

In TypeScript there are several ways to declare a property with undefined value: adding `| undefined` in the property type or using optional property syntax (`?` after its name). Use `| undefined` syntax when you want to be explicit that an object has that property, in that case TypeScript compiler will not allow omitting it:

```
interface Person {  
    name: string;  
    address: string | undefined;  
}  
  
let John = { name: "John" }; // will not compile  
  
let John = { name: "John", address: undefined }; // will compile, we want to be  
explicit when person does not have home
```

Use optional property syntax for properties holding some additional information.

```
interface Person {  
    name: string;  
    pet?: string;  
}  
  
let John = { name: "John" }; // will compile  
  
let John = { name: "John", pet: undefined }; // will compile, there is no pet like for  
the object on previous line  
  
let John = { name: "John", pet: "Benji" }; // will compile
```

Using `| undefined` for optional property is redundant, it can be omitted without change to the actual type. Still if you want to force the property in the object consider using only `| undefined` without `?`.

Noncompliant Code Example

```
interface Person {  
    name: string;  
    address? : string | undefined;    // Noncompliant, "?" should be removed  
    pet?: Animal | undefined; // Noncompliant, "undefined" should be removed  
}
```

Compliant Solution

```
interface Person {  
    name: string;
```

```
address: string | undefined;  
pet?: Animal;  
}
```

When defining a type in TypeScript, we can specify that a property is optional with a question mark after the name:

Or we can specify that a property may be undefined:

These two interfaces seem nearly identical. In either case, accessing the property `foo` may return the value `undefined`. They are subtly different, though, as evidenced by the fact that **TypeScript won't actually allow us to assign `InterfaceWithOptional` to `InterfaceWithUndefined`:**

TypeScript reports:

Type 'InterfaceWithOptional' is not assignable to type 'InterfaceWithUndefined'.

Property 'foo' is optional in type 'InterfaceWithOptional' but required in type 'InterfaceWithUndefined'.ts(2322)