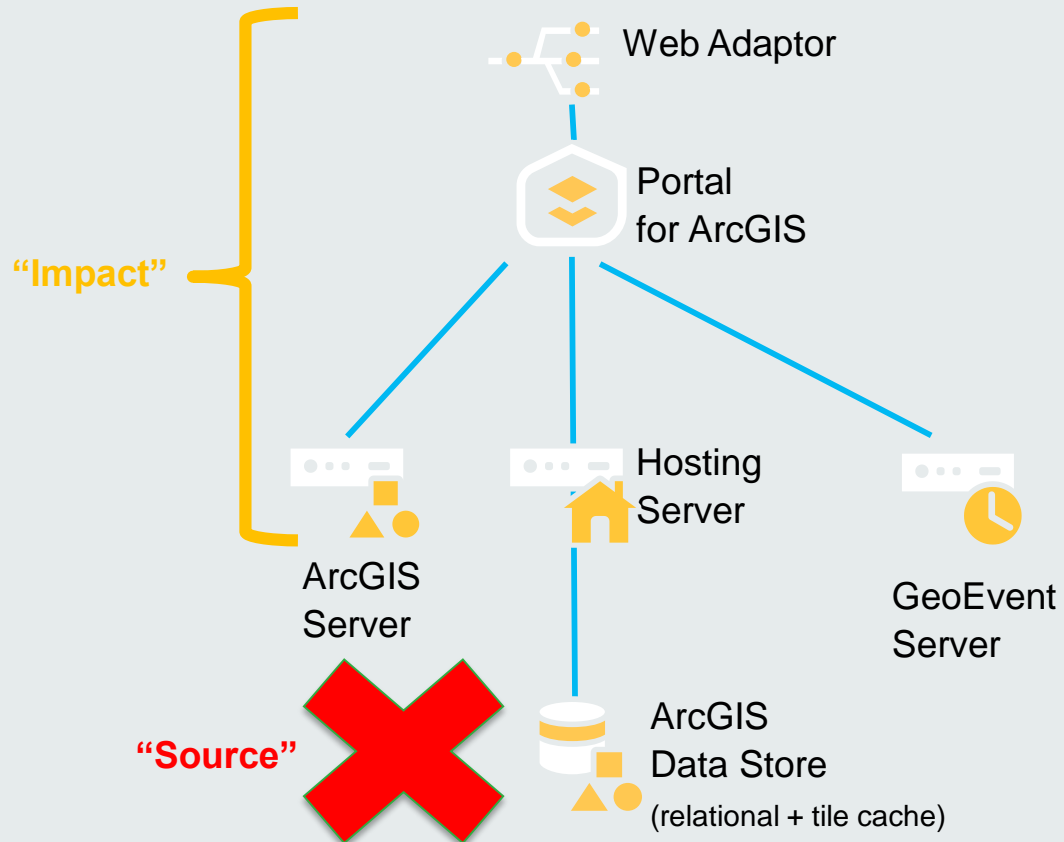
Category	Service	Min(sec)	Avg(sec)	P50(sec)	P95(sec)	P99(sec)	Max(sec)	Samples where CPU Time > 0	Samples
MapServer	Root / CountriesFromSqlEgdb	0.21	0.43	0.21	0.32	12.45	13.77	153	158
MapServer	Root / SampleWorldCities	0.10	0.11	0.10	0.14	0.14	0.16	150	158

Typical cases and Root Cause Analysis (RCA)

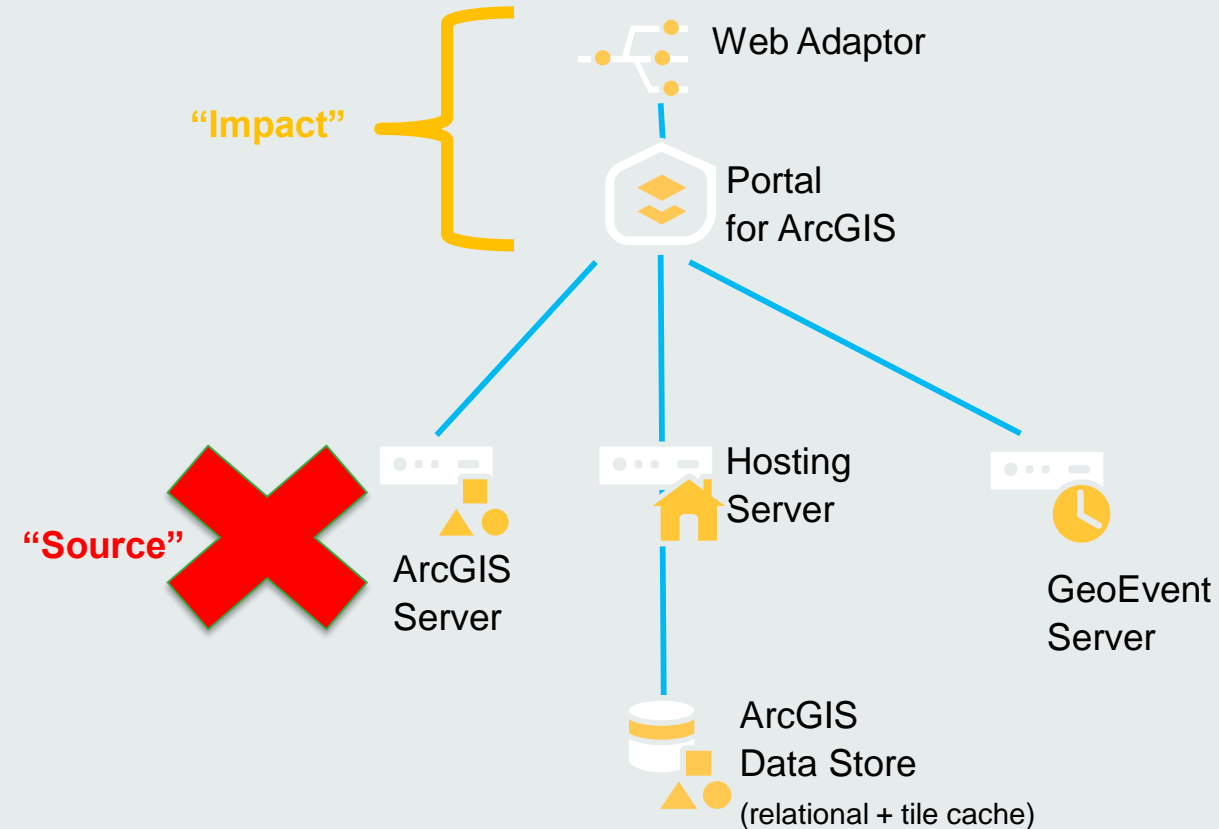
Root Cause Analysis (RCA)

“Source” - the most downstream failing component

“Impact” – all upstream failing components



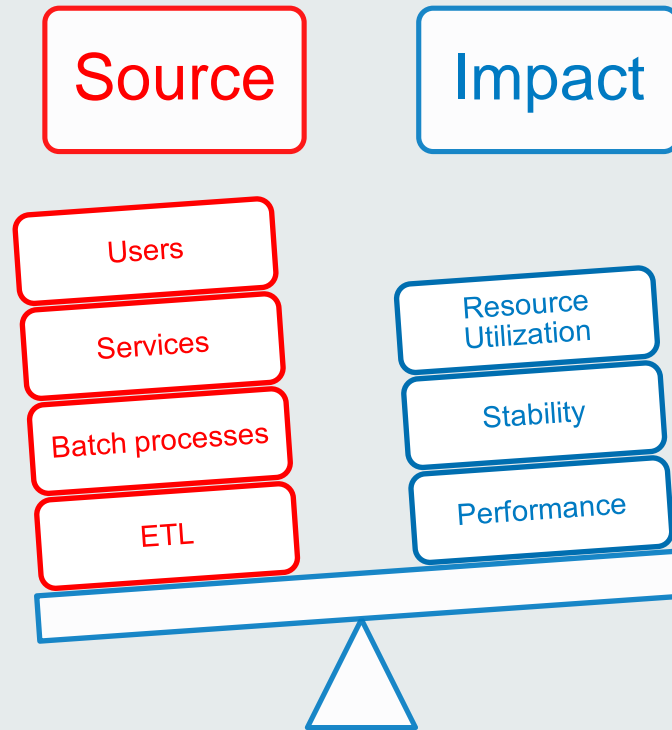
Example 1



Example 2

Overloaded system

Load exceeds the designed capacity



RCA: Usage spike

Throughput (tr/s)

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Root Cause Analysis Reports

01/29/2019 7:04 AM

Set Time:

Yesterday

Time Range:

01/28/2019 12:00 AM

01/28/2019 11:59 PM

Collection : Demo

Reports: Sources & Impacts by Time

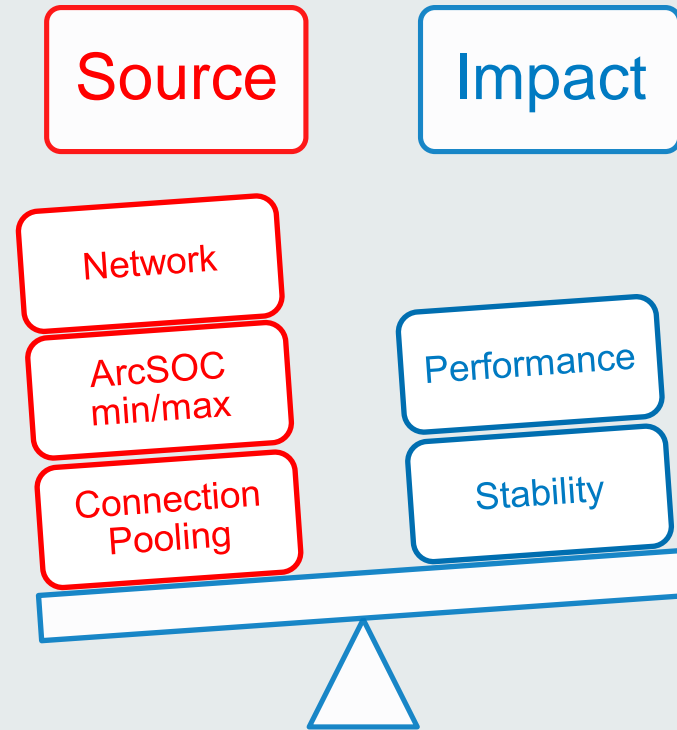
Execute

Bins : 82 - 01/28/2019 10:10 AM

Use this root cause analysis report to categorize alerts into impacts and sources

Bin	Type	Tier	Start Time	End Time	Min	Level	Counter Name	Rule	Counter Instance	Name	Counter Type	Comments
82	Impact	ArcGIS	01/28/2019 10:10 AM	01/28/2019 10:20 AM	10	Warning	Free	= 0	Root<~>SampleWorldCities	ArcGIS Server	ArcGIS	Increase min/max to reduce wait time
	Impact	Infrastructure		01/28/2019 10:20 AM	10	Warning	Error	> 0	10.0.3.154	WinEvent: AGS	</> Ext - WinEvent	Check windows event logs
	Impact	Infrastructure		01/28/2019 10:20 AM	10	Warning	% Processor Time	> 85	_Total	10.0.3.154	System	Check for: 1. usage spikes; 2. degraded performance; 3. unexp consuming CPU
	Impact	Infrastructure		01/28/2019 10:20 AM	10	Warning	% Processor Time	> 85	agmdemo-PRD-AGS02-i-0ce4a9bff1788a034-us-east-1	AWS	Amazon	Check for: 1. usage spikes; 2. degraded performance; 3. unexp consuming CPU
	Impact	na		01/28/2019 10:20 AM	10	Warning	seconds	> 0.1	EC2AMAZ-NI76OEE	CPUBenchmark_EC2AMAZ-NI76OEE	</> Ext - CPUBenchmark	Investigate potential CPU wait time
	Source	ArcGIS		01/28/2019 10:20 AM	10	Warning	Throughput (Tr/sec)	>= 5	Root<~>SampleWorldCities	ArcGIS Server	ArcGIS	Usage spike. Check resource utilization and settings.
	Source	ArcGIS		01/28/2019 10:20 AM	10	Warning	Throughput (Tr/sec)	>= 10	Summary	ArcGIS Server	ArcGIS	Usage spike. Check resource utilization and settings.

Bottleneck



RCA: Free instances = 0

Bottleneck are often created by increased load

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Root Cause Analysis Reports 01/29/2019 7:04 AM

Set Time: Yesterday Time Range: 01/28/2019 12:00 AM 01/28/2019 11:59 PM

Collection: Demo Reports: Sources & Impacts by Time Execute

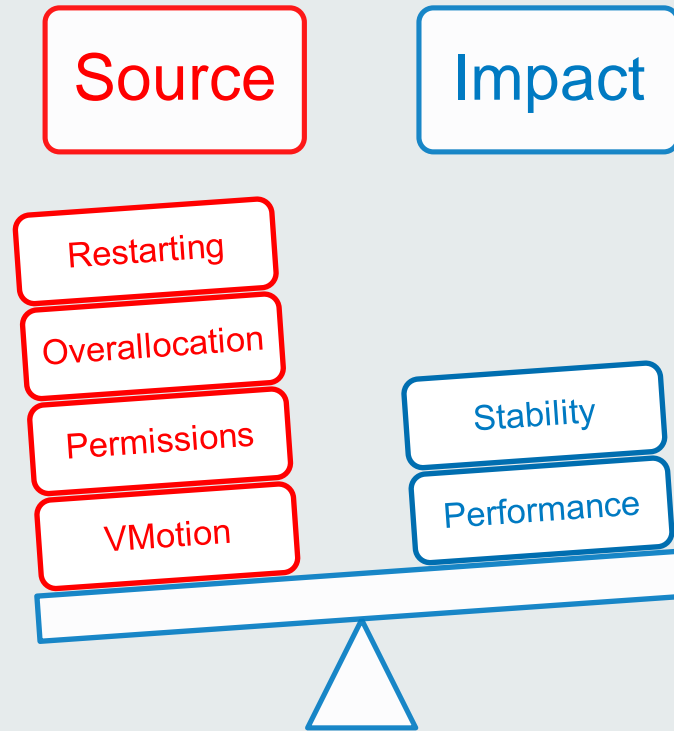
Bins: 82 - 01/28/2019 10:10 AM

Use this root cause analysis report to categorize alerts into impacts and sources

Bin	Type	Tier	Start Time	End Time	Min	Level	Counter Name	Rule	Counter Instance	Name	Counter Type	Comments
82	Impact	ArcGIS	01/28/2019 10:10 AM	01/28/2019 10:20 AM	10	Warning	Free	= 0	Root<~>SampleWorldCities	ArcGIS Server	ArcGIS	Increase min/max to reduce wait time
	Impact	Infrastructure		01/28/2019 10:20 AM	10	Warning	Error	> 0	10.0.3.154	WinEvent: AGS	</> Ext - WinEvent	Check windows event logs
	Impact	Infrastructure		01/28/2019 10:20 AM	10	Warning	% Processor Time	> 85	_Total	10.0.3.154	System	Check for: 1. usage spikes; 2. degraded performance; 3. unexp consuming CPU
	Impact	Infrastructure		01/28/2019 10:20 AM	10	Warning	% Processor Time	> 85	agmdemo-PRD-AGS02-i-0ce4a9bff1788a034-us-east-1	AWS	Amazon	Check for: 1. usage spikes; 2. degraded performance; 3. unexp consuming CPU
	Impact	na		01/28/2019 10:20 AM	10	Warning	seconds	> 0.1	EC2AMAZ-NI76OEE	CPUBenchmark_EC2AMAZ-NI76OEE	</> Ext - CPUBenchmark	Investigate potential CPU wait time
	Source	ArcGIS		01/28/2019 10:20 AM	10	Warning	Throughput (Tr/sec)	>= 5	Root<~>SampleWorldCities	ArcGIS Server	ArcGIS	Usage spike. Check resource utilization and settings.
	Source	ArcGIS		01/28/2019 10:20 AM	10	Warning	Throughput (Tr/sec)	>= 10	Summary	ArcGIS Server	ArcGIS	Usage spike. Check resource utilization and settings.

Unstable Infrastructure

Interruption to the underlying resources



RCA: CPU spike by unexpected process, e.g. viroous scan

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Root Cause Analysis Reports 01/29/2019 7:04 AM

Set Time: Last Hour Time Range: 01/29/2019 6:35 AM 01/29/2019 7:35 AM

Collection: Demo Reports: Sources & Impacts by Time Execute

Bins: All

Use this root cause analysis report to categorize alerts into impacts and sources

Bin	Type	Tier	Start Time	End Time	Min	Level	Counter Name	Rule	Counter Instance	Name	Counter Type	Comments
0	Impact	Web	01/29/2019 7:25 AM	01/29/2019 7:35 AM	10	Warning	HTTP500	>= 5	HTTP Code (%)	AWS ALB	</> Ext - System Log Parser for ELB	1. check web and app logs for urls; 2. Reproduce with web debugger;
	Impact	ArcGIS		01/29/2019 7:35 AM	10	Warning	Service-ERROR	> 0	Validation	ArcGIS GeoEvent Server	</> Ext - ArcGIS GeoEvent Extension	Check ArcGIS Enterprise logs
	Source	Infrastructure		01/29/2019 7:35 AM	10	Warning	% Processor Time	> 85	_Total	10.0.3.154	System	Check for: 1. usage spikes; 2. degraded performance; 3. unexpected process consuming CPU

RCA: Portal for ArcGIS Server service stopped

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Root Cause Analysis Reports

01/28/2019 6:29 PM

Set Time:

Today

Time Range:

01/28/2019 12:00 AM

01/28/2019 6:29 PM

Collection:

Demo

Reports:

Sources & Impacts by Time

Execute

Bins:

80 - 01/28/2019 5:00 AM

Use this root cause analysis report to categorize alerts into impacts and sources

