Dogs are domestic animals as well as pets with potential zoonotic respiratory infections. This study aimed at profiling bacterial species associated with upper respiratory tract infection (URTI) in selected breeds of dog in and around Abeokuta, a city on coordinates 7º9'39''N and 3º20'54''E. Nasopharyngeal samples were aseptically collected from a total of fifty-five (55) dogs at the Veterinary Teaching Hospital (VTH), Federal University of Agriculture, Abeokuta (FUTA), Nigeria. Ten (10) breeds of exotic dogs were examined for probable bacteria responsible for URTI. Total bacteria count (cfu), percentage occurrence and resistance screening against selected antibiotics were enumerated. The isolates per breed in a group with age as a factor, were screened according to standard microbiological methods while antibiotics susceptibility test (AST) was performed by Kirby-Bauer's disc diffusion technique with their minimum inhibitory concentrations (MICs). URTI was highest (49.0%) for dogs below 12 months while the least percentage of 5.5% was recorded for dogs between ages 6 and 10 years. The decreasing order of URTI rate based on breed was; Alsatian (43.6%)>Boerboel (20.0%)>Italian mastiff>Terrier cross (1.8%). The frequency of occurrence of ten identified bacterial species were; *Escherichia coli* (83.1%), *Citrobacter freundii* (73.4%), *Staphylococcus aureus* (67.5%), *Klebsiella oxytoca* (65.2%), *Bacillus subtilis* (57.6%), *Staphylococcus saprophyticus* (40%), *Pseudomonas aeruginosa* (38.2%), *Streptococcus sp.* (18.2%), *Proteus mirabilis* (14.5%) and *Haemophilus sp*. (5.8%). All the isolates expressed significant differences ($P<0.05$) across all the parameters tested and were also 100% resistant to at least one of the antibiotics tested. Percentage susceptibility rate (%) to Nitrofurantoin (100), Ciprofloxacin and Amoxycillin (90.0), Ceftriaxone (10.0) while Augmentin was completely resisted by all the isolates (0.0). The study concluded that most pet-dogs in the study locality were potential carriers of antibiotic-resistant bacterial strains responsible for recurring URTI. Hence, need for more public awareness aimed at curtailing the spread of resistant microbial agents of URTI.