

WebSphere on Cloud TCO Calculator

Hardware

Selected default deployment configuration: Medium

Pre-production Server(s)

	Server quantity	Total cores per server	RAM (GB) per server	Year 1 Hardware Costs	Year 2 Hardware Costs	Year 3 Hardware Costs
App Server	4	8	128	\$63,296	\$12,659	\$12,659
HTTP Server	2	4	32	\$29,312	\$5,862	\$5,862
Load Balancer	1	2	32	\$14,456	\$2,891	\$2,891
Firewall Server	1	2	32	\$14,456	\$2,891	\$2,891
Other	0	0	0	\$0	\$0	\$0
On-prem pre-production server costs per year:				\$121,520	\$24,304	\$24,304

Pre-production server utilization (as a percentage): 30%

Production Server(s)

	Server quantity	Total cores per server	RAM (GB) per server	Year 1 Hardware Costs	Year 2 Hardware Costs	Year 3 Hardware Costs
App Server	4	16	256	\$70,592	\$14,118	\$14,118
HTTP Server	2	4	64	\$29,824	\$5,965	\$5,965
Load Balancer	2	2	64	\$29,424	\$5,885	\$5,885
Firewall Server	1	2	32	\$14,456	\$2,891	\$2,891
Other	0	0	0	\$0	\$0	\$0
On-prem production server costs per year:				\$144,296	\$28,859	\$28,859

Production server utilization (as a percentage): 30%

On-premises storage, networking, business continuity (disaster recovery), and facilities costs

	% of hardware cost	Year 1 Hardware Costs	Year 2 Hardware Costs	Year 3 Hardware Costs
Additional storage hardware (as % of total server costs)	20%	\$53,163	\$10,633	\$10,633
Network hardware (as % of total server costs)	10%	\$26,582	\$5,316	\$5,316
Disaster recovery hardware (as % of total Production server costs)	100%	\$144,296	\$28,859	\$28,859
Facilities overhead (as % of total server costs)	20%	\$82,022	\$82,022	\$82,022
Total hardware costs by year:		\$571,879	\$179,994	\$179,994

Hardware assumptions

Assumed number of sockets per server	2
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Base server cost (with higher-end Intel based servers)	\$14000
<i>Per unit incremental costs added to the base server cost above:</i>	
Cost per core	\$100
Cost per GB of memory	\$8
Annual hardware maintenance	20%

Assumes that hardware maintenance begins in year 2

Software

	Estimated # of units	License	Support	Year 1 Software Costs	Year 2 Software Costs	Year 3 Software Costs
Red Hat Enterprise Linux OS subscription/ support	18	\$0	\$84,942	\$84,942	\$84,942	\$84,942
On-premises IBM® WAS Base Processor Value Units (PVUs)	6,720	\$394, 800	\$78,960	\$394,800	\$78,960	\$78,960
Hypervisors (priced by processor)	36	\$152, 820	\$30,564	\$152,820	\$30,564	\$30,564
Other (anti-virus, monitoring, LDAP, HTTP)	18	\$0	\$0	\$0	\$0	\$0
On-premises per month software costs:				\$632,562	\$194,466	\$194,466

Software assumptions

Non-IBM software assumptions

	License per unit (list)	Annual support %	Support per unit (list)	Estimated price discount %	Discounted license per unit
RHEL OS subscription/support	\$0	0%	\$4,719	0%	\$0
Hypervisors (priced by processor)	\$4245	20%	\$849	0%	\$4,245
Other (anti-virus, monitoring, LDAP, HTTP)	\$0	20%	\$0	0%	\$0

Assumes that licensed software maintenance begins in year 2

IBM software assumptions

WAS on-premises product in use: WAS Base

	PVUs per core	Estimated list unit price	Annual support %	Support per unit (list)	Estimated price discount	Discounted license per unit
On-premises Moderate (PVUs)	70	\$58.75	20%	\$11.75	0%	\$58.75

Assumes that software maintenance begins in year 2

Labor

Current level of scripting: Moderate

Initial setup costs - 26 total on-premises servers

Servers to set up	Average hours per server	Average hourly labor rate	Year 1 Labor costs	Year 2 Labor Costs	Year 3 Labor Costs
26	8	\$74	\$15,400	\$0	\$0