Bin	Type	Tier	Start Time	End Time	Min	Level	Counter Name	Rule	Counter Instance	Name	Counter Type	Comments
80	Impact	Web	01/28/2019 5:00 AM	01/28/2019 5:10 AM	10	Warning	Find String	= 0	Portal for ArcGIS Health	Portal for ArcGIS Health	Http	1. Reproduce with web debugger; 2. check app and other logs
	Impact	Web		01/28/2019 5:10 AM	10	Warning	Find String NOT	= 1	Portal for ArcGIS Health	Portal for ArcGIS Health	Http	1. Reproduce with web debugger; 2. check app and other logs
	Impact	Web		01/28/2019 5:10 AM	10	Warning	JSON Error Code	> 0	Countries_Sql_Egdb_Draw	Countries_Sql_Egdb_Draw	Http	1. Reproduce with web debugger; 2. check app and other logs
	Impact	Web		01/28/2019 5:10 AM	10	Warning	Find String	= 0	Countries_Sql_Egdb_Draw	Countries_Sql_Egdb_Draw	Http	1. Reproduce with web debugger; 2. check app and other logs
	Impact	Web		01/28/2019 5:10 AM	10	Warning	JSON Error Code	> 0	Countries_Sql_Egdb_Test	Countries_Sql_Egdb_Test	Http	1. Reproduce with web debugger; 2. check app and other logs
	Impact	Web		01/28/2019 5:10 AM	10	Warning	RequestAverage	> 1	Response Time (Sec)	AWS ALB	Ext - System Log Parser for ELB	Check resource utilization and settings.
	Impact	Web		01/28/2019 5:10 AM	10	Warning	Find String NOT	= 1	Countries_Sql_Egdb_Test	Countries_Sql_Egdb_Test	Http	1. Reproduce with web debugger; 2. check app and other logs
	Impact	Infrastructure		01/28/2019 5:10 AM	10	Warning	Error	> 0	10.0.3.154	WinEvent: AGS	Ext - WinEvent	Check windows event logs
	Impact	Infrastructure		01/28/2019 5:10 AM	10	Warning	Error	> 0	10.0.3.27	WinEvent: AGS	Ext - WinEvent	Check windows event logs
	Impact	Infrastructure		01/28/2019 5:10 AM	10	Warning	Count Total	= 0	ArcGISPortal	10.0.3.184-ArcGISPortal	Process	Check ArcGIS Enterprise and OS logs.
	Impact	Infrastructure		01/28/2019 5:10 AM	10	Warning	Count Total	= 0	postgres	10.0.3.184-postgres	Process	Check ArcGIS Enterprise and OS logs.
	Impact	Infrastructure		01/28/2019 5:10 AM	10	Warning	Warning	> 0	10.0.3.232	WinEvent: AGM	Ext - WinEvent	Check windows event logs
	Source	ArcGIS		01/28/2019 5:10 AM	10	Critical	Portal for ArcGIS	= 0	10.0.3.184	WinService: Portal	Ext - WinService	Check ArcGIS Enterprise and OS logs.

RCA: ArcGIS Server machine rebooted

ArcGIS Monitor

RCA

Home

Availability

Alerts

Categories

Site

Reports

API

Help

Demo@arcgismonitor.esri.com:4

Root Cause Analysis Reports 01/28/2019 6:29 PM

Set Time: Today

Time Range: 01/28/2019 12:00 AM 01/28/2019 6:29 PM

Collection: Demo

Reports: Sources & Impacts by Time

Execute

Bins: 45 - 01/28/2019 10:50 AM

Use this root cause analysis report to categorize alerts into impacts and sources

Bin	Type	Tier	Start Time	End Time	Min	Level	Counter Name	Rule	Counter Instance	Name	Counter Type	Comments
45	Impact	Web	01/28/2019 10:50 AM	01/28/2019 11:00 AM	10	Warning	Response Time(sec)	> 3	Countries_Sql_Egdb_Draw	Countries_Sql_Egdb_Draw	Http	Check: 1. CPU; 2. Which tier(s) are responsible (e.g.check ArcGIS, DB count logs)?
	Impact	Web		01/28/2019 11:00 AM	10	Warning	Find String	= 0	Countries_Sql_Egdb_Draw	Countries_Sql_Egdb_Draw	Http	1. Reproduce with web debugger; 2. check app and other logs
	Impact	Web		01/28/2019 11:00 AM	10	Warning	Find String	= 0	SampleWorldCities	SampleWorldCities	Http	1. Reproduce with web debugger; 2. check app and other logs
	Impact	Web		01/28/2019 11:00 AM	10	Warning	Find String NOT	= 1	SampleWorldCities	SampleWorldCities	Http	1. Reproduce with web debugger; 2. check app and other logs
	Impact	ArcGIS		01/28/2019 11:00 AM	10	Warning	Throughput (Tr/sec)	>= 5	Root<->SampleWorldCities	ArcGIS Server	ArcGIS	Usage spike. Check resource utilization and settings.
	Impact	ArcGIS		01/28/2019 11:00 AM	10	Warning	Throughput (Tr/sec)	>= 10	Summary	ArcGIS Server	ArcGIS	Usage spike. Check resource utilization and settings.
	Impact	ArcGIS		01/28/2019 11:00 AM	10	Warning	Free	= 0	Root<->SampleWorldCities	ArcGIS Server	ArcGIS	Increase min/max to reduce wait time
	Impact	Infrastructure		01/28/2019 11:00 AM	10	Warning	Error	> 0	10.0.3.154	WinEvent: AGS	Ext - WinEvent	Check windows event logs
	Impact	Infrastructure		01/28/2019 11:00 AM	10	Warning	% Processor Time	> 85	_Total	10.0.3.154	System	Check for: 1. usage spikes; 2. degraded performance; 3. unexpected process consuming CPU
	Impact	Infrastructure		01/28/2019 11:00 AM	10	Warning	% Processor Time	> 85	agmdemo-PRD-AGS02-i-0ce4a9bff1788a034-us-east-1	AWS	Amazon	Check for: 1. usage spikes; 2. degraded performance; 3. unexpected process consuming CPU
	Source	Infrastructure		01/28/2019 11:00 AM	10	Critical	Reboot	> 0	_Total	10.0.3.154	System	If reboot not planned, check OS event logs for details

RCA: Database not running

Root Cause Analysis Reports 01/28/2019 6:29 PM

Set Time: Today Time Range: 01/28/2019 12:00 AM 01/28/2019 6:29 PM

Collection: Demo Reports: Sources & Impacts by Time Execute

Bins: 103 - 01/28/2019 1:10 AM

Use this root cause analysis report to categorize alerts into impacts and sources

Bin	Type	Tier	Start Time	End Time	Min	Level	Counter Name	Rule	Counter Instance	Name	Counter Type	Comments
103	Impact	Web	01/28/2019 1:10 AM	01/28/2019 1:20 AM	10	Warning	Response Time(sec)	> 3	Countries_Sql_Egdb_Draw	Countries_Sql_Egdb_Draw	Http	Check: 1. CPU; 2. Which tier(s) are responsible (e.g.check ArcGIS, DB
	Impact	Web		01/28/2019 1:20 AM	10	Warning	Response Time(sec)	> 3	Countries_Sql_Egdb_Test	Countries_Sql_Egdb_Test	Http	Check: 1. CPU; 2. Which tier(s) are responsible (e.g.check ArcGIS, DB
	Impact	Infrastructure		01/28/2019 1:20 AM	10	Warning	Error	> 0	10.0.3.154	WinEvent: AGS	Ext - WinEvent	Check windows event logs
	Source	Database		01/28/2019 1:20 AM	10	Critical	Code	> 0	Validation	eGDB Activity	Ext - EgdbSQL	Check if database is running

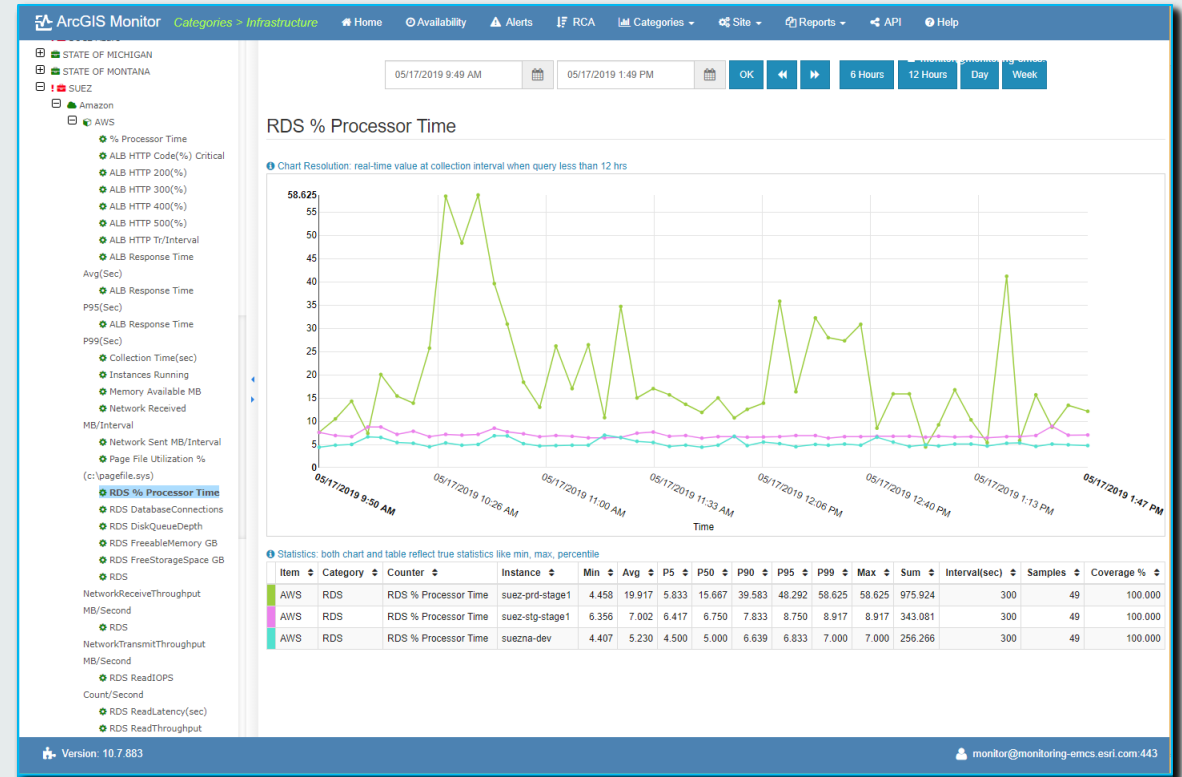
2019 Releases

- 10.7

- **Root Cause Analysis**
- **Dashboard home page**
- **REST API**
- **Additional default alerts**
- **Health and utilization reports**
- **Additional metrics added**

