

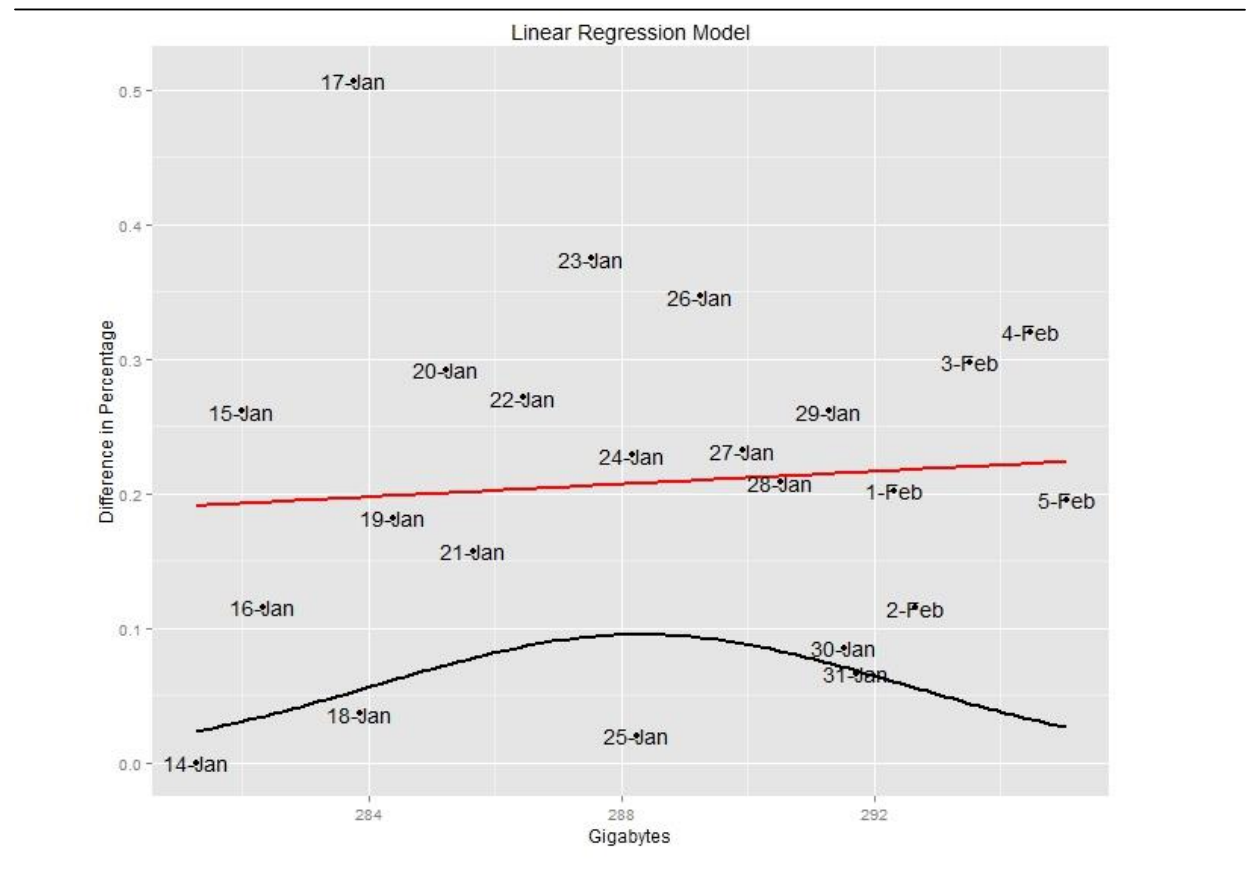
Growth Report

Database growth concerning the newly commissioned database (i.e., 1-Oct) AIS@MCCDMPRD was tested over a period of approximately three weeks. **Our null hypothesis (H_0) is that AIS@MCCDMPRD will be approximately 1 TB in size by the end of this calendar year.** Our alternative hypothesis (H_a) is that AIS@MCCDMPRD will NOT be approximately 1 TB in size by end of calendar year. In order to either accept or reject the null hypothesis, we use plotting based on linear and LOESS regression models.

Day-to-day growth measured in gigabytes according to percentage change is the parametric extent of association for these two variables. Linear regression is an approach for modeling the relationship between a scalar dependent variable y and one or more explanatory variables (or independent variable) denoted X . LOESS specifically denotes a method that is also known as locally weighted polynomial regression. At each point in the dataset a low-degree polynomial is fitted to a subset of the data, with explanatory variable values near the point whose response is being estimated. *Both models display the general trend of growth over time; however, the linear model shows a trend more suited for overplotting whereas the LOESS model is more closely fitted to the numeric values in the data.*

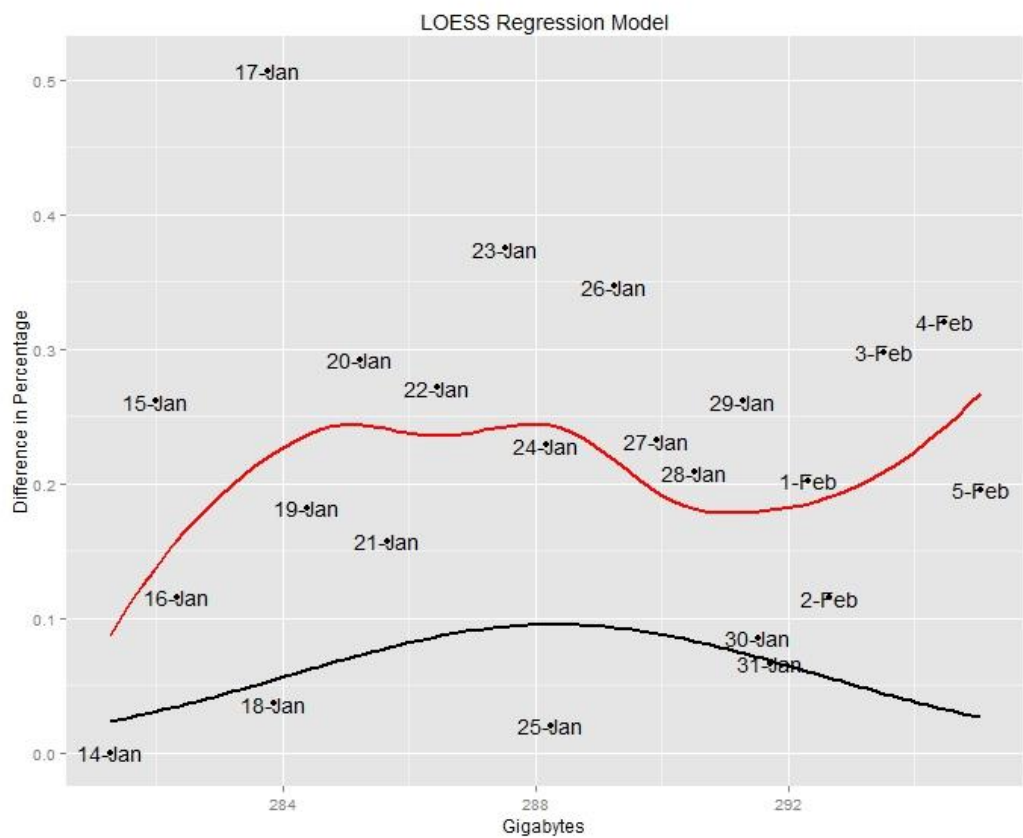
TABLE 1

Linear Regression Model



Given the positive linear relationship seen in TABLE 1, the database is growing incrementally. Furthermore, gradual increases greater than 1 GB took place on a Friday, Saturday, and Monday corresponding to 23-Jan, 17-Jan, and 26-Jan respectively.

TABLE 2
LOESS Regression Model



Given the more fitted distribution in TABLE 2, the database is growing incrementally and therefore has a positive association. As in the linear model, MCCDMPRD has grown to approximately 295 GB since being commissioned four months ago and is on pace to reach approximately 1TB by the end of this calendar year. **Based on the positive association shown in each model and the total number of GB, our position is to accept the null hypothesis that AIS@MCCDMPRD will be approximately 1 TB in size by the end of this calendar year and reject the alternative hypothesis.**

Datasets

Date	Gigabytes	Percentage Difference	Gigabyte Difference
14-Jan	281.2681875	0	0
15-Jan	282.0051875	0.26134271	0.737
16-Jan	282.3321875	0.115821013	0.327
17-Jan	283.7691875	0.506397475	1.437
18-Jan	283.8731875	0.036636077	0.104
19-Jan	284.3911875	0.182143478	0.518
20-Jan	285.2231875	0.291701389	0.832
21-Jan	285.6721875	0.157173158	0.449
22-Jan	286.4491875	0.271252297	0.777
23-Jan	287.5261875	0.374574577	1.077
24-Jan	288.1841875	0.228326199	0.658
25-Jan	288.2421875	0.020121968	0.058
26-Jan	289.2441875	0.346420099	1.002
27-Jan	289.9161875	0.231791128	0.672

28-Jan	290.5211875	0.20824643	0.605
29-Jan	291.2811875	0.260916267	0.76
30-Jan	291.5291875	0.085068669	0.248
31-Jan	291.7221875	0.066158835	0.193
1-Feb	292.3131875	0.20218041	0.591
2-Feb	292.6491875	0.114813235	0.336
3-Feb	293.5221875	0.29742215	0.873
4-Feb	294.4651875	0.320241591	0.943
5-Feb	295.0411875	0.19522698	0.576

Recommendations

My recommendation is to accept the null hypothesis that AIS@MCCDMPRD will be approximately 1 TB in size by the end of this calendar year and maintain the current storage plan.