Ongoing support costs - 26 total on-premises servers

	Average hours per month	Average hourly labor rate	Year 1 Labor Costs	Year 2 Labor Costs	Year 3 Labor Costs
Hardware investigation and planning	2	\$74	\$1,777	\$1,777	\$1,777
Labor investigation and planning, script mgmt, PMR mgmt	4	\$74	\$3,554	\$3,554	\$3,554

	Average hours per server per month	Average hourly labor rate	Year 1 Labor Costs	Year 2 Labor Costs	Year 3 Labor Costs
Hardware-level support (includes networking, servers, etc.)	1	\$74	\$23,100	\$23,100	\$23,100
Software-level support (O/S install, patching, monitoring, etc.)	5	\$74	\$115,500	\$115,500	\$115,500
Application specific support (e.g. App Servers, HTTP Servers, Load Balancer, EARs, WARs, User registry, etc.)	5	\$74	\$115,500	\$115,500	\$115,500
Total on-premises support costs (1.68 full-time equivalents (FTEs) required):			\$274,831	\$259,431	\$259,431

Labor assumptions

Labor hours per year	2080
Avg annual cost per FTE for setup	\$154000
Avg annual cost per FTE for hardware support	\$154000
Avg annual cost per FTE for software support	\$154000
Avg annual cost per FTE for app support	\$154000

Setup assumptions

	Advanced scripting	Moderate scripting	Limited scripting
Server setup time (hours)	4	8	16

Ongoing support assumptions

	Advanced scripting	Moderate scripting	Limited scripting
Hardware support (hours / month)	1	1	1
Software support (hours / month)	0.5	5	9
App support (hours / month)	0.5	5	9
Hardware investigation and planning	2	2	2
Software investigation and planning, script mgmt, PMR mgmt	4	4	4

Cloud Option

IBM cloud offering: IBM WAS Base on Bluemix

Estimated IBM WAS Base on Bluemix costs

	By month	Year 1 Cloud Costs	Year 2 Cloud Costs	Year 3 Cloud Costs
IBM WAS Base on Bluemix subscription	\$8,094	\$97,131	\$97,131	\$97,131
Cloud Migration labor	N/A	\$0	\$0	\$0
Hardware-level support (includes networking, servers, etc.)	\$0	\$0	\$0	\$0
Software-level support (O/S install, patching, monitoring, etc.)	\$7,219	\$86,625	\$86,625	\$86,625
Application specific support (e.g. App Servers, HTTP Servers, Load Balancer, EARs, WARs, User registry, etc.)	\$7,219	\$86,625	\$86,625	\$86,625
Totals:	\$22,532	\$270,381	\$270,381	\$270,381

IBM WAS Base on Bluemix cost assumptions

IBM WAS Base on Bluemix labor assumptions

	Percent reduction from on-prem
Hardware-level support (includes networking, servers, etc.)	100%
Software-level support (O/S install, patching, monitoring, etc.)	25%
Application specific support (e.g. App Servers, HTTP Servers, Load Balancer, EARs WARs, User Registry etc.)	25%

Note: Hardware and software investigation and planning hours/costs are eliminated

IBM WAS Base on Bluemix pricing assumptions

Average hours in a month	730
Total Cores (based on on-prem App Servers and HTTP Servers only)	112
Average utilization (excludes peaks)	30%
Estimated instance hours per month	24,528
Charge per instance/hour (list)	\$0.3
Support per instance/hour (list)	\$0.03
Charge per instance/month	\$7,358
Support per instance/month	\$736
Discount	0%
Discounted charge per instance/hour	\$0.30
Discounted support per instance/hour	\$0.03

Results

Estimated on-premises costs

	Year 1 Costs	Year 2 Costs	Year 3 Costs	Total 3 Year Costs
Hardware *	\$571,879	\$179,994	\$179,994	\$931,867
Software *	\$632,562	\$194,466	\$194,466	\$1,021,494
Setup and support labor	\$274,831	\$259,431	\$259,431	\$793,692
Totals:	\$1,479,272	\$633,891	\$633,891	\$2,747,053

