

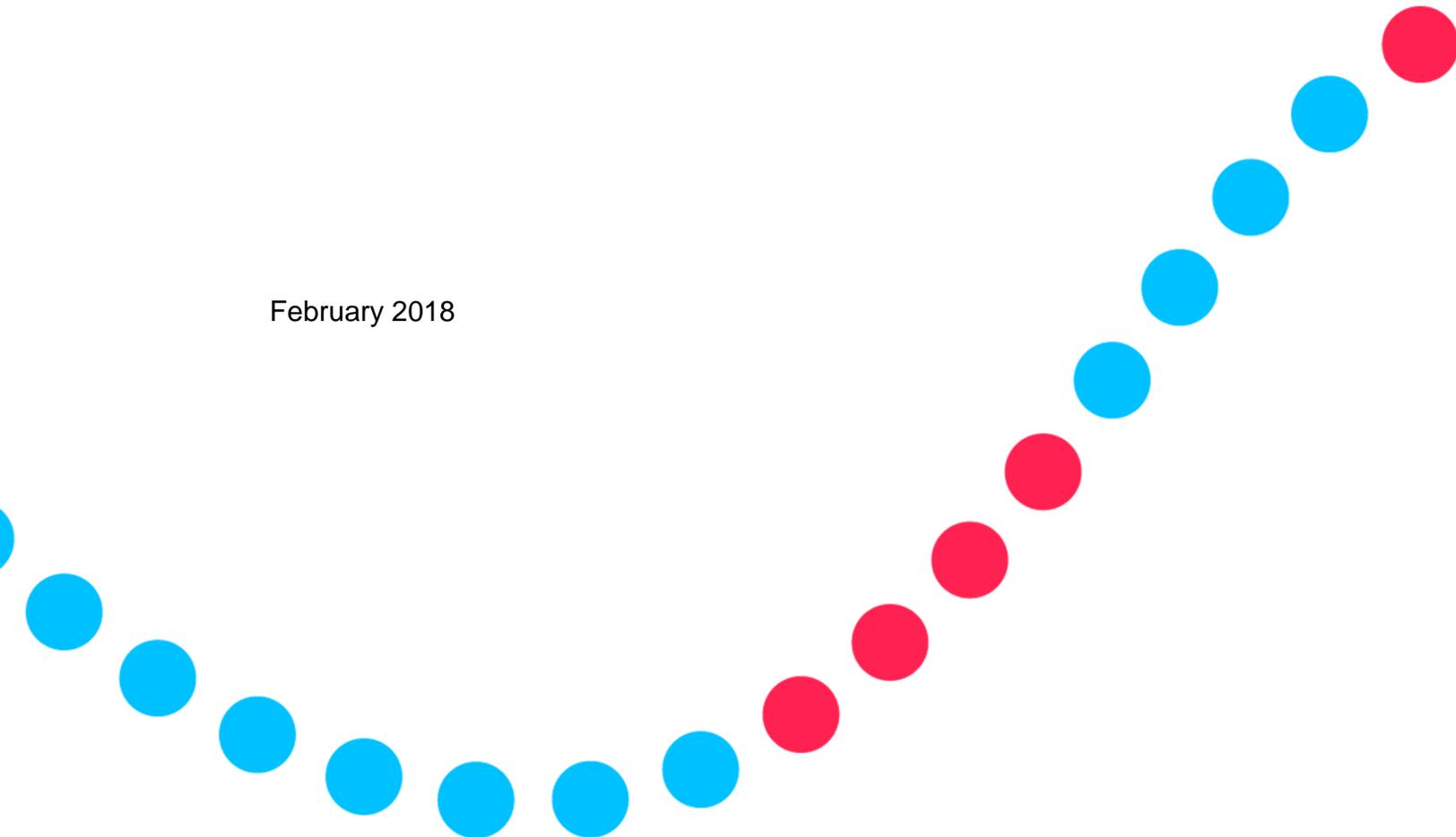


Prognosis UC Assessor v2

A cloud-based UC network assessment solution

Getting Started Guide

February 2018



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Prognosis UC Assessor v2 Overview

