Internet advertising is vital in today’s business world. It is uncommon for a major Internet advertising campaign not to include an online display component. Nevertheless, research on optimal Internet media selection has been sparse. Firms face considerable challenges in their budget allocation decisions: the large number of websites they may potentially choose; the vast variation in traffic and costs across websites; and the inevitable correlations in viewership among these sites. Generally, attempting to select the optimal subset of websites among all possible combinations is a NP-hard problem. Therefore, existing approaches can only handle Internet media selection in settings on the order of ten websites. We propose an optimization method that is computationally feasible to allocate advertising budgets among thousands of websites. While performing similarly to extant approaches in settings scalable to prior methods, our approach successfully tackles the challenging task of large-scale optimal Internet media selection. Our method is also flexible to accommodate practical Internet advertising considerations such as targeted consumer demographics, mandatory media coverage to matched content websites, and target frequency of ad exposure.