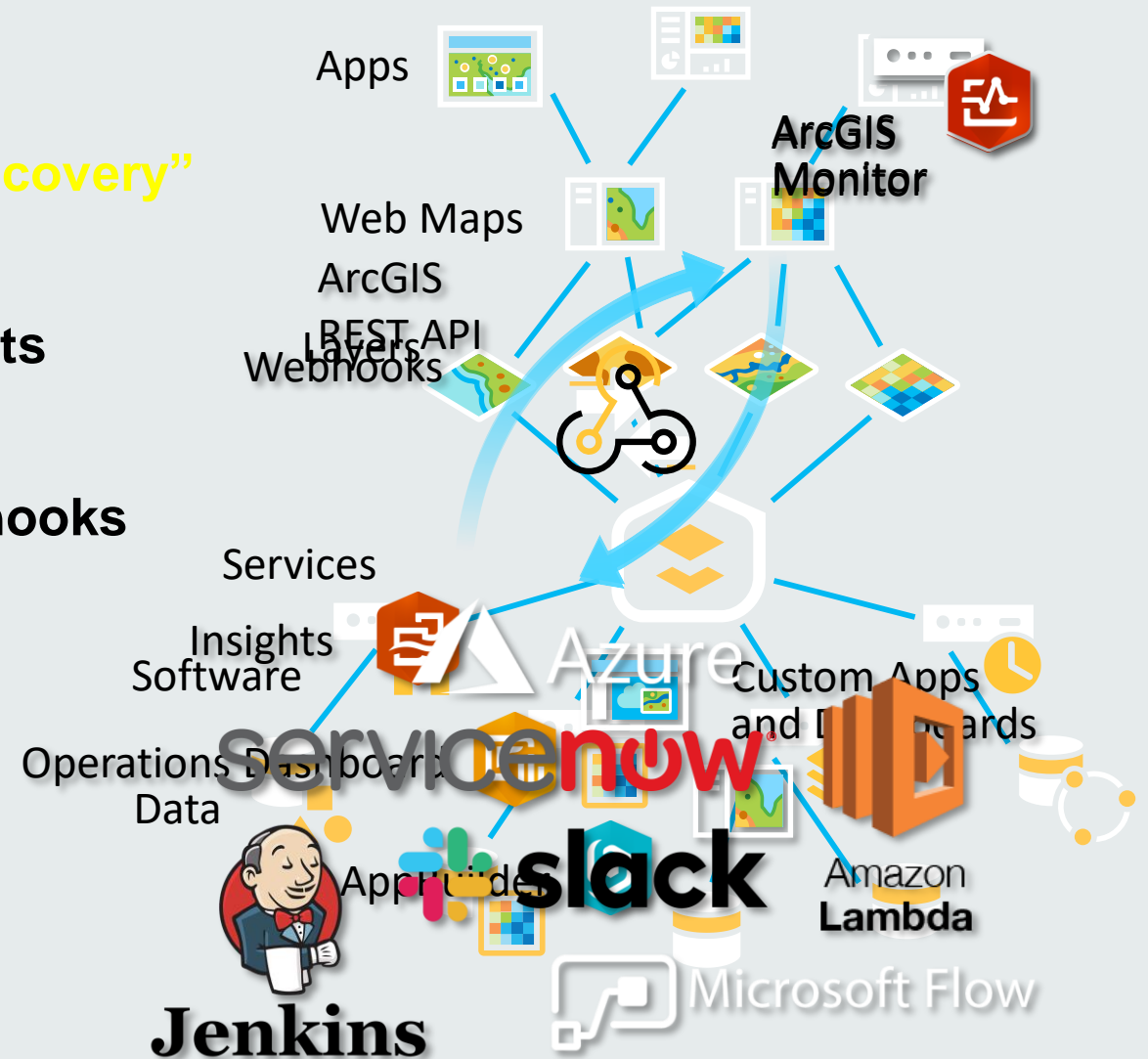
- 10.7.1

- **Minor bug fixes**
- **Usability improvements**



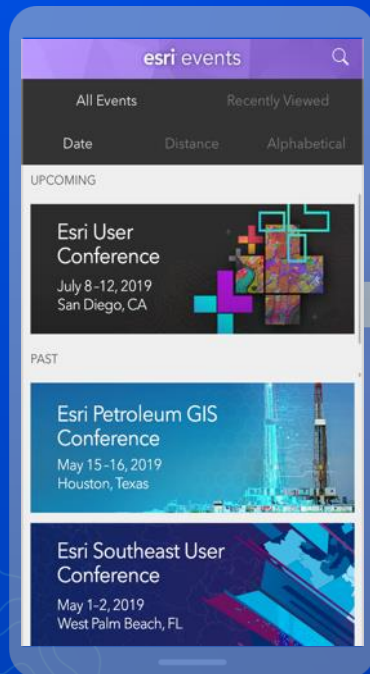
2020 Enhancements

- Simplify configuration through “auto-discovery”
- Utilize Operations Dashboard and Insights
- Integrate with external systems via webhooks
- Modernize UI/UX experience

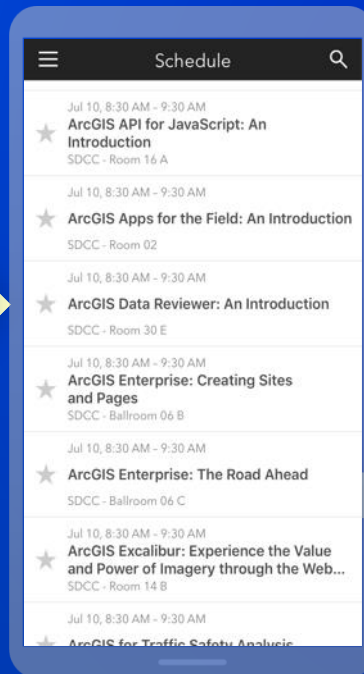


Please Share Your Feedback in the App

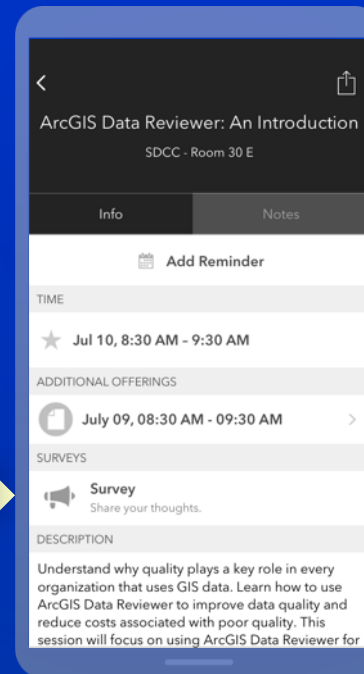
Download the Esri Events app and find your event



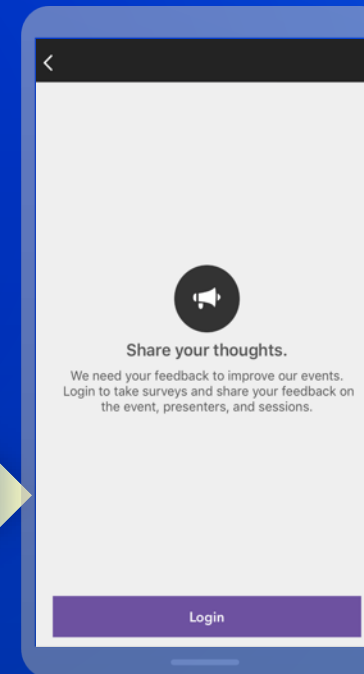
Select the session you attended



Scroll down to "Survey"



Log in to access the survey



Complete the survey and select "Submit"