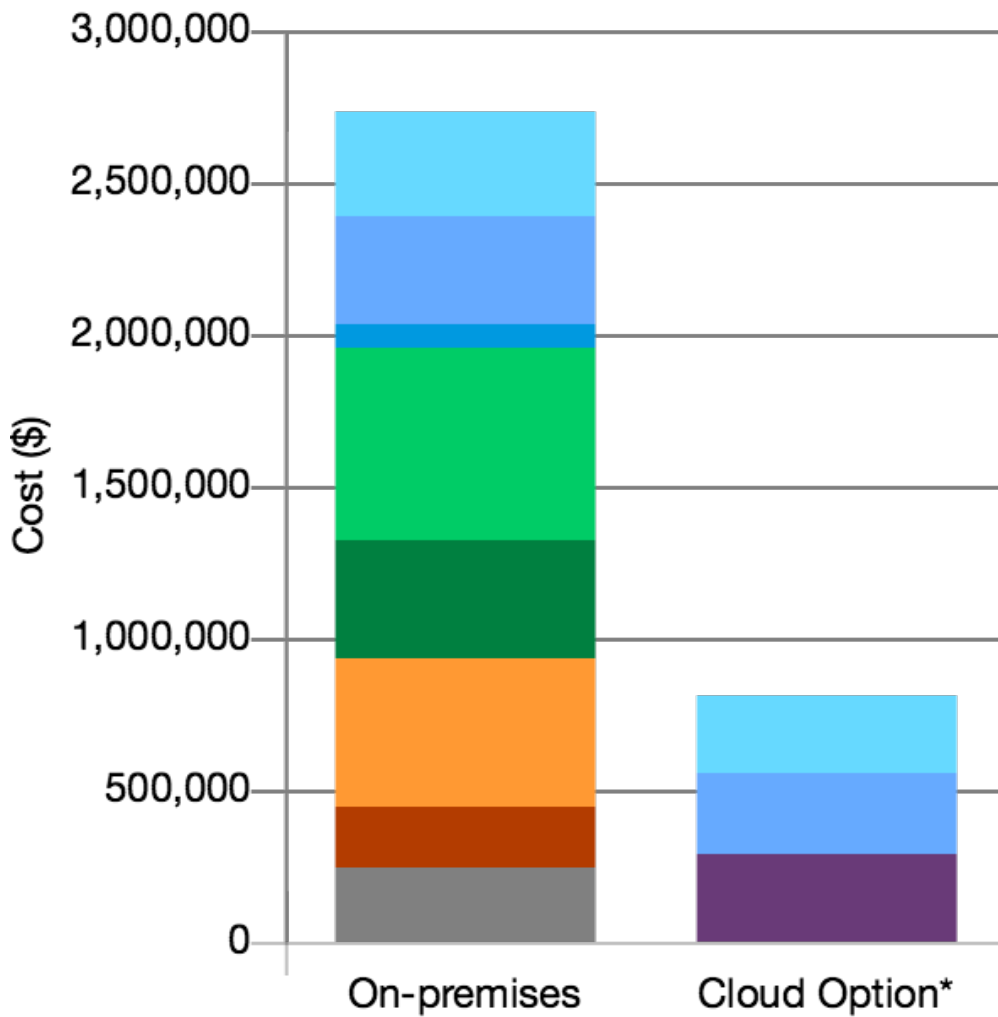
** Assumes hardware and software maintenance begin in year 2*

Estimated IBM WAS Base on Bluemix costs

	By month	Year 1 Cloud Costs	Year 2 Cloud Costs	Year 3 Cloud Costs	Total 3- Year Costs
IBM WAS Base on Bluemix subscription	\$8,094	\$97,131	\$97,131	\$97,131	\$291,393
Software and application support	\$14,437	\$173,250	\$173,250	\$173,250	\$519,750
Cloud migration labor	N/A	\$0	\$0	\$0	\$0
Totals:	\$22,532	\$270,381	\$270,381	\$270,381	\$811,143

	Over 12 months	Over 24 months	Over 36 months
Savings with IBM WAS Base on Bluemix	\$1,208,891	\$1,572,401	\$1,935,910

Potential Savings Over 3 Yr: \$1,922,288 (70%)



Assumes 30% average on-premise server usage

*Cloud Option = IBM WAS Base on Bluemix

