

## Laboratoriya ishi №1.

### Mavzu: Axborotlarni ximoyalovchi dasturiy vositalar bilan ishlash.

**Ishning maqsadi:** Axborotlarni himoyalashning texnik va dasturiy vositalari. Axborot xavfsizligini ta'minlash qonunchiligini o'rgatish.

**Kutilayotgan natija:** Talabalarda axborotlarni himoyalashning texnik va dasturiy vositalari hamda axborot xavfsizligini ta'minlashning maqsadlari haqida amaliy ko'nikmalar hosil qilinadi.

**Laboratoriya jihozlari:** Kompyuter, Windows operatsion tizimi, Antivirus va arxivator dasturlari.

### Nazariy ma'lumotlar.

**Axborot xavfsizligini ta'minlash** – bu foydalanuvchining axborotlarini himoyalashga quyilgan me'yor va talablarni bajarishidir.

**Axborot xavfsizligi** – bu axborot foydalanuvchilariga va ko'plab axborot tizimlariga zarar keltiruvchi tabiiy yoki sun'iy xarakterga ega tasodifiy va uyushtirilgan ta'sirlardan axborotlarni va axborot kommunikatsiya tizim ob'ektlarining himoyalanganligidir.

Axborot xavfsizligini ta'minlash tamoyillari quyidagilar xisoblanadi:

–Ma'lumotlar butunligi – axborotni yo'qotilishiga olib keluvchi buzilishlardan, shuningdek ma'lumotlarni mualliflik huquqi bo'lmagan holda hosil qilish yoki yo'q qilishdan himoya qilish.

–Axborotning konfidentsialligi – axborot va uning tashuvchisining holatini belgilaydi va unda axborot bilan ruxsatsiz tanishishning yoki uni ruxsatsiz nusxa ko'chirishning oldini olish ta'minlangan bo'ladi.

–Foydalanish huquqlariga, ya'ni mualliflikka ega barcha foydalanuvchilar axborotdan foydalana olishliklari.

Axborotlarni xavfsizligini ta'minlashda ma'lumotlarni arxivlash va ularning ahamiyati quyidagicha.

Axborot xavfsizligi tahdidlarining turlari sun'iy va tabiiy tahdidlardir.

#### SUN'IY.

- Tasodifiy.
- Qasddan.

Axborot xavfsizligiga sun'iy tahdidlar.

#### Tasodifiy:

- Foydalanuvchilarning xatoliklari.
- Foydalanuvchilarning uquvsizligi va mas'uliyatsizligi.

Axborot tizimlaridagi xatoliklar.

#### Qasddan:

- Axborot tizimlariga fizik ta'sir etish.
- Axborotlarni o'g'irlash.

Xakerlik hujumlari.

#### TABIIY.

- Tabiiy hodisalar.
- Texnikaviy.

Tabiiy xarakterdagi tahdidlar.



**Zararli dasturiy mahsulotla.**

Zararli dasturiy maxsulotlar – bu axborot tizimlaridagi ma'lumotlarni hamda dasturiy mahsulotlarni o'zgartirish, ko'chirib olish, o'chirish, foydalanuvchilarni maxfiy ma'lumotlaridan noqonuniy foydalanishdir.



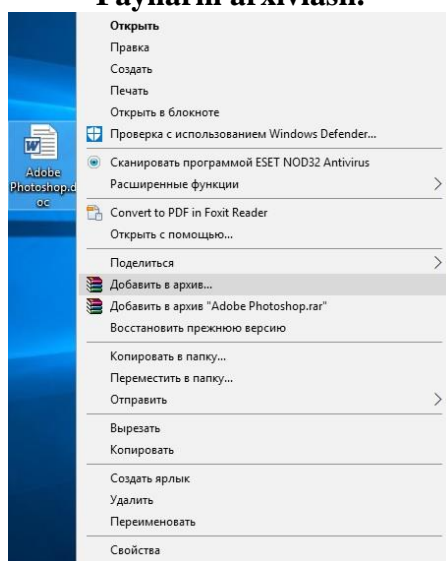
### Архивlash dasturlari.

- Winzip.
- Winarj.
- Winrar.

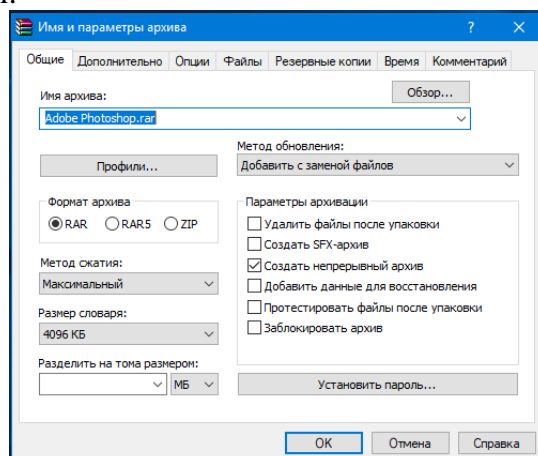
Архивда joylashgan xar bir fayl xakida ma'lumot beruvchi mundarijada quyidagilar joylashgan buladi.

- fayl nomi.
- fayl joylashgan katalog xakida ma'lumot.
- Fayl uzgartirilganligini kursatuvchi sana va vakt.
- faylning diskdagi, arxivdagi ulchami va parametrlari.

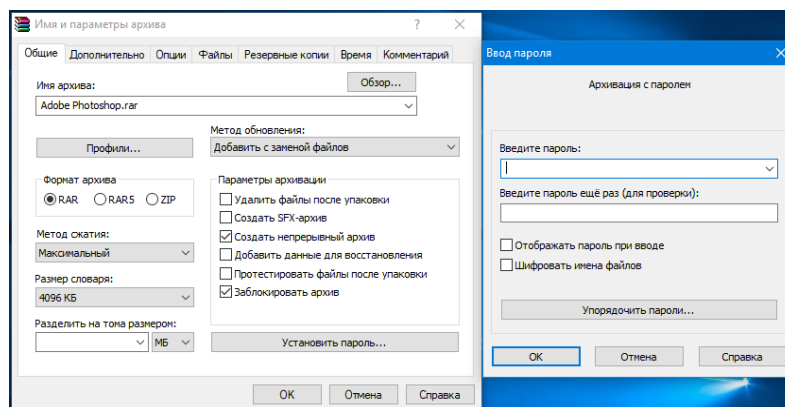
### Фayllarni arxivlash.



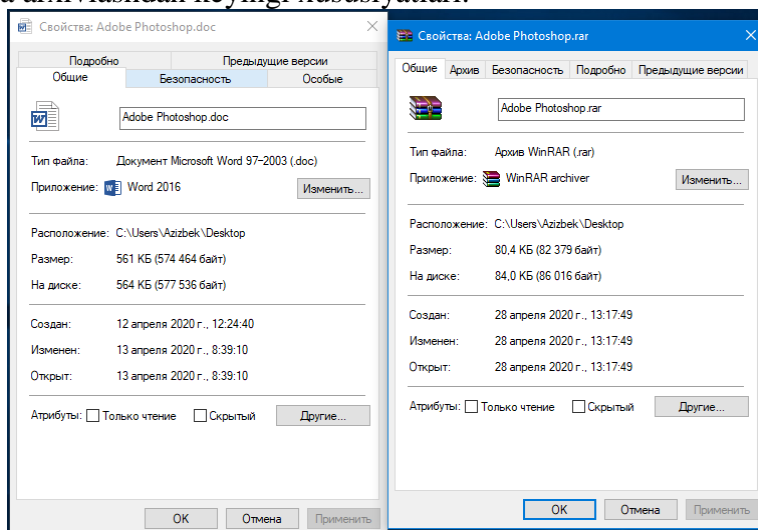
Фayllarni arxivlash jarayoni.



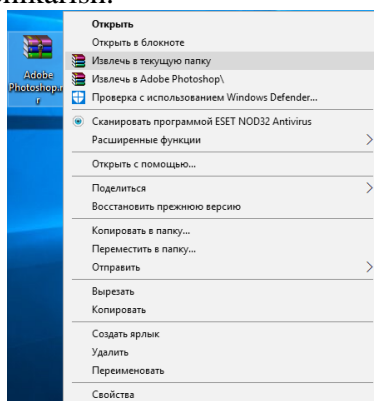
Архивlashni maxsus kod (parol) bilan ximoyalash.



Faylning oldingi va arxivlashdan keyingi xususiyatlari.



Arxivlashgan fayllarni arxivdan chikarish.



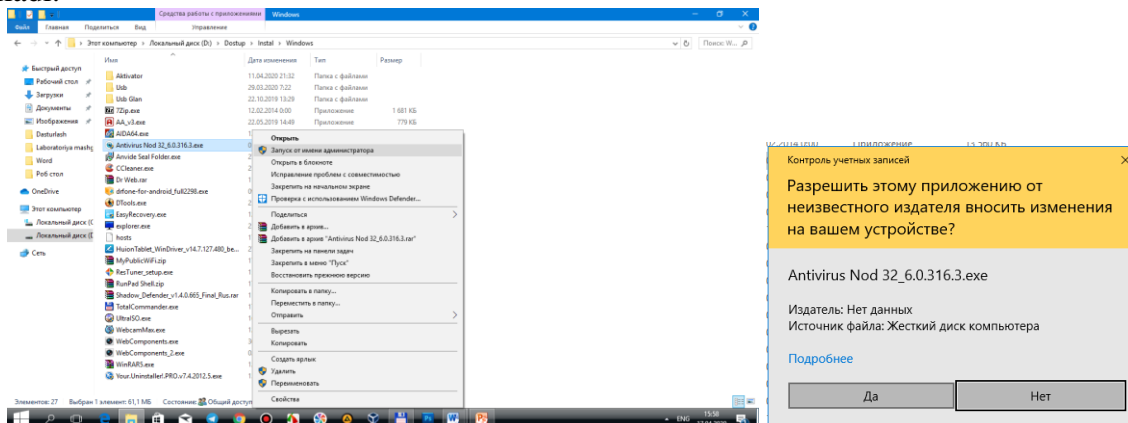
Shuningdek axborotlarni ximoyalashning Antivirusli himoya usuli ham mavjud. Bular quyidagilar xisoblanadi.

- Litsenziyalangan antiviruslardan foydalanish;
- Muntazam profilaktika o'tkazish;
- Viruslarni zararsizlantirish.

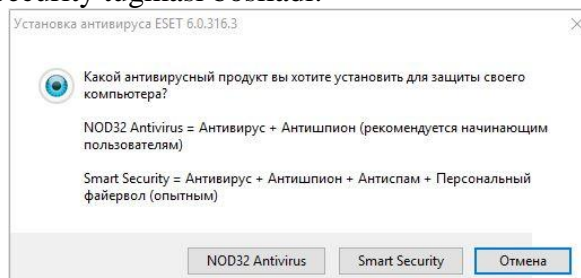


Antiviruslarning keng tarqalgan turi bu NOD32 antivirusidir. Antivirus orqali himoyalaniш quyidagicha amalga oshiriladi.

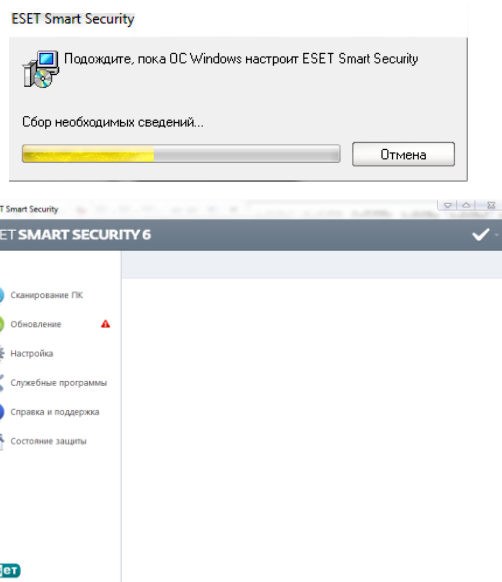
Eng birinchi bo'lib Nod32 dasturi ustida sichqonchani chap tugmasi 2-marotaba bosiladi yoki ushbu dasturni sichqonchani chap tugmasi bilan 1-marotaba bosib dasturni tanlab olib klaviaturadan ENTER tugmasi bosiladi va yoki bo'lmasam sichqonchani o'ng tugmasu antivirus dasturi ustida 1-marotaba bosilib hosil bo'lgan kontekst menyudan запуск от имени администратора buyrug'i tanlanadi va keying ruxsat berish oynasi paydo bo'lgan ДА tugmasi bosiladi.



Keyingi oynadan Smart Security tugmasi bosiladi.



Dasturning o'rnatilishi yakunlanadi va ishga tushiriladi.

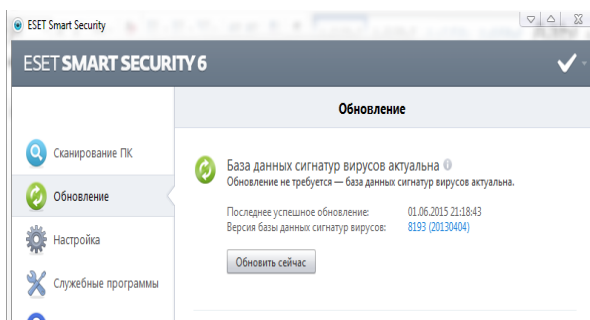


Antivirus o'rnatilgandan so'ng 2-bandi ya'ni Обновление bo'limiga o'tib yangi bazani o'rnatamiz. Bu amallar quyidagicha amalga oshiriladi.

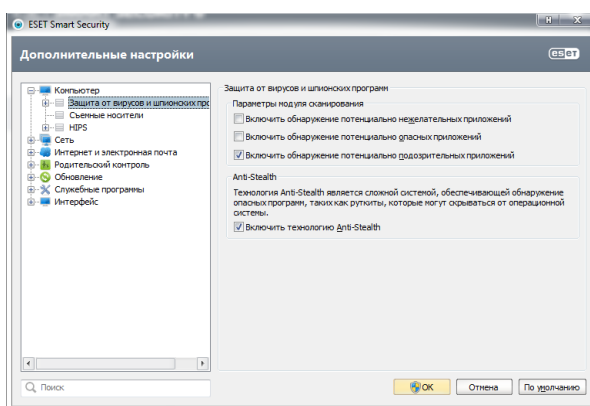
1. Antivirus bazasi yuklab olinadi va papkada BasesNOD nomi beriladi.
2. BasesNOD papkasiga kiramiz va oynaning o'rta yuqori manzil yozilgan qismiga sichqonchani chap tugmasini 1-marotaba bosib belgilab va undan nusxa olamiz. Papka kompyuterning qayerida turgan bo'lsa o'sha joyning manzili chiqadi masalan: C:\Users\Azizbek\Desktop\BasesNOD.



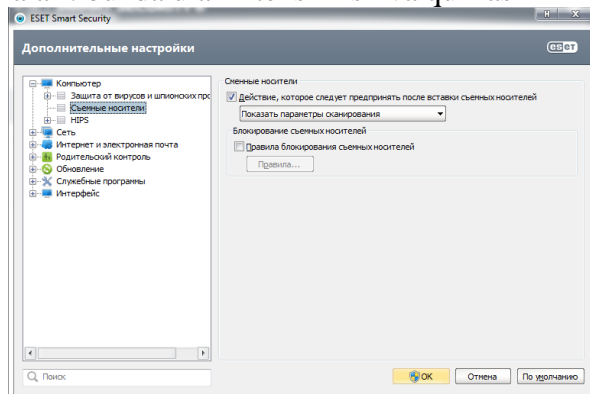
3. Olingan nusxani antivirus dasturi ustida klaviaturadan F5 tugmasini bosib manzil qo'yilishi lozim bo'lgan yerga manzilni joylaymiz Добавить tugmasini bosib chiqib so'ngra Обновить tugmasini bosamiz.



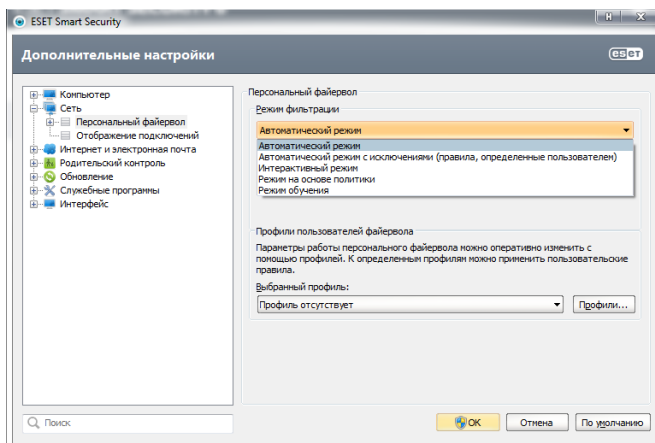
Дополнительный настройки bo'limiga o'tib virus va shpion dasturlari bilan ishlovchi bandni ko'rib o'tamiz.

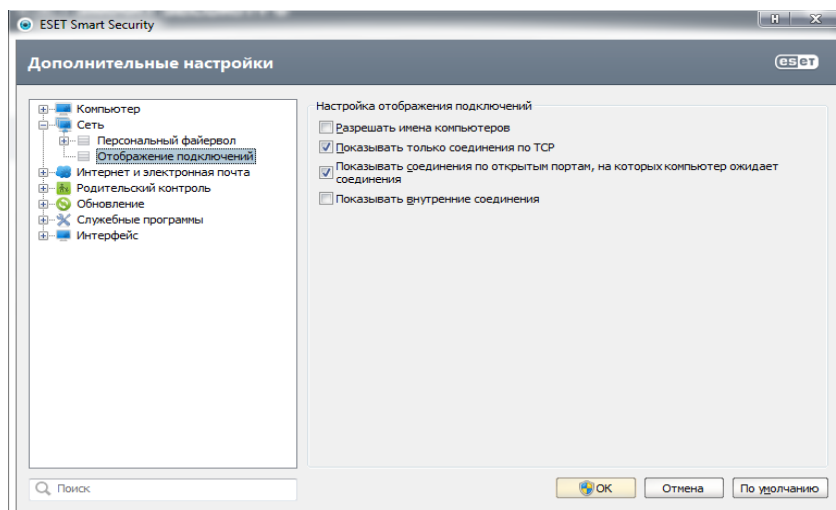


Qo'shimcha xotira qurilmalari: bunda ularni tekshirish va qulflash imkoniyati mavjud:



Тармоқ bo'limi. Shaxsiy fayervol: bunda filtrlash tartibi va faerol foydalanuvchilari profile joylashgan bo'ladi.





Ulanishlarni ko'rsatish: Internet va elektron pochta: bu bo'limda quyidagi parameterlar sozlanadi.

- Veb-mijoz himoyasi va manzilni boshqarish;
- Pochta mijoz himoyasi va spamdan himoyalash;
- Internet va elektron pochtdan foydalanish;
- Tarmoq protokollaridan himoyalash versiyasi.

#### **Laboratoriya ishlarini o'tkazish qoidalari va xavfsizlik choralari.**

Berilgan nazariy ma'lumot bilan tanishib chiqiladi va topshiriqlar variantlari ketma-ket bajariladi va natijalar olinadi.

Kompyuter xonasida xavfsizlik texnikasi qoidalari va sanitariya – gigiyena talablariga amal qilinadi.

#### **Topshiriqlar variantlari (masala, misol, keyslar).**

1. WinRAR dasturi yordamida biror papkani himoyalang.
2. WinRAR dasturi yordamida biror faylni himoyalang.
3. WinRAR dasturi yordamida biror papkani himoyalang va parol o'rning.
4. Antivirus dasturini o'rning va anyivirus bazasini yangilang.
5. Kompyuterni to'liq tekshiruvga bering.

#### **Nazorat savollari.**

1. Axborot xavfsizligi nima?
2. Axborot xavfsizligiga tahdid turlari qanday?
3. Axborot xavfsizligining sun'iy tahdidi qaysilar?
4. Axborot xavfsizligining tabiiy tahdidi qaysilar?
5. Qanday arxivatorlar mavjud?
6. Qanday antiviruslar mavjud?
7. Antivirus dasturiga yangi baza qanday o'rnatiladi?
8. Papka yoki fayl qanday arxivlanadi?

#### **Adabiyotlar ro'yhati.**

1. Aripov M.M., Kabiljanova F.A., Yuldashev Z.X. «Informatsionnye tehnologii» (uchebnoe posobie dlya studentov VUZov), Tashkent 2004, NUUZ.
2. U.Yuldashev, M.Mamarajabov, S.Q. Tursunov; Pedagogik Web-dizayn: Pedagogika oily ta'lim muassasalari uchun/ U. Yuldashev, O'zbekiston Respublikasi Oliy va o'rta maxsus ta'lim vazirligi. T.: "Voriz-nashriyot", 2013.- 232 b.
3. S.S.Kosimov Axborot texnologiyalar, T., 2007.



## Laboratoriya ishi №2.

### Mavzu: Virtual laboratoriyalar bilan ishlash.

**Ishning maqsadi:** VirtualBox 6.0.0 dasturini o'rnatish hamda ishchi maydinni hosil qilib Windows XP, Windows 7 operatsion tizimini o'rnatish va sozlash, zamonaviy axborot texnologiyalarining o'quv – texnik vositalari kompyuter va ulardan foydalanish imkoniyatlari bilan tanishish.

**Kutilayotgan natija:** Talabalarda Windows operatsion tizimining turli versiyalarini o'rnatish, sozlash, axborot texnologiyalarining o'quv – texnik vositalari kompyuterning ichki, tashqi qurilmalari va ularning ishlash printsipli bo'yicha ko'nikmalar hosil qilish.

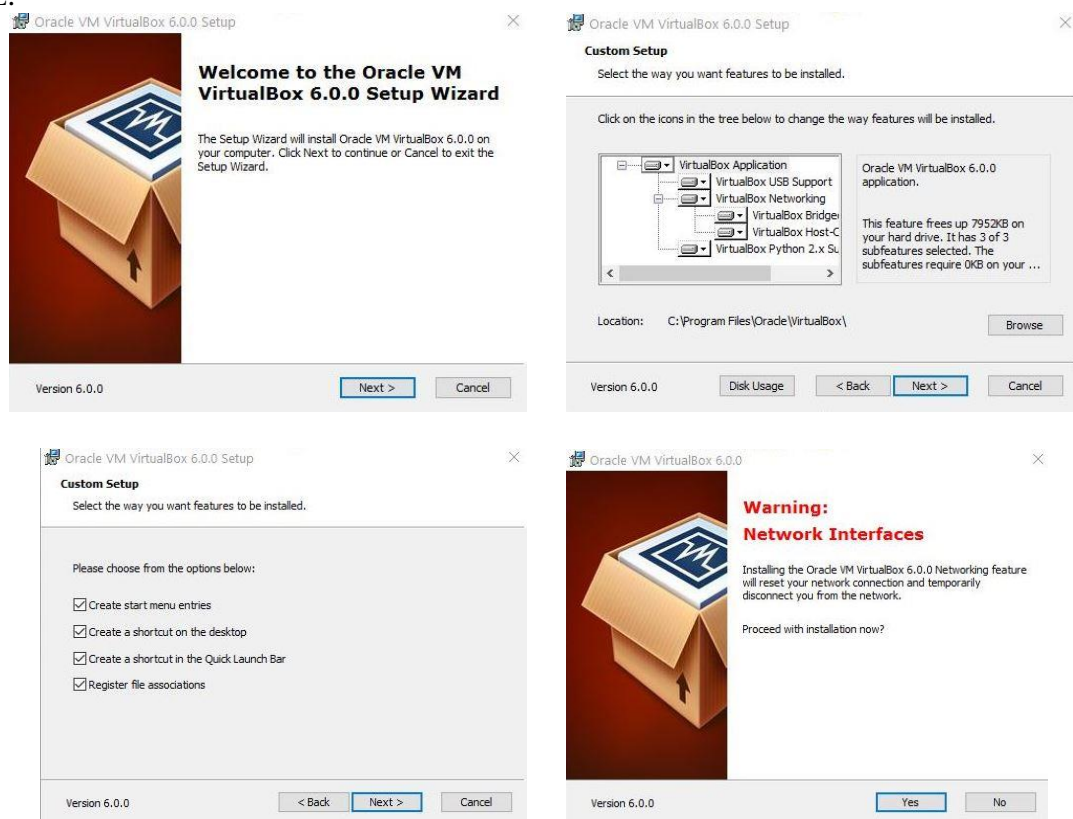
**Laboratoriya jihozlari:** Kompyuter, VirtualBox 6.0.0 versiyasi Windows operatsion tizimlari.

### Nazariy ma'lumot.

Ishni boshlash uchun bizga **VirtualBox 6.0.0** dasturi kerak bo'ladi. Ushbu dasturni kompyuterga o'rnatib olamiz. Demak dasturni o'rnatish quyidagicha amalga oshiriladi.

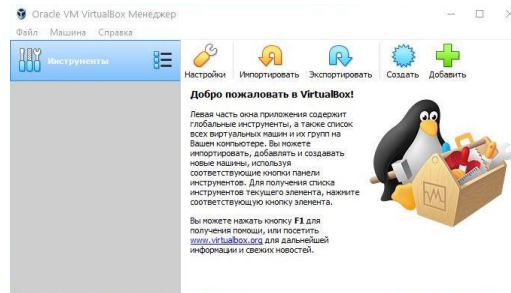
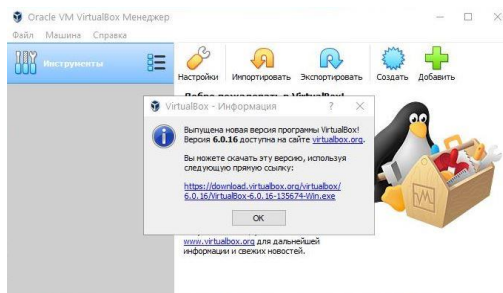
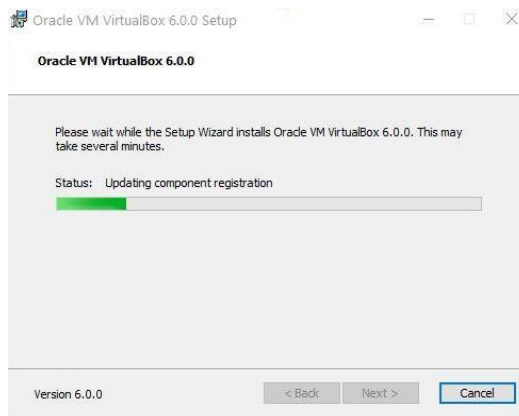
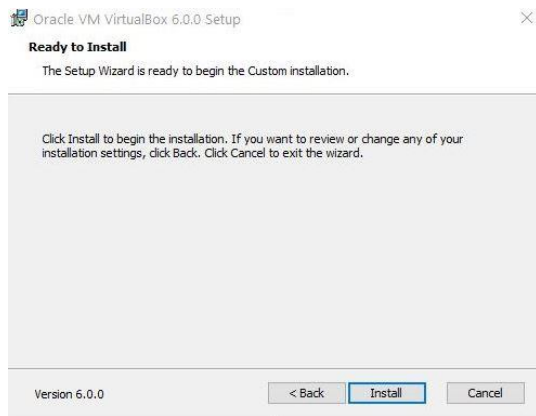
Dastur ustida sichqonchanning chap tugmasini 2 marta bosib ishga tushirib olamiz. Natijada quyidagi oyna ochiladi.

Dasturning hamma sozlamalarini avtomatik holatda qoldirib **Next** tugmalarini ketma – ketlikda bosib so'ngra **Yes** tugmasini bosish orqali dasturni o'rnatish jarayoniga tayyorlab olamiz.



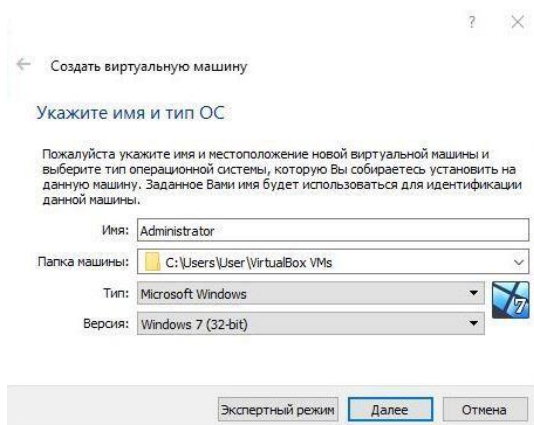
Dastur o'rnatilish jarayoniga tayyor holatga kelganidan so'ng **Install** va o'rnatilish tugagandan so'ng **Finish** va **Yes** tugmalarini bosib ishni yakunlaymiz. Natijada bizga dastur bilan ishlovchi muloqot oynasi paydo bo'ladi. Endi bu oynada virtual kompyuterlarni shakillantiramiz.

Virtual kompyuterlar bizga **Windows** va **Linux Ubuntu** operatsion tizimlarini tajriba maydonchasida o'rnatish uchun kerak bo'ladi. Amaliy mashg'ulot darsimizning mazmuni ham shundan iborat. Demak ishni quyidagi tartibda bajarishni boshlaymiz.



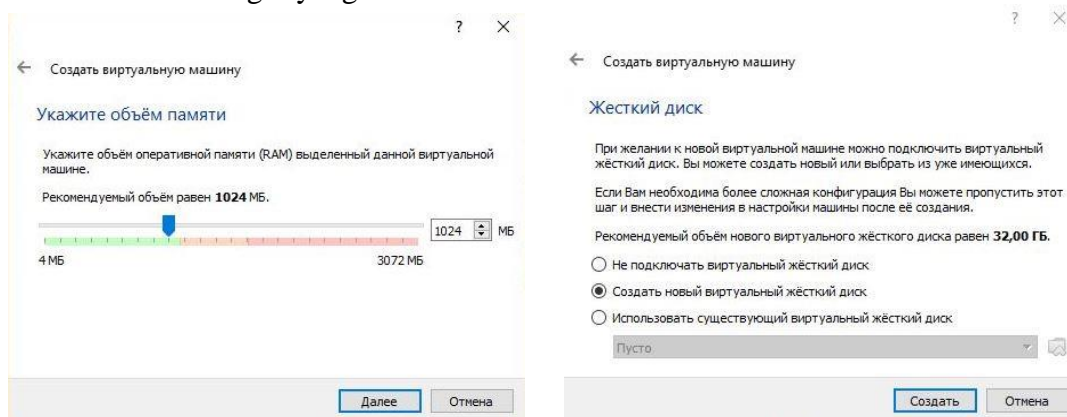
Bu oynada virtual kompyuterni nomini **Имя** bo'limiga, joylashinuv manzilini esa **Папка машины** bo'limiga ko'rsatamiz. Operatsion tizimning turini **Тип** bo'limiga, operatsion tizim razryadini **Версия** bo'limiga ko'rsatamiz. So'ngara **Далее** tugmasini bosib keyingi oyna sozlamalariga o'tamiz.

Keyingi oynadan kompyuterimizning operativ hotirasidan kelib chiqib **RAM** hotira hajmini belgilaymiz va **Далее** tugmasini bosamiz.





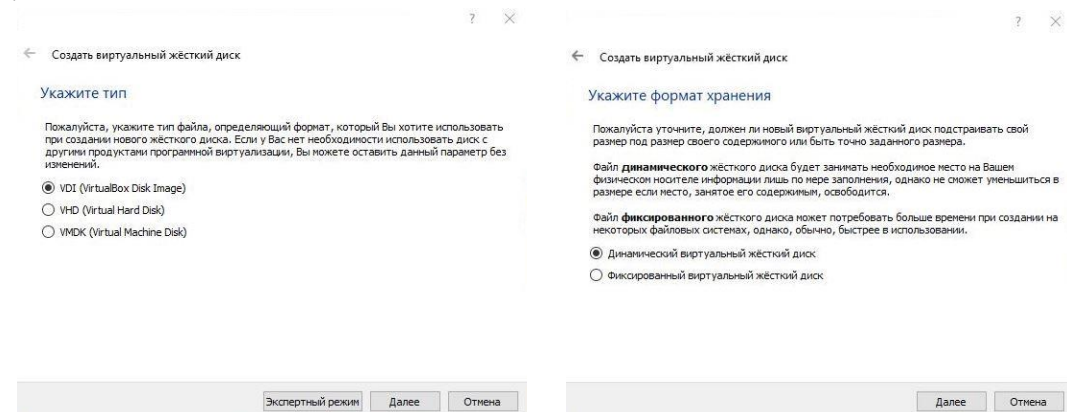
Navbatdagi oynadan esa virtual kompyuterimizga qattiq diskini hotira hajmini belgilaymiz va **Создать новый виртуальный жёсткий диск** parametrini tanlab **Создать** tugmasini bosib navbatdagi oynaga o'tamiz.



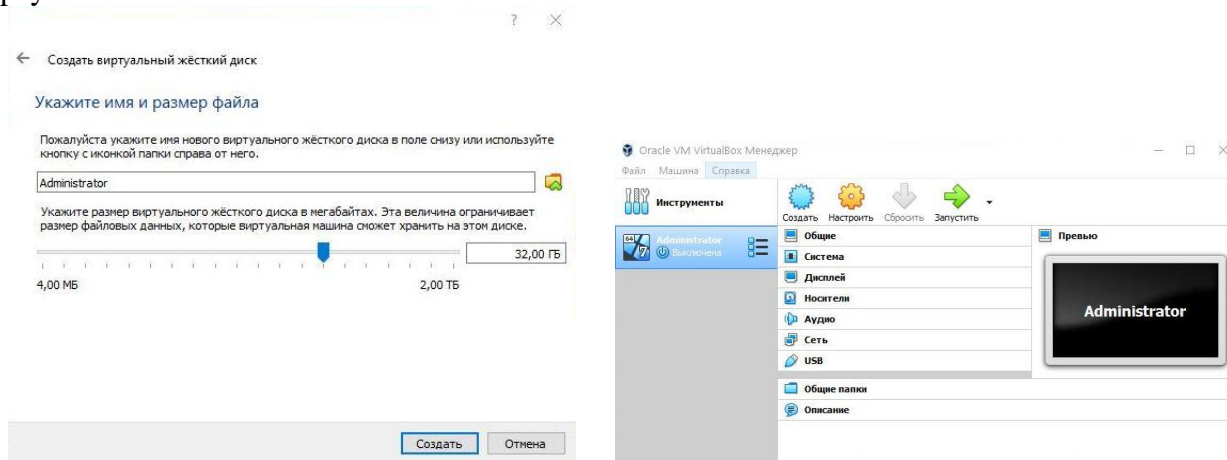
Bu oymadan esa **VDI** ya'ni (**VirtualBox Disk Image**) **Tun** bandini tanlab **Далее** tugmasini bosamiz.

Navbatdagi oynadan **Динамический виртуальный жёсткий диск** bo'limini tanlaymiz va **Далее** tugmasini bosamiz.

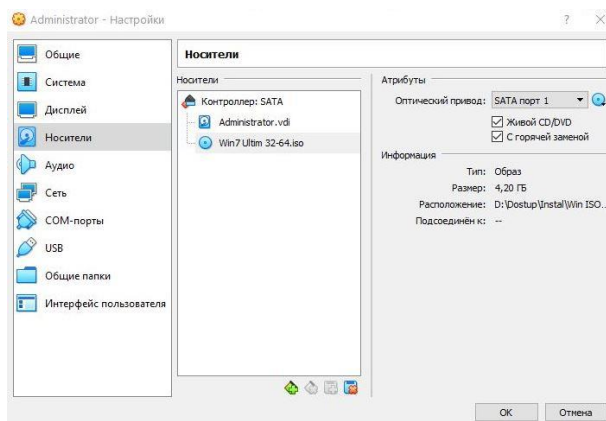
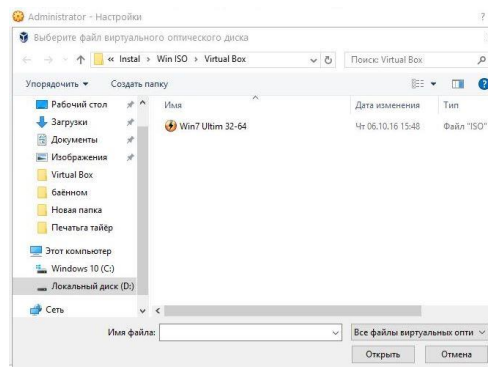
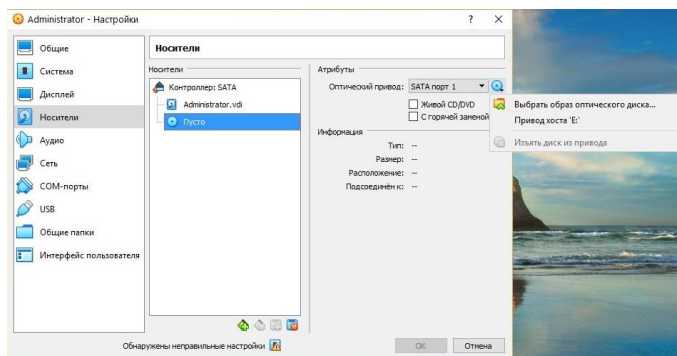
Bu bo'limni tanlashimizdan maqsad keyinchalik ish jarayonida bizga ma'lum bir hotira sig'imi kerak bo'lsa bemaolol kompyuterimizning qolgan bo'sh joyidan foydalanishimiz mumkin bo'ladi.



Quyidagi so'nggi oynadan qattiq diskimizning nomi va hotira hajmini belgilab **Создать** tugmasini bosib ishni yakunlaymiz. Natijada bizga virtual holatdagi kompyuterimiz ishchi oynasi paydo shakillanadi.

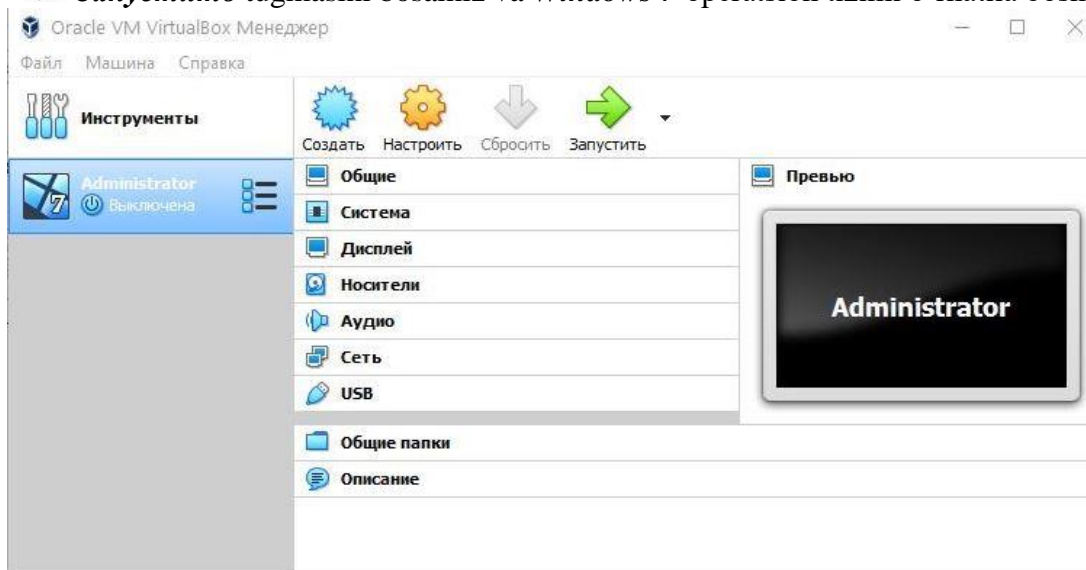


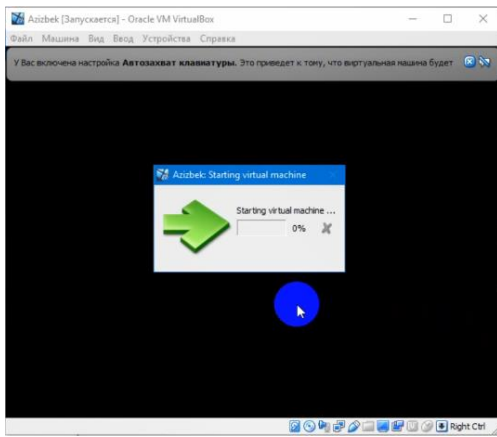
Endi **Windows 7** operatsion tizimini ushbu virtual kompyuterimiz hotirasiga o'rnatish tartibini ketma – ketligini ko'rib o'tamiz. Bunda **Настройка** bo'limidan **Носители** bandiga kirib u yerdan disk ko'rinishidagi virtual disk yurituvchi tanlanadi. Disk yurituvchi piktogrammasi yonida **Пусто** yozuvi mavjud. Bu degani hali disk yurituvchining ichiga disk solingani yo'q degani. Biz bu disk yurituvchini tanlaganimizdan so'ng oynaning o'ng qismida **Атрибуты** bo'limidan **Оптический привод SATA порт 1** qismiga **ISO** formatda yozilgan **Windows 7** obrazi manzilini ko'rsatib **Живой CD/DVD** va **С горячей заменой** yozuvlari oldiga  ushbu belgini qo'yganimizdan so'ng **Ok** tugmasi aktiv holatga keladi va ushbu **Ok** tugmasini bosib tasdiqlaymiz.



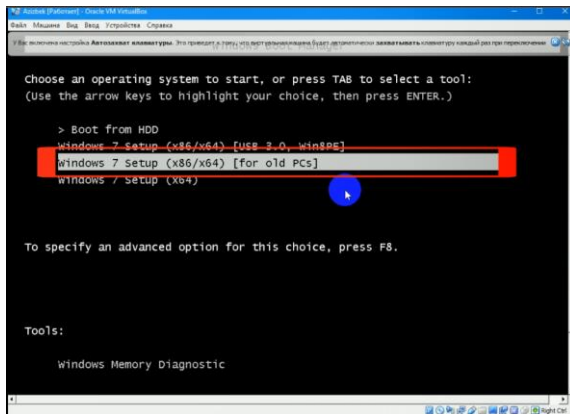
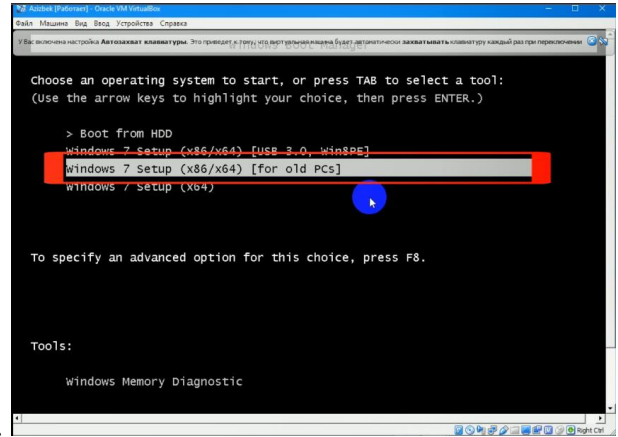
Mana virtual kompyuterimiz **Windows 7** operatsion tizimini yuklashga tayyor holatga keldi. Endi birgina **Запустить** tugmasini bosishimiz qoldi halos.

**Запустить** tugmasini bosamiz va **Windows 7** operatsion tizimi o'rnatila boshlaydi.

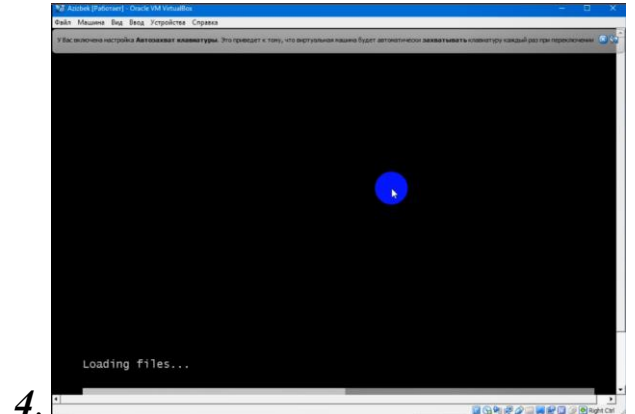




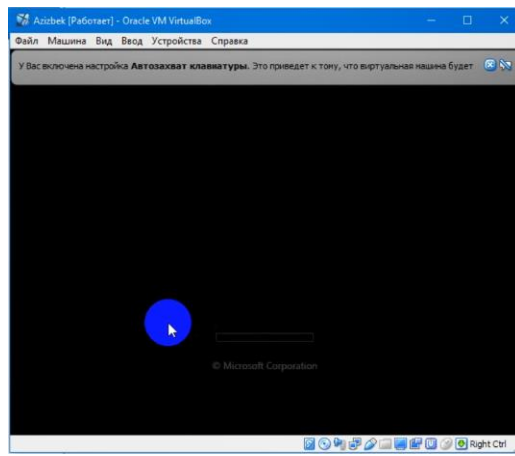
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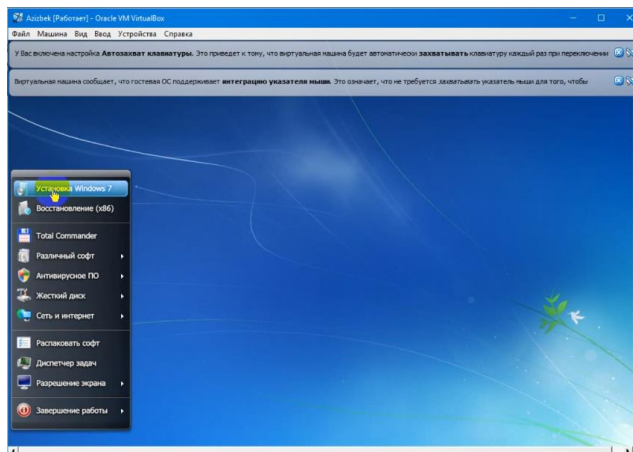


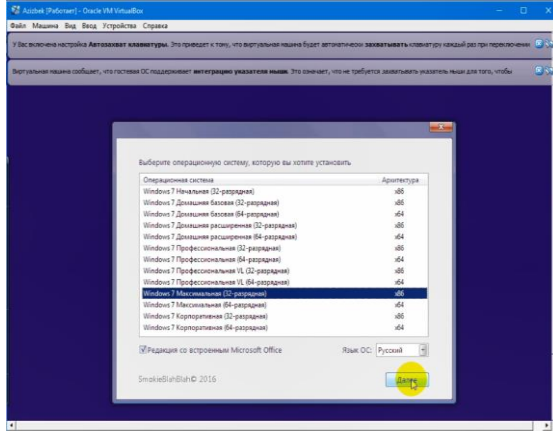
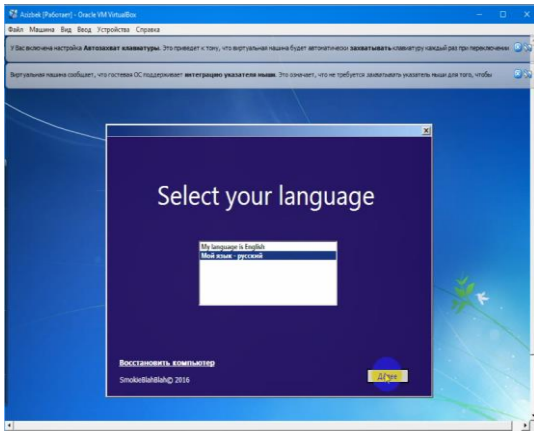
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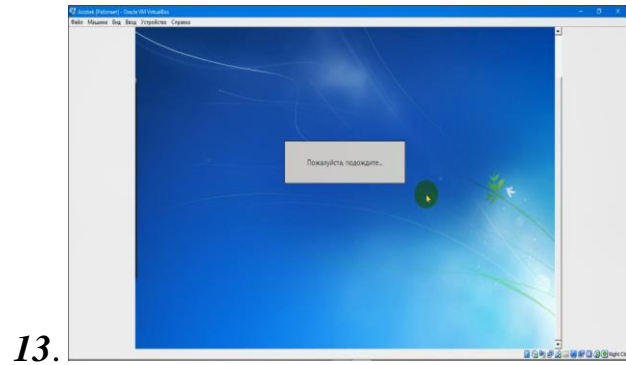
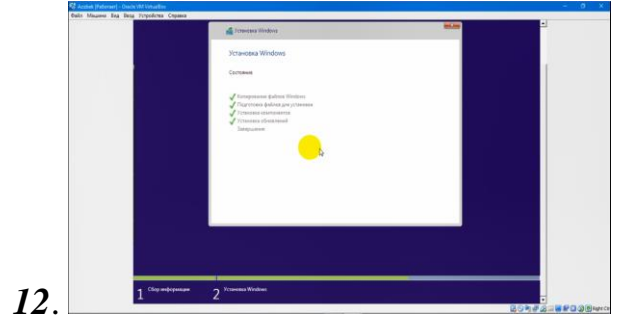
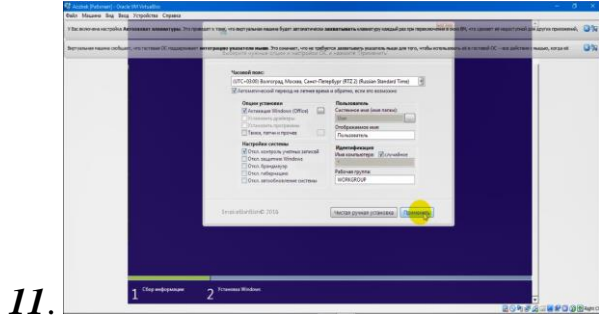
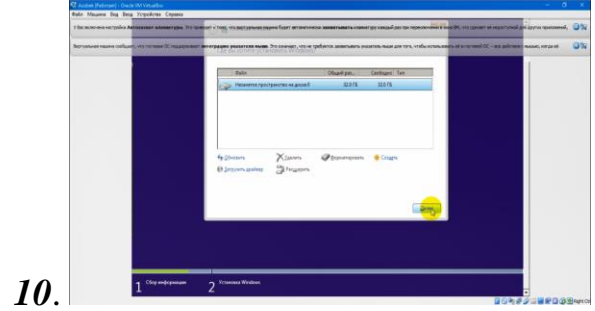
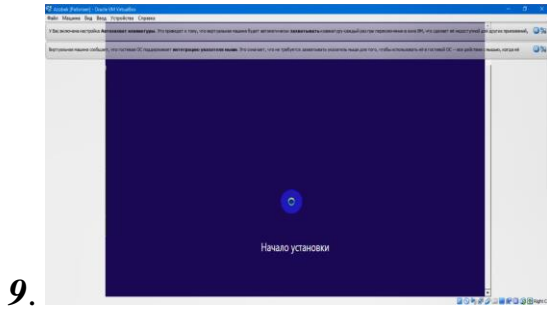


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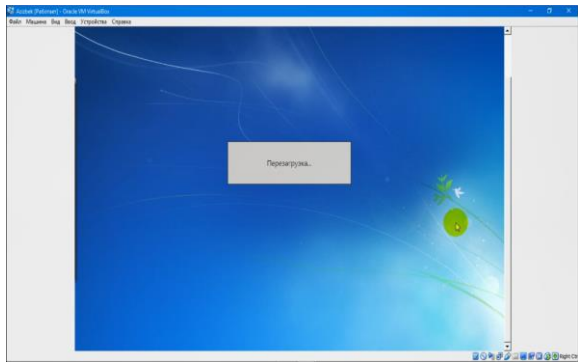
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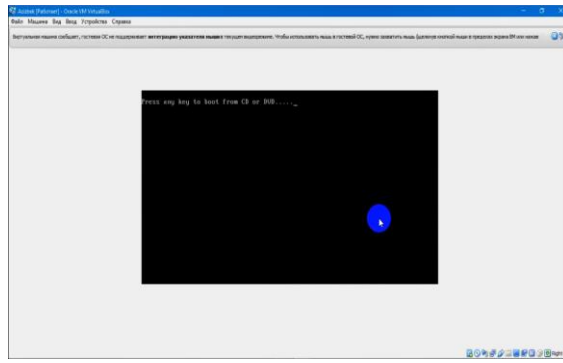




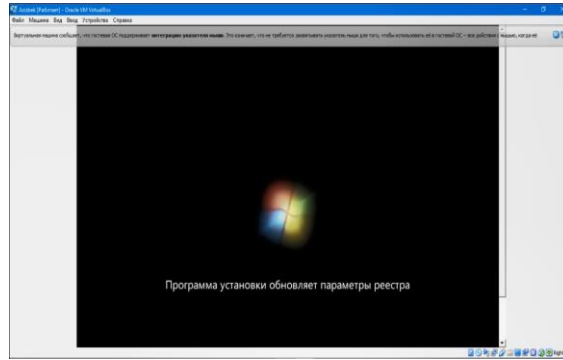
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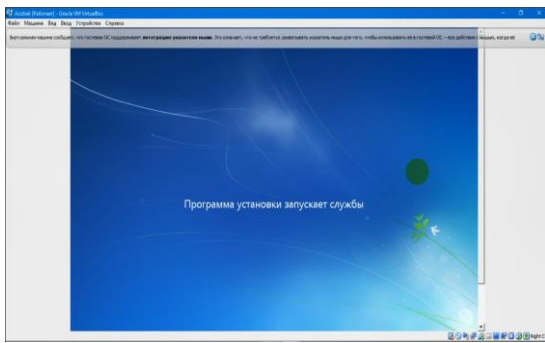
15.



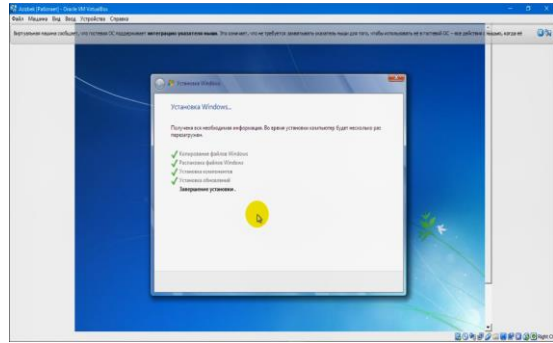
16.



17.

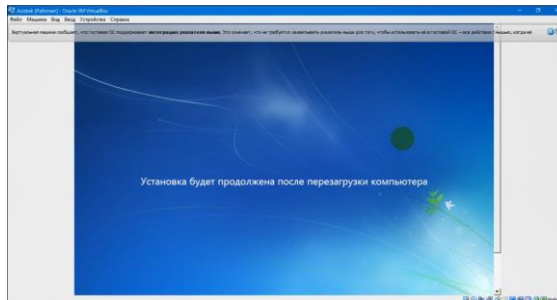


18.

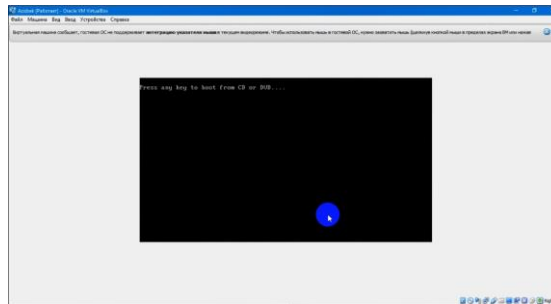




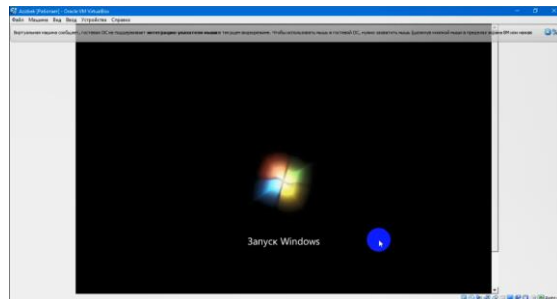
19.



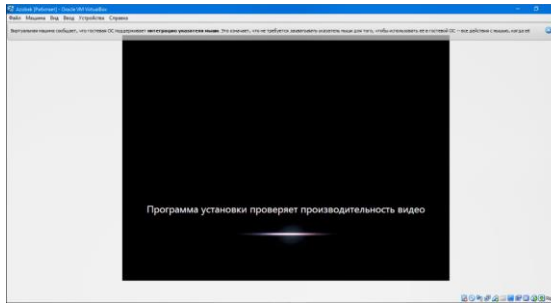
20.



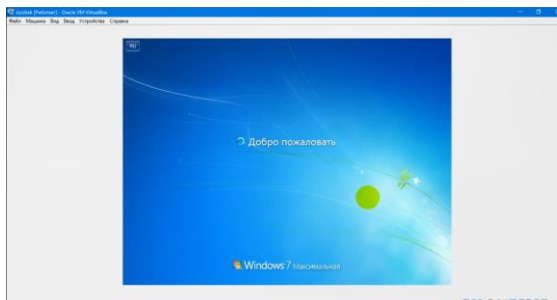
21.



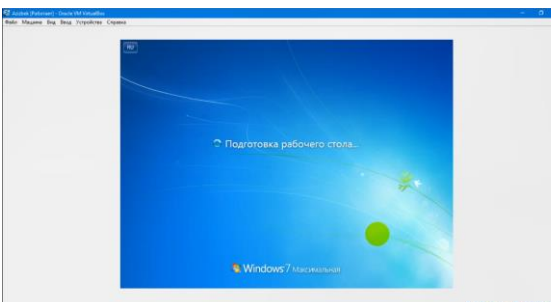
22.



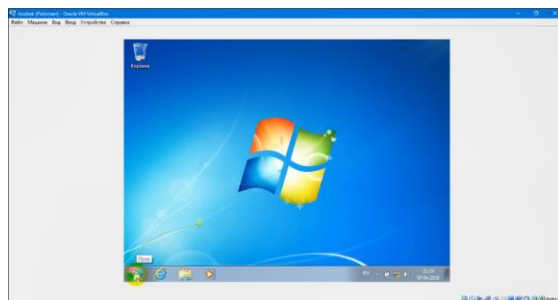
23.



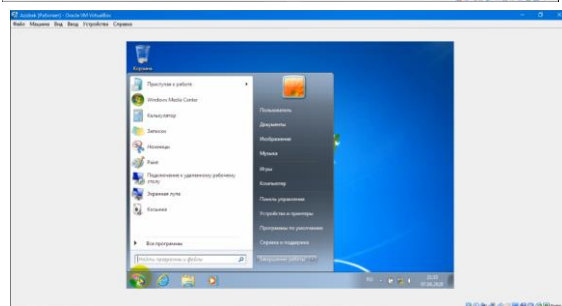
24.



25.



26.



**Windows 7** operatsion tizimini o`rnatish jarayoni tugadi.

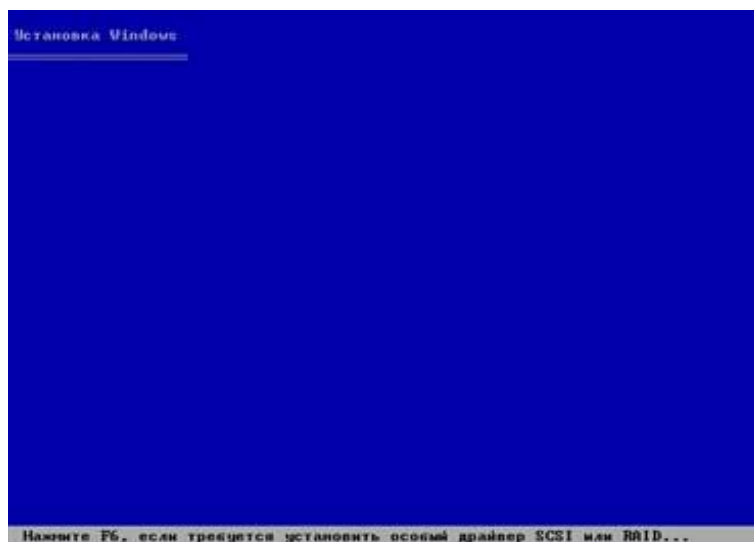
Mana endi **Windows XP** operatsion tizimini o`rnatishni ko`rib o`tamiz. **Windows XP** operatsion tizimini o`rnatishda master mavjud qurilamalni avtomatik tarzda tekshiradi va mumkin konfliktlar xaqida habar beradi. **Windows XP** ni yuklovchi kompakt-disklar orqali o`rnatishda kompyuter **BIOSi CD/DVD-ROM** orqali yuklashga ruhsat bergan bo`lishi kerak. Buni **BIOS** orqali sozlash mumkin. Zamonvay kompyuterlarda **CD/DVD-ROM** orqali yuklash sozlangan bo`ladi. Keling, **Windows XP** ni **CD/DVD-ROM** orqali o`rnatishni ko`rib chiqamiz:

**1-Yuklovchi CD/DVD** diskni **CD/DVD-ROM** ga qo`yamiz va kompyuterni qayta yuklaymiz. Agar **BIOS** da **CD/DVD-ROM** orqali yuklashga ruhsat berilgan bo`lsa kompyuter **CD/DVD** diskdagi sistema orqali yuklanadi. Bunda foydalanuvchiga **Windows** ni o`rnatuvchi master dan tashqari turli hil utilitalar, ya`ni qattiq disk bilan, **BIOS** bilan, parollar bilan ishlovchi utilitalar, antiviruslar, arxivatorlar, navigatorlar ni ishlatish mumkin. Taxminan quyidagi rasmda berilgan holatdagidek:

**2-Windows** ni o`rnatuvchi masterni yuklaymiz. Bunda kompyuterda dinamik yuklanish jarayoni sodir bo`ladi:



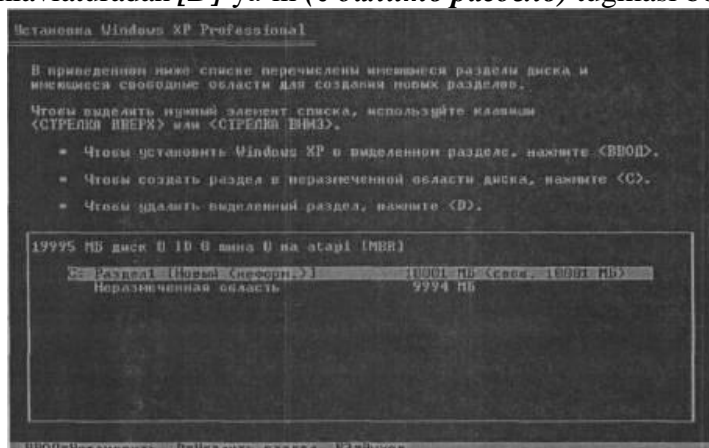
3-Shundan so`ng o`rnatishnign ilk bosqichlari boshlanadi. Bunda litsenziya kelishivi ekranda chiqadi, **F8** bosildi. Bazi disklarda litsenziya kelishuv qismi olib tashlangan bo`lishi ham mumkin:



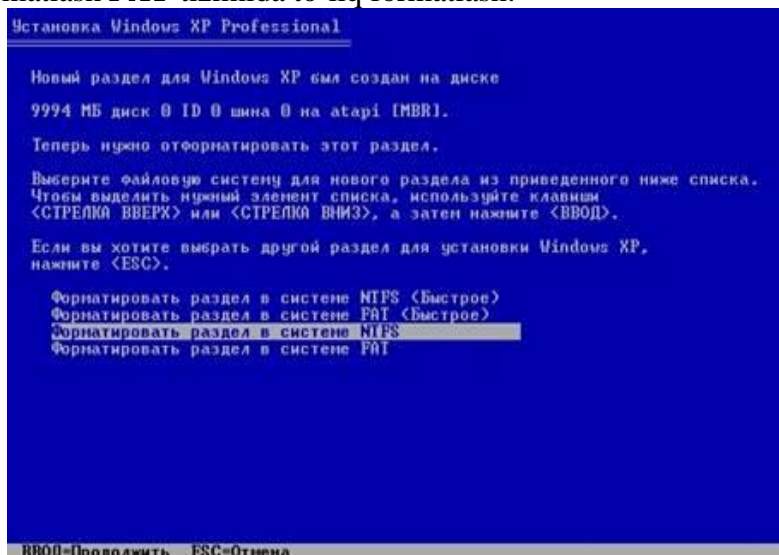
4-Quyidagi ishlarni bajarish mimkin: **Windows** ni o`rnatish uchun **[Enter]** Tiklash konsoli yordamida **Windows** ni tuzatish **[R]** O`rnatish dasturidan chiqish **[F3]**:



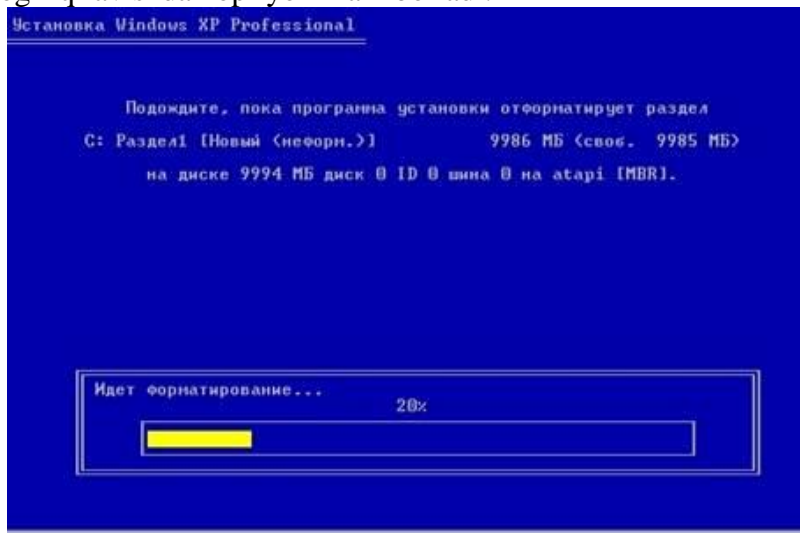
5-[Enter] ni bosib o`rnatishda davom etamiz: Bunda mavjud qattiq diskdagi bo`limlardan birini tanlash kerak. Bu bo`limga **Windows** OT o`rnatildi. Bo`limda albatta kamida **15 Gb** joy bo`lishi kerak. **Windows** ni tanlangan *раздел* ga o`rnatish uchun [Enter] Yangi *раздел* hosil qilish uchun klaviaturadan [C] ya`ni (*Создать раздел*) tugmasini bosamiz. Tanlangan *раздел* ni o`chirish uchun esa klaviaturadan [D] ya`ni (*Удалить раздел*) tugmasi bosiladi:



6-[Enter] ni bosib o`rnatishda davom etamiz: Tanlangan *раздел* ni formatlaymiz. Bunda quyidagi usullar taklif etiladi: **NTFS** tizimida tez formatlash **FAT** tizimida tez formatlash **NTFS** tizimida to`liq formatlash **FAT** tizimida to`liq formatlash:



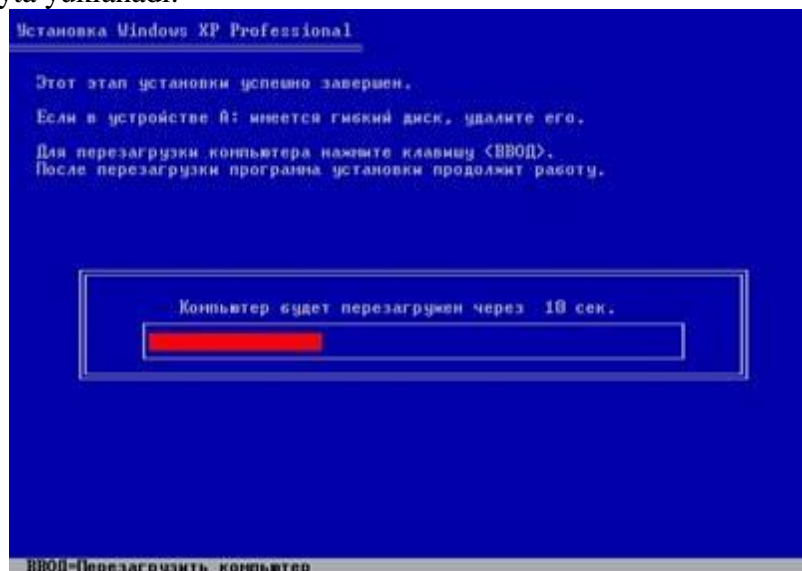
7-**NTFS** tizimida to`liq formatlashni tanlab davom etamiz: bunda formatlash vaqti tanlangan razdel xajmiga bog`liq ravishda kop` yoki kam bo`ladi.



