

The primary components of the deferred tax assets and liabilities are as follows, for the periods indicated below:

	June 30,	
	2019	2018
<b>Deferred tax assets</b>		
Non-capital loss carryforwards	\$ 161,119	\$ 129,436
Capital loss carryforwards	155	417
Undeducted scientific research and development expenses	137,253	123,114
Depreciation and amortization	683,777	829,369
Restructuring costs and other reserves	17,845	17,202
Deferred revenue	53,254	62,726
Other	59,584	57,461
Total deferred tax asset	\$ 1,112,987	\$ 1,219,725
Valuation Allowance	\$ (77,328)	\$ (80,924)
<b>Deferred tax liabilities</b>		
Scientific research and development tax credits	\$ (14,482)	\$ (13,342)
Other	(72,599)	(82,668)
Deferred tax liabilities	\$ (87,081)	\$ (96,010)
Net deferred tax asset	\$ 948,578	\$ 1,042,791
<b>Comprised of:</b>		
Long-term assets	1,004,450	1,122,729
Long-term liabilities	(55,872)	(79,938)
	\$ 948,578	\$ 1,042,791

We believe that sufficient uncertainty exists regarding the realization of certain deferred tax assets that a valuation allowance is required. We continue to evaluate our taxable position quarterly and consider factors by taxing jurisdiction, including but not limited to factors such as estimated taxable income, any historical experience of losses for tax purposes and the future growth of OpenText.

The aggregate changes in the balance of our gross unrecognized tax benefits (including interest and penalties) were as follows:

Unrecognized tax benefits as of July 1, 2017	\$ 174,530
Increases on account of current year positions	6,483
Increases on account of prior year positions	17,794
Decreases due to settlements with tax authorities	—
Decreases due to lapses of statutes of limitations	(20,995)
Unrecognized tax benefits as of June 30, 2018	\$ 177,812
Increases on account of current year positions	25,642
Increases on account of prior year positions	15,024
Decreases due to settlements with tax authorities	—
Decreases due to lapses of statutes of limitations	(9,236)
Unrecognized tax benefits as of June 30, 2019	\$ 209,242

Included in the above tabular reconciliation are unrecognized tax benefits of \$11.2 million relating to deferred tax assets in jurisdictions in which these deferred tax assets are offset with valuation allowances. The net unrecognized tax benefit excluding these deferred tax assets is approximately \$198.1 million as of June 30, 2019 (June 30, 2018—\$167.2 million).

We recognize interest expense and penalties related to income tax matters in income tax expense. For the year ended June 30, 2019, 2018 and 2017, we recognized the following amounts as income tax-related interest expense and penalties: