

ROI modeling in a standard Eco4Cloud deployment

ROI evaluation methodology

E4C uses a three-step methodology for conducting ROI analysis:

1. Gather quantitative benefit information. In this study, the benefits amount to energy savings in a data center, while costs amount to the E4C license purchase and renewal.
2. Create a complete investment (three-year total cost analysis) profile based on costs and benefits. Additional benefits exist, such as risk management, and more efficient data center management, that are harder to be evaluated, and are excluded from this analysis. This makes investment profile conservative, as adding the additional benefits would make the estimations more attractive.
3. Calculate the ROI and payback period. E4C conducts a depreciated cash flow analysis of the investments over a three-year period.

E4C uses a discounted cash flow methodology to calculate the ROI and payback period. ROI is the ratio of the net present value (NPV) and discounted investment. Payback period is the point at which cumulative benefits equal the initial investment. E4C uses a standard 5% discount factor (allows for risk and the missed opportunity cost that could have been realized using that capital).

“The three-year ROI analysis shows an NPV, after 3 years, of \$542,465. The company has a payback period of 7.1 months and an ROI of 112%”

Use case

The current analysis is based on a mid-size data center, as per Gartner categorization (Forecast Analysis: Data Centers, Worldwide, 2010-2016). The example data center hosts 300 physical hosts, with a Power Usage Effectiveness of 1.6.

The three-year ROI analysis shows that the data center in this study spends \$202.468,07 as E4C license purchase cost and \$141.727,65 as yearly license renewal cost. It receives \$342.796,32 per year as energy savings for an NPV, after 3 years, of \$ 542.465,60. The company has a payback period of 7.1 months and an ROI of 112% (see Table 1).

Table 1	
Three-Year ROI Analysis (mid-size data center)	
Benefits	\$1.028.388,96
Investments	\$ 485.923,36
Net Present Value	\$ 542.465,60
ROI = NPV / Investments	112%
Payback period	7.1 months
Discount rate	5%

Similar results are achievable in different scenarios, with higher or lower data center sizes.

The following charts show the yearly progress of benefits and investments.

The first chart adds the net present value to the yearly estimations, while the second one adds the ROI of E4C.