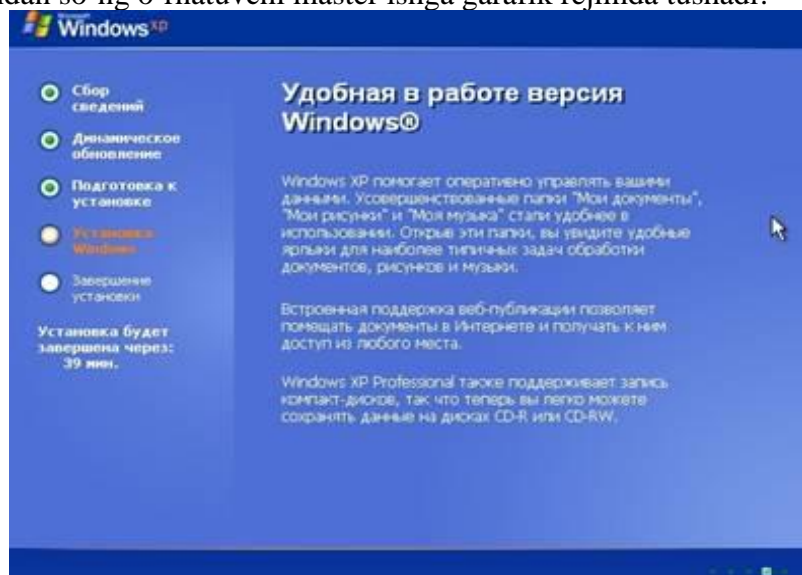
8-Formatlash jarayoni tugaydi va masterni yuklash uchun zarur bo'lgan fayllar qattiq diskka ko'chiriladi:



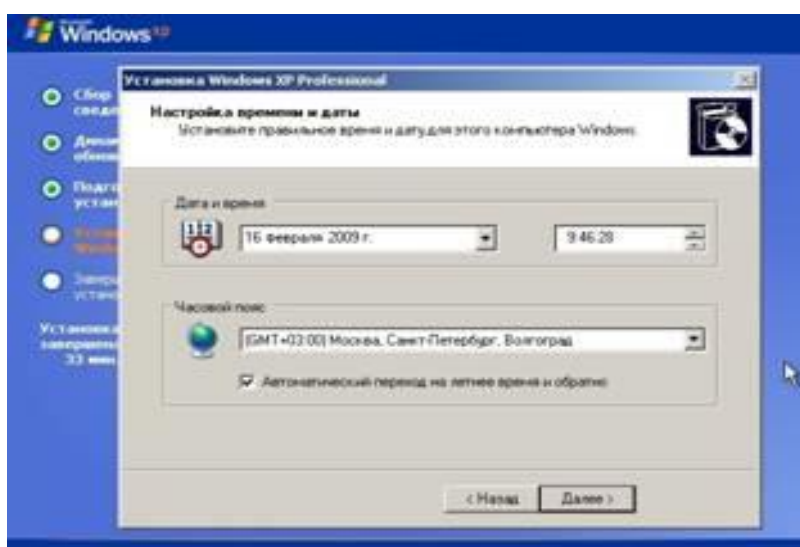
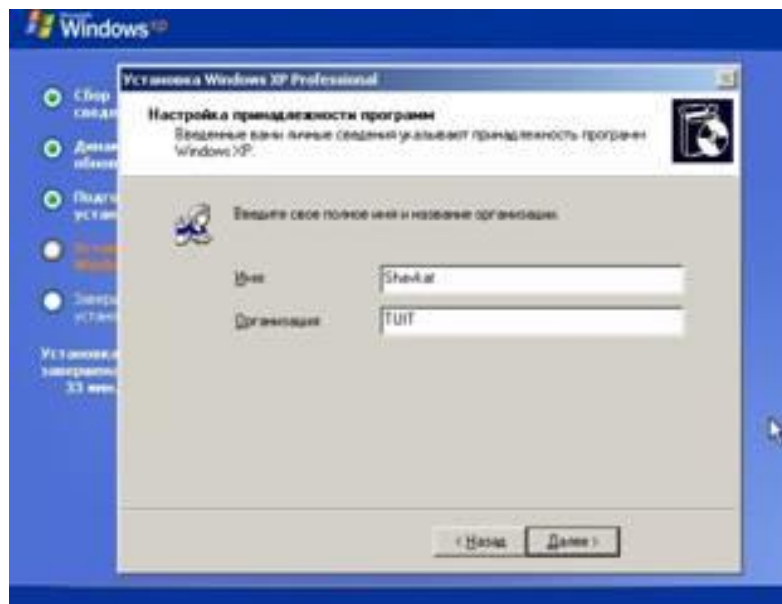
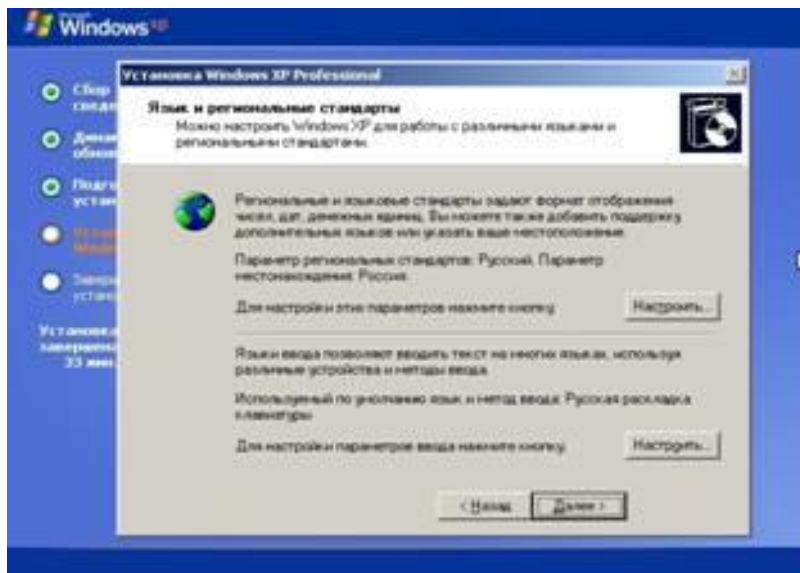
9-Kompyuter qayta yuklanadi:



Qayta yuklangandan so'ng o'rnatuvchi master ishga grafik rejimda tushadi:



10-O'rnatish jarayonida master foydalanuvchidan kerakli sozlashlarni (hududiy parametrlarni, fodalanuvchi va tashkilot nomini, vaqt va sanani, tarmoq parametrlarini) kiritishni so'raydi:

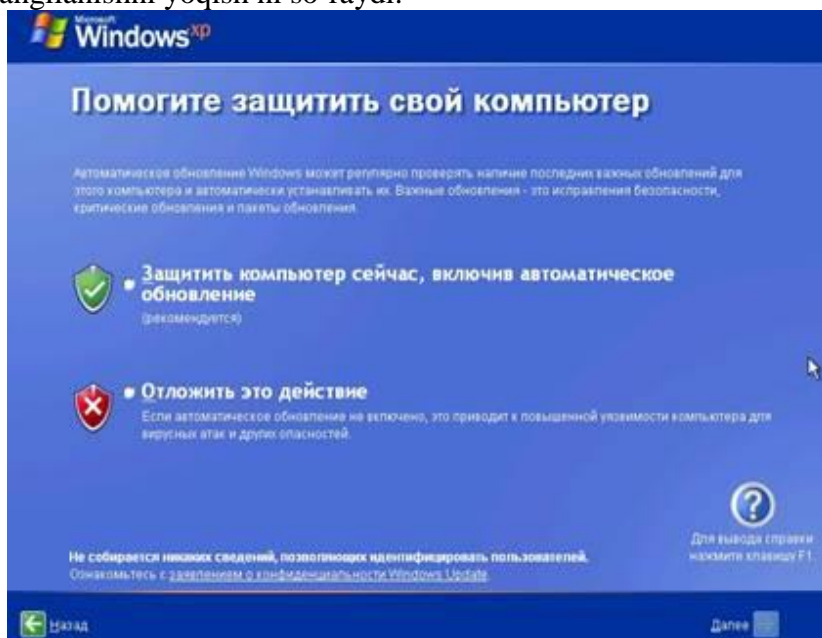


II-Master o`z ishni yakunlaydi va kompyuter qayta yuklanadi hamda birinchi bor **Windows** ishga tushadi [Далее] bosiladi:

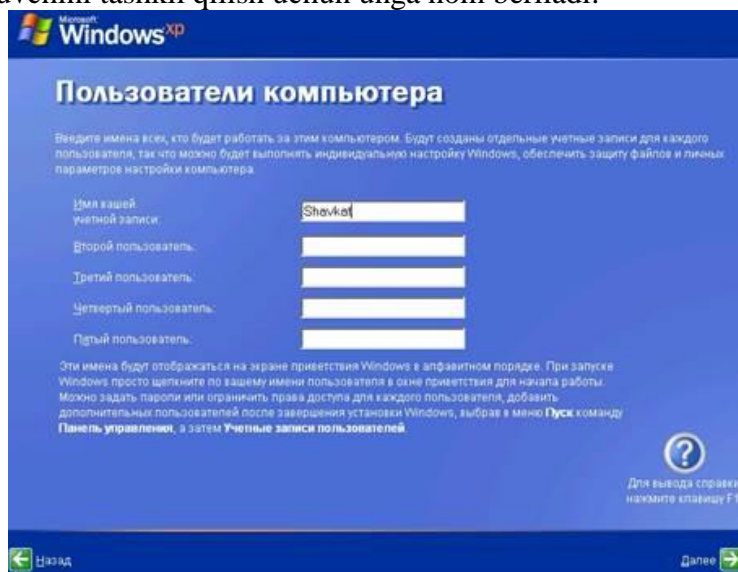




12-Avtomatik yangilanishni yoqish ni so`raydi:



13-Yangi foydalanuvchini tashkil qilish uchun unga nom beriladi:



14-Va nihoyat foydalanuvchi ish stoli ishga tushadi:



### **Laboratoriya ishlarini o'tkazish qoidalari va xavfsizlik choralari.**

Berilgan nazariy ma'lumot bilan tanishib chiqiladi va topshiriqlar variantlari ketma-ket bajariladi va natijalar olinadi.

Kompyuter xonasida xavfsizlik texnikasi qoidalari va sanitariya – gigiyena talablariga amal qilinadi.

### **Topshiriqlar variantlari (masala, misol, keyslar).**

1. Windows XP operatsion tizimini VirtualBox dasturi orqali o'z kompyuteringizda ornatib rasm holatida taqdim eting va tushuntirib bering.
2. Windows 7 operatsion tizimini VirtualBox dasturi orqali o'z kompyuteringizda ornatib rasm holatida taqdim eting va tushuntirib bering.

### **Nazorat savollari.**

1. Windows XP, 7 operatsion tizimlarining bir – biridan farqi qanday?
2. Windows operatsion tizimining asoschisi kim?
3. Windows operatsion tizimini kompyuterning hotirasiga yozish uchun qaysi axborot tashuvchi qurilmalardan foydalaniladi?
4. Qanday operatsion tizim turlarini bilasiz?
5. Operatsion tizimni o'rnatishda operativ hotiraning ro'li nimadan iborat?
6. Mikroprotsessorning vazifasi nimalardan iborat?
7. Monitoring vazifasi nimalardan iborat?