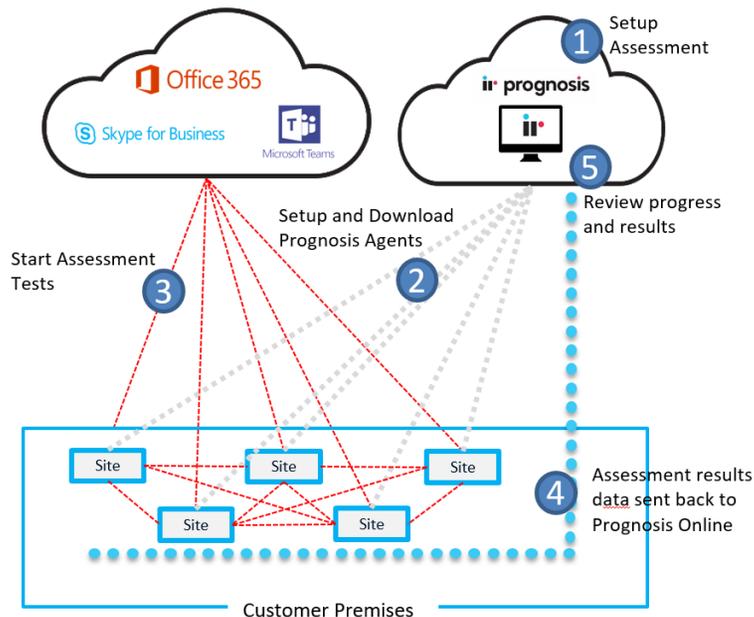
IR Prognosis UC Assessor v2 is a cloud-based UC network assessment and testing solution that has been designed to work with Microsoft® Skype for Business™ and other Unified Communications (UC) platforms.

Some of the features offered with Prognosis UC Assessor include:

- Synthetic call generation from any PC via a local lightweight Prognosis software agent.
- Site-to-site, site-to-cloud and full mesh combinations across the organization.
- For Site-to-Cloud: Test UC network performance to the closest Skype for Business online or Microsoft Teams cloud edge, via global Microsoft Anycast Cloud edge points in Office 365.
- For Site-to-Site: Test UC network performance between any two installed UC Assessor agents for any UC platform, including Skype for Business, Cisco, Avaya and others.
- The ability to leverage many different vendor codecs for real world simulation testing.
- The facility to measure; latency, jitter, packet loss, burst packet loss and out of order packets.
- Results scored against Microsoft minimum performance requirements for Skype for Business.

Prognosis UC Assessor v2 is a cloud hosted service, it includes a small lightweight software agent that is downloaded to the customer premises and then installed on any PC that will be running assessment tests.

The following diagram shows a basic overview of the deployment of UC Assessor v2 and how it interacts with the Microsoft Skype for Business Online and Microsoft Teams destination.



1. Create projects, assessments, and agent locations
2. Download and install Prognosis agent or send to remote location
3. Start/Stop/Manage assessment tests with remote control
4. Assessment results data sent back to Prognosis Online
5. View assessment results in Prognosis Online

Pre-requisites and Minimum Requirements

The lightweight Prognosis software agent has pre-requisites for installation and configuration in the destination installation environment. This section outlines the requirements for any agents that are to be installed.

Agent Software Requirements

Hardware

The Prognosis agent software requires the following PC or server hardware specifications:

- 2x CPU cores
- 2GB RAM
- 40GB of storage

Software

The Prognosis agent supports the following Microsoft Windows® operating systems:

- Microsoft Windows 7 or later (32 or 64-bit operating systems)
- Microsoft Windows Server® 2008 R2 or later

Firewall Requirements

Prognosis Agent (DNS & Outbound HTTPS - Port 443)

The Prognosis agent requires external DNS resolution and HTTPS over port 443 to connect to the Prognosis cloud, it uses the Web sockets protocol to allow bi-directional communication. This is needed for any assessment administration and for uploading assessment results to the UC Assessor cloud portal.

Prognosis agent communications should be able to connect through standard transparent HTTPS proxies. To enable communication for explicit forward proxies, you may either configure the Prognosis agent to use the proxy or configure your firewall rules to allow outbound access. The following guide can be used to configure Firewall rules to allow outbound access:

<http://docs.aws.amazon.com/general/latest/gr/aws-ip-ranges.html>

The most up to date IP address list is available from the following URL. It will be necessary to include any subnet from the Amazon us-west-2 region, which is where the UC Assessor Cloud service is hosted. <https://ip-ranges.amazonaws.com/ip-ranges.json>

The easiest Firewall rule to implement is based on the source IP address of the Prognosis agent and the destination port of 443. Any system proxy settings in MS Internet Explorer should be disabled to allow for direct Firewall access.

Site to Cloud Assessments (ICMP)

ICMP is needed to communicate to the Skype for Business online and Microsoft teams destinations. Each site-to-cloud assessment can run up to 10 simultaneous calls per assessment. To allow Firewall rules, the following protocols and destinations need to be configured:

- **Skype for Business online** - ICMP with the destination AnyCast IP address of 13.107.8.2
- **Microsoft teams** - ICMP with destination AnyCast IP address of 13.107.8.22

Site to Site Assessments (UDP)

- UDP uses a default port range of 50,000 - 50,050, which is needed for site to site assessments. A maximum of 50 concurrent assessments can be run on a site to site agent, this is due to each assessment test allocating a unique port. Each site-to site assessment can run up to 500 simultaneous test calls per assessment.
- ICMP is also used to obtain traceroute information between the two servers. This will need to be enabled between the two Prognosis agents if hop by hop visibility is required.

Configuring Forward Proxy

Prognosis UC Assessor allows for the configuration of an explicit HTTP forward proxy for traffic transmission.

Requirements

- The HTTP Proxy may use either HTTP or HTTPS, and must support through WebSockets. HTTPS proxies that do not intercept the traffic should support Web sockets.
- Prognosis UC Assessor does not support SOCKS proxies.
- You must be using a version of the Prognosis Agent that is version 1.0.25 or higher. You can find out which version of the agent you are using by accessing "Programs and Features" on your Windows device, then viewing the Version column next to the "Prognosis Agent".

Configuration

1. Specify a system environment variable named **PROGNOSIS_HTTP_PROXY** with the location of the proxy (e.g. https://proxy:443). This can be done by:
 - Opening Explorer
 - Right click on "This PC" or "My Computer", and selecting "Properties".
 - Select "Advanced system settings" on the left sidebar.
 - Select the "Environment Variables" button.
 - Under "System variables", select the "New..." button
 - Specify PROGNOSIS_HTTP_PROXY as the "Variable Name", with the proxy address as the value.
2. Restart the agent by:
 - Opening the "Task Manager"
 - Click on the "Services" tab
 - Find the service called "Prognosis Agent Service"
 - Right-click on the service, then selecting restart.

Getting Started

Establishing your Account Password

Once IR has set up your Prognosis Online account, you will receive an e-mail containing a link to complete the process by establishing a password for your account.

Example:

Welcome to IR Prognosis online!

Please complete the initial setup of your Prognosis Online account by clicking the link below to setup your online access password: <https://irl-uat.auth0.com/lo/reset?ticket=sdfgh4356fdgh456W#>

Note: This link expires in 5 days.

Thanks!

IR Prognosis Online Team

Log on to UC Assessor

Once your account password has been set up, log on to UC Assessor at <https://uca.prognosis.com/> with your user credentials.

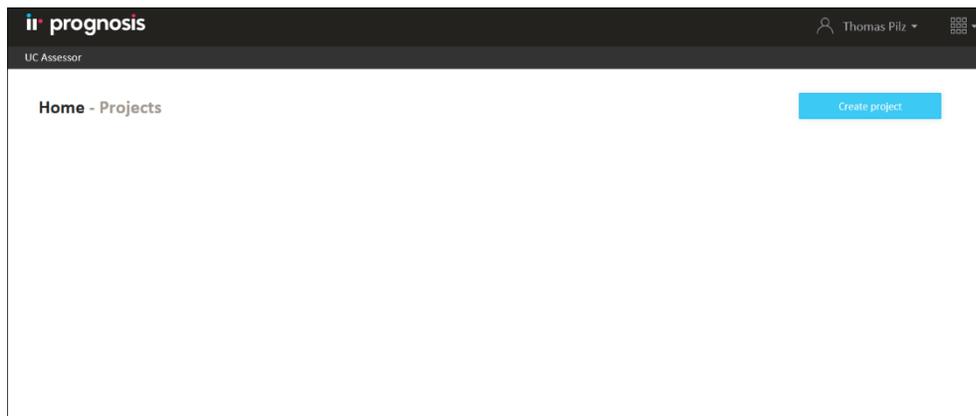


Following a successful log on, 'Projects' and 'Assessments' can be created. UC Assessor utilizes the concept of projects so that assessments are grouped together under a dedicated project name.

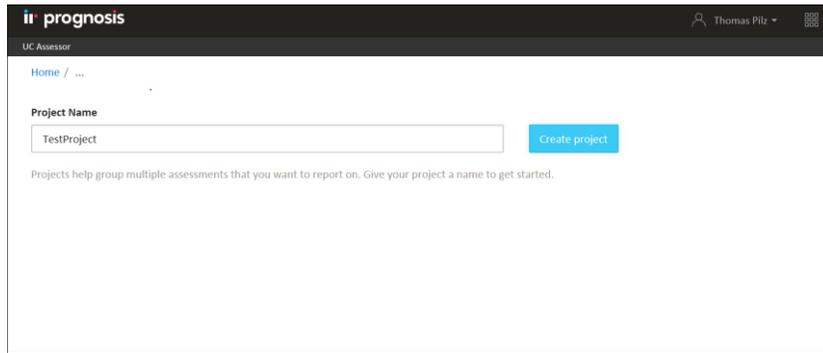
Creating a Project

To create a project,

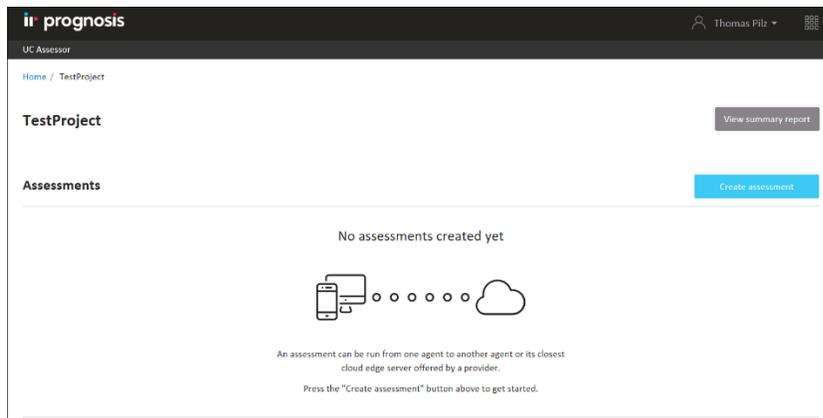
Step 1 Click the **Create project** button.



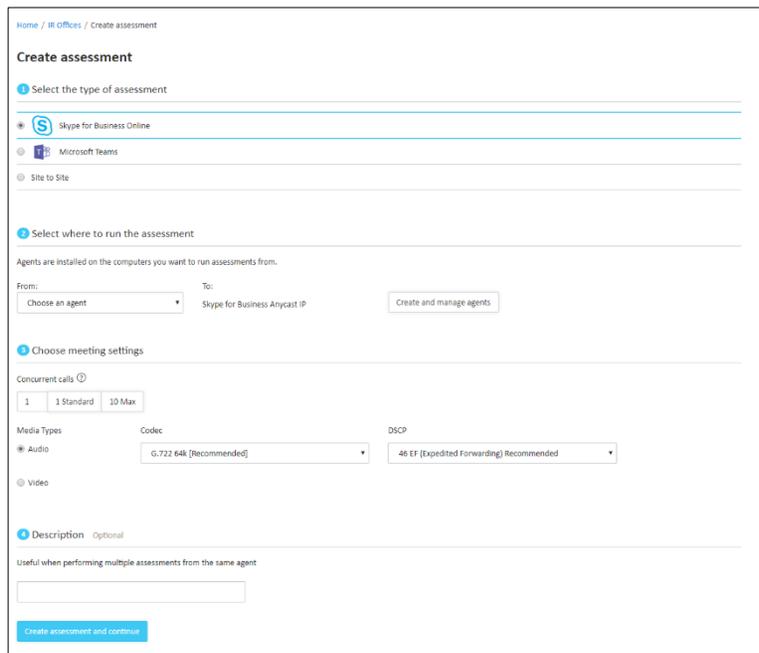
Step 2 Provide a project name and click the **Create project..** button.



Step 3 Create an assessment within the project by clicking the **Create assessment** button.



The following 'Create Assessment' page will open.



- Step 4 There are four steps needed to configure the assessment. Follow the on-screen steps to setup an assessment.
- Select assessment type
 - Select where to run the assessment and install the agent (if no agents are set up yet, click Create and Manage Agents)
 - Choose the assessment setting to simulate the meeting or call. (i.e. voice or video)
 - Type an optional description that describes the specific assessment. Example: *London sales office to Denver HQ* or *Denver Bldg 2 to SFB Online*.

Create and Manage Agents

Click the **Create and manage agents** button which brings up the **Manage agents** modal.

This is used to create and manage Prognosis agents, these are lightweight agents that run on a PC with the MS Windows operating system.

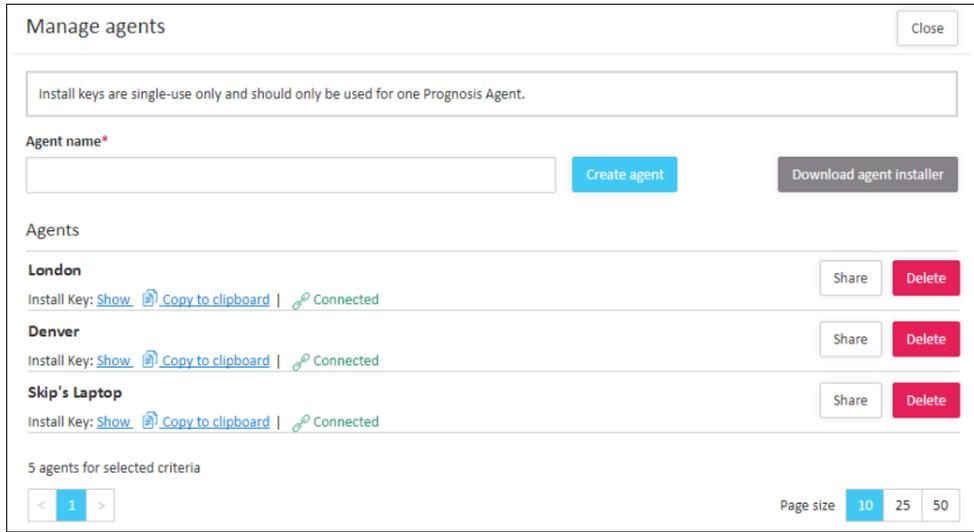
To install the Prognosis agent, perform the following steps:

- Step 1 Input an 'Agent Name' and then click the **Create agent** button. The 'Agent Name' is a location or machine name.
- Step 2 Click the **Copy to clipboard** link to copy the agent install key to the clipboard:

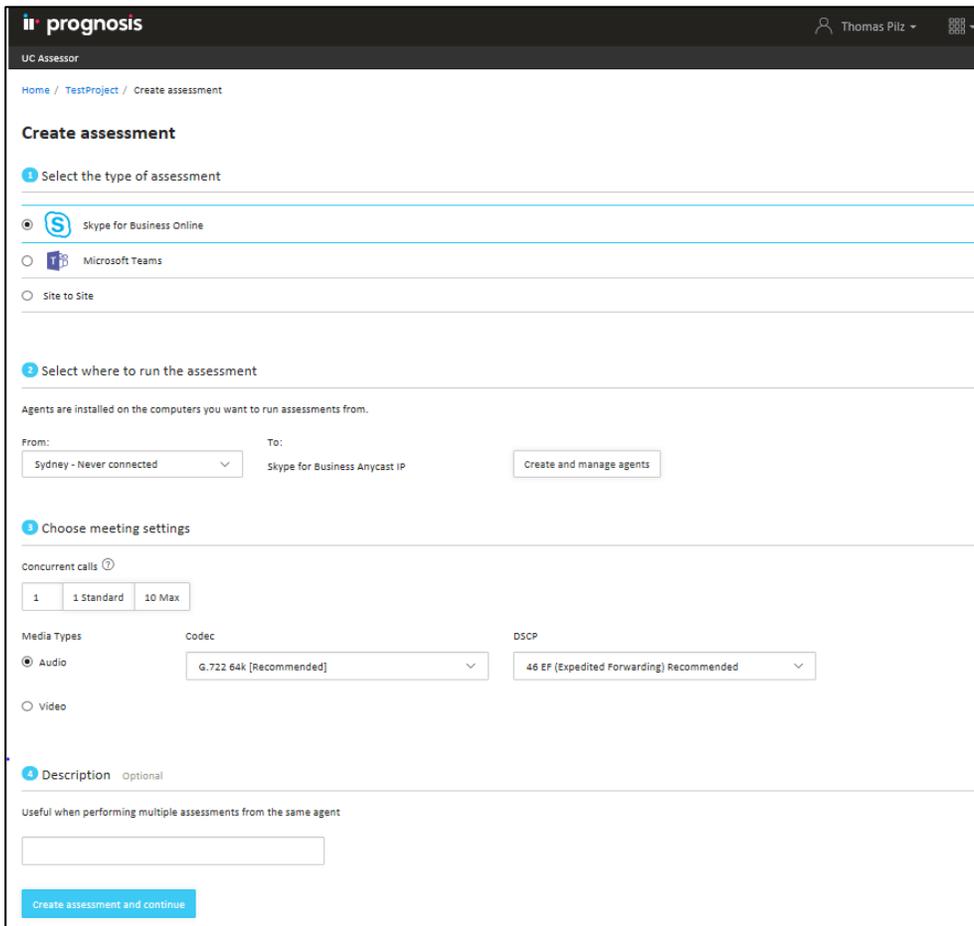
- Step 3 Click the **Download agent installer** button to download the Prognosis agent installer.
- Step 4 Run the install and **copy the install key** when prompted.
- Step 5 Click the **Share** button to send this to a remote person to download and install the Assessor Agent at a remote location on your behalf.

After following these steps, a new Agent will display in the list of available Agents and should automatically self-connect back to the UC Assessor cloud service. Within a couple of minutes the agent status should automatically change from **Never Connected** to **Connected**.

The screenshot below shows three agents that have been successfully installed and connected:



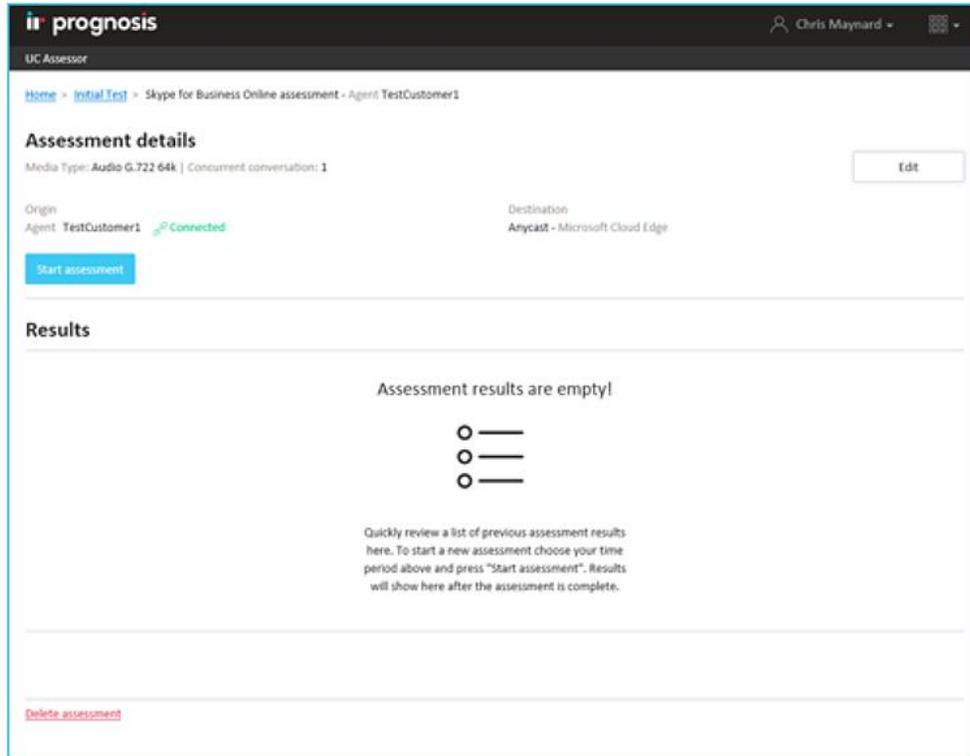
Once the agent has been successfully created, click the **Create assessment and continue** button after choosing the required assessment settings:



Starting an Assessment

Once an assessment has been created, it can then be started using the following steps:

- Step 1 From the Home page, locate the required project and click the adjacent **Manage** button. This will open the Assessment page.
- Step 2 From the Assessments page, locate the required assessment and click the adjacent **View** button. This will open the Assessment Details page.



- Step 3 From the Assessment Details page, click the **Start Assessment** button.

Common Questions

What data is collected by Prognosis UC Assessor agents and sent to the UC Assessor cloud service?

In addition to the information entered during the Assessment and Agent setup, the following information is collected by the Assessor Agents and sent to the UC Assessor service:

- Assessment router hops including DNS entries and IP addresses, including internal/external network entries.
- Performance data for the assessment server, including; Jitter, Packet Loss, Latency, Out of order, Wireless signal strength and QoS (DSCP) settings.
- For specific details, reference the IR online data privacy statement at <http://www.ir.com/legal/privacy>.

Can Prognosis UC Assessor be used to test for bandwidth and network capacity?

When testing from site-to-cloud against Microsoft Skype for Business Online or Microsoft Teams in Office 365, Microsoft has a limit of 10 concurrent assessment calls per second per assessment, so a load test is not possible. However, when testing site-to-site, each assessment can test with up to 500 concurrent calls. Keep in mind that a site-to-site test with 500 concurrent calls in a single assessment would require a much higher performing computer to support that volume of concurrent call simulations.

What if internet access is not available, can I still use Prognosis UC Assessor?

Prognosis UC Assessor v2 requires each agent to have internet access to download and connect each agent, and transmit the assessment test results data back to the UC Assessor cloud service. This limitation will be addressed in a future version of the service, contact IR Sales for more information.

How many simultaneous tests or simulated calls can be run from a single agent?

See Firewall Requirements section. The UDP transport protocol has a default port range of 50,000 - 50,050, which is needed for site to site assessments. A maximum of 500 assessment tests can be run on a site to site agent, this is due to each assessment test allocating a unique port.

How many assessment tests are required to test a full mesh of all sites to each other, and all sites to the cloud?

The formula is $n(n-1)/2 + n$, where n=number of unique sites or agent locations. Example for 10 sites full premise mesh and to the cloud:

- Site to cloud is 10; 1 for each site.
- Site-to-site total is 45; $(10*9)/2 = 45$.
- Add these together to see a total of 55 assessment tests are needed.

How is UC Assessor licensed and charged?

- UC Assessor is licensed on a per assessment basis per month basis. Assessment Units (AU) are purchased in advanced and consumed as each assessment test is started. One AU = one assessment for 1 month for either site-to-site between 2 agents, or site-to-cloud between an agent and a cloud destination.
 - A calendar month is from a given day in one month to either; 1) the same day of the following month OR 2) the last day of the following month if that day does not exist (i.e 30th or 31st).
- If multiple separate duplicate assessments use the same source, destination, agent IDs, and machine IDs then only one AU is consumed. Example is multiple separate duplicate assessments with different codecs.
- The assessment 1 calendar month timeclock is started and the AU charged/consumed when the assessment is started for the first time. If an assessment is not stopped within 1 calendar month from the start date, a second AU is charged and consumed for each additional 1 calendar month an assessment is running.
- Each assessments (i.e. same source, destination and agent IDs) can be started and stopped an unlimited number of times without incurring additional charges, unless the duration runs longer than 1 calendar month from the original start date.

- Any change to the assessment source, destination, agent ID, or installed agent location will be identified as a different test and will be charged an additional AU.
- Multiple separate assessments using the same source, destination, and installed agents will only be charged 1 AU, even though there are running on separate assessments. This is so you can do simultaneous assessment tests of audio and video at the same time between the same locations.

If I run a quick test of a newly configured Assessment to confirm everything is configured correctly, does that consume a license?

Yes.

If I want to test Wi-Fi and then Ethernet between the same source and destination, is that 1 or 2 assessments?

One. Since the source, destination, or agent ID are the same, only 1 AU is consumed. However you cannot do a WiFi and Wired assessment at the same time since you cannot direct assessments to use specific network interfaces on the machine of the installed agent.

If I want to test voice and video between the same source and destination, is that 1 or 2 assessments?

One. Since the source, destination, or agent ID are the same, only 1 AU is consumed.

Bi-directional testing: If I have 2 sites, A & B, and I run a test from A to B, do I need to run a test B to A as well?

No. UC Assessor synthetic calls sends the payload out and back when performing an assessment. This means that a single test, is the equivalent of a bi-directional call. So A to B, is also testing B to A.

Exception: Currently only the originating site, performs a TraceRoute and Wi-Fi signal strength tracking. It is understood that they need to be tracked on both sites. Until such time (which is likely several months away) a bidirectional test may be required.

- **Example 1:** If A is a data center and B is an office with Wi-Fi, the test direction should be B to A to ensure the Wi-Fi is tested.
- **Example 2:** If A & B are both offices with Wi-Fi, it may make sense to test both A to B and B to A to ensure the Wi-Fi is tested at each location.
- **Example 3:** If A, B & C are all offices with Wi-Fi, it is important to test each site-to-site combination, and the Wi-Fi at each, to the tests would be: A to B, B to C, C to A.

Does IR provide specific guidance or best practices on how to run a proper UC network assessment for an organization?

Not at this time, please reference the guidance provided by Microsoft ([see Skype for Business Deployment Guidance for Voice and Meetings in the Microsoft FastTrack portal](#)) or other providers for specific planning and delivery guidance for various vendor UC platforms.

Tips for Success

Advance planning is important, be sure to think about how any assessments are needed to test all the logical connections between a site and up to the cloud.

If building a large number of assessments within a project, consider creating all the required agents first, so that they are available as the assessments are built, instead of creating each one as needed.

To perform an assessment, agents for each site must be available and connected in order to be selected in the assessment setup screen